



+N/-S  
0.00

+E/-W  
0.00

Northing  
1629343.40

Easting  
2419574.00

Latitude  
39.54328

Longitude  
-107.55834

Slot  
B05

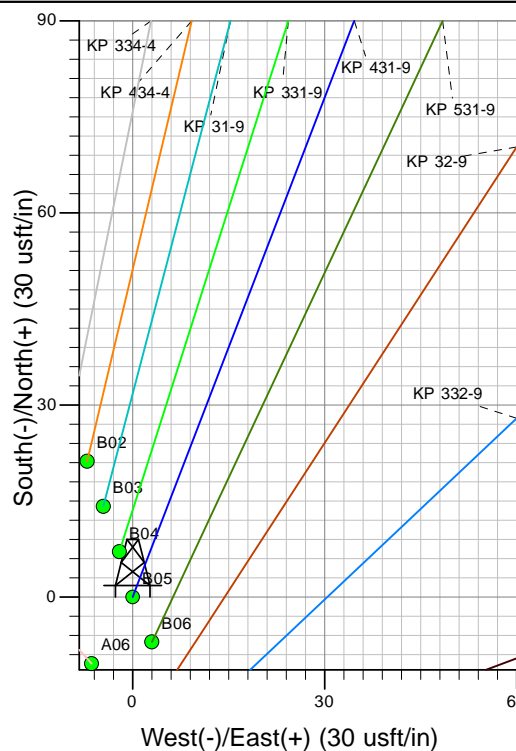
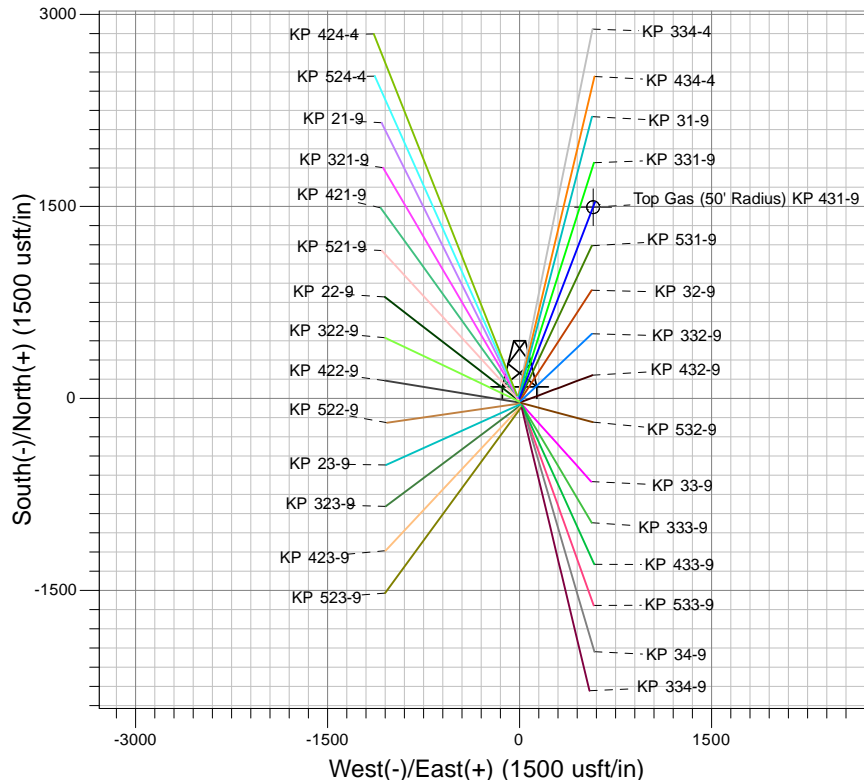
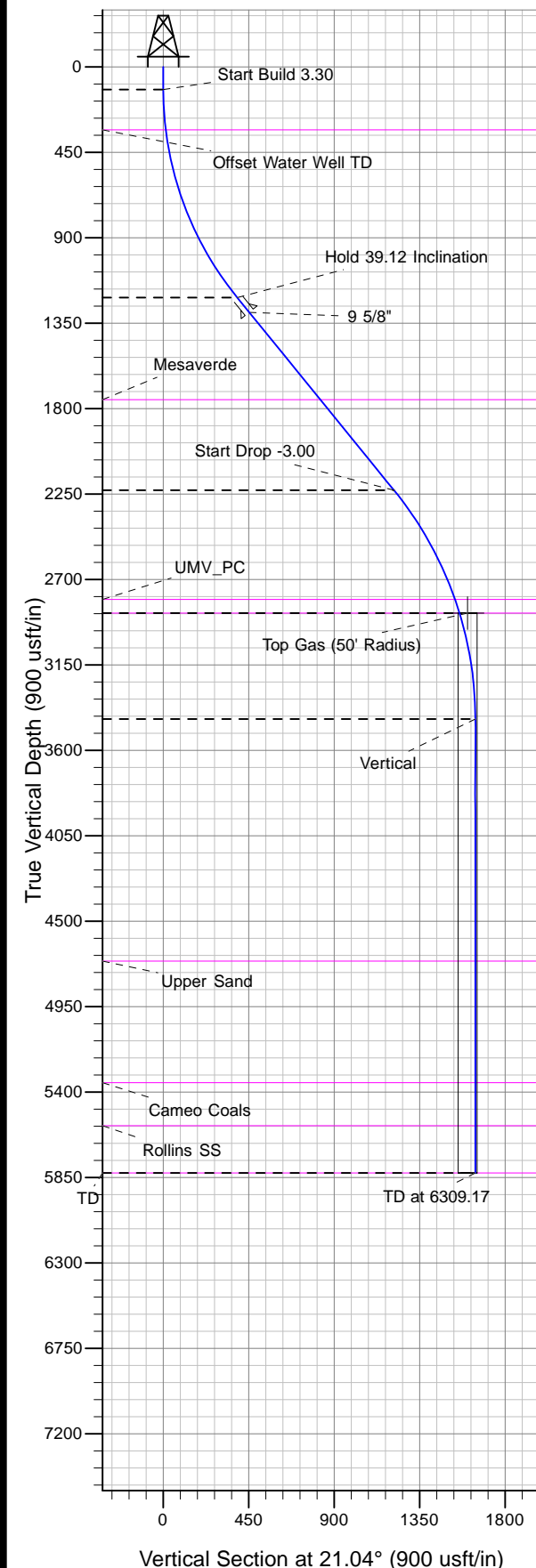
Well Name: KP 431-9

Surface Location: KP 32-9 Pad

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

Ground Elevation: 5762.00

KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)



Project: Sec. 09-T6S-R91W  
Site: KP 32-9 Pad  
Well: KP 431-9  
Design #2 09Sep13 kjs



Azimuths to True North  
Magnetic North: 9.92°  
Magnetic Field  
Strength: 52148.5snT  
Dip Angle: 65.81°  
Date: 4/15/2013  
Model: IGRF2010

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
120.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.30
1215.42	1305.38	39.12	21.04	363.22	139.74	389.17	389.17	Hold 39.12 Inclination
2230.43	2613.64	39.12	21.04	1133.57	436.11	1214.57	1214.57	Start Drop -3.00
2877.00	3350.89	17.00	21.04	1455.23	559.86	1559.21	1559.21	Top Gas
3435.39	3917.56	0.00	0.00	1533.12	589.83	1642.66	1642.66	Vertical
5827.00	6309.17	0.00	0.00	1533.12	589.83	1642.66	1642.66	TD at 6309.17



# **KOKOPELLI FIELD**

**Sec. 09-T6S-R91W**

**KP 32-9 Pad**

**KP 431-9 - Slot B05**

**Wellbore #1**

**Plan: Design #2 09Sep13 kjs**

## **Standard Planning Report - Geographic**

**11 September, 2013**



IBM Global Services  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well KP 431-9 - Slot B05
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Project:</b>	Sec. 09-T6S-R91W	<b>MD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Site:</b>	KP 32-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 431-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2 09Sep13 kjs		

<b>Project</b>	Sec. 09-T6S-R91W		
<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 32-9 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,629,318.90 usft	<b>Latitude:</b> 39.54321
<b>From:</b> Map		<b>Easting:</b>	2,419,572.10 usft	<b>Longitude:</b> -107.55835
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.30 °

<b>Well</b>	KP 431-9 - Slot B05			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,629,343.40 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,419,574.00 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	5,762.00 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	4/15/2013	9.92	65.81	52,148

<b>Design</b>	Design #2 09Sep13 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	21.04

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,305.38	39.12	21.04	1,215.42	363.22	139.74	3.30	3.30	0.00	21.04	
2,613.64	39.12	21.04	2,230.43	1,133.57	436.11	0.00	0.00	0.00	0.00	
3,350.89	17.00	21.04	2,877.00	1,455.23	559.86	3.00	-3.00	0.00	180.00	Top Gas (50' Radius)
3,917.56	0.00	0.00	3,435.39	1,533.12	589.83	3.00	-3.00	0.00	180.00	
6,309.17	0.00	0.00	5,827.00	1,533.12	589.83	0.00	0.00	0.00	0.00	



**IBM Global Services**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well KP 431-9 - Slot B05
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Project:</b>	Sec. 09-T6S-R91W	<b>MD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Site:</b>	KP 32-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 431-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2 09Sep13 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	
0.00	0.00	0.00	0.00	0.00	0.00	1,629,343.40	2,419,574.00	39.54328	-107.55835	
120.00	0.00	0.00	120.00	0.00	0.00	1,629,343.40	2,419,574.00	39.54328	-107.55835	
Start Build 3.30										
332.53	7.01	21.04	332.00	12.13	4.66	1,629,355.41	2,419,578.94	39.54331	-107.55833	
Offset Water Well TD										
500.00	12.54	21.04	496.97	38.66	14.87	1,629,381.71	2,419,589.75	39.54339	-107.55829	
1,000.00	29.04	21.04	962.80	203.72	78.38	1,629,545.29	2,419,656.98	39.54384	-107.55807	
1,305.38	39.12	21.04	1,215.42	363.22	139.74	1,629,703.36	2,419,721.94	39.54428	-107.55785	
Hold 39.12 Inclination										
1,406.00	39.12	21.04	1,293.48	422.47	162.53	1,629,762.07	2,419,746.07	39.54444	-107.55777	
9 5/8"										
1,500.00	39.12	21.04	1,366.41	477.82	183.83	1,629,816.93	2,419,768.61	39.54459	-107.55770	
1,998.28	39.12	21.04	1,753.00	771.22	296.71	1,630,107.70	2,419,888.11	39.54540	-107.55730	
Mesaverde										
2,000.00	39.12	21.04	1,754.34	772.24	297.10	1,630,108.71	2,419,888.52	39.54540	-107.55729	
2,500.00	39.12	21.04	2,142.26	1,066.66	410.37	1,630,400.48	2,420,008.43	39.54621	-107.55689	
2,613.64	39.12	21.04	2,230.43	1,133.57	436.11	1,630,466.80	2,420,035.69	39.54639	-107.55680	
Start Drop -3.00										
3,000.00	27.53	21.04	2,552.72	1,331.33	512.19	1,630,662.78	2,420,116.23	39.54693	-107.55653	
3,275.13	19.27	21.04	2,805.00	1,433.22	551.39	1,630,763.76	2,420,157.73	39.54721	-107.55639	
UMV_PC										
3,350.89	17.00	21.04	2,877.00	1,455.23	559.86	1,630,785.57	2,420,166.69	39.54727	-107.55636	
Top Gas - Approx. Top Gas										
3,500.00	12.53	21.04	3,021.15	1,490.68	573.50	1,630,820.70	2,420,181.13	39.54737	-107.55631	
3,917.56	0.00	0.00	3,435.39	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
Vertical										
4,000.00	0.00	0.00	3,517.83	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
4,500.00	0.00	0.00	4,017.83	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
5,000.00	0.00	0.00	4,517.83	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
5,193.17	0.00	0.00	4,711.00	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
Upper Sand										
5,500.00	0.00	0.00	5,017.83	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
5,833.17	0.00	0.00	5,351.00	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
Cameo Coals										
6,000.00	0.00	0.00	5,517.83	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
6,059.17	0.00	0.00	5,577.00	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
Rollins SS										
6,309.17	0.00	0.00	5,827.00	1,533.12	589.83	1,630,862.76	2,420,198.41	39.54749	-107.55626	
TD										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top Gas (50' Radius) KF - plan misses target center by 40.65usft at 3361.71usft MD (2887.35 TVD, 1458.15 N, 560.99 E) - Circle (radius 50.00)	0.00	0.00	2,877.00	1,494.81	575.17	1,630,824.80	2,420,182.89	39.54738	-107.55631	

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well KP 431-9 - Slot B05
<b>Company:</b>	KOKOPELLI FIELD	<b>TVD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Project:</b>	Sec. 09-T6S-R91W	<b>MD Reference:</b>	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
<b>Site:</b>	KP 32-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	KP 431-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2 09Sep13 kjs		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,406.00	1,293.48	9 5/8"	9.625	12.250	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
332.53	332.00	Offset Water Well TD				
1,998.28	1,753.00	Mesaverde				
3,275.13	2,805.00	UMV_PC				
3,350.89	2,877.00	Approx. Top Gas				
5,193.17	4,711.00	Upper Sand				
5,833.17	5,351.00	Cameo Coals				
6,059.17	5,577.00	Rollins SS				
6,309.17	5,827.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.30	
1,305.38	1,215.42	363.22	139.74	Hold 39.12 Inclination	
2,613.64	2,230.43	1,133.57	436.11	Start Drop -3.00	
3,350.89	2,877.00	1,455.23	559.86	Top Gas	
3,917.56	3,435.39	1,533.12	589.83	Vertical	
6,309.17	5,827.00	1,533.12	589.83	TD at 6309.17	