



Laramie Energy, LLC

Mesa County, CO

Piceance 29-07 Pad

Piceance Federal 29-06W

Wellbore #1

Plan: Design #1

QES Well Planning Report

22 September, 2016





Project: Mesa County, CO
 Site: Piceance 29-07 Pad
 Well: Piceance Federal 29-06W
 Wellbore: Wellbore #1
 Design: Design #1
 Latitude: 39.250822
 Longitude: -107.791739
 Ground Level: 7496.0
 well @ 7518.0usft (Patterson #306)



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 Piceance Federal 29-06W, True North
 Vertical (TVD) Reference: well @ 7518.0usft (Patterson #306)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: well @ 7518.0usft (Patterson #306)
 Calculation Method: Minimum Curvature

WELL DETAILS: Piceance Federal 29-06W

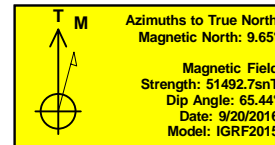
| +N/-S | +E/-W | Northing | Easting | Ground Level: 7496.0 | Latitude | Longitude |
|-------|-------|------------|------------|----------------------|-----------|-------------|
| 0.0 | 0.0 | 1524431.57 | 2351086.26 | | 39.250822 | -107.791739 |

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

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|--------------------------------|--------|-------|---------|------------|------------|-----------|-------------|
| PBHL - Piceance Federal 29-06W | 7703.0 | 264.2 | -2129.2 | 1524749.34 | 2348964.36 | 39.251547 | -107.799258 |

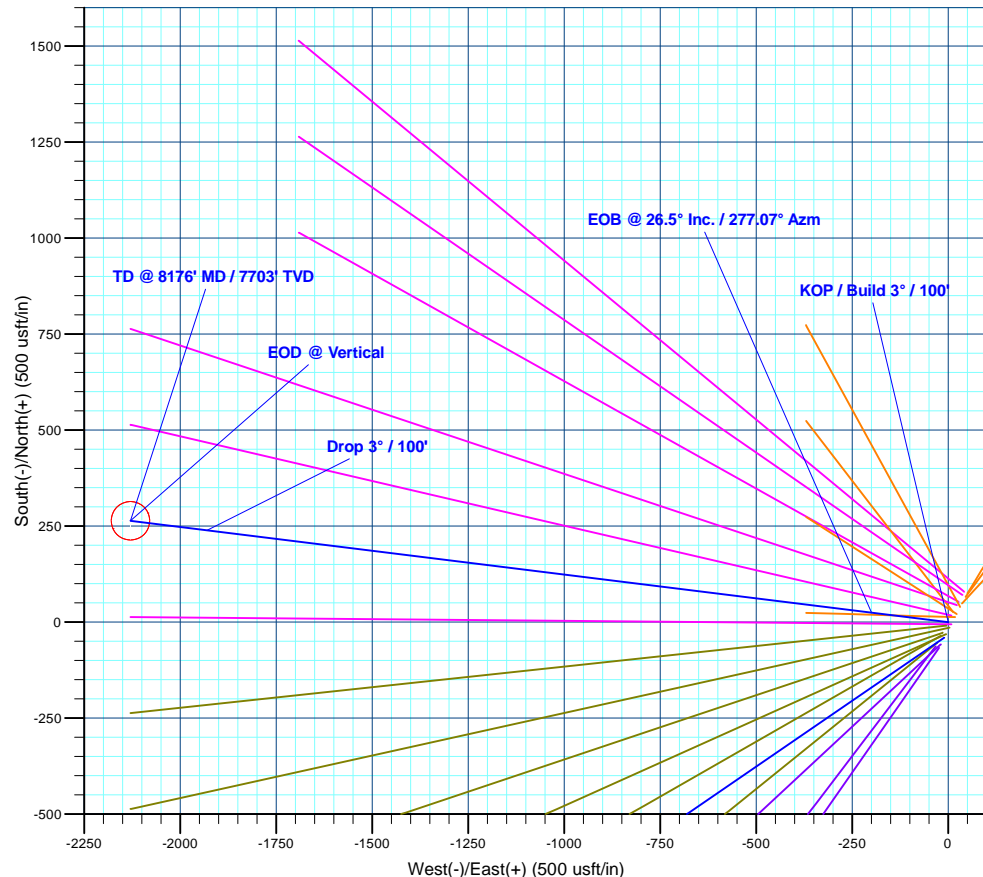
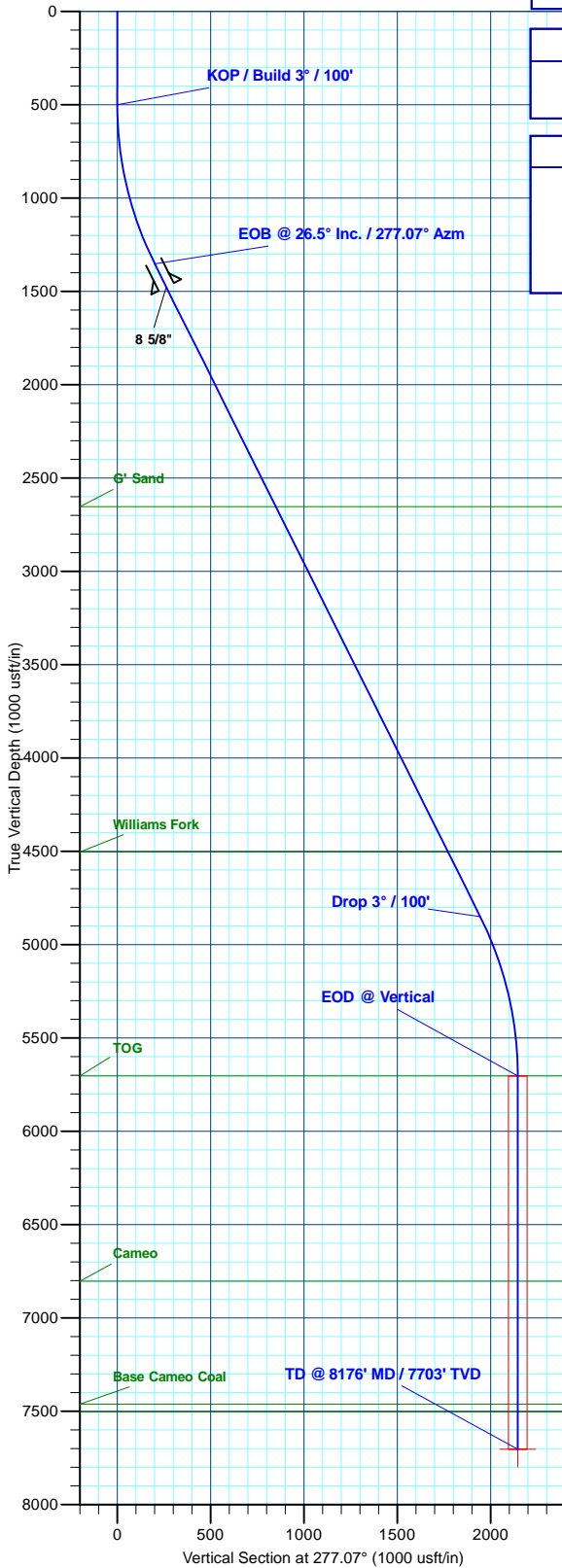
SECTION DETAILS

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | Vsect | Annotation |
|--------|-------|--------|--------|-------|---------|------|--------|--------|--------------------------------|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | KOP / Build 3° / 100' |
| 1383.3 | 26.50 | 277.07 | 1352.1 | 24.7 | -199.1 | 3.00 | 277.07 | 200.6 | EOB @ 26.5° Inc. / 277.07° Azm |
| 5292.7 | 26.50 | 277.07 | 4850.9 | 239.5 | -1930.1 | 0.00 | 0.00 | 1944.9 | Drop 3° / 100' |
| 6176.0 | 0.00 | 0.00 | 5703.0 | 264.2 | -2129.2 | 3.00 | 180.00 | 2145.6 | EOD @ Vertical |
| 8176.0 | 0.00 | 0.00 | 7703.0 | 264.2 | -2129.2 | 0.00 | 0.00 | 2145.6 | TD @ 8176' MD / 7703' TVD |



FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|--------|-----------------|
| 2653.0 | 2836.9 | G' Sand |
| 4503.0 | 4904.0 | Williams Fork |
| 5703.0 | 6176.0 | TOG |
| 6803.0 | 7276.0 | Cameo |
| 7461.0 | 7934.0 | Base Cameo Coal |
| 7503.0 | 7976.0 | Rollins |



Plan: Design #1 (Piceance Federal 29-06W/Wellbore #1)

Created By: Will Jircik Date: 14:57, September 22 2016



Well Planning Report



| | | | |
|------------------|-------------------------|-------------------------------------|------------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Piceance Federal 29-06W |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7518.0usft (Patterson #306) |
| Project: | Mesa County, CO | MD Reference: | well @ 7518.0usft (Patterson #306) |
| Site: | Piceance 29-07 Pad | North Reference: | True |
| Well: | Piceance Federal 29-06W | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

| | | | |
|-------------|---------------------------|---------------|----------------|
| Project | Mesa County, CO | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | |

| | | | | | | |
|-----------------------|----------|--------------------|-------------------|------------|-------------------|---------|
| Site | | Piceance 29-07 Pad | | | | |
| Site Position: | | Northing: | 1,524,369.77 usft | Latitude: | 39.250650 | |
| From: | Lat/Long | Easting: | 2,351,052.41 usft | Longitude: | -107.791853 | |
| Position Uncertainty: | | 0.0 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | -1.45 ° |

| Well | Piceance Federal 29-06W | | | | | |
|----------------------|-------------------------|-----------|---------------------|-------------------|---------------|--------------|
| Well Position | +N/-S | 62.6 usft | Northing: | 1,524,431.57 usft | Latitude: | 39.250822 |
| | +E/-W | 32.3 usft | Easting: | 2,351,086.26 usft | Longitude: | -107.791739 |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | 0.0 usft | Ground Level: | 7,496.0 usft |

| | | | | | |
|-----------|-------------|-------------|-----------------|---------------|---------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 9/20/2016 | 9.65 | 65.44 | 51,493 |

| | | | | |
|-------------------|----------------------------|-----------------|-----------------|------------------|
| Design | Design #1 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 277.07 |

| Plan Sections | | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,383.3 | 26.50 | 277.07 | 1,352.1 | 24.7 | -199.1 | 3.00 | 3.00 | 0.00 | 277.07 | |
| 5,292.7 | 26.50 | 277.07 | 4,850.9 | 239.5 | -1,930.1 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,176.0 | 0.00 | 0.00 | 5,703.0 | 264.2 | -2,129.2 | 3.00 | -3.00 | 0.00 | 180.00 | |
| 8,176.0 | 0.00 | 0.00 | 7,703.0 | 264.2 | -2,129.2 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL - Piceance Fed |



Well Planning Report



| | | | |
|------------------|-------------------------|-------------------------------------|------------------------------------|
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| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7518.0usft (Patterson #306) |
| Project: | Mesa County, CO | MD Reference: | well @ 7518.0usft (Patterson #306) |
| Site: | Piceance 29-07 Pad | North Reference: | True |
| Well: | Piceance Federal 29-06W | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

| 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 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| KOP / Build 3° / 100' | | | | | | | | | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 3.00 | 277.07 | 600.0 | 0.3 | -2.6 | 2.6 | 3.00 | 3.00 | 0.00 |
| 700.0 | 6.00 | 277.07 | 699.6 | 1.3 | -10.4 | 10.5 | 3.00 | 3.00 | 0.00 |
| 800.0 | 9.00 | 277.07 | 798.8 | 2.9 | -23.3 | 23.5 | 3.00 | 3.00 | 0.00 |
| 900.0 | 12.00 | 277.07 | 897.1 | 5.1 | -41.4 | 41.7 | 3.00 | 3.00 | 0.00 |
| 1,000.0 | 15.00 | 277.07 | 994.3 | 8.0 | -64.6 | 65.1 | 3.00 | 3.00 | 0.00 |
| 1,100.0 | 18.00 | 277.07 | 1,090.2 | 11.5 | -92.8 | 93.5 | 3.00 | 3.00 | 0.00 |
| 1,200.0 | 21.00 | 277.07 | 1,184.4 | 15.6 | -125.9 | 126.9 | 3.00 | 3.00 | 0.00 |
| 1,300.0 | 24.00 | 277.07 | 1,276.8 | 20.3 | -163.9 | 165.1 | 3.00 | 3.00 | 0.00 |
| EOB @ 26.5° Inc. / 277.07° Azm | | | | | | | | | |
| 1,383.3 | 26.50 | 277.07 | 1,352.1 | 24.7 | -199.1 | 200.6 | 3.00 | 3.00 | 0.00 |
| 1,400.0 | 26.50 | 277.07 | 1,367.1 | 25.6 | -206.5 | 208.1 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 26.50 | 277.07 | 1,456.6 | 31.1 | -250.8 | 252.7 | 0.00 | 0.00 | 0.00 |
| 8 5/8" | | | | | | | | | |
| 1,522.0 | 26.50 | 277.07 | 1,476.3 | 32.3 | -260.5 | 262.5 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 26.50 | 277.07 | 1,546.1 | 36.6 | -295.1 | 297.3 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 26.50 | 277.07 | 1,635.6 | 42.1 | -339.3 | 341.9 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 26.50 | 277.07 | 1,725.1 | 47.6 | -383.6 | 386.6 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 26.50 | 277.07 | 1,814.6 | 53.1 | -427.9 | 431.2 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 26.50 | 277.07 | 1,904.1 | 58.6 | -472.2 | 475.8 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 26.50 | 277.07 | 1,993.6 | 64.1 | -516.5 | 520.4 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 26.50 | 277.07 | 2,083.0 | 69.6 | -560.7 | 565.0 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 26.50 | 277.07 | 2,172.5 | 75.1 | -605.0 | 609.7 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 26.50 | 277.07 | 2,262.0 | 80.6 | -649.3 | 654.3 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 26.50 | 277.07 | 2,351.5 | 86.0 | -693.6 | 698.9 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 26.50 | 277.07 | 2,441.0 | 91.5 | -737.8 | 743.5 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 26.50 | 277.07 | 2,530.5 | 97.0 | -782.1 | 788.1 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 26.50 | 277.07 | 2,620.0 | 102.5 | -826.4 | 832.7 | 0.00 | 0.00 | 0.00 |
| G' Sand | | | | | | | | | |
| 2,836.9 | 26.50 | 277.07 | 2,653.0 | 104.5 | -842.7 | 849.2 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 26.50 | 277.07 | 2,709.5 | 108.0 | -870.7 | 877.4 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 26.50 | 277.07 | 2,799.0 | 113.5 | -915.0 | 922.0 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 26.50 | 277.07 | 2,888.5 | 119.0 | -959.2 | 966.6 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 26.50 | 277.07 | 2,978.0 | 124.5 | -1,003.5 | 1,011.2 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 26.50 | 277.07 | 3,067.5 | 130.0 | -1,047.8 | 1,055.8 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 26.50 | 277.07 | 3,157.0 | 135.5 | -1,092.1 | 1,100.4 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 26.50 | 277.07 | 3,246.5 | 141.0 | -1,136.3 | 1,145.1 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 26.50 | 277.07 | 3,336.0 | 146.5 | -1,180.6 | 1,189.7 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 26.50 | 277.07 | 3,425.5 | 152.0 | -1,224.9 | 1,234.3 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 26.50 | 277.07 | 3,515.0 | 157.5 | -1,269.2 | 1,278.9 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 26.50 | 277.07 | 3,604.5 | 162.9 | -1,313.5 | 1,323.5 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 26.50 | 277.07 | 3,694.0 | 168.4 | -1,357.7 | 1,368.1 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 26.50 | 277.07 | 3,783.4 | 173.9 | -1,402.0 | 1,412.8 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 26.50 | 277.07 | 3,872.9 | 179.4 | -1,446.3 | 1,457.4 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 26.50 | 277.07 | 3,962.4 | 184.9 | -1,490.6 | 1,502.0 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 26.50 | 277.07 | 4,051.9 | 190.4 | -1,534.8 | 1,546.6 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 26.50 | 277.07 | 4,141.4 | 195.9 | -1,579.1 | 1,591.2 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 26.50 | 277.07 | 4,230.9 | 201.4 | -1,623.4 | 1,635.8 | 0.00 | 0.00 | 0.00 |



Well Planning Report



| | | | |
|------------------|-------------------------|-------------------------------------|------------------------------------|
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| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7518.0usft (Patterson #306) |
| Project: | Mesa County, CO | MD Reference: | well @ 7518.0usft (Patterson #306) |
| Site: | Piceance 29-07 Pad | North Reference: | True |
| Well: | Piceance Federal 29-06W | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

| 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 | 26.50 | 277.07 | 4,320.4 | 206.9 | -1,667.7 | 1,680.5 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 26.50 | 277.07 | 4,409.9 | 212.4 | -1,712.0 | 1,725.1 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 26.50 | 277.07 | 4,499.4 | 217.9 | -1,756.2 | 1,769.7 | 0.00 | 0.00 | 0.00 |
| Williams Fork | | | | | | | | | |
| 4,904.0 | 26.50 | 277.07 | 4,503.0 | 218.1 | -1,758.0 | 1,771.5 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 26.50 | 277.07 | 4,588.9 | 223.4 | -1,800.5 | 1,814.3 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 26.50 | 277.07 | 4,678.4 | 228.9 | -1,844.8 | 1,858.9 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 26.50 | 277.07 | 4,767.9 | 234.4 | -1,889.1 | 1,903.6 | 0.00 | 0.00 | 0.00 |
| Drop 3° / 100' | | | | | | | | | |
| 5,292.7 | 26.50 | 277.07 | 4,850.9 | 239.5 | -1,930.1 | 1,944.9 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 26.28 | 277.07 | 4,857.4 | 239.9 | -1,933.3 | 1,948.2 | 3.00 | -3.00 | 0.00 |
| 5,400.0 | 23.28 | 277.07 | 4,948.2 | 245.0 | -1,974.9 | 1,990.1 | 3.00 | -3.00 | 0.00 |
| 5,500.0 | 20.28 | 277.07 | 5,041.0 | 249.6 | -2,011.7 | 2,027.2 | 3.00 | -3.00 | 0.00 |
| 5,600.0 | 17.28 | 277.07 | 5,135.7 | 253.5 | -2,043.7 | 2,059.4 | 3.00 | -3.00 | 0.00 |
| 5,700.0 | 14.28 | 277.07 | 5,231.9 | 256.9 | -2,070.7 | 2,086.5 | 3.00 | -3.00 | 0.00 |
| 5,800.0 | 11.28 | 277.07 | 5,329.4 | 259.6 | -2,092.6 | 2,108.7 | 3.00 | -3.00 | 0.00 |
| 5,900.0 | 8.28 | 277.07 | 5,428.0 | 261.7 | -2,109.5 | 2,125.6 | 3.00 | -3.00 | 0.00 |
| 6,000.0 | 5.28 | 277.07 | 5,527.2 | 263.2 | -2,121.2 | 2,137.5 | 3.00 | -3.00 | 0.00 |
| 6,100.0 | 2.28 | 277.07 | 5,627.0 | 264.0 | -2,127.7 | 2,144.0 | 3.00 | -3.00 | 0.00 |
| EOD @ Vertical - TOG | | | | | | | | | |
| 6,176.0 | 0.00 | 0.00 | 5,703.0 | 264.2 | -2,129.2 | 2,145.6 | 3.00 | -3.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 5,727.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 0.00 | 0.00 | 5,827.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 5,927.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 0.00 | 0.00 | 6,027.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,127.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 0.00 | 0.00 | 6,227.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,327.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 0.00 | 0.00 | 6,427.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 6,527.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 0.00 | 0.00 | 6,627.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 6,727.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| Cameo | | | | | | | | | |
| 7,276.0 | 0.00 | 0.00 | 6,803.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 0.00 | 0.00 | 6,827.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 6,927.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 0.00 | 0.00 | 7,027.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 0.00 | 0.00 | 7,127.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 0.00 | 0.00 | 7,227.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 0.00 | 0.00 | 7,327.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 7,427.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| Base Cameo Coal | | | | | | | | | |
| 7,934.0 | 0.00 | 0.00 | 7,461.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| Rollins | | | | | | | | | |
| 7,976.0 | 0.00 | 0.00 | 7,503.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 0.00 | 0.00 | 7,527.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 0.00 | 0.00 | 7,627.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |
| TD @ 8176' MD / 7703' TVD | | | | | | | | | |
| 8,176.0 | 0.00 | 0.00 | 7,703.0 | 264.2 | -2,129.2 | 2,145.6 | 0.00 | 0.00 | 0.00 |



Well Planning Report



| | | | |
|------------------|-------------------------|-------------------------------------|------------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Piceance Federal 29-06W |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7518.0usft (Patterson #306) |
| Project: | Mesa County, CO | MD Reference: | well @ 7518.0usft (Patterson #306) |
| Site: | Piceance 29-07 Pad | North Reference: | True |
| Well: | Piceance Federal 29-06W | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

| 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 | | | | | | | | | |
| PBHL - Piceance Federal 29-06W | 0.00 | 0.00 | 7,703.0 | 264.2 | -2,129.2 | 1,524,749.35 | 2,348,964.37 | 39.251547 | -107.799258 |
| - plan hits target center | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |

| Casing Points | | | | | |
|-----------------------|-----------------------|--------|---------------------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") | |
| 1,522.0 | 1,476.3 | 8 5/8" | 8-5/8 | 11 | |

| Formations | | | | | | |
|-----------------------|-----------------------|-----------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 2,836.9 | 2,653.0 | G' Sand | | 0.00 | | |
| 4,904.0 | 4,503.0 | Williams Fork | | 0.00 | | |
| 6,176.0 | 5,703.0 | TOG | | 0.00 | | |
| 7,276.0 | 6,803.0 | Cameo | | 0.00 | | |
| 7,934.0 | 7,461.0 | Base Cameo Coal | | 0.00 | | |
| 7,976.0 | 7,503.0 | Rollins | | 0.00 | | |

| Plan Annotations | | | | | |
|-----------------------|-----------------------|-------------------|--------------|--------------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | | |
| | | +N/-S (usft) | +E/-W (usft) | Comment | |
| 500.0 | 500.0 | 0.0 | 0.0 | KOP / Build 3° / 100' | |
| 1,383.3 | 1,352.1 | 24.7 | -199.1 | EOB @ 26.5° Inc. / 277.07° Azm | |
| 5,292.7 | 4,850.9 | 239.5 | -1,930.1 | Drop 3° / 100' | |
| 6,176.0 | 5,703.0 | 264.2 | -2,129.2 | EOD @ Vertical | |
| 8,176.0 | 7,703.0 | 264.2 | -2,129.2 | TD @ 8176' MD / 7703' TVD | |