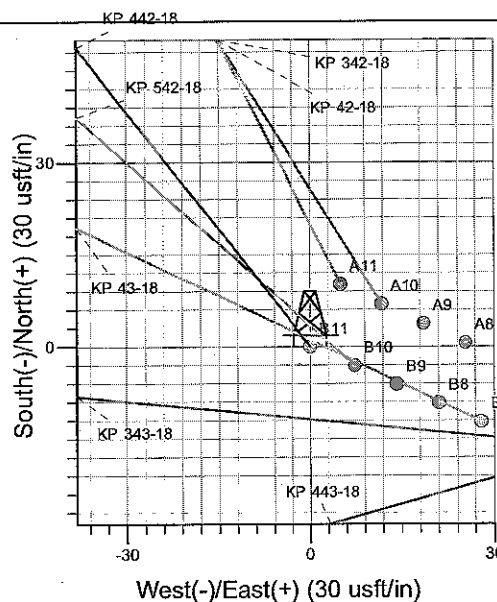
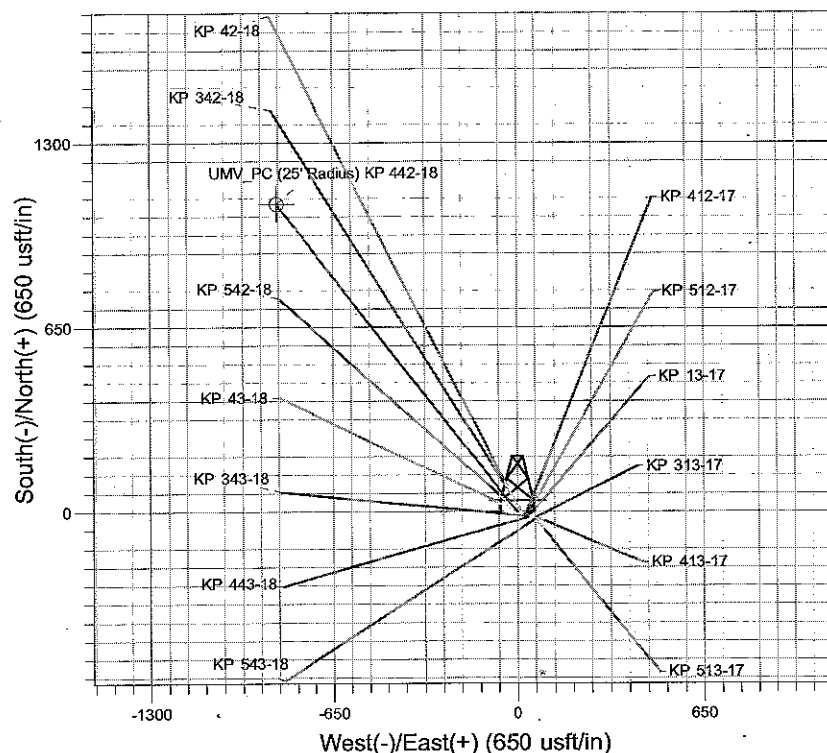
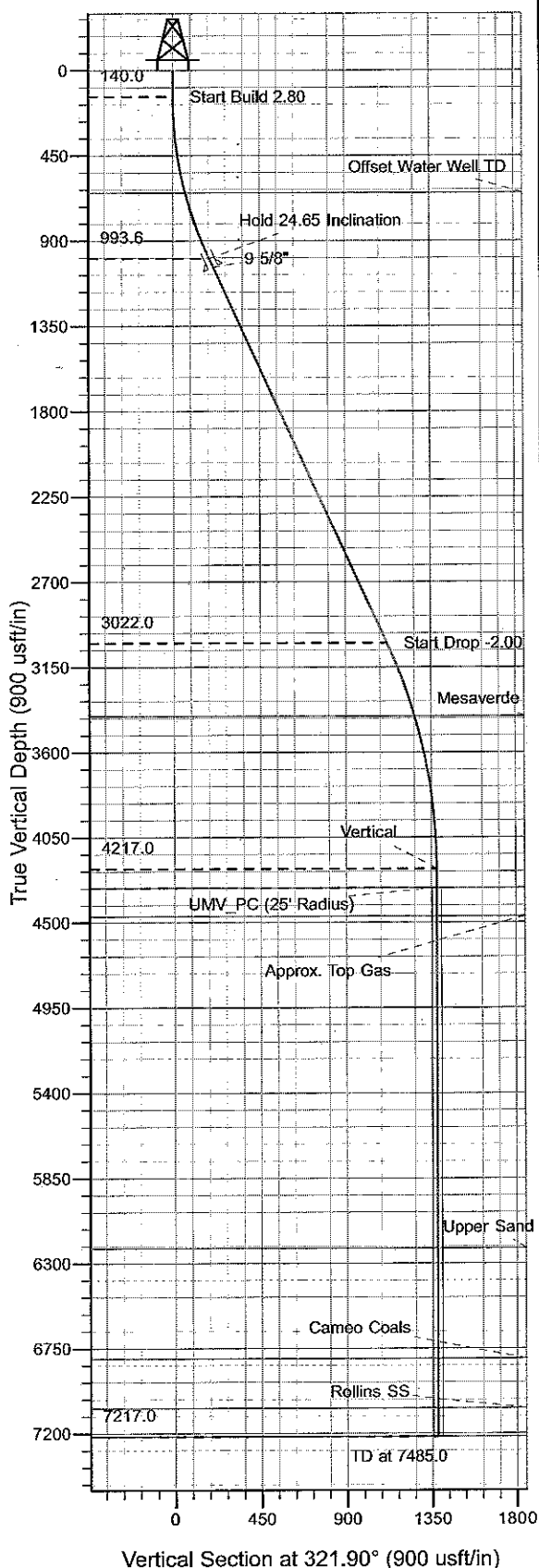




Well Name: KP 442-18  
 Surface Location: KP 13-17 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 6203.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1623249.00 2411296.10 39° 31' 33.717 N 107° 35' 13.897 W B11  
 KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)



Project: Sec. 17-06S-091W  
 Site: KP 13-17 Pad  
 Well: KP 442-18  
 Design #1 04Jun10 kjs

Azimuths to True North  
 Magnetic North: 10.30°  
 Magnetic Field  
 Strength: 52422.4snT  
 Dip Angle: 65.87°  
 Date: 6/4/2010  
 Model: IGRF2010

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
140.0	140.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.80
993.6	1020.5	24.65	321.90	146.8	-115.1	186.5	186.5	Hold 24.65 Inclination
3022.0	3252.4	24.65	321.90	879.4	-689.6	1117.5	1117.5	Start Drop -2.00
4217.0	4485.0	0.00	0.00	1084.8	-850.7	1378.6	1378.6	Vertical
4317.0	4585.0	0.00	0.00	1084.8	-850.7	1378.6	1378.6	UMV_PC
7217.0	7485.0	0.00	0.00	1084.8	-850.7	1378.6	1378.6	TD at 7485.0

# **KOKOPELLI FIELD**

**Sec. 17-06S-091W**

**KP 13-17 Pad**

**KP 442-18 - Slot B11**

**Wellbore #1**

**Plan: Design #1 04Jun10 kjs**

## **Standard Planning Report - Geographic**

**04 August, 2010**

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well KP 442-18 - Slot B11
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	Sec. 17-06S-091W	<b>MD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	KP 13-17 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 442-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 04Jun10 kjs		

<b>Project</b>	Sec. 17-06S-091W, 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>	KP 13-17 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,623,236.70 usft	<b>Latitude:</b> 39° 31' 33.607 N
<b>From:</b>	Map	<b>Easting:</b>	2,411,346.10 usft	<b>Longitude:</b> 107° 35' 13.255 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.316 °

<b>Well</b>	KP 442-18 - Slot B11			
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,623,249.00 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,411,296.10 usft
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 6,203.0 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	6/4/2010	10.304	65.869	52,422

<b>Design</b>	Design #1 04Jun10 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	321.90

Plan Sections										
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	
140.0	0.00	0.00	140.0	0.0	0.0	0.00	0.00	0.00	0.000	
1,020.5	24.65	321.90	993.6	146.8	-115.1	2.80	2.80	0.00	321.896	
3,252.4	24.65	321.90	3,022.0	879.4	-689.6	0.00	0.00	0.00	0.000	
4,485.0	0.00	0.00	4,217.0	1,084.8	-850.7	2.00	-2.00	0.00	180.000	
4,585.0	0.00	0.00	4,317.0	1,084.8	-850.7	0.00	0.00	0.00	0.000	UMV_PC (25' Radius)
7,485.0	0.00	0.00	7,217.0	1,084.8	-850.7	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 KP 442-18 - Slot B11
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	Sec. 17-06S-091W	<b>MD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	KP 13-17 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 442-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 04Jun10 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	1,623,249.00	2,411,296.10	39° 31' 33.717 N	107° 35' 13.897 W
140.0	0.00	0.00	140.0	0.0	0.0	1,623,249.00	2,411,296.10	39° 31' 33.717 N	107° 35' 13.897 W
<b>Start Build 2.80</b>									
652.3	14.35	321.90	647.0	50.2	-39.4	1,623,300.09	2,411,257.90	39° 31' 34.214 N	107° 35' 14.400 W
<b>Offset Water Well TD</b>									
1,020.5	24.65	321.90	993.6	146.8	-115.1	1,623,398.37	2,411,184.40	39° 31' 35.168 N	107° 35' 15.366 W
<b>Hold 24.65 Inclination</b>									
1,071.0	24.65	321.90	1,039.5	163.4	-128.1	1,623,415.25	2,411,171.78	39° 31' 35.332 N	107° 35' 15.532 W
<b>9 5/8"</b>									
3,252.4	24.65	321.90	3,022.0	879.4	-689.6	1,624,143.97	2,410,626.88	39° 31' 42.409 N	107° 35' 22.698 W
<b>Start Drop -2.00</b>									
3,665.9	16.38	321.90	3,409.0	993.3	-779.0	1,624,259.95	2,410,540.15	39° 31' 43.535 N	107° 35' 23.839 W
<b>Mesaverde</b>									
4,485.0	0.00	0.00	4,217.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>Vertical</b>									
4,585.0	0.00	0.00	4,317.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>UMV_PC - UMV_PC</b>									
4,735.0	0.00	0.00	4,467.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>Approx. Top Gas</b>									
6,489.0	0.00	0.00	6,221.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>Upper Sand</b>									
7,073.0	0.00	0.00	6,805.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>Cameo Coals</b>									
7,335.0	0.00	0.00	7,067.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>Rollins SS</b>									
7,485.0	0.00	0.00	7,217.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
<b>TD at 7485.0 - 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) K	0.00	0.00	4,317.0	1,084.8	-850.7	1,624,353.10	2,410,470.50	39° 31' 44.439 N	107° 35' 24.755 W
- plan hits target center									
- Circle (radius 25.0)									

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,071.0	1,039.5	9 5/8"	9.625	12.250

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well KP 442-18 - Slot B11
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	Sec. 17-06S-091W	<b>MD Reference:</b>	KELLY BUSHING @ 6229.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	KP 13-17 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 442-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 04Jun10 kjs		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
652.3	647.0	Offset Water Well TD			
3,665.9	3,409.0	Mesaverde			
4,585.0	4,317.0	UMV_PC			
4,735.0	4,467.0	Approx. Top Gas			
6,489.0	6,221.0	Upper Sand			
7,073.0	6,805.0	Cameo Coals			
7,335.0	7,067.0	Rollins SS			
7,485.0	7,217.0	TD			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
140.0	140.0	0.0	0.0	Start Build 2.80	
1,020.5	993.6	146.8	-115.1	Hold 24.65 Inclination	
3,252.4	3,022.0	879.4	-689.6	Start Drop -2.00	
4,485.0	4,217.0	1,084.8	-850.7	Vertical	
4,585.0	4,317.0	1,084.8	-850.7	UMV_PC	
7,485.0	7,217.0	1,084.8	-850.7	TD at 7485.0	