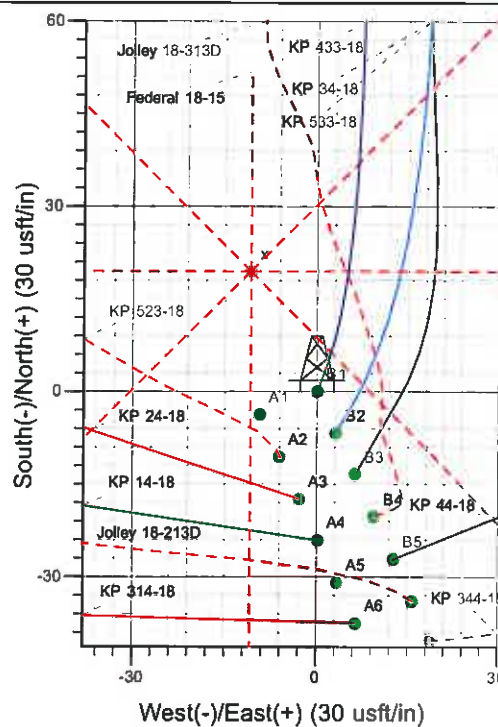
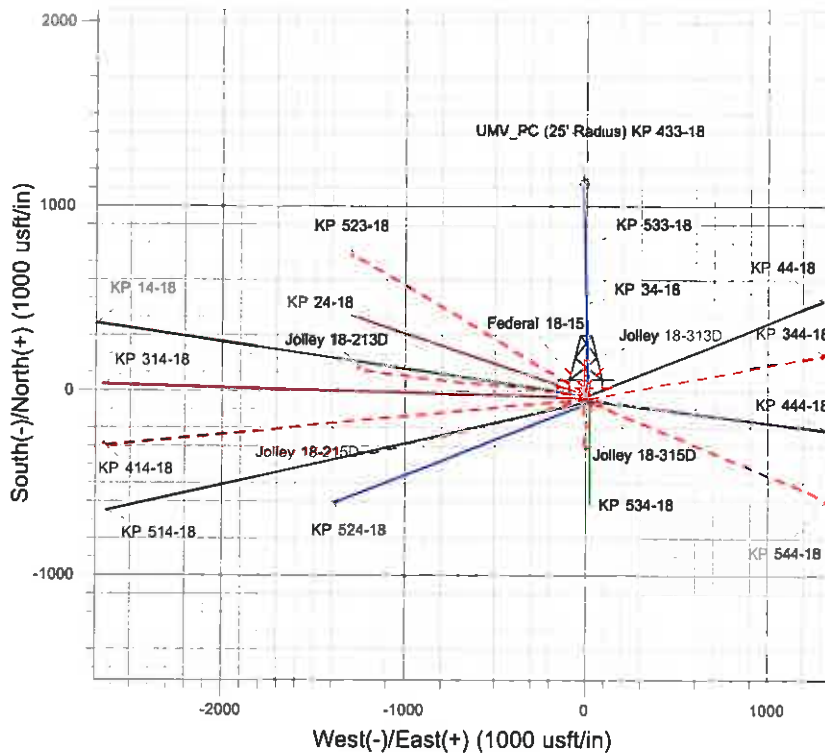
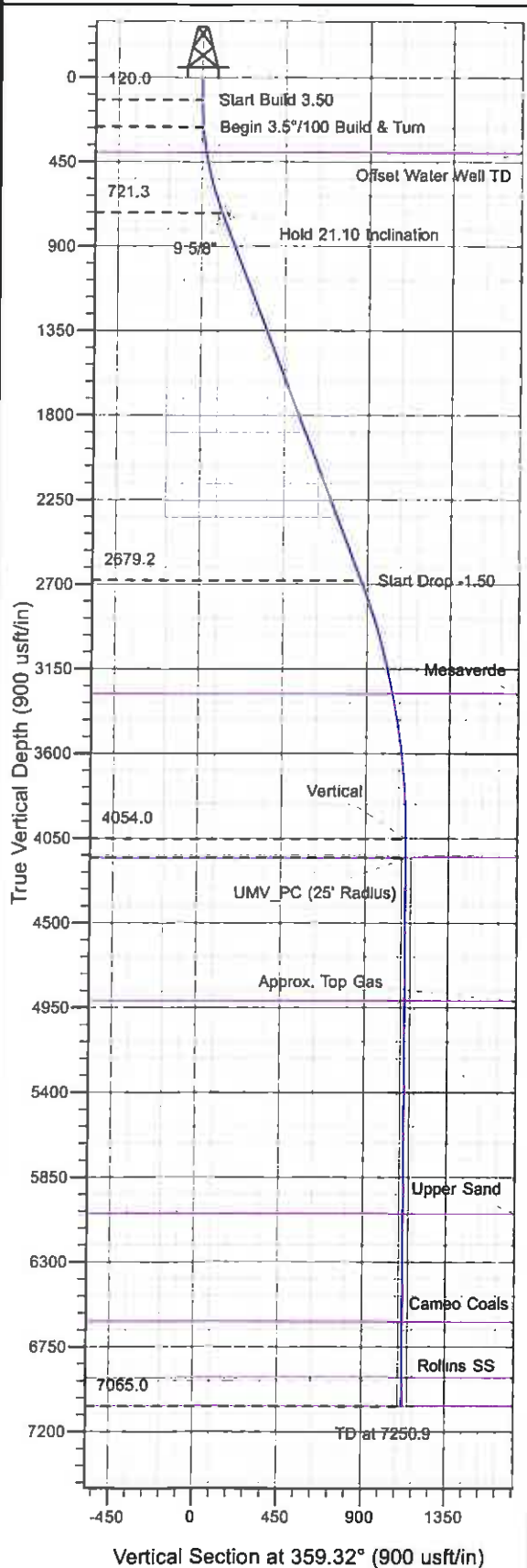




Well Name: KP 433-18  
 Surface Location: KP 34-18 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5918.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1621955.30 2409136.20 39° 31' 20.443 N 107° 35' 41.074 W B1  
 KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)



Project: Sec. 16-T6S-R91W  
 Site: KP 34-18 Pad  
 Well: KP 433-18  
 Design #1 04Dec09 kjs



Azimuths to True North  
 Magnetic North: 10 35°  
 Magnetic Field  
 Strength: 52499.2nT  
 Dip Angle: 65.89°  
 Date: 12/4/2009  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.50
262.7	262.9	5.00	20.00	5.9	2.1	5.8	6.2	Begin 3.5°/100 Build & Turn
721.3	735.1	21.10	358.82	110.9	7.5	110.8	111.7	Hold 21.10 Inclination
2679.2	2833.6	21.10	358.82	866.0	-8.1	866.0	867.0	Start Drop -1.50
4054.0	4239.9	0.00	0.00	1121.9	-13.4	1122.0	1123.0	Vertical
4154.0	4339.9	0.00	0.00	1121.9	-13.4	1122.0	1123.0	UMV_PC
7065.0	7250.9	0.00	0.00	1121.9	-13.4	1122.0	1123.0	TD at 7250.9

# **KOKOPELLI FIELD**

**Sec. 18-T6S-R91W**

**KP 34-18 Pad**

**KP 433-18 - Slot B1**

**Wellbore #1**

**Plan: Design #1 04Dec09 kjs**

## **Standard Planning Report - Geographic**

**18 March, 2011**

# Williams

## Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well KP 433-18 - Slot B1
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)
Project:	Sec. 18-T6S-R91W	MD Reference:	KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)
Site:	KP 34-18 Pad	North Reference:	True
Well:	KP 433-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 04Dec09 kjs		

Project	Sec. 18-T6S-R91W, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site		KP 34-18 Pad			
Site Position:		Northing:	1,621,893.85 usft	Latitude:	39° 31' 19.842 N
From:	Map	Easting:	2,409,163.01 usft	Longitude:	107° 35' 40.714 W
Position Uncertainty:	0.0 usft	Slot Radius:	0 "	Grid Convergence:	-1.32 "

Well	KP 433-18 - Slot B1					
Well Position	+N/-S	0.0 usft	Northing:	1,621,955.30 usft	Latitude:	39° 31' 20.443 N
	+E/-W	0.0 usft	Easting:	2,409,136.20 usft	Longitude:	107° 35' 41.074 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,918.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	12/4/2009	10.35	65.89	52,499

Design	Design #1 04Dec09 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.32

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	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
262.9	5.00	20.00	262.7	5.9	2.1	3.50	3.50	0.00	20.00	
735.1	21.10	358.82	721.3	110.9	7.5	3.50	3.41	-4.49	-27.20	
2,833.6	21.10	358.82	2,679.2	866.0	-8.1	0.00	0.00	0.00	0.00	
4,239.9	0.00	0.00	4,054.0	1,121.9	-13.4	1.50	-1.50	0.00	180.00	
7,250.9	0.00	0.00	7,065.0	1,121.9	-13.4	0.00	0.00	0.00	0.00	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well KP 433-18 - Slot B1
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)
Project:	Sec. 18-T6S-R91W	MD Reference:	KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)
Site:	KP 34-18 Pad	North Reference:	True
Well:	KP 433-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 04Dec09 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	1,621,955.30	2,409,136.20	39° 31' 20.443 N	107° 35' 41.074 W
120.0	0.00	0.00	120.0	0.0	0.0	1,621,955.30	2,409,136.20	39° 31' 20.443 N	107° 35' 41.074 W
Start Build 3.50									
262.9	5.00	20.00	262.7	5.9	2.1	1,621,961.10	2,409,138.47	39° 31' 20.501 N	107° 35' 41.047 W
Begin 3.5"/100 Build & Turn									
398.3	9.47	6.72	397.0	22.5	5.5	1,621,977.63	2,409,142.17	39° 31' 20.665 N	107° 35' 41.005 W
Offset Water Well TD									
735.1	21.10	358.82	721.3	110.9	7.5	1,622,065.97	2,409,146.21	39° 31' 21.539 N	107° 35' 40.979 W
Hold 21.10 Inclination									
785.0	21.10	358.82	767.9	128.8	7.1	1,622,083.94	2,409,146.26	39° 31' 21.717 N	107° 35' 40.984 W
9 5/8"									
2,833.6	21.10	358.82	2,679.2	866.0	-8.1	1,622,821.23	2,409,148.07	39° 31' 29.002 N	107° 35' 41.178 W
Start Drop -1.50									
3,465.6	11.61	358.82	3,285.0	1,043.7	-11.8	1,622,998.99	2,409,148.51	39° 31' 30.759 N	107° 35' 41.224 W
Mesaverde									
4,239.9	0.00	0.00	4,054.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
Vertical									
4,339.9	0.00	0.00	4,154.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
UMV_PC - UMV_PC									
5,100.9	0.00	0.00	4,915.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
Approx. Top Gas									
6,230.9	0.00	0.00	6,045.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
Upper Sand									
6,805.9	0.00	0.00	6,620.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
Cameo Coals									
7,100.9	0.00	0.00	6,915.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
Rollins SS									
7,250.9	0.00	0.00	7,065.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
TD at 7250.9									

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	4,154.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
- plan hits target center									
- Circle (radius 25.0)									
TD / PBHL KP 433-18	0.00	0.00	7,065.0	1,121.9	-13.4	1,623,077.20	2,409,148.70	39° 31' 31.531 N	107° 35' 41.245 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
785.0	767.9	9 5/8"	9-5/8	12-1/4	

**Williams**  
Planning Report - Geographic

Database: Compass R5000 WIN AUTH  
Company: KOKOPELLI FIELD  
Project: Sec. 18-T6S-R91W  
Site: KP 34-18 Pad  
Well: KP 433-18  
Wellbore: Wellbore #1  
Design: Design #1 04Dec09 kjs

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:

Well KP 433-18 - S101 B1  
KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)  
KELLY BUSHING @ 5941.0usft (Cyclone 30 (23' RKB) kjs)  
True  
Minimum Curvature

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
398.3	397.0	Offset Water Well TD			
3,465.6	3,285.0	Mesaverde			
4,339.9	4,154.0	UMV_PC			
5,100.9	4,915.0	Approx. Top Gas			
6,230.9	6,045.0	Upper Sand			
6,805.9	6,620.0	Cameo Coals			
7,100.9	6,915.0	Rollins SS			
7,250.9	7,065.0	TD		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 3.50
262.9	262.7	5.9	2.1	Begin 3.5°/100 Build & Turn
735.1	721.3	110.9	7.5	Hold 21.10 Inclination
2,833.6	2,679.2	866.0	-8.1	Start Drop -1.50
4,239.9	4,054.0	1,121.9	-13.4	Vertical
4,339.9	4,154.0	1,121.9	-13.4	UMV_PC
7,250.9	7,065.0	1,121.9	-13.4	TD at 7250.9