

PICEANCE VLY NAD 83

RU 08-07S-093W

RU 21-8 Pad

RU 642-8 - Slot B02

Wellbore #1

Plan: Design #1 08Sep14 mab

Standard Planning Report - Geographic

04 November, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 642-8 - Slot B02
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 642-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Sep14 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 642-8 - Slot B02			
Well Position	+N/-S	0.00 usft	Northing:	1,602,638.91462 usft
	+E/-W	0.00 usft	Easting:	2,350,456.76391 usft
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	9/8/2014	9.84	65.66	51,918

Design	Design #1 08Sep14 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	125.47

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	
1,102.54	29.48	125.47	1,059.77	-143.44	201.34	3.00	3.00	0.00	125.47	
5,838.22	29.48	125.47	5,182.46	-1,495.57	2,099.18	0.00	0.00	0.00	0.00	
7,803.30	0.00	0.00	7,062.00	-1,782.46	2,501.86	1.50	-1.50	0.00	180.00	
7,903.30	0.00	0.00	7,162.00	-1,782.46	2,501.86	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
10,653.30	0.00	0.00	9,912.00	-1,782.46	2,501.86	0.00	0.00	0.00	0.00	

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 642-8 - Slot B02
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 642-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	1,602,638.91462	2,350,456.76391	39.46543	-107.80096
120.00	0.00	0.00	120.00	0.00	0.00	1,602,638.91462	2,350,456.76391	39.46543	-107.80096
Start Build 3.00°/100									
200.00	2.40	125.47	199.98	-0.97	1.36	1,602,637.90830	2,350,458.10326	39.46543	-107.80095
400.00	8.40	125.47	399.00	-11.89	16.69	1,602,626.60748	2,350,473.14396	39.46540	-107.80090
600.00	14.40	125.47	594.96	-34.82	48.87	1,602,602.87217	2,350,504.73422	39.46534	-107.80078
800.00	20.40	125.47	785.72	-69.50	97.56	1,602,566.96242	2,350,552.52792	39.46524	-107.80061
1,000.00	26.40	125.47	969.19	-115.57	162.22	1,602,519.27165	2,350,616.00142	39.46512	-107.80038
1,102.54	29.48	125.47	1,059.77	-143.44	201.34	1,602,490.41640	2,350,654.40599	39.46504	-107.80024
Hold 29.48° Inc, 125.47° Az									
1,200.00	29.48	125.47	1,144.61	-171.27	240.40	1,602,461.60993	2,350,692.74564	39.46496	-107.80011
9 5/8"									
1,400.00	29.48	125.47	1,318.73	-228.38	320.55	1,602,402.49448	2,350,771.42468	39.46481	-107.79982
1,600.00	29.48	125.47	1,492.84	-285.48	400.70	1,602,343.37903	2,350,850.10374	39.46465	-107.79954
1,800.00	29.48	125.47	1,666.95	-342.58	480.85	1,602,284.26358	2,350,928.78280	39.46449	-107.79925
2,000.00	29.48	125.47	1,841.06	-399.69	561.00	1,602,225.14812	2,351,007.46185	39.46434	-107.79897
2,200.00	29.48	125.47	2,015.17	-456.79	641.15	1,602,166.03268	2,351,086.14091	39.46418	-107.79869
2,400.00	29.48	125.47	2,189.29	-513.89	721.30	1,602,106.91723	2,351,164.81995	39.46402	-107.79840
2,600.00	29.48	125.47	2,363.40	-571.00	801.45	1,602,047.80178	2,351,243.49901	39.46386	-107.79812
2,800.00	29.48	125.47	2,537.51	-628.10	881.60	1,601,988.68633	2,351,322.17807	39.46371	-107.79784
3,000.00	29.48	125.47	2,711.62	-685.21	961.75	1,601,929.57088	2,351,400.85712	39.46355	-107.79755
3,200.00	29.48	125.47	2,885.73	-742.31	1,041.91	1,601,870.45542	2,351,479.53618	39.46339	-107.79727
3,400.00	29.48	125.47	3,059.85	-799.41	1,122.06	1,601,811.33997	2,351,558.21522	39.46324	-107.79698
3,600.00	29.48	125.47	3,233.96	-856.52	1,202.21	1,601,752.22453	2,351,636.89428	39.46308	-107.79670
3,800.00	29.48	125.47	3,408.07	-913.62	1,282.36	1,601,693.10908	2,351,715.57334	39.46292	-107.79642
4,000.00	29.48	125.47	3,582.18	-970.73	1,362.51	1,601,633.99363	2,351,794.25239	39.46277	-107.79613
4,200.00	29.48	125.47	3,756.29	-1,027.83	1,442.66	1,601,574.87818	2,351,872.93145	39.46261	-107.79585
4,400.00	29.48	125.47	3,930.41	-1,084.93	1,522.81	1,601,515.76272	2,351,951.61049	39.46245	-107.79556
4,600.00	29.48	125.47	4,104.52	-1,142.04	1,602.96	1,601,456.64727	2,352,030.28955	39.46230	-107.79528
4,800.00	29.48	125.47	4,278.63	-1,199.14	1,683.11	1,601,397.53183	2,352,108.96861	39.46214	-107.79500
5,000.00	29.48	125.47	4,452.74	-1,256.25	1,763.26	1,601,338.41638	2,352,187.64766	39.46198	-107.79471
5,200.00	29.48	125.47	4,626.85	-1,313.35	1,843.41	1,601,279.30093	2,352,266.32672	39.46183	-107.79443
5,400.00	29.48	125.47	4,800.96	-1,370.45	1,923.57	1,601,220.18547	2,352,345.00576	39.46167	-107.79415
5,600.00	29.48	125.47	4,975.08	-1,427.56	2,003.72	1,601,161.07002	2,352,423.68482	39.46151	-107.79386
5,800.00	29.48	125.47	5,149.19	-1,484.66	2,083.87	1,601,101.95457	2,352,502.36387	39.46136	-107.79358
5,838.22	29.48	125.47	5,182.46	-1,495.57	2,099.18	1,601,090.65854	2,352,517.39821	39.46133	-107.79352
Start Drop -1.50°/100									
6,000.00	27.05	125.47	5,324.94	-1,540.02	2,161.57	1,601,044.64480	2,352,578.63968	39.46120	-107.79330
6,200.00	24.05	125.47	5,505.37	-1,590.07	2,231.81	1,600,992.83631	2,352,647.59364	39.46107	-107.79305
6,400.00	21.05	125.47	5,690.05	-1,634.56	2,294.27	1,600,946.77085	2,352,708.90394	39.46094	-107.79283
6,600.00	18.05	125.47	5,878.50	-1,673.39	2,348.77	1,600,906.57471	2,352,762.40254	39.46084	-107.79264
6,800.00	15.05	125.47	6,070.20	-1,706.45	2,395.16	1,600,872.35807	2,352,807.94280	39.46075	-107.79247
7,000.00	12.05	125.47	6,264.61	-1,733.63	2,433.32	1,600,844.21469	2,352,845.39992	39.46067	-107.79234
7,200.00	9.05	125.47	6,461.21	-1,754.88	2,463.14	1,600,822.22173	2,352,874.67120	39.46061	-107.79223
7,400.00	6.05	125.47	6,659.45	-1,770.12	2,484.54	1,600,806.43947	2,352,895.67643	39.46057	-107.79216
7,600.00	3.05	125.47	6,858.80	-1,779.32	2,497.46	1,600,796.91116	2,352,908.35802	39.46055	-107.79211
7,800.00	0.05	125.47	7,058.70	-1,782.46	2,501.86	1,600,793.66293	2,352,912.68123	39.46054	-107.79210
7,803.30	0.00	0.00	7,062.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
Vertical									
7,903.30	0.00	0.00	7,162.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
Top Gas - Approx. Top Gas									
8,000.00	0.00	0.00	7,258.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 642-8 - Slot B02
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 642-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	7,458.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
8,400.00	0.00	0.00	7,658.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
8,600.00	0.00	0.00	7,858.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
8,800.00	0.00	0.00	8,058.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
9,000.00	0.00	0.00	8,258.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
9,200.00	0.00	0.00	8,458.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
9,400.00	0.00	0.00	8,658.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
9,600.00	0.00	0.00	8,858.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
9,657.30	0.00	0.00	8,916.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
Cameo Coals									
9,800.00	0.00	0.00	9,058.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
10,000.00	0.00	0.00	9,258.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
10,200.00	0.00	0.00	9,458.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
10,347.30	0.00	0.00	9,606.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
Coal D									
10,400.00	0.00	0.00	9,658.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
10,503.30	0.00	0.00	9,762.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
Rollins SS									
10,600.00	0.00	0.00	9,858.70	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
10,653.30	0.00	0.00	9,912.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210
TD at 10653.30 - 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	358.55	7,162.00	-1,782.46	2,501.86	1,600,793.66207	2,352,912.68237	39.46054	-107.79210

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,200.00	1,144.61	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
7,903.30	7,162.00	Approx. Top Gas				
9,657.30	8,916.00	Cameo Coals				
10,347.30	9,606.00	Coal D				
10,503.30	9,762.00	Rollins SS				
10,653.30	9,912.00	TD				

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RU 642-8 - Slot B02
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 642-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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 3.00°/100
1,102.54	1,059.77	-143.44	201.34	Hold 29.48° Inc, 125.47° Az
5,838.22	5,182.46	-1,495.57	2,099.18	Start Drop -1.50°/100
7,803.30	7,062.00	-1,782.46	2,501.86	Vertical
7,903.30	7,162.00	-1,782.46	2,501.86	Top Gas
10,653.30	9,912.00	-1,782.46	2,501.86	TD at 10653.30