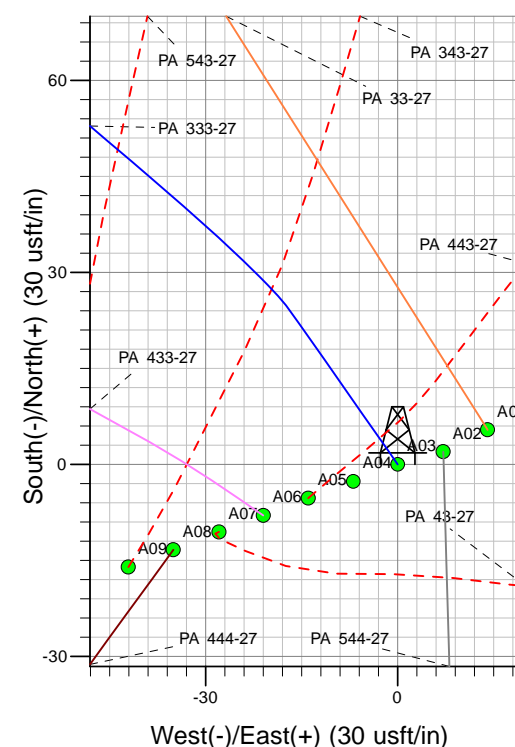
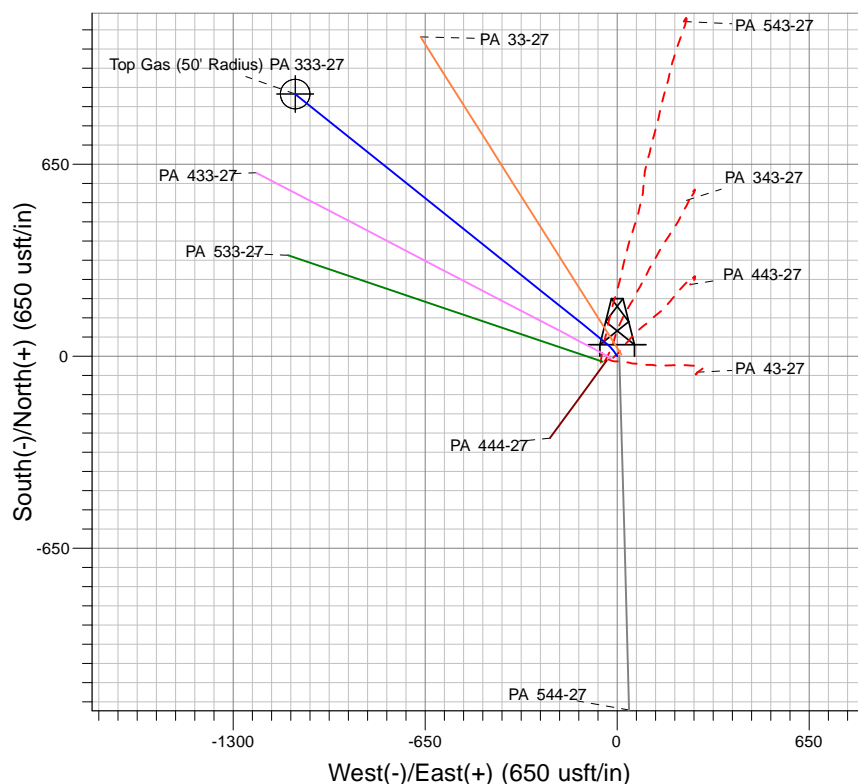
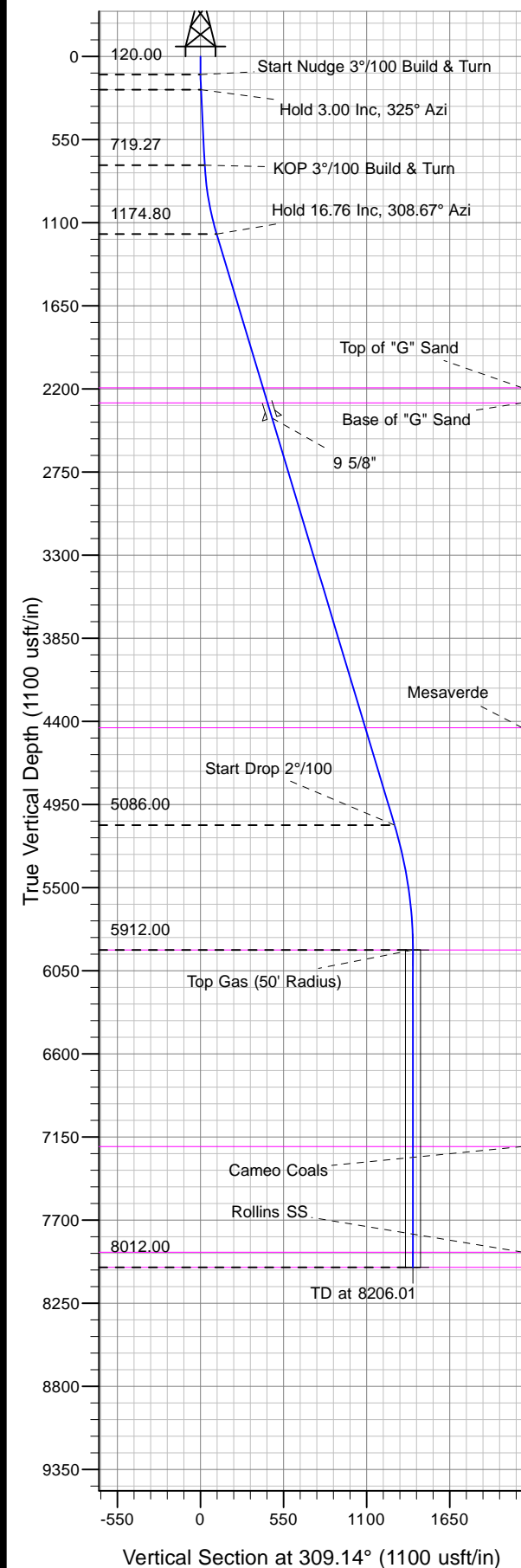




Well Name: PA 333-27  
Surface Location: PA 543-27 Pad  
North American Datum 1983 , US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5566.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1613696.50	2300647.20	39.49218	-107.97839	A03

KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)



Project: PA 27-06S-095W  
Site: PA 543-27 Pad  
Well: PA 333-27  
Design #1 13Jun13 kjs



Azimuths to True North  
Magnetic North: 11.45°  
Magnetic Field  
Strength: 53051.8snT  
Dip Angle: 65.99°  
Date: 12/31/2004  
Model: IGRF2000

#### 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 Nudge 3°/100 Build & Turn
219.95	220.00	3.00	325.00	2.14	-1.50	2.52	2.62	Hold 3.00 Inc, 325° Azi
719.27	720.00	3.00	325.00	23.58	-16.51	27.69	28.79	KOP 3°/100 Build & Turn
1174.80	1183.45	16.76	308.67	75.52	-75.92	106.55	107.82	Hold 16.76 Inc, 308.67° Azi
5086.00	5268.12	16.76	308.67	811.47	-995.37	1284.23	1285.54	Start Drop 2°/100
5912.00	6106.01	0.00	213.02	887.50	-1090.36	1405.89	1407.20	Top Gas
8012.00	8206.01	0.00	213.02	887.50	-1090.36	1405.89	1407.20	TD at 8206.01



## **PICEANCE VLY NAD 83**

**PA 27-06S-095W**

**PA 543-27 Pad**

**PA 333-27 - Slot A03**

**Wellbore #1**

**Plan: Design #1 13Jun13 kjs**

## **Standard Planning Report - Geographic**

**19 November, 2013**



IBM Global Services  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well PA 333-27 - Slot A03
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	PA 27-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	PA 543-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 333-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jun13 kjs		

<b>Project</b>	PA 27-06S-095W, Garfield County, CO, 27-06S-095W		
<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		Using geodetic scale factor

<b>Site</b>	PA 543-27 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,613,691.56 usft	<b>Latitude:</b> 39.49217
<b>From:</b> Map		<b>Easting:</b>	2,300,633.09 usft	<b>Longitude:</b> -107.97844
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.563 °

<b>Well</b>	PA 333-27 - Slot A03			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,613,696.50 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,300,647.20 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	5,566.00 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>
	IGRF2000	12/31/2004	11.445	65.987	53,052

<b>Design</b>	Design #1 13Jun13 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	309.14

<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	0.000	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.000	
220.00	3.00	325.00	219.95	2.14	-1.50	3.00	3.00	0.00	325.000	
720.00	3.00	325.00	719.27	23.58	-16.51	0.00	0.00	0.00	0.000	
1,183.45	16.76	308.67	1,174.80	75.52	-75.92	3.00	2.97	-3.52	-19.712	
5,268.12	16.76	308.67	5,086.00	811.47	-995.37	0.00	0.00	0.00	0.000	
6,106.01	0.00	213.02	5,912.00	887.50	-1,090.36	2.00	-2.00	-11.42	-180.000	Top Gas (50' Radius)
8,206.01	0.00	213.02	8,012.00	887.50	-1,090.36	0.00	0.00	0.00	0.000	TD PA 333-27

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well PA 333-27 - Slot A03
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	PA 27-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	PA 543-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 333-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jun13 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	1,613,696.50	2,300,647.20	39.49218	-107.97839	
120.00	0.00	0.00	120.00	0.00	0.00	1,613,696.50	2,300,647.20	39.49218	-107.97839	
Start Nudge 3°/100 Build & Turn										
200.00	2.40	325.00	199.98	1.37	-0.96	1,613,697.89	2,300,646.28	39.49219	-107.97839	
220.00	3.00	325.00	219.95	2.14	-1.50	1,613,698.68	2,300,645.76	39.49219	-107.97839	
Hold 3.00 Inc, 325° Azi										
400.00	3.00	325.00	399.71	9.86	-6.90	1,613,706.54	2,300,640.57	39.49221	-107.97841	
600.00	3.00	325.00	599.43	18.44	-12.91	1,613,715.28	2,300,634.80	39.49223	-107.97843	
720.00	3.00	325.00	719.27	23.58	-16.51	1,613,720.52	2,300,631.34	39.49225	-107.97845	
KOP 3°/100 Build & Turn										
800.00	5.32	316.24	799.05	27.97	-20.28	1,613,725.01	2,300,627.70	39.49226	-107.97846	
1,000.00	11.27	310.40	996.88	47.35	-41.59	1,613,744.97	2,300,606.92	39.49231	-107.97854	
1,183.45	16.76	308.67	1,174.80	75.52	-75.92	1,613,774.06	2,300,573.37	39.49239	-107.97866	
Hold 16.76 Inc, 308.67° Azi										
1,200.00	16.76	308.67	1,190.65	78.50	-79.64	1,613,777.14	2,300,569.73	39.49240	-107.97867	
1,400.00	16.76	308.67	1,382.15	114.54	-124.66	1,613,814.39	2,300,525.71	39.49250	-107.97883	
1,600.00	16.76	308.67	1,573.66	150.57	-169.68	1,613,851.63	2,300,481.69	39.49260	-107.97899	
1,800.00	16.76	308.67	1,765.16	186.61	-214.70	1,613,888.88	2,300,437.68	39.49270	-107.97915	
2,000.00	16.76	308.67	1,956.67	222.64	-259.72	1,613,926.13	2,300,393.66	39.49279	-107.97931	
2,200.00	16.76	308.67	2,148.18	258.68	-304.74	1,613,963.38	2,300,349.64	39.49289	-107.97947	
2,245.77	16.76	308.67	2,192.00	266.92	-315.05	1,613,971.90	2,300,339.57	39.49292	-107.97950	
Top of "G" Sand										
2,350.20	16.76	308.67	2,292.00	285.74	-338.55	1,613,991.35	2,300,316.58	39.49297	-107.97959	
Base of "G" Sand										
2,400.00	16.76	308.67	2,339.68	294.71	-349.76	1,614,000.63	2,300,305.62	39.49299	-107.97963	
2,454.64	16.76	308.67	2,392.00	304.55	-362.06	1,614,010.80	2,300,293.60	39.49302	-107.97967	
9 5/8"										
2,600.00	16.76	308.67	2,531.19	330.75	-394.78	1,614,037.87	2,300,261.60	39.49309	-107.97979	
2,800.00	16.76	308.67	2,722.70	366.78	-439.80	1,614,075.12	2,300,217.59	39.49319	-107.97995	
3,000.00	16.76	308.67	2,914.20	402.82	-484.82	1,614,112.37	2,300,173.57	39.49329	-107.98011	
3,200.00	16.76	308.67	3,105.71	438.85	-529.84	1,614,149.62	2,300,129.55	39.49339	-107.98027	
3,400.00	16.76	308.67	3,297.22	474.88	-574.86	1,614,186.87	2,300,085.53	39.49349	-107.98043	
3,600.00	16.76	308.67	3,488.72	510.92	-619.88	1,614,224.11	2,300,041.51	39.49359	-107.98058	
3,800.00	16.76	308.67	3,680.23	546.95	-664.90	1,614,261.36	2,299,997.49	39.49369	-107.98074	
4,000.00	16.76	308.67	3,871.74	582.99	-709.92	1,614,298.61	2,299,953.48	39.49378	-107.98090	
4,200.00	16.76	308.67	4,063.24	619.02	-754.94	1,614,335.86	2,299,909.46	39.49388	-107.98106	
4,400.00	16.76	308.67	4,254.75	655.06	-799.96	1,614,373.10	2,299,865.44	39.49398	-107.98122	
4,595.56	16.76	308.67	4,442.00	690.29	-843.98	1,614,409.53	2,299,822.40	39.49408	-107.98138	
Mesaverde										
4,600.00	16.76	308.67	4,446.25	691.09	-844.98	1,614,410.35	2,299,821.42	39.49408	-107.98138	
4,800.00	16.76	308.67	4,637.76	727.13	-890.00	1,614,447.60	2,299,777.40	39.49418	-107.98154	
5,000.00	16.76	308.67	4,829.27	763.16	-935.02	1,614,484.85	2,299,733.38	39.49428	-107.98170	
5,200.00	16.76	308.67	5,020.77	799.20	-980.04	1,614,522.10	2,299,689.37	39.49438	-107.98186	
5,268.12	16.76	308.67	5,086.00	811.47	-995.37	1,614,534.78	2,299,674.37	39.49441	-107.98192	
Start Drop 2°/100										
5,400.00	14.12	308.67	5,213.11	833.41	-1,022.78	1,614,557.46	2,299,647.58	39.49447	-107.98201	
5,600.00	10.12	308.67	5,408.61	859.64	-1,055.56	1,614,584.58	2,299,615.53	39.49454	-107.98213	
5,800.00	6.12	308.67	5,606.57	877.29	-1,077.61	1,614,602.82	2,299,593.97	39.49459	-107.98221	
6,000.00	2.12	308.67	5,806.01	886.27	-1,088.83	1,614,612.10	2,299,583.00	39.49462	-107.98225	
6,106.01	0.00	213.02	5,912.00	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225	
Top Gas - Approx. Top Gas										



**IBM Global Services**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well PA 333-27 - Slot A03
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	PA 27-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	PA 543-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 333-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jun13 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
6,200.00	0.00	213.02	6,005.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
6,400.00	0.00	213.02	6,205.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
6,600.00	0.00	213.02	6,405.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
6,800.00	0.00	213.02	6,605.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
7,000.00	0.00	213.02	6,805.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
7,200.00	0.00	213.02	7,005.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
7,400.00	0.00	213.02	7,205.99	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
7,406.01	0.00	213.02	7,212.00	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
Cameo Coals									
7,600.00	0.00	213.02	7,405.99	887.49	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
7,800.00	0.00	213.02	7,605.99	887.49	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
8,000.00	0.00	213.02	7,805.99	887.49	-1,090.36	1,614,613.36	2,299,581.50	39.49462	-107.98225
8,106.01	0.00	213.02	7,912.00	887.49	-1,090.36	1,614,613.36	2,299,581.50	39.49462	-107.98225
Rollins SS									
8,200.00	0.00	213.02	8,005.99	887.49	-1,090.36	1,614,613.36	2,299,581.50	39.49462	-107.98225
8,206.01	0.00	213.02	8,012.00	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
TD at 8206.01 - 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) P/ - plan hits target center - Circle (radius 50.00)	0.00	0.00	5,912.00	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225
TD PA 333-27 - plan hits target center - Point	0.00	0.00	8,012.00	887.50	-1,090.36	1,614,613.37	2,299,581.50	39.49462	-107.98225

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
2,454.64	2,392.00	9 5/8"		9.625	12.250



<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well PA 333-27 - Slot A03
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Project:</b>	PA 27-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5592.00usft (Nabors 573 (26' RKB) kjs)
<b>Site:</b>	PA 543-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 333-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jun13 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,245.77	2,192.00	Top of "G" Sand				
2,350.20	2,292.00	Base of "G" Sand				
4,595.56	4,442.00	Mesaverde				
6,106.01	5,912.00	Approx. Top Gas				
7,406.01	7,212.00	Cameo Coals				
8,106.01	7,912.00	Rollins SS				
8,206.01	8,012.00	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 Nudge 3°/100 Build & Turn	
220.00	219.95	2.14	-1.50	Hold 3.00 Inc, 325° Azi	
720.00	719.27	23.58	-16.51	KOP 3°/100 Build & Turn	
1,183.45	1,174.80	75.52	-75.92	Hold 16.76 Inc, 308.67° Azi	
5,268.12	5,086.00	811.47	-995.37	Start Drop 2°/100	
6,106.01	5,912.00	887.50	-1,090.36	Top Gas	
8,206.01	8,012.00	887.50	-1,090.36	TD at 8206.01	