



# **PICEANCE VLY NAD 83**

**RU 08-07S-093W**

**RU 21-8 Pad**

**RU 14-5 - Slot B09**

**Wellbore #1**

**Plan: Design #1 09Sep14 mab**

## **Standard Planning Report - Geographic**

**26 November, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 14-5 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 14-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 09Sep14 mab		

<b>Project</b>	RU 08-07S-093W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	RU 21-8 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,602,707.70 usft	<b>Latitude:</b> 39.46553
<b>From:</b> Map		<b>Easting:</b>	2,350,555.60 usft	<b>Longitude:</b> -107.80061
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.45 °

<b>Well</b>	RU 14-5 - Slot B09			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,602,672.37 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,350,497.22 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	7,736.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/9/2014	9.84	65.66	51,918

<b>Design</b>	Design #1 09Sep14 mab			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (bearing)</b>
	0.00	0.00	0.00	311.19

<b>Plan Sections</b>										
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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
610.17	14.71	311.19	604.81	41.20	-47.07	3.00	3.00	0.00	311.19	
5,925.87	14.71	311.19	5,746.39	929.87	-1,062.47	0.00	0.00	0.00	0.00	
6,906.20	0.00	0.00	6,716.00	1,012.27	-1,156.61	1.50	-1.50	0.00	180.00	
7,406.20	0.00	0.00	7,216.00	1,012.27	-1,156.61	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
10,156.20	0.00	0.00	9,966.00	1,012.27	-1,156.61	0.00	0.00	0.00	0.00	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 14-5 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 14-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 09Sep14 mab		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	1,602,672.37	2,350,497.22	39.46553	-107.80082	
120.00	0.00	0.00	120.00	0.00	0.00	1,602,672.37	2,350,497.22	39.46553	-107.80082	
Start Build 3.00										
200.00	2.40	311.19	199.98	1.10	-1.26	1,602,673.51	2,350,495.99	39.46553	-107.80082	
400.00	8.40	311.19	399.00	13.49	-15.42	1,602,686.25	2,350,482.15	39.46556	-107.80087	
600.00	14.40	311.19	594.96	39.52	-45.15	1,602,713.02	2,350,453.08	39.46564	-107.80098	
610.17	14.71	311.19	604.81	41.20	-47.07	1,602,714.75	2,350,451.20	39.46564	-107.80098	
Hold 14.71° Inc, 311.19° Az										
800.00	14.71	311.19	788.42	72.94	-83.34	1,602,747.40	2,350,415.76	39.46573	-107.80111	
1,000.00	14.71	311.19	981.87	106.37	-121.54	1,602,781.79	2,350,378.41	39.46582	-107.80125	
1,200.00	14.71	311.19	1,175.32	139.81	-159.74	1,602,816.18	2,350,341.07	39.46591	-107.80138	
9 5/8"										
1,400.00	14.71	311.19	1,368.77	173.24	-197.95	1,602,850.57	2,350,303.72	39.46600	-107.80152	
1,600.00	14.71	311.19	1,562.21	206.68	-236.15	1,602,884.97	2,350,266.38	39.46609	-107.80165	
1,800.00	14.71	311.19	1,755.66	240.11	-274.35	1,602,919.36	2,350,229.03	39.46619	-107.80179	
2,000.00	14.71	311.19	1,949.11	273.55	-312.56	1,602,953.75	2,350,191.69	39.46628	-107.80192	
2,200.00	14.71	311.19	2,142.56	306.99	-350.76	1,602,988.14	2,350,154.35	39.46637	-107.80206	
2,400.00	14.71	311.19	2,336.01	340.42	-388.96	1,603,022.54	2,350,117.00	39.46646	-107.80220	
2,600.00	14.71	311.19	2,529.46	373.86	-427.17	1,603,056.93	2,350,079.66	39.46655	-107.80233	
2,800.00	14.71	311.19	2,722.91	407.29	-465.37	1,603,091.32	2,350,042.31	39.46665	-107.80247	
3,000.00	14.71	311.19	2,916.36	440.73	-503.57	1,603,125.71	2,350,004.97	39.46674	-107.80260	
3,200.00	14.71	311.19	3,109.81	474.16	-541.78	1,603,160.11	2,349,967.62	39.46683	-107.80274	
3,400.00	14.71	311.19	3,303.26	507.60	-579.98	1,603,194.50	2,349,930.28	39.46692	-107.80287	
3,600.00	14.71	311.19	3,496.71	541.04	-618.18	1,603,228.89	2,349,892.93	39.46701	-107.80301	
3,754.35	14.71	311.19	3,646.00	566.84	-647.67	1,603,255.43	2,349,864.11	39.46708	-107.80311	
Top of "G" Sand										
3,800.00	14.71	311.19	3,690.15	574.47	-656.39	1,603,263.28	2,349,855.59	39.46710	-107.80314	
3,857.74	14.71	311.19	3,746.00	584.12	-667.42	1,603,273.21	2,349,844.81	39.46713	-107.80318	
Base of "G" Sand										
4,000.00	14.71	311.19	3,883.60	607.91	-694.59	1,603,297.68	2,349,818.24	39.46720	-107.80328	
4,200.00	14.71	311.19	4,077.05	641.34	-732.80	1,603,332.07	2,349,780.90	39.46729	-107.80341	
4,400.00	14.71	311.19	4,270.50	674.78	-771.00	1,603,366.46	2,349,743.56	39.46738	-107.80355	
4,600.00	14.71	311.19	4,463.95	708.22	-809.20	1,603,400.85	2,349,706.21	39.46747	-107.80368	
4,800.00	14.71	311.19	4,657.40	741.65	-847.41	1,603,435.25	2,349,668.87	39.46756	-107.80382	
5,000.00	14.71	311.19	4,850.85	775.09	-885.61	1,603,469.64	2,349,631.52	39.46766	-107.80395	
5,200.00	14.71	311.19	5,044.30	808.52	-923.81	1,603,504.03	2,349,594.18	39.46775	-107.80409	
5,400.00	14.71	311.19	5,237.75	841.96	-962.02	1,603,538.43	2,349,556.83	39.46784	-107.80423	
5,600.00	14.71	311.19	5,431.20	875.39	-1,000.22	1,603,572.82	2,349,519.49	39.46793	-107.80436	
5,800.00	14.71	311.19	5,624.65	908.83	-1,038.42	1,603,607.21	2,349,482.14	39.46802	-107.80450	
5,925.87	14.71	311.19	5,746.39	929.87	-1,062.47	1,603,628.85	2,349,458.64	39.46808	-107.80458	
Start Drop -1.50°/100										
6,000.00	13.59	311.19	5,818.27	941.81	-1,076.10	1,603,641.13	2,349,445.31	39.46811	-107.80463	
6,200.00	10.59	311.19	6,013.81	969.40	-1,107.63	1,603,669.51	2,349,414.49	39.46819	-107.80474	
6,349.23	8.35	311.19	6,161.00	985.57	-1,126.11	1,603,686.15	2,349,396.43	39.46823	-107.80481	
Mesaverde										
6,400.00	7.59	311.19	6,211.28	990.21	-1,131.41	1,603,690.92	2,349,391.25	39.46825	-107.80483	
6,600.00	4.59	311.19	6,410.12	1,004.19	-1,147.38	1,603,705.30	2,349,375.63	39.46828	-107.80488	
6,800.00	1.59	311.19	6,609.81	1,011.30	-1,155.50	1,603,712.61	2,349,367.70	39.46830	-107.80491	
6,906.20	0.00	0.00	6,716.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491	
Vertical										
7,000.00	0.00	0.00	6,809.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491	
7,200.00	0.00	0.00	7,009.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 14-5 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 14-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 09Sep14 mab		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,400.00	0.00	0.00	7,209.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
7,406.20	0.00	0.00	7,216.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
Top Gas - Approx. Top Gas									
7,600.00	0.00	0.00	7,409.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
7,800.00	0.00	0.00	7,609.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
8,000.00	0.00	0.00	7,809.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
8,200.00	0.00	0.00	8,009.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
8,400.00	0.00	0.00	8,209.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
8,600.00	0.00	0.00	8,409.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
8,800.00	0.00	0.00	8,609.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,000.00	0.00	0.00	8,809.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,200.00	0.00	0.00	9,009.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,205.20	0.00	0.00	9,015.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
Cameo Coals									
9,400.00	0.00	0.00	9,209.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,600.00	0.00	0.00	9,409.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,800.00	0.00	0.00	9,609.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
9,865.20	0.00	0.00	9,675.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
Coal D									
10,000.00	0.00	0.00	9,809.80	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
10,006.20	0.00	0.00	9,816.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
Rollins SS									
10,156.20	0.00	0.00	9,966.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491
TD at 10156.20									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (50' Radius) RL - plan hits target center - Circle (radius 50.00)	0.00	358.55	7,216.00	1,012.27	-1,156.61	1,603,713.61	2,349,366.61	39.46831	-107.80491

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,200.00	1,175.32	9 5/8"	9.625	13.500	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 14-5 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 14-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 09Sep14 mab		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
3,754.35	3,646.00	Top of "G" Sand				
3,857.74	3,746.00	Base of "G" Sand				
6,349.23	6,161.00	Mesaverde				
7,406.20	7,216.00	Approx. Top Gas				
9,205.20	9,015.00	Cameo Coals				
9,865.20	9,675.00	Coal D				
10,006.20	9,816.00	Rollins SS				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.00	
610.17	604.81	41.20	-47.07	Hold 14.71° Inc, 311.19° Az	
5,925.87	5,746.39	929.87	-1,062.47	Start Drop -1.50°/100	
6,906.20	6,716.00	1,012.27	-1,156.61	Vertical	
7,406.20	7,216.00	1,012.27	-1,156.61	Top Gas	
10,156.20	9,966.00	1,012.27	-1,156.61	TD at 10156.20	