

PICEANCE HL NAD 83

RG 26-01S-098W

RGU 42-26-198

RGU 532-26-198 - Slot B06

Wellbore #1

Plan: Design #3 5May15 sam

Standard Survey Report

06 May, 2015

WPX

Survey Report

Company:	PICEANCE HL NAD 83	Local Co-ordinate Reference:	Well RGU 532-26-198 (B06) - Slot B06
Project:	RG 26-01S-098W	TVD Reference:	KB @ 6646.00usft (H&P 318)
Site:	RGU 42-26-198	MD Reference:	KB @ 6646.00usft (H&P 318)
Well:	RGU 532-26-198	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #3 5May15 sam	Database:	COMPASS-PICEANCE

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:	1,778,121.90 usft	Latitude:	39.935237
From:	Map	Easting:	2,199,615.70 usft	Longitude:	-108.354508
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.80 °

Well		RGU 532-26-198 - Slot B06				
Well Position	+N/-S	0.00 usft	Northing:	1,778,090.90 usft	Latitude:	39.935150
	+E/-W	0.00 usft	Easting:	2,199,594.60 usft	Longitude:	-108.354580
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,622.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/25/2015	10.09	65.93	52,063

Design	Design #3 5May15 sam				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	3,958.01	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (bearing)	
	0.00	0.00	0.00	258.55	

Survey Tool Program	Date	5/6/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
174.00	3,958.01	Survey #1 MWD (Wellbore #1)	MWD	MWD - Standard	
3,958.01	12,624.52	Design #3 5May15 sam (Wellbore #1)			

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,958.01	16.63	262.11	3,829.68	-101.07	-953.33	954.42	0.00	0.00	0.00	
Hold 16.63 Inclination										
4,000.00	16.63	262.11	3,869.92	-102.72	-965.24	966.41	0.00	0.00	0.00	
4,025.00	16.63	262.11	3,893.87	-103.71	-972.32	973.56	0.00	0.00	0.00	
9 5/8" 40# J-55 at 4002' MD										
4,208.01	16.63	262.11	4,069.22	-110.90	-1,024.20	1,025.83	0.00	0.00	0.00	
Start Build/Turn DLS 3.00 TFO -35.55										
4,383.31	21.12	253.61	4,235.08	-123.26	-1,079.39	1,082.38	3.00	2.56	-4.85	
Hold 21.12 Inclination										

WPX
Survey Report

Company:	PICEANCE HL NAD 83	Local Co-ordinate Reference:	Well RGU 532-26-198 (B06) - Slot B06
Project:	RG 26-01S-098W	TVD Reference:	KB @ 6646.00usft (H&P 318)
Site:	RGU 42-26-198	MD Reference:	KB @ 6646.00usft (H&P 318)
Well:	RGU 532-26-198	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #3 5May15 sam	Database:	COMPASS-PICEANCE

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,500.00	21.12	253.61	4,343.93	-135.13	-1,119.74	1,124.28	0.00	0.00	0.00	
5,000.00	21.12	253.61	4,810.33	-185.99	-1,292.61	1,303.81	0.00	0.00	0.00	
5,500.00	21.12	253.61	5,276.73	-236.85	-1,465.49	1,483.34	0.00	0.00	0.00	
5,871.22	21.12	253.61	5,623.00	-274.60	-1,593.84	1,616.63	0.00	0.00	0.00	
Top of "G" Sand										
6,000.00	21.12	253.61	5,743.13	-287.70	-1,638.37	1,662.87	0.00	0.00	0.00	
6,246.43	21.12	253.61	5,973.00	-312.77	-1,723.57	1,751.36	0.00	0.00	0.00	
Fort Union										
6,500.00	21.12	253.61	6,209.53	-338.56	-1,811.24	1,842.40	0.00	0.00	0.00	
6,861.28	21.12	253.61	6,546.52	-375.31	-1,936.15	1,972.12	0.00	0.00	0.00	
Start Drop -2.00										
7,000.00	18.35	253.61	6,677.09	-388.53	-1,981.09	2,018.79	2.00	-2.00	0.00	
7,500.00	8.35	253.61	7,162.96	-421.07	-2,091.71	2,133.67	2.00	-2.00	0.00	
7,676.23	4.83	253.61	7,338.00	-426.78	-2,111.11	2,153.81	2.00	-2.00	0.00	
Ohio Creek										
7,917.52	0.00	0.00	7,579.00	-429.64	-2,120.85	2,163.93	2.00	-2.00	0.00	
Vertical										
7,956.52	0.00	0.00	7,618.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Mesaverde										
8,000.00	0.00	0.00	7,661.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,161.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,661.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
9,401.52	0.00	0.00	9,063.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Approx. Top Gas										
9,500.00	0.00	0.00	9,161.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,661.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,161.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
10,981.52	0.00	0.00	10,643.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Cameo Coals										
11,000.00	0.00	0.00	10,661.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,161.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
11,556.52	0.00	0.00	11,218.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Rollins SS										
11,686.52	0.00	0.00	11,348.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Cozzette										
11,975.52	0.00	0.00	11,637.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Corcoran										
12,000.00	0.00	0.00	11,661.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
12,360.52	0.00	0.00	12,022.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Upper Sego										
12,474.52	0.00	0.00	12,136.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
Lower Sego										
12,500.00	0.00	0.00	12,161.48	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
12,624.52	0.00	0.00	12,286.00	-429.64	-2,120.85	2,163.93	0.00	0.00	0.00	
TD at 12624.52										

WPX

Survey Report

Company:	PICEANCE HL NAD 83	Local Co-ordinate Reference:	Well RGU 532-26-198 (B06) - Slot B06
Project:	RG 26-01S-098W	TVD Reference:	KB @ 6646.00usft (H&P 318)
Site:	RGU 42-26-198	MD Reference:	KB @ 6646.00usft (H&P 318)
Well:	RGU 532-26-198	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #3 5May15 sam	Database:	COMPASS-PICEANCE

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)

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
RGU 532-26-198 50' Ra - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,579.00	-429.64	-2,120.85	1,777,728.10	2,197,461.30	39.933971	-108.362142

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
4,025.00	3,893.87	9 5/8" 40# J-55 at 4002' MD	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
1,256.16	1,228.00	Green River Fm				
1,442.75	1,408.00	A Groove				
1,655.19	1,613.00	B Groove				
1,950.86	1,898.00	Dissolution Surface				
3,078.33	2,983.00	Garden Gulch				
3,260.23	3,158.00	Orange Marker				
3,509.08	3,398.00	Wasatch				
5,871.22	5,623.00	Top of "G" Sand				
6,246.43	5,973.00	Fort Union				
7,676.23	7,338.00	Ohio Creek				
7,956.52	7,618.00	Mesaverde				
9,401.52	9,063.00	Approx. Top Gas				
10,981.52	10,643.00	Cameo Coals				
11,556.52	11,218.00	Rollins SS				
11,686.52	11,348.00	Cozzette				
11,975.52	11,637.00	Corcoran				
12,360.52	12,022.00	Upper Sego				
12,474.52	12,136.00	Lower Sego		0.00		

WPX
Survey Report

Company:	PICEANCE HL NAD 83	Local Co-ordinate Reference:	Well RGU 532-26-198 (B06) - Slot B06
Project:	RG 26-01S-098W	TVD Reference:	KB @ 6646.00usft (H&P 318)
Site:	RGU 42-26-198	MD Reference:	KB @ 6646.00usft (H&P 318)
Well:	RGU 532-26-198	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #3 5May15 sam	Database:	COMPASS-PICEANCE

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3958	3830	-101	-953	Hold 16.63 Inclination
4208	4069	-111	-1024	Start Build/Turn DLS 3.00 TFO -35.55
4383	4235	-123	-1079	Hold 21.12 Inclination
6861	6547	-375	-1936	Start Drop -2.00
7918	7579	-430	-2121	Vertical
12,625	12,286	-430	-2121	TD at 12624.52

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------