



PICEANCE HL NAD 83

RG 23-01S-098W

RGU 43-23-198 Pad

RGU 33-23-198 - Slot A5

Wellbore #1

Plan: Design #2 15Jan13 kjs

Standard Planning Report - Geographic

17 April, 2013



WPX Energy
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RGU 33-23-198 - Slot A5
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6588.00usft (Cyclone 29 (21' RKB) kjs)
Project:	RG 23-01S-098W	MD Reference:	KELLY BUSHING @ 6588.00usft (Cyclone 29 (21' RKB) kjs)
Site:	RGU 43-23-198 Pad	North Reference:	True
Well:	RGU 33-23-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 15Jan13 kjs		

Project	RG 23-01S-098W, Rio Blanco 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	RGU 43-23-198 Pad			
Site Position:		Northing:	1,781,556.00 usft	Latitude: 39.94469
From: Map		Easting:	2,199,927.00 usft	Longitude: -108.35379
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.7999 °

Well	RGU 33-23-198 - Slot A5					
Well Position	+N/-S	0.10 usft	Northing:	1,781,577.00 usft	Latitude:	39.94475
	+E/-W	0.11 usft	Easting:	2,199,968.10 usft	Longitude:	-108.35364
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,567.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/27/2012	10.4375	66.0132	52,338

Design	Design #2 15Jan13 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.11	317.96

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
0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.0000	
120.00	0.00	0.00	120.00	0.00	0.11	0.00	0.00	0.00	0.0000	
277.14	5.50	317.96	276.90	5.60	-4.93	3.50	3.50	0.00	317.9600	
3,515.15	5.50	317.96	3,500.00	236.09	-212.76	0.00	0.00	0.00	0.0000	
4,092.35	25.70	317.96	4,053.06	350.79	-316.16	3.50	3.50	0.00	0.0000	
6,692.07	25.70	317.96	6,395.57	1,188.19	-1,071.11	0.00	0.00	0.00	0.0000	
7,977.17	0.00	0.00	7,638.00	1,398.71	-1,260.90	2.00	-2.00	0.00	180.0000	
8,077.17	0.00	0.00	7,738.00	1,398.71	-1,260.90	0.00	0.00	0.00	0.0000	Mesaverde (25' Radiu
12,907.17	0.00	0.00	12,568.00	1,398.71	-1,260.90	0.00	0.00	0.00	0.0000	



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Site:	RGU 43-23-198 Pad	North Reference:	True
Well:	RGU 33-23-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 15Jan13 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	
0.00	0.00	0.00	0.00	0.00	0.11	1,781,576.90	2,199,968.10	39.94475	-108.35364	
120.00	0.00	0.00	120.00	0.00	0.11	1,781,576.90	2,199,968.10	39.94475	-108.35364	
Start Build 3.50										
277.14	5.50	317.96	276.90	5.60	-4.93	1,781,582.65	2,199,963.23	39.94476	-108.35366	
Hold 5.50 Inc, 317.96° azi										
500.00	5.50	317.96	498.73	21.46	-19.24	1,781,598.96	2,199,949.43	39.94481	-108.35371	
1,000.00	5.50	317.96	996.43	57.06	-51.33	1,781,635.54	2,199,918.47	39.94490	-108.35382	
1,207.52	5.50	317.96	1,203.00	71.83	-64.65	1,781,650.72	2,199,905.63	39.94495	-108.35387	
Green River Fm										
1,403.43	5.50	317.96	1,398.00	85.77	-77.22	1,781,665.05	2,199,893.50	39.94498	-108.35392	
A Groove										
1,500.00	5.50	317.96	1,494.13	92.65	-83.42	1,781,672.12	2,199,887.52	39.94500	-108.35394	
1,594.31	5.50	317.96	1,588.00	99.36	-89.47	1,781,679.02	2,199,881.68	39.94502	-108.35396	
B Groove										
1,900.72	5.50	317.96	1,893.00	121.17	-109.14	1,781,701.44	2,199,862.71	39.94508	-108.35403	
Dissolution Surface										
2,000.00	5.50	317.96	1,991.83	128.24	-115.51	1,781,708.70	2,199,856.56	39.94510	-108.35405	
2,500.00	5.50	317.96	2,489.53	163.83	-147.60	1,781,745.28	2,199,825.60	39.94520	-108.35417	
3,000.00	5.50	317.96	2,987.22	199.42	-179.69	1,781,781.87	2,199,794.64	39.94530	-108.35428	
3,005.80	5.50	317.96	2,993.00	199.83	-180.07	1,781,782.29	2,199,794.28	39.94530	-108.35428	
Garden Gulch										
3,176.59	5.50	317.96	3,163.00	211.99	-191.03	1,781,794.79	2,199,783.71	39.94533	-108.35432	
Orange Marker										
3,397.61	5.50	317.96	3,383.00	227.72	-205.21	1,781,810.96	2,199,770.02	39.94537	-108.35437	
Wasatch										
3,500.00	5.50	317.96	3,484.92	235.01	-211.79	1,781,818.45	2,199,763.68	39.94539	-108.35440	
3,515.15	5.50	317.96	3,500.00	236.09	-212.76	1,781,819.56	2,199,762.75	39.94540	-108.35440	
Start Build 3.50										
3,908.21	19.26	317.96	3,883.00	298.52	-269.05	1,781,883.72	2,199,708.45	39.94557	-108.35460	
9 5/8"										
4,000.00	22.47	317.96	3,968.76	322.79	-290.94	1,781,908.67	2,199,687.33	39.94563	-108.35468	
4,092.35	25.70	317.96	4,053.06	350.79	-316.16	1,781,937.44	2,199,663.00	39.94571	-108.35477	
Hold 25.70 Inclination										
4,500.00	25.70	317.96	4,420.38	482.10	-434.54	1,782,072.41	2,199,548.80	39.94607	-108.35519	
5,000.00	25.70	317.96	4,870.91	643.15	-579.74	1,782,237.94	2,199,408.73	39.94651	-108.35571	
5,500.00	25.70	317.96	5,321.44	804.21	-724.94	1,782,403.48	2,199,268.66	39.94696	-108.35623	
5,917.91	25.70	317.96	5,698.00	938.82	-846.30	1,782,541.84	2,199,151.59	39.94732	-108.35666	
Top of "G" Sand										
6,000.00	25.70	317.96	5,771.97	965.27	-870.14	1,782,569.02	2,199,128.59	39.94740	-108.35675	
6,317.44	25.70	317.96	6,058.00	1,067.52	-962.32	1,782,674.11	2,199,039.66	39.94768	-108.35707	
Fort Union										
6,500.00	25.70	317.96	6,222.50	1,126.33	-1,015.34	1,782,734.56	2,198,988.52	39.94784	-108.35726	
6,692.07	25.70	317.96	6,395.57	1,188.19	-1,071.11	1,782,798.15	2,198,934.72	39.94801	-108.35746	
Start Drop -2.00										
7,000.00	19.54	317.96	6,679.67	1,276.13	-1,150.39	1,782,888.53	2,198,858.24	39.94825	-108.35774	
7,500.00	9.54	317.96	7,163.03	1,369.26	-1,234.36	1,782,984.25	2,198,777.24	39.94851	-108.35804	
7,807.07	3.40	317.96	7,468.00	1,394.96	-1,257.52	1,783,010.67	2,198,754.89	39.94858	-108.35813	
Ohio Creek										
7,977.17	0.00	0.00	7,638.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814	
Vertical										
8,000.00	0.00	0.00	7,660.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814	



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Site:	RGU 43-23-198 Pad	North Reference:	True
Well:	RGU 33-23-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 15Jan13 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
8,077.17	0.00	0.00	7,738.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Mesaverde - Mesaverde									
8,500.00	0.00	0.00	8,160.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
9,000.00	0.00	0.00	8,660.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
9,127.17	0.00	0.00	8,788.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Approx. Top Gas									
9,500.00	0.00	0.00	9,160.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
10,000.00	0.00	0.00	9,660.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
10,500.00	0.00	0.00	10,160.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
11,000.00	0.00	0.00	10,660.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
11,107.17	0.00	0.00	10,768.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Cameo Coals									
11,500.00	0.00	0.00	11,160.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
11,682.17	0.00	0.00	11,343.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Rollins SS									
11,807.17	0.00	0.00	11,468.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Cozzette									
12,000.00	0.00	0.00	11,660.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
12,032.17	0.00	0.00	11,693.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Corcoran									
12,427.17	0.00	0.00	12,088.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Upper Sego									
12,500.00	0.00	0.00	12,160.83	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
12,657.17	0.00	0.00	12,318.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
Lower Sego									
12,907.17	0.00	0.00	12,568.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
TD at 12907.17 - 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									
Mesaverde (25' Radius)	0.00	0.00	7,738.00	1,398.71	-1,260.90	1,783,014.52	2,198,751.63	39.94859	-108.35814
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
3,908.21	3,883.00	9 5/8"	9.625	14.750	



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Project:	RG 23-01S-098W	MD Reference:	KELLY BUSHING @ 6588.00usft (Cyclone 29 (21' RKB) kjs)
Site:	RGU 43-23-198 Pad	North Reference:	True
Well:	RGU 33-23-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 15Jan13 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,207.52	1,203.00	Green River Fm				
1,403.43	1,398.00	A Groove				
1,594.31	1,588.00	B Groove				
1,900.72	1,893.00	Dissolution Surface				
3,005.80	2,993.00	Garden Gulch				
3,176.59	3,163.00	Orange Marker				
3,397.61	3,383.00	Wasatch				
5,917.91	5,698.00	Top of "G" Sand				
6,317.44	6,058.00	Fort Union				
7,807.07	7,468.00	Ohio Creek				
8,077.17	7,738.00	Mesaverde				
9,127.17	8,788.00	Approx. Top Gas				
11,107.17	10,768.00	Cameo Coals				
11,682.17	11,343.00	Rollins SS				
11,807.17	11,468.00	Cozzette				
12,032.17	11,693.00	Corcoran				
12,427.17	12,088.00	Upper Sego				
12,657.17	12,318.00	Lower Sego				
12,907.17	12,568.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.11	Start Build 3.50	
277.14	276.90	5.60	-4.93	Hold 5.50 Inc, 317.96° azi	
3,515.15	3,500.00	236.09	-212.76	Start Build 3.50	
4,092.35	4,053.06	350.79	-316.16	Hold 25.70 Inclination	
6,692.07	6,395.57	1,188.19	-1,071.11	Start Drop -2.00	
7,977.17	7,638.00	1,398.71	-1,260.90	Vertical	
8,077.17	7,738.00	1,398.71	-1,260.90	Mesaverde	
12,907.17	12,568.00	1,398.71	-1,260.90	TD at 12907.17	