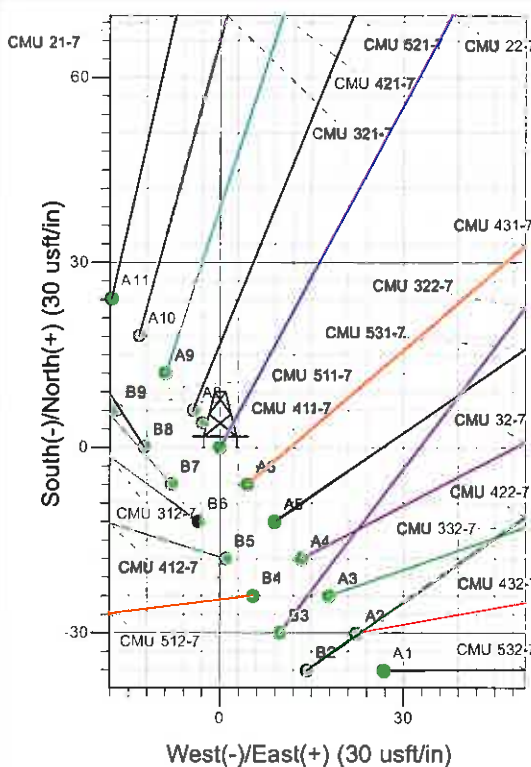
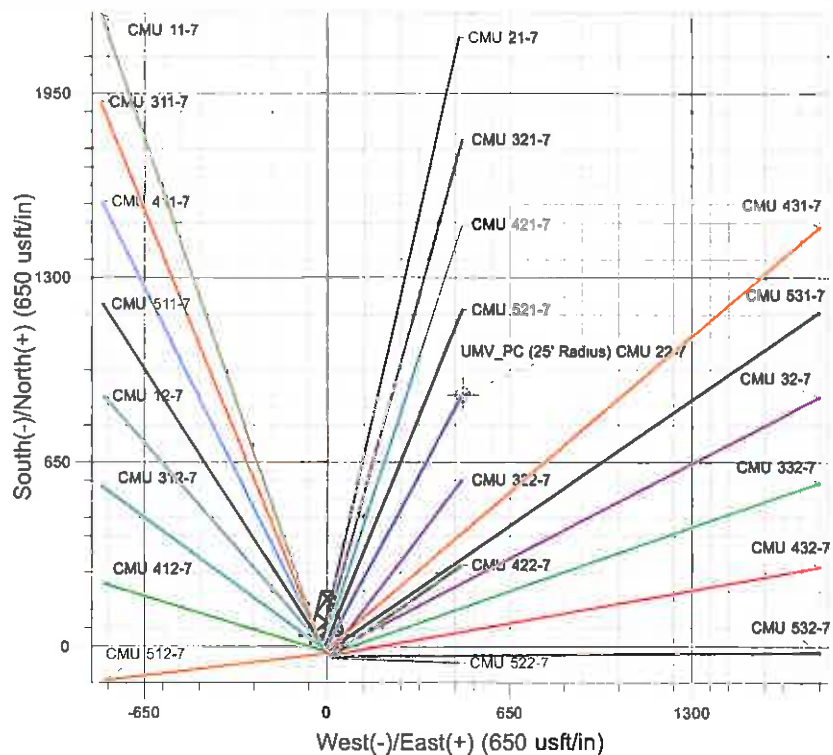
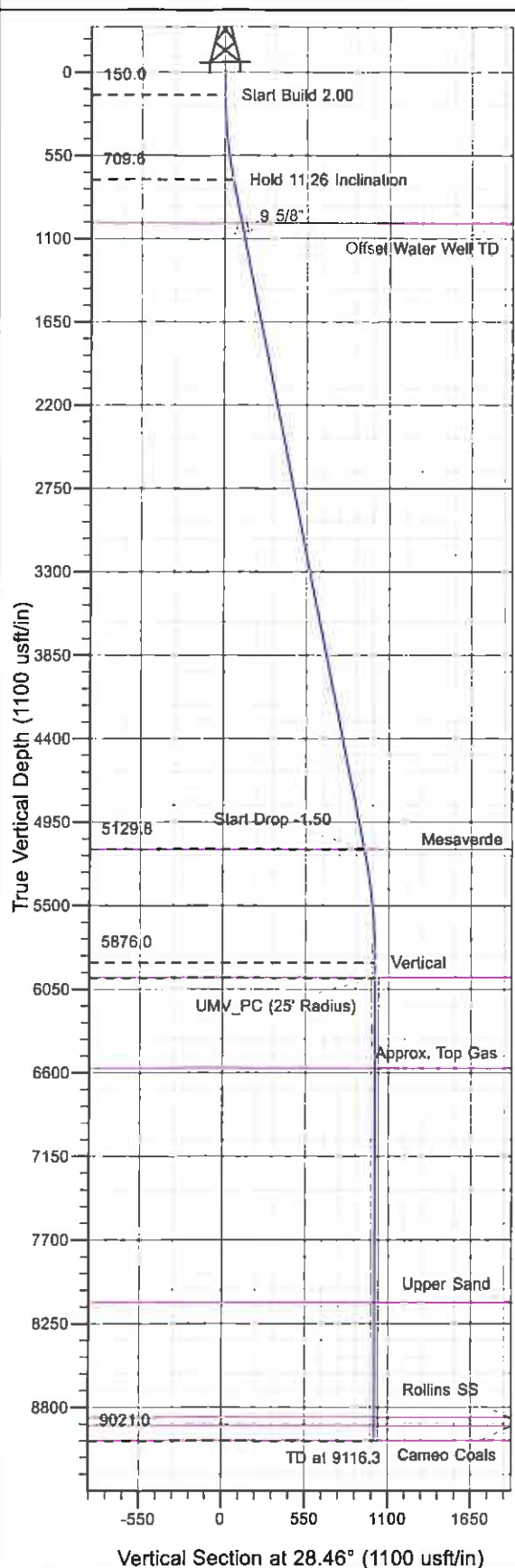




Well Name: CMU 22-7  
 Surface Location: CMU 22-7 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 7614.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1598677.75 2438752.84 39° 27' 37.012 N 107° 29' 16.707 W A7  
 KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)



Project: Sec. 07-T7S-R90W  
 Site: CMU 22-7 Pad  
 Well: CMU 22-7  
 Design #1 23Nov10 kjs



Azimuths to True North  
 Magnetic North: 10.19°  
 Magnetic Field  
 Strength: 52340.3snT  
 Dip Angle: 65.82°  
 Date: 11/23/2010  
 Model: IGRF2010

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
150.0	150.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
709.6	713.2	11.26	28.46	48.5	26.3	55.2	55.2	Hold 11.26 Inclination
5129.8	5220.3	11.26	28.46	822.6	445.8	935.6	935.6	Start Drop -1.50
5876.0	5971.3	0.00	0.00	887.3	480.9	1009.2	1009.2	Vertical
5976.0	6071.3	0.00	0.00	887.3	480.9	1009.2	1009.2	UMV_PC
9021.0	9116.3	0.00	0.00	887.3	480.9	1009.2	1009.2	TD at 9116.3

# **KOKOPELLI FIELD**

**Sec. 07-T7S-R90W**

**CMU 22-7 Pad**

**CMU 22-7 - Slot A7**

**Wellbore #1**

**Plan: Design #1 23Nov10 kjs**

## **Standard Planning Report - Geographic**

**08 December, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well CMU 22-7 - Slot A7
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
<b>Project:</b>	Sec. 07-T7S-R90W	<b>MD Reference:</b>	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
<b>Site:</b>	CMU 22-7 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CMU 22-7	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Nov10 kjs		

<b>Project</b>	Sec. 07-T7S-R90W, Garfield County, CO		
<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		

<b>Site</b>	CMU 22-7 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,598,681.83 usft	<b>Latitude:</b> 39° 27' 37.052 N
<b>From:</b>	Map	<b>Easting:</b>	2,438,749.95 usft	<b>Longitude:</b> 107° 29' 16.745 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.254 °

<b>Well</b>	CMU 22-7 - Slot A7			
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,598,677.74 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,438,752.84 usft
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	7,614.0 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>
	IGRF2010	11/23/2010	10.189	65.820	52,340

<b>Design</b>	Design #1 23Nov10 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	28.46

<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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.000	
713.2	11.26	28.46	709.6	48.5	26.3	2.00	2.00	0.00	28.455	
5,220.3	11.26	28.46	5,129.8	822.6	445.8	0.00	0.00	0.00	0.000	
5,971.3	0.00	0.00	5,876.0	887.3	480.9	1.50	-1.50	0.00	180.000	
6,071.3	0.00	0.00	5,976.0	887.3	480.9	0.00	0.00	0.00	0.000	UMV_PC (25' Radius)
9,116.3	0.00	0.00	9,021.0	887.3	480.9	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 CMU 22-7 - Slot A7
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
<b>Project:</b>	Sec. 07-T7S-R90W	<b>MD Reference:</b>	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
<b>Site:</b>	CMU 22-7 Pad	<b>North Reference:</b>	True
<b>Well:</b>	CMU 22-7	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Nov10 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	1,598,677.74	2,438,752.84	39° 27' 37.012 N	107° 29' 16.707 W
150.0	0.00	0.00	150.0	0.0	0.0	1,598,677.74	2,438,752.84	39° 27' 37.012 N	107° 29' 16.707 W
<b>Start Build 2.00</b>									
713.2	11.26	28.46	709.6	48.5	26.3	1,598,725.68	2,438,780.18	39° 27' 37.491 N	107° 29' 16.372 W
<b>Hold 11.26 Inclination</b>									
1,009.3	11.26	28.46	1,000.0	99.4	53.9	1,598,775.91	2,438,808.86	39° 27' 37.994 N	107° 29' 16.020 W
<b>Offset Water Well TD</b>									
1,070.5	11.26	28.46	1,060.0	109.9	59.6	1,598,786.29	2,438,814.78	39° 27' 38.098 N	107° 29' 15.948 W
<b>9 5/8"</b>									
5,220.3	11.26	28.46	5,129.8	822.6	445.8	1,599,490.38	2,439,216.53	39° 27' 45.142 N	107° 29' 11.023 W
<b>Start Drop -1.50</b>									
5,222.5	11.23	28.46	5,132.0	823.0	446.0	1,599,490.75	2,439,216.75	39° 27' 45.146 N	107° 29' 11.020 W
<b>Mesaverde</b>									
5,971.3	0.00	0.00	5,876.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>Vertical</b>									
6,071.3	0.00	0.00	5,976.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>UMV_PC - UMV_PC</b>									
6,666.3	0.00	0.00	6,571.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>Approx. Top Gas</b>									
8,211.3	0.00	0.00	8,116.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>Upper Sand</b>									
8,966.3	0.00	0.00	8,871.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>Rollins SS</b>									
9,021.3	0.00	0.00	8,926.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>Cameo Coals</b>									
9,116.3	0.00	0.00	9,021.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
<b>TD</b>									

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									
UMV_PC (25' Radius) C	0.00	0.00	5,976.0	887.3	480.9	1,599,554.30	2,439,253.00	39° 27' 45.782 N	107° 29' 10.576 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,070.5	1,060.0	9 5/8"	9.625	12.250	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well CMU 22-7 - Slot A7
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
Project:	Sec. 07-T7S-R90W	MD Reference:	KELLY BUSHING @ 7637.0usft (Cyclone 30 (23' RKB) kjs)
Site:	CMU 22-7 Pad	North Reference:	True
Well:	CMU 22-7	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 23Nov10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")	
1,009.3	1,000.0	Offset Water Well TD				
5,222.5	5,132.0	Mesaverde				
6,071.3	5,976.0	UMV_PC				
6,666.3	6,571.0	Approx. Top Gas				
8,211.3	8,116.0	Upper Sand				
8,966.3	8,871.0	Rollins SS				
9,021.3	8,926.0	Cameo Coals				
9,116.3	9,021.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
150.0	150.0	0.0	0.0	Start Build 2.00	
713.2	709.6	48.5	26.3	Hold 11.26 Inclination	
5,220.3	5,129.8	822.6	445.8	Start Drop -1.50	
5,971.3	5,876.0	887.3	480.9	Vertical	
6,071.3	5,976.0	887.3	480.9	UMV_PC	
9,116.3	9,021.0	887.3	480.9	TD at 9116.3	