

OCT 08 2014

15-42420

RECEIVED

WELL NAME AND NUMBER Puckett 13 Federal Com No. 35H
LOCATION Section 13, T17S, R31E, Unit O, 150 FSL, 2290 FEL, Eddy County
OPERATOR COG Operating LLC
DRILLING CONTRACTOR United Drilling, Inc.

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above described well and had conducted deviation test and obtained the following results:

| Degrees @ Depth | Degrees @ Depth | Degrees @ Depth |
|-----------------|-----------------|-----------------|
| 92.2° @ 7569' | 91.8° @ 9367' | |
| 92.2° @ 7663' | 92.0° @ 9462' | |
| 92.7° @ 7758' | 90.3° @ 9556' | |
| 92.7° @ 7852' | 90.1° @ 9651' | |
| 93.1° @ 7948' | 90.1° @ 9746' | |
| 92.0° @ 8137' | 90.1° @ 9841' | |
| 92.0° @ 8231' | 89.6° @ 9943' | |
| 92.2° @ 8326' | | |
| 90.1° @ 8420' | | |
| 89.6° @ 8515' | | |
| 90.6° @ 8610' | | |
| 90.3° @ 8705' | | |
| 90.1° @ 8799' | | |
| 90.6° @ 8993' | | |
| 91.0° @ 8988' | | |
| 91.0° @ 9083' | | |
| 91.3° @ 9178' | | |
| 91.5° @ 9272' | | |

Drilling Contractor- UNITED DRILLING, INC.

By: *Luisa Noriega*
(Luisa Noriega)

Title: Asst. Office Manager

Subscribed and sworn to before me this 29th day of July, 2014.

Charles Martin
Notary Public
Charles New Mexico
County State

My Commission Expires: 10/8/16



July 25, 2014

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

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 08 2014

RECEIVED

Attn: Kanicia Castillo

RE: Puckett 13 Federal Com 35H

Please find enclosed a copy of the survey from 0.00' to 4526.00' ran on the above referenced well.

Sincerely,

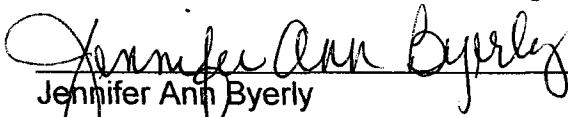
Keith Havelka
Operations

STATE OF TEXAS §

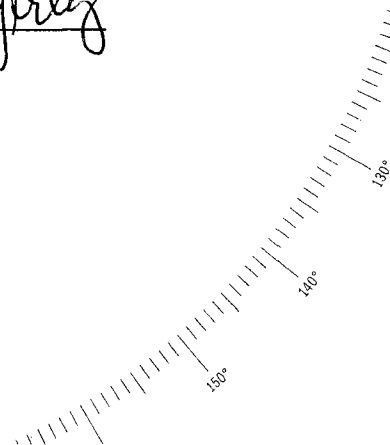
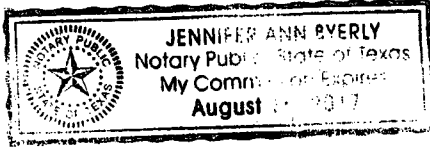
§

COUNTY OF NUECES §

This instrument was acknowledged before me on the 25 day of July, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

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





Company: Concho
 Lease/Well: Puckett 13 Federal Com/35H



Rig Name: United 43
 State/County: New Mexico/Eddy
 Latitude: 32.83, Longitude: -103.82
 GRID North is 0.28 Degrees East of True North
 VS-Azi: 0.00 Degrees

NM OIL CONSERVATION
 ARTESIA DISTRICT
 OCT 08 2014
 RECEIVED

Depth Reference : R.K.B. = 14.5 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

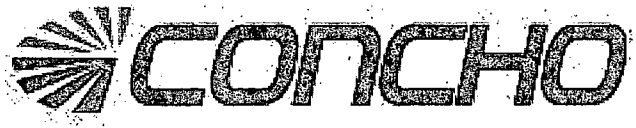
Filename: gyro survey.ut
 Minimum Curvature Method
 Report Date/Time: 7/25/2014 / 14:39

VES Survey International
 West Texas
 (432) 563-5444

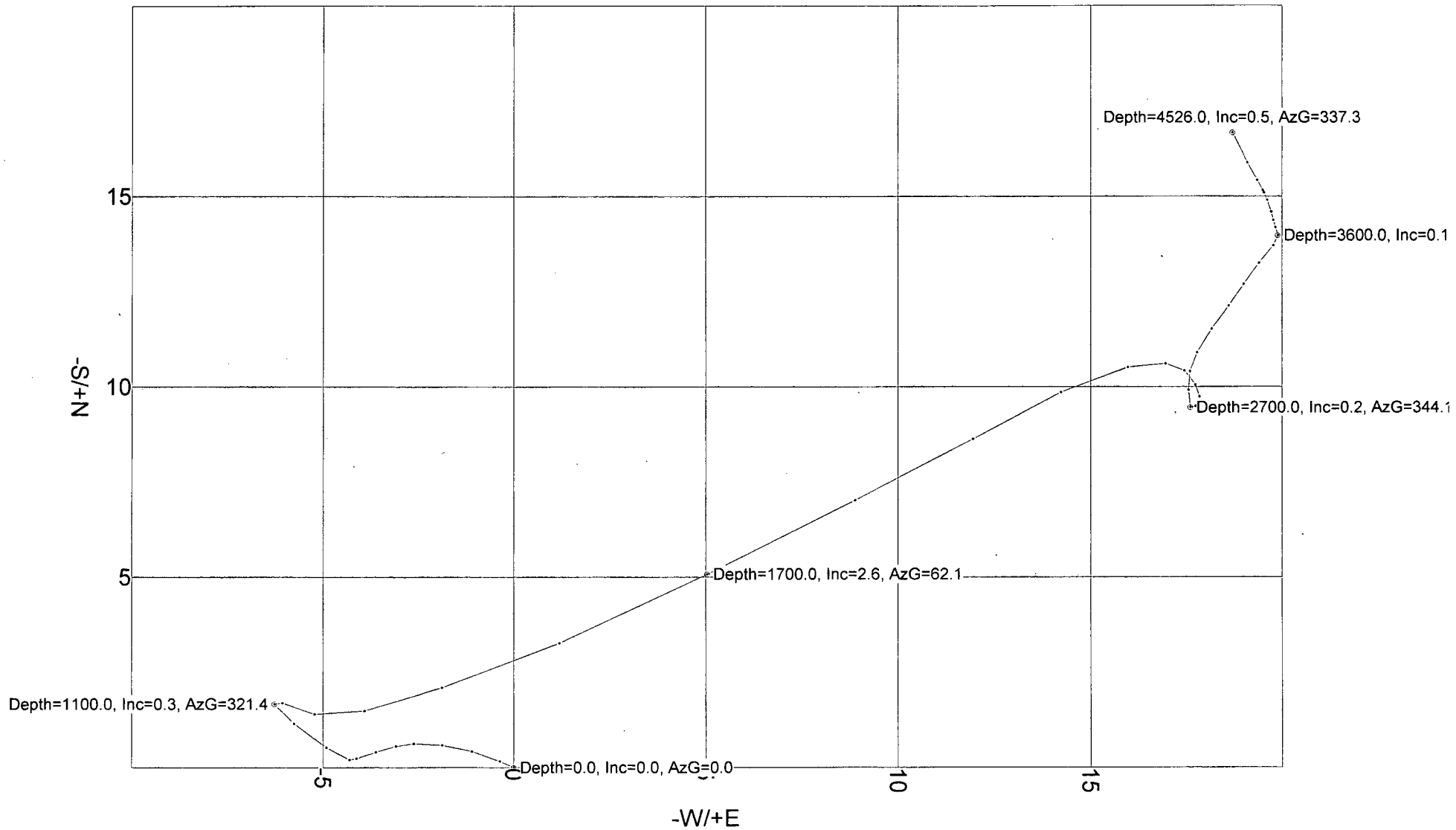
Surveyor: Evan Goetz
 Puckett 13 Federal Com 35H / API 30-015-42420

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | TVD FT | +N/-S FT | +E/-W FT | Vertical Section FT | Closure Distance FT | Closure Direction Deg | Dogleg Severity Deg/100 |
|----------------------|-------------------|------------------------|-----------|-------------|-------------|------------------------|------------------------|--------------------------|----------------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **** |
| 100.00 | 0.45 | 294.10 | 100.00 | 0.16 | -0.36 | 0.16 | 0.40 | 294.10 | 0.45 |
| 200.00 | 0.44 | 284.96 | 200.00 | 0.42 | -1.09 | 0.42 | 1.17 | 291.12 | 0.07 |
| 300.00 | 0.46 | 279.39 | 299.99 | 0.59 | -1.86 | 0.59 | 1.95 | 287.51 | 0.05 |
| 400.00 | 0.41 | 265.08 | 399.99 | 0.62 | -2.62 | 0.62 | 2.69 | 283.38 | 0.12 |
| 500.00 | 0.13 | 255.20 | 499.99 | 0.56 | -3.08 | 0.56 | 3.13 | 280.35 | 0.29 |
| 600.00 | 0.51 | 252.44 | 599.99 | 0.40 | -3.61 | 0.40 | 3.63 | 276.33 | 0.38 |
| 700.00 | 0.10 | 250.23 | 699.99 | 0.24 | -4.12 | 0.24 | 4.13 | 273.29 | 0.40 |
| 800.00 | 0.12 | 268.28 | 799.99 | 0.20 | -4.30 | 0.20 | 4.31 | 272.70 | 0.04 |
| 900.00 | 0.69 | 302.66 | 899.98 | 0.53 | -4.92 | 0.53 | 4.94 | 276.12 | 0.60 |
| 1000.00 | 0.53 | 310.94 | 999.98 | 1.15 | -5.77 | 1.15 | 5.89 | 281.31 | 0.19 |
| 1100.00 | 0.31 | 321.38 | 1099.97 | 1.67 | -6.29 | 1.67 | 6.51 | 284.86 | 0.22 |
| 1200.00 | 0.49 | 115.76 | 1199.97 | 1.70 | -6.08 | 1.70 | 6.31 | 285.61 | 0.78 |
| 1300.00 | 0.56 | 103.20 | 1299.97 | 1.40 | -5.23 | 1.40 | 5.41 | 285.04 | 0.13 |
| 1400.00 | 0.99 | 77.07 | 1399.96 | 1.49 | -3.91 | 1.49 | 4.18 | 290.80 | 0.55 |
| 1500.00 | 1.46 | 70.79 | 1499.94 | 2.10 | -1.87 | 2.10 | 2.81 | 318.32 | 0.49 |
| 1600.00 | 2.30 | 67.90 | 1599.88 | 3.27 | 1.19 | 3.27 | 3.48 | 20.03 | 0.84 |
| 1700.00 | 2.58 | 62.07 | 1699.79 | 5.08 | 5.04 | 5.08 | 7.15 | 44.77 | 0.38 |
| 1800.00 | 2.35 | 64.26 | 1799.70 | 7.03 | 8.88 | 7.03 | 11.32 | 51.64 | 0.25 |

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | TVD FT | +N/-S FT | +E/-W FT | Vertical Section FT | Closure Distance FT | Closure Direction Deg | Dogleg Severity Deg/100 |
|----------------------|-------------------|------------------------|-----------|-------------|-------------|------------------------|------------------------|--------------------------|----------------------------|
| 1900.00 | 1.61 | 59.70 | 1899.64 | 8.63 | 11.94 | 8.63 | 14.73 | 54.15 | 0.76 |
| 2000.00 | 1.37 | 64.20 | 1999.60 | 9.86 | 14.23 | 9.86 | 17.31 | 55.29 | 0.27 |
| 2100.00 | 0.79 | 78.15 | 2099.59 | 10.52 | 15.98 | 10.52 | 19.13 | 56.65 | 0.63 |
| 2200.00 | 0.36 | 99.34 | 2199.58 | 10.61 | 16.96 | 10.61 | 20.01 | 57.98 | 0.48 |
| 2300.00 | 0.26 | 126.33 | 2299.58 | 10.42 | 17.46 | 10.42 | 20.33 | 59.16 | 0.17 |
| 2400.00 | 0.29 | 156.54 | 2399.58 | 10.05 | 17.74 | 10.05 | 20.39 | 60.46 | 0.15 |
| 2500.00 | 0.10 | 179.05 | 2499.58 | 9.74 | 17.84 | 9.74 | 20.33 | 61.37 | 0.20 |
| 2600.00 | 0.22 | 210.08 | 2599.58 | 9.49 | 17.75 | 9.49 | 20.12 | 61.88 | 0.15 |
| 2700.00 | 0.17 | 344.14 | 2699.58 | 9.46 | 17.61 | 9.46 | 19.99 | 61.76 | 0.36 |
| 2800.00 | 0.36 | 358.68 | 2799.58 | 9.92 | 17.56 | 9.92 | 20.17 | 60.55 | 0.21 |
| 2900.00 | 0.21 | 14.51 | 2899.58 | 10.41 | 17.60 | 10.41 | 20.45 | 59.40 | 0.17 |
| 3000.00 | 0.40 | 24.16 | 2999.57 | 10.90 | 17.79 | 10.90 | 20.86 | 58.50 | 0.19 |
| 3100.00 | 0.44 | 37.59 | 3099.57 | 11.52 | 18.16 | 11.52 | 21.51 | 57.61 | 0.11 |
| 3200.00 | 0.42 | 34.72 | 3199.57 | 12.13 | 18.61 | 12.13 | 22.21 | 56.90 | 0.03 |
| 3300.00 | 0.36 | 33.30 | 3299.57 | 12.70 | 18.99 | 12.70 | 22.85 | 56.24 | 0.06 |
| 3400.00 | 0.42 | 39.30 | 3399.56 | 13.25 | 19.40 | 13.25 | 23.49 | 55.67 | 0.07 |
| 3500.00 | 0.25 | 38.60 | 3499.56 | 13.71 | 19.77 | 13.71 | 24.06 | 55.27 | 0.17 |
| 3600.00 | 0.11 | 349.11 | 3599.56 | 13.97 | 19.89 | 13.97 | 24.31 | 54.92 | 0.20 |
| 3700.00 | 0.15 | 338.02 | 3699.56 | 14.19 | 19.83 | 14.19 | 24.38 | 54.41 | 0.05 |
| 3800.00 | 0.08 | 358.30 | 3799.56 | 14.38 | 19.77 | 14.38 | 24.45 | 53.98 | 0.08 |
| 3900.00 | 0.17 | 339.60 | 3899.56 | 14.59 | 19.72 | 14.59 | 24.53 | 53.50 | 0.10 |
| 4000.00 | 0.20 | 341.83 | 3999.56 | 14.90 | 19.61 | 14.90 | 24.63 | 52.77 | 0.03 |
| 4100.00 | 0.04 | 320.21 | 4099.56 | 15.10 | 19.53 | 15.10 | 24.69 | 52.30 | 0.17 |
| 4200.00 | 0.05 | 334.92 | 4199.56 | 15.16 | 19.50 | 15.16 | 24.70 | 52.14 | 0.01 |
| 4300.00 | 0.30 | 331.39 | 4299.56 | 15.42 | 19.36 | 15.42 | 24.75 | 51.45 | 0.25 |
| 4400.00 | 0.31 | 328.74 | 4399.56 | 15.88 | 19.09 | 15.88 | 24.83 | 50.24 | 0.02 |
| 4526.00 | 0.49 | 337.28 | 4525.55 | 16.67 | 18.71 | 16.67 | 25.06 | 48.29 | 0.15 |



VES Survey International
West Texas
(432) 563-5444
Surveyor: Evan Goetz
Puckett 13 Federal Com 35H / API 30-015-42420



VES Survey Date: 07/18/2014



| | | | |
|------------------|-------------------------------------|-------------------------------------|--|
| Company: | COG Operating LLC | Local Co-ordinate Reference: | Well Puckett 13 Federal Com Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett 13 Federal Com | MD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett 13 Federal Com Well No. 35H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys Original Hole | Databases: | EDM 5000.1 Database |

| | | | |
|--------------------|--------------------------------------|----------------------|----------------|
| Project: | Eddy County, New Mexico | | |
| 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: | Puckett 13 Federal Com | | | | |
| Site Position: | | Northing: | 669,864.10 usft | Latitude: | 32.84047105 |
| From: | Map | Easting: | 659,000.60 usft | Longitude: | -103.81564459 |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.28 ° |

| | | | | | | |
|-----------------------------|-------------------------------------|-----------|----------------------------|-----------------|----------------------|---------------|
| Well: | Puckett 13 Federal Com Well No. 35H | | | | | |
| Well Position | +N-S | 0.00 usft | Northing: | 665,214.30 usft | Latitude: | 32.82771407 |
| | +E-W | 0.00 usft | Easting: | 657,243.60 usft | Longitude: | -103.82143833 |
| Position Uncertainty | | 0.00 usft | Wellhead Elevation: | usft | Ground Level: | 3,914.00 usft |

| | | | | | |
|------------------|---------------|--|--|--|--|
| Wellbore: | Original Hole | | | | |
|------------------|---------------|--|--|--|--|

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|-----------|------------|-------------|--------------------|------------------|------------------------|
| | IGRF2010 | 3/7/2014 | 7.41 | 60.63 | 48,675 |

| | | | | | |
|----------------|-----------------------|--|--|--|--|
| Design: | Surveys Original Hole | | | | |
|----------------|-----------------------|--|--|--|--|

| | | | | | |
|--------------------------|------------------------------------|------------------------|------------------------|--------------------------|------|
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N-S (usft) | +E-W (usft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 0.04 | |



| | | | |
|------------------|-------------------------------------|-------------------------------------|--|
| Company: | COG Operating LLC | Local Co-ordinate Reference: | Well Puckett 13 Federal Com Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett 13 Federal Com | MD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett 13 Federal Com Well No. 35H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys Original Hole | Database: | EDM-5000.1 Database |

| | | | | |
|------------------------|------------------------|--------------------------|------------------|----------------------------------|
| Survey Program: | Date: 7/26/2014 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
| 100.00 | 4,526.00 | Gyro (Original Hole) | NS-GYRO-MS | North sensing gyrocompassing m/s |
| 4,609.00 | 9,943.00 | MWD (Original Hole) | MWD | MWD - Standard |

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V. Sec (usft) | Northing (usft) | Easting (usft) |
|-------------|---------|-------------------|------------|------------|------------|----------------|---------------|-----------------|----------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 665,214.30 | 657,243.60 |
| 100.00 | 0.45 | 294.10 | 100.00 | 0.16 | -0.36 | 0.45 | 0.16 | 665,214.46 | 657,243.24 |
| Gyro | | | | | | | | | |
| 200.00 | 0.44 | 284.96 | 200.00 | 0.42 | -1.09 | 0.07 | 0.42 | 665,214.72 | 657,242.51 |
| 300.00 | 0.46 | 279.39 | 299.99 | 0.58 | -1.85 | 0.05 | 0.58 | 665,214.88 | 657,241.75 |
| 400.00 | 0.41 | 265.08 | 399.99 | 0.62 | -2.61 | 0.12 | 0.62 | 665,214.92 | 657,240.99 |
| 500.00 | 0.13 | 255.20 | 499.99 | 0.56 | -3.07 | 0.28 | 0.56 | 665,214.86 | 657,240.53 |
| 600.00 | 0.51 | 252.44 | 599.99 | 0.40 | -3.61 | 0.38 | 0.39 | 665,214.70 | 657,239.99 |
| 700.00 | 0.10 | 250.23 | 699.99 | 0.23 | -4.11 | 0.41 | 0.23 | 665,214.53 | 657,239.49 |
| 800.00 | 0.12 | 268.28 | 799.99 | 0.20 | -4.30 | 0.04 | 0.20 | 665,214.50 | 657,239.30 |
| 900.00 | 0.69 | 302.66 | 899.98 | 0.52 | -4.91 | 0.59 | 0.52 | 665,214.82 | 657,238.69 |
| 1,000.00 | 0.53 | 310.94 | 999.98 | 1.15 | -5.77 | 0.18 | 1.15 | 665,215.45 | 657,237.83 |
| 1,100.00 | 0.31 | 321.38 | 1,099.97 | 1.66 | -6.29 | 0.23 | 1.66 | 665,215.96 | 657,237.31 |
| 1,200.00 | 0.49 | 115.76 | 1,199.97 | 1.69 | -6.07 | 0.78 | 1.69 | 665,215.99 | 657,237.53 |
| 1,300.00 | 0.56 | 103.20 | 1,299.97 | 1.39 | -5.21 | 0.13 | 1.39 | 665,215.69 | 657,238.39 |
| 1,400.00 | 0.99 | 77.07 | 1,399.96 | 1.47 | -3.89 | 0.55 | 1.47 | 665,215.77 | 657,239.71 |
| 1,500.00 | 1.46 | 70.79 | 1,499.94 | 2.09 | -1.85 | 0.49 | 2.09 | 665,216.39 | 657,241.75 |
| 1,600.00 | 2.30 | 67.90 | 1,599.88 | 3.26 | 1.22 | 0.85 | 3.26 | 665,217.56 | 657,244.82 |
| 1,700.00 | 2.58 | 62.07 | 1,699.79 | 5.07 | 5.06 | 0.37 | 5.07 | 665,219.37 | 657,248.66 |
| 1,800.00 | 2.35 | 64.26 | 1,799.70 | 7.01 | 8.90 | 0.25 | 7.02 | 665,221.31 | 657,252.50 |
| 1,900.00 | 1.61 | 59.70 | 1,899.64 | 8.61 | 11.96 | 0.76 | 8.62 | 665,222.91 | 657,255.56 |



| | | | |
|------------------|--|-------------------------------------|--|
| Company: | COG Operating, LLC | Local Co-ordinate Reference: | Well, Puckett, 13, Federal, Com, Well, No. 35H |
| Project: | Eddy, County, New, Mexico | TVD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett, 13, Federal, Com | MD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett, 13, Federal, Com, Well, No. 35H | North Reference: | Grid |
| Wellbore: | Original, Hole | Survey Calculation Method: | Minimum, Curvature |
| Design: | Surveys, Original, Hole | Database: | EDM, 5000, 1, Database |

| Survey | | | | | | | | | | | |
|--------------|------------|----------------------|---------------|---------------|---------------|-------------------|------------------|--------------------|-------------------|--|--|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V. Sec (usft) | Northing (usft) | Easting (usft) | | |
| 2,000.00 | 1.37 | 64.20 | 1,999.60 | 9.84 | 14.25 | 0.27 | 9.85 | 665,224.14 | 657,257.85 | | |
| 2,100.00 | 0.79 | 78.15 | 2,099.59 | 10.50 | 16.00 | 0.63 | 10.52 | 665,224.80 | 657,259.60 | | |
| 2,200.00 | 0.36 | 99.34 | 2,199.58 | 10.59 | 16.98 | 0.47 | 10.61 | 665,224.89 | 657,260.58 | | |
| 2,300.00 | 0.26 | 126.33 | 2,299.58 | 10.41 | 17.48 | 0.17 | 10.42 | 665,224.71 | 657,261.08 | | |
| 2,400.00 | 0.29 | 156.54 | 2,399.58 | 10.04 | 17.76 | 0.15 | 10.06 | 665,224.34 | 657,261.36 | | |
| 2,500.00 | 0.10 | 179.05 | 2,499.58 | 9.72 | 17.86 | 0.20 | 9.74 | 665,224.02 | 657,261.46 | | |
| 2,600.00 | 0.22 | 210.08 | 2,599.58 | 9.47 | 17.77 | 0.14 | 9.48 | 665,223.77 | 657,261.37 | | |
| 2,700.00 | 0.17 | 344.14 | 2,699.58 | 9.45 | 17.63 | 0.36 | 9.46 | 665,223.75 | 657,261.23 | | |
| 2,800.00 | 0.36 | 358.68 | 2,799.58 | 9.90 | 17.58 | 0.20 | 9.92 | 665,224.20 | 657,261.18 | | |
| 2,900.00 | 0.21 | 14.51 | 2,899.58 | 10.39 | 17.62 | 0.17 | 10.41 | 665,224.69 | 657,261.22 | | |
| 3,000.00 | 0.40 | 24.16 | 2,999.57 | 10.89 | 17.81 | 0.20 | 10.90 | 665,225.19 | 657,261.41 | | |
| 3,100.00 | 0.44 | 37.59 | 3,099.57 | 11.51 | 18.19 | 0.11 | 11.53 | 665,225.81 | 657,261.79 | | |
| 3,200.00 | 0.42 | 34.72 | 3,199.57 | 12.12 | 18.63 | 0.03 | 12.13 | 665,226.42 | 657,262.23 | | |
| 3,300.00 | 0.36 | 33.30 | 3,299.57 | 12.68 | 19.01 | 0.06 | 12.70 | 665,226.98 | 657,262.61 | | |
| 3,400.00 | 0.42 | 39.30 | 3,399.56 | 13.23 | 19.42 | 0.07 | 13.24 | 665,227.53 | 657,263.02 | | |
| 3,500.00 | 0.25 | 38.60 | 3,499.56 | 13.68 | 19.78 | 0.17 | 13.70 | 665,227.98 | 657,263.38 | | |
| 3,600.00 | 0.11 | 349.11 | 3,599.56 | 13.95 | 19.90 | 0.20 | 13.96 | 665,228.25 | 657,263.50 | | |
| 3,700.00 | 0.15 | 338.02 | 3,699.56 | 14.16 | 19.83 | 0.05 | 14.18 | 665,228.46 | 657,263.43 | | |
| 3,800.00 | 0.08 | 358.30 | 3,799.56 | 14.35 | 19.78 | 0.08 | 14.37 | 665,228.65 | 657,263.38 | | |
| 3,900.00 | 0.17 | 339.60 | 3,899.56 | 14.56 | 19.73 | 0.10 | 14.58 | 665,228.86 | 657,263.33 | | |
| 4,000.00 | 0.20 | 341.83 | 3,999.56 | 14.87 | 19.62 | 0.03 | 14.88 | 665,229.17 | 657,263.22 | | |
| 4,100.00 | 0.04 | 320.21 | 4,099.56 | 15.06 | 19.55 | 0.16 | 15.07 | 665,229.36 | 657,263.15 | | |
| 4,200.00 | 0.05 | 334.92 | 4,199.56 | 15.13 | 19.51 | 0.02 | 15.14 | 665,229.43 | 657,263.11 | | |
| 4,300.00 | 0.30 | 331.39 | 4,299.56 | 15.40 | 19.36 | 0.25 | 15.41 | 665,229.70 | 657,262.96 | | |
| 4,400.00 | 0.31 | 328.74 | 4,399.56 | 15.86 | 19.10 | 0.02 | 15.87 | 665,230.16 | 657,262.70 | | |
| 4,526.00 | 0.49 | 337.28 | 4,525.55 | 16.65 | 18.71 | 0.15 | 16.66 | 665,230.95 | 657,262.31 | | |



| | | | |
|-------------------------|---|-------------------------------------|--|
| Company: | COG Operating LLC | Local Co-ordinate Reference: | Well Puckett 13 Federal Com Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett 13 Federal Com | MD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett 13 Federal Com Well No. 35H | North Reference: | Grid |
| Wellbore Design: | Original Hole Surveys, Original Hole | Survey Calculation Method: | Minimum Curvature |
| | | Database: | EDM.5000.1-Ddatabase |

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V:Sec (usft) | Northing (usft) | Easting (usft) |
|--|---------|-------------------|------------|------------|------------|----------------|--------------|-----------------|----------------|
| 4,609.00 | 0.00 | 317.20 | 4,608.55 | 16.97 | 18.57 | 0.59 | 16.99 | 665,231.27 | 657,262.17 |
| MWD surveys | | | | | | | | | |
| 4,704.00 | 0.20 | 10.60 | 4,703.55 | 17.14 | 18.60 | 0.21 | 17.15 | 665,231.44 | 657,262.20 |
| 4,799.00 | 0.20 | 333.40 | 4,798.55 | 17.45 | 18.56 | 0.13 | 17.46 | 665,231.75 | 657,262.16 |
| 4,862.00 | 0.20 | 335.50 | 4,861.55 | 17.65 | 18.47 | 0.01 | 17.66 | 665,231.95 | 657,262.07 |
| 4,893.00 | 1.60 | 359.70 | 4,892.55 | 18.13 | 18.44 | 4.58 | 18.14 | 665,232.43 | 657,262.04 |
| 4,925.00 | 4.60 | 0.50 | 4,924.50 | 19.86 | 18.45 | 9.38 | 19.87 | 665,234.16 | 657,262.05 |
| 4,956.00 | 7.90 | 3.30 | 4,955.31 | 23.23 | 18.58 | 10.69 | 23.24 | 665,237.53 | 657,262.18 |
| 4,988.00 | 11.80 | 5.70 | 4,986.83 | 28.68 | 19.04 | 12.25 | 28.70 | 665,242.98 | 657,262.64 |
| 5,019.00 | 14.40 | 7.80 | 5,017.02 | 35.66 | 19.87 | 8.53 | 35.67 | 665,249.96 | 657,263.47 |
| 5,050.00 | 16.90 | 8.50 | 5,046.87 | 43.93 | 21.06 | 8.09 | 43.95 | 665,258.23 | 657,264.66 |
| 5,082.00 | 19.40 | 7.80 | 5,077.28 | 53.80 | 22.47 | 7.84 | 53.82 | 665,268.10 | 657,266.07 |
| 5,113.00 | 21.80 | 7.50 | 5,106.29 | 64.61 | 23.92 | 7.75 | 64.63 | 665,278.91 | 657,267.52 |
| 5,145.00 | 23.80 | 8.50 | 5,135.79 | 76.89 | 25.65 | 6.37 | 76.91 | 665,291.19 | 657,269.25 |
| 5,176.00 | 25.70 | 9.20 | 5,163.94 | 89.71 | 27.65 | 6.20 | 89.73 | 665,304.01 | 657,271.25 |
| 5,208.00 | 27.10 | 9.90 | 5,192.60 | 103.74 | 30.01 | 4.48 | 103.76 | 665,318.04 | 657,273.61 |
| 5,239.00 | 27.40 | 11.00 | 5,220.16 | 117.70 | 32.59 | 1.89 | 117.72 | 665,332.00 | 657,276.19 |
| 5,271.00 | 29.00 | 12.40 | 5,248.36 | 132.50 | 35.66 | 5.41 | 132.53 | 665,346.80 | 657,279.26 |
| 5,303.00 | 31.50 | 13.50 | 5,276.01 | 148.21 | 39.28 | 8.00 | 148.24 | 665,362.51 | 657,282.88 |
| 5,334.00 | 34.50 | 13.50 | 5,302.00 | 164.63 | 43.22 | 9.68 | 164.66 | 665,378.93 | 657,286.82 |
| 5,362.00 | 37.39 | 13.14 | 5,324.67 | 180.62 | 47.00 | 10.35 | 180.65 | 665,394.92 | 657,290.60 |
| 330 Hard line intercept @ 5362 MD | | | | | | | | | |
| 5,365.00 | 37.70 | 13.10 | 5,327.05 | 182.40 | 47.42 | 10.35 | 182.43 | 665,396.70 | 657,291.02 |
| 5,397.00 | 41.30 | 12.80 | 5,351.73 | 202.23 | 51.98 | 11.27 | 202.27 | 665,416.53 | 657,295.58 |
| 5,428.00 | 45.00 | 12.80 | 5,374.35 | 222.91 | 56.67 | 11.94 | 222.95 | 665,437.21 | 657,300.27 |
| 5,460.00 | 48.70 | 13.50 | 5,396.23 | 245.63 | 61.99 | 11.67 | 245.68 | 665,459.93 | 657,305.59 |
| 5,491.00 | 51.20 | 13.50 | 5,416.17 | 268.71 | 67.53 | 8.06 | 268.75 | 665,483.01 | 657,311.13 |



| | | | |
|-------------------------|---|-------------------------------------|--|
| Company: | COG Operating LLC | Local Co-ordinate Reference: | Well: Puckett-13, Federal Com Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=39,14+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett-13, Federal Com | MD Reference: | RKB=39,14+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett-13, Federal Com Well No. 35H | North Reference: | Grid: |
| Wellbore Design: | Original Hole Surveys: Original Hole | Survey Calculation Method: | Minimum Curvature |
| | | Database: | EDM 5000.1 Database |

| Survey | | | | | | | | | | | |
|-----------|---------|-------------------|------------|------------|------------|----------------|---------------|-----------------|----------------|--|--|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V: Sec (usft) | Northing (usft) | Easting (usft) | | |
| 5,523.00 | 54.50 | 13.10 | 5,435.50 | 293.53 | 73.39 | 10.36 | 293.58 | 665,507.83 | 657,316.99 | | |
| 5,554.00 | 58.10 | 12.80 | 5,452.69 | 318.66 | 79.17 | 11.64 | 318.71 | 665,532.96 | 657,322.77 | | |
| 5,585.00 | 60.90 | 13.10 | 5,468.42 | 344.68 | 85.16 | 9.07 | 344.74 | 665,558.98 | 657,328.76 | | |
| 5,617.00 | 62.80 | 12.80 | 5,483.52 | 372.18 | 91.48 | 5.99 | 372.24 | 665,586.48 | 657,335.08 | | |
| 5,648.00 | 67.00 | 13.10 | 5,496.67 | 399.53 | 97.77 | 13.58 | 399.60 | 665,613.83 | 657,341.37 | | |
| 5,680.00 | 72.70 | 13.10 | 5,507.69 | 428.78 | 104.57 | 17.81 | 428.85 | 665,643.08 | 657,348.17 | | |
| 5,711.00 | 78.10 | 13.50 | 5,515.50 | 457.96 | 111.47 | 17.46 | 458.04 | 665,672.26 | 657,355.07 | | |
| 5,743.00 | 83.60 | 14.90 | 5,520.59 | 488.58 | 119.22 | 17.72 | 488.66 | 665,702.88 | 657,362.82 | | |
| 5,834.00 | 90.10 | 14.20 | 5,525.58 | 576.48 | 142.04 | 7.18 | 576.58 | 665,790.78 | 657,385.64 | | |
| 5,866.00 | 90.40 | 11.30 | 5,525.44 | 607.69 | 149.10 | 9.11 | 607.79 | 665,821.99 | 657,392.70 | | |
| 5,961.00 | 92.40 | 7.10 | 5,523.12 | 701.41 | 164.28 | 4.90 | 701.52 | 665,915.71 | 657,407.88 | | |
| 6,055.00 | 91.80 | 4.00 | 5,519.68 | 794.89 | 173.36 | 3.36 | 795.02 | 666,009.19 | 657,416.96 | | |
| 6,150.00 | 90.80 | 357.60 | 5,517.52 | 889.81 | 174.69 | 6.82 | 889.93 | 666,104.11 | 657,418.29 | | |
| 6,244.00 | 91.50 | 357.30 | 5,515.63 | 983.70 | 170.51 | 0.81 | 983.82 | 666,198.00 | 657,414.11 | | |
| 6,339.00 | 92.00 | 356.90 | 5,512.73 | 1,078.53 | 165.70 | 0.67 | 1,078.65 | 666,292.83 | 657,409.30 | | |
| 6,434.00 | 91.70 | 356.60 | 5,509.66 | 1,173.33 | 160.32 | 0.45 | 1,173.44 | 666,387.63 | 657,403.92 | | |
| 6,528.00 | 91.50 | 356.90 | 5,507.04 | 1,267.14 | 154.99 | 0.38 | 1,267.25 | 666,481.44 | 657,398.59 | | |
| 6,623.00 | 91.70 | 357.30 | 5,504.39 | 1,361.98 | 150.19 | 0.47 | 1,362.09 | 666,576.28 | 657,393.79 | | |
| 6,718.00 | 91.70 | 356.90 | 5,501.57 | 1,456.82 | 145.38 | 0.42 | 1,456.92 | 666,671.12 | 657,388.98 | | |
| 6,812.00 | 91.50 | 356.90 | 5,498.94 | 1,550.64 | 140.30 | 0.21 | 1,550.74 | 666,764.94 | 657,383.90 | | |
| 6,907.00 | 91.00 | 356.60 | 5,496.87 | 1,645.47 | 134.92 | 0.61 | 1,645.56 | 666,859.77 | 657,378.52 | | |
| 7,001.00 | 91.70 | 356.90 | 5,494.66 | 1,739.29 | 129.59 | 0.81 | 1,739.38 | 666,953.59 | 657,373.19 | | |
| 7,096.00 | 91.50 | 356.60 | 5,492.00 | 1,834.10 | 124.21 | 0.38 | 1,834.19 | 667,048.40 | 657,367.81 | | |
| 7,191.00 | 91.10 | 356.60 | 5,489.85 | 1,928.91 | 118.57 | 0.42 | 1,928.99 | 667,143.21 | 657,362.17 | | |
| 7,285.00 | 90.80 | 356.60 | 5,488.29 | 2,022.73 | 113.00 | 0.32 | 2,022.81 | 667,237.03 | 657,356.60 | | |
| 7,380.00 | 91.70 | 356.90 | 5,486.22 | 2,117.55 | 107.62 | 1.00 | 2,117.63 | 667,331.85 | 657,351.22 | | |
| 7,474.00 | 91.70 | 356.90 | 5,483.43 | 2,211.38 | 102.53 | 0.00 | 2,211.45 | 667,425.68 | 657,346.13 | | |



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|------------------|---------------------------------------|-------------------------------------|---|
| Company: | COG: Operating, LLC | Local Co-ordinate Reference: | Well: Puckett 13, Federal Com, Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=39,14+13.5' @ 3927.50usft (United #43) |
| Site: | Puckett 13, Federal Com | MD Reference: | RKB=39,14+13.5' @ 3927.50usft (United #43) |
| Well: | Puckett 13, Federal Com, Well No. 35H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys, Original Hole | Database: | EDM: 5000.1, Ddatabase |

| Survey | | | | | | | | | | | |
|--------------|------------|----------------------|---------------|---------------|---------------|-------------------|------------------|--------------------|-------------------|--|--|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V- Sec (usft) | Northing (usft) | Easting (usft) | | |
| 7,569.00 | 92.20 | 357.30 | 5,480.20 | 2,306.20 | 97.73 | 0.67 | 2,306.27 | 667,520.50 | 657,341.33 | | |
| 7,663.00 | 92.90 | 357.30 | 5,476.01 | 2,400.00 | 93.31 | 0.74 | 2,400.06 | 667,614.30 | 657,336.91 | | |
| 7,758.00 | 92.70 | 357.30 | 5,471.37 | 2,494.78 | 88.84 | 0.21 | 2,494.84 | 667,709.08 | 657,332.44 | | |
| 7,852.00 | 92.70 | 357.30 | 5,466.95 | 2,588.57 | 84.41 | 0.00 | 2,588.63 | 667,802.87 | 657,328.01 | | |
| 7,948.00 | 93.10 | 357.30 | 5,462.09 | 2,684.34 | 79.90 | 0.42 | 2,684.40 | 667,898.64 | 657,323.50 | | |
| 8,042.00 | 91.70 | 356.60 | 5,458.15 | 2,778.12 | 74.90 | 1.66 | 2,778.18 | 667,992.42 | 657,318.50 | | |
| 8,137.00 | 92.00 | 357.60 | 5,455.09 | 2,872.95 | 70.10 | 1.10 | 2,873.00 | 668,087.25 | 657,313.70 | | |
| 8,231.00 | 92.00 | 357.30 | 5,451.81 | 2,966.80 | 65.92 | 0.32 | 2,966.85 | 668,181.10 | 657,309.52 | | |
| 8,326.00 | 92.20 | 357.30 | 5,448.32 | 3,061.63 | 61.44 | 0.21 | 3,061.67 | 668,275.93 | 657,305.04 | | |
| 8,420.00 | 90.10 | 358.70 | 5,446.44 | 3,155.55 | 58.17 | 2.68 | 3,155.59 | 668,369.85 | 657,301.77 | | |
| 8,515.00 | 89.60 | 359.00 | 5,446.69 | 3,250.53 | 56.26 | 0.61 | 3,250.57 | 668,464.83 | 657,299.86 | | |
| 8,610.00 | 90.60 | 358.00 | 5,446.52 | 3,345.49 | 53.77 | 1.49 | 3,345.53 | 668,559.79 | 657,297.37 | | |
| 8,705.00 | 90.30 | 358.30 | 5,445.77 | 3,440.44 | 50.71 | 0.45 | 3,440.48 | 668,654.74 | 657,294.31 | | |
| 8,799.00 | 90.10 | 359.00 | 5,445.45 | 3,534.41 | 48.49 | 0.77 | 3,534.45 | 668,748.71 | 657,292.09 | | |
| 8,893.00 | 90.60 | 358.70 | 5,444.87 | 3,628.39 | 46.60 | 0.62 | 3,628.42 | 668,842.69 | 657,290.20 | | |
| 8,988.00 | 91.00 | 358.30 | 5,443.55 | 3,723.35 | 44.12 | 0.60 | 3,723.38 | 668,937.65 | 657,287.72 | | |
| 9,083.00 | 91.00 | 359.00 | 5,441.89 | 3,818.31 | 41.88 | 0.74 | 3,818.34 | 669,032.61 | 657,285.48 | | |
| 9,178.00 | 91.30 | 359.00 | 5,439.98 | 3,913.28 | 40.22 | 0.32 | 3,913.30 | 669,127.58 | 657,283.82 | | |
| 9,272.00 | 91.50 | 359.40 | 5,437.68 | 4,007.24 | 38.91 | 0.48 | 4,007.26 | 669,221.54 | 657,282.51 | | |
| 9,367.00 | 91.80 | 359.40 | 5,434.95 | 4,102.19 | 37.92 | 0.32 | 4,102.22 | 669,316.49 | 657,281.52 | | |
| 9,462.00 | 92.00 | 358.70 | 5,431.80 | 4,197.13 | 36.34 | 0.77 | 4,197.15 | 669,411.43 | 657,279.94 | | |
| 9,556.00 | 90.30 | 358.70 | 5,429.91 | 4,291.08 | 34.21 | 1.81 | 4,291.10 | 669,505.38 | 657,277.81 | | |
| 9,651.00 | 90.10 | 358.70 | 5,429.58 | 4,386.06 | 32.05 | 0.21 | 4,386.08 | 669,600.36 | 657,275.65 | | |
| 9,746.00 | 90.10 | 358.70 | 5,429.42 | 4,481.03 | 29.90 | 0.00 | 4,481.05 | 669,695.33 | 657,273.50 | | |
| 9,841.00 | 90.10 | 358.70 | 5,429.25 | 4,576.01 | 27.74 | 0.00 | 4,576.02 | 669,790.31 | 657,271.34 | | |
| 9,935.00 | 89.60 | 359.00 | 5,429.50 | 4,669.99 | 25.86 | 0.62 | 4,670.00 | 669,884.29 | 657,269.46 | | |

| | | | |
|------------------|-------------------------------------|-------------------------------------|---|
| Company: | COG Operating LLC | Local Co-ordinate Reference: | Well: Puckett 13 Federal Com Well No. 35H |
| Project: | Eddy County, New Mexico | TVD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Site: | Puckett 13 Federal Com | MD Reference: | RKB=3914+13.5 @ 3927.50usft (United #43) |
| Well: | Puckett 13 Federal Com Well No. 35H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys: Original Hole | Database: | EDM 5000.1 Ddatabase |

| Survey | | | | | | | | | | |
|--------------------------------|------------|----------------------|---------------|---------------|---------------|-------------------|------------------|--------------------|-------------------|--|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | DLeg (°/100ft) | V. Sec (usft) | Northing (usft) | Easting (usft) | |
| 9,943.00 | 89.60 | 359.00 | 5,429.55 | 4,677.99 | 25.72 | 0.00 | 4,678.00 | 669,892.29 | 657,269.32 | |
| Survey projected to 9943.00 MD | | | | | | | | | | |

| Design Annotations | | | | |
|-----------------------------|-----------------------------|-------------------|----------------|-----------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/S (usft) | +E/W (usft) | |
| 100.00 | 100.00 | 0.16 | -0.36 | Gyro |
| 4,609.00 | 4,608.55 | 16.97 | 18.57 | MWD surveys |
| 5,362.00 | 5,324.67 | 180.62 | 47.00 | 330 Hard line intercept @ 5362 MD |
| 9,943.00 | 5,429.55 | 4,677.99 | 25.72 | Survey projected to 9943.00 MD |