

**PATRIOT DRILLING, LLC**

OPERATOR: COG Operating, LLC  
WELL/LEASE: Diamondback 22 St Com 6H  
COUNTY: Eddy Co., New Mexico  
Sec. 22, T 26S, R 28E

15-43195

**STATE OF NEW MEXICO  
DEVIATION REPORT**

| <u>Depth</u> | <u>Deviation</u> | <u>Depth</u> | <u>Deviation</u> |
|--------------|------------------|--------------|------------------|
| 585          | 1 3/4            | 2,888        | 1                |
| 1,074        | 3/4              | 3,267        | 1 1/4            |
| 1,548        | 2 1/4            | 3,649        | 1 1/4            |
| 2,019        | 1 1/4            | 3,996        | 1 1/2            |
| 2,482        | 1 1/4            |              |                  |

**Patriot Drilling, LLC**

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 1st day of August, 2015 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2019



Lori T. Rowan  
Notary Public for Ector Co., Texas

**NM OIL CONSERVATION**  
ARTESTA DISTRICT

SEP 04 2015

RECEIVED

RECEIVED

JUL 31 15

COG  
ARTESIA WEST



July 22, 2015

Concho Resources, Inc.  
One Concho Center  
600 W. Illinois Avenue  
Midland, Texas 79701

NM OIL CONSERVATION  
ARTESIA DISTRICT

SEP 04 2015

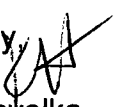
RECEIVED

Attn: Kanicia Castillo

RE: **Diamondback 22 State Com No 006H**

Please find enclosed a copy of the survey from 0' to 7170' ran on the above referenced well.

Sincerely,

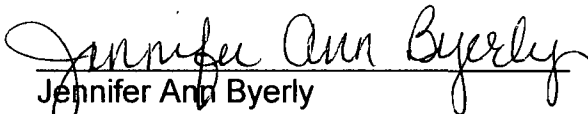
  
Keith Havelka  
Operations

STATE OF TEXAS       §

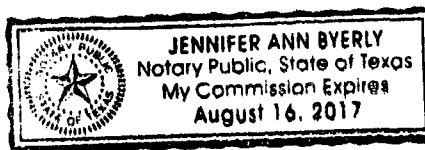
§

COUNTY OF NUECES   §

This instrument was acknowledged before me on the 22 day of July,  
A.D., 2015, by Keith Havelka.

  
Jennifer Ann Byerly  
Notary Public, State of Texas

VES Survey International  
P.O. Box 261021 Corpus Christi, TX 78426  
T (361) 767-0602 F (361) 767-0612  
www.vessurvey.com





Company: Concho  
 Lease/Well: Diamondback 22 State Com No/006H  
 Location: S22, T26S, R28E  
 Rig Name: Patriot 2  
 State/County: New Mexico/Eddy  
 VS-Azi: 187.58 Degrees  
 Latitude: 32.03361, Longitude: -104.07967  
 Grid North = True North -0.13 degs (NAD 27)  
 Grid Convergence Applied = -0.13 degs



Depth Reference : RKB = 20 Foot

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...2 state com 6h\_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 7/22/2015 / 16:35

VES Survey International

West Texas

(432) 563-5444

Surveyor: Gene Heiss

Diamondback 22 State Com No 006H / API 30-015-43195

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 0.00                    | 0.00                 | 0.00                      | 0.00      | 0.00        | 0.00        | 0.00                      | 0.00                      | 0.00                        | ****                          |
| 100.00                  | 0.75                 | 305.28                    | 100.00    | 0.38        | -0.53       | -0.30                     | 0.66                      | 305.28                      | 0.75                          |
| 200.00                  | 0.64                 | 317.41                    | 199.99    | 1.17        | -1.45       | -0.97                     | 1.86                      | 308.89                      | 0.18                          |
| 300.00                  | 0.58                 | 321.78                    | 299.98    | 1.97        | -2.14       | -1.67                     | 2.91                      | 312.74                      | 0.08                          |
| 400.00                  | 0.52                 | 0.51                      | 399.98    | 2.82        | -2.44       | -2.47                     | 3.73                      | 319.10                      | 0.37                          |
| 500.00                  | 1.17                 | 6.07                      | 499.97    | 4.29        | -2.33       | -3.94                     | 4.88                      | 331.44                      | 0.65                          |
| 600.00                  | 1.95                 | 16.58                     | 599.93    | 6.93        | -1.74       | -6.64                     | 7.14                      | 345.89                      | 0.83                          |
| 700.00                  | 2.10                 | 13.83                     | 699.87    | 10.33       | -0.82       | -10.14                    | 10.37                     | 355.48                      | 0.19                          |
| 800.00                  | 1.63                 | 9.71                      | 799.82    | 13.52       | -0.14       | -13.38                    | 13.52                     | 359.41                      | 0.49                          |
| 900.00                  | 1.52                 | 6.35                      | 899.78    | 16.24       | 0.25        | -16.13                    | 16.24                     | 0.87                        | 0.14                          |
| 1000.00                 | 0.88                 | 348.64                    | 999.76    | 18.31       | 0.24        | -18.19                    | 18.31                     | 0.76                        | 0.73                          |
| 1100.00                 | 0.65                 | 312.57                    | 1099.75   | 19.45       | -0.32       | -19.24                    | 19.45                     | 359.05                      | 0.52                          |
| 1200.00                 | 0.34                 | 356.64                    | 1199.74   | 20.12       | -0.76       | -19.85                    | 20.14                     | 357.85                      | 0.47                          |
| 1300.00                 | 1.27                 | 59.87                     | 1299.73   | 20.97       | 0.18        | -20.81                    | 20.97                     | 0.50                        | 1.16                          |
| 1400.00                 | 2.14                 | 59.04                     | 1399.69   | 22.49       | 2.75        | -22.66                    | 22.66                     | 6.96                        | 0.88                          |
| 1500.00                 | 2.30                 | 67.63                     | 1499.61   | 24.22       | 6.20        | -24.82                    | 25.00                     | 14.36                       | 0.37                          |
| 1600.00                 | 1.68                 | 57.97                     | 1599.55   | 25.76       | 9.30        | -26.76                    | 27.39                     | 19.85                       | 0.70                          |

| Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 1.33                 | 44.26                     | 1699.52   | 27.37       | 11.36       | -28.63                    | 29.63                     | 22.53                       | 0.50                          |
| 1.78                 | 48.03                     | 1799.48   | 29.24       | 13.33       | -30.75                    | 32.14                     | 24.50                       | 0.46                          |
| 1.73                 | 41.69                     | 1899.43   | 31.41       | 15.48       | -33.18                    | 35.02                     | 26.24                       | 0.20                          |
| 1.37                 | 25.09                     | 1999.40   | 33.62       | 16.99       | -35.56                    | 37.67                     | 26.82                       | 0.57                          |
| 1.13                 | 299.11                    | 2099.38   | 35.17       | 16.64       | -37.06                    | 38.91                     | 25.32                       | 1.71                          |
| 1.06                 | 320.39                    | 2199.36   | 36.37       | 15.19       | -38.05                    | 39.41                     | 22.67                       | 0.41                          |
| 0.63                 | 11.10                     | 2299.35   | 37.62       | 14.71       | -39.23                    | 40.39                     | 21.36                       | 0.82                          |
| 0.98                 | 342.09                    | 2399.34   | 38.97       | 14.55       | -40.55                    | 41.60                     | 20.48                       | 0.52                          |
| 0.56                 | 316.93                    | 2499.34   | 40.13       | 13.96       | -41.62                    | 42.49                     | 19.18                       | 0.53                          |
| 0.79                 | 346.38                    | 2599.33   | 41.16       | 13.47       | -42.57                    | 43.30                     | 18.12                       | 0.41                          |
| 1.00                 | 308.36                    | 2699.32   | 42.36       | 12.62       | -43.66                    | 44.20                     | 16.59                       | 0.61                          |
| 0.59                 | 319.86                    | 2799.31   | 43.30       | 11.61       | -44.45                    | 44.83                     | 15.01                       | 0.44                          |
| 0.64                 | 322.10                    | 2899.30   | 44.13       | 10.93       | -45.19                    | 45.46                     | 13.92                       | 0.06                          |
| 1.06                 | 293.32                    | 2999.29   | 44.94       | 9.74        | -45.83                    | 45.98                     | 12.23                       | 0.59                          |
| 1.06                 | 285.76                    | 3099.27   | 45.56       | 8.00        | -46.21                    | 46.25                     | 9.96                        | 0.14                          |
| 0.86                 | 288.23                    | 3199.26   | 46.04       | 6.39        | -46.48                    | 46.48                     | 7.90                        | 0.20                          |
| 0.90                 | 275.10                    | 3299.25   | 46.35       | 4.89        | -46.59                    | 46.61                     | 6.02                        | 0.21                          |
| 0.96                 | 272.17                    | 3399.24   | 46.45       | 3.26        | -46.48                    | 46.57                     | 4.01                        | 0.08                          |
| 1.11                 | 277.14                    | 3499.22   | 46.60       | 1.46        | -46.39                    | 46.63                     | 1.79                        | 0.17                          |
| 1.15                 | 266.07                    | 3599.20   | 46.66       | -0.50       | -46.18                    | 46.66                     | 359.38                      | 0.22                          |
| 1.20                 | 281.11                    | 3699.18   | 46.79       | -2.53       | -46.05                    | 46.86                     | 356.90                      | 0.31                          |
| 1.22                 | 275.05                    | 3799.16   | 47.08       | -4.62       | -46.06                    | 47.31                     | 354.40                      | 0.13                          |
| 1.23                 | 277.68                    | 3899.13   | 47.32       | -6.73       | -46.02                    | 47.80                     | 351.90                      | 0.06                          |
| 1.55                 | 292.31                    | 3999.10   | 47.98       | -9.05       | -46.36                    | 48.82                     | 349.32                      | 0.48                          |
| 6.38                 | 337.05                    | 4098.85   | 53.62       | -12.47      | -51.50                    | 55.05                     | 346.91                      | 5.39                          |
| 8.39                 | 335.98                    | 4198.02   | 65.40       | -17.61      | -62.50                    | 67.73                     | 344.93                      | 2.01                          |
| 7.77                 | 345.74                    | 4297.03   | 78.61       | -22.24      | -74.99                    | 81.69                     | 344.20                      | 1.50                          |
| 8.53                 | 335.28                    | 4396.02   | 91.90       | -27.01      | -87.53                    | 95.78                     | 343.62                      | 1.66                          |
| 7.35                 | 329.90                    | 4495.06   | 104.17      | -33.32      | -98.86                    | 109.36                    | 342.26                      | 1.40                          |
| 6.58                 | 327.78                    | 4594.33   | 114.54      | -39.58      | -108.32                   | 121.19                    | 340.94                      | 0.81                          |
| 6.98                 | 327.83                    | 4693.63   | 124.53      | -45.86      | -117.39                   | 132.71                    | 339.78                      | 0.40                          |
| 7.87                 | 325.27                    | 4792.79   | 135.30      | -53.00      | -127.12                   | 145.31                    | 338.61                      | 0.95                          |
| 7.76                 | 325.15                    | 4891.86   | 146.47      | -60.76      | -137.17                   | 158.57                    | 337.47                      | 0.11                          |
| 7.59                 | 319.15                    | 4990.96   | 157.01      | -68.94      | -146.54                   | 171.48                    | 336.29                      | 0.82                          |
| 7.02                 | 325.64                    | 5090.15   | 167.06      | -76.72      | -155.48                   | 183.83                    | 335.33                      | 1.00                          |
| 7.02                 | 324.30                    | 5189.40   | 177.07      | -83.74      | -164.48                   | 195.87                    | 334.69                      | 0.16                          |
| 6.63                 | 332.85                    | 5288.69   | 187.17      | -89.94      | -173.67                   | 207.66                    | 334.34                      | 1.09                          |
| 7.68                 | 337.69                    | 5387.92   | 198.49      | -95.11      | -184.21                   | 220.10                    | 334.40                      | 1.21                          |
| 7.51                 | 334.44                    | 5487.04   | 210.56      | -100.46     | -195.47                   | 233.30                    | 334.49                      | 0.46                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 5600.00                 | 7.52                 | 327.54                    | 5586.18   | 221.98      | -106.80     | -205.95                   | 246.34                    | 334.31                      | 0.90                          |
| 5700.00                 | 6.84                 | 340.48                    | 5685.40   | 233.12      | -112.30     | -216.27                   | 258.76                    | 334.28                      | 1.75                          |
| 5800.00                 | 6.27                 | 335.03                    | 5784.75   | 243.68      | -116.59     | -226.18                   | 270.14                    | 334.43                      | 0.85                          |
| 5900.00                 | 6.96                 | 329.78                    | 5884.08   | 253.87      | -121.95     | -235.57                   | 281.64                    | 334.34                      | 0.92                          |
| 6000.00                 | 7.89                 | 329.19                    | 5983.24   | 265.01      | -128.52     | -245.74                   | 294.52                    | 334.13                      | 0.93                          |
| 6100.00                 | 7.88                 | 327.48                    | 6082.30   | 276.68      | -135.72     | -256.36                   | 308.17                    | 333.87                      | 0.23                          |
| 6200.00                 | 7.14                 | 328.53                    | 6181.44   | 287.76      | -142.65     | -266.43                   | 321.18                    | 333.63                      | 0.76                          |
| 6300.00                 | 6.47                 | 319.39                    | 6280.74   | 297.34      | -149.56     | -275.01                   | 332.83                    | 333.30                      | 1.27                          |
| 6400.00                 | 7.23                 | 311.28                    | 6380.03   | 305.77      | -157.96     | -282.26                   | 344.16                    | 332.68                      | 1.23                          |
| 6500.00                 | 6.73                 | 304.93                    | 6479.29   | 313.28      | -167.49     | -288.44                   | 355.24                    | 331.87                      | 0.92                          |
| 6600.00                 | 7.60                 | 314.21                    | 6578.51   | 321.24      | -177.04     | -295.08                   | 366.80                    | 331.14                      | 1.44                          |
| 6700.00                 | 6.22                 | 293.94                    | 6677.79   | 328.05      | -186.73     | -300.55                   | 377.47                    | 330.35                      | 2.78                          |
| 6800.00                 | 5.34                 | 302.36                    | 6777.29   | 332.74      | -195.61     | -304.03                   | 385.97                    | 329.55                      | 1.22                          |
| 6900.00                 | 3.92                 | 287.94                    | 6876.96   | 336.28      | -202.79     | -306.59                   | 392.69                    | 328.91                      | 1.83                          |
| 7000.00                 | 2.52                 | 279.55                    | 6976.80   | 337.70      | -208.21     | -307.28                   | 396.72                    | 328.34                      | 1.48                          |
| 7100.00                 | 3.14                 | 243.27                    | 7076.69   | 336.83      | -212.82     | -305.81                   | 398.43                    | 327.71                      | 1.86                          |
| 7170.00                 | 3.36                 | 261.69                    | 7146.58   | 335.67      | -216.57     | -304.17                   | 399.47                    | 327.17                      | 1.52                          |



VES Survey International

West Texas

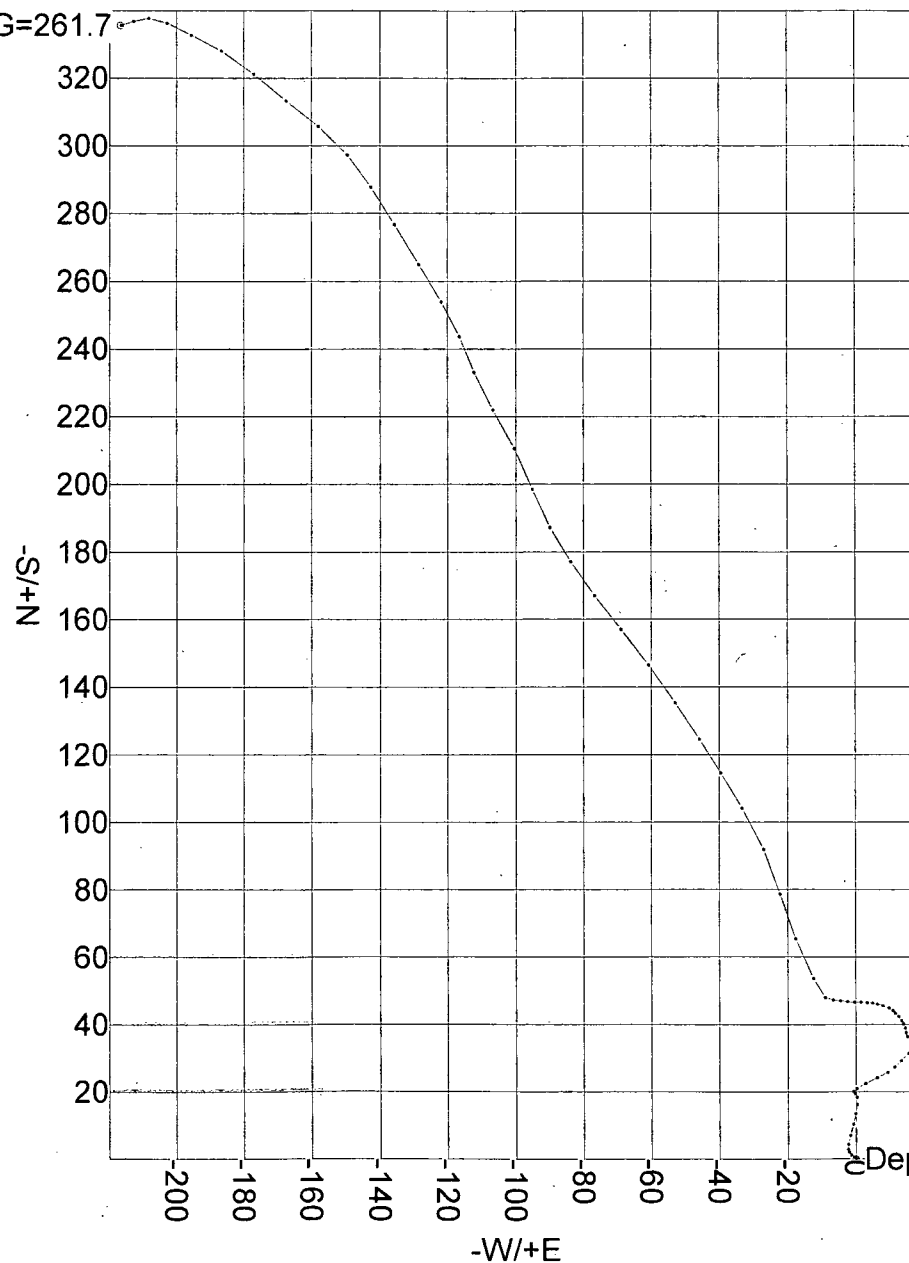
(432) 563-5444

Surveyor: Gene Heiss

Diamondback 22 State Com No 006H / API 30-015-43195



Depth=7170.0, Inc=3.4, AzG=261.7



Depth=0.0, Inc=0.0, AzG=0.0

VES Survey Date: 7/18/2015



## **COG Operating LLC.**

Eddy County, NM  
Diamondback 22 State Com  
#6H

OH

Survey: MWD #1

## **Survey Report - Geographic**

28 July, 2015

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

SEP 04 2015

RECEIVED



Wellplanning  
Survey Report - Geographic

|           |                          |                              |                                        |
|-----------|--------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating LLC        | Local Co-ordinate Reference: | Well #6H                               |
| Project:  | Eddy County, NM          | TVD Reference:               | WELL @ 2998.7usft (Original Well Elev) |
| Site:     | Diamondback 22 State Com | MD Reference:                | WELL @ 2998.7usft (Original Well Elev) |
| Well:     | #6H                      | North Reference:             | Grid                                   |
| Wellbore: | OH                       | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                       | Database:                    | EDM:5000.1 Single User Db              |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project:    | Eddy County - NM                     |               |                |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum:  | NAD 1927 (NADCON CONUS)              |               |                |
| Map Zone:   | New Mexico East 3001                 |               |                |

|                                |          |              |                 |                   |                  |
|--------------------------------|----------|--------------|-----------------|-------------------|------------------|
| Site: Diamondback 22 State Com |          |              |                 |                   |                  |
| Site Position:                 |          | Northing:    | 376,046.00 usft | Latitude:         | 32° 2' 1.000 N   |
| From:                          | Map      | Easting:     | 578,606.90 usft | Longitude:        | 104° 4' 46.798 W |
| Position Uncertainty:          | 0.0 usft | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.13 °           |

|                      |       |          |                     |                 |               |                  |
|----------------------|-------|----------|---------------------|-----------------|---------------|------------------|
| Well                 | #6H   |          |                     |                 |               |                  |
| Well Position        | +N/-S | 0.0 usft | Northing:           | 376,046.00 usft | Latitude:     | 32° 2' 1.000 N   |
|                      | +E/-W | 0.0 usft | Easting:            | 578,606.90 usft | Longitude:    | 104° 4' 46.798 W |
| Position Uncertainty |       | 0.0 usft | Wellhead Elevation: | usft            | Ground Level: | 2,978.7 usft     |

|           |            |             |             |           |                |
|-----------|------------|-------------|-------------|-----------|----------------|
| Wellbore: | OH         |             |             |           |                |
| Magnetics | Model Name | Sample Date | Declination | Dip Angle | Field Strength |
|           |            |             | (°)         | (°)       | (nT)           |
|           | IGRF2010   | 6/30/2015   | 7.31        | 59.82     | 48,047         |

|                   |                  |        |        |               |     |
|-------------------|------------------|--------|--------|---------------|-----|
| 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    | 187.58        |     |

|                |          |                   |            |                      |
|----------------|----------|-------------------|------------|----------------------|
| Survey Program |          | Date 7/28/2015    |            |                      |
| From           | To       | Survey (Wellbore) | Tool Name  | Description          |
| (usft)         | (usft)   |                   |            |                      |
| 100.0          | 7,170.0  | GYRO (OH)         | NS-GYRO-SS | NS Gyro single shots |
| 7,263.0        | 12,760.0 | MWD #1 (OH)       | MWD        | MWD - Standard       |

|          |             |         |          |        |        |            |            |                |                  |  |
|----------|-------------|---------|----------|--------|--------|------------|------------|----------------|------------------|--|
| Survey   |             |         |          |        |        |            |            |                |                  |  |
| Measured | Inclination | Azimuth | Vertical | +N/-S  | +E/-W  | Map        | Map        |                |                  |  |
| Depth    | (°)         | (°)     | Depth    | (usft) | (usft) | Northing   | Easting    | Latitude       | Longitude        |  |
| (usft)   |             |         | (usft)   |        |        | (usft)     | (usft)     |                |                  |  |
| 7,170.0  | 3.36        | 261.69  | 7,146.6  | 335.7  | -216.6 | 376,381.69 | 578,390.34 | 32° 2' 4.328 N | 104° 4' 49.305 W |  |
| 7,263.0  | 3.10        | 258.60  | 7,239.4  | 334.8  | -221.7 | 376,380.80 | 578,385.17 | 32° 2' 4.319 N | 104° 4' 49.365 W |  |
| 7,342.0  | 1.70        | 239.00  | 7,318.4  | 333.8  | -224.8 | 376,379.78 | 578,382.08 | 32° 2' 4.309 N | 104° 4' 49.401 W |  |
| 7,440.0  | 1.90        | 170.40  | 7,416.3  | 331.4  | -225.8 | 376,377.42 | 578,381.10 | 32° 2' 4.286 N | 104° 4' 49.412 W |  |
| 7,471.0  | 1.70        | 172.40  | 7,447.3  | 330.5  | -225.7 | 376,376.46 | 578,381.25 | 32° 2' 4.276 N | 104° 4' 49.411 W |  |
| 7,503.0  | 0.80        | 184.90  | 7,479.3  | 329.8  | -225.6 | 376,375.77 | 578,381.29 | 32° 2' 4.269 N | 104° 4' 49.410 W |  |
| 7,535.0  | 1.10        | 248.50  | 7,511.3  | 329.4  | -225.9 | 376,375.43 | 578,380.99 | 32° 2' 4.266 N | 104° 4' 49.414 W |  |
| 7,567.0  | 2.20        | 256.00  | 7,543.3  | 329.2  | -226.8 | 376,375.17 | 578,380.10 | 32° 2' 4.263 N | 104° 4' 49.424 W |  |
| 7,598.0  | 3.30        | 260.90  | 7,574.2  | 328.9  | -228.3 | 376,374.89 | 578,378.65 | 32° 2' 4.261 N | 104° 4' 49.441 W |  |
| 7,630.0  | 4.10        | 282.90  | 7,606.2  | 329.0  | -230.3 | 376,375.00 | 578,376.62 | 32° 2' 4.262 N | 104° 4' 49.464 W |  |
| 7,662.0  | 4.30        | 280.70  | 7,638.1  | 329.5  | -232.6 | 376,375.48 | 578,374.33 | 32° 2' 4.267 N | 104° 4' 49.491 W |  |



Wellplanning  
Survey Report - Geographic

|           |                          |                              |                                        |
|-----------|--------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating LLC        | Local Co-ordinate Reference: | Well #6H                               |
| Project:  | Eddy County, NM          | TVD Reference:               | WELL @ 2998.7usft (Original Well Elev) |
| Site:     | Diamondback 22 State Com | MD Reference:                | WELL @ 2998.7usft (Original Well Elev) |
| Well:     | #6H                      | North Reference:             | Grid                                   |
| Wellbore: | OH                       | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                       | Database:                    | EDM:5000.1 Single User.Db              |

| Survey                |                 |             |                       |              |              |                     |                    |                 |                  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
| 7,693.0               | 5.20            | 257.00      | 7,669.0               | 329.4        | -235.1       | 376,375.37          | 578,371.82         | 32° 2' 4.266 N  | 104° 4' 49.520 W |
| 7,725.0               | 6.60            | 242.40      | 7,700.8               | 328.2        | -238.1       | 376,374.20          | 578,368.77         | 32° 2' 4.254 N  | 104° 4' 49.556 W |
| 7,757.0               | 10.40           | 221.80      | 7,732.5               | 325.2        | -241.7       | 376,371.19          | 578,365.22         | 32° 2' 4.224 N  | 104° 4' 49.597 W |
| 7,789.0               | 14.70           | 212.30      | 7,763.7               | 319.6        | -245.8       | 376,365.60          | 578,361.12         | 32° 2' 4.169 N  | 104° 4' 49.645 W |
| 7,820.0               | 19.30           | 210.30      | 7,793.3               | 311.9        | -250.5       | 376,357.85          | 578,356.43         | 32° 2' 4.093 N  | 104° 4' 49.699 W |
| 7,852.0               | 24.00           | 210.10      | 7,823.1               | 301.6        | -256.4       | 376,347.65          | 578,350.49         | 32° 2' 3.992 N  | 104° 4' 49.769 W |
| 7,884.0               | 28.70           | 209.30      | 7,851.7               | 289.3        | -263.4       | 376,335.31          | 578,343.47         | 32° 2' 3.870 N  | 104° 4' 49.851 W |
| 7,915.0               | 33.50           | 208.20      | 7,878.3               | 275.3        | -271.1       | 376,321.27          | 578,335.78         | 32° 2' 3.731 N  | 104° 4' 49.940 W |
| 7,947.0               | 38.30           | 206.60      | 7,904.2               | 258.6        | -279.7       | 376,304.61          | 578,327.16         | 32° 2' 3.566 N  | 104° 4' 50.041 W |
| 7,979.0               | 42.50           | 205.20      | 7,928.6               | 240.0        | -288.8       | 376,285.95          | 578,318.11         | 32° 2' 3.382 N  | 104° 4' 50.146 W |
| 8,010.0               | 46.90           | 204.20      | 7,950.6               | 220.1        | -297.9       | 376,266.15          | 578,309.01         | 32° 2' 3.186 N  | 104° 4' 50.253 W |
| 8,042.0               | 51.60           | 203.30      | 7,971.5               | 198.0        | -307.6       | 376,243.96          | 578,299.25         | 32° 2' 2.967 N  | 104° 4' 50.367 W |
| 8,074.0               | 56.30           | 202.70      | 7,990.3               | 174.2        | -317.8       | 376,220.15          | 578,289.15         | 32° 2' 2.731 N  | 104° 4' 50.485 W |
| 8,106.0               | 60.90           | 201.80      | 8,007.0               | 148.9        | -328.1       | 376,194.88          | 578,278.82         | 32° 2' 2.481 N  | 104° 4' 50.605 W |
| 8,137.0               | 65.60           | 201.50      | 8,020.9               | 123.2        | -338.3       | 376,169.15          | 578,268.61         | 32° 2' 2.227 N  | 104° 4' 50.725 W |
| 8,169.0               | 70.90           | 201.70      | 8,032.8               | 95.5         | -349.2       | 376,141.53          | 578,257.67         | 32° 2' 1.954 N  | 104° 4' 50.853 W |
| 8,200.0               | 76.10           | 201.70      | 8,041.6               | 67.9         | -360.2       | 376,113.92          | 578,246.68         | 32° 2' 1.681 N  | 104° 4' 50.981 W |
| 8,225.0               | 80.30           | 201.20      | 8,046.7               | 45.2         | -369.2       | 376,091.15          | 578,237.74         | 32° 2' 1.456 N  | 104° 4' 51.085 W |
| 8,261.0               | 85.90           | 199.70      | 8,051.0               | 11.7         | -381.6       | 376,057.68          | 578,225.26         | 32° 2' 1.125 N  | 104° 4' 51.231 W |
| 8,292.0               | 87.50           | 199.00      | 8,052.8               | -17.5        | -391.9       | 376,028.48          | 578,215.01         | 32° 2' 0.836 N  | 104° 4' 51.351 W |
| 8,324.0               | 87.90           | 198.90      | 8,054.1               | -47.8        | -402.3       | 375,998.24          | 578,204.62         | 32° 2' 0.537 N  | 104° 4' 51.473 W |
| 8,356.0               | 88.60           | 199.00      | 8,055.0               | -78.0        | -412.7       | 375,967.98          | 578,194.23         | 32° 2' 0.238 N  | 104° 4' 51.594 W |
| 8,419.0               | 90.20           | 198.80      | 8,055.7               | -137.6       | -433.1       | 375,908.39          | 578,173.83         | 32° 1' 59.649 N | 104° 4' 51.833 W |
| 8,514.0               | 91.90           | 198.20      | 8,054.0               | -227.7       | -463.2       | 375,818.31          | 578,143.69         | 32° 1' 58.758 N | 104° 4' 52.185 W |
| 8,608.0               | 91.10           | 197.50      | 8,051.5               | -317.1       | -492.0       | 375,728.87          | 578,114.89         | 32° 1' 57.873 N | 104° 4' 52.522 W |
| 8,703.0               | 89.70           | 196.30      | 8,050.8               | -408.0       | -519.6       | 375,637.98          | 578,087.27         | 32° 1' 56.974 N | 104° 4' 52.846 W |
| 8,799.0               | 91.40           | 197.10      | 8,049.9               | -500.0       | -547.2       | 375,546.04          | 578,059.69         | 32° 1' 56.065 N | 104° 4' 53.169 W |
| 8,894.0               | 91.90           | 196.50      | 8,047.2               | -590.9       | -574.7       | 375,455.13          | 578,032.24         | 32° 1' 55.166 N | 104° 4' 53.490 W |
| 8,989.0               | 91.30           | 195.30      | 8,044.5               | -682.2       | -600.7       | 375,363.80          | 578,006.23         | 32° 1' 54.263 N | 104° 4' 53.795 W |
| 9,084.0               | 90.90           | 191.70      | 8,042.7               | -774.5       | -622.8       | 375,271.46          | 577,984.06         | 32° 1' 53.350 N | 104° 4' 54.055 W |
| 9,179.0               | 89.00           | 188.10      | 8,042.8               | -868.1       | -639.2       | 375,177.89          | 577,967.73         | 32° 1' 52.424 N | 104° 4' 54.247 W |
| 9,211.0               | 89.00           | 186.60      | 8,043.4               | -899.8       | -643.3       | 375,146.16          | 577,963.64         | 32° 1' 52.110 N | 104° 4' 54.295 W |
| 9,243.0               | 88.90           | 185.20      | 8,043.9               | -931.7       | -646.6       | 375,114.34          | 577,960.35         | 32° 1' 51.795 N | 104° 4' 54.334 W |
| 9,275.0               | 89.50           | 183.80      | 8,044.4               | -963.6       | -649.1       | 375,082.44          | 577,957.84         | 32° 1' 51.480 N | 104° 4' 54.364 W |
| 9,306.0               | 90.10           | 182.40      | 8,044.5               | -994.5       | -650.7       | 375,051.49          | 577,956.16         | 32° 1' 51.173 N | 104° 4' 54.385 W |
| 9,338.0               | 90.50           | 180.80      | 8,044.3               | -1,026.5     | -651.6       | 375,019.50          | 577,955.27         | 32° 1' 50.857 N | 104° 4' 54.396 W |
| 9,370.0               | 90.20           | 179.30      | 8,044.1               | -1,058.5     | -651.7       | 374,987.50          | 577,955.24         | 32° 1' 50.540 N | 104° 4' 54.397 W |
| 9,465.0               | 91.10           | 176.40      | 8,043.1               | -1,153.4     | -648.1       | 374,892.59          | 577,958.80         | 32° 1' 49.601 N | 104° 4' 54.358 W |
| 9,560.0               | 91.80           | 175.80      | 8,040.6               | -1,248.2     | -641.6       | 374,797.84          | 577,965.26         | 32° 1' 48.663 N | 104° 4' 54.286 W |
| 9,655.0               | 90.80           | 175.90      | 8,038.5               | -1,342.9     | -634.8       | 374,703.11          | 577,972.14         | 32° 1' 47.725 N | 104° 4' 54.209 W |
| 9,751.0               | 92.30           | 175.50      | 8,035.9               | -1,438.6     | -627.6       | 374,607.42          | 577,979.33         | 32° 1' 46.778 N | 104° 4' 54.128 W |
| 9,845.0               | 91.70           | 175.80      | 8,032.6               | -1,532.2     | -620.4       | 374,513.75          | 577,986.46         | 32° 1' 45.851 N | 104° 4' 54.047 W |
| 9,940.0               | 92.20           | 177.90      | 8,029.4               | -1,627.0     | -615.2       | 374,418.95          | 577,991.67         | 32° 1' 44.912 N | 104° 4' 53.989 W |
| 10,036.0              | 91.00           | 178.10      | 8,026.7               | -1,722.9     | -611.9       | 374,323.05          | 577,995.02         | 32° 1' 43.963 N | 104° 4' 53.953 W |
| 10,131.0              | 91.20           | 178.70      | 8,024.9               | -1,817.9     | -609.2       | 374,228.11          | 577,997.67         | 32° 1' 43.024 N | 104° 4' 53.925 W |
| 10,226.0              | 90.50           | 179.30      | 8,023.5               | -1,912.9     | -607.6       | 374,133.13          | 577,999.33         | 32° 1' 42.084 N | 104° 4' 53.908 W |
| 10,321.0              | 89.20           | 179.30      | 8,023.7               | -2,007.9     | -606.4       | 374,038.14          | 578,000.49         | 32° 1' 41.144 N | 104° 4' 53.897 W |
| 10,416.0              | 90.80           | 179.10      | 8,023.7               | -2,102.8     | -605.1       | 373,943.16          | 578,001.82         | 32° 1' 40.203 N | 104° 4' 53.884 W |
| 10,511.0              | 91.30           | 177.90      | 8,022.0               | -2,197.8     | -602.6       | 373,848.21          | 578,004.30         | 32° 1' 39.264 N | 104° 4' 53.858 W |
| 10,606.0              | 91.30           | 177.70      | 8,019.8               | -2,292.7     | -599.0       | 373,753.30          | 578,007.95         | 32° 1' 38.324 N | 104° 4' 53.818 W |
| 10,701.0              | 89.90           | 177.40      | 8,018.8               | -2,387.6     | -594.9       | 373,658.39          | 578,012.01         | 32° 1' 37.385 N | 104° 4' 53.774 W |
| 10,797.0              | 91.80           | 177.10      | 8,017.4               | -2,483.5     | -590.3       | 373,562.52          | 578,016.62         | 32° 1' 36.436 N | 104° 4' 53.723 W |
| 10,892.0              | 91.20           | 176.80      | 8,014.9               | -2,578.3     | -585.2       | 373,467.69          | 578,021.67         | 32° 1' 35.498 N | 104° 4' 53.667 W |
| 10,987.0              | 89.10           | 176.20      | 8,014.7               | -2,673.1     | -579.4       | 373,372.87          | 578,027.47         | 32° 1' 34.559 N | 104° 4' 53.602 W |
| 11,082.0              | 89.70           | 175.00      | 8,015.7               | -2,767.8     | -572.1       | 373,278.16          | 578,034.76         | 32° 1' 33.622 N | 104° 4' 53.520 W |



# Wellplanning

## Survey Report - Geographic

|           |                          |                              |                                        |
|-----------|--------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating LLC        | Local Co-ordinate Reference: | Well #6H                               |
| Project:  | Eddy County, NM          | TVD Reference:               | WELL @ 2998.7usft (Original Well Elev) |
| Site:     | Diamondback 22 State Com | MD Reference:                | WELL @ 2998.7usft (Original Well Elev) |
| Well:     | #6H                      | North Reference:             | Grid                                   |
| Wellbore: | OH                       | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                       | Database:                    | EDM 5000.1 Single User Db              |

| Survey                |                 |             |                       |              |              |                     |                    |                 |                  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
| 11,178.0              | 89.20           | 175.20      | 8,016.6               | -2,863.5     | -563.9       | 373,182.51          | 578,042.96         | 32° 1' 32.675 N | 104° 4' 53.427 W |
| 11,273.0              | 89.80           | 176.20      | 8,017.4               | -2,958.2     | -556.8       | 373,087.79          | 578,050.08         | 32° 1' 31.737 N | 104° 4' 53.347 W |
| 11,368.0              | 89.70           | 177.30      | 8,017.8               | -3,053.1     | -551.4       | 372,992.94          | 578,055.46         | 32° 1' 30.798 N | 104° 4' 53.287 W |
| 11,463.0              | 90.40           | 178.80      | 8,017.7               | -3,148.0     | -548.2       | 372,898.00          | 578,058.70         | 32° 1' 29.859 N | 104° 4' 53.252 W |
| 11,558.0              | 90.20           | 179.40      | 8,017.2               | -3,243.0     | -546.7       | 372,803.01          | 578,060.19         | 32° 1' 28.919 N | 104° 4' 53.237 W |
| 11,653.0              | 92.10           | 181.40      | 8,015.3               | -3,338.0     | -547.4       | 372,708.04          | 578,059.53         | 32° 1' 27.979 N | 104° 4' 53.247 W |
| 11,748.0              | 91.90           | 182.00      | 8,012.0               | -3,432.9     | -550.2       | 372,613.14          | 578,056.71         | 32° 1' 27.040 N | 104° 4' 53.283 W |
| 11,843.0              | 90.70           | 180.80      | 8,009.9               | -3,527.8     | -552.5       | 372,518.20          | 578,054.39         | 32° 1' 26.100 N | 104° 4' 53.312 W |
| 11,938.0              | 89.50           | 181.00      | 8,009.7               | -3,622.8     | -554.0       | 372,423.21          | 578,052.90         | 32° 1' 25.160 N | 104° 4' 53.332 W |
| 12,033.0              | 91.20           | 180.90      | 8,009.1               | -3,717.8     | -555.6       | 372,328.23          | 578,051.32         | 32° 1' 24.220 N | 104° 4' 53.353 W |
| 12,127.0              | 90.60           | 181.10      | 8,007.6               | -3,811.7     | -557.2       | 372,234.26          | 578,049.68         | 32° 1' 23.290 N | 104° 4' 53.375 W |
| 12,222.0              | 92.00           | 180.30      | 8,005.5               | -3,906.7     | -558.4       | 372,139.29          | 578,048.52         | 32° 1' 22.350 N | 104° 4' 53.391 W |
| 12,317.0              | 91.60           | 181.00      | 8,002.5               | -4,001.7     | -559.5       | 372,044.35          | 578,047.44         | 32° 1' 21.411 N | 104° 4' 53.406 W |
| 12,412.0              | 90.90           | 181.10      | 8,000.4               | -4,096.6     | -561.2       | 371,949.39          | 578,045.70         | 32° 1' 20.471 N | 104° 4' 53.429 W |
| 12,507.0              | 89.10           | 179.90      | 8,000.4               | -4,191.6     | -562.0       | 371,854.40          | 578,044.87         | 32° 1' 19.531 N | 104° 4' 53.441 W |
| 12,602.0              | 90.70           | 180.40      | 8,000.6               | -4,286.6     | -562.3       | 371,759.40          | 578,044.63         | 32° 1' 18.591 N | 104° 4' 53.446 W |
| 12,708.0              | 92.50           | 179.50      | 7,997.6               | -4,392.6     | -562.2       | 371,653.45          | 578,044.72         | 32° 1' 17.542 N | 104° 4' 53.448 W |
| 12,760.0              | 92.50           | 179.50      | 7,995.4               | -4,444.5     | -561.7       | 371,601.50          | 578,045.17         | 32° 1' 17.028 N | 104° 4' 53.444 W |
| PBHL(D22#6H)          |                 |             |                       |              |              |                     |                    |                 |                  |

|                   |                    |             |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|