

PICEANCE VLY NAD 83

RU 06-07S-093W

RU 13-6 Pad

RU 21-6 - Slot A11

Wellbore #1

Plan: Design #2 2Nov15 sam

Standard Planning Report

09 November, 2015

WPX

Planning Report

Database:	COMPASS	Local Co-ordinate Reference:	Well RU 21-6 (A11) - Slot A11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KB @ 7009.00usft (HP 318)
Project:	RU 06-07S-093W	MD Reference:	KB @ 7009.00usft (HP 318)
Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 21-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 2Nov15 sam		

Project	RU 06-07S-093W		
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	RU 13-6 Pad			
Site Position:		Northing:	1,603,405.40 usft	Latitude: 39.467067
From: Map		Easting:	2,343,761.30 usft	Longitude: -107.824733
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.47 °

Well	RU 21-6 - Slot A11			
Well Position	+N/-S	73.32 usft	Northing:	1,603,479.10 usft
	+E/-W	-15.78 usft	Easting:	2,343,747.40 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	6,985.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2014	9.87	65.66	51,937

Design	Design #2 2Nov15 sam			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (bearing)
	0.00	0.00	0.00	20.86

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
144.00	0.00	0.00	144.00	0.00	0.00	0.00	0.00	0.00	0.00	
958.78	28.52	20.86	925.55	185.60	70.72	3.50	3.50	0.00	20.86	
5,747.51	28.52	20.86	5,133.29	2,322.00	884.79	0.00	0.00	0.00	0.00	
7,173.37	0.00	0.00	6,501.00	2,646.79	1,008.55	2.00	-2.00	0.00	180.00	
7,773.37	0.00	0.00	7,101.00	2,646.79	1,008.55	0.00	0.00	0.00	0.00	RU 21-6 Top Gas 50'
9,983.37	0.00	0.00	9,311.00	2,646.79	1,008.55	0.00	0.00	0.00	0.00	

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Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 21-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 2Nov15 sam		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144.00	0.00	0.00	144.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.50									
500.00	12.46	20.86	497.20	36.03	13.73	38.56	3.50	3.50	0.00
958.78	28.52	20.86	925.55	185.60	70.72	198.61	3.50	3.50	0.00
Hold 28.52 Inclination									
1,000.00	28.52	20.86	961.77	203.99	77.73	218.29	0.00	0.00	0.00
1,124.00	28.52	20.86	1,070.73	259.31	98.81	277.49	0.00	0.00	0.00
9 5/8"									
1,500.00	28.52	20.86	1,401.11	427.05	162.73	457.01	0.00	0.00	0.00
2,000.00	28.52	20.86	1,840.45	650.12	247.73	695.72	0.00	0.00	0.00
2,500.00	28.52	20.86	2,279.78	873.18	332.72	934.43	0.00	0.00	0.00
3,000.00	28.52	20.86	2,719.12	1,096.25	417.72	1,173.14	0.00	0.00	0.00
3,229.75	28.52	20.86	2,921.00	1,198.75	456.78	1,282.83	0.00	0.00	0.00
Top of "G" Sand									
3,343.56	28.52	20.86	3,021.00	1,249.52	476.13	1,337.16	0.00	0.00	0.00
Base of "G" Sand									
3,500.00	28.52	20.86	3,158.46	1,319.31	502.72	1,411.85	0.00	0.00	0.00
4,000.00	28.52	20.86	3,597.80	1,542.38	587.72	1,650.56	0.00	0.00	0.00
4,500.00	28.52	20.86	4,037.13	1,765.44	672.72	1,889.27	0.00	0.00	0.00
5,000.00	28.52	20.86	4,476.47	1,988.51	757.72	2,127.98	0.00	0.00	0.00
5,500.00	28.52	20.86	4,915.81	2,211.57	842.72	2,366.69	0.00	0.00	0.00
5,747.51	28.52	20.86	5,133.29	2,322.00	884.79	2,484.86	0.00	0.00	0.00
Start Drop -2.00									
6,000.00	23.47	20.86	5,360.17	2,425.36	924.18	2,595.48	2.00	-2.00	0.00
6,103.68	21.39	20.86	5,456.00	2,462.33	938.27	2,635.04	2.00	-2.00	0.00
Mesaverde									
6,500.00	13.47	20.86	5,833.82	2,573.18	980.50	2,753.66	2.00	-2.00	0.00
7,000.00	3.47	20.86	6,327.74	2,641.89	1,006.69	2,827.19	2.00	-2.00	0.00
7,173.37	0.00	0.00	6,501.00	2,646.79	1,008.55	2,832.43	2.00	-2.00	0.00
Vertical									
7,500.00	0.00	0.00	6,827.63	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
7,773.37	0.00	0.00	7,101.00	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
Top of Target - Approx. Top Gas									
8,000.00	0.00	0.00	7,327.63	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
8,500.00	0.00	0.00	7,827.63	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
8,948.37	0.00	0.00	8,276.00	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
Cameo Coals									
9,000.00	0.00	0.00	8,327.63	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
9,500.00	0.00	0.00	8,827.63	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
9,668.37	0.00	0.00	8,996.00	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
Coal D									
9,833.37	0.00	0.00	9,161.00	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
Rollins SS									
9,983.37	0.00	0.00	9,311.00	2,646.79	1,008.55	2,832.43	0.00	0.00	0.00
TD at 9959.37 - TD									

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Project:	RU 06-07S-093W	MD Reference:	KB @ 7009.00usft (HP 318)
Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 21-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 2Nov15 sam		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(bearing)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
RU 21-6 Top Gas 50' Ra	0.00	0.00	7,101.00	2,646.79	1,008.55	1,606,099.10	2,344,823.30	39.474535	-107.821216
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(in)	(in)
1,124.00	1,070.73	9 5/8"		9.625	13.500

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(bearing)	
3,229.75	2,921.00	Top of "G" Sand		0.00		
3,343.56	3,021.00	Base of "G" Sand		0.00		
6,103.68	5,456.00	Mesaverde		0.00		
7,773.37	7,101.00	Approx. Top Gas		0.00		
8,948.37	8,276.00	Cameo Coals		0.00		
9,668.37	8,996.00	Coal D		0.00		
9,833.37	9,161.00	Rollins SS		0.00		
9,983.37	9,311.00	TD		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)		
144.00	144.00	0.00	0.00	Start Build 3.50	
958.78	925.55	185.60	70.72	Hold 28.52 Inclination	
5,747.51	5,133.29	2,322.00	884.79	Start Drop -2.00	
7,173.37	6,501.00	2,646.79	1,008.55	Vertical	
7,773.37	7,101.00	2,646.79	1,008.55	Top of Target	
9,983.37	9,311.00	2,646.79	1,008.55	TD at 9959.37	