



+N/-S  
0.0

+E/-W  
0.0

Northing  
1772353.20

Easting  
2197193.30

Latitude  
39° 55' 9.122 N

Longitude  
108° 21' 44.976 W

Slot  
A9

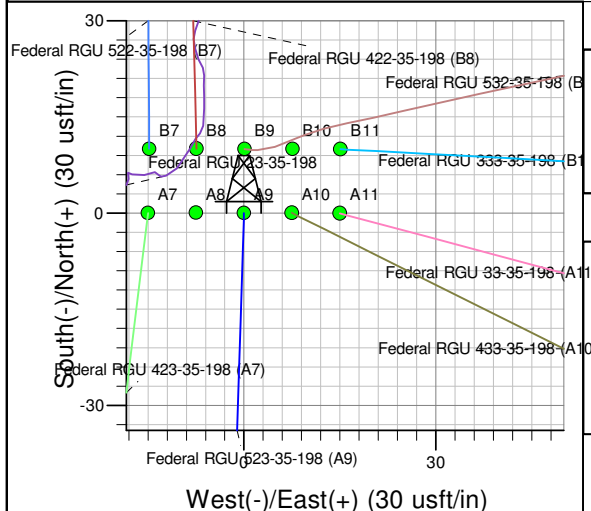
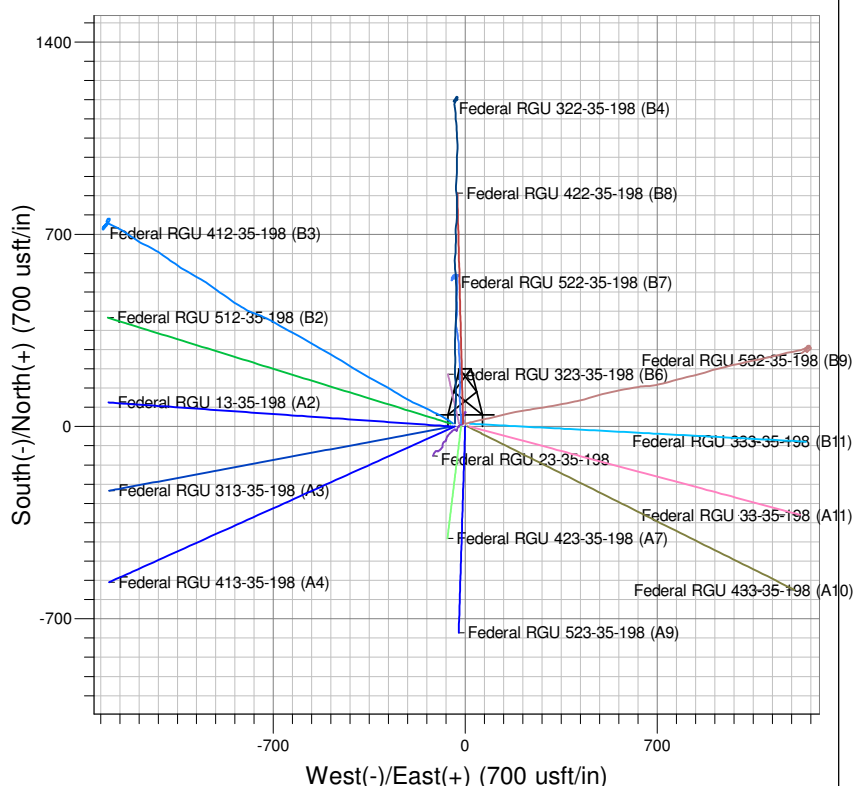
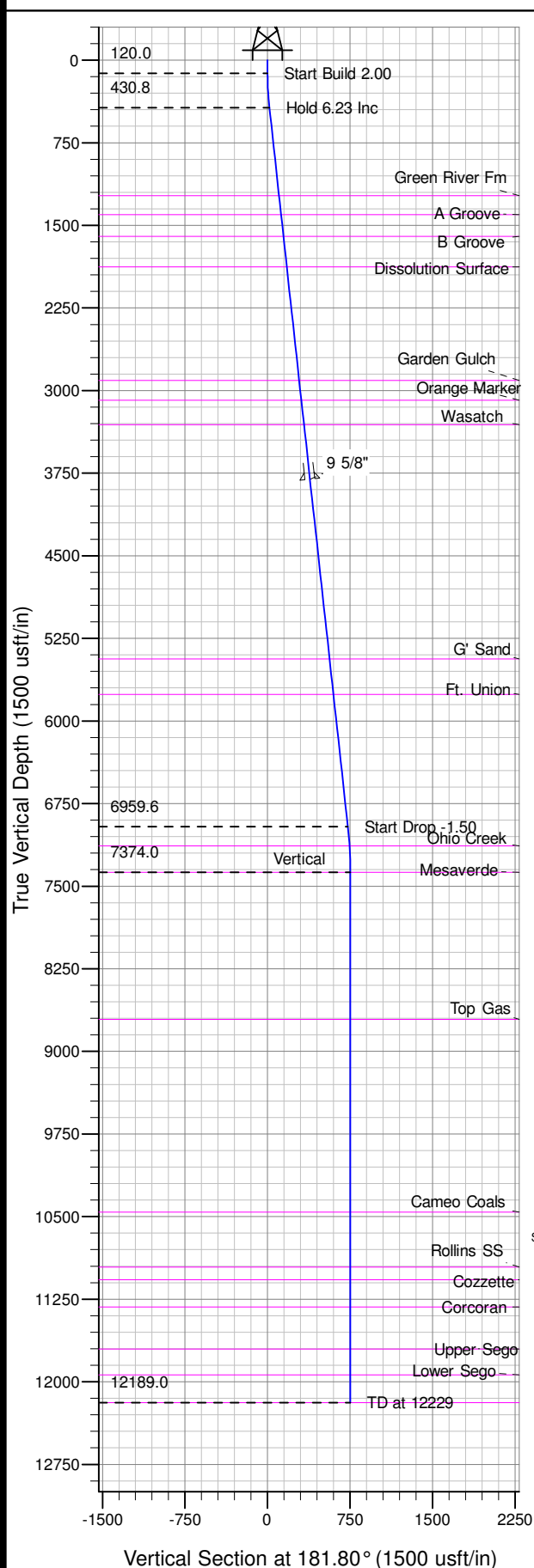
Well Name: Federal RGU 523-35-198

Surface Location: RGU 23-35-198 Pad

North American Datum 1983 , US State Plane 1983 , Colorado Central Zone

Ground Elevation: 6778.0

KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jib)



Project: RG 35-01S-098W  
Site: RGU 23-35-198 Pad  
Well: Federal RGU 523-35-198  
Plan #1 18Nov08 kfk

Azimuths to True North  
Magnetic North: 10.62°  
Magnetic Field  
Strength: 52515.0snT  
Dip Angle: 66.05°  
Date: 11/16/2010  
Model: IGRF2005-10

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.000	0.0	
2	120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.000	0.0	
3	431.4	6.23	181.80	430.8	-16.9	-0.5	2.00	181.801	16.9	
4	6999.0	6.23	181.80	6959.6	-729.1	-22.9	0.00	0.000	729.4	
5	7414.2	0.00	0.00	7374.0	-751.6	-23.6	1.50	180.000	752.0	Mesaverde (50' Radius) Federal RGU 523-35-198
6	12229.2	0.00	0.00	12189.0	-751.6	-23.6	0.00	0.000	752.0	

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation		
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00		
430.8	431.4	6.23	181.80	-16.9	-0.5	16.9	16.9	Hold 6.23 Inc		
6959.6	6999.0	6.23	181.80	-729.1	-22.9	729.4	729.4	Start Drop -1.50		
7374.0	7414.2	0.00	0.00	-751.6	-23.6	752.0	752.0	Vertical		
12189.0	12229.2	0.00	0.00	-751.6	-23.6	752.0	752.0	TD at 12229		

# **PICEANCE HL NAD 83**

**RG 35-01S-098W**

**RGU 23-35-198 Pad**

**Federal RGU 523-35-198 - Slot A9**

**Wellbore #1**

**Plan: Plan #1 18nov08 kfk**

## **Standard Planning Report - Geographic**

**07 June, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well Federal RGU 523-35-198 (A9) - Slot A9
<b>Company:</b>	PICEANCE HL NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jib)
<b>Project:</b>	RG 35-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jib)
<b>Site:</b>	RGU 23-35-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 523-35-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 18nov08 kfk		

<b>Project</b>	RG 35-01S-098W, Rio Blanco County, CO, RG 35-01S-098W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

Site		RGU 23-35-198 Pad			
Site Position:		Northing:	1,772,401.04 usft	Latitude:	39° 55' 9.595 N
From:	Lat/Long	Easting:	2,197,194.87 usft	Longitude:	108° 21' 44.975 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.805 °

Well	Federal RGU 523-35-198 - Slot A9					
Well Position	+N/-S	0.0 usft	Northing:	1,772,353.20 usft	Latitude:	39° 55' 9.122 N
	+E/-W	0.0 usft	Easting:	2,197,193.30 usft	Longitude:	108° 21' 44.976 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,778.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	11/16/2010	10.622	66.045	52,515

<b>Design</b>	Plan #1 18nov08 kfk				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	181.80	

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
431.4	6.23	181.80	430.8	-16.9	-0.5	2.00	2.00	0.00	181.801	
6,999.0	6.23	181.80	6,959.6	-729.1	-22.9	0.00	0.00	0.00	0.000	
7,414.2	0.00	0.00	7,374.0	-751.6	-23.6	1.50	-1.50	0.00	180.000	Mesaverde (50' Radiu
12,229.2	0.00	0.00	12,189.0	-751.6	-23.6	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well Federal RGU 523-35-198 (A9) - Slot A9
<b>Company:</b>	PICEANCE HL NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jjb)
<b>Project:</b>	RG 35-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jjb)
<b>Site:</b>	RGU 23-35-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 523-35-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 18nov08 kfk		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,772,353.20	2,197,193.30	39° 55' 9.122 N	108° 21' 44.976 W
120.0	0.00	0.00	120.0	0.0	0.0	1,772,353.20	2,197,193.30	39° 55' 9.122 N	108° 21' 44.976 W
431.4	6.23	181.80	430.8	-16.9	-0.5	1,772,336.32	2,197,192.24	39° 55' 8.955 N	108° 21' 44.982 W
6,999.0	6.23	181.80	6,959.6	-729.1	-22.9	1,771,625.20	2,197,147.42	39° 55' 1.917 N	108° 21' 45.270 W
7,414.2	0.00	0.00	7,374.0	-751.6	-23.6	1,771,602.70	2,197,146.00	39° 55' 1.695 N	108° 21' 45.279 W
12,229.2	0.00	0.00	12,189.0	-751.6	-23.6	1,771,602.70	2,197,146.00	39° 55' 1.695 N	108° 21' 45.279 W

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Mesaverde (25' Radius)	0.00	0.00	7,374.0	-751.6	-23.6	1,771,602.70	2,197,146.00	39° 55' 1.695 N	108° 21' 45.279 W
- plan hits target center									
- Circle (radius 25.0)									
Mesaverde (50' Radius)	0.00	0.00	7,374.0	-751.6	-23.6	1,771,602.70	2,197,146.00	39° 55' 1.695 N	108° 21' 45.279 W
- plan hits target center									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
3,827.0	3,806.3	9 5/8"	9.625	14.750	

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Planning Report - Geographic

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<b>Company:</b>	PICEANCE HL NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jjb)
<b>Project:</b>	RG 35-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6799.0usft (Cyclone 29 (21' RKB) jjb)
<b>Site:</b>	RGU 23-35-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 523-35-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 18nov08 kfk		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,238.4	1,233.0	Green River Fm				
1,409.4	1,403.0	A Groove				
1,607.6	1,600.0	B Groove				
1,888.2	1,879.0	Dissolution Surface				
2,924.3	2,909.0	Garden Gulch				
3,105.4	3,089.0	Orange Marker				
3,326.7	3,309.0	Wasatch				
5,468.3	5,438.0	G' Sand				
5,791.2	5,759.0	Ft. Union				
7,174.0	7,134.0	Ohio Creek				
7,414.2	7,374.0	Mesaverde				
8,749.2	8,709.0	Top Gas				
10,500.2	10,460.0	Cameo Coals				
10,999.2	10,959.0	Rollins SS				
11,115.2	11,075.0	Cozzette				
11,361.2	11,321.0	Corcoran				
11,744.2	11,704.0	Upper Sego				
11,979.2	11,939.0	Lower Sego				
12,229.2	12,189.0	TD		0.000		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.0	120.0	0.0	0.0	Start Build 2.00	
431.4	430.8	-16.9	-0.5	Hold 6.23 Inc	
6,999.0	6,959.6	-729.1	-22.9	Start Drop -1.50	
7,414.2	7,374.0	-751.6	-23.6	Vertical	
12,229.2	12,189.0	-751.6	-23.6	TD at 12229	