

PICEANCE VLY NAD 83

RU 31-06S-094W

RWF 34-31 Pad

RWF 33-31 - Slot B11

Wellbore #1

Plan: Design #1 18Feb10 kjs

Standard Planning Report - Geographic

05 May, 2010

Williams
Planning Report - Geographic

| | | | |
|------------------|------------------------|-------------------------------------|--|
| Database: | Compass R5000 WIN AUTH | Local Co-ordinate Reference: | Well RWF 33-31 - Slot B11 |
| Company: | PICEANCE VLY NAD 83 | TVD Reference: | WELL @ 5733.0usft (SSD 573 (26' KB) kjs) |
| Project: | RU 31-06S-094W | MD Reference: | WELL @ 5733.0usft (SSD 573 (26' KB) kjs) |
| Site: | RWF 34-31 Pad | North Reference: | True |
| Well: | RWF 33-31 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 18Feb10 kjs | | |

| | | | |
|--------------------|-----------------------------|----------------------|----------------|
| Project | RU 31-06S-094W, 31-06S-094W | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | |

| | | | | | |
|-----------------------|----------|---------------|-------------------|-------------------|-------------------|
| Site | | RWF 34-31 Pad | | | |
| Site Position: | | Northing: | 1,607,154.40 usft | Latitude: | 39° 28' 30.868 N |
| From: | Map | Easting: | 2,314,309.20 usft | Longitude: | 107° 55' 45.744 W |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13.200 in | Grid Convergence: | -1.532 ° |

| Well | RWF 33-31 - Slot B11 | | | | | |
|----------------------|----------------------|----------|---------------------|-------------------|---------------|-------------------|
| Well Position | +N/-S | 0.0 usft | Northing: | 1,607,179.39 usft | Latitude: | 39° 28' 31.117 N |
| | +E/-W | 0.0 usft | Easting: | 2,314,319.22 usft | Longitude: | 107° 55' 45.625 W |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | | Ground Level: | 5,707.0 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 2/18/2010 | 10.490 | 65.770 | 52,383 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|-----|
| Design | Design #1 18Feb10 kjs | | | | |
| 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 | 10.33 | |

| 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 | |
| 835.3 | 25.03 | 10.33 | 812.7 | 151.3 | 27.6 | 3.50 | 3.50 | 0.00 | 10.326 | |
| 4,863.7 | 25.03 | 10.33 | 4,462.7 | 1,828.4 | 333.1 | 0.00 | 0.00 | 0.00 | 0.000 | |
| 6,115.4 | 0.00 | 0.00 | 5,675.0 | 2,093.2 | 381.4 | 2.00 | -2.00 | 0.00 | 180.000 | Top Gas (25' Radius) |
| 8,665.4 | 0.00 | 0.00 | 8,225.0 | 2,093.2 | 381.4 | 0.00 | 0.00 | 0.00 | 0.000 | |

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| Site: | RWF 34-31 Pad | North Reference: | True |
| Well: | RWF 33-31 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 18Feb10 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 | 1,607,179.39 | 2,314,319.22 | 39° 28' 31.117 N | 107° 55' 45.625 W | |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 1,607,179.39 | 2,314,319.22 | 39° 28' 31.117 N | 107° 55' 45.625 W | |
| Start Build 3.50 | | | | | | | | | | |
| 835.3 | 25.03 | 10.33 | 812.7 | 151.3 | 27.6 | 1,607,329.90 | 2,314,350.82 | 39° 28' 32.613 N | 107° 55' 45.274 W | |
| Hold 25.03 Inclination | | | | | | | | | | |
| 2,399.5 | 25.03 | 10.33 | 2,230.0 | 802.5 | 146.2 | 1,607,977.69 | 2,314,486.83 | 39° 28' 39.049 N | 107° 55' 43.761 W | |
| Top of "G" Sand | | | | | | | | | | |
| 2,509.9 | 25.03 | 10.33 | 2,330.0 | 848.4 | 154.6 | 1,608,023.40 | 2,314,496.43 | 39° 28' 39.503 N | 107° 55' 43.654 W | |
| Base of "G" Sand | | | | | | | | | | |
| 2,620.2 | 25.03 | 10.33 | 2,430.0 | 894.4 | 163.0 | 1,608,069.11 | 2,314,506.02 | 39° 28' 39.957 N | 107° 55' 43.547 W | |
| 9 5/8" | | | | | | | | | | |
| 4,863.7 | 25.03 | 10.33 | 4,462.7 | 1,828.4 | 333.1 | 1,608,998.21 | 2,314,701.10 | 39° 28' 49.188 N | 107° 55' 41.377 W | |
| Start Drop -2.00 | | | | | | | | | | |
| 4,970.2 | 22.91 | 10.33 | 4,560.0 | 1,870.9 | 340.9 | 1,609,040.53 | 2,314,709.99 | 39° 28' 49.609 N | 107° 55' 41.278 W | |
| Mesaverde | | | | | | | | | | |
| 6,115.4 | 0.00 | 0.00 | 5,675.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| Top Gas - Approx. Top Gas | | | | | | | | | | |
| 7,515.4 | 0.00 | 0.00 | 7,075.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| Cameo Coals | | | | | | | | | | |
| 8,340.4 | 0.00 | 0.00 | 7,900.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| Coal D | | | | | | | | | | |
| 8,410.4 | 0.00 | 0.00 | 7,970.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| Base L. Cameo Pay | | | | | | | | | | |
| 8,515.4 | 0.00 | 0.00 | 8,075.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| Rollins SS | | | | | | | | | | |
| 8,665.4 | 0.00 | 0.00 | 8,225.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| TD at 8665.4 - TD | | | | | | | | | | |

| 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 | | | | | | | | | | |
| Top Gas (25' Radius) R\ | 0.00 | 0.00 | 5,675.0 | 2,093.2 | 381.4 | 1,609,261.60 | 2,314,756.40 | 39° 28' 51.805 N | 107° 55' 40.761 W | |
| - plan hits target center | | | | | | | | | | |
| - Circle (radius 25.0) | | | | | | | | | | |

| Casing Points | | | | | | | Casing Diameter (in) | Hole Diameter (in) |
|-----------------------|-----------------------|--------|--|--|--|--|----------------------|--------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | | | | | | |
| 2,620.2 | 2,430.0 | 9 5/8" | | | | | 9.625 | 12.250 |

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| Project: | RU 31-06S-094W | MD Reference: | WELL @ 5733.0usft (SSD 573 (26' KB) kjs) |
| Site: | RWF 34-31 Pad | North Reference: | True |
| Well: | RWF 33-31 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
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| Formations | | | | | | |
|-----------------------|-----------------------|-------------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 2,399.5 | 2,230.0 | Top of "G" Sand | | | | |
| 2,509.9 | 2,330.0 | Base of "G" Sand | | | | |
| 4,970.2 | 4,560.0 | Mesaverde | | | | |
| 6,115.4 | 5,675.0 | Approx. Top Gas | | | | |
| 7,515.4 | 7,075.0 | Cameo Coals | | | | |
| 8,340.4 | 7,900.0 | Coal D | | | | |
| 8,410.4 | 7,970.0 | Base L. Cameo Pay | | | | |
| 8,515.4 | 8,075.0 | Rollins SS | | | | |
| 8,665.4 | 8,225.0 | TD | | 0.000 | | |

| 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 3.50 |
| 835.3 | 812.7 | 151.3 | 27.6 | Hold 25.03 Inclination |
| 4,863.7 | 4,462.7 | 1,828.4 | 333.1 | Start Drop -2.00 |
| 6,115.4 | 5,675.0 | 2,093.2 | 381.4 | Top Gas |
| 8,665.4 | 8,225.0 | 2,093.2 | 381.4 | TD at 8665.4 |