

PICEANCE HL NAD 83

RG 26-01S-098W

RGU 42-26-198

RGU 33-26-198 - Slot B02

Wellbore #1

Plan: Design #2 12Aug14 mab

Standard Planning Report - Geographic

03 September, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RGU 33-26-198 - Slot B02
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Project:	RG 26-01S-098W	MD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Site:	RGU 42-26-198	North Reference:	True
Well:	RGU 33-26-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 12Aug14 mab		

Project	RG 26-01S-098W, Rio Blanco County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	RGU 42-26-198			
Site Position:		Northing:	1,778,121.90000 usft	Latitude: 39.93524
From: Map		Easting:	2,199,615.70000 usft	Longitude: -108.35451
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.80 °

Well	RGU 33-26-198 - Slot B02				
Well Position	+N/-S	0.00 usft	Northing:	1,778,066.10000 usft	Latitude: 39.93508
	+E/-W	0.00 usft	Easting:	2,199,577.60000 usft	Longitude: -108.35464
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level: 6,622.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/24/2013	10.36	65.99	52,274

Design	Design #2 12Aug14 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	198.26

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	
656.13	10.72	198.26	653.00	-47.50	-15.67	2.00	2.00	0.00	198.26	
6,919.82	10.72	198.26	6,807.33	-1,154.19	-380.85	0.00	0.00	0.00	0.00	
7,634.66	0.00	0.00	7,518.00	-1,217.52	-401.75	1.50	-1.50	0.00	180.00	
7,734.66	0.00	0.00	7,618.00	-1,217.52	-401.75	0.00	0.00	0.00	0.00	Mesaverde (50' Radius
12,679.66	0.00	0.00	12,563.00	-1,217.52	-401.75	0.00	0.00	0.00	0.00	

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Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Project:	RG 26-01S-098W	MD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Site:	RGU 42-26-198	North Reference:	True
Well:	RGU 33-26-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 12Aug14 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	1,778,066.10000	2,199,577.60000	39.93508	-108.35464	
120.00	0.00	0.00	120.00	0.00	0.00	1,778,066.10000	2,199,577.60000	39.93508	-108.35464	
Start Build 2.00										
200.00	1.60	198.26	199.99	-1.06	-0.35	1,778,065.05083	2,199,577.21685	39.93508	-108.35464	
400.00	5.60	198.26	399.55	-12.98	-4.28	1,778,053.25711	2,199,572.90988	39.93505	-108.35466	
600.00	9.60	198.26	597.76	-38.10	-12.57	1,778,028.41585	2,199,563.83807	39.93498	-108.35468	
656.13	10.72	198.26	653.00	-47.50	-15.67	1,778,019.11494	2,199,560.44146	39.93495	-108.35470	
Hold 10.72° Inc, 198.26° Az										
800.00	10.72	198.26	794.36	-72.92	-24.06	1,777,993.97109	2,199,551.25914	39.93488	-108.35473	
1,000.00	10.72	198.26	990.87	-108.26	-35.72	1,777,959.01828	2,199,538.49467	39.93478	-108.35477	
1,200.00	10.72	198.26	1,187.38	-143.59	-47.38	1,777,924.06548	2,199,525.73022	39.93469	-108.35481	
1,241.34	10.72	198.26	1,228.00	-150.90	-49.79	1,777,916.84039	2,199,523.09168	39.93467	-108.35482	
Green River Fm										
1,400.00	10.72	198.26	1,383.89	-178.93	-59.04	1,777,889.11267	2,199,512.96575	39.93459	-108.35485	
1,424.54	10.72	198.26	1,408.00	-183.27	-60.47	1,777,884.82384	2,199,511.39951	39.93458	-108.35486	
A Groove										
1,600.00	10.72	198.26	1,580.40	-214.27	-70.70	1,777,854.15987	2,199,500.20129	39.93449	-108.35489	
1,633.18	10.72	198.26	1,613.00	-220.13	-72.64	1,777,848.36055	2,199,498.08343	39.93448	-108.35490	
B Groove										
1,800.00	10.72	198.26	1,776.90	-249.60	-82.36	1,777,819.20706	2,199,487.43682	39.93440	-108.35493	
1,923.25	10.72	198.26	1,898.00	-271.38	-89.55	1,777,797.66769	2,199,479.57083	39.93434	-108.35496	
Dissolution Surface										
2,000.00	10.72	198.26	1,973.41	-284.94	-94.02	1,777,784.25425	2,199,474.67236	39.93430	-108.35498	
2,200.00	10.72	198.26	2,169.92	-320.28	-105.68	1,777,749.30144	2,199,461.90789	39.93420	-108.35502	
2,400.00	10.72	198.26	2,366.43	-355.61	-117.34	1,777,714.34863	2,199,449.14343	39.93411	-108.35506	
2,600.00	10.72	198.26	2,562.94	-390.95	-129.00	1,777,679.39583	2,199,436.37897	39.93401	-108.35510	
2,800.00	10.72	198.26	2,759.44	-426.29	-140.66	1,777,644.44302	2,199,423.61450	39.93391	-108.35514	
3,000.00	10.72	198.26	2,955.95	-461.62	-152.32	1,777,609.49021	2,199,410.85004	39.93381	-108.35518	
3,022.44	10.72	198.26	2,978.00	-465.59	-153.63	1,777,605.56841	2,199,409.41783	39.93380	-108.35519	
Garden Gulch										
3,195.46	10.72	198.26	3,148.00	-496.16	-163.72	1,777,575.33056	2,199,398.37523	39.93372	-108.35522	
Orange Marker										
3,200.00	10.72	198.26	3,152.46	-496.96	-163.98	1,777,574.53740	2,199,398.08557	39.93372	-108.35522	
3,400.00	10.72	198.26	3,348.97	-532.30	-175.64	1,777,539.58460	2,199,385.32111	39.93362	-108.35527	
3,439.73	10.72	198.26	3,388.00	-539.32	-177.96	1,777,532.64184	2,199,382.78567	39.93360	-108.35527	
Wasatch										
3,600.00	10.72	198.26	3,545.48	-567.63	-187.30	1,777,504.63179	2,199,372.55664	39.93352	-108.35531	
3,800.00	10.72	198.26	3,741.98	-602.97	-198.96	1,777,469.67899	2,199,359.79218	39.93343	-108.35535	
3,948.61	10.72	198.26	3,888.00	-629.23	-207.63	1,777,443.70699	2,199,350.30743	39.93335	-108.35538	
9 5/8"										
4,000.00	10.72	198.26	3,938.49	-638.31	-210.62	1,777,434.72618	2,199,347.02771	39.93333	-108.35539	
4,200.00	10.72	198.26	4,135.00	-673.64	-222.28	1,777,399.77337	2,199,334.26325	39.93323	-108.35543	
4,400.00	10.72	198.26	4,331.51	-708.98	-233.94	1,777,364.82056	2,199,321.49878	39.93314	-108.35547	
4,600.00	10.72	198.26	4,528.01	-744.32	-245.60	1,777,329.86775	2,199,308.73432	39.93304	-108.35552	
4,800.00	10.72	198.26	4,724.52	-779.65	-257.26	1,777,294.91495	2,199,295.96985	39.93294	-108.35556	
5,000.00	10.72	198.26	4,921.03	-814.99	-268.92	1,777,259.96214	2,199,283.20539	39.93284	-108.35560	
5,200.00	10.72	198.26	5,117.54	-850.33	-280.58	1,777,225.00933	2,199,270.44092	39.93275	-108.35564	
5,400.00	10.72	198.26	5,314.05	-885.66	-292.24	1,777,190.05652	2,199,257.67646	39.93265	-108.35568	
5,600.00	10.72	198.26	5,510.55	-921.00	-303.90	1,777,155.10372	2,199,244.91199	39.93255	-108.35572	
5,709.36	10.72	198.26	5,618.00	-940.32	-310.28	1,777,135.99242	2,199,237.93271	39.93250	-108.35575	
Top of "G" Sand										

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Site:	RGU 42-26-198	North Reference:	True
Well:	RGU 33-26-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 12Aug14 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
5,800.00	10.72	198.26	5,707.06	-956.34	-315.56	1,777,120.15091	2,199,232.14753	39.93246	-108.35577
6,000.00	10.72	198.26	5,903.57	-991.67	-327.22	1,777,085.19811	2,199,219.38306	39.93236	-108.35581
6,065.57	10.72	198.26	5,968.00	-1,003.26	-331.05	1,777,073.73802	2,199,215.19794	39.93233	-108.35582
Fort Union									
6,200.00	10.72	198.26	6,100.08	-1,027.01	-338.88	1,777,050.24530	2,199,206.61860	39.93226	-108.35585
6,400.00	10.72	198.26	6,296.59	-1,062.35	-350.54	1,777,015.29249	2,199,193.85413	39.93217	-108.35589
6,600.00	10.72	198.26	6,493.09	-1,097.68	-362.20	1,776,980.33968	2,199,181.08967	39.93207	-108.35593
6,800.00	10.72	198.26	6,689.60	-1,133.02	-373.86	1,776,945.38687	2,199,168.32520	39.93197	-108.35597
6,919.82	10.72	198.26	6,807.33	-1,154.19	-380.85	1,776,924.44674	2,199,160.67805	39.93191	-108.35600
Start Drop -1.50°/100									
7,000.00	9.52	198.26	6,886.26	-1,167.57	-385.26	1,776,911.21174	2,199,155.84474	39.93188	-108.35601
7,200.00	6.52	198.26	7,084.28	-1,194.06	-394.01	1,776,885.00465	2,199,146.27413	39.93180	-108.35604
7,400.00	3.52	198.26	7,283.49	-1,210.68	-399.49	1,776,868.56827	2,199,140.27172	39.93176	-108.35606
7,454.59	2.70	198.26	7,338.00	-1,213.49	-400.42	1,776,865.78602	2,199,139.25567	39.93175	-108.35607
Ohio Creek									
7,600.00	0.52	198.26	7,483.35	-1,217.37	-401.70	1,776,861.94767	2,199,137.85393	39.93174	-108.35607
7,634.66	0.00	0.00	7,518.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Vertical									
7,734.66	0.00	0.00	7,618.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Mesaverde - Mesaverde									
7,800.00	0.00	0.00	7,683.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
8,000.00	0.00	0.00	7,883.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
8,200.00	0.00	0.00	8,083.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
8,400.00	0.00	0.00	8,283.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
8,600.00	0.00	0.00	8,483.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
8,800.00	0.00	0.00	8,683.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
9,000.00	0.00	0.00	8,883.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
9,200.00	0.00	0.00	9,083.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
9,239.66	0.00	0.00	9,123.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Approx. Top Gas									
9,400.00	0.00	0.00	9,283.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
9,600.00	0.00	0.00	9,483.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
9,800.00	0.00	0.00	9,683.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
10,000.00	0.00	0.00	9,883.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
10,200.00	0.00	0.00	10,083.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
10,400.00	0.00	0.00	10,283.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
10,600.00	0.00	0.00	10,483.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
10,779.66	0.00	0.00	10,663.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Cameo Coals									
10,800.00	0.00	0.00	10,683.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
11,000.00	0.00	0.00	10,883.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
11,200.00	0.00	0.00	11,083.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
11,359.66	0.00	0.00	11,243.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Rollins SS									
11,400.00	0.00	0.00	11,283.34	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
11,494.66	0.00	0.00	11,378.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Cozzette									
11,600.00	0.00	0.00	11,483.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
11,799.66	0.00	0.00	11,683.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607
Corcoran									
11,800.00	0.00	0.00	11,683.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607

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Project:	RG 26-01S-098W	MD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Site:	RGU 42-26-198	North Reference:	True
Well:	RGU 33-26-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 12Aug14 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	
12,000.00	0.00	0.00	11,883.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
12,179.66	0.00	0.00	12,063.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
Upper Sego										
12,200.00	0.00	0.00	12,083.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
12,400.00	0.00	0.00	12,283.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
12,429.66	0.00	0.00	12,313.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
Lower Sego										
12,600.00	0.00	0.00	12,483.35	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
12,679.66	0.00	0.00	12,563.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	
TD at 12679.66 - 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	
Mesaverde (50' Radius) - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,618.00	-1,217.52	-401.75	1,776,861.80000	2,199,137.80000	39.93174	-108.35607	

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (in)	Hole Diameter (in)				
3,948.61	3,888.00	9 5/8"			9.625	13.500				

WPX
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Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Project:	RG 26-01S-098W	MD Reference:	KELLY BUSHING @ 6643.00usft (Cyclone 29 (21' RKB))
Site:	RGU 42-26-198	North Reference:	True
Well:	RGU 33-26-198	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 12Aug14 mab		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
1,241.34	1,228.00	Green River Fm				
1,424.54	1,408.00	A Groove				
1,633.18	1,613.00	B Groove				
1,923.25	1,898.00	Dissolution Surface				
3,022.44	2,978.00	Garden Gulch				
3,195.46	3,148.00	Orange Marker				
3,439.73	3,388.00	Wasatch				
5,709.36	5,618.00	Top of "G" Sand				
6,065.57	5,968.00	Fort Union				
7,454.59	7,338.00	Ohio Creek				
7,734.66	7,618.00	Mesaverde				
9,239.66	9,123.00	Approx. Top Gas				
10,779.66	10,663.00	Cameo Coals				
11,359.66	11,243.00	Rollins SS				
11,494.66	11,378.00	Cozzette				
11,799.66	11,683.00	Corcoran				
12,179.66	12,063.00	Upper Sego				
12,429.66	12,313.00	Lower Sego				
12,679.66	12,563.00	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 2.00	
656.13	653.00	-47.50	-15.67	Hold 10.72° Inc, 198.26° Az	
6,919.82	6,807.33	-1,154.19	-380.85	Start Drop -1.50°/100	
7,634.66	7,518.00	-1,217.52	-401.75	Vertical	
7,734.66	7,618.00	-1,217.52	-401.75	Mesaverde	
12,679.66	12,563.00	-1,217.52	-401.75	TD at 12679.66	