



NM OIL CONSERVATION  
ARTESIA DISTRICT

MAR 18 2019

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## **EOG Resources - Midland**

Eddy County, NM (NAD 83 NME)

Quail 2 State Com

#581H

30.015-45787

OH

Plan: Plan #0.1

## **Standard Planning Report**

05 March, 2019

|           |                              |                              |                      |
|-----------|------------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                  | Local Co-ordinate Reference: | Well #581H           |
| Company:  | EOG Resources - Midland      | TVD Reference:               | KB = 25 @ 3268.0usft |
| Project:  | Eddy County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3268.0usft |
| Site:     | Quail 2 State Com            | North Reference:             | Grid                 |
| Well:     | #581H                        | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                           |                              |                      |
| Design:   | Plan #0.1                    |                              |                      |

|             |                              |               |                |
|-------------|------------------------------|---------------|----------------|
| Project     | Eddy County, NM (NAD 83 NME) |               |                |
| Map System: | US State Plane 1983          | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983    |               |                |
| Map Zone:   | New Mexico Eastern Zone      |               |                |

|                       |                   |                   |                   |
|-----------------------|-------------------|-------------------|-------------------|
| Site                  | Quail 2 State Com |                   |                   |
| Site Position:        | Map               | Northing:         | 392,709.00 usft   |
| From:                 |                   | Easting:          | 692,792.00 usft   |
| Position Uncertainty: | 0.0 usft          | Slot Radius:      | 13-3/16"          |
|                       |                   | Latitude:         | 32° 4' 43.295 N   |
|                       |                   | Longitude:        | 103° 50' 39.610 W |
|                       |                   | Grid Convergence: | 0.26°             |

|                      |          |                     |               |
|----------------------|----------|---------------------|---------------|
| Well                 | #581H    |                     |               |
| Well Position        | +N-S     | 0.0 usft            | Northing:     |
|                      | +E-W     | 0.0 usft            | Easting:      |
| Position Uncertainty | 0.0 usft | Wellhead Elevation: | Ground Level: |
|                      |          |                     | 3,243.0 usft  |

|           |            |             |                 |
|-----------|------------|-------------|-----------------|
| Wellbore  | OH         |             |                 |
| Magnetics | Model Name | Sample Date | Declination     |
|           | IGRF2015   | 3/5/2019    | 6.88            |
|           |            |             | Dip Angle       |
|           |            |             | 59.86           |
|           |            |             | Field Strength  |
|           |            |             | 47,648.41244324 |

|                   |                  |        |               |
|-------------------|------------------|--------|---------------|
| Design            | Plan #0.1        |        |               |
| Audit Notes:      |                  |        |               |
| Version:          | Phase:           | PLAN   | Tie On Depth: |
|                   |                  |        | 0.0           |
| Vertical Section: | Depth From (TVD) | +N-S   | +E-W          |
|                   | (usft)           | (usft) | (usft)        |
|                   | 0.0              | 0.0    | 0.0           |
|                   |                  |        | Direction     |
|                   |                  |        | 179.93        |

|                          |               |                         |                     |
|--------------------------|---------------|-------------------------|---------------------|
| Plan Survey Tool Program | Date 3/5/2019 |                         |                     |
| Depth From               | Depth To      | Survey (Wellbore)       | Tool Name           |
| (usft)                   | (usft)        |                         |                     |
| 1                        | 0.0           | 15,247.6 Plan #0.1 (OH) | MWD                 |
|                          |               |                         | OWSG MWD - Standard |

|                |             |         |                |          |        |             |             |             |        |                      |
|----------------|-------------|---------|----------------|----------|--------|-------------|-------------|-------------|--------|----------------------|
| Plan Sections  |             |         |                |          |        |             |             |             |        |                      |
| Measured Depth | Inclination | Azimuth | Vertical Depth | +N-S     | +E-W   | Dogleg Rate | Build Rate  | Turn Rate   | TFO    | Target               |
| (usft)         | (°)         | (°)     | (usft)         | (usft)   | (usft) | (°/100usft) | (°/100usft) | (°/100usft) | (°)    |                      |
| 0.0            | 0.00        | 0.00    | 0.0            | 0.0      | 0.0    | 0.00        | 0.00        | 0.00        | 0.00   |                      |
| 1,355.0        | 0.00        | 0.00    | 1,355.0        | 0.0      | 0.0    | 0.00        | 0.00        | 0.00        | 0.00   |                      |
| 1,447.7        | 1.85        | 350.54  | 1,447.7        | 1.5      | -0.2   | 2.00        | 2.00        | 0.00        | 350.54 |                      |
| 8,053.7        | 1.85        | 350.54  | 8,051.3        | 148.5    | -24.8  | 0.00        | 0.00        | 0.00        | 0.00   |                      |
| 6,146.4        | 0.00        | 0.01    | 6,144.0        | 150.0    | -25.0  | 2.00        | -2.00       | 0.00        | 180.00 |                      |
| 9,800.9        | 0.00        | 0.01    | 9,798.5        | 150.0    | -25.0  | 0.00        | 0.00        | 0.00        | 0.00   | KOP(Quail 2 State Cc |
| 10,550.9       | 90.00       | 179.66  | 10,276.0       | -327.5   | -22.1  | 12.00       | 12.00       | 23.95       | 179.66 |                      |
| 15,247.6       | 90.00       | 179.66  | 10,276.0       | -5,024.0 | 6.0    | 0.00        | 0.00        | 0.00        | 0.00   | PBHL(Quail 2 State C |

|           |                              |                              |                      |
|-----------|------------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                  | Local Co-ordinate Reference: | Well #581H           |
| Company:  | EOG Resources - Midland      | TVD Reference:               | KB = 25 @ 3268.0usft |
| Project:  | Eddy County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3268.0usft |
| Site:     | Quail 2 State Com            | North Reference:             | Grid                 |
| Well:     | #581H                        | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                           |                              |                      |
| Design:   | Plan #0.1                    |                              |                      |

| 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) |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 100.0                 | 0.00            | 0.00        | 100.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 200.0                 | 0.00            | 0.00        | 200.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 300.0                 | 0.00            | 0.00        | 300.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 400.0                 | 0.00            | 0.00        | 400.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 500.0                 | 0.00            | 0.00        | 500.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 600.0                 | 0.00            | 0.00        | 600.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 700.0                 | 0.00            | 0.00        | 700.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 800.0                 | 0.00            | 0.00        | 800.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 900.0                 | 0.00            | 0.00        | 900.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,000.0               | 0.00            | 0.00        | 1,000.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,200.0               | 0.00            | 0.00        | 1,200.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,300.0               | 0.00            | 0.00        | 1,300.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,355.0               | 0.00            | 0.00        | 1,355.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,400.0               | 0.90            | 350.54      | 1,400.0               | 0.3         | -0.1        | -0.3                    | 2.00                    | 2.00                   | 0.00                  |
| 1,447.7               | 1.85            | 350.54      | 1,447.7               | 1.5         | -0.2        | -1.5                    | 2.00                    | 2.00                   | 0.00                  |
| 1,500.0               | 1.85            | 350.54      | 1,500.0               | 3.1         | -0.5        | -3.1                    | 0.00                    | 0.00                   | 0.00                  |
| 1,600.0               | 1.85            | 350.54      | 1,599.9               | 6.3         | -1.1        | -6.3                    | 0.00                    | 0.00                   | 0.00                  |
| 1,700.0               | 1.85            | 350.54      | 1,699.9               | 9.5         | -1.6        | -9.5                    | 0.00                    | 0.00                   | 0.00                  |
| 1,800.0               | 1.85            | 350.54      | 1,799.8               | 12.7        | -2.1        | -12.7                   | 0.00                    | 0.00                   | 0.00                  |
| 1,900.0               | 1.85            | 350.54      | 1,899.7               | 15.9        | -2.7        | -15.9                   | 0.00                    | 0.00                   | 0.00                  |
| 2,000.0               | 1.85            | 350.54      | 1,999.7               | 19.1        | -3.2        | -19.1                   | 0.00                    | 0.00                   | 0.00                  |
| 2,100.0               | 1.85            | 350.54      | 2,099.6               | 22.3        | -3.7        | -22.3                   | 0.00                    | 0.00                   | 0.00                  |
| 2,200.0               | 1.85            | 350.54      | 2,199.6               | 25.5        | -4.2        | -25.5                   | 0.00                    | 0.00                   | 0.00                  |
| 2,300.0               | 1.85            | 350.54      | 2,299.5               | 28.7        | -4.8        | -28.7                   | 0.00                    | 0.00                   | 0.00                  |
| 2,400.0               | 1.85            | 350.54      | 2,399.5               | 31.9        | -5.3        | -31.9                   | 0.00                    | 0.00                   | 0.00                  |
| 2,500.0               | 1.85            | 350.54      | 2,499.4               | 35.1        | -5.8        | -35.1                   | 0.00                    | 0.00                   | 0.00                  |
| 2,600.0               | 1.85            | 350.54      | 2,599.4               | 38.3        | -6.4        | -38.3                   | 0.00                    | 0.00                   | 0.00                  |
| 2,700.0               | 1.85            | 350.54      | 2,699.3               | 41.5        | -6.9        | -41.5                   | 0.00                    | 0.00                   | 0.00                  |
| 2,800.0               | 1.85            | 350.54      | 2,799.3               | 44.6        | -7.4        | -44.7                   | 0.00                    | 0.00                   | 0.00                  |
| 2,900.0               | 1.85            | 350.54      | 2,899.2               | 47.8        | -8.0        | -47.9                   | 0.00                    | 0.00                   | 0.00                  |
| 3,000.0               | 1.85            | 350.54      | 2,999.2               | 51.0        | -8.5        | -51.0                   | 0.00                    | 0.00                   | 0.00                  |
| 3,100.0               | 1.85            | 350.54      | 3,099.1               | 54.2        | -9.0        | -54.2                   | 0.00                    | 0.00                   | 0.00                  |
| 3,200.0               | 1.85            | 350.54      | 3,199.1               | 57.4        | -9.6        | -57.4                   | 0.00                    | 0.00                   | 0.00                  |
| 3,300.0               | 1.85            | 350.54      | 3,299.0               | 60.6        | -10.1       | -60.6                   | 0.00                    | 0.00                   | 0.00                  |
| 3,400.0               | 1.85            | 350.54      | 3,399.0               | 63.8        | -10.6       | -63.8                   | 0.00                    | 0.00                   | 0.00                  |
| 3,500.0               | 1.85            | 350.54      | 3,498.9               | 67.0        | -11.2       | -67.0                   | 0.00                    | 0.00                   | 0.00                  |
| 3,600.0               | 1.85            | 350.54      | 3,598.9               | 70.2        | -11.7       | -70.2                   | 0.00                    | 0.00                   | 0.00                  |
| 3,700.0               | 1.85            | 350.54      | 3,698.8               | 73.4        | -12.2       | -73.4                   | 0.00                    | 0.00                   | 0.00                  |
| 3,800.0               | 1.85            | 350.54      | 3,798.8               | 76.6        | -12.8       | -76.6                   | 0.00                    | 0.00                   | 0.00                  |
| 3,900.0               | 1.85            | 350.54      | 3,898.7               | 79.8        | -13.3       | -79.8                   | 0.00                    | 0.00                   | 0.00                  |
| 4,000.0               | 1.85            | 350.54      | 3,998.6               | 83.0        | -13.8       | -83.0                   | 0.00                    | 0.00                   | 0.00                  |
| 4,100.0               | 1.85            | 350.54      | 4,098.6               | 86.2        | -14.4       | -86.2                   | 0.00                    | 0.00                   | 0.00                  |
| 4,200.0               | 1.85            | 350.54      | 4,198.5               | 89.3        | -14.9       | -89.4                   | 0.00                    | 0.00                   | 0.00                  |
| 4,300.0               | 1.85            | 350.54      | 4,298.5               | 92.5        | -15.4       | -92.6                   | 0.00                    | 0.00                   | 0.00                  |
| 4,400.0               | 1.85            | 350.54      | 4,398.4               | 95.7        | -16.0       | -95.7                   | 0.00                    | 0.00                   | 0.00                  |
| 4,500.0               | 1.85            | 350.54      | 4,498.4               | 98.9        | -16.5       | -98.9                   | 0.00                    | 0.00                   | 0.00                  |
| 4,600.0               | 1.85            | 350.54      | 4,598.3               | 102.1       | -17.0       | -102.1                  | 0.00                    | 0.00                   | 0.00                  |
| 4,700.0               | 1.85            | 350.54      | 4,698.3               | 105.3       | -17.6       | -105.3                  | 0.00                    | 0.00                   | 0.00                  |
| 4,800.0               | 1.85            | 350.54      | 4,798.2               | 108.5       | -18.1       | -108.5                  | 0.00                    | 0.00                   | 0.00                  |
| 4,900.0               | 1.85            | 350.54      | 4,898.2               | 111.7       | -18.6       | -111.7                  | 0.00                    | 0.00                   | 0.00                  |
| 5,000.0               | 1.85            | 350.54      | 4,998.1               | 114.9       | -19.1       | -114.9                  | 0.00                    | 0.00                   | 0.00                  |
| 5,100.0               | 1.85            | 350.54      | 5,098.1               | 118.1       | -19.7       | -118.1                  | 0.00                    | 0.00                   | 0.00                  |

|                  |                              |                                     |                      |
|------------------|------------------------------|-------------------------------------|----------------------|
| <b>Database:</b> | EDM 5000.14                  | <b>Local Co-ordinate Reference:</b> | Well #581H           |
| <b>Company:</b>  | EOG Resources - Midland      | <b>TVD Reference:</b>               | KB = 25 @ 3268.0usft |
| <b>Project:</b>  | Eddy County, NM (NAD 83 NME) | <b>MD Reference:</b>                | KB = 25 @ 3268.0usft |
| <b>Site:</b>     | Quail 2 State Com            | <b>North Reference:</b>             | Grid                 |
| <b>Well:</b>     | #581H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature    |
| <b>Wellbore:</b> | OH                           |                                     |                      |
| <b>Design:</b>   | Plan #0.1                    |                                     |                      |

| 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) |  |
| 5,200.0                      | 1.85            | 350.54      | 5,198.0               | 121.3        | -20.2        | -121.3                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,300.0                      | 1.85            | 350.54      | 5,298.0               | 124.5        | -20.7        | -124.5                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,400.0                      | 1.85            | 350.54      | 5,397.9               | 127.7        | -21.3        | -127.7                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,500.0                      | 1.85            | 350.54      | 5,497.9               | 130.8        | -21.8        | -130.9                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,600.0                      | 1.85            | 350.54      | 5,597.8               | 134.0        | -22.3        | -134.1                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,700.0                      | 1.85            | 350.54      | 5,697.8               | 137.2        | -22.9        | -137.3                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,800.0                      | 1.85            | 350.54      | 5,797.7               | 140.4        | -23.4        | -140.4                  | 0.00                    | 0.00                   | 0.00                  |  |
| 5,900.0                      | 1.85            | 350.54      | 5,897.7               | 143.6        | -23.9        | -143.6                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,000.0                      | 1.85            | 350.54      | 5,997.6               | 146.8        | -24.5        | -146.8                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,053.7                      | 1.85            | 350.54      | 6,051.3               | 148.5        | -24.8        | -148.5                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,100.0                      | 0.93            | 350.54      | 6,097.6               | 149.6        | -24.9        | -149.7                  | 2.00                    | -2.00                  | 0.00                  |  |
| 6,148.4                      | 0.00            | 0.01        | 6,144.0               | 150.0        | -25.0        | -150.0                  | 2.00                    | -2.00                  | 0.00                  |  |
| 6,200.0                      | 0.00            | 0.00        | 6,197.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,300.0                      | 0.00            | 0.00        | 6,297.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,400.0                      | 0.00            | 0.00        | 6,397.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,500.0                      | 0.00            | 0.00        | 6,497.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,600.0                      | 0.00            | 0.00        | 6,597.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,700.0                      | 0.00            | 0.00        | 6,697.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,800.0                      | 0.00            | 0.00        | 6,797.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,900.0                      | 0.00            | 0.00        | 6,897.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,000.0                      | 0.00            | 0.00        | 6,997.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,100.0                      | 0.00            | 0.00        | 7,097.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,200.0                      | 0.00            | 0.00        | 7,197.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,300.0                      | 0.00            | 0.00        | 7,297.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,400.0                      | 0.00            | 0.00        | 7,397.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,500.0                      | 0.00            | 0.00        | 7,497.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,600.0                      | 0.00            | 0.00        | 7,597.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,700.0                      | 0.00            | 0.00        | 7,697.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,800.0                      | 0.00            | 0.00        | 7,797.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 7,900.0                      | 0.00            | 0.00        | 7,897.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,000.0                      | 0.00            | 0.00        | 7,997.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,100.0                      | 0.00            | 0.00        | 8,097.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,200.0                      | 0.00            | 0.00        | 8,197.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,300.0                      | 0.00            | 0.00        | 8,297.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,400.0                      | 0.00            | 0.00        | 8,397.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,500.0                      | 0.00            | 0.00        | 8,497.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,600.0                      | 0.00            | 0.00        | 8,597.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,700.0                      | 0.00            | 0.00        | 8,697.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,800.0                      | 0.00            | 0.00        | 8,797.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 8,900.0                      | 0.00            | 0.00        | 8,897.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,000.0                      | 0.00            | 0.00        | 8,997.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,100.0                      | 0.00            | 0.00        | 9,097.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,200.0                      | 0.00            | 0.00        | 9,197.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,300.0                      | 0.00            | 0.00        | 9,297.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,400.0                      | 0.00            | 0.00        | 9,397.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,500.0                      | 0.00            | 0.00        | 9,497.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,600.0                      | 0.00            | 0.00        | 9,597.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,700.0                      | 0.00            | 0.00        | 9,697.6               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| 9,800.9                      | 0.00            | 0.01        | 9,798.5               | 150.0        | -25.0        | -150.0                  | 0.00                    | 0.00                   | 0.00                  |  |
| KOP(Quail 2 State Com #581H) |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 9,825.0                      | 2.89            | 179.66      | 9,822.5               | 149.4        | -25.0        | -149.4                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,850.0                      | 5.89            | 179.66      | 9,847.5               | 147.5        | -25.0        | -147.5                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,875.0                      | 8.89            | 179.66      | 9,872.3               | 144.3        | -25.0        | -144.3                  | 12.00                   | 12.00                  | 0.00                  |  |

|           |                              |                              |                      |
|-----------|------------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                  | Local Co-ordinate Reference: | Well #581H           |
| Company:  | EOG Resources - Midland      | TVD Reference:               | KB = 25 @ 3288.0usft |
| Project:  | Eddy County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3288.0usft |
| Site:     | Quail 2 State Corn           | North Reference:             | Grid                 |
| Well:     | #581H                        | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                           |                              |                      |
| Design:   | Plan #0.1                    |                              |                      |

## Planned Survey

| Measured<br>Depth<br>(usft)   | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 9,900.0                       | 11.89              | 179.66         | 9,896.8                     | 139.8           | -24.9           | -139.8                        | 12.00                         | 12.00                        | 0.00                        |
| 9,925.0                       | 14.89              | 179.66         | 9,921.2                     | 134.0           | -24.9           | -134.0                        | 12.00                         | 12.00                        | 0.00                        |
| 9,950.0                       | 17.89              | 179.66         | 9,945.1                     | 126.9           | -24.9           | -127.0                        | 12.00                         | 12.00                        | 0.00                        |
| 9,975.0                       | 20.89              | 179.66         | 9,968.7                     | 118.6           | -24.8           | -118.7                        | 12.00                         | 12.00                        | 0.00                        |
| 10,000.0                      | 23.89              | 179.66         | 9,991.8                     | 109.1           | -24.8           | -109.1                        | 12.00                         | 12.00                        | 0.00                        |
| 10,025.0                      | 26.89              | 179.66         | 10,014.4                    | 98.4            | -24.7           | -98.4                         | 12.00                         | 12.00                        | 0.00                        |
| 10,050.0                      | 29.89              | 179.66         | 10,036.4                    | 86.5            | -24.6           | -86.5                         | 12.00                         | 12.00                        | 0.00                        |
| 10,075.0                      | 32.89              | 179.66         | 10,057.8                    | 73.5            | -24.5           | -73.5                         | 12.00                         | 12.00                        | 0.00                        |
| 10,100.0                      | 35.89              | 179.66         | 10,078.4                    | 59.4            | -24.5           | -59.4                         | 12.00                         | 12.00                        | 0.00                        |
| 10,125.0                      | 38.89              | 179.66         | 10,098.2                    | 44.2            | -24.4           | -44.2                         | 12.00                         | 12.00                        | 0.00                        |
| 10,150.0                      | 41.89              | 179.66         | 10,117.3                    | 28.0            | -24.3           | -28.0                         | 12.00                         | 12.00                        | 0.00                        |
| 10,175.0                      | 44.89              | 179.66         | 10,135.4                    | 10.8            | -24.2           | -10.9                         | 12.00                         | 12.00                        | 0.00                        |
| 10,200.0                      | 47.89              | 179.66         | 10,152.7                    | -7.3            | -24.1           | 7.2                           | 12.00                         | 12.00                        | 0.00                        |
| FTP(Quail 2 State Corn #581H) |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 10,225.0                      | 50.89              | 179.66         | 10,169.0                    | -26.2           | -23.9           | 26.2                          | 12.00                         | 12.00                        | 0.00                        |
| 10,250.0                      | 53.89              | 179.66         | 10,184.2                    | -46.1           | -23.8           | 46.0                          | 12.00                         | 12.00                        | 0.00                        |
| 10,275.0                      | 56.89              | 179.66         | 10,198.4                    | -66.6           | -23.7           | 66.6                          | 12.00                         | 12.00                        | 0.00                        |
| 10,300.0                      | 59.89              | 179.66         | 10,211.5                    | -87.9           | -23.6           | 87.9                          | 12.00                         | 12.00                        | 0.00                        |
| 10,325.0                      | 62.89              | 179.66         | 10,223.5                    | -109.9          | -23.4           | 109.8                         | 12.00                         | 12.00                        | 0.00                        |
| 10,350.0                      | 65.89              | 179.66         | 10,234.3                    | -132.4          | -23.3           | 132.4                         | 12.00                         | 12.00                        | 0.00                        |
| 10,375.0                      | 68.89              | 179.66         | 10,243.9                    | -155.5          | -23.2           | 155.4                         | 12.00                         | 12.00                        | 0.00                        |
| 10,400.0                      | 71.89              | 179.66         | 10,252.3                    | -179.0          | -23.0           | 179.0                         | 12.00                         | 12.00                        | 0.00                        |
| 10,425.0                      | 74.89              | 179.66         | 10,259.4                    | -203.0          | -22.9           | 202.9                         | 12.00                         | 12.00                        | 0.00                        |
| 10,450.0                      | 77.89              | 179.66         | 10,265.3                    | -227.3          | -22.7           | 227.2                         | 12.00                         | 12.00                        | 0.00                        |
| 10,475.0                      | 80.89              | 179.66         | 10,269.9                    | -251.8          | -22.6           | 251.8                         | 12.00                         | 12.00                        | 0.00                        |
| 10,500.0                      | 83.89              | 179.66         | 10,273.2                    | -276.6          | -22.4           | 276.6                         | 12.00                         | 12.00                        | 0.00                        |
| 10,525.0                      | 86.89              | 179.66         | 10,275.3                    | -301.5          | -22.3           | 301.5                         | 12.00                         | 12.00                        | 0.00                        |
| 10,550.9                      | 90.00              | 179.66         | 10,276.0                    | -327.5          | -22.1           | 327.4                         | 12.00                         | 12.00                        | 0.00                        |
| 10,600.0                      | 90.00              | 179.66         | 10,276.0                    | -376.5          | -21.8           | 376.5                         | 0.00                          | 0.00                         | 0.00                        |
| 10,700.0                      | 90.00              | 179.66         | 10,276.0                    | -476.5          | -21.2           | 476.5                         | 0.00                          | 0.00                         | 0.00                        |
| 10,800.0                      | 90.00              | 179.66         | 10,276.0                    | -576.5          | -20.8           | 576.5                         | 0.00                          | 0.00                         | 0.00                        |
| 10,900.0                      | 90.00              | 179.66         | 10,276.0                    | -676.5          | -20.0           | 676.5                         | 0.00                          | 0.00                         | 0.00                        |
| 11,000.0                      | 90.00              | 179.66         | 10,276.0                    | -776.5          | -19.4           | 776.5                         | 0.00                          | 0.00                         | 0.00                        |
| 11,100.0                      | 90.00              | 179.66         | 10,276.0                    | -876.5          | -18.8           | 876.5                         | 0.00                          | 0.00                         | 0.00                        |
| 11,200.0                      | 90.00              | 179.66         | 10,276.0                    | -976.5          | -18.3           | 976.5                         | 0.00                          | 0.00                         | 0.00                        |
| 11,300.0                      | 90.00              | 179.66         | 10,276.0                    | -1,076.5        | -17.7           | 1,076.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,400.0                      | 90.00              | 179.66         | 10,276.0                    | -1,176.5        | -17.1           | 1,176.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,500.0                      | 90.00              | 179.66         | 10,276.0                    | -1,276.5        | -16.5           | 1,276.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,600.0                      | 90.00              | 179.66         | 10,276.0                    | -1,376.5        | -15.9           | 1,376.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,700.0                      | 90.00              | 179.66         | 10,276.0                    | -1,476.5        | -15.3           | 1,476.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,800.0                      | 90.00              | 179.66         | 10,276.0                    | -1,576.5        | -14.7           | 1,576.5                       | 0.00                          | 0.00                         | 0.00                        |
| 11,900.0                      | 90.00              | 179.66         | 10,276.0                    | -1,676.5        | -14.1           | 1,676.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,000.0                      | 90.00              | 179.66         | 10,276.0                    | -1,776.5        | -13.5           | 1,776.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,100.0                      | 90.00              | 179.66         | 10,276.0                    | -1,876.5        | -12.9           | 1,876.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,200.0                      | 90.00              | 179.66         | 10,276.0                    | -1,976.5        | -12.3           | 1,976.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,300.0                      | 90.00              | 179.66         | 10,276.0                    | -2,076.5        | -11.7           | 2,076.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,400.0                      | 90.00              | 179.66         | 10,276.0                    | -2,176.5        | -11.1           | 2,176.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,500.0                      | 90.00              | 179.66         | 10,276.0                    | -2,276.5        | -10.5           | 2,276.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,600.0                      | 90.00              | 179.66         | 10,276.0                    | -2,376.5        | -9.9            | 2,376.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,700.0                      | 90.00              | 179.66         | 10,276.0                    | -2,476.5        | -9.3            | 2,476.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,800.0                      | 90.00              | 179.66         | 10,276.0                    | -2,576.5        | -8.7            | 2,576.5                       | 0.00                          | 0.00                         | 0.00                        |
| 12,900.0                      | 90.00              | 179.66         | 10,276.0                    | -2,676.5        | -8.1            | 2,676.5                       | 0.00                          | 0.00                         | 0.00                        |
| 13,000.0                      | 90.00              | 179.66         | 10,276.0                    | -2,776.5        | -7.5            | 2,776.5                       | 0.00                          | 0.00                         | 0.00                        |
| 13,100.0                      | 90.00              | 179.66         | 10,276.0                    | -2,876.5        | -6.9            | 2,876.5                       | 0.00                          | 0.00                         | 0.00                        |

|           |                              |                              |                      |
|-----------|------------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                  | Local Co-ordinate Reference: | Well #581H           |
| Company:  | EOG Resources - Midland      | TVD Reference:               | KB = 25 @ 3268.0usft |
| Project:  | Eddy County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3268.0usft |
| Site:     | Quail 2 State Com            | North Reference:             | Grid                 |
| Well:     | #581H                        | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                           |                              |                      |
| Design:   | Plan #0.1                    |                              |                      |

#### 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) |
|-------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 13,200.0                      | 90.00           | 179.66      | 10,276.0              | -2,976.5     | -6.3         | 2,976.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,300.0                      | 90.00           | 179.66      | 10,276.0              | -3,076.5     | -5.7         | 3,076.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,400.0                      | 90.00           | 179.66      | 10,276.0              | -3,176.5     | -5.1         | 3,176.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,500.0                      | 90.00           | 179.66      | 10,276.0              | -3,276.5     | -4.5         | 3,276.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,600.0                      | 90.00           | 179.66      | 10,276.0              | -3,376.5     | -3.9         | 3,376.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,700.0                      | 90.00           | 179.66      | 10,276.0              | -3,476.5     | -3.3         | 3,476.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,800.0                      | 90.00           | 179.66      | 10,276.0              | -3,576.5     | -2.7         | 3,576.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,900.0                      | 90.00           | 179.66      | 10,276.0              | -3,676.5     | -2.1         | 3,676.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,000.0                      | 90.00           | 179.66      | 10,276.0              | -3,776.4     | -1.5         | 3,776.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,100.0                      | 90.00           | 179.66      | 10,276.0              | -3,876.4     | -0.9         | 3,876.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,200.0                      | 90.00           | 179.66      | 10,276.0              | -3,976.4     | -0.3         | 3,976.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,300.0                      | 90.00           | 179.66      | 10,276.0              | -4,076.4     | 0.3          | 4,076.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,400.0                      | 90.00           | 179.66      | 10,276.0              | -4,176.4     | 0.9          | 4,176.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,500.0                      | 90.00           | 179.66      | 10,276.0              | -4,276.4     | 1.5          | 4,276.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,600.0                      | 90.00           | 179.66      | 10,276.0              | -4,376.4     | 2.1          | 4,376.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,700.0                      | 90.00           | 179.66      | 10,276.0              | -4,476.4     | 2.7          | 4,476.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,800.0                      | 90.00           | 179.66      | 10,276.0              | -4,576.4     | 3.3          | 4,576.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,900.0                      | 90.00           | 179.66      | 10,276.0              | -4,676.4     | 3.9          | 4,676.4                 | 0.00                    | 0.00                   | 0.00                  |
| 15,000.0                      | 90.00           | 179.66      | 10,276.0              | -4,776.4     | 4.5          | 4,776.4                 | 0.00                    | 0.00                   | 0.00                  |
| 15,100.0                      | 90.00           | 179.66      | 10,276.0              | -4,876.4     | 5.1          | 4,876.4                 | 0.00                    | 0.00                   | 0.00                  |
| 15,200.0                      | 90.00           | 179.66      | 10,276.0              | -4,976.4     | 5.7          | 4,976.4                 | 0.00                    | 0.00                   | 0.00                  |
| 15,247.6                      | 90.00           | 179.66      | 10,276.0              | -5,024.0     | 6.0          | 5,024.0                 | 0.00                    | 0.00                   | 0.00                  |
| PBHL(Quail 2 State Com #581H) |                 |             |                       |              |              |                         |                         |                        |                       |

#### Design Targets

| Target Name                                                                                                                     | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude        | Longitude         |
|---------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------------|-------------------|
| KOP(Quail 2 State Com<br>- plan hits target center<br>- Point                                                                   | 0.00          | 0.01         | 9,798.5    | 150.0        | -25.0        | 392,859.00      | 692,767.00     | 32° 4' 44.781 N | 103° 50' 39.893 W |
| FTP(Quail 2 State Com ;<br>- plan misses target center by 163.4usft at 10200.0usft MD (10152.7 TVD, -7.3 N, -24.1 E)<br>- Point | 0.00          | 0.01         | 10,276.0   | 100.0        | -25.0        | 392,809.00      | 692,767.00     | 32° 4' 44.286 N | 103° 50' 39.895 W |
| PBHL(Quail 2 State Con<br>- plan hits target center<br>- Point                                                                  | 0.00          | 0.00         | 10,276.0   | -5,024.0     | 6.0          | 387,685.00      | 692,798.00     | 32° 3' 53.578 N | 103° 50' 39.805 W |