

PICEANCE VLY NAD 83

RU 08-07S-093W

RU 21-8 Pad

RU 433-5 - Slot B16

Wellbore #1

Plan: Design #1 09Sep14 mab

Standard Planning Report - Geographic

04 November, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 433-5 - Slot B16
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Project:	RU 08-07S-093W	MD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Site:	RU 21-8 Pad	North Reference:	True
Well:	RU 433-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 09Sep14 mab		

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

Site	RU 21-8 Pad				
Site Position:		Northing:	1,602,707.70000 usft	Latitude:	39.46563
From:	Map	Easting:	2,350,555.60000 usft	Longitude:	-107.80061
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.45 °

Well	RU 433-5 - Slot B16					
Well Position	+N/-S	0.00 usft	Northing:	1,602,705.84378 usft	Latitude:	39.46562
	+E/-W	0.00 usft	Easting:	2,350,537.66806 usft	Longitude:	-107.80068
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,736.00 usft

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

Design	Design #1 09Sep14 mab			
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	43.56

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
370.00	5.00	40.00	369.68	8.35	7.01	2.00	2.00	0.00	40.00	
1,370.00	5.00	40.00	1,365.88	75.12	63.03	0.00	0.00	0.00	0.00	
1,961.59	16.82	43.86	1,945.75	156.86	139.16	2.00	2.00	0.65	5.45	
6,258.55	16.82	43.86	6,058.97	1,053.19	1,000.48	0.00	0.00	0.00	0.00	
7,379.60	0.00	0.00	7,164.00	1,170.96	1,113.65	1.50	-1.50	0.00	180.00	
10,229.60	0.00	0.00	10,014.00	1,170.96	1,113.65	0.00	0.00	0.00	0.00	TD / PBHL RU 433-5

WPX
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Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Project:	RU 08-07S-093W	MD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Site:	RU 21-8 Pad	North Reference:	True
Well:	RU 433-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	1,602,705.84378	2,350,537.66806	39.46562	-107.80068	
120.00	0.00	0.00	120.00	0.00	0.00	1,602,705.84378	2,350,537.66806	39.46562	-107.80068	
Start Build 2.00°/100										
200.00	1.60	40.00	199.99	0.86	0.72	1,602,706.68095	2,350,538.40745	39.46562	-107.80068	
370.00	5.00	40.00	369.68	8.35	7.01	1,602,714.01461	2,350,544.88455	39.46564	-107.80065	
Hold 5.00° Inc, 40.00° Az										
400.00	5.00	40.00	399.57	10.35	8.69	1,602,715.97437	2,350,546.61541	39.46565	-107.80065	
600.00	5.00	40.00	598.81	23.71	19.89	1,602,729.03940	2,350,558.15448	39.46569	-107.80061	
800.00	5.00	40.00	798.05	37.06	31.10	1,602,742.10443	2,350,569.69354	39.46572	-107.80057	
1,000.00	5.00	40.00	997.29	50.41	42.30	1,602,755.16946	2,350,581.23260	39.46576	-107.80053	
1,200.00	5.00	40.00	1,196.52	63.77	53.51	1,602,768.23448	2,350,592.77166	39.46580	-107.80049	
1,370.00	5.00	40.00	1,365.88	75.12	63.03	1,602,779.33976	2,350,602.57987	39.46583	-107.80045	
Begin Build & Turn 2.00°/100										
1,400.00	5.60	40.58	1,395.75	77.23	64.82	1,602,781.40636	2,350,604.42499	39.46583	-107.80045	
1,600.00	9.59	42.62	1,593.96	96.90	82.45	1,602,800.62741	2,350,622.55015	39.46589	-107.80039	
1,800.00	13.59	43.47	1,789.84	126.22	109.90	1,602,829.24163	2,350,650.73378	39.46597	-107.80029	
1,961.59	16.82	43.86	1,945.75	156.86	139.16	1,602,859.12685	2,350,680.75854	39.46605	-107.80018	
Hold 16.82° Inc, 43.86° Az										
2,000.00	16.82	43.86	1,982.52	164.87	146.86	1,602,866.94182	2,350,688.65847	39.46607	-107.80016	
2,011.59	16.82	43.86	1,993.62	167.29	149.19	1,602,869.29986	2,350,691.04213	39.46608	-107.80015	
9 5/8"										
2,200.00	16.82	43.86	2,173.97	206.59	186.95	1,602,907.63264	2,350,729.79160	39.46619	-107.80002	
2,400.00	16.82	43.86	2,365.42	248.31	227.04	1,602,948.32346	2,350,770.92472	39.46630	-107.79987	
2,600.00	16.82	43.86	2,556.87	290.03	267.13	1,602,989.01427	2,350,812.05785	39.46642	-107.79973	
2,800.00	16.82	43.86	2,748.32	331.75	307.22	1,603,029.70508	2,350,853.19098	39.46653	-107.79959	
3,000.00	16.82	43.86	2,939.76	373.47	347.31	1,603,070.39590	2,350,894.32411	39.46665	-107.79945	
3,200.00	16.82	43.86	3,131.21	415.19	387.40	1,603,111.08672	2,350,935.45724	39.46676	-107.79931	
3,400.00	16.82	43.86	3,322.66	456.91	427.49	1,603,151.77753	2,350,976.59037	39.46688	-107.79916	
3,600.00	16.82	43.86	3,514.11	498.62	467.58	1,603,192.46835	2,351,017.72350	39.46699	-107.79902	
3,800.00	16.82	43.86	3,705.56	540.34	507.67	1,603,233.15917	2,351,058.85663	39.46711	-107.79888	
4,000.00	16.82	43.86	3,897.00	582.06	547.76	1,603,273.84998	2,351,099.98976	39.46722	-107.79874	
4,200.00	16.82	43.86	4,088.45	623.78	587.85	1,603,314.54080	2,351,141.12289	39.46733	-107.79860	
4,400.00	16.82	43.86	4,279.90	665.50	627.94	1,603,355.23162	2,351,182.25601	39.46745	-107.79845	
4,600.00	16.82	43.86	4,471.35	707.22	668.03	1,603,395.92243	2,351,223.38915	39.46756	-107.79831	
4,800.00	16.82	43.86	4,662.79	748.94	708.12	1,603,436.61324	2,351,264.52228	39.46768	-107.79817	
5,000.00	16.82	43.86	4,854.24	790.66	748.21	1,603,477.30406	2,351,305.65541	39.46779	-107.79803	
5,200.00	16.82	43.86	5,045.69	832.38	788.30	1,603,517.99488	2,351,346.78854	39.46791	-107.79789	
5,400.00	16.82	43.86	5,237.14	874.10	828.39	1,603,558.68570	2,351,387.92167	39.46802	-107.79774	
5,600.00	16.82	43.86	5,428.59	915.82	868.47	1,603,599.37651	2,351,429.05480	39.46814	-107.79760	
5,800.00	16.82	43.86	5,620.03	957.54	908.56	1,603,640.06733	2,351,470.18793	39.46825	-107.79746	
6,000.00	16.82	43.86	5,811.48	999.26	948.65	1,603,680.75815	2,351,511.32106	39.46837	-107.79732	
6,200.00	16.82	43.86	6,002.93	1,040.98	988.74	1,603,721.44896	2,351,552.45418	39.46848	-107.79718	
6,258.55	16.82	43.86	6,058.97	1,053.19	1,000.48	1,603,733.36022	2,351,564.49491	39.46851	-107.79713	
Start Drop -1.50°/100										
6,400.00	14.69	43.86	6,195.11	1,080.88	1,027.09	1,603,760.37012	2,351,591.79842	39.46859	-107.79704	
6,600.00	11.69	43.86	6,389.80	1,113.79	1,058.72	1,603,792.47067	2,351,624.24791	39.46868	-107.79693	
6,800.00	8.69	43.86	6,586.62	1,139.31	1,083.24	1,603,817.36107	2,351,649.40887	39.46875	-107.79684	
7,000.00	5.69	43.86	6,785.03	1,157.37	1,100.59	1,603,834.97309	2,351,667.21233	39.46880	-107.79678	
7,200.00	2.69	43.86	6,984.47	1,167.92	1,110.72	1,603,845.25844	2,351,677.60949	39.46883	-107.79674	
7,379.60	0.00	0.00	7,164.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
Vertical										
7,400.00	0.00	0.00	7,184.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	

WPX
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Well:	RU 433-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	
7,479.60	0.00	0.00	7,264.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
Top Gas - Approx. Top Gas										
7,600.00	0.00	0.00	7,384.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
7,800.00	0.00	0.00	7,584.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
8,000.00	0.00	0.00	7,784.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
8,200.00	0.00	0.00	7,984.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
8,400.00	0.00	0.00	8,184.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
8,600.00	0.00	0.00	8,384.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
8,800.00	0.00	0.00	8,584.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,000.00	0.00	0.00	8,784.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,200.00	0.00	0.00	8,984.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,278.60	0.00	0.00	9,063.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
Cameo Coals										
9,400.00	0.00	0.00	9,184.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,600.00	0.00	0.00	9,384.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,800.00	0.00	0.00	9,584.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
9,949.60	0.00	0.00	9,734.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
Coal D										
10,000.00	0.00	0.00	9,784.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
10,079.60	0.00	0.00	9,864.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
Rollins SS										
10,200.00	0.00	0.00	9,984.40	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
10,229.60	0.00	0.00	10,014.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
TD at 10229.60 - TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top Gas (50' Radius) RL - hit/miss target - Shape	0.00	358.55	7,264.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	
TD / PBHL RU 433-5 - plan hits target center - Point	0.00	0.00	10,014.00	1,170.96	1,113.65	1,603,848.22727	2,351,680.61059	39.46884	-107.79673	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (in)	Hole Diameter (in)	
2,011.59	1,993.62	9 5/8"		9.625	13.500	

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 433-5 - Slot B16
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Project:	RU 08-07S-093W	MD Reference:	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
Site:	RU 21-8 Pad	North Reference:	True
Well:	RU 433-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 09Sep14 mab		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
7,479.60	7,264.00	Approx. Top Gas				
9,278.60	9,063.00	Cameo Coals				
9,949.60	9,734.00	Coal D				
10,079.60	9,864.00	Rollins SS				
10,229.60	10,014.00	TD				

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 2.00°/100	
370.00	369.68	8.35	7.01	Hold 5.00° Inc, 40.00° Az	
1,370.00	1,365.88	75.12	63.03	Begin Build & Turn 2.00°/100	
1,961.59	1,945.75	156.86	139.16	Hold 16.82° Inc, 43.86° Az	
6,258.55	6,058.97	1,053.19	1,000.48	Start Drop -1.50°/100	
7,379.60	7,164.00	1,170.96	1,113.65	Vertical	
7,479.60	7,264.00	1,170.96	1,113.65	Top Gas	
10,229.60	10,014.00	1,170.96	1,113.65	TD at 10229.60	