



PICEANCE VLY NAD 83

PA 21-06S-095W

PA 22-21 Pad

PA 331-21 - Slot 2A9

Wellbore #1

Plan: Design #2 07Nov12 kjs

Standard Planning Report - Geographic

11 March, 2013



WPX Energy
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well PA 331-21 - Slot 2A9
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Project:	PA 21-06S-095W	MD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Site:	PA 22-21 Pad	North Reference:	True
Well:	PA 331-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 kjs		

Project	PA 21-06S-095W, Garfield County, CO, 21-06S-095W		
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	PA 22-21 Pad			
Site Position:		Northing:	1,620,701.00 usft	Latitude: 39.51079
From: Map		Easting:	2,292,437.50 usft	Longitude: -108.00815
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.58 °

Well	PA 331-21 - Slot 2A9			
Well Position	+N/-S	0.00 usft	Northing:	1,620,601.00 usft
	+E/-W	0.00 usft	Easting:	2,292,449.50 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	6,030.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/6/2012	10.23	65.72	52,157

Design	Design #2 07Nov12 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	0.00	47.91

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	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
525.00	15.00	63.75	520.73	21.59	43.77	4.00	4.00	0.00	63.75	
900.34	28.85	47.39	868.37	104.85	154.62	4.00	3.69	-4.36	-31.65	
6,013.23	28.85	47.39	5,346.65	1,775.14	1,970.36	0.00	0.00	0.00	0.00	
7,455.78	0.00	272.15	6,729.00	2,015.87	2,232.05	2.00	-2.00	-9.38	-180.00	Top Gas (25' Radius)
9,555.78	0.00	272.15	8,829.00	2,015.87	2,232.05	0.00	0.00	0.00	0.00	



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Well:	PA 331-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 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	0.00	1,620,601.00	2,292,449.50	39.51051	-108.00810	
150.00	0.00	0.00	150.00	0.00	0.00	1,620,601.00	2,292,449.50	39.51051	-108.00810	
Start Build 4.00										
500.00	14.00	63.75	496.53	18.82	38.16	1,620,618.75	2,292,488.17	39.51057	-108.00797	
525.00	15.00	63.75	520.73	21.59	43.77	1,620,621.37	2,292,493.85	39.51057	-108.00795	
Begin 4°/100 Build & Turn										
900.34	28.85	47.39	868.37	104.85	154.62	1,620,701.54	2,292,606.95	39.51080	-108.00755	
Hold 28.85 Inc, 47.39° azi										
1,000.00	28.85	47.39	955.66	137.41	190.01	1,620,733.11	2,292,643.23	39.51089	-108.00743	
1,056.00	28.85	47.39	1,004.71	155.71	209.90	1,620,750.84	2,292,663.61	39.51094	-108.00736	
9 5/8"										
1,500.00	28.85	47.39	1,393.60	300.75	367.58	1,620,891.48	2,292,825.23	39.51134	-108.00680	
2,000.00	28.85	47.39	1,831.54	464.09	545.14	1,621,049.85	2,293,007.22	39.51179	-108.00617	
2,500.00	28.85	47.39	2,269.48	627.43	722.71	1,621,208.22	2,293,189.22	39.51224	-108.00554	
3,000.00	28.85	47.39	2,707.42	790.77	900.27	1,621,366.59	2,293,371.22	39.51269	-108.00491	
3,195.89	28.85	47.39	2,879.00	854.77	969.84	1,621,428.63	2,293,442.53	39.51286	-108.00466	
Top of "G" Sand										
3,310.06	28.85	47.39	2,979.00	892.06	1,010.38	1,621,464.80	2,293,484.08	39.51296	-108.00452	
Base of "G" Sand										
3,500.00	28.85	47.39	3,145.36	954.11	1,077.83	1,621,524.96	2,293,553.22	39.51313	-108.00428	
4,000.00	28.85	47.39	3,583.30	1,117.45	1,255.40	1,621,683.33	2,293,735.22	39.51358	-108.00365	
4,500.00	28.85	47.39	4,021.24	1,280.79	1,432.96	1,621,841.70	2,293,917.22	39.51403	-108.00302	
5,000.00	28.85	47.39	4,459.18	1,444.13	1,610.53	1,622,000.07	2,294,099.22	39.51448	-108.00239	
5,500.00	28.85	47.39	4,897.12	1,607.47	1,788.09	1,622,158.44	2,294,281.22	39.51493	-108.00176	
5,827.54	28.85	47.39	5,184.00	1,714.47	1,904.41	1,622,262.18	2,294,400.44	39.51522	-108.00135	
Mesaverde										
6,000.00	28.85	47.39	5,335.06	1,770.81	1,965.66	1,622,316.81	2,294,463.21	39.51538	-108.00113	
6,013.23	28.85	47.39	5,346.65	1,775.14	1,970.36	1,622,321.00	2,294,468.03	39.51539	-108.00112	
Begin 2°/100 Drop										
6,500.00	19.12	47.39	5,790.86	1,908.92	2,115.80	1,622,450.72	2,294,617.10	39.51576	-108.00060	
7,000.00	9.12	47.39	6,275.14	1,991.37	2,205.43	1,622,530.66	2,294,708.97	39.51598	-108.00028	
7,455.78	0.00	272.15	6,729.00	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
Top Gas - Approx. Top Gas										
7,500.00	0.00	272.15	6,773.22	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
8,000.00	0.00	272.15	7,273.22	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
8,500.00	0.00	272.15	7,773.22	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
8,625.78	0.00	272.15	7,899.00	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
Cameo Coals										
9,000.00	0.00	272.15	8,273.22	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
9,455.78	0.00	272.15	8,729.00	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
Rollins SS										
9,500.00	0.00	272.15	8,773.22	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
9,555.78	0.00	272.15	8,829.00	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019	
TD at 9555.78 - TD										



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Project:	PA 21-06S-095W	MD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Site:	PA 22-21 Pad	North Reference:	True
Well:	PA 331-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 kjs		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (25' Radius) P/ - plan hits target center - Circle (radius 25.00)	0.00	0.00	6,729.00	2,015.87	2,232.05	1,622,554.41	2,294,736.26	39.51605	-108.00019

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,056.00	1,004.71	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,195.89	2,879.00	Top of "G" Sand				
3,310.06	2,979.00	Base of "G" Sand				
5,827.54	5,184.00	Mesaverde				
7,455.78	6,729.00	Approx. Top Gas				
8,625.78	7,899.00	Cameo Coals				
9,455.78	8,729.00	Rollins SS				
9,555.78	8,829.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
150.00	150.00	0.00	0.00	Start Build 4.00	
525.00	520.73	21.59	43.77	Begin 4°/100 Build & Turn	
900.34	868.37	104.85	154.62	Hold 28.85 Inc, 47.39° azi	
6,013.23	5,346.65	1,775.14	1,970.36	Begin 2°/100 Drop	
7,455.78	6,729.00	2,015.87	2,232.05	Top Gas	
9,555.78	8,829.00	2,015.87	2,232.05	TD at 9555.78	