



Project: Mesa County, CO  
 Site: Bruton 19-06 Pad  
 Well: Bruton Federal 19-09E  
 Wellbore: Wellbore #1  
 Design: Design #2  
 Latitude: 39.262856  
 Longitude: -107.815022  
 Ground Level: 7262.0  
 well @ 7286.0usft (H&P #290)



#### PROJECT DETAILS: Mesa County, CO

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Central Zone  
 System Datum: Mean Sea Level

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Bruton Federal 19-09E, True North  
 Vertical (TVD) Reference: well @ 7286.0usft (H&P #290)  
 Section (VS) Reference: Slot - (0.0N, 0.0E)  
 Measured Depth Reference: well @ 7286.0usft (H&P #290)  
 Calculation Method: Minimum Curvature

#### WELL DETAILS: Bruton Federal 19-09E

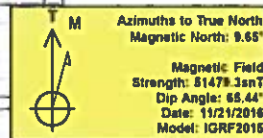
| +N-S | +E-W | Northing   | Ground Level: Easting | 7262.0 Latitude | Longitude   |
|------|------|------------|-----------------------|-----------------|-------------|
| 0.0  | 0.0  | 1528980.13 | 2344696.63            | 39.262856       | -107.815022 |

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

| Name                         | TVD    | +N-S  | +E-W   | Northing   | Easting    | Latitude  | Longitude   |
|------------------------------|--------|-------|--------|------------|------------|-----------|-------------|
| PBHL - Bruton Federal 19-09E | 7613.0 | 380.9 | 2442.1 | 1529298.88 | 2347057.81 | 39.263901 | -107.806397 |

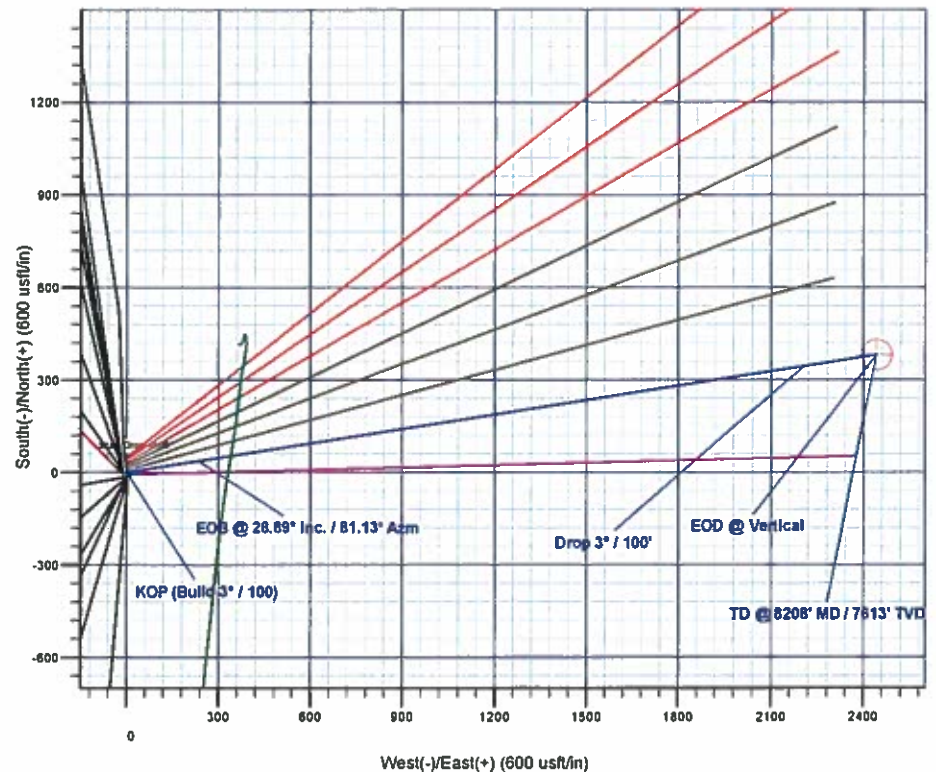
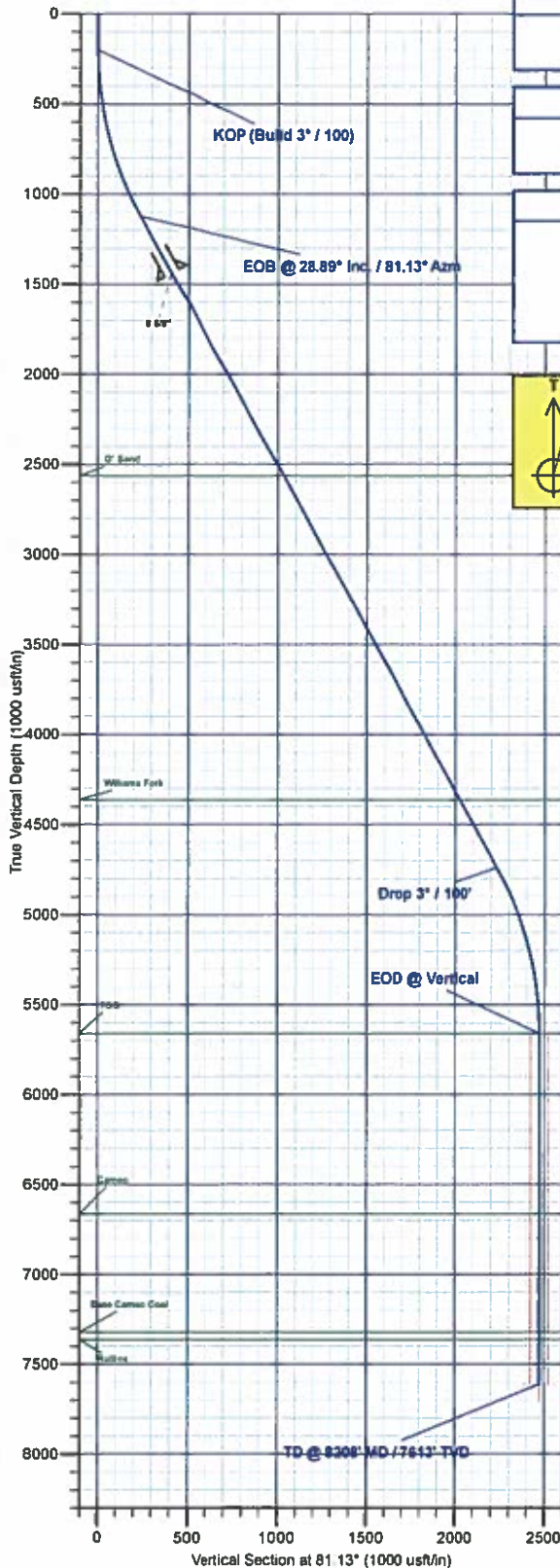
#### SECTION DETAILS

| MD     | Inc   | Azi   | TVD    | +N-S  | +E-W   | Diag | TFace  | VSect  | Annotation                     |
|--------|-------|-------|--------|-------|--------|------|--------|--------|--------------------------------|
| 0.0    | 0.00  | 0.00  | 0.0    | 0.0   | 0.0    | 0.00 | 0.00   | 0.0    |                                |
| 200.0  | 0.00  | 0.00  | 200.0  | 0.0   | 0.0    | 0.00 | 6.00   | 0.0    | KOP (Build 3° / 100')          |
| 1163.0 | 28.89 | 81.13 | 1122.7 | 36.6  | 234.9  | 3.00 | 81.13  | 237.7  | EOB @ 28.89° Inc. / 81.13° Azm |
| 6294.6 | 28.89 | 81.13 | 4740.3 | 344.3 | 2207.2 | 0.00 | 0.00   | 2233.9 | Drop 3° / 100'                 |
| 6257.8 | 0.00  | 0.00  | 5663.0 | 380.9 | 2442.1 | 3.00 | 180.00 | 2471.6 | EOD @ Vertical                 |
| 8207.8 | 0.00  | 0.00  | 7613.0 | 380.9 | 2442.1 | 0.00 | 0.00   | 2471.6 | TD @ 8208' MD / 7613' TVD      |



#### FORMATION TOP DETAILS

| TVDPath | MDPath | Formation       |
|---------|--------|-----------------|
| 2563.0  | 2004.0 | G' Sand         |
| 4363.0  | 4863.9 | Williams Fork   |
| 5663.0  | 6257.8 | TOO             |
| 6663.0  | 7257.8 | Cameo           |
| 7323.0  | 7817.8 | Base Cameo Coal |
| 7363.0  | 7957.8 | Rollins         |



Plan: Design #2 (Bruton Federal 19-09E/Wellbore #1)

Created By: Will Jircik Date: 14:48, March 01 2017



# **Laramie Energy, LLC**

**Mesa County, CO**

**Bruton 19-06 Pad**

**Bruton Federal 19-09E**

**Wellbore #1**

**Plan: Design #2**

## **QES Well Planning Report**

**01 March, 2017**





## Well Planning Report



|                  |                       |                                     |                              |
|------------------|-----------------------|-------------------------------------|------------------------------|
| <b>Database:</b> | EDM5002               | <b>Local Co-ordinate Reference:</b> | Well Bruton Federal 19-09E   |
| <b>Company:</b>  | Laramie Energy, LLC   | <b>TVD Reference:</b>               | well @ 7286.0usft (H&P #290) |
| <b>Project:</b>  | Mesa County, CO       | <b>MD Reference:</b>                | well @ 7286.0usft (H&P #290) |
| <b>Site:</b>     | Bruton 19-06 Pad      | <b>North Reference:</b>             | True                         |
| <b>Well:</b>     | Bruton Federal 19-09E | <b>Survey Calculation Method:</b>   | Minimum Curvature            |
| <b>Wellbore:</b> | Wellbore #1           |                                     |                              |
| <b>Design:</b>   | Design #2             |                                     |                              |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Mesa County, CO           |                      |                |
| <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 Central Zone     |                      |                |

|                              |                  |                     |                   |                                 |
|------------------------------|------------------|---------------------|-------------------|---------------------------------|
| <b>Site</b>                  | Bruton 19-06 Pad |                     |                   |                                 |
| <b>Site Position:</b>        |                  | <b>Northing:</b>    | 1,528,940.55 usft | <b>Latitude:</b> 39.262756      |
| <b>From:</b>                 | Lat/Long         | <b>Easting:</b>     | 2,344,737.10 usft | <b>Longitude:</b> -107.814558   |
| <b>Position Uncertainty:</b> | 0.0 usft         | <b>Slot Radius:</b> | 13-3/16"          | <b>Grid Convergence:</b> -1.46° |

|                             |                       |             |                            |                   |
|-----------------------------|-----------------------|-------------|----------------------------|-------------------|
| <b>Well</b>                 | Bruton Federal 19-09E |             |                            |                   |
| <b>Well Position</b>        | +N/-S                 | 36.3 usft   | <b>Northing:</b>           | 1,528,980.13 usft |
|                             | +E/-W                 | -131.4 usft | <b>Easting:</b>            | 2,344,606.63 usft |
| <b>Position Uncertainty</b> | 0.0 usft              |             | <b>Wellhead Elevation:</b> | 0.0 usft          |
|                             |                       |             | <b>Ground Level:</b>       | 7,262.0 usft      |

|                  |                   |                    |                            |                          |                                |
|------------------|-------------------|--------------------|----------------------------|--------------------------|--------------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                            |                          |                                |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination<br/>(°)</b> | <b>Dip Angle<br/>(°)</b> | <b>Field Strength<br/>(nT)</b> |
|                  | IGRF2015          | 11/21/2016         | 9.65                       | 65.44                    | 51,479                         |

|                          |                                    |                         |                         |                          |
|--------------------------|------------------------------------|-------------------------|-------------------------|--------------------------|
| <b>Design</b>            | Design #2                          |                         |                         |                          |
| <b>Audit Notes:</b>      |                                    |                         |                         |                          |
| <b>Version:</b>          | <b>Phase:</b>                      | PLAN                    |                         | <b>Tie On Depth:</b> 0.0 |
| <b>Vertical Section:</b> | <b>Depth From (TVD)<br/>(usft)</b> | <b>+N/-S<br/>(usft)</b> | <b>+E/-W<br/>(usft)</b> | <b>Direction<br/>(°)</b> |
|                          | 0.0                                | 0.0                     | 0.0                     | 81.13                    |

|                                      |                            |                        |                                      |                         |                         |  |                                       |                                      |                    |                       |
|--------------------------------------|----------------------------|------------------------|--------------------------------------|-------------------------|-------------------------|--|---------------------------------------|--------------------------------------|--------------------|-----------------------|
| <b>Plan Sections</b>                 |                            |                        |                                      |                         |                         |  |                                       |                                      |                    |                       |
| <b>Measured<br/>Depth<br/>(usft)</b> | <b>Inclination<br/>(°)</b> | <b>Azimuth<br/>(°)</b> | <b>Vertical<br/>Depth<br/>(usft)</b> | <b>+N/-S<br/>(usft)</b> | <b>+E/-W<br/>(usft)</b> | <b>Dogleg<br/>Rate<br/>(°/100usft)</b> | <b>Build<br/>Rate<br/>(°/100usft)</b> | <b>Turn<br/>Rate<br/>(°/100usft)</b> | <b>TFO<br/>(°)</b> | <b>Target</b>         |
| 0.0                                  | 0.00                       | 0.00                   | 0.0                                  | 0.0                     | 0.0                     | 0.00                                   | 0.00                                  | 0.00                                 | 0.00               |                       |
| 200.0                                | 0.00                       | 0.00                   | 200.0                                | 0.0                     | 0.0                     | 0.00                                   | 0.00                                  | 0.00                                 | 0.00               |                       |
| 1,163.0                              | 28.89                      | 81.13                  | 1,122.7                              | 36.6                    | 234.9                   | 3.00                                   | 3.00                                  | 0.00                                 | 81.13              |                       |
| 5,294.8                              | 28.89                      | 81.13                  | 4,740.3                              | 344.3                   | 2,207.2                 | 0.00                                   | 0.00                                  | 0.00                                 | 0.00               |                       |
| 6,257.8                              | 0.00                       | 0.00                   | 5,663.0                              | 380.9                   | 2,442.1                 | 3.00                                   | -3.00                                 | 0.00                                 | 180.00             |                       |
| 8,207.8                              | 0.00                       | 0.00                   | 7,613.0                              | 380.9                   | 2,442.1                 | 0.00                                   | 0.00                                  | 0.00                                 | 0.00               | PBHL - Bruton Federal |





# Well Planning Report



|                  |                       |                                     |                              |
|------------------|-----------------------|-------------------------------------|------------------------------|
| <b>Database:</b> | EDM5002               | <b>Local Co-ordinate Reference:</b> | Well Bruton Federal 19-09E   |
| <b>Company:</b>  | Laramie Energy, LLC   | <b>TVD Reference:</b>               | well @ 7286.0usft (H&P #290) |
| <b>Project:</b>  | Mesa County, CO       | <b>MD Reference:</b>                | well @ 7286.0usft (H&P #290) |
| <b>Site:</b>     | Bruton 19-06 Pad      | <b>North Reference:</b>             | True                         |
| <b>Well:</b>     | Bruton Federal 19-09E | <b>Survey Calculation Method:</b>   | Minimum Curvature            |
| <b>Wellbore:</b> | Wellbore #1           |                                     |                              |
| <b>Design:</b>   | Design #2             |                                     |                              |

| 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) |
| 0.0                                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 100.0                                 | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP (Build 3° / 100)</b>           |                 |             |                       |              |              |                         |                         |                        |                       |
| 200.0                                 | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 300.0                                 | 3.00            | 81.13       | 300.0                 | 0.4          | 2.6          | 2.6                     | 3.00                    | 3.00                   | 0.00                  |
| 400.0                                 | 6.00            | 81.13       | 399.6                 | 1.6          | 10.3         | 10.5                    | 3.00                    | 3.00                   | 0.00                  |
| 500.0                                 | 9.00            | 81.13       | 498.8                 | 3.6          | 23.2         | 23.5                    | 3.00                    | 3.00                   | 0.00                  |
| 600.0                                 | 12.00           | 81.13       | 597.1                 | 6.4          | 41.2         | 41.7                    | 3.00                    | 3.00                   | 0.00                  |
| 700.0                                 | 15.00           | 81.13       | 694.3                 | 10.0         | 64.3         | 65.1                    | 3.00                    | 3.00                   | 0.00                  |
| 800.0                                 | 18.00           | 81.13       | 790.2                 | 14.4         | 92.4         | 93.5                    | 3.00                    | 3.00                   | 0.00                  |
| 900.0                                 | 21.00           | 81.13       | 884.4                 | 19.5         | 125.3        | 126.9                   | 3.00                    | 3.00                   | 0.00                  |
| 1,000.0                               | 24.00           | 81.13       | 976.8                 | 25.4         | 163.1        | 165.1                   | 3.00                    | 3.00                   | 0.00                  |
| 1,100.0                               | 27.00           | 81.13       | 1,067.1               | 32.1         | 205.7        | 208.2                   | 3.00                    | 3.00                   | 0.00                  |
| <b>EOB @ 28.89° Inc. / 81.13° Azm</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,163.0                               | 28.89           | 81.13       | 1,122.7               | 36.6         | 234.8        | 237.7                   | 3.00                    | 3.00                   | 0.00                  |
| 1,200.0                               | 28.89           | 81.13       | 1,155.1               | 39.4         | 252.5        | 255.6                   | 0.00                    | 0.00                   | 0.00                  |
| 1,300.0                               | 28.89           | 81.13       | 1,242.7               | 46.8         | 300.2        | 303.9                   | 0.00                    | 0.00                   | 0.00                  |
| 1,400.0                               | 28.89           | 81.13       | 1,330.2               | 54.3         | 348.0        | 352.2                   | 0.00                    | 0.00                   | 0.00                  |
| 1,500.0                               | 28.89           | 81.13       | 1,417.8               | 61.7         | 395.7        | 400.5                   | 0.00                    | 0.00                   | 0.00                  |
| <b>8 5/8"</b>                         |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,524.0                               | 28.89           | 81.13       | 1,438.8               | 63.5         | 407.2        | 412.1                   | 0.00                    | 0.00                   | 0.00                  |
| 1,600.0                               | 28.89           | 81.13       | 1,505.3               | 69.2         | 443.5        | 448.8                   | 0.00                    | 0.00                   | 0.00                  |
| 1,700.0                               | 28.89           | 81.13       | 1,592.9               | 76.6         | 491.2        | 497.1                   | 0.00                    | 0.00                   | 0.00                  |
| 1,800.0                               | 28.89           | 81.13       | 1,680.4               | 84.1         | 538.9        | 545.4                   | 0.00                    | 0.00                   | 0.00                  |
| 1,900.0                               | 28.89           | 81.13       | 1,768.0               | 91.5         | 586.7        | 593.8                   | 0.00                    | 0.00                   | 0.00                  |
| 2,000.0                               | 28.89           | 81.13       | 1,855.5               | 98.9         | 634.4        | 642.1                   | 0.00                    | 0.00                   | 0.00                  |
| 2,100.0                               | 28.89           | 81.13       | 1,943.1               | 106.4        | 682.1        | 690.4                   | 0.00                    | 0.00                   | 0.00                  |
| 2,200.0                               | 28.89           | 81.13       | 2,030.6               | 113.8        | 729.9        | 738.7                   | 0.00                    | 0.00                   | 0.00                  |
| 2,300.0                               | 28.89           | 81.13       | 2,118.2               | 121.3        | 777.6        | 787.0                   | 0.00                    | 0.00                   | 0.00                  |
| 2,400.0                               | 28.89           | 81.13       | 2,205.8               | 128.7        | 825.3        | 835.3                   | 0.00                    | 0.00                   | 0.00                  |
| 2,500.0                               | 28.89           | 81.13       | 2,293.3               | 136.2        | 873.1        | 883.6                   | 0.00                    | 0.00                   | 0.00                  |
| 2,600.0                               | 28.89           | 81.13       | 2,380.9               | 143.6        | 920.8        | 932.0                   | 0.00                    | 0.00                   | 0.00                  |
| 2,700.0                               | 28.89           | 81.13       | 2,468.4               | 151.1        | 968.6        | 980.3                   | 0.00                    | 0.00                   | 0.00                  |
| 2,800.0                               | 28.89           | 81.13       | 2,556.0               | 158.5        | 1,016.3      | 1,028.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>G' Sand</b>                        |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,808.0                               | 28.89           | 81.13       | 2,563.0               | 159.1        | 1,020.1      | 1,032.5                 | 0.00                    | 0.00                   | 0.00                  |
| 2,900.0                               | 28.89           | 81.13       | 2,643.5               | 166.0        | 1,064.0      | 1,076.9                 | 0.00                    | 0.00                   | 0.00                  |
| 3,000.0                               | 28.89           | 81.13       | 2,731.1               | 173.4        | 1,111.8      | 1,125.2                 | 0.00                    | 0.00                   | 0.00                  |
| 3,100.0                               | 28.89           | 81.13       | 2,818.6               | 180.8        | 1,159.5      | 1,173.5                 | 0.00                    | 0.00                   | 0.00                  |
| 3,200.0                               | 28.89           | 81.13       | 2,906.2               | 188.3        | 1,207.2      | 1,221.8                 | 0.00                    | 0.00                   | 0.00                  |
| 3,300.0                               | 28.89           | 81.13       | 2,993.7               | 195.7        | 1,255.0      | 1,270.1                 | 0.00                    | 0.00                   | 0.00                  |
| 3,400.0                               | 28.89           | 81.13       | 3,081.3               | 203.2        | 1,302.7      | 1,318.5                 | 0.00                    | 0.00                   | 0.00                  |
| 3,500.0                               | 28.89           | 81.13       | 3,168.9               | 210.6        | 1,350.4      | 1,366.8                 | 0.00                    | 0.00                   | 0.00                  |
| 3,600.0                               | 28.89           | 81.13       | 3,256.4               | 218.1        | 1,398.2      | 1,415.1                 | 0.00                    | 0.00                   | 0.00                  |
| 3,700.0                               | 28.89           | 81.13       | 3,344.0               | 225.5        | 1,445.9      | 1,463.4                 | 0.00                    | 0.00                   | 0.00                  |
| 3,800.0                               | 28.89           | 81.13       | 3,431.5               | 233.0        | 1,493.7      | 1,511.7                 | 0.00                    | 0.00                   | 0.00                  |
| 3,900.0                               | 28.89           | 81.13       | 3,519.1               | 240.4        | 1,541.4      | 1,560.0                 | 0.00                    | 0.00                   | 0.00                  |
| 4,000.0                               | 28.89           | 81.13       | 3,606.6               | 247.9        | 1,589.1      | 1,608.3                 | 0.00                    | 0.00                   | 0.00                  |
| 4,100.0                               | 28.89           | 81.13       | 3,694.2               | 255.3        | 1,636.9      | 1,656.7                 | 0.00                    | 0.00                   | 0.00                  |
| 4,200.0                               | 28.89           | 81.13       | 3,781.7               | 262.8        | 1,684.6      | 1,705.0                 | 0.00                    | 0.00                   | 0.00                  |
| 4,300.0                               | 28.89           | 81.13       | 3,869.3               | 270.2        | 1,732.3      | 1,753.3                 | 0.00                    | 0.00                   | 0.00                  |
| 4,400.0                               | 28.89           | 81.13       | 3,956.8               | 277.6        | 1,780.1      | 1,801.6                 | 0.00                    | 0.00                   | 0.00                  |
| 4,500.0                               | 28.89           | 81.13       | 4,044.4               | 285.1        | 1,827.8      | 1,849.9                 | 0.00                    | 0.00                   | 0.00                  |
| 4,600.0                               | 28.89           | 81.13       | 4,132.0               | 292.5        | 1,875.5      | 1,898.2                 | 0.00                    | 0.00                   | 0.00                  |



# Well Planning Report



|                  |                       |                                     |                              |
|------------------|-----------------------|-------------------------------------|------------------------------|
| <b>Database:</b> | EDM5002               | <b>Local Co-ordinate Reference:</b> | Well Bruton Federal 19-09E   |
| <b>Company:</b>  | Laramie Energy, LLC   | <b>TVD Reference:</b>               | well @ 7286 0usft (H&P #290) |
| <b>Project:</b>  | Mesa County, CO       | <b>MD Reference:</b>                | well @ 7286 0usft (H&P #290) |
| <b>Site:</b>     | Bruton 19-06 Pad      | <b>North Reference:</b>             | True                         |
| <b>Well:</b>     | Bruton Federal 19-09E | <b>Survey Calculation Method:</b>   | Minimum Curvature            |
| <b>Wellbore:</b> | Wellbore #1           |                                     |                              |
| <b>Design:</b>   | Design #2             |                                     |                              |

## 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) |
|----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 4,700.0                          | 28.89           | 81.13       | 4,219.5               | 300.0        | 1,923.3      | 1,946.5                 | 0.00                    | 0.00                   | 0.00                  |
| 4,800.0                          | 28.89           | 81.13       | 4,307.1               | 307.4        | 1,971.0      | 1,994.9                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Williams Fork</b>             |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,863.9                          | 28.89           | 81.13       | 4,363.0               | 312.2        | 2,001.5      | 2,025.7                 | 0.00                    | 0.00                   | 0.00                  |
| 4,900.0                          | 28.89           | 81.13       | 4,394.6               | 314.9        | 2,018.8      | 2,043.2                 | 0.00                    | 0.00                   | 0.00                  |
| 5,000.0                          | 28.89           | 81.13       | 4,482.2               | 322.3        | 2,066.5      | 2,091.5                 | 0.00                    | 0.00                   | 0.00                  |
| 5,100.0                          | 28.89           | 81.13       | 4,569.7               | 329.8        | 2,114.2      | 2,139.8                 | 0.00                    | 0.00                   | 0.00                  |
| 5,200.0                          | 28.89           | 81.13       | 4,657.3               | 337.2        | 2,162.0      | 2,188.1                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Drop 3° / 100'</b>            |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,294.8                          | 28.89           | 81.13       | 4,740.3               | 344.3        | 2,207.2      | 2,233.9                 | 0.00                    | 0.00                   | 0.00                  |
| 5,300.0                          | 28.73           | 81.13       | 4,744.8               | 344.7        | 2,209.7      | 2,236.4                 | 3.01                    | -3.01                  | 0.00                  |
| 5,400.0                          | 25.73           | 81.13       | 4,833.7               | 351.7        | 2,254.9      | 2,282.2                 | 3.00                    | -3.00                  | 0.00                  |
| 5,500.0                          | 22.73           | 81.13       | 4,924.9               | 358.0        | 2,295.5      | 2,323.2                 | 3.00                    | -3.00                  | 0.00                  |
| 5,600.0                          | 19.73           | 81.13       | 5,018.1               | 363.6        | 2,331.2      | 2,359.4                 | 3.00                    | -3.00                  | 0.00                  |
| 5,700.0                          | 16.73           | 81.13       | 5,113.1               | 368.4        | 2,362.2      | 2,390.7                 | 3.00                    | -3.00                  | 0.00                  |
| 5,800.0                          | 13.73           | 81.13       | 5,209.6               | 372.5        | 2,388.1      | 2,417.0                 | 3.00                    | -3.00                  | 0.00                  |
| 5,900.0                          | 10.73           | 81.13       | 5,307.3               | 375.7        | 2,409.0      | 2,438.2                 | 3.00                    | -3.00                  | 0.00                  |
| 6,000.0                          | 7.73            | 81.13       | 5,406.0               | 378.2        | 2,424.9      | 2,454.2                 | 3.00                    | -3.00                  | 0.00                  |
| 6,100.0                          | 4.73            | 81.13       | 5,505.4               | 379.9        | 2,435.6      | 2,465.1                 | 3.00                    | -3.00                  | 0.00                  |
| 6,200.0                          | 1.73            | 81.13       | 5,605.2               | 380.8        | 2,441.2      | 2,470.7                 | 3.00                    | -3.00                  | 0.00                  |
| <b>EOD @ Vertical - TOG</b>      |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,257.8                          | 0.00            | 0.00        | 5,663.0               | 380.9        | 2,442.1      | 2,471.6                 | 3.00                    | -3.00                  | -140.36               |
| 6,300.0                          | 0.00            | 0.00        | 5,705.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,400.0                          | 0.00            | 0.00        | 5,805.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,500.0                          | 0.00            | 0.00        | 5,905.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,600.0                          | 0.00            | 0.00        | 6,005.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,700.0                          | 0.00            | 0.00        | 6,105.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,800.0                          | 0.00            | 0.00        | 6,205.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 6,900.0                          | 0.00            | 0.00        | 6,305.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,000.0                          | 0.00            | 0.00        | 6,405.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,100.0                          | 0.00            | 0.00        | 6,505.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,200.0                          | 0.00            | 0.00        | 6,605.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Cameo</b>                     |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,257.8                          | 0.00            | 0.00        | 6,663.0               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,300.0                          | 0.00            | 0.00        | 6,705.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,400.0                          | 0.00            | 0.00        | 6,805.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,500.0                          | 0.00            | 0.00        | 6,905.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,600.0                          | 0.00            | 0.00        | 7,005.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,700.0                          | 0.00            | 0.00        | 7,105.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,800.0                          | 0.00            | 0.00        | 7,205.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 7,900.0                          | 0.00            | 0.00        | 7,305.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Base Cameo Coal</b>           |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,917.8                          | 0.00            | 0.00        | 7,323.0               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Rollins</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,957.8                          | 0.00            | 0.00        | 7,363.0               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 8,000.0                          | 0.00            | 0.00        | 7,405.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 8,100.0                          | 0.00            | 0.00        | 7,505.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| 8,200.0                          | 0.00            | 0.00        | 7,605.2               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>TD @ 8208' MD / 7613' TVD</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,207.8                          | 0.00            | 0.00        | 7,613.0               | 380.9        | 2,442.1      | 2,471.6                 | 0.00                    | 0.00                   | 0.00                  |



## Well Planning Report



|                  |                       |                                     |                              |
|------------------|-----------------------|-------------------------------------|------------------------------|
| <b>Database:</b> | EDM5002               | <b>Local Co-ordinate Reference:</b> | Well Bruton Federal 19-09E   |
| <b>Company:</b>  | Laramie Energy, LLC   | <b>TVD Reference:</b>               | well @ 7286.0usft (H&P #290) |
| <b>Project:</b>  | Mesa County, CO       | <b>MD Reference:</b>                | well @ 7286.0usft (H&P #290) |
| <b>Site:</b>     | Bruton 19-06 Pad      | <b>North Reference:</b>             | True                         |
| <b>Well:</b>     | Bruton Federal 19-09E | <b>Survey Calculation Method:</b>   | Minimum Curvature            |
| <b>Wellbore:</b> | Wellbore #1           |                                     |                              |
| <b>Design:</b>   | Design #2             |                                     |                              |

## Design Targets

## Target Name

| - hit/miss target         | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Northing<br>(usft) | Easting<br>(usft) | Latitude  | Longitude   |
|---------------------------|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|-----------|-------------|
| - Shape                   |                  |                 |               |                 |                 |                    |                   |           |             |
| PBHL - Bruton Federal 1   | 0.00             | 0.00            | 7,613.0       | 380.9           | 2,442.1         | 1,529,298.68       | 2,347,057.61      | 39.263901 | -107.806397 |
| - plan hits target center |                  |                 |               |                 |                 |                    |                   |           |             |
| - Circle (radius 50.0)    |                  |                 |               |                 |                 |                    |                   |           |             |

## Casing Points

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Name   | Casing<br>Diameter<br>(") | Hole<br>Diameter<br>(") |
|-----------------------------|-----------------------------|--------|---------------------------|-------------------------|
| 1,524.0                     | 1,438.8                     | 8 5/8" | 8-5/8                     | 11                      |

## Formations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Name            | Lithology | Dip<br>(°) | Dip<br>Direction<br>(°) |
|-----------------------------|-----------------------------|-----------------|-----------|------------|-------------------------|
| 2,808.0                     | 2,563.0                     | G' Sand         |           |            |                         |
| 4,863.9                     | 4,363.0                     | Williams Fork   |           |            |                         |
| 6,257.8                     | 5,663.0                     | TOG             |           |            |                         |
| 7,257.8                     | 6,663.0                     | Cameo           |           |            |                         |
| 7,917.8                     | 7,323.0                     | Base Cameo Coal |           |            |                         |
| 7,957.8                     | 7,363.0                     | Rollins         |           |            |                         |

## Plan Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                        |
|-----------------------------|-----------------------------|-------------------|-----------------|--------------------------------|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                |
| 200.0                       | 200.0                       | 0.0               | 0.0             | KOP (Build 3" / 100)           |
| 1,163.0                     | 1,122.7                     | 36.6              | 234.8           | EOB @ 28.89° Inc. / 81.13° Azm |
| 5,294.8                     | 4,740.3                     | 344.3             | 2,207.2         | Drop 3" / 100'                 |
| 6,257.8                     | 5,663.0                     | 380.9             | 2,442.1         | EOD @ Vertical                 |
| 8,207.8                     | 7,613.0                     | 380.9             | 2,442.1         | TD @ 8208' MD / 7613' TVD      |