

30-015-42763



December 18, 2014

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

**NM OIL CONSERVATION**

ARTESIA DISTRICT

JUL 27 2015

RECEIVED

Attn: Kanicia Castillo

**RE: Cabo Wabo 25 Federal Com 3H**

Please find enclosed a copy of the survey from 0.00' to 10400.00' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

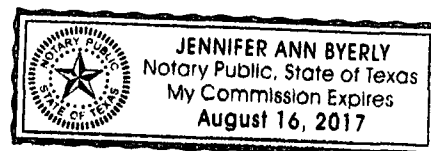
A handwritten signature in black ink, appearing to read "Keith Havelka".

Keith Havelka  
Operations

STATE OF TEXAS     §  
                                  §  
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18 day of December A.D., 2014, by Keith Havelka.

A handwritten signature in black ink, appearing to read "Jennifer Ann Byerly".  
Jennifer Ann Byerly  
Notary Public, State of Texas





Company: Concho  
Lease/Well: Cabo Wabo 25 Federal Com/3H

Rig Name: Scan Freedom  
State/County: New Mexico/Eddy  
Latitude: 32.09, Longitude: -103.93  
GRID North is 0.21 Degrees East of True North  
VS-Azi: 0.00 Degrees



NM OIL CONSERVATION  
ARTESIA DISTRICT  
JUL 27 2015  
RECEIVED

Depth Reference : RKB = 27 Ft

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ... 25 fed com 3h\_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 12/18/2014 / 10:48

VES Survey International

West Texas

(432) 563-5444

Surveyor: Gene Heiss

Cabo Wabo 25 Federal Com 3H / API 30-015-42507

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 0.00                    | 0.00                 | 0.00                      | 0.00      | 0.00        | 0.00        | 0.00                      | 0.00                      | 0.00                        | ****                          |
| 25.00                   | 0.18                 | 245.96                    | 25.00     | -0.02       | -0.04       | -0.02                     | 0.04                      | 245.96                      | 0.70                          |
| 50.00                   | 0.03                 | 246.50                    | 50.00     | -0.03       | -0.08       | -0.03                     | 0.08                      | 246.00                      | 0.60                          |
| 75.00                   | 0.03                 | 246.00                    | 75.00     | -0.04       | -0.09       | -0.04                     | 0.09                      | 246.03                      | 0.02                          |
| 100.00                  | 0.12                 | 255.84                    | 100.00    | -0.05       | -0.12       | -0.05                     | 0.13                      | 248.09                      | 0.37                          |
| 125.00                  | 0.21                 | 215.99                    | 125.00    | -0.09       | -0.17       | -0.09                     | 0.19                      | 242.11                      | 0.55                          |
| 150.00                  | 0.09                 | 149.48                    | 150.00    | -0.14       | -0.19       | -0.14                     | 0.24                      | 232.43                      | 0.76                          |
| 175.00                  | 0.03                 | 306.79                    | 175.00    | -0.16       | -0.18       | -0.16                     | 0.24                      | 229.06                      | 0.47                          |
| 200.00                  | 0.09                 | 300.08                    | 200.00    | -0.14       | -0.21       | -0.14                     | 0.25                      | 234.81                      | 0.27                          |
| 225.00                  | 0.18                 | 224.06                    | 225.00    | -0.16       | -0.25       | -0.16                     | 0.30                      | 236.97                      | 0.73                          |
| 250.00                  | 0.29                 | 186.95                    | 250.00    | -0.25       | -0.29       | -0.25                     | 0.38                      | 228.35                      | 0.73                          |
| 275.00                  | 0.43                 | 149.27                    | 275.00    | -0.40       | -0.25       | -0.40                     | 0.47                      | 211.74                      | 1.06                          |
| 300.00                  | 0.47                 | 127.06                    | 300.00    | -0.54       | -0.12       | -0.54                     | 0.55                      | 192.21                      | 0.71                          |
| 325.00                  | 0.54                 | 138.23                    | 325.00    | -0.69       | 0.04        | -0.69                     | 0.69                      | 176.44                      | 0.48                          |
| 350.00                  | 0.46                 | 113.08                    | 350.00    | -0.81       | 0.21        | -0.81                     | 0.84                      | 165.33                      | 0.92                          |
| 375.00                  | 0.43                 | 109.90                    | 375.00    | -0.88       | 0.39        | -0.88                     | 0.97                      | 156.02                      | 0.16                          |
| 400.00                  | 0.63                 | 114.48                    | 399.99    | -0.97       | 0.61        | -0.97                     | 1.15                      | 148.09                      | 0.80                          |
| 425.00                  | 0.74                 | 118.19                    | 424.99    | -1.11       | 0.87        | -1.11                     | 1.41                      | 141.71                      | 0.51                          |
| 450.00                  | 0.84                 | 116.74                    | 449.99    | -1.27       | 1.18        | -1.27                     | 1.73                      | 136.99                      | 0.40                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 475.00                  | 0.94                 | 114.83                    | 474.99    | -1.43       | 1.53        | -1.43                     | 2.10                      | 133.15                      | 0.41                          |
| 500.00                  | 0.95                 | 118.97                    | 499.98    | -1.62       | 1.90        | -1.62                     | 2.49                      | 130.50                      | 0.27                          |
| 525.00                  | 0.70                 | 120.76                    | 524.98    | -1.80       | 2.21        | -1.80                     | 2.85                      | 129.15                      | 1.00                          |
| 550.00                  | 0.79                 | 123.05                    | 549.98    | -1.97       | 2.48        | -1.97                     | 3.17                      | 128.42                      | 0.40                          |
| 575.00                  | 0.89                 | 135.64                    | 574.98    | -2.20       | 2.76        | -2.20                     | 3.53                      | 128.55                      | 0.83                          |
| 600.00                  | 0.89                 | 140.34                    | 599.97    | -2.49       | 3.02        | -2.49                     | 3.92                      | 129.48                      | 0.29                          |
| 625.00                  | 0.74                 | 145.74                    | 624.97    | -2.78       | 3.24        | -2.78                     | 4.27                      | 130.59                      | 0.68                          |
| 650.00                  | 0.59                 | 156.80                    | 649.97    | -3.03       | 3.38        | -3.03                     | 4.54                      | 131.84                      | 0.81                          |
| 675.00                  | 0.60                 | 166.85                    | 674.97    | -3.27       | 3.46        | -3.27                     | 4.76                      | 133.39                      | 0.42                          |
| 700.00                  | 0.70                 | 197.39                    | 699.97    | -3.55       | 3.45        | -3.55                     | 4.95                      | 135.83                      | 1.43                          |
| 725.00                  | 1.12                 | 213.68                    | 724.96    | -3.90       | 3.26        | -3.90                     | 5.08                      | 140.04                      | 1.95                          |
| 750.00                  | 1.98                 | 239.37                    | 749.95    | -4.32       | 2.76        | -4.32                     | 5.12                      | 147.44                      | 4.33                          |
| 775.00                  | 2.10                 | 259.24                    | 774.94    | -4.62       | 1.94        | -4.62                     | 5.01                      | 157.28                      | 2.86                          |
| 800.00                  | 1.38                 | 267.52                    | 799.93    | -4.72       | 1.19        | -4.72                     | 4.87                      | 165.91                      | 3.07                          |
| 825.00                  | 1.00                 | 274.00                    | 824.92    | -4.72       | 0.67        | -4.72                     | 4.77                      | 171.94                      | 1.59                          |
| 850.00                  | 1.03                 | 284.92                    | 849.92    | -4.65       | 0.23        | -4.65                     | 4.65                      | 177.12                      | 0.78                          |
| 875.00                  | 0.83                 | 279.78                    | 874.91    | -4.56       | -0.16       | -4.56                     | 4.56                      | 182.02                      | 0.87                          |
| 900.00                  | 0.69                 | 277.85                    | 899.91    | -4.51       | -0.49       | -4.51                     | 4.53                      | 186.17                      | 0.58                          |
| 925.00                  | 0.53                 | 273.29                    | 924.91    | -4.48       | -0.75       | -4.48                     | 4.54                      | 189.51                      | 0.67                          |
| 950.00                  | 0.35                 | 257.64                    | 949.91    | -4.49       | -0.94       | -4.49                     | 4.59                      | 191.82                      | 0.86                          |
| 975.00                  | 0.35                 | 245.95                    | 974.91    | -4.54       | -1.08       | -4.54                     | 4.67                      | 193.43                      | 0.28                          |
| 1000.00                 | 0.16                 | 238.10                    | 999.91    | -4.59       | -1.18       | -4.59                     | 4.74                      | 194.45                      | 0.78                          |
| 1025.00                 | 0.17                 | 211.48                    | 1024.91   | -4.64       | -1.23       | -4.64                     | 4.80                      | 194.85                      | 0.30                          |
| 1050.00                 | 0.09                 | 195.84                    | 1049.91   | -4.69       | -1.25       | -4.69                     | 4.85                      | 194.98                      | 0.34                          |
| 1075.00                 | 0.06                 | 145.00                    | 1074.91   | -4.71       | -1.25       | -4.71                     | 4.88                      | 194.86                      | 0.27                          |
| 1100.00                 | 0.09                 | 320.47                    | 1099.91   | -4.71       | -1.25       | -4.71                     | 4.88                      | 194.91                      | 0.60                          |
| 1125.00                 | 0.13                 | 34.18                     | 1124.91   | -4.67       | -1.25       | -4.67                     | 4.84                      | 194.98                      | 0.54                          |
| 1150.00                 | 0.13                 | 53.82                     | 1149.91   | -4.63       | -1.21       | -4.63                     | 4.79                      | 194.67                      | 0.18                          |
| 1175.00                 | 0.17                 | 60.62                     | 1174.91   | -4.60       | -1.16       | -4.60                     | 4.74                      | 194.14                      | 0.18                          |
| 1200.00                 | 0.20                 | 50.14                     | 1199.91   | -4.55       | -1.09       | -4.55                     | 4.68                      | 193.49                      | 0.20                          |
| 1225.00                 | 0.09                 | 39.48                     | 1224.91   | -4.51       | -1.05       | -4.51                     | 4.63                      | 193.06                      | 0.47                          |
| 1250.00                 | 0.09                 | 53.07                     | 1249.91   | -4.48       | -1.02       | -4.48                     | 4.60                      | 192.80                      | 0.08                          |
| 1275.00                 | 0.07                 | 41.93                     | 1274.91   | -4.46       | -0.99       | -4.46                     | 4.57                      | 192.55                      | 0.08                          |
| 1300.00                 | 0.16                 | 31.51                     | 1299.91   | -4.42       | -0.96       | -4.42                     | 4.52                      | 192.30                      | 0.36                          |
| 1325.00                 | 0.11                 | 22.42                     | 1324.91   | -4.36       | -0.94       | -4.36                     | 4.46                      | 192.10                      | 0.21                          |
| 1350.00                 | 0.10                 | 31.58                     | 1349.91   | -4.32       | -0.91       | -4.32                     | 4.42                      | 191.94                      | 0.08                          |
| 1375.00                 | 0.06                 | 50.42                     | 1374.91   | -4.29       | -0.89       | -4.29                     | 4.39                      | 191.73                      | 0.19                          |
| 1400.00                 | 0.10                 | 45.34                     | 1399.91   | -4.27       | -0.87       | -4.27                     | 4.36                      | 191.47                      | 0.14                          |
| 1425.00                 | 0.13                 | 31.28                     | 1424.91   | -4.23       | -0.84       | -4.23                     | 4.31                      | 191.19                      | 0.16                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 1450.00                 | 0.15                 | 320.33                    | 1449.91   | -4.19       | -0.84       | -4.19                     | 4.27                      | 191.39                      | 0.63                          |
| 1475.00                 | 0.12                 | 315.84                    | 1474.91   | -4.14       | -0.88       | -4.14                     | 4.23                      | 192.02                      | 0.10                          |
| 1500.00                 | 0.11                 | 221.01                    | 1499.91   | -4.14       | -0.92       | -4.14                     | 4.24                      | 192.48                      | 0.69                          |
| 1525.00                 | 0.10                 | 249.62                    | 1524.91   | -4.17       | -0.95       | -4.17                     | 4.28                      | 192.90                      | 0.22                          |
| 1550.00                 | 0.10                 | 237.49                    | 1549.91   | -4.19       | -0.99       | -4.19                     | 4.30                      | 193.36                      | 0.09                          |
| 1575.00                 | 0.12                 | 152.31                    | 1574.91   | -4.22       | -1.00       | -4.22                     | 4.34                      | 193.34                      | 0.61                          |
| 1600.00                 | 0.16                 | 154.00                    | 1599.91   | -4.28       | -0.97       | -4.28                     | 4.39                      | 192.83                      | 0.16                          |
| 1625.00                 | 0.18                 | 128.14                    | 1624.91   | -4.33       | -0.93       | -4.33                     | 4.43                      | 192.09                      | 0.31                          |
| 1650.00                 | 0.24                 | 126.21                    | 1649.91   | -4.39       | -0.85       | -4.39                     | 4.47                      | 191.02                      | 0.25                          |
| 1675.00                 | 0.23                 | 130.98                    | 1674.91   | -4.45       | -0.77       | -4.45                     | 4.52                      | 189.85                      | 0.08                          |
| 1700.00                 | 0.29                 | 100.08                    | 1699.91   | -4.50       | -0.67       | -4.50                     | 4.55                      | 188.50                      | 0.60                          |
| 1725.00                 | 0.12                 | 68.51                     | 1724.91   | -4.50       | -0.59       | -4.50                     | 4.54                      | 187.41                      | 0.81                          |
| 1750.00                 | 0.10                 | 356.15                    | 1749.91   | -4.47       | -0.56       | -4.47                     | 4.50                      | 187.18                      | 0.51                          |
| 1775.00                 | 0.14                 | 12.78                     | 1774.91   | -4.42       | -0.56       | -4.42                     | 4.45                      | 187.20                      | 0.21                          |
| 1800.00                 | 0.13                 | 346.53                    | 1799.91   | -4.36       | -0.56       | -4.36                     | 4.40                      | 187.29                      | 0.24                          |
| 1825.00                 | 0.21                 | 295.78                    | 1824.91   | -4.31       | -0.61       | -4.31                     | 4.36                      | 187.99                      | 0.64                          |
| 1850.00                 | 0.14                 | 301.01                    | 1849.91   | -4.28       | -0.67       | -4.28                     | 4.33                      | 188.92                      | 0.29                          |
| 1875.00                 | 0.08                 | 290.27                    | 1874.91   | -4.26       | -0.71       | -4.26                     | 4.32                      | 189.50                      | 0.25                          |
| 1900.00                 | 0.09                 | 220.92                    | 1899.91   | -4.27       | -0.74       | -4.27                     | 4.33                      | 189.86                      | 0.39                          |
| 1925.00                 | 0.05                 | 304.20                    | 1924.91   | -4.28       | -0.76       | -4.28                     | 4.34                      | 190.12                      | 0.40                          |
| 1950.00                 | 0.01                 | 207.68                    | 1949.91   | -4.27       | -0.77       | -4.27                     | 4.34                      | 190.26                      | 0.21                          |
| 1975.00                 | 0.05                 | 247.35                    | 1974.91   | -4.28       | -0.78       | -4.28                     | 4.35                      | 190.39                      | 0.15                          |
| 2000.00                 | 0.04                 | 226.06                    | 1999.91   | -4.29       | -0.80       | -4.29                     | 4.36                      | 190.57                      | 0.07                          |
| 2025.00                 | 0.04                 | 201.24                    | 2024.91   | -4.30       | -0.81       | -4.30                     | 4.38                      | 190.66                      | 0.07                          |
| 2050.00                 | 0.08                 | 158.53                    | 2049.91   | -4.33       | -0.81       | -4.33                     | 4.40                      | 190.56                      | 0.22                          |
| 2075.00                 | 0.12                 | 131.92                    | 2074.91   | -4.36       | -0.78       | -4.36                     | 4.43                      | 190.15                      | 0.24                          |
| 2100.00                 | 0.15                 | 126.45                    | 2099.91   | -4.40       | -0.74       | -4.40                     | 4.46                      | 189.50                      | 0.11                          |
| 2125.00                 | 0.12                 | 127.67                    | 2124.91   | -4.43       | -0.69       | -4.43                     | 4.49                      | 188.85                      | 0.11                          |
| 2150.00                 | 0.18                 | 110.36                    | 2149.91   | -4.46       | -0.63       | -4.46                     | 4.51                      | 188.06                      | 0.31                          |
| 2175.00                 | 0.24                 | 65.89                     | 2174.91   | -4.46       | -0.55       | -4.46                     | 4.49                      | 187.00                      | 0.67                          |
| 2200.00                 | 0.16                 | 66.63                     | 2199.91   | -4.42       | -0.47       | -4.42                     | 4.45                      | 186.03                      | 0.32                          |
| 2225.00                 | 0.04                 | 111.42                    | 2224.91   | -4.41       | -0.43       | -4.41                     | 4.43                      | 185.54                      | 0.54                          |
| 2250.00                 | 0.05                 | 273.93                    | 2249.91   | -4.41       | -0.43       | -4.41                     | 4.43                      | 185.58                      | 0.35                          |
| 2275.00                 | 0.09                 | 58.43                     | 2274.91   | -4.40       | -0.43       | -4.40                     | 4.42                      | 185.52                      | 0.53                          |
| 2300.00                 | 0.18                 | 51.46                     | 2299.91   | -4.37       | -0.38       | -4.37                     | 4.39                      | 184.96                      | 0.36                          |
| 2325.00                 | 0.23                 | 42.80                     | 2324.91   | -4.31       | -0.32       | -4.31                     | 4.32                      | 184.18                      | 0.24                          |
| 2350.00                 | 0.05                 | 61.42                     | 2349.91   | -4.27       | -0.27       | -4.27                     | 4.28                      | 183.66                      | 0.74                          |
| 2375.00                 | 0.25                 | 26.85                     | 2374.91   | -4.21       | -0.24       | -4.21                     | 4.22                      | 183.24                      | 0.87                          |
| 2400.00                 | 0.21                 | 307.15                    | 2399.91   | -4.14       | -0.25       | -4.14                     | 4.14                      | 183.47                      | 1.21                          |

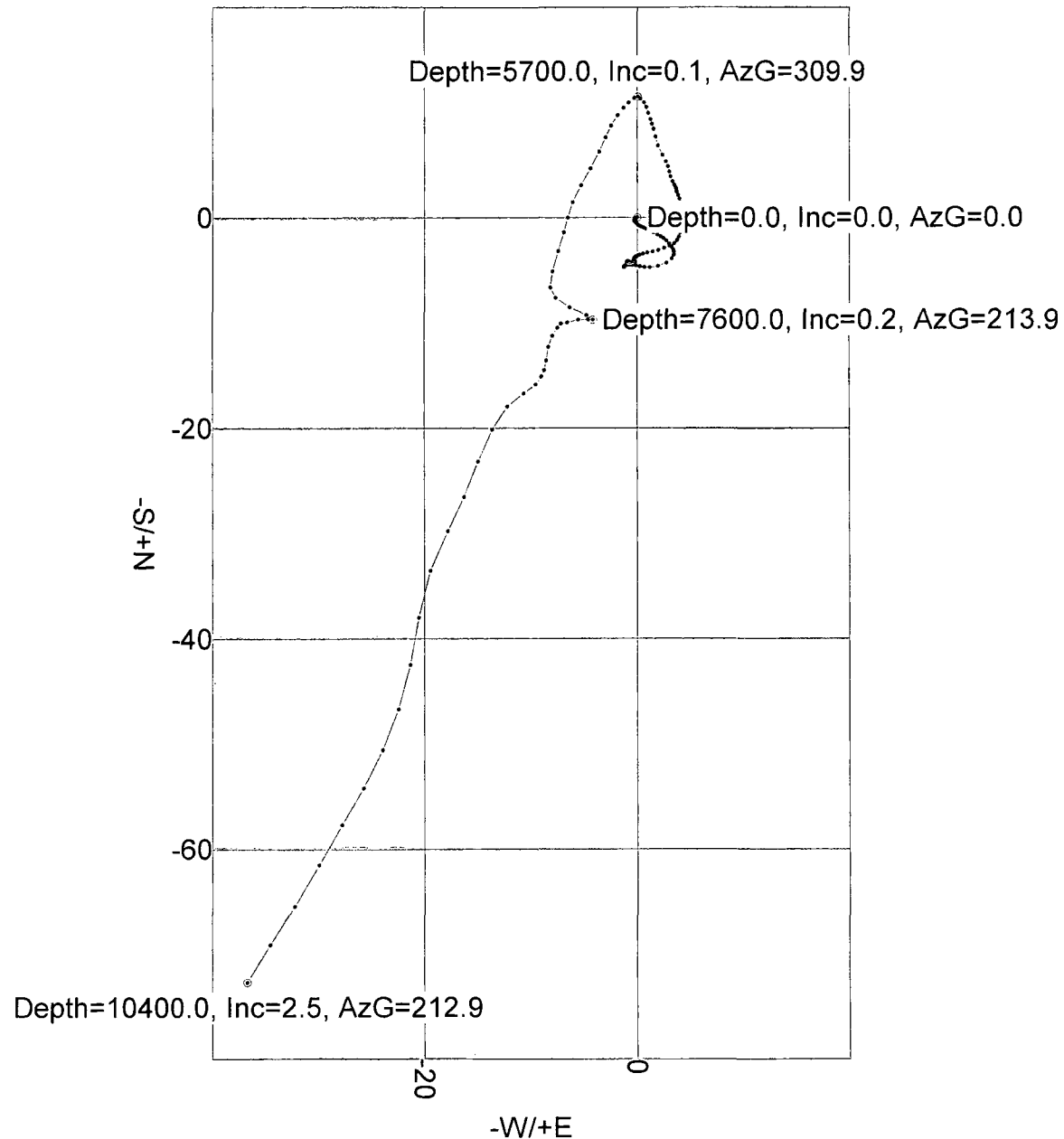
| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 2425.00                 | 0.23                 | 316.52                    | 2424.91   | -4.07       | -0.32       | -4.07                     | 4.08                      | 184.54                      | 0.17                          |
| 2450.00                 | 0.11                 | 12.37                     | 2449.91   | -4.01       | -0.35       | -4.01                     | 4.03                      | 185.03                      | 0.78                          |
| 2475.00                 | 0.10                 | 28.41                     | 2474.91   | -3.97       | -0.34       | -3.97                     | 3.98                      | 184.87                      | 0.12                          |
| 2500.00                 | 0.11                 | 31.43                     | 2499.91   | -3.93       | -0.32       | -3.93                     | 3.94                      | 184.58                      | 0.07                          |
| 2525.00                 | 0.13                 | 32.83                     | 2524.91   | -3.88       | -0.29       | -3.88                     | 3.89                      | 184.22                      | 0.07                          |
| 2550.00                 | 0.08                 | 18.18                     | 2549.91   | -3.84       | -0.27       | -3.84                     | 3.85                      | 183.96                      | 0.22                          |
| 2575.00                 | 0.08                 | 35.83                     | 2574.91   | -3.81       | -0.25       | -3.81                     | 3.82                      | 183.75                      | 0.10                          |
| 2600.00                 | 0.12                 | 47.91                     | 2599.91   | -3.78       | -0.22       | -3.78                     | 3.79                      | 183.35                      | 0.17                          |
| 2625.00                 | 0.22                 | 50.26                     | 2624.90   | -3.73       | -0.17       | -3.73                     | 3.74                      | 182.55                      | 0.41                          |
| 2650.00                 | 0.50                 | 63.44                     | 2649.90   | -3.66       | -0.03       | -3.66                     | 3.66                      | 180.52                      | 1.16                          |
| 2675.00                 | 0.70                 | 69.27                     | 2674.90   | -3.55       | 0.21        | -3.55                     | 3.56                      | 176.67                      | 0.86                          |
| 2700.00                 | 0.89                 | 72.16                     | 2699.90   | -3.44       | 0.53        | -3.44                     | 3.48                      | 171.16                      | 0.76                          |
| 2725.00                 | 1.07                 | 79.48                     | 2724.90   | -3.34       | 0.95        | -3.34                     | 3.47                      | 164.15                      | 0.87                          |
| 2750.00                 | 1.25                 | 77.41                     | 2749.89   | -3.24       | 1.44        | -3.24                     | 3.54                      | 155.97                      | 0.75                          |
| 2775.00                 | 1.32                 | 70.99                     | 2774.89   | -3.08       | 1.98        | -3.08                     | 3.66                      | 147.28                      | 0.64                          |
| 2800.00                 | 1.37                 | 73.60                     | 2799.88   | -2.90       | 2.54        | -2.90                     | 3.86                      | 138.85                      | 0.32                          |
| 2825.00                 | 1.23                 | 64.46                     | 2824.87   | -2.70       | 3.07        | -2.70                     | 4.09                      | 131.39                      | 0.99                          |
| 2850.00                 | 1.06                 | 52.31                     | 2849.87   | -2.45       | 3.49        | -2.45                     | 4.27                      | 125.01                      | 1.19                          |
| 2875.00                 | 0.79                 | 32.75                     | 2874.86   | -2.16       | 3.77        | -2.16                     | 4.35                      | 119.82                      | 1.64                          |
| 2900.00                 | 0.95                 | 21.19                     | 2899.86   | -1.82       | 3.94        | -1.82                     | 4.34                      | 114.83                      | 0.95                          |
| 2925.00                 | 0.85                 | 19.08                     | 2924.86   | -1.45       | 4.07        | -1.45                     | 4.33                      | 109.64                      | 0.42                          |
| 2950.00                 | 0.54                 | 17.63                     | 2949.86   | -1.17       | 4.17        | -1.17                     | 4.33                      | 105.61                      | 1.24                          |
| 2975.00                 | 0.77                 | 9.78                      | 2974.85   | -0.89       | 4.23        | -0.89                     | 4.33                      | 101.84                      | 0.97                          |
| 3000.00                 | 0.68                 | 5.34                      | 2999.85   | -0.58       | 4.28        | -0.58                     | 4.32                      | 97.67                       | 0.43                          |
| 3025.00                 | 0.51                 | 1.23                      | 3024.85   | -0.32       | 4.29        | -0.32                     | 4.30                      | 94.24                       | 0.69                          |
| 3050.00                 | 0.38                 | 12.56                     | 3049.85   | -0.13       | 4.31        | -0.13                     | 4.32                      | 91.66                       | 0.61                          |
| 3075.00                 | 0.25                 | 39.01                     | 3074.85   | 0.00        | 4.37        | 0.00                      | 4.37                      | 90.02                       | 0.79                          |
| 3100.00                 | 0.32                 | 34.65                     | 3099.85   | 0.10        | 4.44        | 0.10                      | 4.44                      | 88.74                       | 0.32                          |
| 3125.00                 | 0.36                 | 13.98                     | 3124.85   | 0.23        | 4.50        | 0.23                      | 4.50                      | 87.04                       | 0.51                          |
| 3150.00                 | 0.15                 | 347.46                    | 3149.85   | 0.34        | 4.51        | 0.34                      | 4.52                      | 85.69                       | 0.96                          |
| 3175.00                 | 0.10                 | 342.41                    | 3174.85   | 0.39        | 4.50        | 0.39                      | 4.51                      | 85.02                       | 0.19                          |
| 3200.00                 | 0.13                 | 344.03                    | 3199.85   | 0.44        | 4.48        | 0.44                      | 4.50                      | 84.40                       | 0.12                          |
| 3225.00                 | 0.22                 | 330.94                    | 3224.85   | 0.51        | 4.45        | 0.51                      | 4.48                      | 83.49                       | 0.38                          |
| 3250.00                 | 0.13                 | 353.45                    | 3249.85   | 0.58        | 4.43        | 0.58                      | 4.46                      | 82.55                       | 0.42                          |
| 3275.00                 | 0.14                 | 340.55                    | 3274.85   | 0.64        | 4.41        | 0.64                      | 4.46                      | 81.79                       | 0.12                          |
| 3300.00                 | 0.09                 | 359.50                    | 3299.85   | 0.68        | 4.40        | 0.68                      | 4.45                      | 81.17                       | 0.26                          |
| 3325.00                 | 0.15                 | 354.53                    | 3324.85   | 0.73        | 4.40        | 0.73                      | 4.46                      | 80.52                       | 0.26                          |
| 3350.00                 | 0.20                 | 355.10                    | 3349.85   | 0.81        | 4.39        | 0.81                      | 4.47                      | 79.54                       | 0.21                          |
| 3375.00                 | 0.28                 | 352.54                    | 3374.85   | 0.92        | 4.38        | 0.92                      | 4.47                      | 78.19                       | 0.34                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 3400.00                 | 0.12                 | 341.13                    | 3399.85   | 1.00        | 4.36        | 1.00                      | 4.48                      | 77.07                       | 0.68                          |
| 3500.00                 | 0.34                 | 330.78                    | 3499.85   | 1.36        | 4.18        | 1.36                      | 4.40                      | 71.99                       | 0.23                          |
| 3600.00                 | 0.17                 | 343.48                    | 3599.85   | 1.76        | 4.00        | 1.76                      | 4.37                      | 66.19                       | 0.18                          |
| 3700.00                 | 0.26                 | 335.71                    | 3699.85   | 2.11        | 3.86        | 2.11                      | 4.40                      | 61.33                       | 0.09                          |
| 3800.00                 | 0.13                 | 348.71                    | 3799.84   | 2.43        | 3.75        | 2.43                      | 4.47                      | 57.04                       | 0.13                          |
| 3900.00                 | 0.10                 | 344.21                    | 3899.84   | 2.62        | 3.70        | 2.62                      | 4.54                      | 54.66                       | 0.04                          |
| 4000.00                 | 0.16                 | 344.87                    | 3999.84   | 2.84        | 3.64        | 2.84                      | 4.62                      | 52.06                       | 0.06                          |
| 4100.00                 | 0.15                 | 317.31                    | 4099.84   | 3.07        | 3.52        | 3.07                      | 4.67                      | 48.89                       | 0.07                          |
| 4200.00                 | 0.30                 | 339.06                    | 4199.84   | 3.41        | 3.34        | 3.41                      | 4.77                      | 44.38                       | 0.17                          |
| 4300.00                 | 0.30                 | 338.09                    | 4299.84   | 3.89        | 3.15        | 3.89                      | 5.01                      | 38.95                       | 0.01                          |
| 4400.00                 | 0.24                 | 359.57                    | 4399.84   | 4.34        | 3.05        | 4.34                      | 5.30                      | 35.11                       | 0.12                          |
| 4500.00                 | 0.39                 | 334.44                    | 4499.84   | 4.85        | 2.90        | 4.85                      | 5.65                      | 30.89                       | 0.20                          |
| 4600.00                 | 0.19                 | 343.77                    | 4599.84   | 5.31        | 2.71        | 5.31                      | 5.96                      | 27.02                       | 0.21                          |
| 4700.00                 | 0.60                 | 331.34                    | 4699.84   | 5.93        | 2.41        | 5.93                      | 6.40                      | 22.14                       | 0.42                          |
| 4800.00                 | 0.54                 | 336.33                    | 4799.83   | 6.82        | 1.97        | 6.82                      | 7.10                      | 16.14                       | 0.08                          |
| 4900.00                 | 0.48                 | 354.06                    | 4899.83   | 7.66        | 1.74        | 7.66                      | 7.86                      | 12.80                       | 0.17                          |
| 5000.00                 | 0.42                 | 338.20                    | 4999.82   | 8.42        | 1.56        | 8.42                      | 8.56                      | 10.50                       | 0.14                          |
| 5100.00                 | 0.16                 | 351.47                    | 5099.82   | 8.90        | 1.40        | 8.90                      | 9.01                      | 8.96                        | 0.27                          |
| 5200.00                 | 0.35                 | 339.27                    | 5199.82   | 9.33        | 1.27        | 9.33                      | 9.41                      | 7.77                        | 0.20                          |
| 5300.00                 | 0.38                 | 341.31                    | 5299.82   | 9.93        | 1.06        | 9.93                      | 9.98                      | 6.09                        | 0.03                          |
| 5400.00                 | 0.30                 | 341.26                    | 5399.82   | 10.49       | 0.87        | 10.49                     | 10.52                     | 4.74                        | 0.08                          |
| 5500.00                 | 0.26                 | 328.33                    | 5499.82   | 10.93       | 0.66        | 10.93                     | 10.95                     | 3.48                        | 0.07                          |
| 5600.00                 | 0.29                 | 305.58                    | 5599.82   | 11.27       | 0.34        | 11.27                     | 11.28                     | 1.70                        | 0.11                          |
| 5700.00                 | 0.11                 | 309.91                    | 5699.81   | 11.49       | 0.05        | 11.49                     | 11.49                     | 0.26                        | 0.18                          |
| 5800.00                 | 0.37                 | 230.09                    | 5799.81   | 11.34       | -0.27       | 11.34                     | 11.34                     | 358.63                      | 0.37                          |
| 5900.00                 | 0.40                 | 232.38                    | 5899.81   | 10.92       | -0.80       | 10.92                     | 10.95                     | 355.82                      | 0.04                          |
| 6000.00                 | 0.40                 | 214.43                    | 5999.81   | 10.42       | -1.27       | 10.42                     | 10.49                     | 353.03                      | 0.13                          |
| 6100.00                 | 0.64                 | 219.23                    | 6099.80   | 9.70        | -1.82       | 9.70                      | 9.87                      | 349.37                      | 0.24                          |
| 6200.00                 | 0.71                 | 207.91                    | 6199.80   | 8.72        | -2.46       | 8.72                      | 9.06                      | 344.25                      | 0.15                          |
| 6300.00                 | 0.70                 | 200.03                    | 6299.79   | 7.60        | -2.96       | 7.60                      | 8.16                      | 338.72                      | 0.10                          |
| 6400.00                 | 0.99                 | 208.02                    | 6399.78   | 6.26        | -3.58       | 6.26                      | 7.21                      | 330.25                      | 0.32                          |
| 6500.00                 | 1.06                 | 205.35                    | 6499.76   | 4.65        | -4.38       | 4.65                      | 6.39                      | 316.72                      | 0.08                          |
| 6600.00                 | 1.03                 | 212.08                    | 6599.75   | 3.06        | -5.26       | 3.06                      | 6.08                      | 300.17                      | 0.13                          |
| 6700.00                 | 1.04                 | 200.04                    | 6699.73   | 1.44        | -6.04       | 1.44                      | 6.21                      | 283.41                      | 0.22                          |
| 6800.00                 | 0.72                 | 193.79                    | 6799.72   | -0.02       | -6.50       | -0.02                     | 6.50                      | 269.82                      | 0.34                          |
| 6900.00                 | 0.94                 | 196.14                    | 6899.71   | -1.41       | -6.88       | -1.41                     | 7.02                      | 258.40                      | 0.22                          |
| 7000.00                 | 1.16                 | 196.05                    | 6999.69   | -3.17       | -7.39       | -3.17                     | 8.04                      | 246.75                      | 0.23                          |
| 7100.00                 | 1.17                 | 196.08                    | 7099.67   | -5.13       | -7.95       | -5.13                     | 9.46                      | 237.18                      | 0.01                          |
| 7200.00                 | 0.62                 | 169.97                    | 7199.66   | -6.64       | -8.14       | -6.64                     | 10.51                     | 230.79                      | 0.67                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 7300.00                 | 0.67                 | 139.10                    | 7299.65   | -7.62       | -7.66       | -7.62                     | 10.81                     | 225.16                      | 0.35                          |
| 7400.00                 | 1.19                 | 116.34                    | 7399.64   | -8.52       | -6.35       | -8.52                     | 10.63                     | 216.69                      | 0.62                          |
| 7500.00                 | 0.86                 | 112.04                    | 7499.62   | -9.26       | -4.73       | -9.26                     | 10.40                     | 207.05                      | 0.34                          |
| 7600.00                 | 0.21                 | 213.94                    | 7599.62   | -9.70       | -4.14       | -9.70                     | 10.54                     | 203.13                      | 0.92                          |
| 7700.00                 | 0.46                 | 296.50                    | 7699.62   | -9.67       | -4.60       | -9.67                     | 10.71                     | 205.45                      | 0.48                          |
| 7800.00                 | 0.66                 | 248.88                    | 7799.61   | -9.70       | -5.50       | -9.70                     | 11.15                     | 209.55                      | 0.49                          |
| 7900.00                 | 0.56                 | 264.50                    | 7899.61   | -9.96       | -6.52       | -9.96                     | 11.90                     | 213.23                      | 0.20                          |
| 8000.00                 | 0.14                 | 247.55                    | 7999.61   | -10.05      | -7.12       | -10.05                    | 12.32                     | 215.31                      | 0.42                          |
| 8100.00                 | 0.49                 | 209.32                    | 8099.60   | -10.47      | -7.44       | -10.47                    | 12.84                     | 215.40                      | 0.39                          |
| 8200.00                 | 0.55                 | 213.52                    | 8199.60   | -11.24      | -7.91       | -11.24                    | 13.75                     | 215.14                      | 0.07                          |
| 8300.00                 | 0.75                 | 190.04                    | 8299.59   | -12.28      | -8.29       | -12.28                    | 14.82                     | 214.02                      | 0.33                          |
| 8400.00                 | 0.74                 | 188.51                    | 8399.59   | -13.57      | -8.50       | -13.57                    | 16.01                     | 212.07                      | 0.02                          |
| 8500.00                 | 0.34                 | 199.09                    | 8499.58   | -14.49      | -8.69       | -14.49                    | 16.89                     | 210.97                      | 0.41                          |
| 8600.00                 | 0.43                 | 203.93                    | 8599.58   | -15.11      | -8.94       | -15.11                    | 17.55                     | 210.62                      | 0.10                          |
| 8700.00                 | 0.65                 | 224.47                    | 8699.57   | -15.85      | -9.49       | -15.85                    | 18.48                     | 210.91                      | 0.29                          |
| 8800.00                 | 1.00                 | 239.43                    | 8799.56   | -16.70      | -10.64      | -16.70                    | 19.80                     | 212.49                      | 0.40                          |
| 8900.00                 | 1.28                 | 223.91                    | 8899.54   | -17.95      | -12.16      | -17.95                    | 21.68                     | 214.12                      | 0.41                          |
| 9000.00                 | 1.77                 | 206.29                    | 8999.51   | -20.13      | -13.62      | -20.13                    | 24.30                     | 214.07                      | 0.67                          |
| 9100.00                 | 2.02                 | 201.21                    | 9099.45   | -23.16      | -14.94      | -23.16                    | 27.56                     | 212.82                      | 0.31                          |
| 9200.00                 | 2.09                 | 202.09                    | 9199.39   | -26.50      | -16.26      | -26.50                    | 31.09                     | 211.54                      | 0.07                          |
| 9300.00                 | 2.04                 | 208.50                    | 9299.33   | -29.75      | -17.80      | -29.75                    | 34.67                     | 210.89                      | 0.24                          |
| 9400.00                 | 2.67                 | 199.42                    | 9399.24   | -33.52      | -19.42      | -33.52                    | 38.74                     | 210.09                      | 0.73                          |
| 9500.00                 | 2.65                 | 188.20                    | 9499.13   | -38.00      | -20.53      | -38.00                    | 43.19                     | 208.38                      | 0.52                          |
| 9600.00                 | 2.58                 | 192.24                    | 9599.03   | -42.48      | -21.33      | -42.48                    | 47.53                     | 206.67                      | 0.20                          |
| 9700.00                 | 2.42                 | 197.51                    | 9698.94   | -46.69      | -22.44      | -46.69                    | 51.80                     | 205.68                      | 0.28                          |
| 9800.00                 | 2.34                 | 204.71                    | 9798.85   | -50.55      | -23.93      | -50.55                    | 55.93                     | 205.33                      | 0.31                          |
| 9900.00                 | 2.31                 | 208.51                    | 9898.77   | -54.18      | -25.75      | -54.18                    | 59.98                     | 205.42                      | 0.16                          |
| 10000.00                | 2.34                 | 212.34                    | 9998.68   | -57.67      | -27.80      | -57.67                    | 64.02                     | 205.74                      | 0.16                          |
| 10100.00                | 2.69                 | 207.39                    | 10098.59  | -61.48      | -29.97      | -61.48                    | 68.39                     | 205.99                      | 0.41                          |
| 10200.00                | 2.59                 | 213.49                    | 10198.48  | -65.44      | -32.29      | -65.44                    | 72.98                     | 206.27                      | 0.30                          |
| 10300.00                | 2.34                 | 209.34                    | 10298.39  | -69.10      | -34.54      | -69.10                    | 77.26                     | 206.56                      | 0.30                          |
| 10400.00                | 2.45                 | 212.89                    | 10398.30  | -72.68      | -36.70      | -72.68                    | 81.42                     | 206.79                      | 0.19                          |



VES Survey International  
West Texas  
(432) 563-5444  
Surveyor: Gene Heiss  
Cabo Wabo 25 Federal Com 3H / API 30-015-42507



VES Survey Date: 12/5/2014





## **COG Operating, LLC**

**Eddy County, NM (NAD 27)**

**Sec 25, T25-S, R29-E**

**Cabo Wabo 25 Federal Com #3H**

**Wellbore #1**

**Design: Wellbore #1**

## **Survey Report - Geographic**

**29 December, 2014**





## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project     | Eddy County, NM (NAD 27)             |               |                |
| 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, T25-S, R29-E |                   |                   |
| Site Position:        |                      | Northing:         | 398,474.10 usft   |
| From:                 | Map                  | Easting:          | 622,259.90 usft   |
| Position Uncertainty: | 0.0 usft             | Slot Radius:      | 13-3/16 "         |
|                       |                      | Latitude:         | 32° 5' 41.662 N   |
|                       |                      | Longitude:        | 103° 56' 18.722 W |
|                       |                      | Grid Convergence: | 0.21 °            |

|                      |                              |                     |                  |
|----------------------|------------------------------|---------------------|------------------|
| Well                 | Cabo Wabo 25 Federal Com #3H |                     |                  |
| Well Position        | +N/-S                        | 0.0 usft            | Northing:        |
|                      | +E/-W                        | 0.0 usft            | Easting:         |
| Position Uncertainty | 0.0 usft                     | Wellhead Elevation: | usft             |
|                      |                              | Latitude:           | 32° 5' 41.796 N  |
|                      |                              | Longitude:          | 103° 56' 2.913 W |
|                      |                              | Ground Level:       | 3,068.3 usft     |

|           |             |             |                |
|-----------|-------------|-------------|----------------|
| Wellbore  | Wellbore #1 |             |                |
| Magnetics | Model Name: | Sample Date | Declination    |
|           |             |             | (°)            |
|           | IGRF2010    | 12/7/2014   | 7.32           |
|           |             |             | Dip Angle      |
|           |             |             | (°)            |
|           |             |             | 59.92          |
|           |             |             | Field Strength |
|           |             |             | (nT)           |
|           |             |             | 48,154         |

|                   |                  |               |           |
|-------------------|------------------|---------------|-----------|
| Design            | Wellbore #1      |               |           |
| Audit Notes:      |                  |               |           |
| Version:          | 1.0              | Phase:        | ACTUAL    |
|                   |                  | Tie On Depth: | 0.0       |
| Vertical Section: | Depth From (TVD) | +N/-S         | +E/-W     |
|                   | (usft)           | (usft)        | (usft)    |
|                   | 0.0              | 0.0           | 0.0       |
|                   |                  |               | Direction |
|                   |                  |               | (°)       |
|                   |                  |               | 358.66    |

|                |                 |                    |                |
|----------------|-----------------|--------------------|----------------|
| Survey Program | Date 12/29/2014 |                    |                |
| From           | To              | Survey (Wellbore)  | Tool Name      |
| (usft)         | (usft)          |                    |                |
| 25.0           | 7,300.0         | GYRO (Wellbore #1) | Good_gyro      |
| 7,336.0        | 17,420.0        | MWD (Wellbore #1)  | MWD default    |
|                |                 |                    | Description    |
|                |                 |                    | Good Gyro      |
|                |                 |                    | MWD - Standard |

|          |             |         |          |        |        |            |            |                 |                  |
|----------|-------------|---------|----------|--------|--------|------------|------------|-----------------|------------------|
| Survey   |             |         |          |        |        |            |            |                 |                  |
| 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    | 398,492.70 | 623,619.80 | 32° 5' 41.796 N | 103° 56' 2.913 W |
| 25.0     | 0.18        | 245.96  | 25.0     | 0.0    | 0.0    | 398,492.68 | 623,619.77 | 32° 5' 41.796 N | 103° 56' 2.913 W |
| 50.0     | 0.03        | 246.50  | 50.0     | 0.0    | -0.1   | 398,492.66 | 623,619.73 | 32° 5' 41.796 N | 103° 56' 2.914 W |
| 75.0     | 0.03        | 246.00  | 75.0     | 0.0    | -0.1   | 398,492.66 | 623,619.71 | 32° 5' 41.796 N | 103° 56' 2.914 W |
| 100.0    | 0.12        | 255.84  | 100.0    | 0.0    | -0.1   | 398,492.65 | 623,619.68 | 32° 5' 41.796 N | 103° 56' 2.914 W |
| 125.0    | 0.21        | 215.99  | 125.0    | -0.1   | -0.2   | 398,492.61 | 623,619.63 | 32° 5' 41.795 N | 103° 56' 2.915 W |
| 150.0    | 0.09        | 149.48  | 150.0    | -0.1   | -0.2   | 398,492.55 | 623,619.61 | 32° 5' 41.795 N | 103° 56' 2.915 W |
| 175.0    | 0.03        | 306.79  | 175.0    | -0.2   | -0.2   | 398,492.54 | 623,619.62 | 32° 5' 41.795 N | 103° 56' 2.915 W |
| 200.0    | 0.09        | 300.08  | 200.0    | -0.1   | -0.2   | 398,492.55 | 623,619.60 | 32° 5' 41.795 N | 103° 56' 2.915 W |
| 225.0    | 0.18        | 224.06  | 225.0    | -0.2   | -0.3   | 398,492.53 | 623,619.55 | 32° 5' 41.795 N | 103° 56' 2.916 W |
| 250.0    | 0.29        | 186.95  | 250.0    | -0.3   | -0.3   | 398,492.44 | 623,619.52 | 32° 5' 41.794 N | 103° 56' 2.916 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

## Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 275.0                 | 0.43            | 149.27      | 275.0                 | -0.4         | -0.2         | 398,492.30          | 623,619.56         | 32° 5' 41.792 N | 103° 56' 2.916 W |
| 300.0                 | 0.47            | 127.06      | 300.0                 | -0.5         | -0.1         | 398,492.16          | 623,619.69         | 32° 5' 41.791 N | 103° 56' 2.914 W |
| 325.0                 | 0.54            | 138.23      | 325.0                 | -0.7         | 0.0          | 398,492.01          | 623,619.85         | 32° 5' 41.789 N | 103° 56' 2.912 W |
| 350.0                 | 0.46            | 113.08      | 350.0                 | -0.8         | 0.2          | 398,491.88          | 623,620.02         | 32° 5' 41.788 N | 103° 56' 2.910 W |
| 375.0                 | 0.43            | 109.90      | 375.0                 | -0.9         | 0.4          | 398,491.81          | 623,620.20         | 32° 5' 41.787 N | 103° 56' 2.908 W |
| 400.0                 | 0.63            | 114.48      | 400.0                 | -1.0         | 0.6          | 398,491.72          | 623,620.41         | 32° 5' 41.787 N | 103° 56' 2.906 W |
| 425.0                 | 0.74            | 118.19      | 425.0                 | -1.1         | 0.9          | 398,491.59          | 623,620.68         | 32° 5' 41.785 N | 103° 56' 2.903 W |
| 450.0                 | 0.84            | 116.74      | 450.0                 | -1.3         | 1.2          | 398,491.43          | 623,620.99         | 32° 5' 41.784 N | 103° 56' 2.899 W |
| 475.0                 | 0.94            | 114.83      | 475.0                 | -1.4         | 1.5          | 398,491.26          | 623,621.33         | 32° 5' 41.782 N | 103° 56' 2.895 W |
| 500.0                 | 0.95            | 118.97      | 500.0                 | -1.6         | 1.9          | 398,491.07          | 623,621.70         | 32° 5' 41.780 N | 103° 56' 2.891 W |
| 525.0                 | 0.70            | 120.76      | 525.0                 | -1.8         | 2.2          | 398,490.90          | 623,622.01         | 32° 5' 41.778 N | 103° 56' 2.887 W |
| 550.0                 | 0.79            | 123.05      | 550.0                 | -2.0         | 2.5          | 398,490.72          | 623,622.29         | 32° 5' 41.777 N | 103° 56' 2.884 W |
| 575.0                 | 0.89            | 135.64      | 575.0                 | -2.2         | 2.8          | 398,490.49          | 623,622.57         | 32° 5' 41.774 N | 103° 56' 2.881 W |
| 600.0                 | 0.89            | 140.34      | 600.0                 | -2.5         | 3.0          | 398,490.20          | 623,622.83         | 32° 5' 41.771 N | 103° 56' 2.878 W |
| 625.0                 | 0.74            | 145.74      | 625.0                 | -2.8         | 3.2          | 398,489.92          | 623,623.05         | 32° 5' 41.769 N | 103° 56' 2.875 W |
| 650.0                 | 0.59            | 156.80      | 650.0                 | -3.0         | 3.4          | 398,489.67          | 623,623.19         | 32° 5' 41.766 N | 103° 56' 2.874 W |
| 675.0                 | 0.60            | 166.85      | 675.0                 | -3.3         | 3.5          | 398,489.42          | 623,623.27         | 32° 5' 41.764 N | 103° 56' 2.873 W |
| 700.0                 | 0.70            | 197.39      | 700.0                 | -3.6         | 3.4          | 398,489.15          | 623,623.25         | 32° 5' 41.761 N | 103° 56' 2.873 W |
| 725.0                 | 1.12            | 213.68      | 725.0                 | -3.9         | 3.3          | 398,488.80          | 623,623.07         | 32° 5' 41.758 N | 103° 56' 2.875 W |
| 750.0                 | 1.98            | 239.37      | 750.0                 | -4.3         | 2.8          | 398,488.38          | 623,622.56         | 32° 5' 41.753 N | 103° 56' 2.881 W |
| 775.0                 | 2.10            | 259.24      | 774.9                 | -4.6         | 1.9          | 398,488.07          | 623,621.74         | 32° 5' 41.750 N | 103° 56' 2.891 W |
| 800.0                 | 1.38            | 267.52      | 799.9                 | -4.7         | 1.2          | 398,487.97          | 623,620.99         | 32° 5' 41.749 N | 103° 56' 2.899 W |
| 825.0                 | 1.00            | 274.00      | 824.9                 | -4.7         | 0.7          | 398,487.97          | 623,620.47         | 32° 5' 41.749 N | 103° 56' 2.905 W |
| 850.0                 | 1.03            | 284.92      | 849.9                 | -4.7         | 0.2          | 398,488.05          | 623,620.04         | 32° 5' 41.750 N | 103° 56' 2.910 W |
| 875.0                 | 0.83            | 279.78      | 874.9                 | -4.6         | -0.2         | 398,488.14          | 623,619.64         | 32° 5' 41.751 N | 103° 56' 2.915 W |
| 900.0                 | 0.69            | 277.85      | 899.9                 | -4.5         | -0.5         | 398,488.19          | 623,619.31         | 32° 5' 41.752 N | 103° 56' 2.919 W |
| 925.0                 | 0.53            | 273.29      | 924.9                 | -4.5         | -0.8         | 398,488.21          | 623,619.05         | 32° 5' 41.752 N | 103° 56' 2.922 W |
| 950.0                 | 0.35            | 257.64      | 949.9                 | -4.5         | -0.9         | 398,488.20          | 623,618.86         | 32° 5' 41.752 N | 103° 56' 2.924 W |
| 975.0                 | 0.35            | 245.95      | 974.9                 | -4.5         | -1.1         | 398,488.16          | 623,618.72         | 32° 5' 41.751 N | 103° 56' 2.926 W |
| 1,000.0               | 0.16            | 238.10      | 999.9                 | -4.6         | -1.2         | 398,488.11          | 623,618.62         | 32° 5' 41.751 N | 103° 56' 2.927 W |
| 1,025.0               | 0.17            | 211.48      | 1,024.9               | -4.6         | -1.2         | 398,488.06          | 623,618.57         | 32° 5' 41.750 N | 103° 56' 2.927 W |
| 1,050.0               | 0.09            | 195.84      | 1,049.9               | -4.7         | -1.3         | 398,488.01          | 623,618.54         | 32° 5' 41.750 N | 103° 56' 2.928 W |
| 1,075.0               | 0.06            | 145.00      | 1,074.9               | -4.7         | -1.3         | 398,487.98          | 623,618.54         | 32° 5' 41.750 N | 103° 56' 2.928 W |
| 1,100.0               | 0.09            | 320.47      | 1,099.9               | -4.7         | -1.3         | 398,487.98          | 623,618.54         | 32° 5' 41.750 N | 103° 56' 2.928 W |
| 1,125.0               | 0.13            | 34.18       | 1,124.9               | -4.7         | -1.3         | 398,488.02          | 623,618.54         | 32° 5' 41.750 N | 103° 56' 2.928 W |
| 1,150.0               | 0.13            | 53.82       | 1,149.9               | -4.6         | -1.2         | 398,488.06          | 623,618.58         | 32° 5' 41.750 N | 103° 56' 2.927 W |
| 1,175.0               | 0.17            | 60.62       | 1,174.9               | -4.6         | -1.2         | 398,488.10          | 623,618.64         | 32° 5' 41.751 N | 103° 56' 2.927 W |
| 1,200.0               | 0.20            | 50.14       | 1,199.9               | -4.6         | -1.1         | 398,488.14          | 623,618.70         | 32° 5' 41.751 N | 103° 56' 2.926 W |
| 1,225.0               | 0.09            | 39.48       | 1,224.9               | -4.5         | -1.1         | 398,488.19          | 623,618.75         | 32° 5' 41.752 N | 103° 56' 2.925 W |
| 1,250.0               | 0.09            | 53.07       | 1,249.9               | -4.5         | -1.0         | 398,488.21          | 623,618.78         | 32° 5' 41.752 N | 103° 56' 2.925 W |
| 1,275.0               | 0.07            | 41.93       | 1,274.9               | -4.5         | -1.0         | 398,488.24          | 623,618.80         | 32° 5' 41.752 N | 103° 56' 2.925 W |
| 1,300.0               | 0.16            | 31.51       | 1,299.9               | -4.4         | -1.0         | 398,488.28          | 623,618.83         | 32° 5' 41.753 N | 103° 56' 2.924 W |
| 1,325.0               | 0.11            | 22.42       | 1,324.9               | -4.4         | -0.9         | 398,488.33          | 623,618.86         | 32° 5' 41.753 N | 103° 56' 2.924 W |
| 1,350.0               | 0.10            | 31.58       | 1,349.9               | -4.3         | -0.9         | 398,488.37          | 623,618.88         | 32° 5' 41.753 N | 103° 56' 2.924 W |
| 1,375.0               | 0.06            | 50.42       | 1,374.9               | -4.3         | -0.9         | 398,488.40          | 623,618.90         | 32° 5' 41.754 N | 103° 56' 2.924 W |
| 1,400.0               | 0.10            | 45.34       | 1,399.9               | -4.3         | -0.9         | 398,488.42          | 623,618.93         | 32° 5' 41.754 N | 103° 56' 2.923 W |
| 1,425.0               | 0.13            | 31.28       | 1,424.9               | -4.2         | -0.8         | 398,488.46          | 623,618.96         | 32° 5' 41.754 N | 103° 56' 2.923 W |
| 1,450.0               | 0.15            | 320.33      | 1,449.9               | -4.2         | -0.9         | 398,488.51          | 623,618.95         | 32° 5' 41.755 N | 103° 56' 2.923 W |
| 1,475.0               | 0.12            | 315.84      | 1,474.9               | -4.1         | -0.9         | 398,488.55          | 623,618.91         | 32° 5' 41.755 N | 103° 56' 2.923 W |
| 1,500.0               | 0.11            | 221.01      | 1,499.9               | -4.1         | -0.9         | 398,488.55          | 623,618.88         | 32° 5' 41.755 N | 103° 56' 2.924 W |
| 1,525.0               | 0.10            | 249.62      | 1,524.9               | -4.2         | -1.0         | 398,488.53          | 623,618.84         | 32° 5' 41.755 N | 103° 56' 2.924 W |
| 1,550.0               | 0.10            | 237.49      | 1,549.9               | -4.2         | -1.0         | 398,488.51          | 623,618.80         | 32° 5' 41.755 N | 103° 56' 2.925 W |
| 1,575.0               | 0.12            | 152.31      | 1,574.9               | -4.2         | -1.0         | 398,488.47          | 623,618.80         | 32° 5' 41.754 N | 103° 56' 2.925 W |
| 1,600.0               | 0.16            | 154.00      | 1,599.9               | -4.3         | -1.0         | 398,488.42          | 623,618.82         | 32° 5' 41.754 N | 103° 56' 2.925 W |
| 1,625.0               | 0.18            | 128.14      | 1,624.9               | -4.3         | -0.9         | 398,488.36          | 623,618.87         | 32° 5' 41.753 N | 103° 56' 2.924 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

## Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 1,650.0               | 0.24            | 126.21      | 1,649.9               | -4.4         | -0.9         | 398,488.31          | 623,618.94         | 32° 5' 41.753 N | 103° 56' 2.923 W |
| 1,675.0               | 0.23            | 130.98      | 1,674.9               | -4.5         | -0.8         | 398,488.24          | 623,619.02         | 32° 5' 41.752 N | 103° 56' 2.922 W |
| 1,700.0               | 0.29            | 100.08      | 1,699.9               | -4.5         | -0.7         | 398,488.20          | 623,619.12         | 32° 5' 41.752 N | 103° 56' 2.921 W |
| 1,725.0               | 0.12            | 68.51       | 1,724.9               | -4.5         | -0.6         | 398,488.20          | 623,619.21         | 32° 5' 41.752 N | 103° 56' 2.920 W |
| 1,750.0               | 0.10            | 356.15      | 1,749.9               | -4.5         | -0.6         | 398,488.23          | 623,619.23         | 32° 5' 41.752 N | 103° 56' 2.920 W |
| 1,775.0               | 0.14            | 12.78       | 1,774.9               | -4.4         | -0.6         | 398,488.28          | 623,619.24         | 32° 5' 41.753 N | 103° 56' 2.920 W |
| 1,800.0               | 0.13            | 346.53      | 1,799.9               | -4.4         | -0.6         | 398,488.34          | 623,619.24         | 32° 5' 41.753 N | 103° 56' 2.920 W |
| 1,825.0               | 0.21            | 295.78      | 1,824.9               | -4.3         | -0.6         | 398,488.39          | 623,619.19         | 32° 5' 41.754 N | 103° 56' 2.920 W |
| 1,850.0               | 0.14            | 301.01      | 1,849.9               | -4.3         | -0.7         | 398,488.42          | 623,619.12         | 32° 5' 41.754 N | 103° 56' 2.921 W |
| 1,875.0               | 0.08            | 290.27      | 1,874.9               | -4.3         | -0.7         | 398,488.44          | 623,619.08         | 32° 5' 41.754 N | 103° 56' 2.922 W |
| 1,900.0               | 0.09            | 220.92      | 1,899.9               | -4.3         | -0.8         | 398,488.44          | 623,619.05         | 32° 5' 41.754 N | 103° 56' 2.922 W |
| 1,925.0               | 0.05            | 304.20      | 1,924.9               | -4.3         | -0.8         | 398,488.43          | 623,619.03         | 32° 5' 41.754 N | 103° 56' 2.922 W |
| 1,950.0               | 0.01            | 207.68      | 1,949.9               | -4.3         | -0.8         | 398,488.43          | 623,619.02         | 32° 5' 41.754 N | 103° 56' 2.922 W |
| 1,975.0               | 0.05            | 247.35      | 1,974.9               | -4.3         | -0.8         | 398,488.42          | 623,619.01         | 32° 5' 41.754 N | 103° 56' 2.922 W |
| 2,000.0               | 0.04            | 226.06      | 1,999.9               | -4.3         | -0.8         | 398,488.41          | 623,618.99         | 32° 5' 41.754 N | 103° 56' 2.923 W |
| 2,025.0               | 0.04            | 201.24      | 2,024.9               | -4.3         | -0.8         | 398,488.40          | 623,618.98         | 32° 5' 41.754 N | 103° 56' 2.923 W |
| 2,050.0               | 0.08            | 158.53      | 2,049.9               | -4.3         | -0.8         | 398,488.38          | 623,618.99         | 32° 5' 41.753 N | 103° 56' 2.923 W |
| 2,075.0               | 0.12            | 131.92      | 2,074.9               | -4.4         | -0.8         | 398,488.34          | 623,619.01         | 32° 5' 41.753 N | 103° 56' 2.922 W |
| 2,100.0               | 0.15            | 126.45      | 2,099.9               | -4.4         | -0.7         | 398,488.30          | 623,619.06         | 32° 5' 41.753 N | 103° 56' 2.922 W |
| 2,125.0               | 0.12            | 127.67      | 2,124.9               | -4.4         | -0.7         | 398,488.27          | 623,619.10         | 32° 5' 41.752 N | 103° 56' 2.921 W |
| 2,150.0               | 0.18            | 110.36      | 2,149.9               | -4.5         | -0.6         | 398,488.24          | 623,619.16         | 32° 5' 41.752 N | 103° 56' 2.921 W |
| 2,175.0               | 0.24            | 65.89       | 2,174.9               | -4.5         | -0.6         | 398,488.25          | 623,619.25         | 32° 5' 41.752 N | 103° 56' 2.920 W |
| 2,200.0               | 0.16            | 66.63       | 2,199.9               | -4.4         | -0.5         | 398,488.28          | 623,619.33         | 32° 5' 41.753 N | 103° 56' 2.919 W |
| 2,225.0               | 0.04            | 111.42      | 2,224.9               | -4.4         | -0.4         | 398,488.29          | 623,619.37         | 32° 5' 41.753 N | 103° 56' 2.918 W |
| 2,250.0               | 0.05            | 273.93      | 2,249.9               | -4.4         | -0.4         | 398,488.29          | 623,619.36         | 32° 5' 41.753 N | 103° 56' 2.918 W |
| 2,275.0               | 0.09            | 58.43       | 2,274.9               | -4.4         | -0.4         | 398,488.30          | 623,619.37         | 32° 5' 41.753 N | 103° 56' 2.918 W |
| 2,300.0               | 0.18            | 51.46       | 2,299.9               | -4.4         | -0.4         | 398,488.34          | 623,619.42         | 32° 5' 41.753 N | 103° 56' 2.918 W |
| 2,325.0               | 0.23            | 42.80       | 2,324.9               | -4.3         | -0.3         | 398,488.40          | 623,619.48         | 32° 5' 41.754 N | 103° 56' 2.917 W |
| 2,350.0               | 0.05            | 61.42       | 2,349.9               | -4.3         | -0.3         | 398,488.44          | 623,619.53         | 32° 5' 41.754 N | 103° 56' 2.916 W |
| 2,375.0               | 0.25            | 26.85       | 2,374.9               | -4.2         | -0.2         | 398,488.49          | 623,619.56         | 32° 5' 41.755 N | 103° 56' 2.916 W |
| 2,400.0               | 0.21            | 307.15      | 2,399.9               | -4.1         | -0.3         | 398,488.57          | 623,619.55         | 32° 5' 41.755 N | 103° 56' 2.916 W |
| 2,425.0               | 0.23            | 316.52      | 2,424.9               | -4.1         | -0.3         | 398,488.63          | 623,619.48         | 32° 5' 41.756 N | 103° 56' 2.917 W |
| 2,450.0               | 0.11            | 12.37       | 2,449.9               | -4.0         | -0.4         | 398,488.69          | 623,619.45         | 32° 5' 41.757 N | 103° 56' 2.917 W |
| 2,475.0               | 0.10            | 28.41       | 2,474.9               | -4.0         | -0.3         | 398,488.74          | 623,619.46         | 32° 5' 41.757 N | 103° 56' 2.917 W |
| 2,500.0               | 0.11            | 31.43       | 2,499.9               | -3.9         | -0.3         | 398,488.78          | 623,619.49         | 32° 5' 41.757 N | 103° 56' 2.917 W |
| 2,525.0               | 0.13            | 32.83       | 2,524.9               | -3.9         | -0.3         | 398,488.82          | 623,619.51         | 32° 5' 41.758 N | 103° 56' 2.916 W |
| 2,550.0               | 0.08            | 18.18       | 2,549.9               | -3.8         | -0.3         | 398,488.86          | 623,619.53         | 32° 5' 41.758 N | 103° 56' 2.916 W |
| 2,575.0               | 0.08            | 35.83       | 2,574.9               | -3.8         | -0.3         | 398,488.89          | 623,619.55         | 32° 5' 41.759 N | 103° 56' 2.916 W |
| 2,600.0               | 0.12            | 47.91       | 2,599.9               | -3.8         | -0.2         | 398,488.92          | 623,619.58         | 32° 5' 41.759 N | 103° 56' 2.916 W |
| 2,625.0               | 0.22            | 50.26       | 2,624.9               | -3.7         | -0.2         | 398,488.97          | 623,619.64         | 32° 5' 41.759 N | 103° 56' 2.915 W |
| 2,650.0               | 0.50            | 63.44       | 2,649.9               | -3.6         | 0.0          | 398,489.05          | 623,619.77         | 32° 5' 41.760 N | 103° 56' 2.913 W |
| 2,675.0               | 0.70            | 69.27       | 2,674.9               | -3.5         | 0.2          | 398,489.15          | 623,620.01         | 32° 5' 41.761 N | 103° 56' 2.911 W |
| 2,700.0               | 0.89            | 72.16       | 2,699.9               | -3.4         | 0.5          | 398,489.27          | 623,620.34         | 32° 5' 41.762 N | 103° 56' 2.907 W |
| 2,725.0               | 1.07            | 79.48       | 2,724.9               | -3.3         | 0.9          | 398,489.37          | 623,620.75         | 32° 5' 41.763 N | 103° 56' 2.902 W |
| 2,750.0               | 1.25            | 77.41       | 2,749.9               | -3.2         | 1.4          | 398,489.47          | 623,621.25         | 32° 5' 41.764 N | 103° 56' 2.896 W |
| 2,775.0               | 1.32            | 70.99       | 2,774.9               | -3.1         | 2.0          | 398,489.63          | 623,621.79         | 32° 5' 41.766 N | 103° 56' 2.890 W |
| 2,800.0               | 1.37            | 73.60       | 2,799.9               | -2.9         | 2.5          | 398,489.80          | 623,622.35         | 32° 5' 41.767 N | 103° 56' 2.883 W |
| 2,825.0               | 1.23            | 64.46       | 2,824.9               | -2.7         | 3.1          | 398,490.00          | 623,622.87         | 32° 5' 41.769 N | 103° 56' 2.877 W |
| 2,850.0               | 1.06            | 52.31       | 2,849.9               | -2.4         | 3.5          | 398,490.26          | 623,623.30         | 32° 5' 41.772 N | 103° 56' 2.872 W |
| 2,875.0               | 0.79            | 32.75       | 2,874.9               | -2.2         | 3.8          | 398,490.55          | 623,623.58         | 32° 5' 41.775 N | 103° 56' 2.869 W |
| 2,900.0               | 0.95            | 21.19       | 2,899.9               | -1.8         | 3.9          | 398,490.89          | 623,623.74         | 32° 5' 41.778 N | 103° 56' 2.867 W |
| 2,925.0               | 0.85            | 19.08       | 2,924.9               | -1.4         | 4.1          | 398,491.25          | 623,623.88         | 32° 5' 41.782 N | 103° 56' 2.866 W |
| 2,950.0               | 0.54            | 17.63       | 2,949.9               | -1.2         | 4.2          | 398,491.54          | 623,623.98         | 32° 5' 41.785 N | 103° 56' 2.864 W |
| 2,975.0               | 0.77            | 9.78        | 2,974.9               | -0.9         | 4.2          | 398,491.82          | 623,624.04         | 32° 5' 41.787 N | 103° 56' 2.864 W |
| 3,000.0               | 0.68            | 5.34        | 2,999.9               | -0.6         | 4.3          | 398,492.13          | 623,624.08         | 32° 5' 41.790 N | 103° 56' 2.863 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

## Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 3,025.0               | 0.51            | 1.23        | 3,024.9               | -0.3         | 4.3          | 398,492.39          | 623,624.10         | 32° 5' 41.793 N | 103° 56' 2.863 W |
| 3,050.0               | 0.38            | 12.56       | 3,049.9               | -0.1         | 4.3          | 398,492.58          | 623,624.12         | 32° 5' 41.795 N | 103° 56' 2.863 W |
| 3,075.0               | 0.25            | 39.01       | 3,074.8               | 0.0          | 4.4          | 398,492.71          | 623,624.17         | 32° 5' 41.796 N | 103° 56' 2.862 W |
| 3,100.0               | 0.32            | 34.65       | 3,099.8               | 0.1          | 4.4          | 398,492.81          | 623,624.25         | 32° 5' 41.797 N | 103° 56' 2.861 W |
| 3,125.0               | 0.36            | 13.98       | 3,124.8               | 0.2          | 4.5          | 398,492.94          | 623,624.30         | 32° 5' 41.798 N | 103° 56' 2.861 W |
| 3,150.0               | 0.15            | 347.46      | 3,149.8               | 0.3          | 4.5          | 398,493.05          | 623,624.32         | 32° 5' 41.800 N | 103° 56' 2.860 W |
| 3,175.0               | 0.10            | 342.41      | 3,174.8               | 0.4          | 4.5          | 398,493.10          | 623,624.30         | 32° 5' 41.800 N | 103° 56' 2.861 W |
| 3,200.0               | 0.13            | 344.03      | 3,199.8               | 0.4          | 4.5          | 398,493.15          | 623,624.29         | 32° 5' 41.801 N | 103° 56' 2.861 W |
| 3,225.0               | 0.22            | 330.94      | 3,224.8               | 0.5          | 4.5          | 398,493.22          | 623,624.26         | 32° 5' 41.801 N | 103° 56' 2.861 W |
| 3,250.0               | 0.13            | 353.45      | 3,249.8               | 0.6          | 4.4          | 398,493.29          | 623,624.23         | 32° 5' 41.802 N | 103° 56' 2.861 W |
| 3,275.0               | 0.14            | 340.55      | 3,274.8               | 0.6          | 4.4          | 398,493.35          | 623,624.22         | 32° 5' 41.802 N | 103° 56' 2.862 W |
| 3,300.0               | 0.09            | 359.50      | 3,299.8               | 0.7          | 4.4          | 398,493.39          | 623,624.21         | 32° 5' 41.803 N | 103° 56' 2.862 W |
| 3,325.0               | 0.15            | 354.53      | 3,324.8               | 0.7          | 4.4          | 398,493.45          | 623,624.20         | 32° 5' 41.803 N | 103° 56' 2.862 W |
| 3,350.0               | 0.20            | 355.10      | 3,349.8               | 0.8          | 4.4          | 398,493.52          | 623,624.20         | 32° 5' 41.804 N | 103° 56' 2.862 W |
| 3,375.0               | 0.28            | 352.54      | 3,374.8               | 0.9          | 4.4          | 398,493.63          | 623,624.18         | 32° 5' 41.805 N | 103° 56' 2.862 W |
| 3,400.0               | 0.12            | 341.13      | 3,399.8               | 1.0          | 4.4          | 398,493.71          | 623,624.17         | 32° 5' 41.806 N | 103° 56' 2.862 W |
| 3,500.0               | 0.34            | 330.78      | 3,499.8               | 1.4          | 4.2          | 398,494.07          | 623,623.99         | 32° 5' 41.810 N | 103° 56' 2.864 W |
| 3,600.0               | 0.17            | 343.48      | 3,599.8               | 1.8          | 4.0          | 398,494.47          | 623,623.80         | 32° 5' 41.814 N | 103° 56' 2.866 W |
| 3,700.0               | 0.26            | 335.71      | 3,699.8               | 2.1          | 3.9          | 398,494.82          | 623,623.67         | 32° 5' 41.817 N | 103° 56' 2.868 W |
| 3,800.0               | 0.13            | 348.71      | 3,799.8               | 2.4          | 3.7          | 398,495.14          | 623,623.55         | 32° 5' 41.820 N | 103° 56' 2.869 W |
| 3,900.0               | 0.10            | 344.21      | 3,899.8               | 2.6          | 3.7          | 398,495.33          | 623,623.51         | 32° 5' 41.822 N | 103° 56' 2.870 W |
| 4,000.0               | 0.16            | 344.87      | 3,999.8               | 2.9          | 3.6          | 398,495.55          | 623,623.45         | 32° 5' 41.824 N | 103° 56' 2.870 W |
| 4,100.0               | 0.15            | 317.31      | 4,099.8               | 3.1          | 3.5          | 398,495.78          | 623,623.32         | 32° 5' 41.827 N | 103° 56' 2.872 W |
| 4,200.0               | 0.30            | 339.06      | 4,199.8               | 3.4          | 3.3          | 398,496.12          | 623,623.14         | 32° 5' 41.830 N | 103° 56' 2.874 W |
| 4,300.0               | 0.30            | 338.09      | 4,299.8               | 3.9          | 3.1          | 398,496.61          | 623,622.95         | 32° 5' 41.835 N | 103° 56' 2.876 W |
| 4,400.0               | 0.24            | 359.57      | 4,399.8               | 4.4          | 3.0          | 398,497.06          | 623,622.85         | 32° 5' 41.839 N | 103° 56' 2.877 W |
| 4,500.0               | 0.39            | 334.44      | 4,499.8               | 4.9          | 2.9          | 398,497.58          | 623,622.70         | 32° 5' 41.844 N | 103° 56' 2.879 W |
| 4,600.0               | 0.19            | 343.77      | 4,599.8               | 5.3          | 2.7          | 398,498.05          | 623,622.51         | 32° 5' 41.849 N | 103° 56' 2.881 W |
| 4,700.0               | 0.60            | 331.34      | 4,699.8               | 6.0          | 2.4          | 398,498.66          | 623,622.21         | 32° 5' 41.855 N | 103° 56' 2.885 W |
| 4,800.0               | 0.54            | 336.33      | 4,799.8               | 6.9          | 2.0          | 398,499.56          | 623,621.77         | 32° 5' 41.864 N | 103° 56' 2.890 W |
| 4,900.0               | 0.48            | 354.06      | 4,899.8               | 7.7          | 1.7          | 398,500.40          | 623,621.54         | 32° 5' 41.872 N | 103° 56' 2.892 W |
| 5,000.0               | 0.42            | 338.20      | 4,999.8               | 8.5          | 1.6          | 398,501.16          | 623,621.36         | 32° 5' 41.880 N | 103° 56' 2.895 W |
| 5,100.0               | 0.16            | 351.47      | 5,099.8               | 8.9          | 1.4          | 398,501.64          | 623,621.20         | 32° 5' 41.885 N | 103° 56' 2.896 W |
| 5,200.0               | 0.35            | 339.27      | 5,199.8               | 9.4          | 1.3          | 398,502.06          | 623,621.07         | 32° 5' 41.889 N | 103° 56' 2.898 W |
| 5,300.0               | 0.38            | 341.31      | 5,299.8               | 10.0         | 1.1          | 398,502.66          | 623,620.86         | 32° 5' 41.895 N | 103° 56' 2.900 W |
| 5,400.0               | 0.30            | 341.26      | 5,399.8               | 10.5         | 0.9          | 398,503.22          | 623,620.67         | 32° 5' 41.900 N | 103° 56' 2.902 W |
| 5,500.0               | 0.26            | 328.33      | 5,499.8               | 11.0         | 0.7          | 398,503.67          | 623,620.46         | 32° 5' 41.905 N | 103° 56' 2.905 W |
| 5,600.0               | 0.29            | 305.58      | 5,599.8               | 11.3         | 0.3          | 398,504.01          | 623,620.14         | 32° 5' 41.908 N | 103° 56' 2.909 W |
| 5,700.0               | 0.11            | 309.91      | 5,699.8               | 11.5         | 0.1          | 398,504.21          | 623,619.86         | 32° 5' 41.910 N | 103° 56' 2.912 W |
| 5,800.0               | 0.37            | 230.09      | 5,799.8               | 11.4         | -0.3         | 398,504.07          | 623,619.54         | 32° 5' 41.909 N | 103° 56' 2.916 W |
| 5,900.0               | 0.40            | 232.38      | 5,899.8               | 10.9         | -0.8         | 398,503.65          | 623,619.01         | 32° 5' 41.905 N | 103° 56' 2.922 W |
| 6,000.0               | 0.40            | 214.43      | 5,999.8               | 10.4         | -1.3         | 398,503.15          | 623,618.54         | 32° 5' 41.900 N | 103° 56' 2.927 W |
| 6,100.0               | 0.64            | 219.23      | 6,099.8               | 9.7          | -1.8         | 398,502.43          | 623,617.99         | 32° 5' 41.893 N | 103° 56' 2.934 W |
| 6,200.0               | 0.71            | 207.91      | 6,199.8               | 8.7          | -2.5         | 398,501.45          | 623,617.35         | 32° 5' 41.883 N | 103° 56' 2.941 W |
| 6,300.0               | 0.70            | 200.03      | 6,299.8               | 7.6          | -3.0         | 398,500.33          | 623,616.85         | 32° 5' 41.872 N | 103° 56' 2.947 W |
| 6,400.0               | 0.99            | 208.02      | 6,399.8               | 6.3          | -3.6         | 398,498.99          | 623,616.23         | 32° 5' 41.859 N | 103° 56' 2.954 W |
| 6,500.0               | 1.06            | 205.35      | 6,499.8               | 4.7          | -4.4         | 398,497.39          | 623,615.43         | 32° 5' 41.843 N | 103° 56' 2.964 W |
| 6,600.0               | 1.03            | 212.08      | 6,599.7               | 3.1          | -5.2         | 398,495.79          | 623,614.56         | 32° 5' 41.827 N | 103° 56' 2.974 W |
| 6,700.0               | 1.04            | 200.04      | 6,699.7               | 1.5          | -6.0         | 398,494.18          | 623,613.77         | 32° 5' 41.811 N | 103° 56' 2.983 W |
| 6,800.0               | 0.72            | 193.79      | 6,799.7               | 0.0          | -6.5         | 398,492.72          | 623,613.31         | 32° 5' 41.797 N | 103° 56' 2.988 W |
| 6,900.0               | 0.94            | 196.14      | 6,899.7               | -1.4         | -6.9         | 398,491.32          | 623,612.93         | 32° 5' 41.783 N | 103° 56' 2.993 W |
| 7,000.0               | 1.16            | 196.05      | 6,999.7               | -3.1         | -7.4         | 398,489.56          | 623,612.42         | 32° 5' 41.765 N | 103° 56' 2.999 W |
| 7,100.0               | 1.17            | 196.08      | 7,099.7               | -5.1         | -7.9         | 398,487.60          | 623,611.86         | 32° 5' 41.746 N | 103° 56' 3.006 W |
| 7,200.0               | 0.62            | 169.97      | 7,199.7               | -6.6         | -8.1         | 398,486.09          | 623,611.67         | 32° 5' 41.731 N | 103° 56' 3.008 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

| Survey                        |                 |             |                       |              |              |                     |                    |                 |                  |
|-------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| Measured Depth (usft)         | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
| 7,300.0                       | 0.67            | 139.10      | 7,299.7               | -7.6         | -7.7         | 398,485.12          | 623,612.15         | 32° 5' 41.721 N | 103° 56' 3.002 W |
| Tie In @ 7300' MD / 7300' TVD |                 |             |                       |              |              |                     |                    |                 |                  |
| 7,336.0                       | 1.00            | 24.50       | 7,335.6               | -7.5         | -7.4         | 398,485.24          | 623,612.41         | 32° 5' 41.723 N | 103° 56' 2.999 W |
| 7,368.0                       | 3.00            | 356.40      | 7,367.6               | -6.4         | -7.3         | 398,486.33          | 623,612.48         | 32° 5' 41.733 N | 103° 56' 2.998 W |
| 7,399.0                       | 6.00            | 350.90      | 7,398.5               | -4.0         | -7.6         | 398,488.74          | 623,612.17         | 32° 5' 41.757 N | 103° 56' 3.002 W |
| 7,431.0                       | 8.80            | 350.00      | 7,430.3               | 0.1          | -8.3         | 398,492.80          | 623,611.48         | 32° 5' 41.798 N | 103° 56' 3.010 W |
| 7,462.0                       | 11.40           | 348.60      | 7,460.8               | 5.4          | -9.3         | 398,498.14          | 623,610.46         | 32° 5' 41.850 N | 103° 56' 3.021 W |
| 7,493.0                       | 13.40           | 346.90      | 7,491.1               | 11.9         | -10.8        | 398,504.65          | 623,609.04         | 32° 5' 41.915 N | 103° 56' 3.037 W |
| 7,525.0                       | 15.90           | 345.80      | 7,522.0               | 19.8         | -12.7        | 398,512.51          | 623,607.13         | 32° 5' 41.993 N | 103° 56' 3.059 W |
| 7,557.0                       | 19.40           | 345.30      | 7,552.5               | 29.2         | -15.1        | 398,521.90          | 623,604.70         | 32° 5' 42.086 N | 103° 56' 3.087 W |
| 7,588.0                       | 23.00           | 345.30      | 7,581.4               | 40.0         | -17.9        | 398,532.74          | 623,601.86         | 32° 5' 42.193 N | 103° 56' 3.120 W |
| 7,620.0                       | 26.90           | 345.30      | 7,610.4               | 53.1         | -21.4        | 398,545.80          | 623,598.43         | 32° 5' 42.323 N | 103° 56' 3.159 W |
| 7,652.0                       | 30.30           | 347.80      | 7,638.5               | 68.0         | -24.9        | 398,560.69          | 623,594.89         | 32° 5' 42.470 N | 103° 56' 3.200 W |
| 7,684.0                       | 32.50           | 351.10      | 7,665.8               | 84.4         | -28.0        | 398,577.08          | 623,591.85         | 32° 5' 42.632 N | 103° 56' 3.234 W |
| 7,715.0                       | 34.10           | 359.00      | 7,691.7               | 101.3        | -29.4        | 398,594.01          | 623,590.41         | 32° 5' 42.800 N | 103° 56' 3.250 W |
| 7,747.0                       | 37.00           | 1.00        | 7,717.8               | 119.9        | -29.4        | 398,612.61          | 623,590.42         | 32° 5' 42.984 N | 103° 56' 3.249 W |
| 7,778.0                       | 39.70           | 0.10        | 7,742.1               | 139.1        | -29.2        | 398,631.84          | 623,590.60         | 32° 5' 43.174 N | 103° 56' 3.246 W |
| 7,810.0                       | 43.60           | 358.10      | 7,766.0               | 160.4        | -29.5        | 398,653.10          | 623,590.26         | 32° 5' 43.385 N | 103° 56' 3.250 W |
| 7,842.0                       | 47.00           | 357.30      | 7,788.5               | 183.1        | -30.5        | 398,675.82          | 623,589.34         | 32° 5' 43.610 N | 103° 56' 3.259 W |
| 7,873.0                       | 50.10           | 355.70      | 7,809.0               | 206.3        | -31.9        | 398,699.01          | 623,587.91         | 32° 5' 43.839 N | 103° 56' 3.275 W |
| 7,904.0                       | 54.00           | 355.90      | 7,828.1               | 230.7        | -33.7        | 398,723.38          | 623,586.12         | 32° 5' 44.080 N | 103° 56' 3.295 W |
| 7,936.0                       | 58.00           | 357.60      | 7,846.0               | 257.2        | -35.2        | 398,749.86          | 623,584.63         | 32° 5' 44.342 N | 103° 56' 3.311 W |
| 7,968.0                       | 61.30           | 359.50      | 7,862.1               | 284.8        | -35.9        | 398,777.46          | 623,583.94         | 32° 5' 44.616 N | 103° 56' 3.318 W |
| 7,999.0                       | 66.60           | 359.90      | 7,875.7               | 312.6        | -36.0        | 398,805.30          | 623,583.80         | 32° 5' 44.891 N | 103° 56' 3.318 W |
| 8,030.0                       | 71.30           | 359.70      | 7,886.9               | 341.5        | -36.1        | 398,834.23          | 623,583.69         | 32° 5' 45.177 N | 103° 56' 3.318 W |
| 8,062.0                       | 76.20           | 359.20      | 7,895.8               | 372.2        | -36.4        | 398,864.94          | 623,583.40         | 32° 5' 45.481 N | 103° 56' 3.320 W |
| 8,094.0                       | 81.80           | 359.70      | 7,901.9               | 403.6        | -36.7        | 398,896.33          | 623,583.10         | 32° 5' 45.792 N | 103° 56' 3.322 W |
| 8,123.0                       | 87.10           | 1.00        | 7,904.7               | 432.5        | -36.5        | 398,925.19          | 623,583.27         | 32° 5' 46.078 N | 103° 56' 3.319 W |
| 8,215.0                       | 88.70           | 1.60        | 7,908.1               | 524.4        | -34.4        | 399,017.10          | 623,585.36         | 32° 5' 46.987 N | 103° 56' 3.291 W |
| 8,306.0                       | 88.50           | 0.60        | 7,910.3               | 615.4        | -32.7        | 399,108.05          | 623,587.11         | 32° 5' 47.887 N | 103° 56' 3.267 W |
| 8,397.0                       | 88.90           | 358.80      | 7,912.4               | 706.3        | -33.2        | 399,199.02          | 623,586.63         | 32° 5' 48.787 N | 103° 56' 3.268 W |
| 8,489.0                       | 89.30           | 358.50      | 7,913.8               | 798.3        | -35.3        | 399,290.99          | 623,584.46         | 32° 5' 49.698 N | 103° 56' 3.289 W |
| 8,584.0                       | 90.30           | 357.60      | 7,914.2               | 893.2        | -38.6        | 399,385.93          | 623,581.23         | 32° 5' 50.637 N | 103° 56' 3.323 W |
| 8,679.0                       | 91.00           | 356.70      | 7,913.1               | 988.1        | -43.3        | 399,480.80          | 623,576.51         | 32° 5' 51.576 N | 103° 56' 3.374 W |
| 8,773.0                       | 90.80           | 356.50      | 7,911.6               | 1,081.9      | -48.9        | 399,574.63          | 623,570.93         | 32° 5' 52.505 N | 103° 56' 3.434 W |
| 8,868.0                       | 90.40           | 356.70      | 7,910.6               | 1,176.8      | -54.5        | 399,669.45          | 623,565.30         | 32° 5' 53.444 N | 103° 56' 3.496 W |
| 8,963.0                       | 89.30           | 357.30      | 7,910.9               | 1,271.6      | -59.5        | 399,764.32          | 623,560.33         | 32° 5' 54.383 N | 103° 56' 3.550 W |
| 9,057.0                       | 89.70           | 357.60      | 7,911.7               | 1,365.5      | -63.7        | 399,858.23          | 623,556.15         | 32° 5' 55.312 N | 103° 56' 3.594 W |
| 9,151.0                       | 90.00           | 357.40      | 7,911.9               | 1,459.4      | -67.8        | 399,952.14          | 623,552.05         | 32° 5' 56.242 N | 103° 56' 3.638 W |
| 9,246.0                       | 89.30           | 357.10      | 7,912.5               | 1,554.3      | -72.3        | 400,047.02          | 623,547.49         | 32° 5' 57.181 N | 103° 56' 3.687 W |
| 9,341.0                       | 89.30           | 357.80      | 7,913.7               | 1,649.2      | -76.5        | 400,141.92          | 623,543.26         | 32° 5' 58.120 N | 103° 56' 3.732 W |
| 9,435.0                       | 88.90           | 359.20      | 7,915.1               | 1,743.2      | -79.0        | 400,235.88          | 623,540.80         | 32° 5' 59.050 N | 103° 56' 3.756 W |
| 9,530.0                       | 89.80           | 358.80      | 7,916.2               | 1,838.2      | -80.7        | 400,330.85          | 623,539.14         | 32° 5' 59.990 N | 103° 56' 3.772 W |
| 9,556.0                       | 89.30           | 357.60      | 7,916.4               | 1,864.1      | -81.5        | 400,356.84          | 623,538.33         | 32° 6' 0.247 N  | 103° 56' 3.780 W |
| 9,650.0                       | 90.50           | 358.00      | 7,916.6               | 1,958.1      | -85.1        | 400,450.77          | 623,534.72         | 32° 6' 1.177 N  | 103° 56' 3.818 W |
| 9,744.0                       | 90.30           | 358.70      | 7,915.9               | 2,052.0      | -87.8        | 400,544.73          | 623,532.01         | 32° 6' 2.107 N  | 103° 56' 3.845 W |
| 9,838.0                       | 90.20           | 358.10      | 7,915.5               | 2,146.0      | -90.4        | 400,638.69          | 623,529.39         | 32° 6' 3.037 N  | 103° 56' 3.872 W |
| 9,931.0                       | 89.40           | 358.10      | 7,915.9               | 2,238.9      | -93.5        | 400,731.64          | 623,526.30         | 32° 6' 3.957 N  | 103° 56' 3.904 W |
| 10,026.0                      | 90.40           | 358.00      | 7,916.0               | 2,333.9      | -96.7        | 400,826.58          | 623,523.07         | 32° 6' 4.897 N  | 103° 56' 3.937 W |
| 10,117.0                      | 89.90           | 357.60      | 7,915.8               | 2,424.8      | -100.2       | 400,917.51          | 623,519.58         | 32° 6' 5.797 N  | 103° 56' 3.974 W |
| 10,208.0                      | 91.10           | 358.10      | 7,915.0               | 2,515.7      | -103.6       | 401,008.44          | 623,516.16         | 32° 6' 6.697 N  | 103° 56' 4.010 W |
| 10,300.0                      | 91.10           | 358.70      | 7,913.2               | 2,607.7      | -106.2       | 401,100.39          | 623,513.60         | 32° 6' 7.607 N  | 103° 56' 4.035 W |
| 10,391.0                      | 91.00           | 358.10      | 7,911.6               | 2,698.6      | -108.7       | 401,191.34          | 623,511.06         | 32° 6' 8.507 N  | 103° 56' 4.061 W |
| 10,483.0                      | 88.50           | 359.40      | 7,912.0               | 2,790.6      | -110.8       | 401,283.31          | 623,509.05         | 32° 6' 9.417 N  | 103° 56' 4.080 W |
| 10,574.0                      | 89.60           | 358.80      | 7,913.5               | 2,881.6      | -112.2       | 401,374.28          | 623,507.62         | 32° 6' 10.317 N | 103° 56' 4.093 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

## Survey

| Measured Depth (usft)                               | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
|-----------------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 10,666.0                                            | 89.80           | 358.70      | 7,913.9               | 2,973.6      | -114.2       | 401,466.26          | 623,505.61         | 32° 6' 11.228 N | 103° 56' 4.113 W |
| 10,757.0                                            | 89.70           | 359.00      | 7,914.3               | 3,064.5      | -116.0       | 401,557.24          | 623,503.79         | 32° 6' 12.128 N | 103° 56' 4.130 W |
| 10,849.0                                            | 89.20           | 359.50      | 7,915.2               | 3,156.5      | -117.2       | 401,649.22          | 623,502.58         | 32° 6' 13.039 N | 103° 56' 4.140 W |
| 10,940.0                                            | 88.20           | 359.20      | 7,917.3               | 3,247.5      | -118.3       | 401,740.19          | 623,501.55         | 32° 6' 13.939 N | 103° 56' 4.148 W |
| 11,032.0                                            | 89.50           | 359.20      | 7,919.1               | 3,339.5      | -119.5       | 401,832.16          | 623,500.27         | 32° 6' 14.849 N | 103° 56' 4.159 W |
| 11,126.0                                            | 90.50           | 359.50      | 7,919.1               | 3,433.5      | -120.6       | 401,926.16          | 623,499.20         | 32° 6' 15.779 N | 103° 56' 4.167 W |
| 11,220.0                                            | 90.00           | 359.20      | 7,918.7               | 3,527.5      | -121.7       | 402,020.15          | 623,498.13         | 32° 6' 16.710 N | 103° 56' 4.176 W |
| 11,316.0                                            | 88.60           | 358.50      | 7,919.9               | 3,623.4      | -123.6       | 402,116.12          | 623,496.21         | 32° 6' 17.659 N | 103° 56' 4.194 W |
| 11,410.0                                            | 90.10           | 359.70      | 7,921.0               | 3,717.4      | -125.1       | 402,210.10          | 623,494.73         | 32° 6' 18.589 N | 103° 56' 4.207 W |
| 11,504.0                                            | 89.70           | 0.60        | 7,921.1               | 3,811.4      | -124.8       | 402,304.10          | 623,494.98         | 32° 6' 19.520 N | 103° 56' 4.200 W |
| 11,598.0                                            | 88.90           | 1.00        | 7,922.3               | 3,905.4      | -123.5       | 402,398.08          | 623,496.29         | 32° 6' 20.450 N | 103° 56' 4.181 W |
| 11,692.0                                            | 89.80           | 1.30        | 7,923.3               | 3,999.4      | -121.6       | 402,492.05          | 623,498.18         | 32° 6' 21.380 N | 103° 56' 4.155 W |
| 11,786.0                                            | 88.80           | 0.20        | 7,924.5               | 4,093.3      | -120.4       | 402,586.04          | 623,499.41         | 32° 6' 22.310 N | 103° 56' 4.136 W |
| 11,880.0                                            | 89.60           | 358.80      | 7,925.8               | 4,187.3      | -121.2       | 402,680.02          | 623,498.59         | 32° 6' 23.240 N | 103° 56' 4.142 W |
| 11,975.0                                            | 89.90           | 359.50      | 7,926.2               | 4,282.3      | -122.6       | 402,775.01          | 623,497.18         | 32° 6' 24.180 N | 103° 56' 4.154 W |
| 12,069.0                                            | 89.30           | 359.40      | 7,926.9               | 4,376.3      | -123.5       | 402,869.00          | 623,496.27         | 32° 6' 25.110 N | 103° 56' 4.161 W |
| 12,163.0                                            | 89.60           | 358.30      | 7,927.8               | 4,470.3      | -125.4       | 402,962.98          | 623,494.39         | 32° 6' 26.040 N | 103° 56' 4.179 W |
| 12,257.0                                            | 90.00           | 358.50      | 7,928.1               | 4,564.2      | -128.0       | 403,056.94          | 623,491.76         | 32° 6' 26.970 N | 103° 56' 4.205 W |
| 12,351.0                                            | 89.90           | 359.40      | 7,928.2               | 4,658.2      | -129.8       | 403,150.92          | 623,490.04         | 32° 6' 27.900 N | 103° 56' 4.221 W |
| 12,445.0                                            | 90.20           | 358.00      | 7,928.1               | 4,752.2      | -131.9       | 403,244.90          | 623,487.91         | 32° 6' 28.830 N | 103° 56' 4.242 W |
| 12,465.8                                            | 90.46           | 358.33      | 7,928.0               | 4,773.0      | -132.6       | 403,265.68          | 623,487.24         | 32° 6' 29.036 N | 103° 56' 4.249 W |
| <b>Crossed Section Line @ 12466' MD / 7928' TVD</b> |                 |             |                       |              |              |                     |                    |                 |                  |
| 12,540.0                                            | 91.40           | 359.50      | 7,926.8               | 4,847.2      | -134.0       | 403,339.86          | 623,485.84         | 32° 6' 29.770 N | 103° 56' 4.262 W |
| 12,633.0                                            | 91.00           | 359.70      | 7,924.8               | 4,940.1      | -134.6       | 403,432.84          | 623,485.19         | 32° 6' 30.690 N | 103° 56' 4.265 W |
| 12,727.0                                            | 91.80           | 0.10        | 7,922.5               | 5,034.1      | -134.8       | 403,526.81          | 623,485.02         | 32° 6' 31.620 N | 103° 56' 4.263 W |
| 12,822.0                                            | 89.20           | 359.20      | 7,921.7               | 5,129.1      | -135.4       | 403,621.79          | 623,484.44         | 32° 6' 32.560 N | 103° 56' 4.266 W |
| 12,916.0                                            | 88.80           | 358.80      | 7,923.3               | 5,223.1      | -137.0       | 403,715.76          | 623,482.80         | 32° 6' 33.490 N | 103° 56' 4.281 W |
| 13,010.0                                            | 88.10           | 359.00      | 7,925.9               | 5,317.0      | -138.8       | 403,809.71          | 623,481.00         | 32° 6' 34.420 N | 103° 56' 4.298 W |
| 13,104.0                                            | 88.70           | 359.00      | 7,928.5               | 5,411.0      | -140.4       | 403,903.66          | 623,479.36         | 32° 6' 35.350 N | 103° 56' 4.313 W |
| 13,198.0                                            | 88.60           | 0.40        | 7,930.7               | 5,504.9      | -140.9       | 403,997.63          | 623,478.87         | 32° 6' 36.280 N | 103° 56' 4.315 W |
| 13,292.0                                            | 88.40           | 0.20        | 7,933.2               | 5,598.9      | -140.4       | 404,091.60          | 623,479.36         | 32° 6' 37.210 N | 103° 56' 4.305 W |
| 13,386.0                                            | 88.90           | 0.10        | 7,935.4               | 5,692.9      | -140.2       | 404,185.57          | 623,479.60         | 32° 6' 38.140 N | 103° 56' 4.298 W |
| 13,480.0                                            | 88.80           | 359.70      | 7,937.3               | 5,786.9      | -140.4       | 404,279.55          | 623,479.44         | 32° 6' 39.070 N | 103° 56' 4.296 W |
| 13,574.0                                            | 91.30           | 358.80      | 7,937.2               | 5,880.8      | -141.6       | 404,373.53          | 623,478.21         | 32° 6' 40.000 N | 103° 56' 4.306 W |
| 13,668.0                                            | 91.70           | 359.50      | 7,934.7               | 5,974.8      | -143.0       | 404,467.49          | 623,476.82         | 32° 6' 40.930 N | 103° 56' 4.318 W |
| 13,762.0                                            | 89.40           | 359.40      | 7,933.8               | 6,068.8      | -143.9       | 404,561.48          | 623,475.91         | 32° 6' 41.860 N | 103° 56' 4.325 W |
| 13,856.0                                            | 89.60           | 359.00      | 7,934.7               | 6,162.8      | -145.2       | 404,655.46          | 623,474.60         | 32° 6' 42.790 N | 103° 56' 4.336 W |
| 13,950.0                                            | 90.90           | 359.90      | 7,934.3               | 6,256.8      | -146.1       | 404,749.45          | 623,473.70         | 32° 6' 43.721 N | 103° 56' 4.342 W |
| 14,044.0                                            | 90.30           | 359.00      | 7,933.3               | 6,350.7      | -147.0       | 404,843.44          | 623,472.80         | 32° 6' 44.651 N | 103° 56' 4.349 W |
| 14,138.0                                            | 89.80           | 358.10      | 7,933.2               | 6,444.7      | -149.4       | 404,937.41          | 623,470.42         | 32° 6' 45.581 N | 103° 56' 4.372 W |
| 14,233.0                                            | 89.30           | 358.80      | 7,933.9               | 6,539.7      | -152.0       | 405,032.37          | 623,467.85         | 32° 6' 46.521 N | 103° 56' 4.398 W |
| 14,327.0                                            | 90.00           | 359.70      | 7,934.5               | 6,633.7      | -153.2       | 405,126.36          | 623,466.62         | 32° 6' 47.451 N | 103° 56' 4.408 W |
| 14,427.0                                            | 90.00           | 0.60        | 7,934.5               | 6,733.7      | -152.9       | 405,226.36          | 623,466.88         | 32° 6' 48.440 N | 103° 56' 4.401 W |
| 14,521.0                                            | 89.90           | 358.30      | 7,934.6               | 6,827.7      | -153.8       | 405,320.35          | 623,465.98         | 32° 6' 49.371 N | 103° 56' 4.408 W |
| 14,615.0                                            | 89.80           | 357.10      | 7,934.8               | 6,921.6      | -157.6       | 405,414.27          | 623,462.20         | 32° 6' 50.300 N | 103° 56' 4.447 W |
| 14,709.0                                            | 89.80           | 357.30      | 7,935.2               | 7,015.5      | -162.2       | 405,508.16          | 623,457.61         | 32° 6' 51.229 N | 103° 56' 4.497 W |
| 14,803.0                                            | 89.60           | 357.30      | 7,935.7               | 7,109.4      | -166.6       | 405,602.05          | 623,453.19         | 32° 6' 52.159 N | 103° 56' 4.544 W |
| 14,897.0                                            | 89.40           | 358.00      | 7,936.5               | 7,203.3      | -170.5       | 405,695.97          | 623,449.33         | 32° 6' 53.088 N | 103° 56' 4.585 W |
| 14,991.0                                            | 89.30           | 358.10      | 7,937.5               | 7,297.2      | -173.7       | 405,789.91          | 623,446.13         | 32° 6' 54.018 N | 103° 56' 4.618 W |
| 15,080.0                                            | 89.20           | 358.50      | 7,938.7               | 7,386.2      | -176.3       | 405,878.86          | 623,443.49         | 32° 6' 54.899 N | 103° 56' 4.645 W |
| 15,174.0                                            | 90.00           | 358.00      | 7,939.4               | 7,480.1      | -179.2       | 405,972.82          | 623,440.62         | 32° 6' 55.829 N | 103° 56' 4.674 W |
| 15,268.0                                            | 88.70           | 356.20      | 7,940.4               | 7,574.0      | -183.9       | 406,066.68          | 623,435.87         | 32° 6' 56.758 N | 103° 56' 4.726 W |
| 15,362.0                                            | 89.90           | 356.70      | 7,941.6               | 7,667.8      | -189.8       | 406,160.49          | 623,430.05         | 32° 6' 57.686 N | 103° 56' 4.789 W |
| 15,457.0                                            | 90.00           | 359.20      | 7,941.7               | 7,762.7      | -193.2       | 406,255.43          | 623,426.65         | 32° 6' 58.626 N | 103° 56' 4.825 W |
| 15,551.0                                            | 89.10           | 357.60      | 7,942.4               | 7,856.7      | -195.8       | 406,349.38          | 623,424.02         | 32° 6' 59.556 N | 103° 56' 4.851 W |



## Survey Report - Geographic



|           |                              |                              |                                        |
|-----------|------------------------------|------------------------------|----------------------------------------|
| Company:  | COG Operating, LLC           | Local Co-ordinate Reference: | Well Cabo Wabo 25 Federal Com #3H      |
| Project:  | Eddy County, NM (NAD 27)     | TVD Reference:               | WELL @ 3086.3usft (Original Well Elev) |
| Site:     | Sec 25, T25-S, R29-E         | MD Reference:                | WELL @ 3086.3usft (Original Well Elev) |
| Well:     | Cabo Wabo 25 Federal Com #3H | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | Wellbore #1                  | Database:                    | Compass                                |

## Survey

| Measured Depth (usft)      | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude        | Longitude        |
|----------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------------|------------------|
| 15,645.0                   | 90.00           | 359.50      | 7,943.1               | 7,950.6      | -198.2       | 406,443.34          | 623,421.65         | 32° 7' 0.486 N  | 103° 56' 4.875 W |
| 15,739.0                   | 90.00           | 359.90      | 7,943.1               | 8,044.6      | -198.6       | 406,537.34          | 623,421.15         | 32° 7' 1.416 N  | 103° 56' 4.876 W |
| 15,833.0                   | 89.70           | 359.20      | 7,943.4               | 8,138.6      | -199.4       | 406,631.34          | 623,420.42         | 32° 7' 2.346 N  | 103° 56' 4.881 W |
| 15,928.0                   | 90.80           | 359.90      | 7,943.0               | 8,233.6      | -200.1       | 406,726.33          | 623,419.67         | 32° 7' 3.286 N  | 103° 56' 4.885 W |
| 16,022.0                   | 91.60           | 0.40        | 7,941.0               | 8,327.6      | -199.9       | 406,820.31          | 623,419.92         | 32° 7' 4.216 N  | 103° 56' 4.879 W |
| 16,116.0                   | 90.00           | 359.70      | 7,939.7               | 8,421.6      | -199.8       | 406,914.30          | 623,420.00         | 32° 7' 5.146 N  | 103° 56' 4.874 W |
| 16,210.0                   | 90.80           | 0.40        | 7,939.0               | 8,515.6      | -199.7       | 407,008.29          | 623,420.08         | 32° 7' 6.077 N  | 103° 56' 4.869 W |
| 16,304.0                   | 91.10           | 1.30        | 7,937.5               | 8,609.6      | -198.3       | 407,102.27          | 623,421.47         | 32° 7' 7.007 N  | 103° 56' 4.848 W |
| 16,398.0                   | 89.90           | 0.10        | 7,936.7               | 8,703.6      | -197.2       | 407,196.26          | 623,422.62         | 32° 7' 7.937 N  | 103° 56' 4.831 W |
| 16,492.0                   | 89.50           | 359.90      | 7,937.1               | 8,797.6      | -197.2       | 407,290.25          | 623,422.62         | 32° 7' 8.867 N  | 103° 56' 4.827 W |
| 16,586.0                   | 89.20           | 359.70      | 7,938.2               | 8,891.5      | -197.5       | 407,384.25          | 623,422.29         | 32° 7' 9.797 N  | 103° 56' 4.827 W |
| 16,681.0                   | 88.90           | 359.70      | 7,939.8               | 8,986.5      | -198.0       | 407,479.23          | 623,421.80         | 32° 7' 10.737 N | 103° 56' 4.828 W |
| 16,774.0                   | 89.40           | 358.70      | 7,941.2               | 9,079.5      | -199.3       | 407,572.21          | 623,420.50         | 32° 7' 11.657 N | 103° 56' 4.839 W |
| 16,868.0                   | 90.50           | 357.10      | 7,941.2               | 9,173.4      | -202.7       | 407,666.14          | 623,417.05         | 32° 7' 12.587 N | 103° 56' 4.875 W |
| 16,963.0                   | 90.40           | 357.60      | 7,940.5               | 9,268.3      | -207.1       | 407,761.04          | 623,412.66         | 32° 7' 13.526 N | 103° 56' 4.922 W |
| 17,057.0                   | 90.10           | 358.50      | 7,940.1               | 9,362.3      | -210.3       | 407,854.98          | 623,409.46         | 32° 7' 14.456 N | 103° 56' 4.956 W |
| 17,151.0                   | 89.80           | 359.40      | 7,940.2               | 9,456.3      | -212.1       | 407,948.97          | 623,407.74         | 32° 7' 15.386 N | 103° 56' 4.972 W |
| 17,245.0                   | 89.30           | 359.20      | 7,940.9               | 9,550.3      | -213.2       | 408,042.96          | 623,406.59         | 32° 7' 16.317 N | 103° 56' 4.981 W |
| 17,339.0                   | 88.60           | 358.00      | 7,942.6               | 9,644.2      | -215.5       | 408,136.91          | 623,404.30         | 32° 7' 17.246 N | 103° 56' 5.004 W |
| 17,360.0                   | 88.40           | 358.10      | 7,943.2               | 9,665.2      | -216.2       | 408,157.89          | 623,403.58         | 32° 7' 17.454 N | 103° 56' 5.011 W |
| 17,420.0                   | 88.40           | 358.10      | 7,944.9               | 9,725.1      | -218.2       | 408,217.83          | 623,401.59         | 32° 7' 18.047 N | 103° 56' 5.032 W |
| TD @ 17420' MD / 7945' TVD |                 |             |                       |              |              |                     |                    |                 |                  |

## Design Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                                      |
|-----------------------|-----------------------|-------------------|--------------|----------------------------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                              |
| 7,300.0               | 7,299.7               | -7.6              | -7.7         | Tie In @ 7300' MD / 7300' TVD                |
| 12,465.8              | 7,928.0               | 4,773.0           | -132.6       | Crossed Section Line @ 12466' MD / 7928' TVD |
| 17,420.0              | 7,944.9               | 9,725.1           | -218.2       | TD @ 17420' MD / 7945' TVD                   |

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