



Laramie Energy, LLC

Mesa County, CO

Nichols 24-06A

Nichols 0994-24-07E

A-10

Design: Wellbore #1

Survey Report - Geographic

05 December, 2017





Survey Report - Geographic



| | | | |
|------------------|---------------------|-------------------------------------|------------------------------|
| Company: | Laramie Energy, LLC | Local Co-ordinate Reference: | Well Nichols 0994-24-07E |
| Project: | Mesa County, CO | TVD Reference: | well @ 7161.0usft (H&P #290) |
| Site: | Nichols 24-06A | MD Reference: | well @ 7161.0usft (H&P #290) |
| Well: | Nichols 0994-24-07E | North Reference: | True |
| Wellbore: | A-10 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | EDM 5000.1 Single User Db |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| 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: | 39.264528 |
| From: | Lat/Long | Easting: | 2,340,203.74 usft | Longitude: | -107.830633 |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | -1.47 ° |

| | | | | | | |
|----------------------|---------------------|----------|---------------------|-------------------|---------------|--------------|
| Well | Nichols 0994-24-07E | | | | | |
| Well Position | +N/-S | 0.0 usft | Northing: | 1,529,716.09 usft | Latitude: | 39.264567 |
| | +E/-W | 0.0 usft | Easting: | 2,340,210.33 usft | Longitude: | -107.830611 |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | 0.0 usft | Ground Level: | 7,137.0 usft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | A-10 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 11/14/2017 | 9.55 | 65.42 | 51,370.29466222 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|-----|
| Design | Wellbore #1 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 76.56 | |

| | | | | | |
|-----------------------|------------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 12/5/2017 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 201.0 | 7,633.0 | QES MWD Surveys (A-10) | MWD default | MWD - Standard | |

| | | | | | | | | | |
|--------------------------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|----------------------------|---------------------------|-----------------|------------------|
| Survey | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 1,529,716.09 | 2,340,210.33 | 39.264567 | -107.830611 |
| 201.0 | 1.00 | 142.10 | 201.0 | -1.4 | 1.1 | 1,529,714.68 | 2,340,211.37 | 39.264563 | -107.830607 |
| First MWD Survey @ 201.0' MD / 201.0' TVD | | | | | | | | | |
| 292.0 | 1.20 | 119.40 | 292.0 | -2.5 | 2.4 | 1,529,713.55 | 2,340,212.66 | 39.264560 | -107.830603 |
| 382.0 | 2.30 | 106.70 | 381.9 | -3.5 | 4.9 | 1,529,712.50 | 2,340,215.19 | 39.264558 | -107.830594 |
| 473.0 | 2.80 | 97.00 | 472.8 | -4.3 | 8.9 | 1,529,711.61 | 2,340,219.12 | 39.264555 | -107.830580 |
| 564.0 | 3.40 | 86.30 | 563.7 | -4.4 | 13.8 | 1,529,711.39 | 2,340,224.01 | 39.264555 | -107.830563 |
| 654.0 | 4.50 | 76.60 | 653.5 | -3.4 | 19.9 | 1,529,712.22 | 2,340,230.14 | 39.264558 | -107.830541 |
| 744.0 | 6.20 | 72.50 | 743.1 | -1.1 | 28.0 | 1,529,714.29 | 2,340,238.26 | 39.264564 | -107.830512 |
| 835.0 | 7.80 | 74.80 | 833.4 | 2.0 | 38.6 | 1,529,717.11 | 2,340,248.98 | 39.264573 | -107.830475 |
| 927.0 | 9.40 | 72.40 | 924.4 | 5.9 | 51.8 | 1,529,720.68 | 2,340,262.27 | 39.264583 | -107.830428 |
| 1,021.0 | 11.70 | 73.10 | 1,016.8 | 11.0 | 68.2 | 1,529,725.35 | 2,340,278.83 | 39.264597 | -107.830370 |



Survey Report - Geographic



| | | | |
|------------------|---------------------|-------------------------------------|------------------------------|
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| Project: | Mesa County, CO | TVD Reference: | well @ 7161.0usft (H&P #290) |
| Site: | Nichols 24-06A | MD Reference: | well @ 7161.0usft (H&P #290) |
| Well: | Nichols 0994-24-07E | North Reference: | True |
| Wellbore: | A-10 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------|-------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
| 1,116.0 | 13.90 | 70.70 | 1,109.4 | 17.6 | 88.2 | 1,529,731.41 | 2,340,298.98 | 39.264615 | -107.830300 |
| 1,210.0 | 16.50 | 75.70 | 1,200.1 | 24.6 | 111.8 | 1,529,737.83 | 2,340,322.75 | 39.264635 | -107.830216 |
| 1,305.0 | 16.60 | 78.30 | 1,291.2 | 30.7 | 138.2 | 1,529,743.24 | 2,340,349.26 | 39.264651 | -107.830123 |
| 1,399.0 | 16.10 | 77.10 | 1,381.4 | 36.3 | 164.0 | 1,529,748.21 | 2,340,375.25 | 39.264667 | -107.830032 |
| 1,493.0 | 17.70 | 71.50 | 1,471.3 | 43.8 | 190.3 | 1,529,754.98 | 2,340,401.69 | 39.264687 | -107.829939 |
| 1,591.0 | 17.80 | 71.80 | 1,564.7 | 53.2 | 218.7 | 1,529,763.65 | 2,340,430.28 | 39.264713 | -107.829839 |
| 1,686.0 | 17.40 | 70.90 | 1,655.2 | 62.4 | 245.9 | 1,529,772.13 | 2,340,457.72 | 39.264738 | -107.829743 |
| 1,781.0 | 17.10 | 73.70 | 1,746.0 | 70.9 | 272.7 | 1,529,780.01 | 2,340,484.76 | 39.264762 | -107.829648 |
| 1,875.0 | 16.90 | 72.40 | 1,835.8 | 78.9 | 299.0 | 1,529,787.34 | 2,340,511.25 | 39.264784 | -107.829555 |
| 1,970.0 | 16.60 | 75.90 | 1,926.8 | 86.4 | 325.3 | 1,529,794.15 | 2,340,537.75 | 39.264804 | -107.829462 |
| 2,064.0 | 17.40 | 78.20 | 2,016.7 | 92.6 | 352.1 | 1,529,799.60 | 2,340,564.68 | 39.264821 | -107.829368 |
| 2,159.0 | 17.10 | 76.50 | 2,107.4 | 98.7 | 379.6 | 1,529,805.06 | 2,340,592.32 | 39.264838 | -107.829271 |
| 2,253.0 | 16.90 | 76.50 | 2,197.3 | 105.2 | 406.3 | 1,529,810.79 | 2,340,619.20 | 39.264856 | -107.829176 |
| 2,348.0 | 17.70 | 78.20 | 2,288.0 | 111.3 | 433.9 | 1,529,816.26 | 2,340,646.91 | 39.264873 | -107.829079 |
| 2,442.0 | 17.10 | 77.90 | 2,377.7 | 117.2 | 461.4 | 1,529,821.37 | 2,340,674.55 | 39.264889 | -107.828982 |
| 2,537.0 | 16.50 | 77.60 | 2,468.7 | 123.0 | 488.2 | 1,529,826.50 | 2,340,701.53 | 39.264905 | -107.828887 |
| 2,631.0 | 17.50 | 78.50 | 2,558.6 | 128.7 | 515.1 | 1,529,831.50 | 2,340,728.55 | 39.264920 | -107.828792 |
| 2,726.0 | 17.20 | 78.10 | 2,649.2 | 134.4 | 542.8 | 1,529,836.53 | 2,340,756.43 | 39.264936 | -107.828694 |
| 2,821.0 | 18.80 | 78.50 | 2,739.6 | 140.4 | 571.6 | 1,529,841.74 | 2,340,785.32 | 39.264952 | -107.828592 |
| 2,915.0 | 18.50 | 78.10 | 2,828.7 | 146.4 | 601.0 | 1,529,847.07 | 2,340,814.90 | 39.264969 | -107.828489 |
| 3,010.0 | 18.60 | 77.80 | 2,918.7 | 152.8 | 630.6 | 1,529,852.62 | 2,340,844.61 | 39.264986 | -107.828384 |
| 3,105.0 | 18.20 | 77.60 | 3,008.9 | 159.1 | 659.9 | 1,529,858.26 | 2,340,874.06 | 39.265004 | -107.828281 |
| 3,199.0 | 17.90 | 77.80 | 3,098.2 | 165.4 | 688.3 | 1,529,863.73 | 2,340,902.67 | 39.265021 | -107.828180 |
| 3,294.0 | 18.00 | 74.80 | 3,188.6 | 172.3 | 716.8 | 1,529,869.93 | 2,340,931.27 | 39.265040 | -107.828080 |
| 3,389.0 | 17.50 | 75.10 | 3,279.1 | 179.8 | 744.7 | 1,529,876.73 | 2,340,959.43 | 39.265061 | -107.827981 |
| 3,484.0 | 17.10 | 75.20 | 3,369.8 | 187.0 | 772.0 | 1,529,883.27 | 2,340,986.91 | 39.265081 | -107.827884 |
| 3,578.0 | 16.70 | 75.20 | 3,459.7 | 194.0 | 798.5 | 1,529,889.57 | 2,341,013.50 | 39.265100 | -107.827791 |
| 3,673.0 | 16.50 | 74.80 | 3,550.8 | 201.1 | 824.7 | 1,529,895.92 | 2,341,039.89 | 39.265119 | -107.827699 |
| 3,767.0 | 17.80 | 75.30 | 3,640.6 | 208.2 | 851.4 | 1,529,902.38 | 2,341,066.84 | 39.265139 | -107.827604 |
| 3,862.0 | 17.00 | 75.60 | 3,731.2 | 215.3 | 878.9 | 1,529,908.81 | 2,341,094.51 | 39.265158 | -107.827507 |
| 3,957.0 | 16.10 | 76.40 | 3,822.3 | 221.9 | 905.2 | 1,529,914.68 | 2,341,120.93 | 39.265176 | -107.827414 |
| 4,051.0 | 18.00 | 75.40 | 3,912.2 | 228.6 | 931.9 | 1,529,920.72 | 2,341,147.82 | 39.265195 | -107.827320 |
| 4,145.0 | 17.60 | 75.80 | 4,001.7 | 235.8 | 959.8 | 1,529,927.15 | 2,341,175.82 | 39.265214 | -107.827221 |
| 4,240.0 | 17.20 | 74.50 | 4,092.3 | 243.0 | 987.2 | 1,529,933.72 | 2,341,203.46 | 39.265234 | -107.827124 |
| 4,335.0 | 16.70 | 75.40 | 4,183.2 | 250.2 | 1,014.0 | 1,529,940.23 | 2,341,230.38 | 39.265254 | -107.827030 |
| 4,429.0 | 18.40 | 70.40 | 4,272.8 | 258.6 | 1,041.0 | 1,529,947.92 | 2,341,257.63 | 39.265277 | -107.826934 |
| 4,524.0 | 17.60 | 69.30 | 4,363.2 | 268.7 | 1,068.6 | 1,529,957.31 | 2,341,285.44 | 39.265305 | -107.826837 |
| 4,619.0 | 17.20 | 74.60 | 4,453.8 | 277.5 | 1,095.6 | 1,529,965.42 | 2,341,312.64 | 39.265329 | -107.826742 |
| 4,713.0 | 16.30 | 75.00 | 4,543.8 | 284.6 | 1,121.7 | 1,529,971.86 | 2,341,338.96 | 39.265348 | -107.826649 |
| 4,807.0 | 15.60 | 75.10 | 4,634.2 | 291.3 | 1,146.7 | 1,529,977.88 | 2,341,364.08 | 39.265367 | -107.826561 |
| 4,902.0 | 14.40 | 69.90 | 4,726.0 | 298.6 | 1,170.1 | 1,529,984.62 | 2,341,387.70 | 39.265387 | -107.826479 |
| 4,997.0 | 13.60 | 69.20 | 4,818.2 | 306.7 | 1,191.6 | 1,529,992.09 | 2,341,409.43 | 39.265409 | -107.826402 |
| 5,091.0 | 12.60 | 68.50 | 4,909.7 | 314.3 | 1,211.5 | 1,529,999.26 | 2,341,429.49 | 39.265430 | -107.826332 |
| 5,186.0 | 12.20 | 70.30 | 5,002.5 | 321.5 | 1,230.6 | 1,530,005.95 | 2,341,448.76 | 39.265450 | -107.826265 |
| 5,280.0 | 11.30 | 69.40 | 5,094.5 | 328.1 | 1,248.6 | 1,530,012.07 | 2,341,466.90 | 39.265468 | -107.826201 |
| 5,375.0 | 10.50 | 69.70 | 5,187.8 | 334.4 | 1,265.4 | 1,530,017.92 | 2,341,483.88 | 39.265485 | -107.826142 |
| 5,469.0 | 10.10 | 70.20 | 5,280.3 | 340.2 | 1,281.2 | 1,530,023.28 | 2,341,499.81 | 39.265501 | -107.826086 |
| 5,564.0 | 9.10 | 78.60 | 5,374.0 | 344.5 | 1,296.4 | 1,530,027.19 | 2,341,515.12 | 39.265513 | -107.826032 |
| 5,658.0 | 7.60 | 82.10 | 5,467.0 | 346.8 | 1,309.8 | 1,530,029.17 | 2,341,528.62 | 39.265519 | -107.825985 |
| 5,753.0 | 6.70 | 82.10 | 5,561.2 | 348.4 | 1,321.5 | 1,530,030.49 | 2,341,540.37 | 39.265524 | -107.825944 |
| 5,847.0 | 6.10 | 83.00 | 5,654.7 | 349.8 | 1,331.9 | 1,530,031.59 | 2,341,550.79 | 39.265527 | -107.825907 |
| 5,942.0 | 3.90 | 84.00 | 5,749.3 | 350.7 | 1,340.2 | 1,530,032.33 | 2,341,559.04 | 39.265530 | -107.825878 |
| 6,036.0 | 2.00 | 89.10 | 5,843.2 | 351.1 | 1,345.0 | 1,530,032.57 | 2,341,563.86 | 39.265531 | -107.825861 |
| 6,131.0 | 0.70 | 126.40 | 5,938.1 | 350.8 | 1,347.1 | 1,530,032.19 | 2,341,565.98 | 39.265530 | -107.825853 |
| 6,225.0 | 0.70 | 130.10 | 6,032.1 | 350.1 | 1,348.0 | 1,530,031.46 | 2,341,566.86 | 39.265528 | -107.825850 |



Survey Report - Geographic



| | | | |
|------------------|---------------------|-------------------------------------|------------------------------|
| Company: | Laramie Energy, LLC | Local Co-ordinate Reference: | Well Nichols 0994-24-07E |
| Project: | Mesa County, CO | TVD Reference: | well @ 7161.0usft (H&P #290) |
| Site: | Nichols 24-06A | MD Reference: | well @ 7161.0usft (H&P #290) |
| Well: | Nichols 0994-24-07E | North Reference: | True |
| Wellbore: | A-10 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|---------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-----------|-------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude | |
| 6,320.0 | 0.50 | 150.80 | 6,127.1 | 349.3 | 1,348.6 | 1,530,030.71 | 2,341,567.49 | 39.265526 | -107.825848 | |
| 6,415.0 | 0.60 | 167.10 | 6,222.1 | 348.5 | 1,349.0 | 1,530,029.85 | 2,341,567.78 | 39.265524 | -107.825847 | |
| 6,509.0 | 0.60 | 197.50 | 6,316.1 | 347.5 | 1,348.9 | 1,530,028.91 | 2,341,567.72 | 39.265521 | -107.825847 | |
| 6,604.0 | 0.70 | 207.00 | 6,411.1 | 346.5 | 1,348.5 | 1,530,027.93 | 2,341,567.28 | 39.265518 | -107.825848 | |
| 6,698.0 | 0.80 | 218.10 | 6,505.1 | 345.5 | 1,347.8 | 1,530,026.92 | 2,341,566.59 | 39.265516 | -107.825851 | |
| 6,792.0 | 1.20 | 228.20 | 6,599.1 | 344.3 | 1,346.7 | 1,530,025.77 | 2,341,565.42 | 39.265512 | -107.825855 | |
| 6,887.0 | 1.00 | 226.50 | 6,694.1 | 343.1 | 1,345.4 | 1,530,024.57 | 2,341,564.05 | 39.265509 | -107.825859 | |
| 6,982.0 | 1.80 | 218.40 | 6,789.0 | 341.4 | 1,343.8 | 1,530,022.87 | 2,341,562.47 | 39.265504 | -107.825865 | |
| 7,076.0 | 1.80 | 236.40 | 6,883.0 | 339.4 | 1,341.7 | 1,530,020.95 | 2,341,560.28 | 39.265499 | -107.825872 | |
| 7,171.0 | 1.90 | 234.70 | 6,977.9 | 337.7 | 1,339.2 | 1,530,019.28 | 2,341,557.71 | 39.265494 | -107.825881 | |
| 7,266.0 | 1.60 | 217.90 | 7,072.9 | 335.7 | 1,337.1 | 1,530,017.38 | 2,341,555.56 | 39.265489 | -107.825889 | |
| 7,360.0 | 1.70 | 231.10 | 7,166.9 | 333.8 | 1,335.2 | 1,530,015.52 | 2,341,553.62 | 39.265483 | -107.825895 | |
| 7,455.0 | 1.50 | 234.00 | 7,261.8 | 332.2 | 1,333.1 | 1,530,013.96 | 2,341,551.47 | 39.265479 | -107.825903 | |
| 7,550.0 | 1.40 | 233.50 | 7,356.8 | 330.8 | 1,331.1 | 1,530,012.59 | 2,341,549.50 | 39.265475 | -107.825910 | |
| 7,577.0 | 1.40 | 232.60 | 7,383.8 | 330.4 | 1,330.6 | 1,530,012.21 | 2,341,548.96 | 39.265474 | -107.825912 | |
| 7,633.0 | 1.40 | 232.60 | 7,439.8 | 329.5 | 1,329.5 | 1,530,011.40 | 2,341,547.85 | 39.265472 | -107.825915 | |
| Projection to TD @ 7633.0' MD / 7439.8' TVD | | | | | | | | | | |

| Design Annotations | | | | | |
|-----------------------|-----------------------|-------------------|--------------|---------------------------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | | |
| | | +N/-S (usft) | +E/-W (usft) | Comment | |
| 201.0 | 201.0 | -1.4 | 1.1 | First MWD Survey @ 201.0' MD / 201.0' TVD | |
| 7,633.0 | 7,439.8 | 329.5 | 1,329.5 | Projection to TD @ 7633.0' MD / 7439.8' TVD | |