

PICEANCE VLY NAD 83

PA 29-06S-095W

DOE 3-W-29 Pad

PA 13-29 - Slot A3

Wellbore #1

Plan: Plan #1 05Feb09 kjs

Standard Planning Report - Geographic

23 March, 2010

Williams

Planning Report - Geographic

| | | | |
|------------------|------------------------|-------------------------------------|--|
| Database: | Compass R5000 WIN AUTH | Local Co-ordinate Reference: | Well PA 13-29 - Slot A3 |
| Company: | PICEANCE VLY NAD 83 | TVD Reference: | WELL @ 5702.0usft (Nabors 577 (26') kjs) |
| Project: | PA 29-06S-095W | MD Reference: | WELL @ 5702.0usft (Nabors 577 (26') kjs) |
| Site: | DOE 3-W-29 Pad | North Reference: | True |
| Well: | PA 13-29 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 05Feb09 kjs | | |

| | | | |
|--|---------------------------|----------------------|-----------------------------|
| Project PA 29-06S-095W, Garfield County, CO | | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | Using geodetic scale factor |

| | | | |
|------------------------------|----------|--------------------------|-------------------|
| Site DOE 3-W-29 Pad | | | |
| Site Position: | | Northing: | 1,613,247.00 usft |
| From: | Map | Easting: | 2,287,962.20 usft |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13.200 in |
| | | Latitude: | 39° 29' 23.965 N |
| | | Longitude: | 108° 1' 23.779 W |
| | | Grid Convergence: | -1.591 ° |

| | | | |
|--------------------------------|--------------|----------------------------|------------------------------------|
| Well PA 13-29 - Slot A3 | | | |
| Well Position | +N/-S | 0.0 usft | Northing: 1,613,214.80 usft |
| | +E/-W | 0.0 usft | Easting: 2,288,011.70 usft |
| Position Uncertainty | 0.0 usft | Wellhead Elevation: | Latitude: 39° 29' 23.661 N |
| | | | Longitude: 108° 1' 23.137 W |
| | | | Ground Level: 5,676.0 usft |

| | | | | | |
|-----------------------------|-------------------|--------------------|--------------------|------------------|-----------------------|
| Wellbore Wellbore #1 | | | | | |
| Magnetics | Model Name | Sample Date | Declination | Dip Angle | Field Strength |
| | IGRF2010 | 2/3/2009 | (°) | (°) | (nT) |
| | | | 10.666 | 65.794 | 52,486 |

| | | | | |
|-----------------------------------|-------------------------|--------------|----------------------|------------------|
| Design Plan #1 05Feb09 kjs | | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) | +N/-S | +E/-W | Direction |
| | (usft) | (usft) | (usft) | (°) |
| | 0.0 | 0.0 | 0.0 | 301.99 |

| 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 | 0.000 | |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 520.0 | 8.00 | 320.00 | 518.7 | 21.4 | -17.9 | 2.00 | 2.00 | 0.00 | 320.000 | |
| 1,374.8 | 24.48 | 301.17 | 1,337.0 | 159.6 | -209.2 | 2.00 | 1.93 | -2.20 | -27.069 | |
| 4,881.6 | 24.48 | 301.17 | 4,528.4 | 911.8 | -1,452.7 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 5,705.8 | 8.00 | 301.17 | 5,317.0 | 1,030.7 | -1,649.3 | 2.00 | -2.00 | 0.00 | 179.999 | Top Gas (25' Radius) |
| 6,105.8 | 0.00 | 0.00 | 5,715.7 | 1,045.1 | -1,673.2 | 2.00 | -2.00 | 14.71 | 180.000 | |
| 7,857.1 | 0.00 | 0.00 | 7,467.0 | 1,045.1 | -1,673.2 | 0.00 | 0.00 | 0.00 | 0.000 | |

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| Company: | PICEANCE VLY NAD 83 | TVD Reference: | WELL @ 5702.0usft (Nabors 577 (26') kjs) |
| Project: | PA 29-06S-095W | MD Reference: | WELL @ 5702.0usft (Nabors 577 (26') kjs) |
| Site: | DOE 3-W-29 Pad | North Reference: | True |
| Well: | PA 13-29 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 05Feb09 kjs | | |

| Planned 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 | 1,613,214.80 | 2,288,011.70 | 39° 29' 23.661 N | 108° 1' 23.137 W | |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 1,613,214.80 | 2,288,011.70 | 39° 29' 23.661 N | 108° 1' 23.137 W | |
| Start Build 2.00 | | | | | | | | | | |
| 520.0 | 8.00 | 320.00 | 518.7 | 21.4 | -17.9 | 1,613,236.64 | 2,287,994.38 | 39° 29' 23.872 N | 108° 1' 23.365 W | |
| Begin 2°/100 Build & Turn | | | | | | | | | | |
| 1,374.8 | 24.48 | 301.17 | 1,337.0 | 159.6 | -209.2 | 1,613,380.17 | 2,287,807.07 | 39° 29' 25.238 N | 108° 1' 25.805 W | |
| Hold 24.48 Inclination | | | | | | | | | | |
| 2,072.6 | 24.48 | 301.17 | 1,972.0 | 309.3 | -456.6 | 1,613,536.63 | 2,287,563.91 | 39° 29' 26.717 N | 108° 1' 28.961 W | |
| Top of "G" Sand | | | | | | | | | | |
| 2,182.4 | 24.48 | 301.17 | 2,072.0 | 332.9 | -495.5 | 1,613,561.27 | 2,287,525.61 | 39° 29' 26.950 N | 108° 1' 29.458 W | |
| Base of "G" Sand | | | | | | | | | | |
| 2,292.3 | 24.48 | 301.17 | 2,172.0 | 356.4 | -534.5 | 1,613,585.91 | 2,287,487.32 | 39° 29' 27.183 N | 108° 1' 29.955 W | |
| 9 5/8" | | | | | | | | | | |
| 4,314.1 | 24.48 | 301.17 | 4,012.0 | 790.1 | -1,251.5 | 1,614,039.31 | 2,286,782.68 | 39° 29' 31.469 N | 108° 1' 39.100 W | |
| Mesaverde | | | | | | | | | | |
| 4,881.6 | 24.48 | 301.17 | 4,528.4 | 911.8 | -1,452.7 | 1,614,166.56 | 2,286,584.92 | 39° 29' 32.672 N | 108° 1' 41.667 W | |
| Begin 2°/100 Drop | | | | | | | | | | |
| 5,705.8 | 8.00 | 301.17 | 5,317.0 | 1,030.7 | -1,649.3 | 1,614,290.87 | 2,286,391.73 | 39° 29' 33.847 N | 108° 1' 44.175 W | |
| Top Gas - Approx. Top Gas | | | | | | | | | | |
| 6,105.8 | 0.00 | 0.00 | 5,715.7 | 1,045.1 | -1,673.2 | 1,614,305.95 | 2,286,368.29 | 39° 29' 33.989 N | 108° 1' 44.479 W | |
| Vertical | | | | | | | | | | |
| 7,157.1 | 0.00 | 0.00 | 6,767.0 | 1,045.1 | -1,673.2 | 1,614,305.95 | 2,286,368.29 | 39° 29' 33.989 N | 108° 1' 44.479 W | |
| Cameo Coals | | | | | | | | | | |
| 7,707.1 | 0.00 | 0.00 | 7,317.0 | 1,045.1 | -1,673.2 | 1,614,305.95 | 2,286,368.29 | 39° 29' 33.989 N | 108° 1' 44.479 W | |
| Rollins SS | | | | | | | | | | |
| 7,857.1 | 0.00 | 0.00 | 7,467.0 | 1,045.1 | -1,673.2 | 1,614,305.95 | 2,286,368.29 | 39° 29' 33.989 N | 108° 1' 44.479 W | |
| TD at 7857.1 - TD | | | | | | | | | | |

| Design Targets | | | | | | | | | | |
|--|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|--|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude | |
| Top Gas (25' Radius) P/ | 0.00 | 0.00 | 5,317.0 | 1,040.2 | -1,664.9 | 1,614,300.80 | 2,286,376.40 | 39° 29' 33.941 N | 108° 1' 44.374 W | |
| - plan misses target center by 18.1usft at 5707.1usft MD (5318.3 TVD, 1030.8 N, -1649.4 E) | | | | | | | | | | |
| - Circle (radius 25.0) | | | | | | | | | | |
| Top Gas (25' Radius) P/ | 0.00 | 0.00 | 5,317.0 | 1,040.2 | -1,664.9 | 1,614,300.80 | 2,286,376.40 | 39° 29' 33.941 N | 108° 1' 44.374 W | |
| - plan misses target center by 18.1usft at 5707.1usft MD (5318.3 TVD, 1030.8 N, -1649.4 E) | | | | | | | | | | |
| - Circle (radius 25.0) | | | | | | | | | | |
| TD / PBHL PA 13-29 | 0.00 | 0.00 | 7,467.0 | 1,040.2 | -1,664.9 | 1,614,300.80 | 2,286,376.40 | 39° 29' 33.941 N | 108° 1' 44.374 W | |
| - plan misses target center by 9.6usft at 7857.1usft MD (7467.0 TVD, 1045.1 N, -1673.2 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |
| TD / PBHL PA 13-29 (cc | 0.00 | 0.00 | 7,467.0 | 1,040.2 | -1,664.9 | 1,614,300.80 | 2,286,376.40 | 39° 29' 33.941 N | 108° 1' 44.374 W | |
| - plan misses target center by 9.6usft at 7857.1usft MD (7467.0 TVD, 1045.1 N, -1673.2 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |

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Planning Report - Geographic

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| Project: | PA 29-06S-095W | MD Reference: | WELL @ 5702.0usft (Nabors 577 (26') kjs) |
| Site: | DOE 3-W-29 Pad | North Reference: | True |
| Well: | PA 13-29 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 05Feb09 kjs | | |

| Casing Points | | | | |
|-----------------------|-----------------------|--------|----------------------|--------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) |
| 2,292.3 | 2,172.0 | 9 5/8" | 9.625 | 12.250 |

| Formations | | | | | |
|-----------------------|-----------------------|------------------|-----------|---------|-------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
| 2,072.6 | 1,972.0 | Top of "G" Sand | | | |
| 2,182.4 | 2,072.0 | Base of "G" Sand | | | |
| 4,314.1 | 4,012.0 | Mesaverde | | | |
| 5,705.8 | 5,317.0 | Approx. Top Gas | | | |
| 7,157.1 | 6,767.0 | Cameo Coals | | | |
| 7,707.1 | 7,317.0 | Rollins SS | | | |
| 7,857.1 | 7,467.0 | TD | | | |

| Plan Annotations | | | | | |
|-----------------------|-----------------------|-------------------|--------------|---------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment | |
| | | +N/-S (usft) | +E/-W (usft) | | |
| 120.0 | 120.0 | 0.0 | 0.0 | Start Build 2.00 | |
| 520.0 | 518.7 | 21.4 | -17.9 | Begin 2°/100 Build & Turn | |
| 1,374.8 | 1,337.0 | 159.6 | -209.2 | Hold 24.48 Inclination | |
| 4,881.6 | 4,528.4 | 911.8 | -1,452.7 | Begin 2°/100 Drop | |
| 5,705.8 | 5,317.0 | 1,030.7 | -1,649.3 | Top Gas | |
| 6,105.8 | 5,715.7 | 1,045.1 | -1,673.2 | Vertical | |
| 7,857.1 | 7,467.0 | 1,045.1 | -1,673.2 | TD at 7857.1 | |