

PICEANCE VLY NAD 83

GV 10-07S-096W

MV 5-10 Pad

GM 422-10 - Slot B16

Wellbore #1

Plan: Design #1 08Aug14 mab

Standard Planning Report - Geographic

13 October, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 422-10 - Slot B16
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Project:	GV 10-07S-096W	MD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 422-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 mab		

Project	GV 10-07S-096W		
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	MV 5-10 Pad			
Site Position:		Northing:	1,600,354.00000 usft	Latitude: 39.45298
From: Map		Easting:	2,266,910.20000 usft	Longitude: -108.09653
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.64 °

Well	GM 422-10 - Slot B16			
Well Position	+N/-S	0.00 usft	Northing:	1,600,384.50000 usft
	+E/-W	0.00 usft	Easting:	2,266,971.20000 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,148.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/8/2014	9.99	65.60	51,895

Design	Design #1 08Aug14 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	21.91

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	
140.00	0.00	0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	
509.93	7.40	21.91	508.91	22.13	8.90	2.00	2.00	0.00	21.91	
4,111.14	7.40	21.91	4,080.13	452.38	181.92	0.00	0.00	0.00	0.00	
4,604.38	0.00	0.00	4,572.00	481.88	193.79	1.50	-1.50	0.00	180.00	
5,004.38	0.00	0.00	4,972.00	481.88	193.79	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
6,854.38	0.00	0.00	6,822.00	481.88	193.79	0.00	0.00	0.00	0.00	

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Project:	GV 10-07S-096W	MD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 422-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 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	1,600,384.50000	2,266,971.20000	39.45307	-108.09632	
140.00	0.00	0.00	140.00	0.00	0.00	1,600,384.50000	2,266,971.20000	39.45307	-108.09632	
Start Build 2.00										
200.00	1.20	21.91	200.00	0.58	0.23	1,600,385.07596	2,266,971.45097	39.45307	-108.09632	
400.00	5.20	21.91	399.64	10.94	4.40	1,600,395.30829	2,266,975.90958	39.45310	-108.09630	
509.93	7.40	21.91	508.91	22.13	8.90	1,600,406.36505	2,266,980.72742	39.45313	-108.09629	
Hold 7.40° Inc, 21.91° Az										
600.00	7.40	21.91	598.22	32.89	13.23	1,600,416.99718	2,266,985.36024	39.45316	-108.09627	
800.00	7.40	21.91	796.56	56.78	22.84	1,600,440.60651	2,266,995.64772	39.45322	-108.09624	
1,000.00	7.40	21.91	994.89	80.68	32.44	1,600,464.21584	2,267,005.93519	39.45329	-108.09620	
9 5/8"										
1,200.00	7.40	21.91	1,193.23	104.57	42.05	1,600,487.82517	2,267,016.22266	39.45336	-108.09617	
1,400.00	7.40	21.91	1,391.56	128.47	51.66	1,600,511.43450	2,267,026.51013	39.45342	-108.09614	
1,600.00	7.40	21.91	1,589.90	152.36	61.27	1,600,535.04383	2,267,036.79760	39.45349	-108.09610	
1,800.00	7.40	21.91	1,788.23	176.26	70.88	1,600,558.65316	2,267,047.08508	39.45355	-108.09607	
2,000.00	7.40	21.91	1,986.57	200.15	80.49	1,600,582.26249	2,267,057.37255	39.45362	-108.09603	
2,200.00	7.40	21.91	2,184.90	224.05	90.10	1,600,605.87182	2,267,067.66002	39.45368	-108.09600	
2,207.16	7.40	21.91	2,192.00	224.90	90.44	1,600,606.71680	2,267,068.02821	39.45369	-108.09600	
Top of "G" Sand										
2,308.00	7.40	21.91	2,292.00	236.95	95.29	1,600,618.62056	2,267,073.21513	39.45372	-108.09598	
Base of "G" Sand										
2,400.00	7.40	21.91	2,383.24	247.94	99.71	1,600,629.48114	2,267,077.94749	39.45375	-108.09597	
2,600.00	7.40	21.91	2,581.57	271.84	109.32	1,600,653.09047	2,267,088.23497	39.45381	-108.09593	
2,800.00	7.40	21.91	2,779.91	295.73	118.93	1,600,676.69979	2,267,098.52244	39.45388	-108.09590	
3,000.00	7.40	21.91	2,978.24	319.63	128.54	1,600,700.30912	2,267,108.80991	39.45395	-108.09586	
3,200.00	7.40	21.91	3,176.58	343.52	138.14	1,600,723.91845	2,267,119.09738	39.45401	-108.09583	
3,400.00	7.40	21.91	3,374.91	367.42	147.75	1,600,747.52778	2,267,129.38485	39.45408	-108.09580	
3,600.00	7.40	21.91	3,573.25	391.31	157.36	1,600,771.13711	2,267,139.67233	39.45414	-108.09576	
3,800.00	7.40	21.91	3,771.58	415.21	166.97	1,600,794.74644	2,267,149.95980	39.45421	-108.09573	
3,840.76	7.40	21.91	3,812.00	420.08	168.93	1,600,799.55791	2,267,152.05634	39.45422	-108.09572	
Mesaverde										
4,000.00	7.40	21.91	3,969.92	439.10	176.58	1,600,818.35577	2,267,160.24727	39.45427	-108.09569	
4,111.14	7.40	21.91	4,080.13	452.38	181.92	1,600,831.47502	2,267,165.96382	39.45431	-108.09567	
Start Drop -1.50°/100										
4,200.00	6.07	21.91	4,168.38	462.04	185.81	1,600,841.02449	2,267,170.12489	39.45434	-108.09566	
4,400.00	3.07	21.91	4,367.72	476.81	191.75	1,600,855.61722	2,267,176.48348	39.45438	-108.09564	
4,600.00	0.07	21.91	4,567.62	481.88	193.78	1,600,860.62612	2,267,178.66605	39.45439	-108.09563	
4,604.38	0.00	0.00	4,572.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
Vertical										
4,800.00	0.00	0.00	4,767.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
5,000.00	0.00	0.00	4,967.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
5,004.38	0.00	0.00	4,972.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
Top Gas - Approx. Top Gas										
5,200.00	0.00	0.00	5,167.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
5,400.00	0.00	0.00	5,367.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
5,600.00	0.00	0.00	5,567.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
5,800.00	0.00	0.00	5,767.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
6,000.00	0.00	0.00	5,967.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
6,200.00	0.00	0.00	6,167.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
6,274.38	0.00	0.00	6,242.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
Cameo Coals										

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Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 422-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 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
6,400.00	0.00	0.00	6,367.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563
6,600.00	0.00	0.00	6,567.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563
6,754.38	0.00	0.00	6,722.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563
Rollins SS									
6,800.00	0.00	0.00	6,767.62	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563
6,854.38	0.00	0.00	6,822.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563
TD at 6854.38 - TD									

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Top Gas (50' Radius) G1	0.00	0.00	4,972.00	481.88	193.79	1,600,860.62842	2,267,178.66705	39.45439	-108.09563	
- plan hits target center										
- Circle (radius 50.00)										

Casing Points							Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name						
1,000.00	994.89	9 5/8"					9.625	13.500

Formations							Dip (°)	Dip Direction (bearing)
Measured Depth (usft)	Vertical Depth (usft)	Name		Lithology				
2,207.16	2,192.00	Top of "G" Sand						
2,308.00	2,292.00	Base of "G" Sand						
3,840.76	3,812.00	Mesaverde						
5,004.38	4,972.00	Approx. Top Gas						
6,274.38	6,242.00	Cameo Coals						
6,754.38	6,722.00	Rollins SS						
6,854.38	6,822.00	TD						

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
140.00	140.00	0.00	0.00	Start Build 2.00	
509.93	508.91	22.13	8.90	Hold 7.40° Inc, 21.91° Az	
4,111.14	4,080.13	452.38	181.92	Start Drop -1.50°/100	
4,604.38	4,572.00	481.88	193.79	Vertical	
5,004.38	4,972.00	481.88	193.79	Top Gas	
6,854.38	6,822.00	481.88	193.79	TD at 6854.38	