



Project: Mesa County, CO
 Site: Nichols 24-06A
 Well: Nichols 0994-13-20E
 Wellbore: Wellbore #1
 Design: Design #1
 Latitude: 39.264717
 Longitude: -107.830528
 Ground Level: 7137.0
 well @ 7167.0usft (H&P #522)



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 Nichols 0994-13-20E, True North
 Vertical (TVD) Reference: well @ 7167.0usft (H&P #522)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: well @ 7167.0usft (H&P #522)
 Calculation Method: Minimum Curvature

WELL DETAILS:

Nichols 0994-13-20E

| +N/-S | +E/-W | Northing | Ground Level: Easting | 7137.0 Latitude | Longitude |
|-------|-------|------------|--------------------------|--------------------|-------------|
| 0.0 | 0.0 | 1529770.12 | 2340235.22 | 39.264717 | -107.830528 |

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

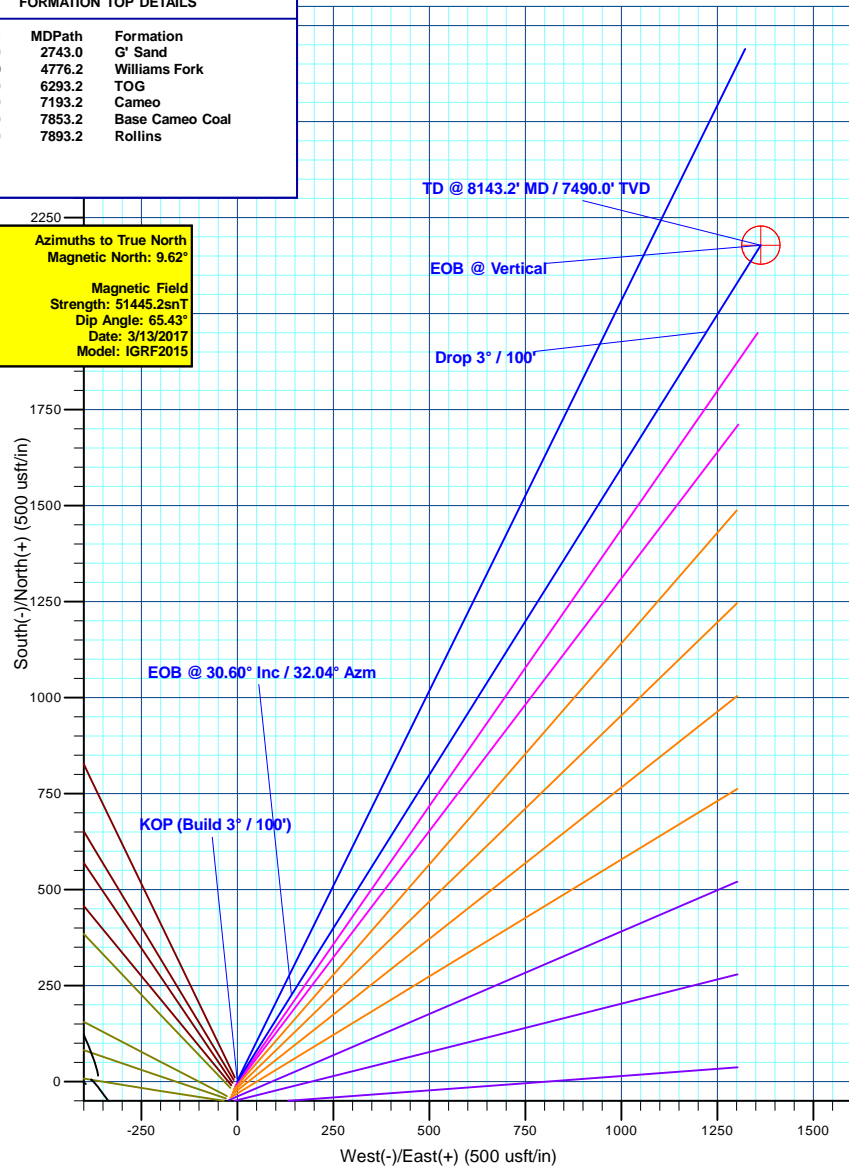
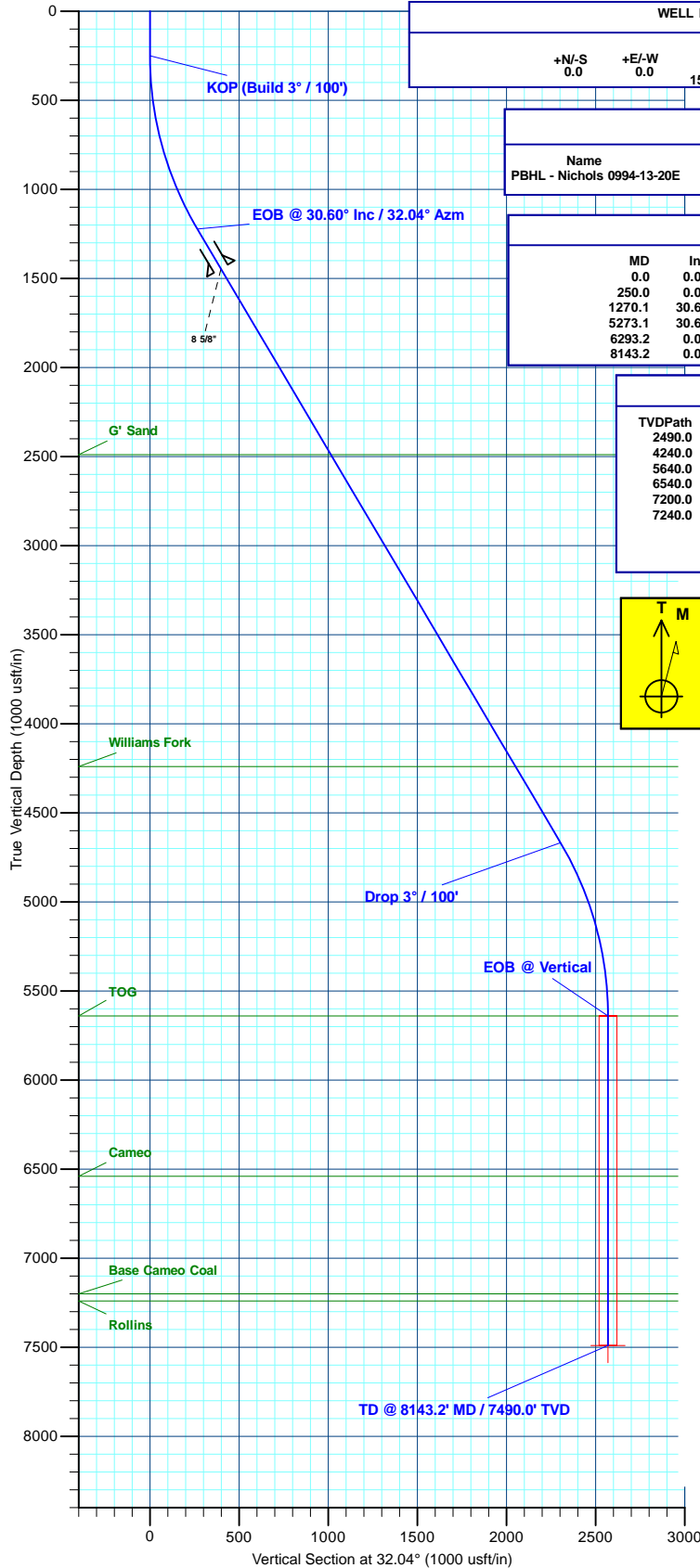
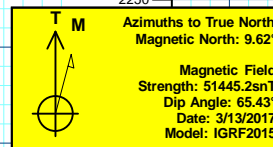
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|----------------------------|--------|--------|--------|------------|------------|-----------|-------------|
| PBHL - Nichols 0994-13-20E | 7490.0 | 2178.4 | 1363.4 | 1531912.86 | 2341654.08 | 39.270698 | -107.825712 |

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 | |
| 250.0 | 0.00 | 0.00 | 250.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | KOP (Build 3° / 100') |
| 1270.1 | 30.60 | 32.04 | 1222.3 | 225.5 | 141.1 | 3.00 | 32.04 | 266.0 | EOB @ 30.60° Inc / 32.04° Azm |
| 5273.1 | 30.60 | 32.04 | 4667.7 | 1952.9 | 1222.3 | 0.00 | 0.00 | 2303.9 | Drop 3° / 100' |
| 6293.2 | 0.00 | 0.00 | 5640.0 | 2178.4 | 1363.4 | 3.00 | 180.00 | 2569.9 | EOB @ Vertical |
| 8143.2 | 0.00 | 0.00 | 7490.0 | 2178.4 | 1363.4 | 0.00 | 0.00 | 2569.9 | TD @ 8143.2' MD / 7490.0' TVD |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|--------|-----------------|
| 2490.0 | 2743.0 | G' Sand |
| 4240.0 | 4776.2 | Williams Fork |
| 5640.0 | 6293.2 | TOG |
| 6540.0 | 7193.2 | Cameo |
| 7200.0 | 7853.2 | Base Cameo Coal |
| 7240.0 | 7893.2 | Rollins |



Plan: Design #1 (Nichols 0994-13-20E/Wellbore #1)

Created By: Will Jircik Date: 18:26, March 13 2017



Laramie Energy, LLC

Mesa County, CO

Nichols 24-06A

Nichols 0994-13-20E

Wellbore #1

Plan: Design #1

QES Well Planning Report

13 March, 2017





Well Planning Report



| | | | |
|------------------|---------------------|-------------------------------------|------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Nichols 0994-13-20E |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7167.0usft (H&P #522) |
| Project: | Mesa County, CO | MD Reference: | well @ 7167.0usft (H&P #522) |
| Site: | Nichols 24-06A | North Reference: | True |
| Well: | Nichols 0994-13-20E | 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 | | Nichols 24-06A | | | |
| Site Position: | | Northing: | 1,529,702.08 usft | Latitude: | 39° 15' 52.301 N |
| From: | Lat/Long | Easting: | 2,340,203.74 usft | Longitude: | 107° 49' 50.279 W |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | -1.47 ° |

| | | | | | | |
|----------------------|---------------------|-----------|---------------------|-------------------|---------------|-------------------|
| Well | Nichols 0994-13-20E | | | | | |
| Well Position | +N/-S | 68.8 usft | Northing: | 1,529,770.12 usft | Latitude: | 39° 15' 52.981 N |
| | +E/-W | 29.7 usft | Easting: | 2,340,235.22 usft | Longitude: | 107° 49' 49.901 W |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | 0.0 usft | Ground Level: | 7,137.0 usft |

| | | | | | |
|-----------|-------------|-------------|-----------------|---------------|---------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 3/13/2017 | 9.62 | 65.43 | 51,445 |

| | | | | |
|-------------------|----------------------------|-----------------|-----------------|------------------|
| 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 | 32.04 |

| 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 | |
| 250.0 | 0.00 | 0.00 | 250.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,270.1 | 30.60 | 32.04 | 1,222.3 | 225.5 | 141.1 | 3.00 | 3.00 | 0.00 | 32.04 | |
| 5,273.1 | 30.60 | 32.04 | 4,667.7 | 1,952.9 | 1,222.3 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,293.2 | 0.00 | 0.00 | 5,640.0 | 2,178.4 | 1,363.4 | 3.00 | -3.00 | 0.00 | 180.00 | |
| 8,143.2 | 0.00 | 0.00 | 7,490.0 | 2,178.4 | 1,363.4 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL - Nichols 0994- |



Well Planning Report



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|------------------|---------------------|-------------------------------------|------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Nichols 0994-13-20E |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7167.0usft (H&P #522) |
| Project: | Mesa County, CO | MD Reference: | well @ 7167.0usft (H&P #522) |
| Site: | Nichols 24-06A | North Reference: | True |
| Well: | Nichols 0994-13-20E | 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 |
| KOP (Build 3° / 100') | | | | | | | | | |
| 250.0 | 0.00 | 0.00 | 250.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 1.50 | 32.04 | 300.0 | 0.6 | 0.3 | 0.7 | 3.00 | 3.00 | 0.00 |
| 400.0 | 4.50 | 32.04 | 399.8 | 5.0 | 3.1 | 5.9 | 3.00 | 3.00 | 0.00 |
| 500.0 | 7.50 | 32.04 | 499.3 | 13.9 | 8.7 | 16.3 | 3.00 | 3.00 | 0.00 |
| 600.0 | 10.50 | 32.04 | 598.0 | 27.1 | 17.0 | 32.0 | 3.00 | 3.00 | 0.00 |
| 700.0 | 13.50 | 32.04 | 695.8 | 44.7 | 28.0 | 52.8 | 3.00 | 3.00 | 0.00 |
| 800.0 | 16.50 | 32.04 | 792.4 | 66.7 | 41.7 | 78.6 | 3.00 | 3.00 | 0.00 |
| 900.0 | 19.50 | 32.04 | 887.5 | 92.9 | 58.1 | 109.5 | 3.00 | 3.00 | 0.00 |
| 1,000.0 | 22.50 | 32.04 | 980.9 | 123.2 | 77.1 | 145.4 | 3.00 | 3.00 | 0.00 |
| 1,100.0 | 25.50 | 32.04 | 1,072.2 | 157.7 | 98.7 | 186.0 | 3.00 | 3.00 | 0.00 |
| 1,200.0 | 28.50 | 32.04 | 1,161.3 | 196.2 | 122.8 | 231.4 | 3.00 | 3.00 | 0.00 |
| EOB @ 30.60° Inc / 32.04° Azm | | | | | | | | | |
| 1,270.1 | 30.60 | 32.04 | 1,222.3 | 225.5 | 141.1 | 266.0 | 3.00 | 3.00 | 0.00 |
| 1,300.0 | 30.60 | 32.04 | 1,248.0 | 238.4 | 149.2 | 281.2 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 30.60 | 32.04 | 1,334.1 | 281.5 | 176.2 | 332.1 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 30.60 | 32.04 | 1,420.2 | 324.7 | 203.2 | 383.1 | 0.00 | 0.00 | 0.00 |
| 8 5/8" | | | | | | | | | |
| 1,530.0 | 30.60 | 32.04 | 1,446.0 | 337.6 | 211.3 | 398.3 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 30.60 | 32.04 | 1,506.2 | 367.9 | 230.2 | 434.0 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 30.60 | 32.04 | 1,592.3 | 411.0 | 257.2 | 484.9 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 30.60 | 32.04 | 1,678.4 | 454.2 | 284.2 | 535.8 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 30.60 | 32.04 | 1,764.4 | 497.3 | 311.3 | 586.7 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 30.60 | 32.04 | 1,850.5 | 540.5 | 338.3 | 637.6 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 30.60 | 32.04 | 1,936.6 | 583.6 | 365.3 | 688.5 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 30.60 | 32.04 | 2,022.7 | 626.8 | 392.3 | 739.4 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 30.60 | 32.04 | 2,108.7 | 669.9 | 419.3 | 790.3 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 30.60 | 32.04 | 2,194.8 | 713.1 | 446.3 | 841.2 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 30.60 | 32.04 | 2,280.9 | 756.2 | 473.3 | 892.1 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 30.60 | 32.04 | 2,366.9 | 799.4 | 500.3 | 943.1 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 30.60 | 32.04 | 2,453.0 | 842.5 | 527.3 | 994.0 | 0.00 | 0.00 | 0.00 |
| G' Sand | | | | | | | | | |
| 2,743.0 | 30.60 | 32.04 | 2,490.0 | 861.1 | 538.9 | 1,015.8 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 30.60 | 32.04 | 2,539.1 | 885.7 | 554.3 | 1,044.9 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 30.60 | 32.04 | 2,625.2 | 928.9 | 581.3 | 1,095.8 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 30.60 | 32.04 | 2,711.2 | 972.0 | 608.4 | 1,146.7 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 30.60 | 32.04 | 2,797.3 | 1,015.2 | 635.4 | 1,197.6 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 30.60 | 32.04 | 2,883.4 | 1,058.3 | 662.4 | 1,248.5 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 30.60 | 32.04 | 2,969.4 | 1,101.5 | 689.4 | 1,299.4 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 30.60 | 32.04 | 3,055.5 | 1,144.6 | 716.4 | 1,350.3 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 30.60 | 32.04 | 3,141.6 | 1,187.8 | 743.4 | 1,401.2 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 30.60 | 32.04 | 3,227.7 | 1,230.9 | 770.4 | 1,452.1 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 30.60 | 32.04 | 3,313.7 | 1,274.1 | 797.4 | 1,503.1 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 30.60 | 32.04 | 3,399.8 | 1,317.2 | 824.4 | 1,554.0 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 30.60 | 32.04 | 3,485.9 | 1,360.4 | 851.4 | 1,604.9 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 30.60 | 32.04 | 3,571.9 | 1,403.5 | 878.4 | 1,655.8 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 30.60 | 32.04 | 3,658.0 | 1,446.7 | 905.5 | 1,706.7 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 30.60 | 32.04 | 3,744.1 | 1,489.9 | 932.5 | 1,757.6 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 30.60 | 32.04 | 3,830.2 | 1,533.0 | 959.5 | 1,808.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 30.60 | 32.04 | 3,916.2 | 1,576.2 | 986.5 | 1,859.4 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 30.60 | 32.04 | 4,002.3 | 1,619.3 | 1,013.5 | 1,910.3 | 0.00 | 0.00 | 0.00 |



Well Planning Report



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|------------------|---------------------|-------------------------------------|------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Nichols 0994-13-20E |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7167.0usft (H&P #522) |
| Project: | Mesa County, CO | MD Reference: | well @ 7167.0usft (H&P #522) |
| Site: | Nichols 24-06A | North Reference: | True |
| Well: | Nichols 0994-13-20E | 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) |
| 4,600.0 | 30.60 | 32.04 | 4,088.4 | 1,662.5 | 1,040.5 | 1,961.2 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 30.60 | 32.04 | 4,174.4 | 1,705.6 | 1,067.5 | 2,012.1 | 0.00 | 0.00 | 0.00 |
| Williams Fork | | | | | | | | | |
| 4,776.2 | 30.60 | 32.04 | 4,240.0 | 1,738.5 | 1,088.1 | 2,050.9 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 30.60 | 32.04 | 4,260.5 | 1,748.8 | 1,094.5 | 2,063.1 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 30.60 | 32.04 | 4,346.6 | 1,791.9 | 1,121.5 | 2,114.0 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 30.60 | 32.04 | 4,432.7 | 1,835.1 | 1,148.5 | 2,164.9 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 30.60 | 32.04 | 4,518.7 | 1,878.2 | 1,175.5 | 2,215.8 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 30.60 | 32.04 | 4,604.8 | 1,921.4 | 1,202.6 | 2,266.7 | 0.00 | 0.00 | 0.00 |
| Drop 3° / 100' | | | | | | | | | |
| 5,273.1 | 30.60 | 32.04 | 4,667.7 | 1,952.9 | 1,222.3 | 2,303.9 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 29.80 | 32.04 | 4,691.0 | 1,964.4 | 1,229.5 | 2,317.4 | 3.00 | -3.00 | 0.00 |
| 5,400.0 | 26.80 | 32.04 | 4,779.0 | 2,004.6 | 1,254.6 | 2,364.8 | 3.00 | -3.00 | 0.00 |
| 5,500.0 | 23.80 | 32.04 | 4,869.4 | 2,040.8 | 1,277.3 | 2,407.6 | 3.00 | -3.00 | 0.00 |
| 5,600.0 | 20.80 | 32.04 | 4,961.9 | 2,073.0 | 1,297.4 | 2,445.5 | 3.00 | -3.00 | 0.00 |
| 5,700.0 | 17.80 | 32.04 | 5,056.3 | 2,101.0 | 1,314.9 | 2,478.5 | 3.00 | -3.00 | 0.00 |
| 5,800.0 | 14.80 | 32.04 | 5,152.3 | 2,124.8 | 1,329.8 | 2,506.6 | 3.00 | -3.00 | 0.00 |
| 5,900.0 | 11.80 | 32.04 | 5,249.6 | 2,144.2 | 1,342.0 | 2,529.6 | 3.00 | -3.00 | 0.00 |
| 6,000.0 | 8.80 | 32.04 | 5,347.9 | 2,159.4 | 1,351.5 | 2,547.5 | 3.00 | -3.00 | 0.00 |
| 6,100.0 | 5.80 | 32.04 | 5,447.1 | 2,170.2 | 1,358.2 | 2,560.2 | 3.00 | -3.00 | 0.00 |
| 6,200.0 | 2.80 | 32.04 | 5,546.8 | 2,176.5 | 1,362.2 | 2,567.7 | 3.00 | -3.00 | 0.00 |
| EOB @ Vertical - TOG | | | | | | | | | |
| 6,293.2 | 0.00 | 0.00 | 5,640.0 | 2,178.4 | 1,363.4 | 2,569.9 | 3.00 | -3.00 | -34.38 |
| 6,300.0 | 0.00 | 0.00 | 5,646.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 5,746.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 0.00 | 0.00 | 5,846.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 5,946.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 0.00 | 0.00 | 6,046.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,146.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 0.00 | 0.00 | 6,246.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 6,346.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 0.00 | 0.00 | 6,446.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| Cameo | | | | | | | | | |
| 7,193.2 | 0.00 | 0.00 | 6,540.0 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 6,546.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 0.00 | 0.00 | 6,646.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 6,746.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 0.00 | 0.00 | 6,846.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 0.00 | 0.00 | 6,946.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 0.00 | 0.00 | 7,046.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 0.00 | 0.00 | 7,146.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| Base Cameo Coal | | | | | | | | | |
| 7,853.2 | 0.00 | 0.00 | 7,200.0 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| Rollins | | | | | | | | | |
| 7,893.2 | 0.00 | 0.00 | 7,240.0 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 7,246.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 0.00 | 0.00 | 7,346.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 0.00 | 0.00 | 7,446.8 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |
| TD @ 8143.2' MD / 7490.0' TVD | | | | | | | | | |
| 8,143.2 | 0.00 | 0.00 | 7,490.0 | 2,178.4 | 1,363.4 | 2,569.9 | 0.00 | 0.00 | 0.00 |



Well Planning Report



| | | | |
|------------------|---------------------|-------------------------------------|------------------------------|
| Database: | EDM5002 | Local Co-ordinate Reference: | Well Nichols 0994-13-20E |
| Company: | Laramie Energy, LLC | TVD Reference: | well @ 7167.0usft (H&P #522) |
| Project: | Mesa County, CO | MD Reference: | well @ 7167.0usft (H&P #522) |
| Site: | Nichols 24-06A | North Reference: | True |
| Well: | Nichols 0994-13-20E | 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 - Nichols 0994-13 - plan hits target center - Circle (radius 50.0) | 0.00 | 0.00 | 7,490.0 | 2,178.4 | 1,363.4 | 1,531,912.87 | 2,341,654.08 | 39° 16' 14.513 N | 107° 49' 32.563 W |

| Casing Points | | | | |
|-----------------------------|-----------------------------|--------|---------------------------|-------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
| 1,530.0 | 1,446.0 | 8 5/8" | 8-5/8 | 11 |

| Formations | | | | | |
|-----------------------------|-----------------------------|-----------------|-----------|------------|-------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
| 2,743.0 | 2,490.0 | G' Sand | | | |
| 4,776.2 | 4,240.0 | Williams Fork | | | |
| 6,293.2 | 5,640.0 | TOG | | | |
| 7,193.2 | 6,540.0 | Cameo | | | |
| 7,853.2 | 7,200.0 | Base Cameo Coal | | | |
| 7,893.2 | 7,240.0 | Rollins | | | |

| Plan Annotations | | | | |
|-----------------------------|-----------------------------|-------------------|-----------------|-------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 250.0 | 250.0 | 0.0 | 0.0 | KOP (Build 3° / 100') |
| 1,270.1 | 1,222.3 | 225.5 | 141.1 | EOB @ 30.60° Inc / 32.04° Azm |
| 5,273.1 | 4,667.7 | 1,952.9 | 1,222.3 | Drop 3° / 100' |
| 6,293.2 | 5,640.0 | 2,178.4 | 1,363.4 | EOB @ Vertical |
| 8,143.2 | 7,490.0 | 2,178.4 | 1,363.4 | TD @ 8143.2' MD / 7490.0' TVD |