

PICEANCE VLY NAD 83

GV 10-07S-096W

MV 5-10 Pad

GM 311-10 - Slot B12

Wellbore #1

Plan: Design #1 07Aug14 mab

Standard Planning Report - Geographic

13 October, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 311-10 - Slot B12
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 311-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 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
From:	Map	Easting:	2,266,910.20000 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	39.45298
		Longitude:	-108.09653
		Grid Convergence:	-1.64 °

Well	GM 311-10 - Slot B12		
Well Position	+N/-S	0.00 usft	Northing: 1,600,375.20000 usft
	+E/-W	0.00 usft	Easting: 2,266,942.70000 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	39.45304
		Longitude:	-108.09642
		Ground Level:	6,148.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/7/2014	9.99	65.60	51,895

Design	Design #1 07Aug14 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	322.37

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	
1,703.64	39.59	322.37	1,580.59	416.33	-321.00	2.50	2.50	0.00	322.37	
2,809.37	39.59	322.37	2,432.68	974.40	-751.29	0.00	0.00	0.00	0.00	
5,448.77	0.00	0.00	4,867.00	1,668.29	-1,286.29	1.50	-1.50	0.00	180.00	
5,548.77	0.00	0.00	4,967.00	1,668.29	-1,286.29	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
7,398.77	0.00	0.00	6,817.00	1,668.29	-1,286.29	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 311-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 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	1,600,375.20000	2,266,942.70000	39.45304	-108.09642
120.00	0.00	0.00	120.00	0.00	0.00	1,600,375.20000	2,266,942.70000	39.45304	-108.09642
Start Build 2.50									
200.00	2.00	322.37	199.98	1.11	-0.85	1,600,376.32950	2,266,941.87950	39.45304	-108.09642
400.00	7.00	322.37	399.30	13.53	-10.43	1,600,389.02057	2,266,932.66042	39.45308	-108.09646
600.00	12.00	322.37	596.50	39.66	-30.58	1,600,415.71767	2,266,913.26704	39.45315	-108.09653
800.00	17.00	322.37	790.07	79.31	-61.15	1,600,456.21763	2,266,883.84696	39.45326	-108.09664
1,000.00	22.00	322.37	978.54	132.16	-101.90	1,600,510.21222	2,266,844.62407	39.45340	-108.09678
1,200.00	27.00	322.37	1,160.47	197.82	-152.53	1,600,577.29049	2,266,795.89690	39.45358	-108.09696
1,400.00	32.00	322.37	1,334.49	275.79	-212.64	1,600,656.94195	2,266,738.03628	39.45380	-108.09717
1,600.00	37.00	322.37	1,499.26	365.47	-281.79	1,600,748.56041	2,266,671.48256	39.45404	-108.09742
1,703.64	39.59	322.37	1,580.59	416.33	-321.00	1,600,800.51695	2,266,633.74015	39.45418	-108.09756
Hold 39.59° Inc, 322.37° Az									
1,753.64	39.59	322.37	1,619.12	441.57	-340.46	1,600,826.29747	2,266,615.01260	39.45425	-108.09762
9 5/8"									
1,800.00	39.59	322.37	1,654.85	464.97	-358.50	1,600,850.20043	2,266,597.64895	39.45432	-108.09769
2,000.00	39.59	322.37	1,808.97	565.91	-436.33	1,600,953.31935	2,266,522.74104	39.45459	-108.09796
2,200.00	39.59	322.37	1,963.09	666.85	-514.16	1,601,056.43825	2,266,447.83312	39.45487	-108.09824
2,400.00	39.59	322.37	2,117.22	767.79	-591.98	1,601,159.55717	2,266,372.92522	39.45515	-108.09852
2,490.56	39.59	322.37	2,187.00	813.49	-627.22	1,601,206.24796	2,266,339.00798	39.45527	-108.09864
Top of "G" Sand									
2,600.00	39.59	322.37	2,271.34	868.73	-669.81	1,601,262.67608	2,266,298.01731	39.45543	-108.09879
2,620.32	39.59	322.37	2,287.00	878.99	-677.72	1,601,273.15496	2,266,290.40522	39.45545	-108.09882
Base of "G" Sand									
2,800.00	39.59	322.37	2,425.46	969.67	-747.64	1,601,365.79500	2,266,223.10940	39.45570	-108.09907
2,809.37	39.59	322.37	2,432.68	974.40	-751.29	1,601,370.62779	2,266,219.59875	39.45572	-108.09908
Start Drop -1.50°/100									
3,000.00	36.73	322.37	2,582.55	1,067.67	-823.20	1,601,465.90817	2,266,150.38492	39.45597	-108.09933
3,200.00	33.73	322.37	2,745.90	1,159.03	-893.64	1,601,559.24013	2,266,082.58648	39.45622	-108.09958
3,400.00	30.73	322.37	2,915.06	1,243.50	-958.76	1,601,645.52789	2,266,019.90511	39.45645	-108.09981
3,600.00	27.73	322.37	3,089.57	1,320.83	-1,018.39	1,601,724.53493	2,265,962.51260	39.45667	-108.10003
3,800.00	24.73	322.37	3,268.95	1,390.83	-1,072.36	1,601,796.04471	2,265,910.56628	39.45686	-108.10022
4,000.00	21.73	322.37	3,452.72	1,453.30	-1,120.53	1,601,859.86121	2,265,864.20853	39.45703	-108.10039
4,200.00	18.73	322.37	3,640.36	1,508.07	-1,162.75	1,601,915.80954	2,265,823.56640	39.45718	-108.10054
4,374.67	16.11	322.37	3,807.00	1,549.48	-1,194.68	1,601,958.11505	2,265,792.83472	39.45729	-108.10065
Mesaverde									
4,400.00	15.73	322.37	3,831.36	1,554.98	-1,198.93	1,601,963.73633	2,265,788.75130	39.45731	-108.10066
4,600.00	12.73	322.37	4,025.20	1,593.92	-1,228.95	1,602,003.51022	2,265,759.85864	39.45742	-108.10077
4,800.00	9.73	322.37	4,221.34	1,624.76	-1,252.73	1,602,035.02219	2,265,736.96763	39.45750	-108.10086
5,000.00	6.73	322.37	4,419.26	1,647.44	-1,270.21	1,602,058.18587	2,265,720.14101	39.45756	-108.10092
5,200.00	3.73	322.37	4,618.41	1,661.88	-1,281.34	1,602,072.93778	2,265,709.42489	39.45760	-108.10096
5,400.00	0.73	322.37	4,818.23	1,668.04	-1,286.10	1,602,079.23747	2,265,704.84866	39.45762	-108.10097
5,448.77	0.00	0.00	4,867.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
Vertical									
5,548.77	0.00	0.00	4,967.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
Top Gas - Approx. Top Gas									
5,600.00	0.00	0.00	5,018.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
5,800.00	0.00	0.00	5,218.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
6,000.00	0.00	0.00	5,418.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
6,200.00	0.00	0.00	5,618.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
6,400.00	0.00	0.00	5,818.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
6,600.00	0.00	0.00	6,018.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097

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Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 311-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 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
6,800.00	0.00	0.00	6,218.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
6,818.77	0.00	0.00	6,237.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
Cameo Coals									
7,000.00	0.00	0.00	6,418.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
7,200.00	0.00	0.00	6,618.23	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
7,298.77	0.00	0.00	6,717.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
Rollins SS									
7,398.77	0.00	0.00	6,817.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097
TD at 7398.77 - 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) G1 - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,967.00	1,668.29	-1,286.29	1,602,079.48936	2,265,704.66568	39.45762	-108.10097

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,753.64	1,619.12	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
2,490.56	2,187.00	Top of "G" Sand				
2,620.32	2,287.00	Base of "G" Sand				
4,374.67	3,807.00	Mesaverde				
5,548.77	4,967.00	Approx. Top Gas				
6,818.77	6,237.00	Cameo Coals				
7,298.77	6,717.00	Rollins SS				
7,398.77	6,817.00	TD				

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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 311-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 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
1,703.64	1,580.59	416.33	-321.00	Hold 39.59° Inc, 322.37° Az
2,809.37	2,432.68	974.40	-751.29	Start Drop -1.50°/100
5,448.77	4,867.00	1,668.29	-1,286.29	Vertical
5,548.77	4,967.00	1,668.29	-1,286.29	Top Gas
7,398.77	6,817.00	1,668.29	-1,286.29	TD at 7398.77