

PICEANCE VLY NAD 83

GV 12-07S-096W

GM 21-12 Pad

GM 531-12 - Slot A07

Wellbore #1

Plan: Design #3 15Apr14 mab

Standard Planning Report - Geographic

07 May, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 531-12 - Slot A07
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5151.00usft (Nabors (26' RKB))
Project:	GV 12-07S-096W	MD Reference:	KELLY BUSHING @ 5151.00usft (Nabors (26' RKB))
Site:	GM 21-12 Pad	North Reference:	True
Well:	GM 531-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3 15Apr14 mab		

Project	GV 12-07S-096W, Garfield County CO, GV 12-07W-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	GM 21-12 Pad			
Site Position:		Northing:	1,601,340.21 usft	Latitude: 39.45646
From: Map		Easting:	2,276,830.88 usft	Longitude: -108.06151
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.62 °

Well	GM 531-12 - Slot A07			
Well Position	+N/-S	0.00 usft	Northing:	1,601,335.44 usft
	+E/-W	0.00 usft	Easting:	2,276,836.85 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	5,125.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	12/17/2012	10.15	65.67	52,114

Design	Design #3 15Apr14 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	107.35

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,076.61	18.53	107.35	1,060.53	-44.29	141.80	2.00	2.00	0.00	107.35	
3,154.79	18.53	107.35	3,030.96	-241.22	772.28	0.00	0.00	0.00	0.00	
4,390.26	0.00	0.00	4,245.00	-300.28	961.34	1.50	-1.50	0.00	180.00	
4,490.26	0.00	0.00	4,345.00	-300.28	961.34	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
6,390.26	0.00	0.00	6,245.00	-300.28	961.34	0.00	0.00	0.00	0.00	

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Site:	GM 21-12 Pad	North Reference:	True
Well:	GM 531-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3 15Apr14 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	1,601,335.44	2,276,836.85	39.45645	-108.06149	
150.00	0.00	0.00	150.00	0.00	0.00	1,601,335.44	2,276,836.85	39.45645	-108.06149	
Start Build 2.00										
200.00	1.00	107.35	200.00	-0.13	0.42	1,601,335.30	2,276,837.26	39.45645	-108.06149	
400.00	5.00	107.35	399.68	-3.25	10.41	1,601,331.90	2,276,847.15	39.45644	-108.06145	
600.00	9.00	107.35	598.15	-10.52	33.67	1,601,323.98	2,276,870.20	39.45642	-108.06137	
800.00	13.00	107.35	794.44	-21.89	70.08	1,601,311.59	2,276,906.28	39.45639	-108.06124	
1,000.00	17.00	107.35	987.58	-37.32	119.48	1,601,294.77	2,276,955.23	39.45634	-108.06107	
1,076.61	18.53	107.35	1,060.53	-44.29	141.80	1,601,287.17	2,276,977.33	39.45633	-108.06099	
Hold 18.53° Inc, 107.35° Az										
1,118.23	18.53	107.35	1,100.00	-48.24	154.42	1,601,282.88	2,276,989.84	39.45631	-108.06094	
9 5/8"										
1,200.00	18.53	107.35	1,177.53	-55.98	179.23	1,601,274.43	2,277,014.42	39.45629	-108.06085	
1,382.96	18.53	107.35	1,351.00	-73.32	234.74	1,601,255.54	2,277,069.41	39.45625	-108.06066	
Top of "G" Sand										
1,400.00	18.53	107.35	1,367.16	-74.94	239.91	1,601,253.78	2,277,074.53	39.45624	-108.06064	
1,488.43	18.53	107.35	1,451.00	-83.32	266.73	1,601,244.64	2,277,101.11	39.45622	-108.06054	
Base of "G" Sand										
1,600.00	18.53	107.35	1,556.79	-93.89	300.58	1,601,233.12	2,277,134.65	39.45619	-108.06042	
1,800.00	18.53	107.35	1,746.42	-112.84	361.26	1,601,212.47	2,277,194.76	39.45614	-108.06021	
2,000.00	18.53	107.35	1,936.05	-131.79	421.94	1,601,191.81	2,277,254.88	39.45608	-108.06000	
2,200.00	18.53	107.35	2,125.67	-150.75	482.61	1,601,171.16	2,277,314.99	39.45603	-108.05978	
2,400.00	18.53	107.35	2,315.30	-169.70	543.29	1,601,150.50	2,277,375.11	39.45598	-108.05957	
2,600.00	18.53	107.35	2,504.93	-188.65	603.96	1,601,129.85	2,277,435.22	39.45593	-108.05935	
2,800.00	18.53	107.35	2,694.56	-207.60	664.64	1,601,109.19	2,277,495.34	39.45588	-108.05914	
3,000.00	18.53	107.35	2,884.19	-226.56	725.32	1,601,088.54	2,277,555.45	39.45582	-108.05892	
3,154.79	18.53	107.35	3,030.96	-241.22	772.28	1,601,072.55	2,277,601.98	39.45578	-108.05875	
Begin Drop -1.50°/100										
3,200.00	17.85	107.35	3,073.90	-245.43	785.75	1,601,067.97	2,277,615.33	39.45577	-108.05871	
3,290.12	16.50	107.35	3,160.00	-253.37	811.15	1,601,059.32	2,277,640.50	39.45575	-108.05862	
Mesaverde										
3,400.00	14.85	107.35	3,265.79	-262.22	839.50	1,601,049.67	2,277,668.58	39.45573	-108.05852	
3,600.00	11.85	107.35	3,460.36	-275.99	883.58	1,601,034.66	2,277,712.26	39.45569	-108.05836	
3,800.00	8.85	107.35	3,657.08	-286.71	917.89	1,601,022.99	2,277,746.25	39.45566	-108.05824	
4,000.00	5.85	107.35	3,855.41	-294.34	942.32	1,601,014.67	2,277,770.46	39.45564	-108.05815	
4,200.00	2.85	107.35	4,054.81	-298.87	956.82	1,601,009.74	2,277,784.81	39.45563	-108.05810	
4,390.26	0.00	0.00	4,245.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
Vertical										
4,400.00	0.00	0.00	4,254.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
4,490.26	0.00	0.00	4,345.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
Top Gas - Approx. Top Gas										
4,600.00	0.00	0.00	4,454.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
4,800.00	0.00	0.00	4,654.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,000.00	0.00	0.00	4,854.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,200.00	0.00	0.00	5,054.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,400.00	0.00	0.00	5,254.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,600.00	0.00	0.00	5,454.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,800.00	0.00	0.00	5,654.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
5,801.26	0.00	0.00	5,656.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	
Cameo Coals										
6,000.00	0.00	0.00	5,854.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808	

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Well:	GM 531-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3 15Apr14 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
6,200.00	0.00	0.00	6,054.74	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808
6,290.26	0.00	0.00	6,145.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808
Rollins SS									
6,390.26	0.00	0.00	6,245.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808
TD at 6390.26 - 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	4,345.00	-300.28	961.34	1,601,008.20	2,277,789.29	39.45562	-108.05808
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,118.23	1,100.00	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
1,382.96	1,351.00	Top of "G" Sand				
1,488.43	1,451.00	Base of "G" Sand				
3,290.12	3,160.00	Mesaverde				
4,490.26	4,345.00	Approx. Top Gas				
5,801.26	5,656.00	Cameo Coals				
6,290.26	6,145.00	Rollins SS				
6,390.26	6,245.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
150.00	150.00	0.00	0.00	Start Build 2.00	
1,076.61	1,060.53	-44.29	141.80	Hold 18.53° Inc, 107.35° Az	
3,154.79	3,030.96	-241.22	772.28	Begin Drop -1.50°/100	
4,390.26	4,245.00	-300.28	961.34	Vertical	
4,490.26	4,345.00	-300.28	961.34	Top Gas	
6,390.26	6,245.00	-300.28	961.34	TD at 6390.26	