

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone: (505) 748-1263 Fax: (505) 748-9720

DISTRICT III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6173 Fax: (505) 334-6170

DISTRICT IV  
1230 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

ARTESIA DISTRICT

MAR 10 2015

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate District Office  
AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION RECEIVED

|                             |                                      |                                               |
|-----------------------------|--------------------------------------|-----------------------------------------------|
| API Number:<br>30-015-43004 | Pool Code:<br>97788                  | Pool Name:<br>Wildcat; G-01 S192617K; GL-Yeso |
| Property Code:<br>39004     | Property Name:<br>BRADLEY 8 FEE      | Well Number:<br>5H                            |
| GRID No.<br>229137          | Operator Name:<br>COG OPERATING, LLC | Elevation:<br>3373'                           |

Surface Location

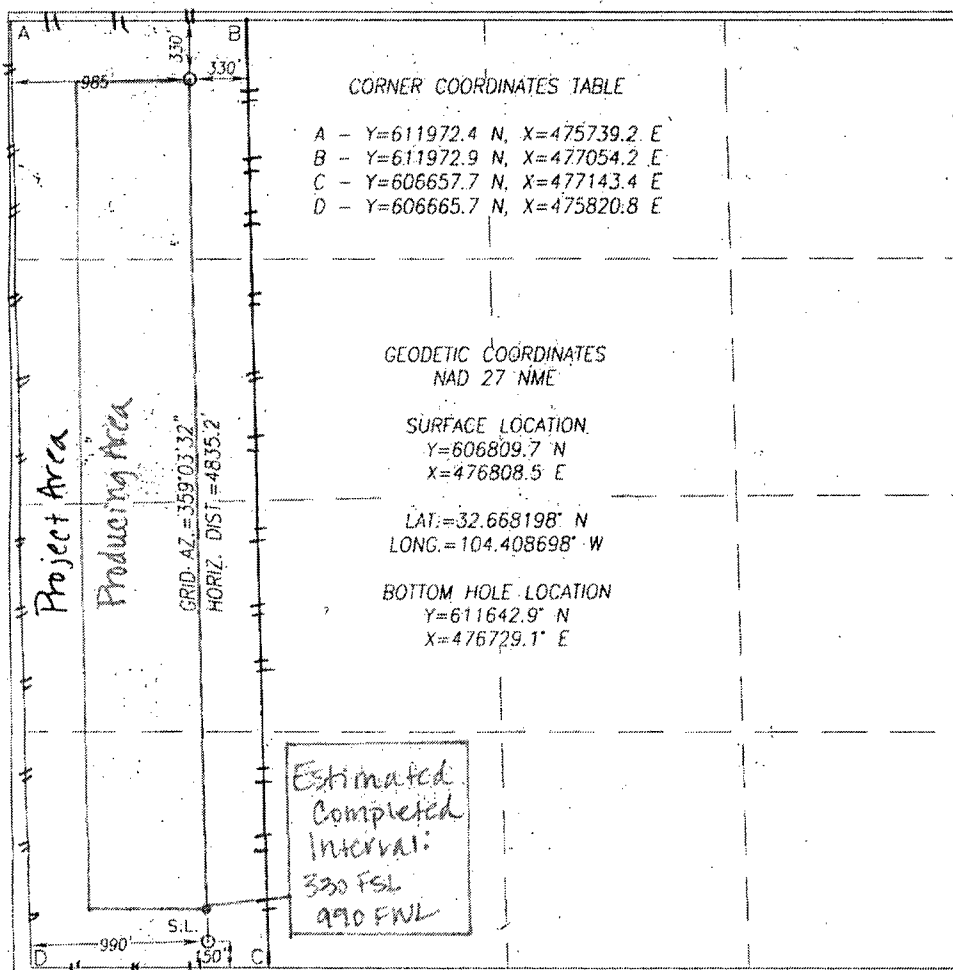
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 8       | 19-S     | 26-E  |         | 150           | SOUTH            | 990           | WEST           | EDDY   |

Bottom Hole Location If Different From Surface.

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| D             | 8       | 19-S     | 26-E  |         | 330           | NORTH            | 985           | WEST           | EDDY   |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 160             |                 |                    |           |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: [Signature]

3-10-15  
Date

Kelly J. Holly  
Printed Name

kholly@concho.com  
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

AUGUST 30, 2013

Date of Survey  
Signature & Seal of Professional Surveyor:

[Seal: RONALD EIDSON, NEW MEXICO, 3239]  
Ronald Eidson 09/10/2013  
Certificate Number: Gary G. Eidson 12641  
Ronald A. Eidson 3239

BKL JWSC W.O.: 13.11.983



## **COG Operating LLC**

**Eddy County, NM (NAD27 NME)**

**Bradley 8 Fee**

**#5H**

**WB1**

**Plan: Plan #1 03-09-15**

**Surface: 150' FSL, 990' FWL, Sec 8, T19S, R26E, Unit M**

**PP: 330' FSL, 990' FWL, Sec 8, T19S, R26E, Unit M**

**BHL: 330' FNL, 985' FWL, Sec 8, T19S, R26E, Unit D**

## **Standard Planning Report**

**09 March, 2015**





## Planning Report



|           |                             |                              |                                 |
|-----------|-----------------------------|------------------------------|---------------------------------|
| Database: | Compass 5000 GCR            | Local Co-ordinate Reference: | Well #5H                        |
| Company:  | COG Operating LLC           | TVD Reference:               | KB @ 3391.00usft (Silver Oak 3) |
| Project:  | Eddy County, NM (NAD27 NME) | MD Reference:                | KB @ 3391.00usft (Silver Oak 3) |
| Site:     | Bradley 8 Fee               | North Reference:             | Grid                            |
| Well:     | #5H                         | Survey Calculation Method:   | Minimum Curvature               |
| Wellbore: | WB1                         |                              |                                 |
| Design:   | Plan #1 03-09-15            |                              |                                 |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project     | Eddy County, NM (NAD27 NME)          |               |                |
| 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                  | Bradley 8 Fee |                   |                    |
| Site Position:        |               | Northing:         | 606,797.50 usft    |
| From:                 | Map           | Easting:          | 478,847.80 usft    |
| Position Uncertainty: | 0.00 usft     | Slot Radius:      | 13-3/16 "          |
|                       |               | Latitude:         | 32° 40' 5.40482 N  |
|                       |               | Longitude:        | 104° 24' 7.45386 W |
|                       |               | Grid Convergence: | -0.04 °            |

|                      |           |                     |                     |
|----------------------|-----------|---------------------|---------------------|
| Well                 | #5H       |                     |                     |
| Well Position        | +N/-S     | 12.20 usft          | Northing:           |
|                      | +E/-W     | -2,039.30 usft      | Easting:            |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: | 0.00 usft           |
|                      |           | Latitude:           | 32° 40' 5.51185 N   |
|                      |           | Longitude:          | 104° 24' 31.31116 W |
|                      |           | Ground Level:       | 3,373.00 usft       |

|           |            |             |                |
|-----------|------------|-------------|----------------|
| Wellbore  | WB1        |             |                |
| Magnetics | Model Name | Sample Date | Declination    |
|           |            |             | (°)            |
|           | IGRF2015   | 3/9/2015    | 7.62           |
|           |            |             | Dip Angle      |
|           |            |             | (°)            |
|           |            |             | 60.36          |
|           |            |             | Field Strength |
|           |            |             | (nT)           |
|           |            |             | 48,345         |

|                   |                  |        |               |
|-------------------|------------------|--------|---------------|
| Design            | Plan #1 03-09-15 |        |               |
| Audit Notes:      |                  |        |               |
| Version:          | Phase:           | PLAN   | Tie On Depth: |
|                   |                  |        | 0.00          |
| Vertical Section: | Depth From (TVD) | +N/-S  | +E/-W         |
|                   | (usft)           | (usft) | (usft)        |
|                   | 0.00             | 0.00   | 0.00          |
|                   |                  |        | Direction     |
|                   |                  |        | (°)           |
|                   |                  |        | 359.06        |

|               |             |         |          |          |        |             |             |             |        |                    |
|---------------|-------------|---------|----------|----------|--------|-------------|-------------|-------------|--------|--------------------|
| Plan Sections |             |         |          |          |        |             |             |             |        |                    |
| Measured      | Inclination | Azimuth | Vertical | +N/-S    | +E/-W  | Dogleg      | Build       | Turn        | TFO    | Target             |
| Depth         | (°)         | (°)     | Depth    | (usft)   | (usft) | Rate        | Rate        | Rate        | (°)    |                    |
| (usft)        |             |         | (usft)   |          |        | (°/100usft) | (°/100usft) | (°/100usft) |        |                    |
| 0.00          | 0.00        | 0.00    | 0.00     | 0.00     | 0.00   | 0.00        | 0.00        | 0.00        | 0.00   |                    |
| 2,554.60      | 0.00        | 0.00    | 2,554.60 | 0.00     | 0.00   | 0.00        | 0.00        | 0.00        | 0.00   |                    |
| 3,377.33      | 90.50       | 359.06  | 3,075.45 | 525.35   | -8.63  | 11.00       | 11.00       | 0.00        | 359.06 |                    |
| 7,685.93      | 90.50       | 359.06  | 3,037.85 | 4,833.20 | -79.40 | 0.00        | 0.00        | 0.00        | 0.00   | PBHL-Bradley 8 #5H |



## Planning Report



|           |                             |                              |                                 |
|-----------|-----------------------------|------------------------------|---------------------------------|
| Database: | Compass 5000 GCR            | Local Co-ordinate Reference: | Well #5H                        |
| Company:  | COG Operating LLC           | TVD Reference:               | KB @ 3391.00usft (Silver Oak 3) |
| Project:  | Eddy County, NM (NAD27 NME) | MD Reference:                | KB @ 3391.00usft (Silver Oak 3) |
| Site:     | Bradley 8 Fee               | North Reference:             | Grid                            |
| Well:     | #5H                         | Survey Calculation Method:   | Minimum Curvature               |
| Wellbore: | WB1                         |                              |                                 |
| Design:   | Plan #1 03-09-15            |                              |                                 |

## Planned Survey

| Measured Depth (usft)           | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.00                            | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,554.60                        | 0.00            | 0.00        | 2,554.60              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| KOP, Start 11°/100' Build       |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,600.00                        | 4.99            | 359.06      | 2,599.94              | 1.98         | -0.03        | 1.98                    | 11.00                   | 11.00                  | 0.00                  |
| 2,700.00                        | 15.99           | 359.06      | 2,698.12              | 20.16        | -0.33        | 20.16                   | 11.00                   | 11.00                  | 0.00                  |
| 2,800.00                        | 26.99           | 359.06      | 2,791.02              | 56.74        | -0.93        | 56.75                   | 11.00                   | 11.00                  | 0.00                  |
| 2,900.00                        | 37.99           | 359.06      | 2,875.24              | 110.37       | -1.81        | 110.39                  | 11.00                   | 11.00                  | 0.00                  |
| 3,000.00                        | 48.99           | 359.06      | 2,947.67              | 179.08       | -2.94        | 179.11                  | 11.00                   | 11.00                  | 0.00                  |
| 3,001.21                        | 49.13           | 359.06      | 2,948.46              | 180.00       | -2.96        | 180.02                  | 11.00                   | 11.00                  | 0.00                  |
| PP-Bradley 8 #5H                |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,100.00                        | 59.99           | 359.06      | 3,005.66              | 260.35       | -4.28        | 260.39                  | 11.00                   | 11.00                  | 0.00                  |
| 3,200.00                        | 70.99           | 359.06      | 3,047.07              | 351.19       | -5.77        | 351.24                  | 11.00                   | 11.00                  | 0.00                  |
| 3,300.00                        | 81.99           | 359.06      | 3,070.39              | 448.27       | -7.36        | 448.33                  | 11.00                   | 11.00                  | 0.00                  |
| 3,371.34                        | 89.84           | 359.06      | 3,075.47              | 519.36       | -8.53        | 519.43                  | 11.00                   | 11.00                  | 0.00                  |
| TL, 3080' TVD @ 0 VZ, 90.5° Inc |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,377.33                        | 90.50           | 359.06      | 3,075.45              | 525.35       | -8.63        | 525.42                  | 10.99                   | 10.99                  | 0.00                  |
| LP, Hold 90.5° Inc, 359.06° Azm |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,400.00                        | 90.50           | 359.06      | 3,075.25              | 548.02       | -9.00        | 548.09                  | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00                        | 90.50           | 359.06      | 3,074.38              | 648.00       | -10.65       | 648.09                  | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00                        | 90.50           | 359.06      | 3,073.51              | 747.98       | -12.29       | 748.08                  | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00                        | 90.50           | 359.06      | 3,072.63              | 847.96       | -13.93       | 848.08                  | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00                        | 90.50           | 359.06      | 3,071.76              | 947.95       | -15.57       | 948.07                  | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00                        | 90.50           | 359.06      | 3,070.89              | 1,047.93     | -17.22       | 1,048.07                | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00                        | 90.50           | 359.06      | 3,070.02              | 1,147.91     | -18.86       | 1,148.07                | 0.00                    | 0.00                   | 0.00                  |
| 4,100.00                        | 90.50           | 359.06      | 3,069.14              | 1,247.89     | -20.50       | 1,248.06                | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00                        | 90.50           | 359.06      | 3,068.27              | 1,347.88     | -22.14       | 1,348.06                | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00                        | 90.50           | 359.06      | 3,067.40              | 1,447.86     | -23.79       | 1,448.06                | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00                        | 90.50           | 359.06      | 3,066.52              | 1,547.84     | -25.43       | 1,548.05                | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00                        | 90.50           | 359.06      | 3,065.65              | 1,647.83     | -27.07       | 1,648.05                | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00                        | 90.50           | 359.06      | 3,064.78              | 1,747.81     | -28.71       | 1,748.04                | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00                        | 90.50           | 359.06      | 3,063.91              | 1,847.79     | -30.36       | 1,848.04                | 0.00                    | 0.00                   | 0.00                  |
| 4,800.00                        | 90.50           | 359.06      | 3,063.03              | 1,947.77     | -32.00       | 1,948.04                | 0.00                    | 0.00                   | 0.00                  |
| 4,900.00                        | 90.50           | 359.06      | 3,062.16              | 2,047.76     | -33.64       | 2,048.03                | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00                        | 90.50           | 359.06      | 3,061.29              | 2,147.74     | -35.28       | 2,148.03                | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00                        | 90.50           | 359.06      | 3,060.42              | 2,247.72     | -36.93       | 2,248.03                | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00                        | 90.50           | 359.06      | 3,059.54              | 2,347.70     | -38.57       | 2,348.02                | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00                        | 90.50           | 359.06      | 3,058.67              | 2,447.69     | -40.21       | 2,448.02                | 0.00                    | 0.00                   | 0.00                  |
| 5,400.00                        | 90.50           | 359.06      | 3,057.80              | 2,547.67     | -41.85       | 2,548.01                | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00                        | 90.50           | 359.06      | 3,056.93              | 2,647.65     | -43.50       | 2,648.01                | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00                        | 90.50           | 359.06      | 3,056.05              | 2,747.64     | -45.14       | 2,748.01                | 0.00                    | 0.00                   | 0.00                  |
| 5,700.00                        | 90.50           | 359.06      | 3,055.18              | 2,847.62     | -46.78       | 2,848.00                | 0.00                    | 0.00                   | 0.00                  |
| 5,800.00                        | 90.50           | 359.06      | 3,054.31              | 2,947.60     | -48.42       | 2,948.00                | 0.00                    | 0.00                   | 0.00                  |
| 5,900.00                        | 90.50           | 359.06      | 3,053.44              | 3,047.58     | -50.07       | 3,047.99                | 0.00                    | 0.00                   | 0.00                  |
| 6,000.00                        | 90.50           | 359.06      | 3,052.56              | 3,147.57     | -51.71       | 3,147.99                | 0.00                    | 0.00                   | 0.00                  |
| 6,100.00                        | 90.50           | 359.06      | 3,051.69              | 3,247.55     | -53.35       | 3,247.99                | 0.00                    | 0.00                   | 0.00                  |
| 6,200.00                        | 90.50           | 359.06      | 3,050.82              | 3,347.53     | -54.99       | 3,347.98                | 0.00                    | 0.00                   | 0.00                  |
| 6,300.00                        | 90.50           | 359.06      | 3,049.94              | 3,447.51     | -56.64       | 3,447.98                | 0.00                    | 0.00                   | 0.00                  |
| 6,400.00                        | 90.50           | 359.06      | 3,049.07              | 3,547.50     | -58.28       | 3,547.98                | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00                        | 90.50           | 359.06      | 3,048.20              | 3,647.48     | -59.92       | 3,647.97                | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00                        | 90.50           | 359.06      | 3,047.33              | 3,747.46     | -61.56       | 3,747.97                | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00                        | 90.50           | 359.06      | 3,046.45              | 3,847.45     | -63.21       | 3,847.96                | 0.00                    | 0.00                   | 0.00                  |
| 6,800.00                        | 90.50           | 359.06      | 3,045.58              | 3,947.43     | -64.85       | 3,947.96                | 0.00                    | 0.00                   | 0.00                  |
| 6,900.00                        | 90.50           | 359.06      | 3,044.71              | 4,047.41     | -66.49       | 4,047.96                | 0.00                    | 0.00                   | 0.00                  |
| 7,000.00                        | 90.50           | 359.06      | 3,043.84              | 4,147.39     | -68.13       | 4,147.95                | 0.00                    | 0.00                   | 0.00                  |



## Planning Report



Database: Compass 5000 GCR  
Company: COG Operating LLC  
Project: Eddy County, NM (NAD27 NME)  
Site: Bradley 8 Fee  
Well: #5H  
Wellbore: WB1  
Design: Plan #1 03-09-15

Local Co-ordinate Reference: Well #5H  
TVD Reference: KB @ 3391.00usft (Silver Oak 3)  
MD Reference: KB @ 3391.00usft (Silver Oak 3)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 7,100.00              | 90.50           | 359.06      | 3,042.96              | 4,247.38     | -69.78       | 4,247.95                | 0.00                    | 0.00                   | 0.00                  |
| 7,200.00              | 90.50           | 359.06      | 3,042.09              | 4,347.36     | -71.42       | 4,347.95                | 0.00                    | 0.00                   | 0.00                  |
| 7,300.00              | 90.50           | 359.06      | 3,041.22              | 4,447.34     | -73.06       | 4,447.94                | 0.00                    | 0.00                   | 0.00                  |
| 7,400.00              | 90.50           | 359.06      | 3,040.35              | 4,547.32     | -74.70       | 4,547.94                | 0.00                    | 0.00                   | 0.00                  |
| 7,500.00              | 90.50           | 359.06      | 3,039.47              | 4,647.31     | -76.35       | 4,647.93                | 0.00                    | 0.00                   | 0.00                  |
| 7,600.00              | 90.50           | 359.06      | 3,038.60              | 4,747.29     | -77.99       | 4,747.93                | 0.00                    | 0.00                   | 0.00                  |
| 7,685.93              | 90.50           | 359.06      | 3,037.85              | 4,833.20     | -79.40       | 4,833.85                | 0.00                    | 0.00                   | 0.00                  |

TD at 7685.93' MD - PBHL-Bradley 8 #5H

## Design Targets

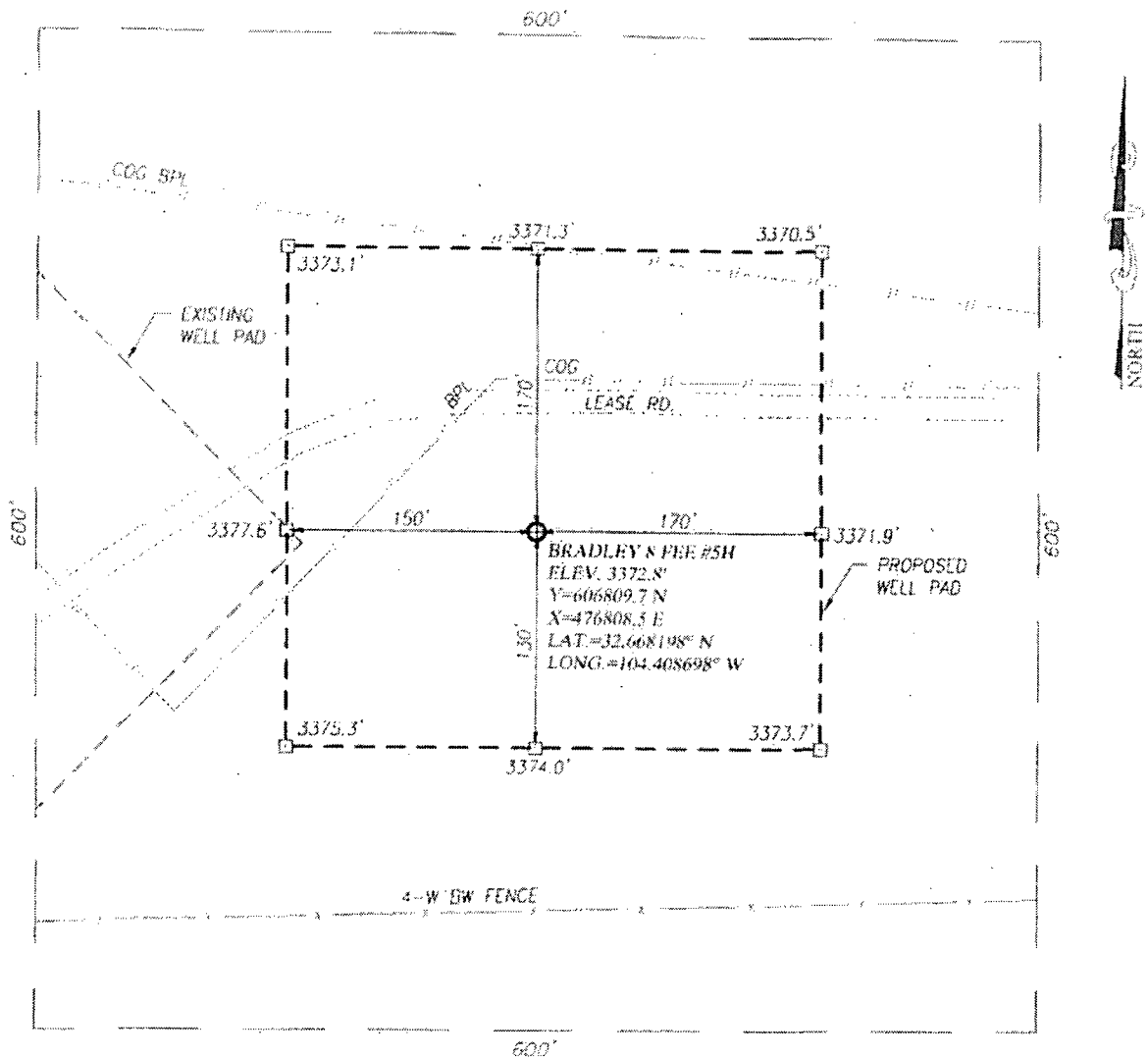
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude           | Longitude           |
|---------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|--------------------|---------------------|
| hit/miss target           |               |              |            |              |              |                 |                |                    |                     |
| Shape                     |               |              |            |              |              |                 |                |                    |                     |
| PP-Bradley 8 #5H          | 0.00          | 0.00         | 2,948.46   | 180.00       | -2.96        | 606,989.70      | 476,805.54     | 32° 40' 7.29304 N  | 104° 24' 31.34725 W |
| - plan hits target center |               |              |            |              |              |                 |                |                    |                     |
| - Point                   |               |              |            |              |              |                 |                |                    |                     |
| PBHL-Bradley 8 #5H        | 0.00          | 360.00       | 3,037.85   | 4,833.20     | -79.40       | 611,642.90      | 476,729.10     | 32° 40' 53.33898 N | 104° 24' 32.28034 W |
| - plan hits target center |               |              |            |              |              |                 |                |                    |                     |
| - Point                   |               |              |            |              |              |                 |                |                    |                     |

## Formations

| Measured Depth (usft) | Vertical Depth (usft) | Name                            | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------|-----------------------|---------------------------------|-----------|---------|-------------------|
| 3,371.34              | 3,075.47              | TL, 3080' TVD @ 0 VZ, 90.5° Inc |           | -0.50   | 359.06            |

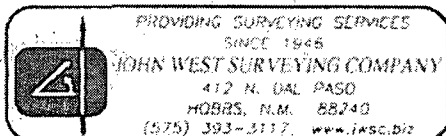
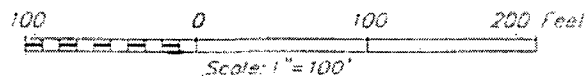
## Plan Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                         |
|-----------------------------|-----------------------------|-------------------|-----------------|---------------------------------|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                 |
| 2,554.60                    | 2,554.60                    | 0.00              | 0.00            | KOP, Start 11"/100' Build       |
| 3,377.33                    | 3,075.45                    | 525.35            | -8.63           | LP, Hold 90.5° Inc, 359.06° Azm |
| 7,685.93                    | 3,037.85                    | 4,833.20          | -79.40          | TD at 7685.93' MD               |



#### DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF US. HIGHWAY 285 AND CO.  
RD. 21 (ROCKING R. RD) GO WEST APPROX. 0.5 MILES;  
TURN RIGHT AND GO NORTH APPROX. 0.9 MILES; TURN  
LEFT AND GO WEST APPROX. 0.1 MILE TO THIS LOCATION.



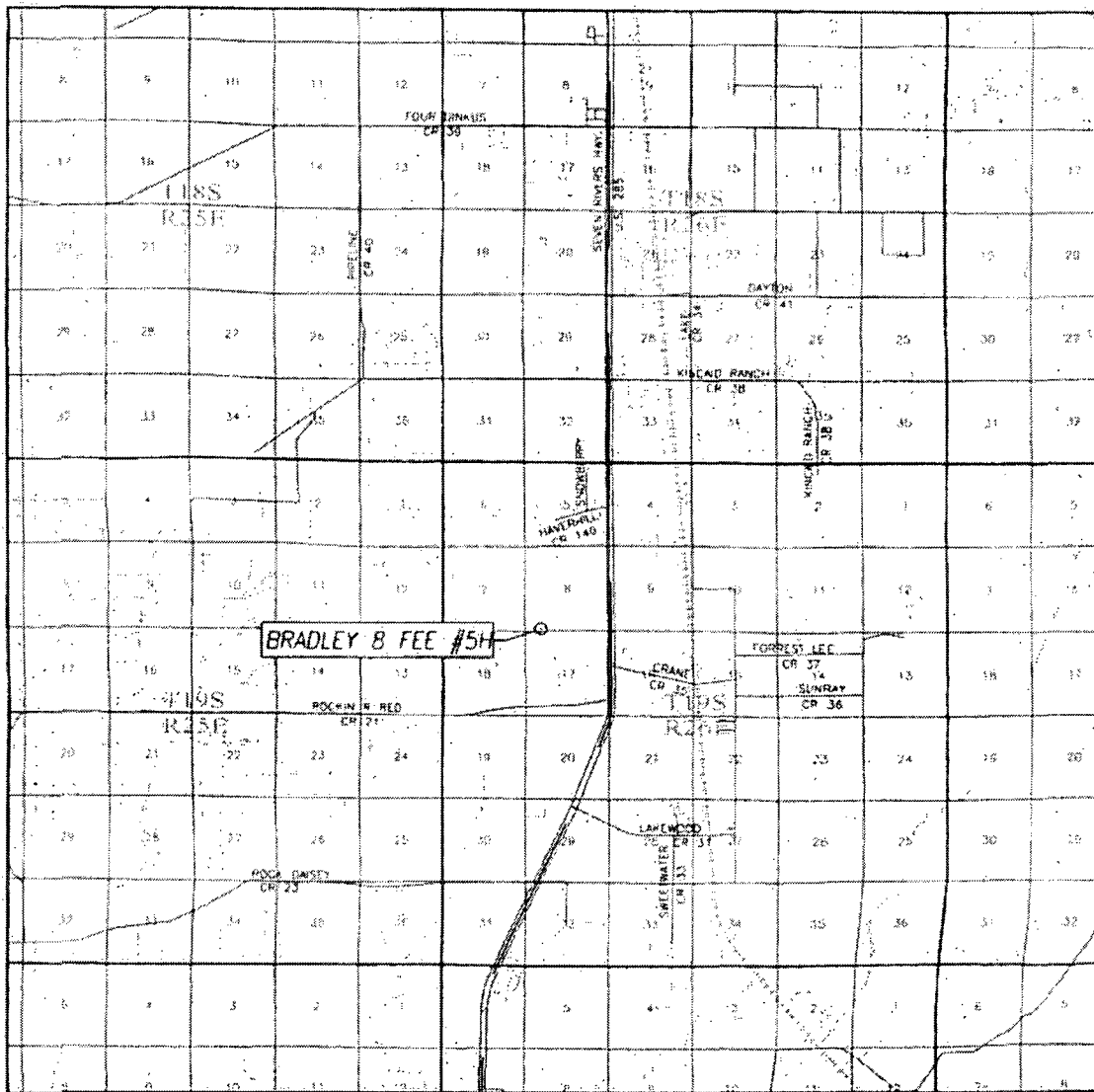
PROVIDING SURVEYING SERVICES  
SINCE 1948  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
MOSBES, N.M. 88240  
(575) 393-3117, www.jwsc.biz

## COG OPERATING, LLC

**BRADLEY 8 FEE #5 WELL**  
LOCATED 150 FEET FROM THE SOUTH LINE  
AND 990 FEET FROM THE WEST LINE OF SECTION 8,  
TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO

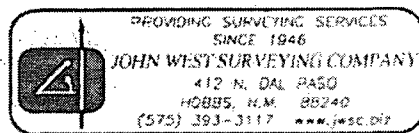
|                      |                  |                         |
|----------------------|------------------|-------------------------|
| Survey Date: 8/30/13 | CAD Date: 9/9/13 | Drawn By: BKL           |
| W.O. No.: 13110983   | Rev:             | Rel. W.O.: Sheet 1 of 1 |

# VICINITY MAP

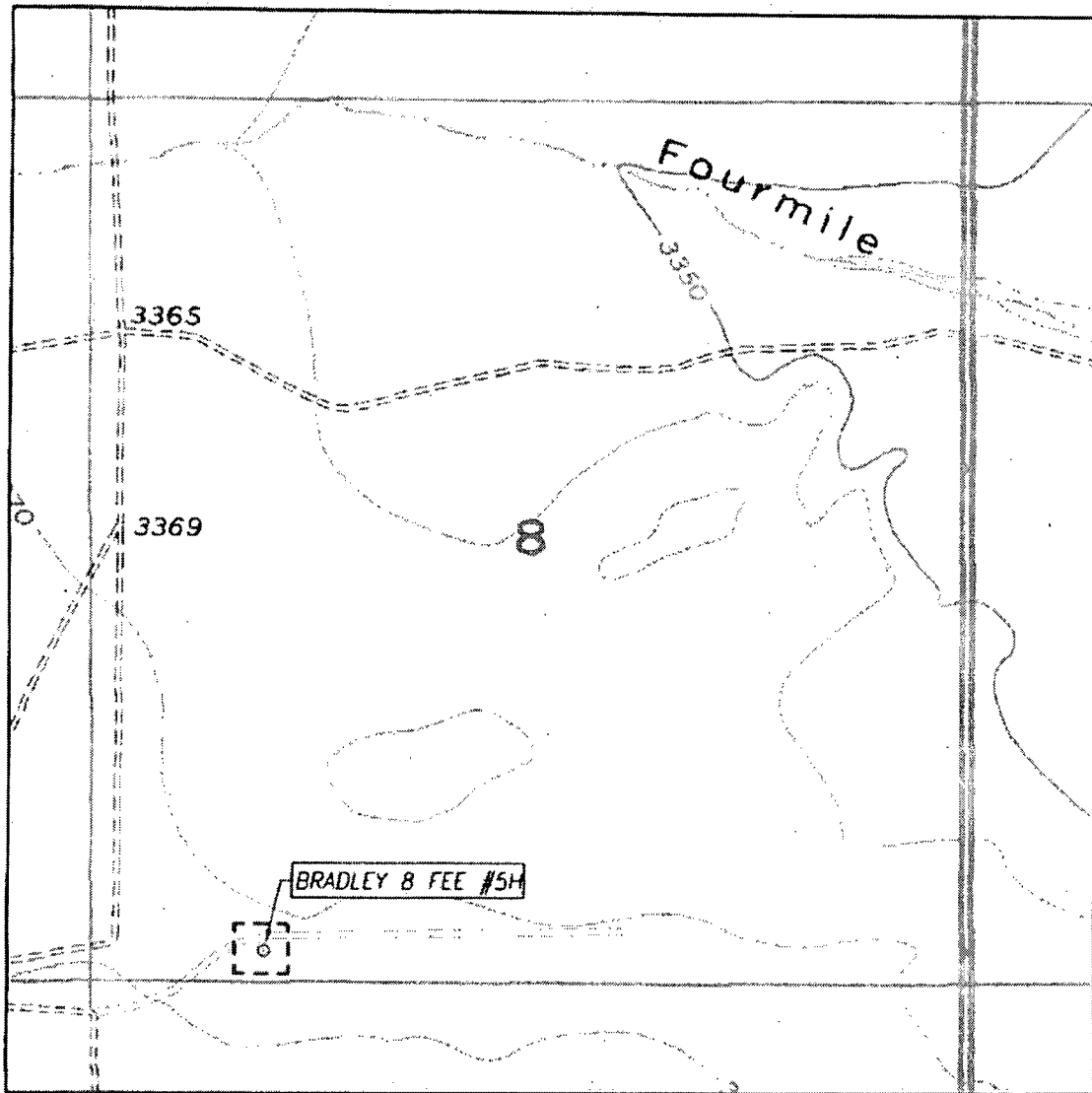


SCALE: 1" = 2 MILES

SEC. R TWP. 19-S RGE. 26-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 150' FSL & 990' FWL  
 ELEVATION 3373'  
 OPERATOR COG OPERATING, LLC  
 LEASE BRADLEY 8 FEE



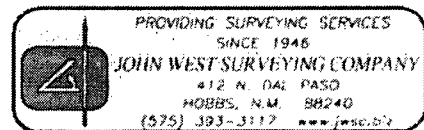
# LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:  
DAYTON, N.M. - 10'

SEC. 8 TWP. 19-S RGE. 26-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 150' FSL & 990' FWL  
 ELEVATION 3373'  
 OPERATOR COG OPERATING, LLC  
 LEASE BRADLEY 8 FEE  
 U.S.G.S. TOPOGRAPHIC MAP  
 DAYTON, N.M.





Project: Eddy County, NM (NAD27 NME)  
Site: Bradley 8 Fee  
Well: #5H  
Wellbore: WB1  
Design: Plan #1 03-09-15  
Rig: Silver Oak 3



PHOENIX  
TECHNOLOGY SERVICES



Asimuths to Grid North  
True North: 0.04°  
Magnetic North: 7.66°  
Magnetic Field  
Strength: 48345.25nT  
Dip Angle: 60.36°  
Date: 3/9/2015  
Model: IGRF2015

#### WELL DETAILS

|  | +N-S | +E-W | Northing  | Ground Level | Easting   | Latitude          | Longitude           |
|--|------|------|-----------|--------------|-----------|-------------------|---------------------|
|  | 0.00 | 0.00 | 306809.70 | 3373.00      | 476808.50 | 32° 40' 5.51184 N | 104° 24' 31.31116 W |

#### SECTION DETAILS

| Sec | MD      | Inc   | Azi    | TVD     | +N-S    | +E-W   | Dleg  | TFace  | VSeet   | Target             | Annotation                      |
|-----|---------|-------|--------|---------|---------|--------|-------|--------|---------|--------------------|---------------------------------|
| 1   | 0.00    | 0.00  | 0.00   | 0.00    | 0.00    | 0.00   | 0.00  | 0.00   | 0.00    |                    |                                 |
| 2   | 2554.00 | 0.00  | 0.00   | 2554.50 | 0.00    | 0.00   | 0.00  | 0.00   | 0.00    |                    | KOP: Start 11°/100° Build       |
| 3   | 3377.33 | 90.50 | 359.06 | 3075.45 | 525.35  | -8.93  | 11.00 | 359.06 | 525.42  |                    | LP: Hold 90.5° Inc. 359.06° Azm |
| 4   | 7685.93 | 90.50 | 359.06 | 3037.85 | 4833.20 | -79.40 | 0.00  | 0.00   | 4833.85 | PBHL-Bradley 8 #5H | TD at 7685.93' MD               |

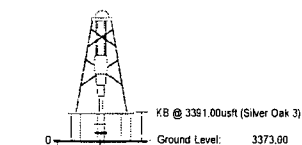
#### DESIGN TARGET DETAILS

| Name               | TVD     | +N-S    | +E-W   | Northing  | Easting   | Latitude           | Longitude           | Shape |
|--------------------|---------|---------|--------|-----------|-----------|--------------------|---------------------|-------|
| PP-Bradley 8 #5H   | 2948.48 | 180.00  | -2.96  | 606989.70 | 476805.54 | 32° 40' 7.29304 N  | 104° 24' 31.34725 W | Point |
| PBHL-Bradley 8 #5H | 3037.85 | 4833.20 | -79.40 | 611642.90 | 476729.10 | 32° 40' 53.33898 N | 104° 24' 32.28034 W | Point |

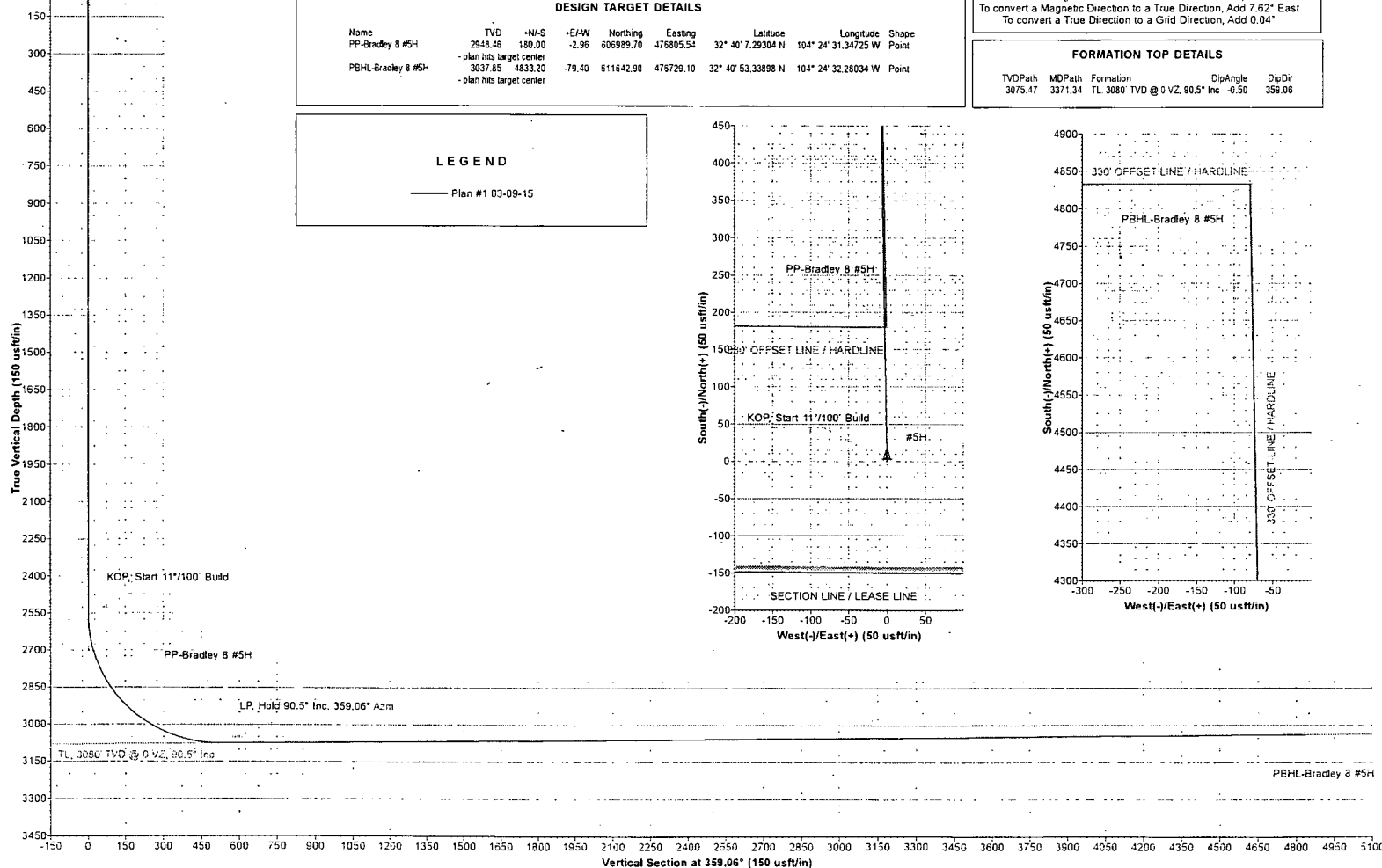
- plan hits target center  
- plan hits target center

#### LEGEND

— Plan #1 03-09-15



Ground Level: 3373.00



Map System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone Name: New Mexico East 3001

Local Origin: Well #5H, Grid North

Latitude: 32° 40' 5.51184 N  
Longitude: 104° 24' 31.31116 W

Grid East: 476808.50  
Grid North: 606809.70  
Scale Factor: 1.000

Geomagnetic Model: IGRF2015  
Sample Date: 09-Mar-15  
Magnetic Declination: 7.62°  
Dip Angle from Horizontal: 60.36°  
Magnetic Field Strength: 48345

To convert a Magnetic Direction to a Grid Direction, Add 7.66°  
To convert a Magnetic Direction to a True Direction, Add 7.62° East  
To convert a True Direction to a Grid Direction, Add 0.04°

#### FORMATION TOP DETAILS

| TVDPath | MDPath  | Formation                       | DipAngle | DipDir |
|---------|---------|---------------------------------|----------|--------|
| 3075.47 | 3371.34 | TL: 3080' TVD @ 0 VZ, 90.5° Inc | -0.50    | 359.06 |

