



# **PICEANCE VLY NAD 83**

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

**RU 21-8 Pad**

**RU 531-8 - Slot B05**

**Wellbore #1**

**Plan: Design #1 08Sep14 mab**

## **Standard Planning Report - Geographic**

**04 November, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 531-8 - Slot B05
<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 531-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 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>	1,602,707.70000 usft	<b>Latitude:</b> 39.46563
<b>From:</b> Map		<b>Easting:</b>	2,350,555.60000 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 531-8 - Slot B05			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,602,653.25654 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,350,474.10055 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	9/8/2014	9.84	65.66	51,918

<b>Design</b>	Design #1 08Sep14 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	110.62

<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	
661.86	13.55	110.62	656.82	-22.45	59.67	2.50	2.50	0.00	110.62	
6,594.04	13.55	110.62	6,423.97	-511.75	1,360.19	0.00	0.00	0.00	0.00	
7,271.36	0.00	0.00	7,095.00	-539.81	1,434.78	2.00	-2.00	0.00	180.00	
7,371.36	0.00	0.00	7,195.00	-539.81	1,434.78	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
10,121.36	0.00	0.00	9,945.00	-539.81	1,434.78	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 531-8 - Slot B05
<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 531-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 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	1,602,653.25654	2,350,474.10055	39.46547	-107.80090
120.00	0.00	0.00	120.00	0.00	0.00	1,602,653.25654	2,350,474.10055	39.46547	-107.80090
<b>Start Build 2.50°/100</b>									
200.00	2.00	110.62	199.98	-0.49	1.31	1,602,652.73199	2,350,475.39438	39.46547	-107.80089
400.00	7.00	110.62	399.30	-6.02	15.99	1,602,646.83805	2,350,489.93186	39.46546	-107.80084
600.00	12.00	110.62	596.50	-17.64	46.87	1,602,634.43948	2,350,520.51311	39.46542	-107.80073
661.86	13.55	110.62	656.82	-22.45	59.67	1,602,629.30102	2,350,533.18720	39.46541	-107.80069
<b>Hold 13.55° Inc, 110.62° Az</b>									
800.00	13.55	110.62	791.12	-33.85	89.96	1,602,617.14355	2,350,563.17378	39.46538	-107.80058
1,000.00	13.55	110.62	985.56	-50.34	133.81	1,602,599.54204	2,350,606.58816	39.46533	-107.80042
1,200.00	13.55	110.62	1,179.99	-66.84	177.65	1,602,581.94055	2,350,650.00253	39.46529	-107.80027
<b>9 5/8"</b>									
1,400.00	13.55	110.62	1,374.43	-83.33	221.50	1,602,564.33904	2,350,693.41691	39.46524	-107.80011
1,600.00	13.55	110.62	1,568.87	-99.83	265.34	1,602,546.73753	2,350,736.83129	39.46520	-107.79996
1,800.00	13.55	110.62	1,763.30	-116.33	309.19	1,602,529.13603	2,350,780.24566	39.46515	-107.79980
2,000.00	13.55	110.62	1,957.74	-132.82	353.04	1,602,511.53452	2,350,823.66004	39.46511	-107.79965
2,200.00	13.55	110.62	2,152.18	-149.32	396.88	1,602,493.93301	2,350,867.07442	39.46506	-107.79949
2,400.00	13.55	110.62	2,346.61	-165.82	440.73	1,602,476.33150	2,350,910.48879	39.46502	-107.79934
2,600.00	13.55	110.62	2,541.05	-182.31	484.57	1,602,458.73000	2,350,953.90317	39.46497	-107.79918
2,800.00	13.55	110.62	2,735.48	-198.81	528.42	1,602,441.12849	2,350,997.31755	39.46493	-107.79903
3,000.00	13.55	110.62	2,929.92	-215.31	572.27	1,602,423.52698	2,351,040.73193	39.46488	-107.79887
3,200.00	13.55	110.62	3,124.36	-231.80	616.11	1,602,405.92547	2,351,084.14631	39.46484	-107.79872
3,400.00	13.55	110.62	3,318.79	-248.30	659.96	1,602,388.32397	2,351,127.56068	39.46479	-107.79856
3,600.00	13.55	110.62	3,513.23	-264.80	703.81	1,602,370.72246	2,351,170.97505	39.46475	-107.79841
3,800.00	13.55	110.62	3,707.66	-281.29	747.65	1,602,353.12095	2,351,214.38943	39.46470	-107.79825
4,000.00	13.55	110.62	3,902.10	-297.79	791.50	1,602,335.51944	2,351,257.80381	39.46466	-107.79809
4,200.00	13.55	110.62	4,096.54	-314.28	835.34	1,602,317.91794	2,351,301.21819	39.46461	-107.79794
4,400.00	13.55	110.62	4,290.97	-330.78	879.19	1,602,300.31643	2,351,344.63257	39.46456	-107.79778
4,600.00	13.55	110.62	4,485.41	-347.28	923.04	1,602,282.71492	2,351,388.04694	39.46452	-107.79763
4,800.00	13.55	110.62	4,679.84	-363.77	966.88	1,602,265.11341	2,351,431.46132	39.46447	-107.79747
5,000.00	13.55	110.62	4,874.28	-380.27	1,010.73	1,602,247.51191	2,351,474.87570	39.46443	-107.79732
5,200.00	13.55	110.62	5,068.72	-396.77	1,054.58	1,602,229.91040	2,351,518.29008	39.46438	-107.79716
5,400.00	13.55	110.62	5,263.15	-413.26	1,098.42	1,602,212.30889	2,351,561.70445	39.46434	-107.79701
5,600.00	13.55	110.62	5,457.59	-429.76	1,142.27	1,602,194.70740	2,351,605.11883	39.46429	-107.79685
5,800.00	13.55	110.62	5,652.02	-446.26	1,186.11	1,602,177.10589	2,351,648.53320	39.46425	-107.79670
6,000.00	13.55	110.62	5,846.46	-462.75	1,229.96	1,602,159.50438	2,351,691.94758	39.46420	-107.79654
6,200.00	13.55	110.62	6,040.90	-479.25	1,273.81	1,602,141.90287	2,351,735.36196	39.46416	-107.79639
6,400.00	13.55	110.62	6,235.33	-495.74	1,317.65	1,602,124.30137	2,351,778.77634	39.46411	-107.79623
6,594.04	13.55	110.62	6,423.97	-511.75	1,360.19	1,602,107.22483	2,351,820.89587	39.46407	-107.79608
<b>Start Drop -2.00°/100</b>									
6,600.00	13.43	110.62	6,429.77	-512.24	1,361.49	1,602,106.70213	2,351,822.18512	39.46407	-107.79608
6,800.00	9.43	110.62	6,625.77	-526.19	1,398.57	1,602,091.81726	2,351,858.89886	39.46403	-107.79594
7,000.00	5.43	110.62	6,824.05	-535.29	1,422.76	1,602,082.10556	2,351,882.85293	39.46400	-107.79586
7,200.00	1.43	110.62	7,023.65	-539.50	1,433.95	1,602,077.61432	2,351,893.93063	39.46399	-107.79582
7,271.36	0.00	0.00	7,095.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>Vertical</b>									
7,371.36	0.00	0.00	7,195.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>Top Gas - Approx. Top Gas</b>									
7,400.00	0.00	0.00	7,223.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
7,600.00	0.00	0.00	7,423.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
7,800.00	0.00	0.00	7,623.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
8,000.00	0.00	0.00	7,823.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 531-8 - Slot B05
<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 531-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 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
8,200.00	0.00	0.00	8,023.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
8,400.00	0.00	0.00	8,223.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
8,600.00	0.00	0.00	8,423.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
8,800.00	0.00	0.00	8,623.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,000.00	0.00	0.00	8,823.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,152.36	0.00	0.00	8,976.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>Cameo Coals</b>									
9,200.00	0.00	0.00	9,023.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,400.00	0.00	0.00	9,223.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,600.00	0.00	0.00	9,423.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,800.00	0.00	0.00	9,623.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
9,837.36	0.00	0.00	9,661.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>Coal D</b>									
9,971.36	0.00	0.00	9,795.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>Rollins SS</b>									
10,000.00	0.00	0.00	9,823.64	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
10,121.36	0.00	0.00	9,945.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582
<b>TD at 10121.36 - TD</b>									

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	7,195.00	-539.81	1,434.78	1,602,077.28042	2,351,894.75419	39.46399	-107.79582

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,200.00	1,179.99	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
7,371.36	7,195.00	Approx. Top Gas				
9,152.36	8,976.00	Cameo Coals				
9,837.36	9,661.00	Coal D				
9,971.36	9,795.00	Rollins SS				
10,121.36	9,945.00	TD				

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 531-8 - Slot B05
<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 531-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 mab		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 2.50°/100
661.86	656.82	-22.45	59.67	Hold 13.55° Inc, 110.62° Az
6,594.04	6,423.97	-511.75	1,360.19	Start Drop -2.00°/100
7,271.36	7,095.00	-539.81	1,434.78	Vertical
7,371.36	7,195.00	-539.81	1,434.78	Top Gas
10,121.36	9,945.00	-539.81	1,434.78	TD at 10121.36