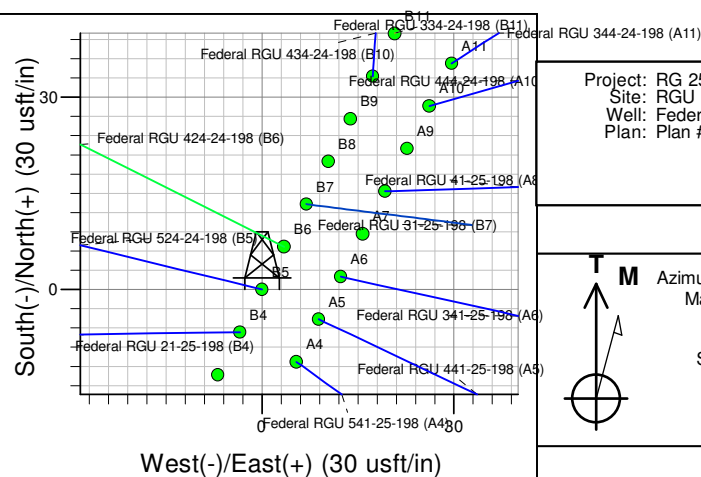
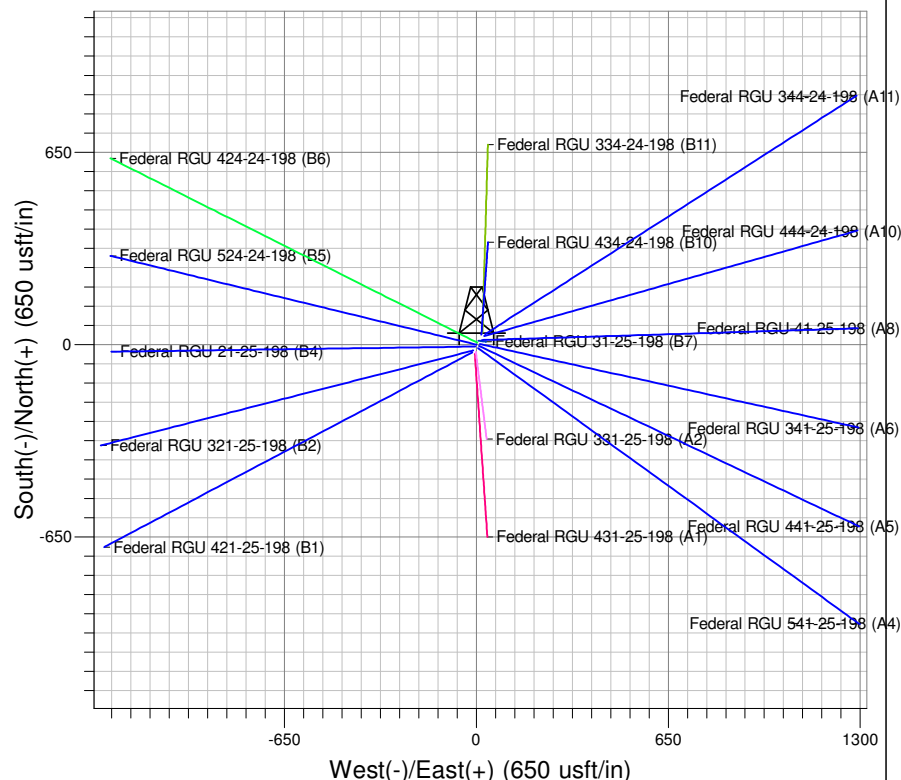


Well Name: Federal RGU 524-24-198  
 Surface Location: RGU 31-25-198 Pad  
 NAD 1927 (NADCON CONUS), US State Plane 1927 (Exact solution) Colorado North 501  
 Ground Elevation: 6640.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 234066.50 1203920.51 39° 56' 27.292 N 108° 20' 22.320 W B5  
 Cyclone 29 (21' RKB) jlb ALLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jlb)



Project: RG 25-01S-098W  
 Site: RGU 31-25-198 Pad  
 Well: Federal RGU 524-24-198  
 Plan: Plan #1 14Jan09 kjs

Azimuths to True North  
 Magnetic North: 10.86°  
 Magnetic Field  
 Strength: 52710.0snT  
 Dip Angle: 66.12°  
 Date: 1/12/2009  
 Model: IGRF200510

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.000	0.0	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.000	0.0	
624.1	10.08	283.61	621.5	10.4	-43.0	2.00	283.612	44.2	
7318.3	10.08	283.61	7212.3	286.2	-1182.0	0.00	0.000	1215.3	
7990.4	0.00	0.00	7881.0	300.1	-1239.3	1.50	180.000	1274.2	Mesaverde (25' Radius) Federal RGU 524-24-198
2890.4	0.00	0.00	12781.0	300.1	-1239.3	0.00	0.000	1274.2	

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
621.5	624.1	10.08	283.61	10.4	-43.0	44.2	44.2	Hold 10.08 inc
7212.3	7318.3	10.08	283.61	286.2	-1182.0	1215.3	1216.1	Start Drop -1.50
7881.0	7990.4	0.00	0.00	300.1	-1239.3	1274.2	1275.1	Vertical
12781.0	12890.4	0.00	0.00	300.1	-1239.3	1274.2	1275.1	TD at 12890.4

# **PICEANCE HL NAD 27**

**RG 25-01S-098W**

**RGU 31-25-198 Pad**

**Federal RGU 524-24-198 - Slot B5**

**Wellbore #1**

**Plan: Plan #1 14Jan09 kjs**

## **Standard Planning Report - Geographic**

**25 January, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well Federal RGU 524-24-198 (B5) - Slot B5
<b>Company:</b>	PICEANCE HL NAD 27	<b>TVD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jib)
<b>Project:</b>	RG 25-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jib)
<b>Site:</b>	RGU 31-25-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 524-24-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jan09 kjs		

<b>Project</b>	RG 25-01S-098W, Rio Blanco County, CO, RG 25-01S-098W		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado North 501		Using geodetic scale factor

<b>Site</b>	RGU 31-25-198 Pad		
<b>Site Position:</b>		<b>Northing:</b>	234,112.07 usft
<b>From:</b>	Map	<b>Easting:</b>	1,203,931.20 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	0.000 in
		<b>Latitude:</b>	39° 56' 27.745 N
		<b>Longitude:</b>	108° 20' 22.202 W
		<b>Grid Convergence:</b>	-1.835 °

Well	Federal RGU 524-24-198 - Slot B5					
Well Position	+N/-S	0.0 usft	Northing:	234,066.50 usft	Latitude:	39° 56' 27.292 N
	+E/-W	0.0 usft	Easting:	1,203,920.51 usft	Longitude:	108° 20' 22.320 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,640.0 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>
	IGRF200510	1/12/2009	10.859	66.116	52,710

<b>Design</b>	Plan #1 14Jan09 kjs			
<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	285.76

<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	
624.1	10.08	283.61	621.5	10.4	-43.0	2.00	2.00	0.00	283.612	
7,318.3	10.08	283.61	7,212.3	286.2	-1,182.0	0.00	0.00	0.00	0.000	
7,990.4	0.00	0.00	7,881.0	300.1	-1,239.3	1.50	-1.50	0.00	180.000	Mesaverde (25' Radiu
12,890.4	0.00	0.00	12,781.0	300.1	-1,239.3	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 524-24-198 (B5) - Slot B5
<b>Company:</b>	PICEANCE HL NAD 27	<b>TVD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jjb)
<b>Project:</b>	RG 25-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jjb)
<b>Site:</b>	RGU 31-25-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 524-24-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jan09 kjs		

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	234,066.50	1,203,920.51	39° 56' 27.292 N	108° 20' 22.320 W
120.0	0.00	0.00	120.0	0.0	0.0	234,066.50	1,203,920.51	39° 56' 27.292 N	108° 20' 22.320 W
624.1	10.08	283.61	621.5	10.4	-43.0	234,078.28	1,203,877.87	39° 56' 27.394 N	108° 20' 22.872 W
7,318.3	10.08	283.61	7,212.3	286.2	-1,182.0	234,390.39	1,202,748.35	39° 56' 30.120 N	108° 20' 37.494 W
7,990.4	0.00	0.00	7,881.0	300.1	-1,239.3	234,406.10	1,202,691.50	39° 56' 30.257 N	108° 20' 38.230 W
12,890.4	0.00	0.00	12,781.0	300.1	-1,239.3	234,406.10	1,202,691.50	39° 56' 30.257 N	108° 20' 38.230 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 (50' Radius)	0.00	0.00	7,881.0	300.1	-1,239.3	234,406.10	1,202,691.50	39° 56' 30.257 N	108° 20' 38.230 W
- plan hits target center									
- Circle (radius 50.0)									
Mesaverde (25' Radius)	0.00	0.00	7,881.0	300.1	-1,239.3	234,406.10	1,202,691.50	39° 56' 30.257 N	108° 20' 38.230 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
3,978.0	3,923.6	9 5/8"	9.625	13.500	

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well Federal RGU 524-24-198 (B5) - Slot B5
<b>Company:</b>	PICEANCE HL NAD 27	<b>TVD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jjb)
<b>Project:</b>	RG 25-01S-098W	<b>MD Reference:</b>	KELLY BUSHING @ 6661.0usft (Cyclone 29 (21' RKB) jjb)
<b>Site:</b>	RGU 31-25-198 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal RGU 524-24-198	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jan09 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,283.8	1,271.0	Green River Fm				
1,481.8	1,466.0	A Groove				
1,690.1	1,671.0	B Groove				
1,984.6	1,961.0	Dissolution Surface				
3,066.3	3,026.0	Garden Gulch				
3,244.1	3,201.0	Orange Marker				
3,477.7	3,431.0	Wasatch				
5,910.2	5,826.0	G' Sand				
6,291.1	6,201.0	Ft. Union				
7,700.2	7,591.0	Ohio Creek				
7,990.4	7,881.0	Mesaverde				
8,970.4	8,861.0	Top Gas				
11,270.4	11,161.0	Cameo Coals				
11,650.4	11,541.0	Rollins SS				
11,785.4	11,676.0	Cozzette				
12,000.4	11,891.0	Corcoran				
12,410.4	12,301.0	Upper Sego				
12,640.4	12,531.0	Lower Sego				
12,890.4	12,781.0	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	
624.1	621.5	10.4	-43.0	Hold 10.08 inc	
7,318.3	7,212.3	286.2	-1,182.0	Start Drop -1.50	
7,990.4	7,881.0	300.1	-1,239.3	Vertical	
12,890.4	12,781.0	300.1	-1,239.3	TD at 12890.4	