



## **COG Operating, LLC**

**Lea County, NM**

**Sec 25, T25S, R33E**

**Dominator 25 Federal #601H**

**Wellbore #1**

**Design: Wellbore #1**

## **Survey Report - Geographic**

**05 October, 2018**

**HOBBS OCD**  
**APR 22 2019**  
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## Survey Report - Geographic



Company: COG Operating, LLC  
 Project: Lea County, NM  
 Site: Sec 25, T25S, R33E  
 Well: Dominator 25 Federal #601H  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
 TVD Reference: WELL @ 3352.0usft (Noram #21)  
 MD Reference: WELL @ 3352.0usft (Noram #21)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project     | Lea 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                  | Sec 25, T25S, R33E |                   |                   |
| Site Position:        |                    | Northing:         | 399,200.40 usft   |
| From:                 | Map                | Easting:          | 748,329.70 usft   |
| Position Uncertainty: | 0.0 usft           | Slot Radius:      | 13-3/16 "         |
|                       |                    | Latitude:         | 32° 5' 41.926 N   |
|                       |                    | Longitude:        | 103° 31' 53.183 W |
|                       |                    | Grid Convergence: | 0.43 °            |

|                      |                            |                     |                  |
|----------------------|----------------------------|---------------------|------------------|
| Well                 | Dominator 25 Federal #601H |                     |                  |
| Well Position        | +N/-S                      | 0.0 usft            | Northing:        |
|                      | +E/-W                      | 0.0 usft            | Easting:         |
| Position Uncertainty | 0.0 usft                   | Wellhead Elevation: |                  |
|                      |                            | Latitude:           | 32° 5' 41.666 N  |
|                      |                            | Longitude:          | 103° 31' 8.733 W |
|                      |                            | Ground Level:       | 3,323.0 usft     |

|           |              |             |                 |
|-----------|--------------|-------------|-----------------|
| Wellbore  | Wellbore #1  |             |                 |
| Magnetics | Model Name   | Sample Date | Declination     |
|           | User Defined | 9/14/2018   | (°)             |
|           |              |             | 6.77            |
|           |              |             | Dip Angle       |
|           |              |             | (°)             |
|           |              |             | 59.78           |
|           |              |             | Field Strength  |
|           |              |             | (nT)            |
|           |              |             | 47,848.00000000 |

|                   |                  |        |           |
|-------------------|------------------|--------|-----------|
| Design            | Wellbore #1      |        |           |
| Audit Notes:      |                  |        |           |
| Version:          | 1.0              | Phase: | ACTUAL    |
| Vertical Section: | Depth From (TVD) | +N/-S  | +E/-W     |
|                   | (usft)           | (usft) | (usft)    |
|                   | 0.0              | 0.0    | 0.0       |
|                   |                  |        | Direction |
|                   |                  |        | (°)       |
|                   |                  |        | 0.78      |

|                |                |                                         |                                            |
|----------------|----------------|-----------------------------------------|--------------------------------------------|
| Survey Program | Date 10/5/2018 |                                         |                                            |
| From           | To             | Survey (Wellbore)                       | Tool Name                                  |
| (usft)         | (usft)         |                                         |                                            |
| 100.0          | 11,752.0       | Scientific Drilling Gyros (Wellbore #1) | GYRO-NS                                    |
| 11,771.0       | 17,210.0       | QES MWD Surveys (C&L) (Wellbore #1)     | MWD+IFR1+MS                                |
|                |                |                                         | Description                                |
|                |                |                                         | OWSG Gyrocompass Gyro                      |
|                |                |                                         | OWSG MWD + IFR1 + Multi-Station Correction |

| Measured | Inclination | Azimuth | Vertical | +N/-S  | +E/-W  | Map        | Map        | Latitude        | Longitude        |
|----------|-------------|---------|----------|--------|--------|------------|------------|-----------------|------------------|
| Depth    | (°)         | (°)     | Depth    | (usft) | (usft) | Northing   | Easting    |                 |                  |
| (usft)   |             |         | (usft)   |        |        | (usft)     | (usft)     |                 |                  |
| 0.0      | 0.00        | 0.00    | 0.0      | 0.0    | 0.0    | 399,202.78 | 752,153.70 | 32° 5' 41.666 N | 103° 31' 8.733 W |
| 100.0    | 0.18        | 60.70   | 100.0    | 0.1    | 0.1    | 399,202.86 | 752,153.83 | 32° 5' 41.667 N | 103° 31' 8.732 W |
| 125.0    | 0.15        | 69.66   | 125.0    | 0.1    | 0.2    | 399,202.89 | 752,153.90 | 32° 5' 41.667 N | 103° 31' 8.731 W |
| 150.0    | 0.18        | 106.97  | 150.0    | 0.1    | 0.3    | 399,202.89 | 752,153.97 | 32° 5' 41.667 N | 103° 31' 8.730 W |
| 175.0    | 0.19        | 60.72   | 175.0    | 0.1    | 0.3    | 399,202.90 | 752,154.04 | 32° 5' 41.668 N | 103° 31' 8.729 W |
| 200.0    | 0.14        | 58.14   | 200.0    | 0.2    | 0.4    | 399,202.94 | 752,154.10 | 32° 5' 41.668 N | 103° 31' 8.728 W |
| 225.0    | 0.18        | 86.69   | 225.0    | 0.2    | 0.5    | 399,202.96 | 752,154.17 | 32° 5' 41.668 N | 103° 31' 8.728 W |
| 250.0    | 0.14        | 65.93   | 250.0    | 0.2    | 0.5    | 399,202.97 | 752,154.24 | 32° 5' 41.668 N | 103° 31' 8.727 W |
| 275.0    | 0.19        | 46.05   | 275.0    | 0.2    | 0.6    | 399,203.01 | 752,154.29 | 32° 5' 41.669 N | 103° 31' 8.726 W |
| 300.0    | 0.19        | 63.61   | 300.0    | 0.3    | 0.7    | 399,203.06 | 752,154.36 | 32° 5' 41.669 N | 103° 31' 8.725 W |
| 325.0    | 0.16        | 74.04   | 325.0    | 0.3    | 0.7    | 399,203.09 | 752,154.43 | 32° 5' 41.669 N | 103° 31' 8.725 W |



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North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Single User Db

## Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude        | Longitude        |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-----------------|------------------|
| 350.0                       | 0.17               | 117.96         | 350.0                       | 0.3             | 0.8             | 399,203.08                | 752,154.50               | 32° 5' 41.669 N | 103° 31' 8.724 W |
| 375.0                       | 0.16               | 75.52          | 375.0                       | 0.3             | 0.9             | 399,203.07                | 752,154.56               | 32° 5' 41.669 N | 103° 31' 8.723 W |
| 400.0                       | 0.20               | 98.28          | 400.0                       | 0.3             | 0.9             | 399,203.07                | 752,154.64               | 32° 5' 41.669 N | 103° 31' 8.722 W |
| 425.0                       | 0.15               | 139.04         | 425.0                       | 0.3             | 1.0             | 399,203.04                | 752,154.71               | 32° 5' 41.669 N | 103° 31' 8.721 W |
| 450.0                       | 0.09               | 31.41          | 450.0                       | 0.2             | 1.0             | 399,203.03                | 752,154.74               | 32° 5' 41.669 N | 103° 31' 8.721 W |
| 475.0                       | 0.18               | 30.16          | 475.0                       | 0.3             | 1.1             | 399,203.08                | 752,154.77               | 32° 5' 41.669 N | 103° 31' 8.721 W |
| 500.0                       | 0.11               | 56.65          | 500.0                       | 0.3             | 1.1             | 399,203.13                | 752,154.81               | 32° 5' 41.670 N | 103° 31' 8.720 W |
| 525.0                       | 0.08               | 63.20          | 525.0                       | 0.4             | 1.1             | 399,203.15                | 752,154.84               | 32° 5' 41.670 N | 103° 31' 8.720 W |
| 550.0                       | 0.20               | 95.57          | 550.0                       | 0.4             | 1.2             | 399,203.16                | 752,154.90               | 32° 5' 41.670 N | 103° 31' 8.719 W |
| 575.0                       | 0.42               | 13.72          | 575.0                       | 0.5             | 1.3             | 399,203.24                | 752,154.97               | 32° 5' 41.671 N | 103° 31' 8.718 W |
| 600.0                       | 0.46               | 14.05          | 600.0                       | 0.6             | 1.3             | 399,203.43                | 752,155.01               | 32° 5' 41.673 N | 103° 31' 8.718 W |
| 625.0                       | 0.47               | 18.82          | 625.0                       | 0.8             | 1.4             | 399,203.62                | 752,155.07               | 32° 5' 41.675 N | 103° 31' 8.717 W |
| 650.0                       | 0.56               | 47.87          | 650.0                       | 1.0             | 1.5             | 399,203.80                | 752,155.19               | 32° 5' 41.676 N | 103° 31' 8.716 W |
| 675.0                       | 0.76               | 36.69          | 675.0                       | 1.2             | 1.7             | 399,204.02                | 752,155.38               | 32° 5' 41.679 N | 103° 31' 8.713 W |
| 700.0                       | 0.70               | 21.16          | 700.0                       | 1.5             | 1.8             | 399,204.29                | 752,155.54               | 32° 5' 41.681 N | 103° 31' 8.712 W |
| 725.0                       | 0.63               | 16.85          | 725.0                       | 1.8             | 1.9             | 399,204.56                | 752,155.63               | 32° 5' 41.684 N | 103° 31' 8.711 W |
| 750.0                       | 0.79               | 17.68          | 750.0                       | 2.1             | 2.0             | 399,204.86                | 752,155.72               | 32° 5' 41.687 N | 103° 31' 8.709 W |
| 775.0                       | 0.96               | 38.07          | 775.0                       | 2.4             | 2.2             | 399,205.19                | 752,155.91               | 32° 5' 41.690 N | 103° 31' 8.707 W |
| 800.0                       | 0.87               | 37.01          | 800.0                       | 2.7             | 2.5             | 399,205.51                | 752,156.15               | 32° 5' 41.693 N | 103° 31' 8.704 W |
| 825.0                       | 0.82               | 17.18          | 825.0                       | 3.0             | 2.6             | 399,205.83                | 752,156.32               | 32° 5' 41.696 N | 103° 31' 8.702 W |
| 850.0                       | 0.67               | 26.02          | 850.0                       | 3.3             | 2.7             | 399,206.13                | 752,156.43               | 32° 5' 41.699 N | 103° 31' 8.701 W |
| 875.0                       | 0.96               | 37.39          | 875.0                       | 3.6             | 2.9             | 399,206.43                | 752,156.62               | 32° 5' 41.702 N | 103° 31' 8.699 W |
| 900.0                       | 0.91               | 37.56          | 900.0                       | 4.0             | 3.2             | 399,206.75                | 752,156.87               | 32° 5' 41.705 N | 103° 31' 8.696 W |
| 925.0                       | 1.10               | 35.64          | 925.0                       | 4.3             | 3.4             | 399,207.10                | 752,157.13               | 32° 5' 41.709 N | 103° 31' 8.693 W |
| 950.0                       | 0.94               | 40.28          | 950.0                       | 4.7             | 3.7             | 399,207.46                | 752,157.41               | 32° 5' 41.712 N | 103° 31' 8.690 W |
| 975.0                       | 0.96               | 39.74          | 975.0                       | 5.0             | 4.0             | 399,207.77                | 752,157.67               | 32° 5' 41.716 N | 103° 31' 8.687 W |
| 1,000.0                     | 1.00               | 38.25          | 1,000.0                     | 5.3             | 4.2             | 399,208.11                | 752,157.94               | 32° 5' 41.719 N | 103° 31' 8.683 W |
| 1,025.0                     | 1.17               | 36.77          | 1,025.0                     | 5.7             | 4.5             | 399,208.48                | 752,158.23               | 32° 5' 41.722 N | 103° 31' 8.680 W |
| 1,050.0                     | 1.15               | 44.83          | 1,049.9                     | 6.1             | 4.9             | 399,208.86                | 752,158.56               | 32° 5' 41.726 N | 103° 31' 8.676 W |
| 1,075.0                     | 0.95               | 47.07          | 1,074.9                     | 6.4             | 5.2             | 399,209.18                | 752,158.89               | 32° 5' 41.729 N | 103° 31' 8.672 W |
| 1,100.0                     | 0.97               | 42.51          | 1,099.9                     | 6.7             | 5.5             | 399,209.48                | 752,159.18               | 32° 5' 41.732 N | 103° 31' 8.669 W |
| 1,125.0                     | 0.97               | 40.35          | 1,124.9                     | 7.0             | 5.8             | 399,209.80                | 752,159.46               | 32° 5' 41.735 N | 103° 31' 8.666 W |
| 1,150.0                     | 1.05               | 41.85          | 1,149.9                     | 7.3             | 6.1             | 399,210.13                | 752,159.75               | 32° 5' 41.739 N | 103° 31' 8.662 W |
| 1,175.0                     | 0.94               | 50.82          | 1,174.9                     | 7.6             | 6.4             | 399,210.43                | 752,160.06               | 32° 5' 41.742 N | 103° 31' 8.659 W |
| 1,200.0                     | 0.91               | 57.54          | 1,199.9                     | 7.9             | 6.7             | 399,210.67                | 752,160.39               | 32° 5' 41.744 N | 103° 31' 8.655 W |
| 1,225.0                     | 0.99               | 54.17          | 1,224.9                     | 8.1             | 7.0             | 399,210.90                | 752,160.73               | 32° 5' 41.746 N | 103° 31' 8.651 W |
| 1,250.0                     | 0.92               | 60.88          | 1,249.9                     | 8.3             | 7.4             | 399,211.12                | 752,161.08               | 32° 5' 41.748 N | 103° 31' 8.647 W |
| 1,275.0                     | 0.92               | 65.87          | 1,274.9                     | 8.5             | 7.7             | 399,211.30                | 752,161.44               | 32° 5' 41.750 N | 103° 31' 8.642 W |
| 1,300.0                     | 0.97               | 75.65          | 1,299.9                     | 8.7             | 8.1             | 399,211.44                | 752,161.83               | 32° 5' 41.751 N | 103° 31' 8.638 W |
| 1,325.0                     | 1.12               | 94.56          | 1,324.9                     | 8.7             | 8.6             | 399,211.47                | 752,162.28               | 32° 5' 41.752 N | 103° 31' 8.633 W |
| 1,350.0                     | 1.33               | 111.98         | 1,349.9                     | 8.6             | 9.1             | 399,211.34                | 752,162.79               | 32° 5' 41.750 N | 103° 31' 8.627 W |
| 1,375.0                     | 1.41               | 114.19         | 1,374.9                     | 8.3             | 9.6             | 399,211.11                | 752,163.34               | 32° 5' 41.748 N | 103° 31' 8.620 W |
| 1,400.0                     | 1.62               | 122.53         | 1,399.9                     | 8.0             | 10.2            | 399,210.79                | 752,163.92               | 32° 5' 41.745 N | 103° 31' 8.614 W |
| 1,425.0                     | 1.97               | 145.79         | 1,424.9                     | 7.5             | 10.8            | 399,210.25                | 752,164.46               | 32° 5' 41.739 N | 103° 31' 8.607 W |
| 1,450.0                     | 2.25               | 155.52         | 1,449.9                     | 6.7             | 11.2            | 399,209.44                | 752,164.90               | 32° 5' 41.732 N | 103° 31' 8.602 W |
| 1,475.0                     | 2.29               | 156.56         | 1,474.8                     | 5.8             | 11.6            | 399,208.54                | 752,165.31               | 32° 5' 41.723 N | 103° 31' 8.598 W |
| 1,500.0                     | 2.33               | 159.08         | 1,499.8                     | 4.8             | 12.0            | 399,207.61                | 752,165.69               | 32° 5' 41.713 N | 103° 31' 8.593 W |
| 1,525.0                     | 2.33               | 155.63         | 1,524.8                     | 3.9             | 12.4            | 399,206.67                | 752,166.08               | 32° 5' 41.704 N | 103° 31' 8.589 W |
| 1,550.0                     | 2.29               | 157.59         | 1,549.8                     | 3.0             | 12.8            | 399,205.74                | 752,166.48               | 32° 5' 41.695 N | 103° 31' 8.584 W |
| 1,575.0                     | 2.25               | 157.80         | 1,574.8                     | 2.0             | 13.2            | 399,204.83                | 752,166.85               | 32° 5' 41.686 N | 103° 31' 8.580 W |
| 1,600.0                     | 2.31               | 158.35         | 1,599.7                     | 1.1             | 13.5            | 399,203.90                | 752,167.22               | 32° 5' 41.677 N | 103° 31' 8.576 W |
| 1,625.0                     | 2.29               | 156.79         | 1,624.7                     | 0.2             | 13.9            | 399,202.98                | 752,167.61               | 32° 5' 41.667 N | 103° 31' 8.571 W |
| 1,650.0                     | 2.36               | 156.26         | 1,649.7                     | -0.7            | 14.3            | 399,202.05                | 752,168.01               | 32° 5' 41.658 N | 103° 31' 8.567 W |
| 1,675.0                     | 2.18               | 156.66         | 1,674.7                     | -1.6            | 14.7            | 399,201.14                | 752,168.41               | 32° 5' 41.649 N | 103° 31' 8.562 W |
| 1,700.0                     | 2.31               | 158.05         | 1,699.7                     | -2.5            | 15.1            | 399,200.24                | 752,168.78               | 32° 5' 41.640 N | 103° 31' 8.558 W |



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| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude        | Longitude        |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-----------------|------------------|
| 1,725.0                     | 2.17               | 159.24         | 1,724.6                     | -3.5            | 15.4            | 399,199.33                | 752,169.14               | 32° 5' 41.631 N | 103° 31' 8.554 W |
| 1,750.0                     | 2.08               | 156.20         | 1,749.6                     | -4.3            | 15.8            | 399,198.47                | 752,169.49               | 32° 5' 41.623 N | 103° 31' 8.550 W |
| 1,775.0                     | 2.08               | 158.50         | 1,774.6                     | -5.2            | 16.1            | 399,197.63                | 752,169.84               | 32° 5' 41.614 N | 103° 31' 8.546 W |
| 1,800.0                     | 2.12               | 159.17         | 1,799.6                     | -6.0            | 16.5            | 399,196.78                | 752,170.17               | 32° 5' 41.606 N | 103° 31' 8.542 W |
| 1,825.0                     | 1.99               | 159.65         | 1,824.6                     | -6.8            | 16.8            | 399,195.94                | 752,170.49               | 32° 5' 41.597 N | 103° 31' 8.539 W |
| 1,850.0                     | 1.96               | 159.53         | 1,849.6                     | -7.7            | 17.1            | 399,195.13                | 752,170.79               | 32° 5' 41.589 N | 103° 31' 8.535 W |
| 1,875.0                     | 1.94               | 158.72         | 1,874.5                     | -8.4            | 17.4            | 399,194.33                | 752,171.09               | 32° 5' 41.582 N | 103° 31' 8.532 W |
| 1,900.0                     | 2.00               | 162.01         | 1,899.5                     | -9.3            | 17.7            | 399,193.53                | 752,171.38               | 32° 5' 41.574 N | 103° 31' 8.528 W |
| 1,925.0                     | 2.06               | 159.33         | 1,924.5                     | -10.1           | 18.0            | 399,192.69                | 752,171.67               | 32° 5' 41.565 N | 103° 31' 8.525 W |
| 1,950.0                     | 2.04               | 159.77         | 1,949.5                     | -10.9           | 18.3            | 399,191.85                | 752,171.98               | 32° 5' 41.557 N | 103° 31' 8.522 W |
| 1,975.0                     | 1.97               | 159.40         | 1,974.5                     | -11.8           | 18.6            | 399,191.03                | 752,172.29               | 32° 5' 41.549 N | 103° 31' 8.518 W |
| 2,000.0                     | 1.97               | 159.79         | 1,999.5                     | -12.6           | 18.9            | 399,190.23                | 752,172.59               | 32° 5' 41.541 N | 103° 31' 8.515 W |
| 2,025.0                     | 1.95               | 160.59         | 2,024.5                     | -13.4           | 19.2            | 399,189.42                | 752,172.88               | 32° 5' 41.533 N | 103° 31' 8.511 W |
| 2,050.0                     | 1.95               | 160.30         | 2,049.4                     | -14.2           | 19.5            | 399,188.62                | 752,173.16               | 32° 5' 41.525 N | 103° 31' 8.508 W |
| 2,075.0                     | 1.95               | 158.28         | 2,074.4                     | -15.0           | 19.8            | 399,187.83                | 752,173.46               | 32° 5' 41.517 N | 103° 31' 8.505 W |
| 2,100.0                     | 1.96               | 158.56         | 2,099.4                     | -15.8           | 20.1            | 399,187.03                | 752,173.78               | 32° 5' 41.509 N | 103° 31' 8.501 W |
| 2,125.0                     | 1.91               | 162.68         | 2,124.4                     | -16.5           | 20.4            | 399,186.24                | 752,174.06               | 32° 5' 41.501 N | 103° 31' 8.498 W |
| 2,150.0                     | 1.86               | 159.12         | 2,149.4                     | -17.3           | 20.6            | 399,185.46                | 752,174.33               | 32° 5' 41.493 N | 103° 31' 8.495 W |
| 2,175.0                     | 1.78               | 158.38         | 2,174.4                     | -18.1           | 20.9            | 399,184.72                | 752,174.61               | 32° 5' 41.486 N | 103° 31' 8.492 W |
| 2,200.0                     | 1.79               | 158.78         | 2,199.4                     | -18.8           | 21.2            | 399,183.99                | 752,174.90               | 32° 5' 41.479 N | 103° 31' 8.488 W |
| 2,225.0                     | 1.74               | 158.20         | 2,224.3                     | -19.5           | 21.5            | 399,183.28                | 752,175.18               | 32° 5' 41.472 N | 103° 31' 8.485 W |
| 2,250.0                     | 1.78               | 158.06         | 2,249.3                     | -20.2           | 21.8            | 399,182.57                | 752,175.47               | 32° 5' 41.465 N | 103° 31' 8.482 W |
| 2,275.0                     | 1.82               | 158.05         | 2,274.3                     | -20.9           | 22.1            | 399,181.84                | 752,175.76               | 32° 5' 41.458 N | 103° 31' 8.479 W |
| 2,300.0                     | 1.78               | 156.76         | 2,299.3                     | -21.7           | 22.4            | 399,181.11                | 752,176.06               | 32° 5' 41.450 N | 103° 31' 8.475 W |
| 2,325.0                     | 1.75               | 154.85         | 2,324.3                     | -22.4           | 22.7            | 399,180.41                | 752,176.38               | 32° 5' 41.443 N | 103° 31' 8.472 W |
| 2,350.0                     | 1.75               | 154.76         | 2,349.3                     | -23.1           | 23.0            | 399,179.72                | 752,176.70               | 32° 5' 41.436 N | 103° 31' 8.468 W |
| 2,375.0                     | 1.76               | 154.45         | 2,374.3                     | -23.8           | 23.3            | 399,179.03                | 752,177.03               | 32° 5' 41.430 N | 103° 31' 8.464 W |
| 2,400.0                     | 1.73               | 153.25         | 2,399.3                     | -24.4           | 23.7            | 399,178.34                | 752,177.37               | 32° 5' 41.423 N | 103° 31' 8.460 W |
| 2,425.0                     | 1.63               | 152.32         | 2,424.2                     | -25.1           | 24.0            | 399,177.69                | 752,177.70               | 32° 5' 41.416 N | 103° 31' 8.456 W |
| 2,450.0                     | 1.74               | 150.77         | 2,449.2                     | -25.7           | 24.4            | 399,177.05                | 752,178.05               | 32° 5' 41.410 N | 103° 31' 8.452 W |
| 2,475.0                     | 1.71               | 149.28         | 2,474.2                     | -26.4           | 24.7            | 399,176.39                | 752,178.43               | 32° 5' 41.403 N | 103° 31' 8.448 W |
| 2,500.0                     | 1.83               | 148.00         | 2,499.2                     | -27.0           | 25.1            | 399,175.74                | 752,178.83               | 32° 5' 41.397 N | 103° 31' 8.443 W |
| 2,525.0                     | 1.91               | 147.28         | 2,524.2                     | -27.7           | 25.6            | 399,175.05                | 752,179.27               | 32° 5' 41.390 N | 103° 31' 8.438 W |
| 2,550.0                     | 1.92               | 142.39         | 2,549.2                     | -28.4           | 26.1            | 399,174.36                | 752,179.75               | 32° 5' 41.383 N | 103° 31' 8.433 W |
| 2,575.0                     | 1.88               | 142.50         | 2,574.2                     | -29.1           | 26.6            | 399,173.71                | 752,180.25               | 32° 5' 41.377 N | 103° 31' 8.427 W |
| 2,600.0                     | 1.85               | 137.81         | 2,599.2                     | -29.7           | 27.1            | 399,173.08                | 752,180.77               | 32° 5' 41.371 N | 103° 31' 8.421 W |
| 2,625.0                     | 2.12               | 136.14         | 2,624.1                     | -30.3           | 27.7            | 399,172.45                | 752,181.36               | 32° 5' 41.364 N | 103° 31' 8.414 W |
| 2,650.0                     | 2.17               | 131.79         | 2,649.1                     | -31.0           | 28.3            | 399,171.80                | 752,182.04               | 32° 5' 41.358 N | 103° 31' 8.406 W |
| 2,675.0                     | 2.22               | 125.36         | 2,674.1                     | -31.6           | 29.1            | 399,171.21                | 752,182.79               | 32° 5' 41.352 N | 103° 31' 8.398 W |
| 2,700.0                     | 2.42               | 125.34         | 2,699.1                     | -32.2           | 29.9            | 399,170.62                | 752,183.61               | 32° 5' 41.346 N | 103° 31' 8.388 W |
| 2,725.0                     | 2.38               | 124.21         | 2,724.1                     | -32.8           | 30.8            | 399,170.02                | 752,184.47               | 32° 5' 41.340 N | 103° 31' 8.378 W |
| 2,750.0                     | 2.44               | 124.72         | 2,749.0                     | -33.4           | 31.6            | 399,169.43                | 752,185.34               | 32° 5' 41.334 N | 103° 31' 8.368 W |
| 2,775.0                     | 2.47               | 124.25         | 2,774.0                     | -34.0           | 32.5            | 399,168.82                | 752,186.22               | 32° 5' 41.328 N | 103° 31' 8.358 W |
| 2,800.0                     | 2.38               | 123.53         | 2,799.0                     | -34.6           | 33.4            | 399,168.23                | 752,187.10               | 32° 5' 41.322 N | 103° 31' 8.348 W |
| 2,825.0                     | 2.03               | 119.20         | 2,824.0                     | -35.1           | 34.2            | 399,167.73                | 752,187.92               | 32° 5' 41.317 N | 103° 31' 8.339 W |
| 2,850.0                     | 1.44               | 117.46         | 2,849.0                     | -35.4           | 34.9            | 399,167.37                | 752,188.58               | 32° 5' 41.313 N | 103° 31' 8.331 W |
| 2,875.0                     | 1.15               | 114.47         | 2,874.0                     | -35.7           | 35.4            | 399,167.12                | 752,189.09               | 32° 5' 41.311 N | 103° 31' 8.325 W |
| 2,900.0                     | 1.16               | 112.86         | 2,899.0                     | -35.9           | 35.9            | 399,166.92                | 752,189.55               | 32° 5' 41.309 N | 103° 31' 8.320 W |
| 2,925.0                     | 1.15               | 108.19         | 2,924.0                     | -36.0           | 36.3            | 399,166.74                | 752,190.02               | 32° 5' 41.307 N | 103° 31' 8.314 W |
| 2,950.0                     | 1.22               | 107.43         | 2,948.9                     | -36.2           | 36.8            | 399,166.58                | 752,190.52               | 32° 5' 41.305 N | 103° 31' 8.308 W |
| 2,975.0                     | 1.30               | 110.86         | 2,973.9                     | -36.4           | 37.3            | 399,166.40                | 752,191.03               | 32° 5' 41.304 N | 103° 31' 8.302 W |
| 3,000.0                     | 1.46               | 112.70         | 2,998.9                     | -36.6           | 37.9            | 399,166.18                | 752,191.59               | 32° 5' 41.301 N | 103° 31' 8.296 W |
| 3,025.0                     | 1.56               | 117.28         | 3,023.9                     | -36.9           | 38.5            | 399,165.90                | 752,192.19               | 32° 5' 41.299 N | 103° 31' 8.289 W |
| 3,050.0                     | 1.73               | 128.02         | 3,048.9                     | -37.3           | 39.1            | 399,165.51                | 752,192.79               | 32° 5' 41.295 N | 103° 31' 8.282 W |
| 3,075.0                     | 1.91               | 135.84         | 3,073.9                     | -37.8           | 39.7            | 399,164.98                | 752,193.38               | 32° 5' 41.289 N | 103° 31' 8.275 W |



## Survey Report - Geographic



Company: COG Operating, LLC  
Project: Lea County, NM  
Site: Sec 25, T25S, R33E  
Well: Dominator 25 Federal #601H  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
TVD Reference: WELL @ 3352.0usft (Noram #21)  
MD Reference: WELL @ 3352.0usft (Noram #21)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
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        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 3,100.0               | 2.03            | 131.34      | 3,098.9               | -38.4        | 40.3         | 399,164.39          | 752,194.00         | 32° 5' 41.283 N | 103° 31' 8.268 W |
| 3,125.0               | 2.14            | 131.83      | 3,123.9               | -39.0        | 41.0         | 399,163.78          | 752,194.68         | 32° 5' 41.277 N | 103° 31' 8.260 W |
| 3,150.0               | 2.18            | 131.86      | 3,148.9               | -39.6        | 41.7         | 399,163.16          | 752,195.38         | 32° 5' 41.271 N | 103° 31' 8.252 W |
| 3,175.0               | 2.33            | 128.72      | 3,173.8               | -40.3        | 42.4         | 399,162.52          | 752,196.13         | 32° 5' 41.265 N | 103° 31' 8.243 W |
| 3,200.0               | 2.22            | 130.93      | 3,198.8               | -40.9        | 43.2         | 399,161.89          | 752,196.89         | 32° 5' 41.259 N | 103° 31' 8.235 W |
| 3,225.0               | 2.00            | 133.16      | 3,223.8               | -41.5        | 43.9         | 399,161.27          | 752,197.58         | 32° 5' 41.252 N | 103° 31' 8.227 W |
| 3,250.0               | 1.89            | 135.16      | 3,248.8               | -42.1        | 44.5         | 399,160.68          | 752,198.19         | 32° 5' 41.246 N | 103° 31' 8.220 W |
| 3,275.0               | 1.79            | 135.29      | 3,273.8               | -42.7        | 45.1         | 399,160.11          | 752,198.75         | 32° 5' 41.241 N | 103° 31' 8.213 W |
| 3,300.0               | 1.47            | 139.65      | 3,298.8               | -43.2        | 45.5         | 399,159.59          | 752,199.23         | 32° 5' 41.236 N | 103° 31' 8.208 W |
| 3,325.0               | 0.64            | 137.68      | 3,323.8               | -43.5        | 45.8         | 399,159.24          | 752,199.54         | 32° 5' 41.232 N | 103° 31' 8.204 W |
| 3,350.0               | 0.24            | 130.17      | 3,348.8               | -43.7        | 46.0         | 399,159.10          | 752,199.67         | 32° 5' 41.231 N | 103° 31' 8.203 W |
| 3,375.0               | 0.26            | 94.71       | 3,373.8               | -43.7        | 46.1         | 399,159.06          | 752,199.77         | 32° 5' 41.230 N | 103° 31' 8.202 W |
| 3,400.0               | 0.30            | 102.87      | 3,398.8               | -43.7        | 46.2         | 399,159.05          | 752,199.89         | 32° 5' 41.230 N | 103° 31' 8.200 W |
| 3,425.0               | 0.49            | 78.57       | 3,423.8               | -43.7        | 46.4         | 399,159.05          | 752,200.06         | 32° 5' 41.230 N | 103° 31' 8.198 W |
| 3,450.0               | 0.69            | 76.87       | 3,448.8               | -43.7        | 46.6         | 399,159.11          | 752,200.31         | 32° 5' 41.231 N | 103° 31' 8.195 W |
| 3,475.0               | 0.95            | 77.25       | 3,473.8               | -43.6        | 47.0         | 399,159.19          | 752,200.66         | 32° 5' 41.232 N | 103° 31' 8.191 W |
| 3,500.0               | 1.19            | 79.77       | 3,498.7               | -43.5        | 47.4         | 399,159.28          | 752,201.11         | 32° 5' 41.232 N | 103° 31' 8.186 W |
| 3,525.0               | 1.43            | 79.19       | 3,523.7               | -43.4        | 48.0         | 399,159.38          | 752,201.68         | 32° 5' 41.233 N | 103° 31' 8.179 W |
| 3,550.0               | 1.55            | 84.98       | 3,548.7               | -43.3        | 48.6         | 399,159.47          | 752,202.32         | 32° 5' 41.234 N | 103° 31' 8.172 W |
| 3,575.0               | 1.71            | 87.97       | 3,573.7               | -43.3        | 49.3         | 399,159.51          | 752,203.03         | 32° 5' 41.235 N | 103° 31' 8.164 W |
| 3,600.0               | 1.67            | 84.65       | 3,598.7               | -43.2        | 50.1         | 399,159.56          | 752,203.76         | 32° 5' 41.235 N | 103° 31' 8.155 W |
| 3,625.0               | 1.73            | 83.85       | 3,623.7               | -43.1        | 50.8         | 399,159.64          | 752,204.50         | 32° 5' 41.236 N | 103° 31' 8.146 W |
| 3,650.0               | 1.65            | 81.53       | 3,648.7               | -43.1        | 51.5         | 399,159.73          | 752,205.23         | 32° 5' 41.237 N | 103° 31' 8.138 W |
| 3,675.0               | 1.67            | 78.11       | 3,673.7               | -42.9        | 52.2         | 399,159.86          | 752,205.95         | 32° 5' 41.238 N | 103° 31' 8.130 W |
| 3,700.0               | 1.47            | 113.01      | 3,698.7               | -43.0        | 52.9         | 399,159.81          | 752,206.60         | 32° 5' 41.237 N | 103° 31' 8.122 W |
| 3,725.0               | 1.55            | 137.25      | 3,723.7               | -43.4        | 53.4         | 399,159.43          | 752,207.12         | 32° 5' 41.233 N | 103° 31' 8.116 W |
| 3,750.0               | 1.64            | 134.71      | 3,748.7               | -43.9        | 53.9         | 399,158.93          | 752,207.61         | 32° 5' 41.228 N | 103° 31' 8.110 W |
| 3,775.0               | 1.61            | 141.53      | 3,773.6               | -44.4        | 54.4         | 399,158.41          | 752,208.08         | 32° 5' 41.223 N | 103° 31' 8.105 W |
| 3,800.0               | 1.84            | 166.20      | 3,798.6               | -45.0        | 54.7         | 399,157.74          | 752,208.39         | 32° 5' 41.217 N | 103° 31' 8.101 W |
| 3,825.0               | 1.86            | 178.35      | 3,823.6               | -45.8        | 54.8         | 399,156.95          | 752,208.50         | 32° 5' 41.209 N | 103° 31' 8.100 W |
| 3,850.0               | 1.95            | 180.23      | 3,848.6               | -46.7        | 54.8         | 399,156.12          | 752,208.51         | 32° 5' 41.201 N | 103° 31' 8.100 W |
| 3,875.0               | 1.98            | 179.96      | 3,873.6               | -47.5        | 54.8         | 399,155.26          | 752,208.51         | 32° 5' 41.192 N | 103° 31' 8.100 W |
| 3,900.0               | 1.84            | 180.32      | 3,898.6               | -48.4        | 54.8         | 399,154.43          | 752,208.51         | 32° 5' 41.184 N | 103° 31' 8.100 W |
| 3,925.0               | 1.50            | 182.57      | 3,923.6               | -49.1        | 54.8         | 399,153.70          | 752,208.49         | 32° 5' 41.177 N | 103° 31' 8.101 W |
| 3,950.0               | 1.24            | 178.87      | 3,948.6               | -49.7        | 54.8         | 399,153.10          | 752,208.49         | 32° 5' 41.171 N | 103° 31' 8.101 W |
| 3,975.0               | 1.10            | 149.49      | 3,973.6               | -50.2        | 54.9         | 399,152.62          | 752,208.63         | 32° 5' 41.166 N | 103° 31' 8.099 W |
| 4,000.0               | 1.19            | 127.99      | 3,998.5               | -50.5        | 55.3         | 399,152.26          | 752,208.95         | 32° 5' 41.162 N | 103° 31' 8.095 W |
| 4,025.0               | 1.22            | 125.57      | 4,023.5               | -50.8        | 55.7         | 399,151.94          | 752,209.37         | 32° 5' 41.159 N | 103° 31' 8.090 W |
| 4,050.0               | 1.23            | 126.88      | 4,048.5               | -51.2        | 56.1         | 399,151.63          | 752,209.81         | 32° 5' 41.156 N | 103° 31' 8.085 W |
| 4,075.0               | 1.20            | 132.33      | 4,073.5               | -51.5        | 56.5         | 399,151.29          | 752,210.21         | 32° 5' 41.153 N | 103° 31' 8.081 W |
| 4,100.0               | 1.22            | 135.19      | 4,098.5               | -51.9        | 56.9         | 399,150.92          | 752,210.59         | 32° 5' 41.149 N | 103° 31' 8.076 W |
| 4,125.0               | 1.19            | 146.25      | 4,123.5               | -52.3        | 57.2         | 399,150.52          | 752,210.93         | 32° 5' 41.145 N | 103° 31' 8.073 W |
| 4,150.0               | 1.09            | 142.62      | 4,148.5               | -52.7        | 57.5         | 399,150.11          | 752,211.21         | 32° 5' 41.141 N | 103° 31' 8.069 W |
| 4,175.0               | 1.15            | 146.17      | 4,173.5               | -53.1        | 57.8         | 399,149.72          | 752,211.50         | 32° 5' 41.137 N | 103° 31' 8.066 W |
| 4,200.0               | 1.12            | 147.14      | 4,198.5               | -53.5        | 58.1         | 399,149.30          | 752,211.77         | 32° 5' 41.133 N | 103° 31' 8.063 W |
| 4,225.0               | 1.26            | 144.82      | 4,223.5               | -53.9        | 58.4         | 399,148.87          | 752,212.06         | 32° 5' 41.129 N | 103° 31' 8.060 W |
| 4,250.0               | 1.20            | 144.56      | 4,248.5               | -54.3        | 58.7         | 399,148.44          | 752,212.37         | 32° 5' 41.124 N | 103° 31' 8.056 W |
| 4,275.0               | 1.19            | 149.96      | 4,273.5               | -54.8        | 59.0         | 399,148.00          | 752,212.65         | 32° 5' 41.120 N | 103° 31' 8.053 W |
| 4,300.0               | 1.05            | 149.89      | 4,298.5               | -55.2        | 59.2         | 399,147.58          | 752,212.90         | 32° 5' 41.116 N | 103° 31' 8.050 W |
| 4,325.0               | 0.98            | 150.68      | 4,323.5               | -55.6        | 59.4         | 399,147.19          | 752,213.12         | 32° 5' 41.112 N | 103° 31' 8.047 W |
| 4,350.0               | 0.89            | 145.72      | 4,348.5               | -55.9        | 59.6         | 399,146.84          | 752,213.33         | 32° 5' 41.108 N | 103° 31' 8.045 W |
| 4,375.0               | 0.87            | 148.26      | 4,373.5               | -56.3        | 59.8         | 399,146.52          | 752,213.54         | 32° 5' 41.105 N | 103° 31' 8.043 W |
| 4,400.0               | 0.96            | 140.78      | 4,398.5               | -56.6        | 60.1         | 399,146.20          | 752,213.77         | 32° 5' 41.102 N | 103° 31' 8.040 W |
| 4,425.0               | 1.06            | 131.66      | 4,423.5               | -56.9        | 60.4         | 399,145.88          | 752,214.08         | 32° 5' 41.099 N | 103° 31' 8.036 W |
| 4,450.0               | 1.30            | 124.04      | 4,448.5               | -57.2        | 60.8         | 399,145.57          | 752,214.49         | 32° 5' 41.096 N | 103° 31' 8.032 W |



## Survey Report - Geographic



Company: COG Operating, LLC  
Project: Lea County, NM  
Site: Sec 25, T25S, R33E  
Well: Dominator 25 Federal #601H  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
TVD Reference: WELL @ 3352.0usft (Noram #21)  
MD Reference: WELL @ 3352.0usft (Noram #21)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
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        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 4,475.0               | 1.55            | 125.05      | 4,473.5               | -57.6        | 61.3         | 399,145.22          | 752,215.00         | 32° 5' 41.092 N | 103° 31' 8.026 W |
| 4,500.0               | 1.95            | 124.02      | 4,498.4               | -58.0        | 61.9         | 399,144.78          | 752,215.63         | 32° 5' 41.088 N | 103° 31' 8.018 W |
| 4,525.0               | 2.19            | 127.61      | 4,523.4               | -58.5        | 62.7         | 399,144.26          | 752,216.36         | 32° 5' 41.083 N | 103° 31' 8.010 W |
| 4,550.0               | 2.34            | 135.37      | 4,548.4               | -59.2        | 63.4         | 399,143.60          | 752,217.10         | 32° 5' 41.076 N | 103° 31' 8.001 W |
| 4,575.0               | 2.51            | 144.92      | 4,573.4               | -60.0        | 64.1         | 399,142.79          | 752,217.77         | 32° 5' 41.068 N | 103° 31' 7.994 W |
| 4,600.0               | 2.51            | 146.56      | 4,598.4               | -60.9        | 64.7         | 399,141.88          | 752,218.39         | 32° 5' 41.059 N | 103° 31' 7.987 W |
| 4,625.0               | 2.55            | 144.07      | 4,623.3               | -61.8        | 65.3         | 399,140.98          | 752,219.01         | 32° 5' 41.050 N | 103° 31' 7.979 W |
| 4,650.0               | 1.97            | 155.84      | 4,648.3               | -62.6        | 65.8         | 399,140.13          | 752,219.52         | 32° 5' 41.042 N | 103° 31' 7.974 W |
| 4,675.0               | 1.77            | 162.98      | 4,673.3               | -63.4        | 66.1         | 399,139.37          | 752,219.80         | 32° 5' 41.034 N | 103° 31' 7.970 W |
| 4,700.0               | 1.68            | 163.01      | 4,698.3               | -64.1        | 66.3         | 399,138.65          | 752,220.02         | 32° 5' 41.027 N | 103° 31' 7.968 W |
| 4,725.0               | 1.61            | 158.03      | 4,723.3               | -64.8        | 66.6         | 399,137.98          | 752,220.26         | 32° 5' 41.020 N | 103° 31' 7.965 W |
| 4,750.0               | 1.33            | 137.56      | 4,748.3               | -65.3        | 66.9         | 399,137.44          | 752,220.59         | 32° 5' 41.015 N | 103° 31' 7.961 W |
| 4,775.0               | 1.39            | 131.39      | 4,773.3               | -65.8        | 67.3         | 399,137.02          | 752,221.01         | 32° 5' 41.011 N | 103° 31' 7.956 W |
| 4,800.0               | 1.51            | 127.77      | 4,798.3               | -66.2        | 67.8         | 399,136.62          | 752,221.50         | 32° 5' 41.007 N | 103° 31' 7.951 W |
| 4,825.0               | 1.76            | 129.01      | 4,823.2               | -66.6        | 68.4         | 399,136.18          | 752,222.06         | 32° 5' 41.002 N | 103° 31' 7.944 W |
| 4,850.0               | 2.20            | 146.88      | 4,848.2               | -67.2        | 68.9         | 399,135.53          | 752,222.62         | 32° 5' 40.996 N | 103° 31' 7.938 W |
| 4,875.0               | 2.50            | 150.98      | 4,873.2               | -68.1        | 69.5         | 399,134.66          | 752,223.15         | 32° 5' 40.987 N | 103° 31' 7.932 W |
| 4,900.0               | 2.65            | 150.43      | 4,898.2               | -69.1        | 70.0         | 399,133.68          | 752,223.70         | 32° 5' 40.977 N | 103° 31' 7.926 W |
| 4,925.0               | 2.48            | 153.79      | 4,923.2               | -70.1        | 70.5         | 399,132.69          | 752,224.22         | 32° 5' 40.968 N | 103° 31' 7.920 W |
| 4,950.0               | 2.19            | 163.92      | 4,948.1               | -71.0        | 70.9         | 399,131.74          | 752,224.59         | 32° 5' 40.958 N | 103° 31' 7.915 W |
| 4,975.0               | 1.86            | 176.33      | 4,973.1               | -71.9        | 71.1         | 399,130.88          | 752,224.75         | 32° 5' 40.950 N | 103° 31' 7.914 W |
| 5,000.0               | 1.73            | 177.15      | 4,998.1               | -72.7        | 71.1         | 399,130.10          | 752,224.80         | 32° 5' 40.942 N | 103° 31' 7.913 W |
| 5,025.0               | 1.73            | 181.14      | 5,023.1               | -73.4        | 71.1         | 399,129.34          | 752,224.81         | 32° 5' 40.934 N | 103° 31' 7.913 W |
| 5,050.0               | 1.71            | 180.63      | 5,048.1               | -74.2        | 71.1         | 399,128.59          | 752,224.79         | 32° 5' 40.927 N | 103° 31' 7.913 W |
| 5,075.0               | 1.72            | 179.53      | 5,073.1               | -74.9        | 71.1         | 399,127.85          | 752,224.79         | 32° 5' 40.920 N | 103° 31' 7.913 W |
| 5,100.0               | 1.71            | 179.20      | 5,098.1               | -75.7        | 71.1         | 399,127.10          | 752,224.80         | 32° 5' 40.912 N | 103° 31' 7.913 W |
| 5,125.0               | 1.72            | 179.59      | 5,123.1               | -76.4        | 71.1         | 399,126.35          | 752,224.81         | 32° 5' 40.905 N | 103° 31' 7.913 W |
| 5,150.0               | 1.73            | 180.33      | 5,148.0               | -77.2        | 71.1         | 399,125.60          | 752,224.81         | 32° 5' 40.897 N | 103° 31' 7.913 W |
| 5,175.0               | 1.75            | 186.39      | 5,173.0               | -77.9        | 71.1         | 399,124.84          | 752,224.77         | 32° 5' 40.890 N | 103° 31' 7.914 W |
| 5,200.0               | 1.80            | 187.09      | 5,198.0               | -78.7        | 71.0         | 399,124.07          | 752,224.67         | 32° 5' 40.882 N | 103° 31' 7.915 W |
| 5,225.0               | 1.82            | 187.49      | 5,223.0               | -79.5        | 70.9         | 399,123.29          | 752,224.57         | 32° 5' 40.874 N | 103° 31' 7.916 W |
| 5,250.0               | 1.85            | 189.27      | 5,248.0               | -80.3        | 70.8         | 399,122.50          | 752,224.46         | 32° 5' 40.867 N | 103° 31' 7.918 W |
| 5,275.0               | 1.85            | 185.07      | 5,273.0               | -81.1        | 70.7         | 399,121.70          | 752,224.36         | 32° 5' 40.859 N | 103° 31' 7.919 W |
| 5,300.0               | 1.87            | 187.48      | 5,298.0               | -81.9        | 70.6         | 399,120.89          | 752,224.27         | 32° 5' 40.851 N | 103° 31' 7.920 W |
| 5,325.0               | 1.88            | 190.59      | 5,323.0               | -82.7        | 70.4         | 399,120.08          | 752,224.14         | 32° 5' 40.843 N | 103° 31' 7.922 W |
| 5,350.0               | 1.90            | 187.92      | 5,347.9               | -83.5        | 70.3         | 399,119.27          | 752,224.01         | 32° 5' 40.835 N | 103° 31' 7.923 W |
| 5,375.0               | 1.86            | 189.93      | 5,372.9               | -84.3        | 70.2         | 399,118.46          | 752,223.88         | 32° 5' 40.827 N | 103° 31' 7.925 W |
| 5,400.0               | 1.92            | 187.86      | 5,397.9               | -85.1        | 70.1         | 399,117.64          | 752,223.75         | 32° 5' 40.819 N | 103° 31' 7.926 W |
| 5,425.0               | 1.85            | 188.89      | 5,422.9               | -86.0        | 69.9         | 399,116.83          | 752,223.63         | 32° 5' 40.811 N | 103° 31' 7.928 W |
| 5,450.0               | 1.94            | 190.60      | 5,447.9               | -86.8        | 69.8         | 399,116.02          | 752,223.49         | 32° 5' 40.803 N | 103° 31' 7.930 W |
| 5,475.0               | 1.86            | 191.47      | 5,472.9               | -87.6        | 69.6         | 399,115.20          | 752,223.33         | 32° 5' 40.795 N | 103° 31' 7.931 W |
| 5,500.0               | 1.83            | 190.32      | 5,497.9               | -88.4        | 69.5         | 399,114.41          | 752,223.18         | 32° 5' 40.787 N | 103° 31' 7.933 W |
| 5,525.0               | 1.79            | 190.59      | 5,522.8               | -89.1        | 69.3         | 399,113.64          | 752,223.04         | 32° 5' 40.779 N | 103° 31' 7.935 W |
| 5,550.0               | 1.61            | 189.94      | 5,547.8               | -89.9        | 69.2         | 399,112.91          | 752,222.91         | 32° 5' 40.772 N | 103° 31' 7.937 W |
| 5,575.0               | 1.43            | 187.74      | 5,572.8               | -90.5        | 69.1         | 399,112.25          | 752,222.80         | 32° 5' 40.765 N | 103° 31' 7.938 W |
| 5,600.0               | 0.68            | 184.16      | 5,597.8               | -91.0        | 69.1         | 399,111.79          | 752,222.75         | 32° 5' 40.761 N | 103° 31' 7.939 W |
| 5,625.0               | 0.28            | 160.92      | 5,622.8               | -91.2        | 69.1         | 399,111.59          | 752,222.76         | 32° 5' 40.759 N | 103° 31' 7.938 W |
| 5,650.0               | 0.18            | 106.14      | 5,647.8               | -91.3        | 69.1         | 399,111.52          | 752,222.82         | 32° 5' 40.758 N | 103° 31' 7.938 W |
| 5,675.0               | 0.17            | 43.47       | 5,672.8               | -91.2        | 69.2         | 399,111.53          | 752,222.88         | 32° 5' 40.758 N | 103° 31' 7.937 W |
| 5,700.0               | 0.33            | 14.27       | 5,697.8               | -91.2        | 69.2         | 399,111.63          | 752,222.92         | 32° 5' 40.759 N | 103° 31' 7.937 W |
| 5,725.0               | 0.33            | 0.30        | 5,722.8               | -91.0        | 69.2         | 399,111.77          | 752,222.94         | 32° 5' 40.761 N | 103° 31' 7.936 W |
| 5,750.0               | 0.41            | 16.73       | 5,747.8               | -90.9        | 69.3         | 399,111.93          | 752,222.97         | 32° 5' 40.762 N | 103° 31' 7.936 W |
| 5,775.0               | 0.36            | 14.00       | 5,772.8               | -90.7        | 69.3         | 399,112.09          | 752,223.01         | 32° 5' 40.764 N | 103° 31' 7.935 W |
| 5,800.0               | 0.30            | 11.92       | 5,797.8               | -90.6        | 69.3         | 399,112.23          | 752,223.05         | 32° 5' 40.765 N | 103° 31' 7.935 W |
| 5,825.0               | 0.26            | 15.39       | 5,822.8               | -90.4        | 69.4         | 399,112.35          | 752,223.08         | 32° 5' 40.766 N | 103° 31' 7.935 W |



## Survey Report - Geographic



Company: COG Operating, LLC  
Project: Lea County, NM  
Site: Sec 25, T25S, R33E  
Well: Dominator 25 Federal #601H  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
TVD Reference: WELL @ 3352.0usft (Noram #21)  
MD Reference: WELL @ 3352.0usft (Noram #21)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Single User Db

## Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude        | Longitude        |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-----------------|------------------|
| 5,850.0                     | 0.27               | 17.70          | 5,847.8                     | -90.3           | 69.4            | 399,112.46                | 752,223.11               | 32° 5' 40.767 N | 103° 31' 7.934 W |
| 5,875.0                     | 0.29               | 18.80          | 5,872.8                     | -90.2           | 69.4            | 399,112.58                | 752,223.15               | 32° 5' 40.769 N | 103° 31' 7.934 W |
| 5,900.0                     | 0.24               | 7.82           | 5,897.8                     | -90.1           | 69.5            | 399,112.69                | 752,223.17               | 32° 5' 40.770 N | 103° 31' 7.934 W |
| 5,925.0                     | 0.30               | 356.00         | 5,922.8                     | -90.0           | 69.5            | 399,112.81                | 752,223.18               | 32° 5' 40.771 N | 103° 31' 7.933 W |
| 5,950.0                     | 0.34               | 4.05           | 5,947.8                     | -89.8           | 69.5            | 399,112.95                | 752,223.18               | 32° 5' 40.772 N | 103° 31' 7.933 W |
| 5,975.0                     | 0.30               | 5.20           | 5,972.8                     | -89.7           | 69.5            | 399,113.09                | 752,223.19               | 32° 5' 40.774 N | 103° 31' 7.933 W |
| 6,000.0                     | 0.29               | 20.55          | 5,997.8                     | -89.6           | 69.5            | 399,113.21                | 752,223.22               | 32° 5' 40.775 N | 103° 31' 7.933 W |
| 6,025.0                     | 0.36               | 15.91          | 6,022.8                     | -89.4           | 69.6            | 399,113.35                | 752,223.26               | 32° 5' 40.776 N | 103° 31' 7.932 W |
| 6,050.0                     | 0.32               | 7.95           | 6,047.8                     | -89.3           | 69.6            | 399,113.49                | 752,223.29               | 32° 5' 40.778 N | 103° 31' 7.932 W |
| 6,075.0                     | 0.36               | 6.43           | 6,072.8                     | -89.1           | 69.6            | 399,113.64                | 752,223.31               | 32° 5' 40.779 N | 103° 31' 7.932 W |
| 6,100.0                     | 0.34               | 8.58           | 6,097.8                     | -89.0           | 69.6            | 399,113.79                | 752,223.33               | 32° 5' 40.781 N | 103° 31' 7.932 W |
| 6,125.0                     | 0.30               | 4.39           | 6,122.8                     | -88.9           | 69.6            | 399,113.93                | 752,223.35               | 32° 5' 40.782 N | 103° 31' 7.931 W |
| 6,150.0                     | 0.13               | 334.96         | 6,147.8                     | -88.8           | 69.6            | 399,114.02                | 752,223.34               | 32° 5' 40.783 N | 103° 31' 7.931 W |
| 6,175.0                     | 0.22               | 197.70         | 6,172.8                     | -88.8           | 69.6            | 399,114.00                | 752,223.31               | 32° 5' 40.783 N | 103° 31' 7.932 W |
| 6,200.0                     | 0.37               | 194.27         | 6,197.8                     | -88.9           | 69.6            | 399,113.87                | 752,223.28               | 32° 5' 40.781 N | 103° 31' 7.932 W |
| 6,225.0                     | 0.42               | 197.71         | 6,222.8                     | -89.1           | 69.5            | 399,113.71                | 752,223.23               | 32° 5' 40.780 N | 103° 31' 7.933 W |
| 6,250.0                     | 0.65               | 189.61         | 6,247.8                     | -89.3           | 69.5            | 399,113.48                | 752,223.18               | 32° 5' 40.778 N | 103° 31' 7.933 W |
| 6,275.0                     | 0.70               | 193.56         | 6,272.8                     | -89.6           | 69.4            | 399,113.19                | 752,223.12               | 32° 5' 40.775 N | 103° 31' 7.934 W |
| 6,300.0                     | 0.69               | 190.81         | 6,297.8                     | -89.9           | 69.4            | 399,112.90                | 752,223.05               | 32° 5' 40.772 N | 103° 31' 7.935 W |
| 6,325.0                     | 0.64               | 187.28         | 6,322.8                     | -90.2           | 69.3            | 399,112.61                | 752,223.01               | 32° 5' 40.769 N | 103° 31' 7.935 W |
| 6,350.0                     | 0.74               | 196.41         | 6,347.8                     | -90.5           | 69.2            | 399,112.32                | 752,222.95               | 32° 5' 40.766 N | 103° 31' 7.936 W |
| 6,375.0                     | 0.67               | 195.78         | 6,372.8                     | -90.8           | 69.2            | 399,112.02                | 752,222.86               | 32° 5' 40.763 N | 103° 31' 7.937 W |
| 6,400.0                     | 0.68               | 189.14         | 6,397.8                     | -91.0           | 69.1            | 399,111.73                | 752,222.80               | 32° 5' 40.760 N | 103° 31' 7.938 W |
| 6,425.0                     | 0.71               | 189.06         | 6,422.8                     | -91.3           | 69.1            | 399,111.43                | 752,222.75               | 32° 5' 40.757 N | 103° 31' 7.939 W |
| 6,450.0                     | 0.66               | 168.02         | 6,447.8                     | -91.6           | 69.1            | 399,111.14                | 752,222.75               | 32° 5' 40.754 N | 103° 31' 7.939 W |
| 6,475.0                     | 0.66               | 148.89         | 6,472.8                     | -91.9           | 69.2            | 399,110.88                | 752,222.86               | 32° 5' 40.752 N | 103° 31' 7.937 W |
| 6,500.0                     | 0.62               | 156.52         | 6,497.8                     | -92.2           | 69.3            | 399,110.63                | 752,222.99               | 32° 5' 40.749 N | 103° 31' 7.936 W |
| 6,525.0                     | 0.62               | 150.84         | 6,522.8                     | -92.4           | 69.4            | 399,110.39                | 752,223.11               | 32° 5' 40.747 N | 103° 31' 7.935 W |
| 6,550.0                     | 0.62               | 154.57         | 6,547.8                     | -92.6           | 69.5            | 399,110.15                | 752,223.23               | 32° 5' 40.745 N | 103° 31' 7.933 W |
| 6,575.0                     | 0.70               | 146.84         | 6,572.8                     | -92.9           | 69.7            | 399,109.90                | 752,223.37               | 32° 5' 40.742 N | 103° 31' 7.931 W |
| 6,600.0                     | 0.71               | 144.02         | 6,597.8                     | -93.1           | 69.9            | 399,109.64                | 752,223.55               | 32° 5' 40.740 N | 103° 31' 7.929 W |
| 6,625.0                     | 0.69               | 146.77         | 6,622.8                     | -93.4           | 70.0            | 399,109.39                | 752,223.72               | 32° 5' 40.737 N | 103° 31' 7.927 W |
| 6,650.0                     | 0.65               | 152.50         | 6,647.8                     | -93.6           | 70.2            | 399,109.14                | 752,223.87               | 32° 5' 40.735 N | 103° 31' 7.926 W |
| 6,675.0                     | 0.65               | 152.90         | 6,672.8                     | -93.9           | 70.3            | 399,108.89                | 752,224.00               | 32° 5' 40.732 N | 103° 31' 7.924 W |
| 6,700.0                     | 0.64               | 150.06         | 6,697.8                     | -94.1           | 70.4            | 399,108.64                | 752,224.13               | 32° 5' 40.730 N | 103° 31' 7.923 W |
| 6,725.0                     | 0.65               | 157.38         | 6,722.8                     | -94.4           | 70.6            | 399,108.39                | 752,224.26               | 32° 5' 40.727 N | 103° 31' 7.921 W |
| 6,750.0                     | 0.62               | 156.57         | 6,747.8                     | -94.6           | 70.7            | 399,108.14                | 752,224.37               | 32° 5' 40.725 N | 103° 31' 7.920 W |
| 6,775.0                     | 0.60               | 158.68         | 6,772.8                     | -94.9           | 70.8            | 399,107.89                | 752,224.47               | 32° 5' 40.722 N | 103° 31' 7.919 W |
| 6,800.0                     | 0.61               | 153.33         | 6,797.8                     | -95.1           | 70.9            | 399,107.65                | 752,224.57               | 32° 5' 40.720 N | 103° 31' 7.918 W |
| 6,825.0                     | 0.63               | 154.83         | 6,822.8                     | -95.4           | 71.0            | 399,107.41                | 752,224.69               | 32° 5' 40.717 N | 103° 31' 7.916 W |
| 6,850.0                     | 0.65               | 151.40         | 6,847.8                     | -95.6           | 71.1            | 399,107.16                | 752,224.82               | 32° 5' 40.715 N | 103° 31' 7.915 W |
| 6,875.0                     | 0.59               | 150.58         | 6,872.8                     | -95.9           | 71.3            | 399,106.92                | 752,224.95               | 32° 5' 40.712 N | 103° 31' 7.913 W |
| 6,900.0                     | 0.63               | 152.97         | 6,897.8                     | -96.1           | 71.4            | 399,106.69                | 752,225.08               | 32° 5' 40.710 N | 103° 31' 7.912 W |
| 6,925.0                     | 0.95               | 160.64         | 6,922.8                     | -96.4           | 71.5            | 399,106.37                | 752,225.21               | 32° 5' 40.707 N | 103° 31' 7.910 W |
| 6,950.0                     | 1.40               | 167.29         | 6,947.8                     | -96.9           | 71.6            | 399,105.87                | 752,225.34               | 32° 5' 40.702 N | 103° 31' 7.909 W |
| 6,975.0                     | 1.46               | 169.88         | 6,972.8                     | -97.5           | 71.8            | 399,105.26                | 752,225.47               | 32° 5' 40.696 N | 103° 31' 7.908 W |
| 7,000.0                     | 1.49               | 163.09         | 6,997.7                     | -98.1           | 71.9            | 399,104.64                | 752,225.62               | 32° 5' 40.690 N | 103° 31' 7.906 W |
| 7,025.0                     | 1.46               | 163.46         | 7,022.7                     | -98.8           | 72.1            | 399,104.02                | 752,225.80               | 32° 5' 40.684 N | 103° 31' 7.904 W |
| 7,050.0                     | 1.52               | 169.79         | 7,047.7                     | -99.4           | 72.3            | 399,103.39                | 752,225.95               | 32° 5' 40.677 N | 103° 31' 7.902 W |
| 7,075.0                     | 1.54               | 161.64         | 7,072.7                     | -100.0          | 72.4            | 399,102.74                | 752,226.12               | 32° 5' 40.671 N | 103° 31' 7.900 W |
| 7,100.0                     | 1.48               | 166.13         | 7,097.7                     | -100.7          | 72.6            | 399,102.11                | 752,226.30               | 32° 5' 40.665 N | 103° 31' 7.898 W |
| 7,125.0                     | 1.48               | 168.15         | 7,122.7                     | -101.3          | 72.7            | 399,101.48                | 752,226.44               | 32° 5' 40.659 N | 103° 31' 7.897 W |
| 7,150.0                     | 1.51               | 164.70         | 7,147.7                     | -101.9          | 72.9            | 399,100.85                | 752,226.60               | 32° 5' 40.652 N | 103° 31' 7.895 W |
| 7,175.0                     | 1.43               | 162.03         | 7,172.7                     | -102.5          | 73.1            | 399,100.24                | 752,226.78               | 32° 5' 40.646 N | 103° 31' 7.893 W |
| 7,200.0                     | 1.38               | 169.12         | 7,197.7                     | -103.1          | 73.2            | 399,099.64                | 752,226.93               | 32° 5' 40.640 N | 103° 31' 7.891 W |

Company: COG Operating, LLC  
 Project: Lea County, NM  
 Site: Sec 25, T25S, R33E  
 Well: Dominator 25 Federal #601H  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
 TVD Reference: WELL @ 3352.0usft (Noram #21)  
 MD Reference: WELL @ 3352.0usft (Noram #21)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 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        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 7,225.0               | 1.39            | 166.92      | 7,222.7               | -103.7       | 73.4         | 399,099.05          | 752,227.06         | 32° 5' 40.634 N | 103° 31' 7.890 W |
| 7,250.0               | 1.41            | 169.22      | 7,247.7               | -104.3       | 73.5         | 399,098.45          | 752,227.18         | 32° 5' 40.629 N | 103° 31' 7.888 W |
| 7,275.0               | 1.47            | 169.75      | 7,272.7               | -104.9       | 73.6         | 399,097.84          | 752,227.30         | 32° 5' 40.622 N | 103° 31' 7.887 W |
| 7,300.0               | 1.38            | 167.85      | 7,297.7               | -105.6       | 73.7         | 399,097.23          | 752,227.42         | 32° 5' 40.616 N | 103° 31' 7.886 W |
| 7,325.0               | 1.46            | 169.79      | 7,322.6               | -106.2       | 73.8         | 399,096.62          | 752,227.54         | 32° 5' 40.610 N | 103° 31' 7.884 W |
| 7,350.0               | 1.44            | 164.38      | 7,347.6               | -106.8       | 74.0         | 399,096.00          | 752,227.68         | 32° 5' 40.604 N | 103° 31' 7.883 W |
| 7,375.0               | 1.45            | 166.76      | 7,372.6               | -107.4       | 74.1         | 399,095.39          | 752,227.84         | 32° 5' 40.598 N | 103° 31' 7.881 W |
| 7,400.0               | 1.44            | 167.23      | 7,397.6               | -108.0       | 74.3         | 399,094.78          | 752,227.98         | 32° 5' 40.592 N | 103° 31' 7.879 W |
| 7,425.0               | 1.49            | 167.38      | 7,422.6               | -108.6       | 74.4         | 399,094.15          | 752,228.12         | 32° 5' 40.586 N | 103° 31' 7.878 W |
| 7,450.0               | 1.46            | 166.25      | 7,447.6               | -109.3       | 74.6         | 399,093.53          | 752,228.27         | 32° 5' 40.580 N | 103° 31' 7.876 W |
| 7,475.0               | 1.51            | 170.56      | 7,472.6               | -109.9       | 74.7         | 399,092.89          | 752,228.40         | 32° 5' 40.573 N | 103° 31' 7.875 W |
| 7,500.0               | 1.50            | 169.00      | 7,497.6               | -110.5       | 74.8         | 399,092.25          | 752,228.51         | 32° 5' 40.567 N | 103° 31' 7.873 W |
| 7,525.0               | 1.56            | 170.34      | 7,522.6               | -111.2       | 74.9         | 399,091.59          | 752,228.63         | 32° 5' 40.561 N | 103° 31' 7.872 W |
| 7,550.0               | 1.64            | 171.82      | 7,547.6               | -111.9       | 75.0         | 399,090.90          | 752,228.74         | 32° 5' 40.554 N | 103° 31' 7.871 W |
| 7,575.0               | 1.59            | 167.78      | 7,572.6               | -112.6       | 75.2         | 399,090.21          | 752,228.86         | 32° 5' 40.547 N | 103° 31' 7.869 W |
| 7,600.0               | 1.52            | 172.36      | 7,597.5               | -113.2       | 75.3         | 399,089.54          | 752,228.98         | 32° 5' 40.540 N | 103° 31' 7.868 W |
| 7,625.0               | 1.54            | 172.61      | 7,622.5               | -113.9       | 75.4         | 399,088.88          | 752,229.07         | 32° 5' 40.534 N | 103° 31' 7.867 W |
| 7,650.0               | 1.55            | 173.26      | 7,647.5               | -114.6       | 75.5         | 399,088.21          | 752,229.15         | 32° 5' 40.527 N | 103° 31' 7.866 W |
| 7,675.0               | 1.60            | 174.31      | 7,672.5               | -115.3       | 75.5         | 399,087.53          | 752,229.23         | 32° 5' 40.520 N | 103° 31' 7.865 W |
| 7,700.0               | 1.56            | 176.05      | 7,697.5               | -115.9       | 75.6         | 399,086.84          | 752,229.28         | 32° 5' 40.513 N | 103° 31' 7.865 W |
| 7,725.0               | 1.58            | 172.88      | 7,722.5               | -116.6       | 75.7         | 399,086.16          | 752,229.35         | 32° 5' 40.507 N | 103° 31' 7.864 W |
| 7,750.0               | 1.60            | 173.69      | 7,747.5               | -117.3       | 75.7         | 399,085.47          | 752,229.43         | 32° 5' 40.500 N | 103° 31' 7.863 W |
| 7,775.0               | 1.64            | 169.18      | 7,772.5               | -118.0       | 75.8         | 399,084.77          | 752,229.54         | 32° 5' 40.493 N | 103° 31' 7.862 W |
| 7,800.0               | 1.61            | 175.68      | 7,797.5               | -118.7       | 75.9         | 399,084.07          | 752,229.63         | 32° 5' 40.486 N | 103° 31' 7.861 W |
| 7,825.0               | 1.61            | 178.87      | 7,822.5               | -119.4       | 76.0         | 399,083.37          | 752,229.66         | 32° 5' 40.479 N | 103° 31' 7.861 W |
| 7,850.0               | 1.58            | 184.56      | 7,847.5               | -120.1       | 75.9         | 399,082.67          | 752,229.64         | 32° 5' 40.472 N | 103° 31' 7.861 W |
| 7,875.0               | 1.68            | 182.53      | 7,872.4               | -120.8       | 75.9         | 399,081.96          | 752,229.60         | 32° 5' 40.465 N | 103° 31' 7.862 W |
| 7,900.0               | 1.63            | 184.56      | 7,897.4               | -121.5       | 75.9         | 399,081.24          | 752,229.56         | 32° 5' 40.458 N | 103° 31' 7.862 W |
| 7,925.0               | 1.52            | 186.51      | 7,922.4               | -122.2       | 75.8         | 399,080.56          | 752,229.49         | 32° 5' 40.451 N | 103° 31' 7.863 W |
| 7,950.0               | 1.47            | 187.42      | 7,947.4               | -122.9       | 75.7         | 399,079.91          | 752,229.41         | 32° 5' 40.445 N | 103° 31' 7.864 W |
| 7,975.0               | 1.47            | 187.37      | 7,972.4               | -123.5       | 75.6         | 399,079.28          | 752,229.33         | 32° 5' 40.439 N | 103° 31' 7.865 W |
| 8,000.0               | 1.46            | 184.89      | 7,997.4               | -124.1       | 75.6         | 399,078.64          | 752,229.26         | 32° 5' 40.432 N | 103° 31' 7.866 W |
| 8,025.0               | 1.56            | 183.18      | 8,022.4               | -124.8       | 75.5         | 399,077.98          | 752,229.21         | 32° 5' 40.426 N | 103° 31' 7.866 W |
| 8,050.0               | 1.50            | 185.17      | 8,047.4               | -125.5       | 75.5         | 399,077.32          | 752,229.17         | 32° 5' 40.419 N | 103° 31' 7.867 W |
| 8,075.0               | 1.20            | 152.84      | 8,072.4               | -126.0       | 75.6         | 399,076.76          | 752,229.26         | 32° 5' 40.414 N | 103° 31' 7.868 W |
| 8,100.0               | 1.20            | 136.98      | 8,097.4               | -126.4       | 75.9         | 399,076.34          | 752,229.55         | 32° 5' 40.409 N | 103° 31' 7.863 W |
| 8,125.0               | 1.09            | 137.91      | 8,122.4               | -126.8       | 76.2         | 399,075.97          | 752,229.89         | 32° 5' 40.406 N | 103° 31' 7.859 W |
| 8,150.0               | 1.05            | 131.62      | 8,147.4               | -127.1       | 76.5         | 399,075.64          | 752,230.22         | 32° 5' 40.403 N | 103° 31' 7.855 W |
| 8,175.0               | 1.05            | 132.37      | 8,172.4               | -127.5       | 76.9         | 399,075.33          | 752,230.56         | 32° 5' 40.399 N | 103° 31' 7.851 W |
| 8,200.0               | 1.02            | 135.44      | 8,197.4               | -127.8       | 77.2         | 399,075.02          | 752,230.89         | 32° 5' 40.396 N | 103° 31' 7.847 W |
| 8,225.0               | 1.14            | 133.78      | 8,222.3               | -128.1       | 77.5         | 399,074.69          | 752,231.22         | 32° 5' 40.393 N | 103° 31' 7.843 W |
| 8,250.0               | 1.06            | 133.33      | 8,247.3               | -128.4       | 77.9         | 399,074.36          | 752,231.57         | 32° 5' 40.390 N | 103° 31' 7.839 W |
| 8,275.0               | 1.09            | 135.83      | 8,272.3               | -128.8       | 78.2         | 399,074.03          | 752,231.91         | 32° 5' 40.386 N | 103° 31' 7.835 W |
| 8,300.0               | 1.11            | 135.87      | 8,297.3               | -129.1       | 78.5         | 399,073.68          | 752,232.24         | 32° 5' 40.383 N | 103° 31' 7.832 W |
| 8,325.0               | 1.11            | 137.34      | 8,322.3               | -129.5       | 78.9         | 399,073.33          | 752,232.57         | 32° 5' 40.380 N | 103° 31' 7.828 W |
| 8,350.0               | 1.09            | 136.26      | 8,347.3               | -129.8       | 79.2         | 399,072.98          | 752,232.90         | 32° 5' 40.376 N | 103° 31' 7.824 W |
| 8,375.0               | 1.04            | 136.31      | 8,372.3               | -130.1       | 79.5         | 399,072.65          | 752,233.22         | 32° 5' 40.373 N | 103° 31' 7.820 W |
| 8,400.0               | 1.01            | 136.19      | 8,397.3               | -130.5       | 79.8         | 399,072.32          | 752,233.53         | 32° 5' 40.369 N | 103° 31' 7.817 W |
| 8,425.0               | 1.06            | 138.42      | 8,422.3               | -130.8       | 80.1         | 399,071.99          | 752,233.84         | 32° 5' 40.366 N | 103° 31' 7.813 W |
| 8,450.0               | 1.03            | 138.90      | 8,447.3               | -131.1       | 80.4         | 399,071.65          | 752,234.14         | 32° 5' 40.363 N | 103° 31' 7.810 W |
| 8,475.0               | 1.07            | 141.93      | 8,472.3               | -131.5       | 80.7         | 399,071.30          | 752,234.43         | 32° 5' 40.359 N | 103° 31' 7.806 W |
| 8,500.0               | 1.03            | 141.88      | 8,497.3               | -131.8       | 81.0         | 399,070.94          | 752,234.71         | 32° 5' 40.356 N | 103° 31' 7.803 W |
| 8,525.0               | 1.01            | 144.73      | 8,522.3               | -132.2       | 81.3         | 399,070.58          | 752,234.98         | 32° 5' 40.352 N | 103° 31' 7.800 W |
| 8,550.0               | 1.07            | 146.60      | 8,547.3               | -132.6       | 81.5         | 399,070.20          | 752,235.23         | 32° 5' 40.348 N | 103° 31' 7.797 W |
| 8,575.0               | 0.95            | 147.00      | 8,572.3               | -132.9       | 81.8         | 399,069.84          | 752,235.48         | 32° 5' 40.345 N | 103° 31' 7.794 W |



## Survey Report - Geographic



Company: COG Operating, LLC  
Project: Lea County, NM  
Site: Sec 25, T25S, R33E  
Well: Dominator 25 Federal #601H  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
TVD Reference: WELL @ 3352.0usft (Noram #21)  
MD Reference: WELL @ 3352.0usft (Noram #21)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Single User Db

## Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude        | Longitude        |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-----------------|------------------|
| 8,600.0                     | 1.01               | 146.91         | 8,597.3                     | -133.3          | 82.0            | 399,069.48                | 752,235.71               | 32° 5' 40.341 N | 103° 31' 7.792 W |
| 8,625.0                     | 1.03               | 152.96         | 8,622.3                     | -133.7          | 82.2            | 399,069.09                | 752,235.93               | 32° 5' 40.337 N | 103° 31' 7.789 W |
| 8,650.0                     | 0.97               | 153.31         | 8,647.3                     | -134.1          | 82.4            | 399,068.70                | 752,236.13               | 32° 5' 40.333 N | 103° 31' 7.787 W |
| 8,675.0                     | 0.87               | 157.91         | 8,672.3                     | -134.4          | 82.6            | 399,068.34                | 752,236.29               | 32° 5' 40.330 N | 103° 31' 7.785 W |
| 8,700.0                     | 0.85               | 155.56         | 8,697.3                     | -134.8          | 82.7            | 399,067.99                | 752,236.44               | 32° 5' 40.326 N | 103° 31' 7.783 W |
| 8,725.0                     | 0.90               | 164.34         | 8,722.3                     | -135.1          | 82.9            | 399,067.64                | 752,236.57               | 32° 5' 40.323 N | 103° 31' 7.782 W |
| 8,750.0                     | 0.92               | 158.15         | 8,747.3                     | -135.5          | 83.0            | 399,067.26                | 752,236.70               | 32° 5' 40.319 N | 103° 31' 7.780 W |
| 8,775.0                     | 0.83               | 159.43         | 8,772.3                     | -135.9          | 83.1            | 399,066.90                | 752,236.84               | 32° 5' 40.316 N | 103° 31' 7.779 W |
| 8,800.0                     | 0.82               | 167.51         | 8,797.3                     | -136.2          | 83.2            | 399,066.56                | 752,236.94               | 32° 5' 40.312 N | 103° 31' 7.778 W |
| 8,825.0                     | 0.94               | 159.12         | 8,822.3                     | -136.6          | 83.4            | 399,066.19                | 752,237.05               | 32° 5' 40.309 N | 103° 31' 7.776 W |
| 8,850.0                     | 0.86               | 165.62         | 8,847.3                     | -137.0          | 83.5            | 399,065.82                | 752,237.17               | 32° 5' 40.305 N | 103° 31' 7.775 W |
| 8,875.0                     | 0.85               | 163.01         | 8,872.2                     | -137.3          | 83.6            | 399,065.46                | 752,237.27               | 32° 5' 40.301 N | 103° 31' 7.774 W |
| 8,900.0                     | 0.89               | 166.19         | 8,897.2                     | -137.7          | 83.7            | 399,065.10                | 752,237.37               | 32° 5' 40.298 N | 103° 31' 7.773 W |
| 8,925.0                     | 0.84               | 167.69         | 8,922.2                     | -138.1          | 83.8            | 399,064.73                | 752,237.46               | 32° 5' 40.294 N | 103° 31' 7.772 W |
| 8,950.0                     | 0.93               | 166.64         | 8,947.2                     | -138.4          | 83.8            | 399,064.35                | 752,237.54               | 32° 5' 40.290 N | 103° 31' 7.771 W |
| 8,975.0                     | 0.86               | 174.23         | 8,972.2                     | -138.8          | 83.9            | 399,063.97                | 752,237.61               | 32° 5' 40.287 N | 103° 31' 7.770 W |
| 9,000.0                     | 0.75               | 175.60         | 8,997.2                     | -139.2          | 83.9            | 399,063.62                | 752,237.64               | 32° 5' 40.283 N | 103° 31' 7.770 W |
| 9,025.0                     | 0.81               | 172.55         | 9,022.2                     | -139.5          | 84.0            | 399,063.28                | 752,237.68               | 32° 5' 40.280 N | 103° 31' 7.769 W |
| 9,050.0                     | 0.84               | 179.35         | 9,047.2                     | -139.9          | 84.0            | 399,062.92                | 752,237.70               | 32° 5' 40.276 N | 103° 31' 7.769 W |
| 9,075.0                     | 0.82               | 174.41         | 9,072.2                     | -140.2          | 84.0            | 399,062.56                | 752,237.72               | 32° 5' 40.273 N | 103° 31' 7.769 W |
| 9,100.0                     | 0.77               | 186.63         | 9,097.2                     | -140.6          | 84.0            | 399,062.22                | 752,237.72               | 32° 5' 40.269 N | 103° 31' 7.769 W |
| 9,125.0                     | 0.88               | 183.33         | 9,122.2                     | -140.9          | 84.0            | 399,061.86                | 752,237.69               | 32° 5' 40.266 N | 103° 31' 7.769 W |
| 9,150.0                     | 0.76               | 186.23         | 9,147.2                     | -141.3          | 84.0            | 399,061.50                | 752,237.66               | 32° 5' 40.262 N | 103° 31' 7.770 W |
| 9,175.0                     | 0.82               | 184.16         | 9,172.2                     | -141.6          | 83.9            | 399,061.16                | 752,237.63               | 32° 5' 40.259 N | 103° 31' 7.770 W |
| 9,200.0                     | 0.83               | 182.88         | 9,197.2                     | -142.0          | 83.9            | 399,060.80                | 752,237.61               | 32° 5' 40.255 N | 103° 31' 7.770 W |
| 9,225.0                     | 0.88               | 185.27         | 9,222.2                     | -142.4          | 83.9            | 399,060.43                | 752,237.58               | 32° 5' 40.251 N | 103° 31' 7.771 W |
| 9,250.0                     | 0.82               | 183.62         | 9,247.2                     | -142.7          | 83.9            | 399,060.08                | 752,237.55               | 32° 5' 40.248 N | 103° 31' 7.771 W |
| 9,275.0                     | 0.77               | 193.09         | 9,272.2                     | -143.1          | 83.8            | 399,059.71                | 752,237.50               | 32° 5' 40.244 N | 103° 31' 7.772 W |
| 9,300.0                     | 0.68               | 195.94         | 9,297.2                     | -143.4          | 83.7            | 399,059.41                | 752,237.42               | 32° 5' 40.241 N | 103° 31' 7.773 W |
| 9,325.0                     | 0.70               | 204.44         | 9,322.2                     | -143.7          | 83.6            | 399,059.13                | 752,237.32               | 32° 5' 40.239 N | 103° 31' 7.774 W |
| 9,350.0                     | 0.70               | 213.54         | 9,347.2                     | -143.9          | 83.5            | 399,058.86                | 752,237.17               | 32° 5' 40.236 N | 103° 31' 7.776 W |
| 9,375.0                     | 0.71               | 212.73         | 9,372.2                     | -144.2          | 83.3            | 399,058.60                | 752,237.00               | 32° 5' 40.233 N | 103° 31' 7.778 W |
| 9,400.0                     | 0.56               | 212.48         | 9,397.2                     | -144.4          | 83.2            | 399,058.37                | 752,236.85               | 32° 5' 40.231 N | 103° 31' 7.779 W |
| 9,425.0                     | 0.60               | 213.58         | 9,422.2                     | -144.6          | 83.0            | 399,058.16                | 752,236.72               | 32° 5' 40.229 N | 103° 31' 7.781 W |
| 9,450.0                     | 0.57               | 215.52         | 9,447.2                     | -144.8          | 82.9            | 399,057.95                | 752,236.57               | 32° 5' 40.227 N | 103° 31' 7.783 W |
| 9,475.0                     | 0.55               | 215.21         | 9,472.2                     | -145.0          | 82.7            | 399,057.75                | 752,236.43               | 32° 5' 40.225 N | 103° 31' 7.784 W |
| 9,500.0                     | 0.48               | 219.06         | 9,497.2                     | -145.2          | 82.6            | 399,057.57                | 752,236.30               | 32° 5' 40.223 N | 103° 31' 7.786 W |
| 9,525.0                     | 0.52               | 205.11         | 9,522.2                     | -145.4          | 82.5            | 399,057.38                | 752,236.18               | 32° 5' 40.221 N | 103° 31' 7.787 W |
| 9,550.0                     | 0.37               | 210.28         | 9,547.2                     | -145.6          | 82.4            | 399,057.21                | 752,236.09               | 32° 5' 40.220 N | 103° 31' 7.788 W |
| 9,575.0                     | 0.29               | 198.94         | 9,572.2                     | -145.7          | 82.3            | 399,057.08                | 752,236.03               | 32° 5' 40.218 N | 103° 31' 7.789 W |
| 9,600.0                     | 0.11               | 179.10         | 9,597.2                     | -145.8          | 82.3            | 399,057.00                | 752,236.01               | 32° 5' 40.218 N | 103° 31' 7.789 W |
| 9,625.0                     | 0.16               | 178.01         | 9,622.2                     | -145.8          | 82.3            | 399,056.94                | 752,236.01               | 32° 5' 40.217 N | 103° 31' 7.789 W |
| 9,650.0                     | 0.07               | 201.07         | 9,647.2                     | -145.9          | 82.3            | 399,056.89                | 752,236.01               | 32° 5' 40.217 N | 103° 31' 7.789 W |
| 9,675.0                     | 0.12               | 127.65         | 9,672.2                     | -145.9          | 82.3            | 399,056.86                | 752,236.02               | 32° 5' 40.216 N | 103° 31' 7.789 W |
| 9,700.0                     | 0.07               | 116.56         | 9,697.2                     | -145.9          | 82.4            | 399,056.84                | 752,236.06               | 32° 5' 40.216 N | 103° 31' 7.789 W |
| 9,725.0                     | 0.08               | 330.92         | 9,722.2                     | -145.9          | 82.4            | 399,056.84                | 752,236.06               | 32° 5' 40.216 N | 103° 31' 7.789 W |
| 9,750.0                     | 0.24               | 305.35         | 9,747.2                     | -145.9          | 82.3            | 399,056.89                | 752,236.01               | 32° 5' 40.217 N | 103° 31' 7.789 W |
| 9,775.0                     | 0.25               | 315.86         | 9,772.2                     | -145.8          | 82.2            | 399,056.96                | 752,235.93               | 32° 5' 40.217 N | 103° 31' 7.790 W |
| 9,800.0                     | 0.28               | 310.06         | 9,797.2                     | -145.7          | 82.1            | 399,057.04                | 752,235.85               | 32° 5' 40.218 N | 103° 31' 7.791 W |
| 9,825.0                     | 0.28               | 298.68         | 9,822.2                     | -145.7          | 82.0            | 399,057.11                | 752,235.75               | 32° 5' 40.219 N | 103° 31' 7.792 W |
| 9,850.0                     | 0.38               | 294.00         | 9,847.2                     | -145.6          | 81.9            | 399,057.17                | 752,235.62               | 32° 5' 40.219 N | 103° 31' 7.794 W |
| 9,875.0                     | 0.21               | 280.92         | 9,872.2                     | -145.6          | 81.8            | 399,057.21                | 752,235.50               | 32° 5' 40.220 N | 103° 31' 7.795 W |
| 9,900.0                     | 0.42               | 272.57         | 9,897.2                     | -145.6          | 81.7            | 399,057.23                | 752,235.36               | 32° 5' 40.220 N | 103° 31' 7.797 W |
| 9,925.0                     | 0.49               | 250.57         | 9,922.2                     | -145.6          | 81.5            | 399,057.19                | 752,235.17               | 32° 5' 40.220 N | 103° 31' 7.799 W |
| 9,950.0                     | 0.60               | 248.28         | 9,947.2                     | -145.7          | 81.2            | 399,057.11                | 752,234.94               | 32° 5' 40.219 N | 103° 31' 7.802 W |

Company: COG Operating, LLC  
 Project: Lea County, NM  
 Site: Sec 25, T25S, R33E  
 Well: Dominator 25 Federal #601H  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
 TVD Reference: WELL @ 3352.0usft (Noram #21)  
 MD Reference: WELL @ 3352.0usft (Noram #21)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude        | Longitude        |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-----------------|------------------|
| 9,975.0                     | 0.64               | 255.28         | 9,972.2                     | -145.8          | 81.0            | 399,057.03                | 752,234.69               | 32° 5' 40.218 N | 103° 31' 7.805 W |
| 10,000.0                    | 0.57               | 247.04         | 9,997.2                     | -145.8          | 80.7            | 399,056.94                | 752,234.44               | 32° 5' 40.217 N | 103° 31' 7.807 W |
| 10,025.0                    | 0.66               | 246.57         | 10,022.2                    | -145.9          | 80.5            | 399,056.84                | 752,234.19               | 32° 5' 40.216 N | 103° 31' 7.810 W |
| 10,050.0                    | 0.84               | 252.56         | 10,047.2                    | -146.1          | 80.2            | 399,056.72                | 752,233.89               | 32° 5' 40.215 N | 103° 31' 7.814 W |
| 10,075.0                    | 0.94               | 258.76         | 10,072.2                    | -146.2          | 79.8            | 399,056.63                | 752,233.51               | 32° 5' 40.214 N | 103° 31' 7.818 W |
| 10,100.0                    | 0.89               | 265.80         | 10,097.2                    | -146.2          | 79.4            | 399,056.57                | 752,233.11               | 32° 5' 40.214 N | 103° 31' 7.823 W |
| 10,125.0                    | 0.84               | 279.11         | 10,122.2                    | -146.2          | 79.0            | 399,056.59                | 752,232.74               | 32° 5' 40.214 N | 103° 31' 7.827 W |
| 10,150.0                    | 0.98               | 285.75         | 10,147.2                    | -146.1          | 78.7            | 399,056.68                | 752,232.35               | 32° 5' 40.215 N | 103° 31' 7.832 W |
| 10,175.0                    | 0.97               | 281.71         | 10,172.2                    | -146.0          | 78.2            | 399,056.78                | 752,231.94               | 32° 5' 40.216 N | 103° 31' 7.837 W |
| 10,200.0                    | 0.96               | 280.85         | 10,197.2                    | -145.9          | 77.8            | 399,056.86                | 752,231.53               | 32° 5' 40.217 N | 103° 31' 7.841 W |
| 10,225.0                    | 0.96               | 285.99         | 10,222.2                    | -145.8          | 77.4            | 399,056.96                | 752,231.12               | 32° 5' 40.218 N | 103° 31' 7.846 W |
| 10,250.0                    | 0.91               | 296.20         | 10,247.2                    | -145.7          | 77.0            | 399,057.10                | 752,230.74               | 32° 5' 40.219 N | 103° 31' 7.850 W |
| 10,275.0                    | 0.73               | 292.54         | 10,272.2                    | -145.5          | 76.7            | 399,057.25                | 752,230.42               | 32° 5' 40.221 N | 103° 31' 7.854 W |
| 10,300.0                    | 0.73               | 294.43         | 10,297.1                    | -145.4          | 76.4            | 399,057.38                | 752,230.12               | 32° 5' 40.222 N | 103° 31' 7.858 W |
| 10,325.0                    | 0.68               | 297.89         | 10,322.1                    | -145.3          | 76.2            | 399,057.51                | 752,229.85               | 32° 5' 40.223 N | 103° 31' 7.861 W |
| 10,350.0                    | 0.59               | 297.11         | 10,347.1                    | -145.1          | 75.9            | 399,057.64                | 752,229.60               | 32° 5' 40.225 N | 103° 31' 7.864 W |
| 10,375.0                    | 0.60               | 300.19         | 10,372.1                    | -145.0          | 75.7            | 399,057.77                | 752,229.37               | 32° 5' 40.226 N | 103° 31' 7.866 W |
| 10,400.0                    | 0.69               | 293.11         | 10,397.1                    | -144.9          | 75.4            | 399,057.89                | 752,229.12               | 32° 5' 40.227 N | 103° 31' 7.869 W |
| 10,425.0                    | 0.96               | 272.41         | 10,422.1                    | -144.8          | 75.1            | 399,057.96                | 752,228.77               | 32° 5' 40.228 N | 103° 31' 7.873 W |
| 10,450.0                    | 1.06               | 270.42         | 10,447.1                    | -144.8          | 74.6            | 399,057.97                | 752,228.33               | 32° 5' 40.228 N | 103° 31' 7.878 W |
| 10,475.0                    | 1.01               | 266.93         | 10,472.1                    | -144.8          | 74.2            | 399,057.96                | 752,227.88               | 32° 5' 40.228 N | 103° 31' 7.884 W |
| 10,500.0                    | 0.18               | 248.02         | 10,497.1                    | -144.9          | 73.9            | 399,057.93                | 752,227.63               | 32° 5' 40.228 N | 103° 31' 7.887 W |
| 10,525.0                    | 1.03               | 107.47         | 10,522.1                    | -144.9          | 74.1            | 399,057.85                | 752,227.80               | 32° 5' 40.227 N | 103° 31' 7.885 W |
| 10,550.0                    | 1.20               | 111.32         | 10,547.1                    | -145.1          | 74.6            | 399,057.69                | 752,228.26               | 32° 5' 40.225 N | 103° 31' 7.879 W |
| 10,575.0                    | 1.20               | 111.17         | 10,572.1                    | -145.3          | 75.1            | 399,057.50                | 752,228.75               | 32° 5' 40.223 N | 103° 31' 7.874 W |
| 10,600.0                    | 1.14               | 112.12         | 10,597.1                    | -145.5          | 75.5            | 399,057.31                | 752,229.23               | 32° 5' 40.221 N | 103° 31' 7.868 W |
| 10,625.0                    | 1.24               | 117.32         | 10,622.1                    | -145.7          | 76.0            | 399,057.09                | 752,229.70               | 32° 5' 40.219 N | 103° 31' 7.863 W |
| 10,650.0                    | 1.11               | 119.32         | 10,647.1                    | -145.9          | 76.5            | 399,056.85                | 752,230.15               | 32° 5' 40.217 N | 103° 31' 7.857 W |
| 10,675.0                    | 1.15               | 118.82         | 10,672.1                    | -146.2          | 76.9            | 399,056.61                | 752,230.58               | 32° 5' 40.214 N | 103° 31' 7.852 W |
| 10,700.0                    | 1.17               | 117.28         | 10,697.1                    | -146.4          | 77.3            | 399,056.37                | 752,231.02               | 32° 5' 40.212 N | 103° 31' 7.847 W |
| 10,725.0                    | 0.95               | 121.59         | 10,722.1                    | -146.6          | 77.7            | 399,056.15                | 752,231.43               | 32° 5' 40.210 N | 103° 31' 7.843 W |
| 10,750.0                    | 0.69               | 130.48         | 10,747.1                    | -146.8          | 78.0            | 399,055.94                | 752,231.72               | 32° 5' 40.208 N | 103° 31' 7.839 W |
| 10,775.0                    | 0.60               | 143.24         | 10,772.1                    | -147.0          | 78.2            | 399,055.74                | 752,231.91               | 32° 5' 40.205 N | 103° 31' 7.837 W |
| 10,800.0                    | 0.72               | 150.33         | 10,797.1                    | -147.3          | 78.4            | 399,055.50                | 752,232.07               | 32° 5' 40.203 N | 103° 31' 7.835 W |
| 10,825.0                    | 0.68               | 150.01         | 10,822.1                    | -147.6          | 78.5            | 399,055.23                | 752,232.22               | 32° 5' 40.200 N | 103° 31' 7.833 W |
| 10,850.0                    | 0.73               | 161.43         | 10,847.1                    | -147.8          | 78.6            | 399,054.95                | 752,232.34               | 32° 5' 40.198 N | 103° 31' 7.832 W |
| 10,875.0                    | 0.86               | 176.01         | 10,872.1                    | -148.2          | 78.7            | 399,054.61                | 752,232.41               | 32° 5' 40.194 N | 103° 31' 7.831 W |
| 10,900.0                    | 0.88               | 164.52         | 10,897.1                    | -148.5          | 78.8            | 399,054.24                | 752,232.47               | 32° 5' 40.191 N | 103° 31' 7.831 W |
| 10,925.0                    | 1.50               | 160.20         | 10,922.1                    | -149.0          | 78.9            | 399,053.75                | 752,232.64               | 32° 5' 40.186 N | 103° 31' 7.829 W |
| 10,950.0                    | 1.96               | 159.96         | 10,947.1                    | -149.7          | 79.2            | 399,053.04                | 752,232.89               | 32° 5' 40.179 N | 103° 31' 7.826 W |
| 10,975.0                    | 2.18               | 157.98         | 10,972.0                    | -150.6          | 79.5            | 399,052.20                | 752,233.22               | 32° 5' 40.170 N | 103° 31' 7.822 W |
| 11,000.0                    | 2.22               | 152.89         | 10,997.0                    | -151.5          | 79.9            | 399,051.32                | 752,233.62               | 32° 5' 40.162 N | 103° 31' 7.818 W |
| 11,025.0                    | 2.43               | 145.76         | 11,022.0                    | -152.3          | 80.4            | 399,050.46                | 752,234.13               | 32° 5' 40.153 N | 103° 31' 7.812 W |
| 11,050.0                    | 2.37               | 141.97         | 11,047.0                    | -153.2          | 81.1            | 399,049.61                | 752,234.75               | 32° 5' 40.145 N | 103° 31' 7.804 W |
| 11,075.0                    | 2.47               | 143.36         | 11,072.0                    | -154.0          | 81.7            | 399,048.77                | 752,235.39               | 32° 5' 40.136 N | 103° 31' 7.797 W |
| 11,100.0                    | 2.36               | 139.97         | 11,096.9                    | -154.8          | 82.3            | 399,047.94                | 752,236.04               | 32° 5' 40.128 N | 103° 31' 7.790 W |
| 11,125.0                    | 1.60               | 121.20         | 11,121.9                    | -155.4          | 83.0            | 399,047.37                | 752,236.67               | 32° 5' 40.122 N | 103° 31' 7.782 W |
| 11,150.0                    | 1.56               | 103.51         | 11,146.9                    | -155.7          | 83.6            | 399,047.11                | 752,237.30               | 32° 5' 40.120 N | 103° 31' 7.775 W |
| 11,175.0                    | 1.57               | 92.99          | 11,171.9                    | -155.8          | 84.3            | 399,047.01                | 752,237.98               | 32° 5' 40.119 N | 103° 31' 7.767 W |
| 11,200.0                    | 1.43               | 84.67          | 11,196.9                    | -155.8          | 84.9            | 399,047.02                | 752,238.63               | 32° 5' 40.119 N | 103° 31' 7.760 W |
| 11,225.0                    | 1.36               | 76.42          | 11,221.9                    | -155.7          | 85.5            | 399,047.12                | 752,239.23               | 32° 5' 40.120 N | 103° 31' 7.753 W |
| 11,250.0                    | 1.18               | 68.92          | 11,246.9                    | -155.5          | 86.1            | 399,047.28                | 752,239.76               | 32° 5' 40.121 N | 103° 31' 7.747 W |
| 11,275.0                    | 1.26               | 70.92          | 11,271.9                    | -155.3          | 86.6            | 399,047.47                | 752,240.26               | 32° 5' 40.123 N | 103° 31' 7.741 W |
| 11,300.0                    | 1.36               | 76.14          | 11,296.9                    | -155.2          | 87.1            | 399,047.63                | 752,240.80               | 32° 5' 40.125 N | 103° 31' 7.734 W |
| 11,325.0                    | 1.29               | 75.22          | 11,321.9                    | -155.0          | 87.7            | 399,047.77                | 752,241.36               | 32° 5' 40.126 N | 103° 31' 7.728 W |

Company: COG Operating, LLC  
 Project: Lea County, NM  
 Site: Sec 25, T25S, R33E  
 Well: Dominator 25 Federal #801H  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #801H  
 TVD Reference: WELL @ 3352.0usft (Noram #21)  
 MD Reference: WELL @ 3352.0usft (Noram #21)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 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        |
|-------------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 11,350.0                                        | 1.45            | 67.38       | 11,346.9              | -154.8       | 88.2         | 399,047.96          | 752,241.93         | 32° 5' 40.128 N | 103° 31' 7.721 W |
| 11,375.0                                        | 1.51            | 68.67       | 11,371.8              | -154.6       | 88.8         | 399,048.21          | 752,242.53         | 32° 5' 40.130 N | 103° 31' 7.714 W |
| 11,400.0                                        | 1.48            | 70.89       | 11,396.8              | -154.4       | 89.4         | 399,048.43          | 752,243.14         | 32° 5' 40.132 N | 103° 31' 7.707 W |
| 11,425.0                                        | 1.63            | 70.70       | 11,421.8              | -154.1       | 90.1         | 399,048.65          | 752,243.78         | 32° 5' 40.135 N | 103° 31' 7.700 W |
| 11,450.0                                        | 1.61            | 64.24       | 11,446.8              | -153.9       | 90.7         | 399,048.92          | 752,244.43         | 32° 5' 40.137 N | 103° 31' 7.692 W |
| 11,475.0                                        | 1.60            | 57.36       | 11,471.8              | -153.5       | 91.3         | 399,049.26          | 752,245.04         | 32° 5' 40.140 N | 103° 31' 7.685 W |
| 11,500.0                                        | 1.58            | 66.21       | 11,496.8              | -153.2       | 92.0         | 399,049.59          | 752,245.65         | 32° 5' 40.144 N | 103° 31' 7.678 W |
| 11,525.0                                        | 1.50            | 63.45       | 11,521.8              | -152.9       | 92.6         | 399,049.88          | 752,246.26         | 32° 5' 40.146 N | 103° 31' 7.671 W |
| 11,550.0                                        | 1.42            | 67.47       | 11,546.8              | -152.6       | 93.1         | 399,050.14          | 752,246.84         | 32° 5' 40.149 N | 103° 31' 7.664 W |
| 11,575.0                                        | 1.27            | 68.93       | 11,571.8              | -152.4       | 93.7         | 399,050.36          | 752,247.38         | 32° 5' 40.151 N | 103° 31' 7.658 W |
| 11,600.0                                        | 1.14            | 66.70       | 11,596.8              | -152.2       | 94.2         | 399,050.56          | 752,247.87         | 32° 5' 40.153 N | 103° 31' 7.652 W |
| 11,625.0                                        | 1.02            | 71.65       | 11,621.8              | -152.1       | 94.6         | 399,050.73          | 752,248.31         | 32° 5' 40.155 N | 103° 31' 7.647 W |
| 11,650.0                                        | 0.96            | 56.98       | 11,646.8              | -151.9       | 95.0         | 399,050.91          | 752,248.70         | 32° 5' 40.156 N | 103° 31' 7.642 W |
| 11,675.0                                        | 0.82            | 53.06       | 11,671.8              | -151.7       | 95.3         | 399,051.13          | 752,249.01         | 32° 5' 40.159 N | 103° 31' 7.639 W |
| 11,700.0                                        | 0.93            | 52.22       | 11,696.8              | -151.4       | 95.6         | 399,051.36          | 752,249.32         | 32° 5' 40.161 N | 103° 31' 7.635 W |
| 11,725.0                                        | 1.06            | 49.22       | 11,721.8              | -151.1       | 96.0         | 399,051.64          | 752,249.65         | 32° 5' 40.164 N | 103° 31' 7.631 W |
| 11,750.0                                        | 1.03            | 41.94       | 11,746.7              | -150.8       | 96.3         | 399,051.96          | 752,249.98         | 32° 5' 40.167 N | 103° 31' 7.627 W |
| 11,752.0                                        | 1.03            | 41.34       | 11,748.7              | -150.8       | 96.3         | 399,051.99          | 752,250.00         | 32° 5' 40.167 N | 103° 31' 7.627 W |
| <b>Gyro Tie In @ 11762.0' MD / 11748.7' TVD</b> |                 |             |                       |              |              |                     |                    |                 |                  |
| 11,771.0                                        | 1.10            | 37.00       | 11,767.7              | -150.5       | 96.5         | 399,052.26          | 752,250.22         | 32° 5' 40.170 N | 103° 31' 7.624 W |
| 11,803.0                                        | 1.20            | 42.20       | 11,799.7              | -150.0       | 96.9         | 399,052.75          | 752,250.63         | 32° 5' 40.175 N | 103° 31' 7.620 W |
| 11,919.0                                        | 1.80            | 58.40       | 11,915.7              | -148.2       | 99.3         | 399,054.61          | 752,253.00         | 32° 5' 40.193 N | 103° 31' 7.592 W |
| 11,967.0                                        | 2.56            | 37.22       | 11,963.7              | -146.9       | 100.6        | 399,055.86          | 752,254.29         | 32° 5' 40.205 N | 103° 31' 7.577 W |
| 11,999.0                                        | 7.12            | 353.62      | 11,995.5              | -144.4       | 100.8        | 399,058.40          | 752,254.51         | 32° 5' 40.230 N | 103° 31' 7.574 W |
| 12,030.0                                        | 13.65           | 349.30      | 12,026.0              | -138.9       | 99.9         | 399,063.91          | 752,253.61         | 32° 5' 40.285 N | 103° 31' 7.584 W |
| 12,062.0                                        | 20.24           | 351.34      | 12,056.6              | -129.7       | 98.4         | 399,073.10          | 752,252.08         | 32° 5' 40.376 N | 103° 31' 7.601 W |
| 12,093.0                                        | 24.37           | 354.40      | 12,085.3              | -118.0       | 96.9         | 399,084.77          | 752,250.64         | 32° 5' 40.491 N | 103° 31' 7.617 W |
| 12,125.0                                        | 26.04           | 355.74      | 12,114.2              | -104.4       | 95.8         | 399,098.35          | 752,249.48         | 32° 5' 40.626 N | 103° 31' 7.629 W |
| 12,157.0                                        | 28.04           | 355.06      | 12,142.7              | -89.9        | 94.6         | 399,112.85          | 752,248.31         | 32° 5' 40.769 N | 103° 31' 7.641 W |
| 12,189.0                                        | 29.53           | 356.93      | 12,170.8              | -74.6        | 93.5         | 399,128.22          | 752,247.24         | 32° 5' 40.922 N | 103° 31' 7.652 W |
| 12,221.0                                        | 31.17           | 359.05      | 12,198.4              | -58.4        | 93.0         | 399,144.37          | 752,246.68         | 32° 5' 41.081 N | 103° 31' 7.658 W |
| 12,252.0                                        | 32.94           | 0.48        | 12,224.7              | -42.0        | 92.9         | 399,160.82          | 752,246.62         | 32° 5' 41.244 N | 103° 31' 7.657 W |
| 12,284.0                                        | 35.58           | 1.38        | 12,251.1              | -24.0        | 93.2         | 399,178.83          | 752,246.91         | 32° 5' 41.422 N | 103° 31' 7.652 W |
| 12,315.0                                        | 38.04           | 1.23        | 12,275.9              | -5.4         | 93.6         | 399,197.40          | 752,247.33         | 32° 5' 41.606 N | 103° 31' 7.645 W |
| 12,346.0                                        | 39.95           | 1.51        | 12,300.0              | 14.1         | 94.1         | 399,216.80          | 752,247.80         | 32° 5' 41.789 N | 103° 31' 7.638 W |
| 12,377.0                                        | 41.25           | 1.76        | 12,323.6              | 34.3         | 94.7         | 399,237.07          | 752,248.38         | 32° 5' 41.999 N | 103° 31' 7.630 W |
| 12,401.8                                        | 42.95           | 1.13        | 12,342.0              | 50.9         | 95.1         | 399,253.69          | 752,248.80         | 32° 5' 42.163 N | 103° 31' 7.623 W |
| <b>FTP @ 12401.8' MD / 12342.0' TVD</b>         |                 |             |                       |              |              |                     |                    |                 |                  |
| 12,408.0                                        | 43.38           | 0.98        | 12,346.5              | 55.1         | 95.2         | 399,257.93          | 752,248.87         | 32° 5' 42.205 N | 103° 31' 7.622 W |
| 12,439.0                                        | 46.13           | 359.96      | 12,368.5              | 77.0         | 95.4         | 399,279.75          | 752,249.05         | 32° 5' 42.421 N | 103° 31' 7.618 W |
| 12,471.0                                        | 48.50           | 359.38      | 12,390.2              | 100.5        | 95.2         | 399,303.27          | 752,248.91         | 32° 5' 42.654 N | 103° 31' 7.618 W |
| 12,502.0                                        | 51.19           | 359.60      | 12,410.2              | 124.2        | 95.0         | 399,328.96          | 752,248.70         | 32° 5' 42.888 N | 103° 31' 7.618 W |
| 12,532.0                                        | 52.90           | 1.12        | 12,428.6              | 147.8        | 95.2         | 399,350.62          | 752,248.85         | 32° 5' 43.122 N | 103° 31' 7.614 W |
| 12,565.0                                        | 55.69           | 2.06        | 12,447.9              | 174.6        | 95.9         | 399,377.40          | 752,249.60         | 32° 5' 43.387 N | 103° 31' 7.603 W |
| 12,597.0                                        | 59.04           | 1.91        | 12,465.2              | 201.5        | 96.8         | 399,404.33          | 752,250.53         | 32° 5' 43.654 N | 103° 31' 7.590 W |
| 12,629.0                                        | 61.46           | 1.54        | 12,481.0              | 229.3        | 97.7         | 399,432.09          | 752,251.37         | 32° 5' 43.928 N | 103° 31' 7.578 W |
| 12,660.0                                        | 63.57           | 1.29        | 12,495.3              | 256.8        | 98.3         | 399,459.59          | 752,252.05         | 32° 5' 44.200 N | 103° 31' 7.567 W |
| 12,691.0                                        | 66.16           | 0.82        | 12,508.5              | 284.9        | 98.9         | 399,487.64          | 752,252.56         | 32° 5' 44.478 N | 103° 31' 7.559 W |
| 12,723.0                                        | 68.98           | 359.77      | 12,520.7              | 314.4        | 99.0         | 399,517.22          | 752,252.71         | 32° 5' 44.771 N | 103° 31' 7.555 W |
| 12,754.0                                        | 73.30           | 358.40      | 12,530.7              | 343.8        | 98.5         | 399,546.54          | 752,252.24         | 32° 5' 45.061 N | 103° 31' 7.558 W |
| 12,786.0                                        | 79.34           | 358.40      | 12,538.3              | 374.8        | 97.7         | 399,577.61          | 752,251.37         | 32° 5' 45.368 N | 103° 31' 7.565 W |
| 12,818.0                                        | 84.82           | 359.02      | 12,542.7              | 406.5        | 97.0         | 399,609.28          | 752,250.66         | 32° 5' 45.682 N | 103° 31' 7.570 W |
| 12,849.0                                        | 86.39           | 358.89      | 12,545.1              | 437.4        | 96.4         | 399,640.19          | 752,250.10         | 32° 5' 45.988 N | 103° 31' 7.574 W |
| 12,881.0                                        | 89.41           | 358.88      | 12,546.2              | 469.4        | 95.8         | 399,672.15          | 752,249.47         | 32° 5' 46.304 N | 103° 31' 7.579 W |
| 12,944.0                                        | 92.57           | 358.39      | 12,545.2              | 532.3        | 94.3         | 399,735.12          | 752,247.97         | 32° 5' 46.927 N | 103° 31' 7.591 W |

Company: COG Operating, LLC  
 Project: Lea County, NM  
 Site: Sec 25, T25S, R33E  
 Well: Dominator 25 Federal #601H  
 Wellbore: Wellbore #1  
 Design: Wellbore #1

Local Co-ordinate Reference: Well Dominator 25 Federal #601H  
 TVD Reference: WELL @ 3352.0usft (Noram #21)  
 MD Reference: WELL @ 3352.0usft (Noram #21)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 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        |
|----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 12,979.0                         | 93.28           | 357.95      | 12,543.4              | 567.3        | 93.2         | 399,770.05          | 752,246.86         | 32° 5' 47.273 N | 103° 31' 7.601 W |
| 13,073.0                         | 90.56           | 359.80      | 12,540.2              | 661.2        | 91.3         | 399,863.97          | 752,245.01         | 32° 5' 48.202 N | 103° 31' 7.614 W |
| 13,166.0                         | 92.32           | 0.63        | 12,537.9              | 754.2        | 91.7         | 399,956.94          | 752,245.36         | 32° 5' 49.122 N | 103° 31' 7.601 W |
| 13,260.0                         | 89.75           | 2.37        | 12,536.2              | 848.1        | 94.1         | 400,050.88          | 752,247.82         | 32° 5' 50.052 N | 103° 31' 7.565 W |
| 13,355.0                         | 90.87           | 6.54        | 12,535.7              | 942.8        | 101.5        | 400,145.57          | 752,255.20         | 32° 5' 50.988 N | 103° 31' 7.471 W |
| 13,450.0                         | 88.43           | 2.19        | 12,536.3              | 1,037.5      | 108.7        | 400,240.26          | 752,262.43         | 32° 5' 51.925 N | 103° 31' 7.378 W |
| 13,544.0                         | 91.79           | 358.30      | 12,536.1              | 1,131.4      | 109.1        | 400,334.23          | 752,262.83         | 32° 5' 52.855 N | 103° 31' 7.365 W |
| 13,638.0                         | 89.30           | 357.20      | 12,535.2              | 1,225.4      | 105.4        | 400,428.14          | 752,259.14         | 32° 5' 53.784 N | 103° 31' 7.400 W |
| 13,732.0                         | 87.79           | 356.65      | 12,537.6              | 1,319.2      | 100.4        | 400,521.97          | 752,254.10         | 32° 5' 54.713 N | 103° 31' 7.450 W |
| 13,826.0                         | 90.81           | 357.98      | 12,538.7              | 1,413.1      | 96.0         | 400,615.85          | 752,249.70         | 32° 5' 55.642 N | 103° 31' 7.493 W |
| 13,921.0                         | 91.07           | 358.50      | 12,537.2              | 1,508.0      | 93.1         | 400,710.79          | 752,246.78         | 32° 5' 56.582 N | 103° 31' 7.519 W |
| 14,015.0                         | 91.74           | 359.02      | 12,534.9              | 1,602.0      | 91.0         | 400,804.74          | 752,244.75         | 32° 5' 57.512 N | 103° 31' 7.534 W |
| 14,108.0                         | 90.87           | 359.23      | 12,532.7              | 1,694.9      | 89.6         | 400,897.70          | 752,243.33         | 32° 5' 58.432 N | 103° 31' 7.543 W |
| 14,202.0                         | 89.41           | 358.25      | 12,532.5              | 1,788.9      | 87.6         | 400,991.68          | 752,241.26         | 32° 5' 59.362 N | 103° 31' 7.558 W |
| 14,295.0                         | 88.69           | 358.63      | 12,534.0              | 1,881.8      | 85.0         | 401,084.63          | 752,238.73         | 32° 6' 0.282 N  | 103° 31' 7.580 W |
| 14,389.0                         | 88.35           | 358.92      | 12,536.5              | 1,975.8      | 83.0         | 401,178.58          | 752,236.72         | 32° 6' 1.212 N  | 103° 31' 7.595 W |
| 14,483.0                         | 88.77           | 359.11      | 12,538.8              | 2,069.7      | 81.4         | 401,272.53          | 752,235.10         | 32° 6' 2.142 N  | 103° 31' 7.605 W |
| 14,577.0                         | 89.50           | 0.30        | 12,540.3              | 2,163.7      | 80.9         | 401,366.52          | 752,234.62         | 32° 6' 3.072 N  | 103° 31' 7.603 W |
| 14,671.0                         | 85.99           | 358.39      | 12,544.0              | 2,257.6      | 79.9         | 401,460.42          | 752,233.55         | 32° 6' 4.001 N  | 103° 31' 7.607 W |
| 14,766.0                         | 88.63           | 358.58      | 12,548.4              | 2,352.5      | 77.3         | 401,555.27          | 752,231.04         | 32° 6' 4.940 N  | 103° 31' 7.628 W |
| 14,861.0                         | 91.40           | 359.27      | 12,548.4              | 2,447.5      | 75.6         | 401,650.25          | 752,229.26         | 32° 6' 5.880 N  | 103° 31' 7.640 W |
| 14,955.0                         | 92.38           | 1.01        | 12,545.3              | 2,541.4      | 75.8         | 401,744.19          | 752,229.49         | 32° 6' 6.809 N  | 103° 31' 7.629 W |
| 15,048.0                         | 93.05           | 2.03        | 12,540.9              | 2,634.3      | 78.3         | 401,837.05          | 752,231.95         | 32° 6' 7.728 N  | 103° 31' 7.592 W |
| 15,143.0                         | 89.67           | 1.12        | 12,538.6              | 2,729.2      | 80.9         | 401,931.98          | 752,234.56         | 32° 6' 8.667 N  | 103° 31' 7.554 W |
| 15,239.0                         | 93.36           | 2.96        | 12,536.1              | 2,825.1      | 84.3         | 402,027.86          | 752,237.97         | 32° 6' 9.616 N  | 103° 31' 7.505 W |
| 15,333.0                         | 90.53           | 2.07        | 12,532.9              | 2,918.9      | 88.4         | 402,121.71          | 752,242.10         | 32° 6' 10.544 N | 103° 31' 7.449 W |
| 15,426.0                         | 87.87           | 357.97      | 12,534.2              | 3,011.9      | 88.4         | 402,214.67          | 752,242.13         | 32° 6' 11.464 N | 103° 31' 7.441 W |
| 15,520.0                         | 88.66           | 357.09      | 12,537.0              | 3,105.8      | 84.4         | 402,308.54          | 752,238.08         | 32° 6' 12.393 N | 103° 31' 7.480 W |
| 15,615.0                         | 92.38           | 1.69        | 12,536.2              | 3,200.7      | 83.4         | 402,403.48          | 752,237.07         | 32° 6' 13.333 N | 103° 31' 7.483 W |
| 15,709.0                         | 90.76           | 2.08        | 12,533.6              | 3,294.6      | 86.5         | 402,497.39          | 752,240.16         | 32° 6' 14.262 N | 103° 31' 7.439 W |
| 15,804.0                         | 87.93           | 359.67      | 12,534.7              | 3,389.6      | 87.9         | 402,592.36          | 752,241.61         | 32° 6' 15.202 N | 103° 31' 7.414 W |
| 15,899.0                         | 88.85           | 357.83      | 12,537.4              | 3,484.5      | 85.8         | 402,687.30          | 752,239.54         | 32° 6' 16.141 N | 103° 31' 7.429 W |
| 15,992.0                         | 88.80           | 357.74      | 12,539.3              | 3,577.4      | 82.2         | 402,780.21          | 752,235.94         | 32° 6' 17.061 N | 103° 31' 7.463 W |
| 16,087.0                         | 89.27           | 357.26      | 12,540.9              | 3,672.3      | 78.1         | 402,875.10          | 752,231.80         | 32° 6' 18.000 N | 103° 31' 7.503 W |
| 16,181.0                         | 90.73           | 356.74      | 12,540.9              | 3,766.2      | 73.2         | 402,968.97          | 752,226.88         | 32° 6' 18.930 N | 103° 31' 7.552 W |
| 16,275.0                         | 90.56           | 357.30      | 12,539.8              | 3,860.1      | 68.3         | 403,062.84          | 752,222.00         | 32° 6' 19.859 N | 103° 31' 7.600 W |
| 16,370.0                         | 92.97           | 358.26      | 12,536.9              | 3,954.9      | 64.6         | 403,157.71          | 752,218.32         | 32° 6' 20.798 N | 103° 31' 7.635 W |
| 16,463.0                         | 92.63           | 358.07      | 12,532.3              | 4,047.8      | 61.6         | 403,250.55          | 752,215.34         | 32° 6' 21.717 N | 103° 31' 7.661 W |
| 16,558.0                         | 92.89           | 0.12        | 12,527.8              | 4,142.6      | 60.1         | 403,345.43          | 752,213.84         | 32° 6' 22.656 N | 103° 31' 7.670 W |
| 16,652.0                         | 91.09           | 359.83      | 12,524.5              | 4,236.6      | 60.1         | 403,439.37          | 752,213.80         | 32° 6' 23.585 N | 103° 31' 7.662 W |
| 16,746.0                         | 90.42           | 0.94        | 12,523.3              | 4,330.6      | 60.7         | 403,533.35          | 752,214.43         | 32° 6' 24.515 N | 103° 31' 7.647 W |
| 16,840.0                         | 90.17           | 1.29        | 12,522.8              | 4,424.6      | 62.6         | 403,627.33          | 752,216.26         | 32° 6' 25.445 N | 103° 31' 7.617 W |
| 16,934.0                         | 88.69           | 1.79        | 12,523.7              | 4,518.5      | 65.1         | 403,721.29          | 752,218.79         | 32° 6' 26.375 N | 103° 31' 7.580 W |
| 17,029.0                         | 89.33           | 2.88        | 12,525.4              | 4,613.4      | 69.0         | 403,816.20          | 752,222.66         | 32° 6' 27.314 N | 103° 31' 7.526 W |
| 17,081.2                         | 90.18           | 3.90        | 12,525.6              | 4,665.5      | 72.0         | 403,868.30          | 752,225.75         | 32° 6' 27.829 N | 103° 31' 7.486 W |
| LTP @ 17081.2' MD / 12625.6' TVD |                 |             |                       |              |              |                     |                    |                 |                  |
| 17,124.0                         | 90.87           | 4.74        | 12,525.2              | 4,708.2      | 75.3         | 403,910.98          | 752,228.97         | 32° 6' 28.251 N | 103° 31' 7.445 W |
| 17,158.0                         | 91.57           | 5.86        | 12,524.5              | 4,742.0      | 78.4         | 403,944.83          | 752,232.11         | 32° 6' 28.586 N | 103° 31' 7.405 W |
| 17,210.0                         | 91.57           | 5.86        | 12,523.0              | 4,793.8      | 83.7         | 403,996.54          | 752,237.42         | 32° 6' 29.097 N | 103° 31' 7.339 W |
| TD @ 17210.0' MD / 12623.0' TVD  |                 |             |                       |              |              |                     |                    |                 |                  |



# Survey Report - Geographic



**Company:** COG Operating, LLC  
**Project:** Lea County, NM  
**Site:** Sec 25, T25S, R33E  
**Well:** Dominator 25 Federal #601H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Dominator 25 Federal #601H  
**TVD Reference:** WELL @ 3352.0usft (Noram #21)  
**MD Reference:** WELL @ 3352.0usft (Noram #21)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

## Design Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                                  |
|-----------------------------|-----------------------------|-------------------|-----------------|------------------------------------------|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                          |
| 11,752.0                    | 11,748.7                    | -150.8            | 96.3            | Gyro Tie In @ 11752.0' MD / 11748.7' TVD |
| 12,401.8                    | 12,342.0                    | 50.9              | 95.1            | FTP @ 12401.8' MD / 12342.0' TVD         |
| 17,081.2                    | 12,525.6                    | 4,665.5           | 72.0            | LTP @ 17081.2' MD / 12525.6' TVD         |
| 17,210.0                    | 12,523.0                    | 4,793.8           | 83.7            | TD @ 17210.0' MD / 12523.0' TVD          |