

PICEANCE VLY NAD 83

RU 06-07S-093W

RU 13-6 Pad

RU 413-6 - Slot B02

Wellbore #1

Plan: Design #1 17Jul14 mab

Standard Planning Report - Geographic

16 September, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 413-6 - Slot B02
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 7011.00usft (Nabors 574 (26' RKB) mab)
Project:	RU 06-07S-093W	MD Reference:	KELLY BUSHING @ 7011.00usft (Nabors 574 (26' RKB) mab)
Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 413-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Jul14 mab		

Project	RU 06-07S-093W		
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	RU 13-6 Pad		
Site Position:		Northing:	1,603,405.40000 usft
From:	Map	Easting:	2,343,761.30000 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	39.467067
		Longitude:	-107.824733
		Grid Convergence:	-1.47 °

Well	RU 413-6 - Slot B02		
Well Position	+N/-S	0.00 usft	Northing: 1,603,410.90000 usft
	+E/-W	0.00 usft	Easting: 2,343,750.10000 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	39.467082
		Longitude:	-107.824773
		Ground Level:	6,985.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2014	9.87	65.66	51,937

Design	Design #1 17Jul14 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	152.01	

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	
400.00	7.00	169.00	399.30	-16.77	3.26	2.50	2.50	0.00	169.00	
557.23	10.00	151.52	554.81	-38.19	11.60	2.50	1.91	-11.12	-49.57	
5,412.65	10.00	151.52	5,336.40	-779.65	413.82	0.00	0.00	0.00	0.00	
6,079.64	0.00	0.00	6,000.00	-830.71	441.52	1.50	-1.50	0.00	180.00	
9,261.64	0.00	0.00	9,182.00	-830.71	441.52	0.00	0.00	0.00	0.00	TD / PBHL RU 413-6

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Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 7011.00usft (Nabors 574 (26' RKB) mab)
Project:	RU 06-07S-093W	MD Reference:	KELLY BUSHING @ 7011.00usft (Nabors 574 (26' RKB) mab)
Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 413-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Jul14 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	1,603,410.90000	2,343,750.10000	39.467082	-107.824773	
120.00	0.00	0.00	120.00	0.00	0.00	1,603,410.90000	2,343,750.10000	39.467082	-107.824773	
Start Build 2.50										
200.00	2.00	169.00	199.98	-1.37	0.27	1,603,409.52322	2,343,750.33123	39.467078	-107.824772	
400.00	7.00	169.00	399.30	-16.77	3.26	1,603,394.05372	2,343,752.92931	39.467036	-107.824762	
Begin Turn 2.50°/100										
557.23	10.00	151.52	554.81	-38.19	11.60	1,603,372.42982	2,343,760.72197	39.466977	-107.824732	
Hold 10.00° Inc, 151.52° Az										
600.00	10.00	151.52	596.93	-44.72	15.15	1,603,365.81023	2,343,764.09656	39.466959	-107.824719	
800.00	10.00	151.52	793.89	-75.26	31.71	1,603,334.85584	2,343,779.87678	39.466875	-107.824661	
1,000.00	10.00	151.52	990.85	-105.80	48.28	1,603,303.90144	2,343,795.65701	39.466791	-107.824602	
1,100.00	10.00	151.52	1,089.33	-121.07	56.57	1,603,288.42425	2,343,803.54712	39.466749	-107.824573	
9 5/8"										
1,200.00	10.00	151.52	1,187.81	-136.34	64.85	1,603,272.94705	2,343,811.43723	39.466707	-107.824543	
1,400.00	10.00	151.52	1,384.77	-166.89	81.42	1,603,241.99265	2,343,827.21745	39.466624	-107.824485	
1,600.00	10.00	151.52	1,581.73	-197.43	97.99	1,603,211.03826	2,343,842.99767	39.466540	-107.824426	
1,800.00	10.00	151.52	1,778.68	-227.97	114.55	1,603,180.08386	2,343,858.77789	39.466456	-107.824367	
2,000.00	10.00	151.52	1,975.64	-258.51	131.12	1,603,149.12947	2,343,874.55812	39.466372	-107.824309	
2,200.00	10.00	151.52	2,172.60	-289.05	147.69	1,603,118.17507	2,343,890.33834	39.466288	-107.824250	
2,400.00	10.00	151.52	2,369.56	-319.60	164.26	1,603,087.22067	2,343,906.11856	39.466204	-107.824191	
2,600.00	10.00	151.52	2,566.52	-350.14	180.82	1,603,056.26628	2,343,921.89878	39.466120	-107.824133	
2,800.00	10.00	151.52	2,763.48	-380.68	197.39	1,603,025.31188	2,343,937.67901	39.466037	-107.824074	
2,959.95	10.00	151.52	2,921.00	-405.11	210.64	1,603,000.55544	2,343,950.29958	39.465970	-107.824027	
Top of "G" Sand										
3,000.00	10.00	151.52	2,960.44	-411.22	213.96	1,602,994.35749	2,343,953.45923	39.465953	-107.824015	
3,061.50	10.00	151.52	3,021.00	-420.61	219.05	1,602,984.83926	2,343,958.31152	39.465927	-107.823997	
Base of "G" Sand										
3,200.00	10.00	151.52	3,157.40	-441.76	230.53	1,602,963.40310	2,343,969.23945	39.465869	-107.823957	
3,400.00	10.00	151.52	3,354.35	-472.30	247.10	1,602,932.44871	2,343,985.01967	39.465785	-107.823898	
3,600.00	10.00	151.52	3,551.31	-502.85	263.66	1,602,901.49431	2,344,000.79989	39.465701	-107.823839	
3,800.00	10.00	151.52	3,748.27	-533.39	280.23	1,602,870.53992	2,344,016.58012	39.465617	-107.823781	
4,000.00	10.00	151.52	3,945.23	-563.93	296.80	1,602,839.58552	2,344,032.36033	39.465534	-107.823722	
4,200.00	10.00	151.52	4,142.19	-594.47	313.37	1,602,808.63112	2,344,048.14055	39.465450	-107.823663	
4,400.00	10.00	151.52	4,339.15	-625.01	329.93	1,602,777.67673	2,344,063.92077	39.465366	-107.823605	
4,600.00	10.00	151.52	4,536.11	-655.56	346.50	1,602,746.72233	2,344,079.70100	39.465282	-107.823546	
4,800.00	10.00	151.52	4,733.06	-686.10	363.07	1,602,715.76794	2,344,095.48122	39.465198	-107.823487	
5,000.00	10.00	151.52	4,930.02	-716.64	379.64	1,602,684.81354	2,344,111.26144	39.465114	-107.823428	
5,200.00	10.00	151.52	5,126.98	-747.18	396.21	1,602,653.85915	2,344,127.04166	39.465030	-107.823370	
5,400.00	10.00	151.52	5,323.94	-777.72	412.77	1,602,622.90475	2,344,142.82188	39.464947	-107.823311	
5,412.65	10.00	151.52	5,336.40	-779.65	413.82	1,602,620.94700	2,344,143.81992	39.464941	-107.823307	
Start Drop -1.50°/100										
5,435.59	9.66	151.52	5,359.00	-783.10	415.69	1,602,617.45703	2,344,145.59908	39.464932	-107.823301	
Mesaverde										
5,600.00	7.19	151.52	5,521.62	-804.28	427.18	1,602,595.99217	2,344,156.54164	39.464874	-107.823260	
5,800.00	4.19	151.52	5,720.61	-821.72	436.64	1,602,578.31481	2,344,165.55337	39.464826	-107.823227	
6,000.00	1.19	151.52	5,920.37	-829.98	441.12	1,602,569.93954	2,344,169.82299	39.464803	-107.823211	
6,079.64	0.00	0.00	6,000.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209	
Vertical										
6,200.00	0.00	0.00	6,120.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209	
6,400.00	0.00	0.00	6,320.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209	

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Well:	RU 413-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Jul14 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
6,511.64	0.00	0.00	6,432.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
Top Gas - Approx. Top Gas									
6,600.00	0.00	0.00	6,520.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
6,800.00	0.00	0.00	6,720.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
7,000.00	0.00	0.00	6,920.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
7,200.00	0.00	0.00	7,120.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
7,400.00	0.00	0.00	7,320.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
7,600.00	0.00	0.00	7,520.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
7,800.00	0.00	0.00	7,720.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,000.00	0.00	0.00	7,920.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,200.00	0.00	0.00	8,120.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,236.64	0.00	0.00	8,157.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
Cameo Coals									
8,400.00	0.00	0.00	8,320.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,600.00	0.00	0.00	8,520.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,800.00	0.00	0.00	8,720.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
8,947.64	0.00	0.00	8,868.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
Coal D									
9,000.00	0.00	0.00	8,920.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
9,111.64	0.00	0.00	9,032.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
Rollins SS									
9,200.00	0.00	0.00	9,120.36	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
9,261.64	0.00	0.00	9,182.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
TD at 9261.64 - TD									

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	0.00	6,432.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209
TD / PBHL RU 413-6 - plan hits target center - Point	0.00	0.00	9,182.00	-830.71	441.52	1,602,569.20000	2,344,170.20000	39.464801	-107.823209

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,089.33	9 5/8"	9.625	13.500	

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Project:	RU 06-07S-093W	MD Reference:	KELLY BUSHING @ 7011.00usft (Nabors 574 (26' RKB) mab)
Site:	RU 13-6 Pad	North Reference:	True
Well:	RU 413-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Jul14 mab		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
2,959.95	2,921.00	Top of "G" Sand				
3,061.50	3,021.00	Base of "G" Sand				
5,435.59	5,359.00	Mesaverde				
6,511.64	6,432.00	Approx. Top Gas				
8,236.64	8,157.00	Cameo Coals				
8,947.64	8,868.00	Coal D				
9,111.64	9,032.00	Rollins SS				
9,261.64	9,182.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 2.50	
400.00	399.30	-16.77	3.26	Begin Turn 2.50°/100	
557.23	554.81	-38.19	11.60	Hold 10.00° Inc, 151.52° Az	
5,412.65	5,336.40	-779.65	413.82	Start Drop -1.50°/100	
6,079.64	6,000.00	-830.71	441.52	Vertical	
6,511.64	6,432.00	-830.71	441.52	Top Gas	
9,261.64	9,182.00	-830.71	441.52	TD at 9261.64	