



Company: Carrizo Oil & Gas  
 Site: Wickstrom  
 Well: 7-11-5-60  
 Project: Morgan County, Colorado (NAD 83)  
 Rig Name: KB



Planning: 936.442.2510 Fax: 936.442.2515  
 Operations: 936.442.2500 Fax: 936.442.2599



Azimuths to Grid North  
 True North: -0.88°  
 Magnetic North: 7.68°

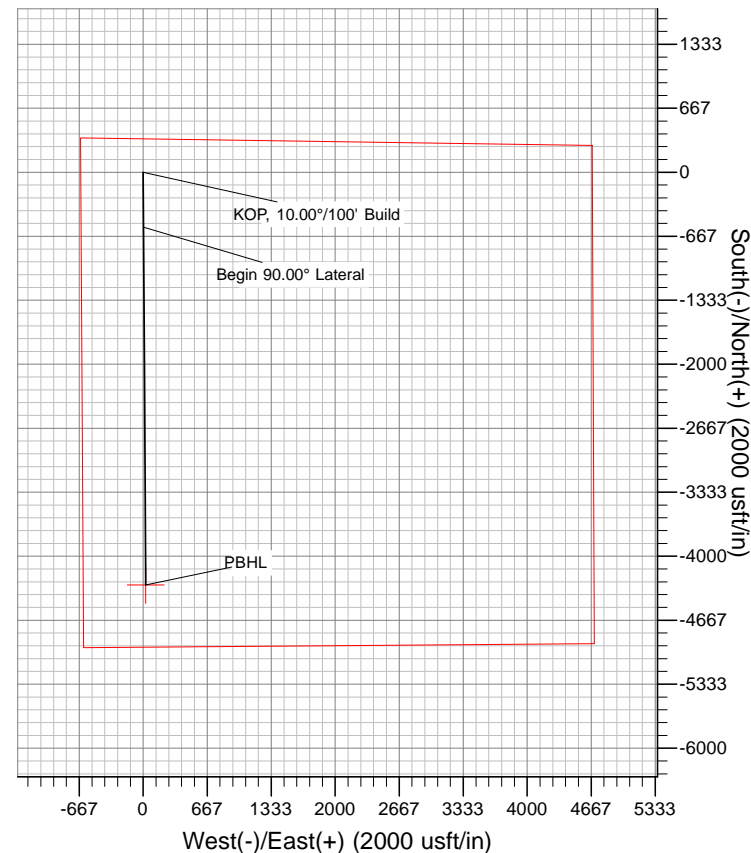
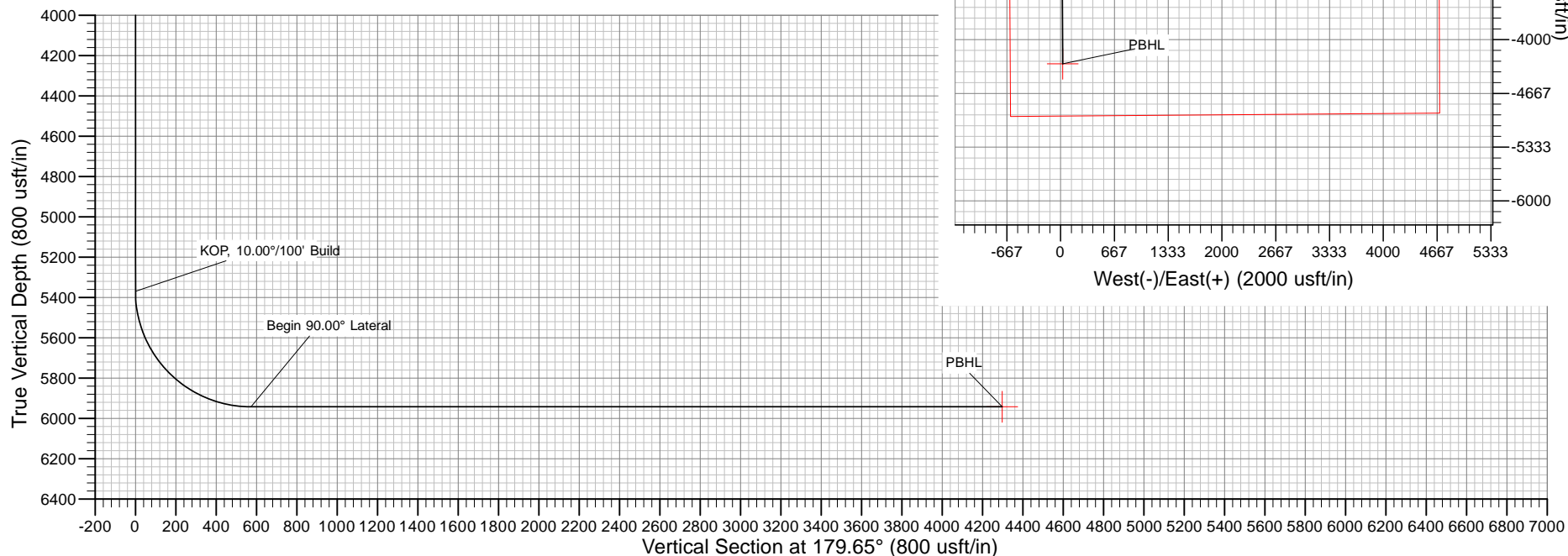
Magnetic Field  
 Strength: 53247.3snT  
 Dip Angle: 67.18°  
 Date: 3/16/2011  
 Model: WMM\_2010

US State Plane 1983  
 Colorado Northern Zone

Created By: Vanessa Thom  
 Date: 13:44, March 16 2011  
 Plan: Design #3

#### ANNOTATIONS

| MD      | Inc   | Azi    | TVD     | +N/-S    | +E/-W | Vsect   | Departure | Annotation             |
|---------|-------|--------|---------|----------|-------|---------|-----------|------------------------|
| 5370.04 | 0.00  | 0.00   | 5370.04 | 0.00     | 0.00  | 0.00    | 0.00      | KOP, 10.00°/100' Build |
| 6270.04 | 90.00 | 179.65 | 5943.00 | -572.95  | 3.47  | 572.96  | 572.96    | Begin 90.00° Lateral   |
| 9995.24 | 90.00 | 179.65 | 5943.00 | -4298.08 | 26.04 | 4298.16 | 4298.16   | PBHL                   |



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.



## **Carrizo Oil & Gas**

**Morgan County, Colorado (NAD 83)**

**Wickstrom**

**7-11-5-60**

**Wellbore #1**

**Plan: Design #3**

## **Standard Planning Report**

**16 March, 2011**

|                  |                                  |                                     |                         |
|------------------|----------------------------------|-------------------------------------|-------------------------|
| <b>Database:</b> | Southern Region                  | <b>Local Co-ordinate Reference:</b> | Well 7-11-5-60          |
| <b>Company:</b>  | Carrizo Oil & Gas                | <b>TVD Reference:</b>               | WELL @ 4604.30usft (KB) |
| <b>Project:</b>  | Morgan County, Colorado (NAD 83) | <b>MD Reference:</b>                | WELL @ 4604.30usft (KB) |
| <b>Site:</b>     | Wickstrom                        | <b>North Reference:</b>             | Grid                    |
| <b>Well:</b>     | 7-11-5-60                        | <b>Survey Calculation Method:</b>   | Minimum Curvature       |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                         |
| <b>Design:</b>   | Design #3                        |                                     |                         |

|                    |                                  |                      |                |
|--------------------|----------------------------------|----------------------|----------------|
| <b>Project</b>     | Morgan County, Colorado (NAD 83) |                      |                |
| <b>Map System:</b> | US State Plane 1983              | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983        |                      |                |
| <b>Map Zone:</b>   | Colorado Northern Zone           |                      |                |

|                             |              |                   |                            |                   |
|-----------------------------|--------------|-------------------|----------------------------|-------------------|
| <b>Well</b>                 | 7-11-5-60    |                   |                            |                   |
| <b>Well Position</b>        | <b>+N/-S</b> | 1,399,620.78 usft | <b>Northing:</b>           | 1,399,620.78 usft |
|                             | <b>+E/-W</b> | 3,377,446.35 usft | <b>Easting:</b>            | 3,377,446.35 usft |
| <b>Position Uncertainty</b> |              | 0.00 usft         | <b>Wellhead Elevation:</b> |                   |
|                             |              |                   | <b>Latitude:</b>           | 40° 25' 20.785 N  |
|                             |              |                   | <b>Longitude:</b>          | 104° 8' 39.357 W  |
|                             |              |                   | <b>Ground Level:</b>       | 4,589.30 usft     |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | WMM_2010          | 3/16/2011          | 8.55                   | 67.18                | 53,247                     |

|                          |                                |                     |                      |                      |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| <b>Design</b>            | Design #3                      |                     |                      |                      |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                  | PROTOTYPE           | <b>Tie On Depth:</b> | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (°)</b> |
|                          | 0.00                           | 0.00                | 0.00                 | 179.65               |

|                              |                        |                    |                              |                     |                     |                                |                               |                              |                |                     |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|-------------------------------|------------------------------|----------------|---------------------|
| <b>Plan Sections</b>         |                        |                    |                              |                     |                     |                                |                               |                              |                |                     |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Dogleg Rate (°/100usft)</b> | <b>Build Rate (°/100usft)</b> | <b>Turn Rate (°/100usft)</b> | <b>TFO (°)</b> | <b>Target</b>       |
| 0.00                         | 0.00                   | 0.00               | 0.00                         | 0.00                | 0.00                | 0.00                           | 0.00                          | 0.00                         | 0.00           |                     |
| 5,370.04                     | 0.00                   | 0.00               | 5,370.04                     | 0.00                | 0.00                | 0.00                           | 0.00                          | 0.00                         | 0.00           |                     |
| 6,270.04                     | 90.00                  | 179.65             | 5,943.00                     | -572.95             | 3.47                | 10.00                          | 10.00                         | 0.00                         | 179.65         |                     |
| 9,995.24                     | 90.00                  | 179.65             | 5,943.00                     | -4,298.08           | 26.04               | 0.00                           | 0.00                          | 0.00                         | 0.00           | 7-11-5-60 - PBHL v3 |

|                  |                                  |                                     |                         |
|------------------|----------------------------------|-------------------------------------|-------------------------|
| <b>Database:</b> | Southern Region                  | <b>Local Co-ordinate Reference:</b> | Well 7-11-5-60          |
| <b>Company:</b>  | Carrizo Oil & Gas                | <b>TVD Reference:</b>               | WELL @ 4604.30usft (KB) |
| <b>Project:</b>  | Morgan County, Colorado (NAD 83) | <b>MD Reference:</b>                | WELL @ 4604.30usft (KB) |
| <b>Site:</b>     | Wickstrom                        | <b>North Reference:</b>             | Grid                    |
| <b>Well:</b>     | 7-11-5-60                        | <b>Survey Calculation Method:</b>   | Minimum Curvature       |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                         |
| <b>Design:</b>   | Design #3                        |                                     |                         |

| 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                  |
| 100.00                | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 200.00                | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 400.00                | 0.00            | 0.00        | 400.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 500.00                | 0.00            | 0.00        | 500.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 600.00                | 0.00            | 0.00        | 600.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 700.00                | 0.00            | 0.00        | 700.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 800.00                | 0.00            | 0.00        | 800.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 900.00                | 0.00            | 0.00        | 900.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,000.00              | 0.00            | 0.00        | 1,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,100.00              | 0.00            | 0.00        | 1,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,200.00              | 0.00            | 0.00        | 1,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,300.00              | 0.00            | 0.00        | 1,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,400.00              | 0.00            | 0.00        | 1,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,500.00              | 0.00            | 0.00        | 1,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,600.00              | 0.00            | 0.00        | 1,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,700.00              | 0.00            | 0.00        | 1,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,800.00              | 0.00            | 0.00        | 1,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00              | 0.00            | 0.00        | 1,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00              | 0.00            | 0.00        | 2,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,100.00              | 0.00            | 0.00        | 2,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00              | 0.00            | 0.00        | 2,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00              | 0.00            | 0.00        | 2,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00              | 0.00            | 0.00        | 2,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,500.00              | 0.00            | 0.00        | 2,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00              | 0.00            | 0.00        | 2,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00              | 0.00            | 0.00        | 2,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00              | 0.00            | 0.00        | 2,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00              | 0.00            | 0.00        | 2,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00              | 0.00            | 0.00        | 3,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00              | 0.00            | 0.00        | 3,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00              | 0.00            | 0.00        | 3,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00              | 0.00            | 0.00        | 3,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00              | 0.00            | 0.00        | 3,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00              | 0.00            | 0.00        | 3,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00              | 0.00            | 0.00        | 3,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00              | 0.00            | 0.00        | 3,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00              | 0.00            | 0.00        | 3,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00              | 0.00            | 0.00        | 3,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00              | 0.00            | 0.00        | 4,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,100.00              | 0.00            | 0.00        | 4,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00              | 0.00            | 0.00        | 4,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00              | 0.00            | 0.00        | 4,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00              | 0.00            | 0.00        | 4,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00              | 0.00            | 0.00        | 4,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00              | 0.00            | 0.00        | 4,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00              | 0.00            | 0.00        | 4,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,800.00              | 0.00            | 0.00        | 4,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 4,900.00              | 0.00            | 0.00        | 4,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00              | 0.00            | 0.00        | 5,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00              | 0.00            | 0.00        | 5,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00              | 0.00            | 0.00        | 5,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00              | 0.00            | 0.00        | 5,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |

|                  |                                  |                                     |                         |
|------------------|----------------------------------|-------------------------------------|-------------------------|
| <b>Database:</b> | Southern Region                  | <b>Local Co-ordinate Reference:</b> | Well 7-11-5-60          |
| <b>Company:</b>  | Carrizo Oil & Gas                | <b>TVD Reference:</b>               | WELL @ 4604.30usft (KB) |
| <b>Project:</b>  | Morgan County, Colorado (NAD 83) | <b>MD Reference:</b>                | WELL @ 4604.30usft (KB) |
| <b>Site:</b>     | Wickstrom                        | <b>North Reference:</b>             | Grid                    |
| <b>Well:</b>     | 7-11-5-60                        | <b>Survey Calculation Method:</b>   | Minimum Curvature       |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                         |
| <b>Design:</b>   | Design #3                        |                                     |                         |

| 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) |  |
| 5,370.04                      | 0.00            | 0.00        | 5,370.04              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |  |
| <b>KOP, 10.00°/100' Build</b> |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 5,400.00                      | 3.00            | 179.65      | 5,399.99              | -0.78        | 0.00         | 0.78                    | 10.00                   | 10.00                  | 0.00                  |  |
| 5,450.00                      | 8.00            | 179.65      | 5,449.74              | -5.57        | 0.03         | 5.57                    | 10.00                   | 10.00                  | 0.00                  |  |
| 5,500.00                      | 13.00           | 179.65      | 5,498.89              | -14.68       | 0.09         | 14.68                   | 10.00                   | 10.00                  | 0.00                  |  |
| 5,550.00                      | 18.00           | 179.65      | 5,547.06              | -28.03       | 0.17         | 28.03                   | 10.00                   | 10.00                  | 0.00                  |  |
| 5,600.00                      | 23.00           | 179.65      | 5,593.88              | -45.53       | 0.28         | 45.53                   | 10.00                   | 10.00                  | 0.00                  |  |
| 5,650.00                      | 28.00           | 179.65      | 5,638.99              | -67.05       | 0.41         | 67.05                   | 10.00                   | 10.00                  | 0.00                  |  |
| 5,700.00                      | 33.00           | 179.65      | 5,682.06              | -92.41       | 0.56         | 92.41                   | 10.00                   | 10.00                  | 0.00                  |  |
| 5,750.00                      | 38.00           | 179.65      | 5,722.76              | -121.43      | 0.74         | 121.43                  | 10.00                   | 10.00                  | 0.00                  |  |
| 5,800.00                      | 43.00           | 179.65      | 5,760.77              | -153.89      | 0.93         | 153.89                  | 10.00                   | 10.00                  | 0.00                  |  |
| 5,850.00                      | 48.00           | 179.65      | 5,795.80              | -189.54      | 1.15         | 189.54                  | 10.00                   | 10.00                  | 0.00                  |  |
| 5,900.00                      | 53.00           | 179.65      | 5,827.60              | -228.11      | 1.38         | 228.11                  | 10.00                   | 10.00                  | 0.00                  |  |
| 5,950.00                      | 58.00           | 179.65      | 5,855.92              | -269.30      | 1.63         | 269.30                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,000.00                      | 63.00           | 179.65      | 5,880.53              | -312.80      | 1.90         | 312.80                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,050.00                      | 68.00           | 179.65      | 5,901.26              | -358.28      | 2.17         | 358.28                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,100.00                      | 73.00           | 179.65      | 5,917.95              | -405.39      | 2.46         | 405.40                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,150.00                      | 78.00           | 179.65      | 5,930.47              | -453.78      | 2.75         | 453.79                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,200.00                      | 83.00           | 179.65      | 5,938.72              | -503.08      | 3.05         | 503.09                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,250.00                      | 88.00           | 179.65      | 5,942.65              | -552.91      | 3.35         | 552.92                  | 10.00                   | 10.00                  | 0.00                  |  |
| 6,270.04                      | 90.00           | 179.65      | 5,943.00              | -572.95      | 3.47         | 572.96                  | 10.00                   | 10.00                  | 0.00                  |  |
| <b>Begin 90.00° Lateral</b>   |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 6,300.00                      | 90.00           | 179.65      | 5,943.00              | -602.90      | 3.65         | 602.92                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,400.00                      | 90.00           | 179.65      | 5,943.00              | -702.90      | 4.26         | 702.92                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,500.00                      | 90.00           | 179.65      | 5,943.00              | -802.90      | 4.86         | 802.92                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,600.00                      | 90.00           | 179.65      | 5,943.00              | -902.90      | 5.47         | 902.92                  | 0.00                    | 0.00                   | 0.00                  |  |
| 6,700.00                      | 90.00           | 179.65      | 5,943.00              | -1,002.90    | 6.08         | 1,002.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 6,800.00                      | 90.00           | 179.65      | 5,943.00              | -1,102.90    | 6.68         | 1,102.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 6,900.00                      | 90.00           | 179.65      | 5,943.00              | -1,202.89    | 7.29         | 1,202.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,000.00                      | 90.00           | 179.65      | 5,943.00              | -1,302.89    | 7.89         | 1,302.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,100.00                      | 90.00           | 179.65      | 5,943.00              | -1,402.89    | 8.50         | 1,402.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,200.00                      | 90.00           | 179.65      | 5,943.00              | -1,502.89    | 9.11         | 1,502.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,300.00                      | 90.00           | 179.65      | 5,943.00              | -1,602.89    | 9.71         | 1,602.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,400.00                      | 90.00           | 179.65      | 5,943.00              | -1,702.88    | 10.32        | 1,702.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,500.00                      | 90.00           | 179.65      | 5,943.00              | -1,802.88    | 10.92        | 1,802.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,600.00                      | 90.00           | 179.65      | 5,943.00              | -1,902.88    | 11.53        | 1,902.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,700.00                      | 90.00           | 179.65      | 5,943.00              | -2,002.88    | 12.13        | 2,002.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,800.00                      | 90.00           | 179.65      | 5,943.00              | -2,102.88    | 12.74        | 2,102.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 7,900.00                      | 90.00           | 179.65      | 5,943.00              | -2,202.88    | 13.35        | 2,202.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,000.00                      | 90.00           | 179.65      | 5,943.00              | -2,302.87    | 13.95        | 2,302.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,100.00                      | 90.00           | 179.65      | 5,943.00              | -2,402.87    | 14.56        | 2,402.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,200.00                      | 90.00           | 179.65      | 5,943.00              | -2,502.87    | 15.16        | 2,502.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,300.00                      | 90.00           | 179.65      | 5,943.00              | -2,602.87    | 15.77        | 2,602.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,400.00                      | 90.00           | 179.65      | 5,943.00              | -2,702.87    | 16.38        | 2,702.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,500.00                      | 90.00           | 179.65      | 5,943.00              | -2,802.86    | 16.98        | 2,802.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,600.00                      | 90.00           | 179.65      | 5,943.00              | -2,902.86    | 17.59        | 2,902.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,700.00                      | 90.00           | 179.65      | 5,943.00              | -3,002.86    | 18.19        | 3,002.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,800.00                      | 90.00           | 179.65      | 5,943.00              | -3,102.86    | 18.80        | 3,102.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 8,900.00                      | 90.00           | 179.65      | 5,943.00              | -3,202.86    | 19.40        | 3,202.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,000.00                      | 90.00           | 179.65      | 5,943.00              | -3,302.86    | 20.01        | 3,302.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,100.00                      | 90.00           | 179.65      | 5,943.00              | -3,402.85    | 20.62        | 3,402.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,200.00                      | 90.00           | 179.65      | 5,943.00              | -3,502.85    | 21.22        | 3,502.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,300.00                      | 90.00           | 179.65      | 5,943.00              | -3,602.85    | 21.83        | 3,602.92                | 0.00                    | 0.00                   | 0.00                  |  |

|                  |                                  |                                     |                         |
|------------------|----------------------------------|-------------------------------------|-------------------------|
| <b>Database:</b> | Southern Region                  | <b>Local Co-ordinate Reference:</b> | Well 7-11-5-60          |
| <b>Company:</b>  | Carrizo Oil & Gas                | <b>TVD Reference:</b>               | WELL @ 4604.30usft (KB) |
| <b>Project:</b>  | Morgan County, Colorado (NAD 83) | <b>MD Reference:</b>                | WELL @ 4604.30usft (KB) |
| <b>Site:</b>     | Wickstrom                        | <b>North Reference:</b>             | Grid                    |
| <b>Well:</b>     | 7-11-5-60                        | <b>Survey Calculation Method:</b>   | Minimum Curvature       |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                         |
| <b>Design:</b>   | Design #3                        |                                     |                         |

| 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) |  |
| 9,400.00              | 90.00           | 179.65      | 5,943.00              | -3,702.85    | 22.43        | 3,702.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,500.00              | 90.00           | 179.65      | 5,943.00              | -3,802.85    | 23.04        | 3,802.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,600.00              | 90.00           | 179.65      | 5,943.00              | -3,902.84    | 23.65        | 3,902.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,700.00              | 90.00           | 179.65      | 5,943.00              | -4,002.84    | 24.25        | 4,002.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,800.00              | 90.00           | 179.65      | 5,943.00              | -4,102.84    | 24.86        | 4,102.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,900.00              | 90.00           | 179.65      | 5,943.00              | -4,202.84    | 25.46        | 4,202.92                | 0.00                    | 0.00                   | 0.00                  |  |
| 9,995.24              | 90.00           | 179.65      | 5,943.00              | -4,298.08    | 26.04        | 4,298.16                | 0.00                    | 0.00                   | 0.00                  |  |

| Design Targets                                              |               |              |            |              |              |                 |                |                  |                  |  |
|-------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|--|
| Target Name<br>- hit/miss target<br>- Shape                 | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude        |  |
| 7-11-5-60 - PBHL v3<br>- plan hits target center<br>- Point | 0.00          | 0.00         | 5,943.00   | -4,298.08    | 26.04        | 1,395,322.70    | 3,377,472.39   | 40° 24' 38.313 N | 104° 8' 39.869 W |  |

| Plan Annotations      |                       |                   |              |                        |  |
|-----------------------|-----------------------|-------------------|--------------|------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              |                        |  |
|                       |                       | +N/-S (usft)      | +E/-W (usft) | Comment                |  |
| 5,370.04              | 5,370.04              | 0.00              | 0.00         | KOP, 10.00°/100' Build |  |
| 6,270.04              | 5,943.00              | -572.95           | 3.47         | Begin 90.00° Lateral   |  |
| 9,995.24              | 5,943.00              | -4,298.08         | 26.04        | PBHL                   |  |