



Well Name: RU 431-8

Surface Location: RU 21-8 Pad

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

Ground Elevation: 7736.00

+N/-S  
0.00

+E/-W  
0.00

Northing  
1602658.04

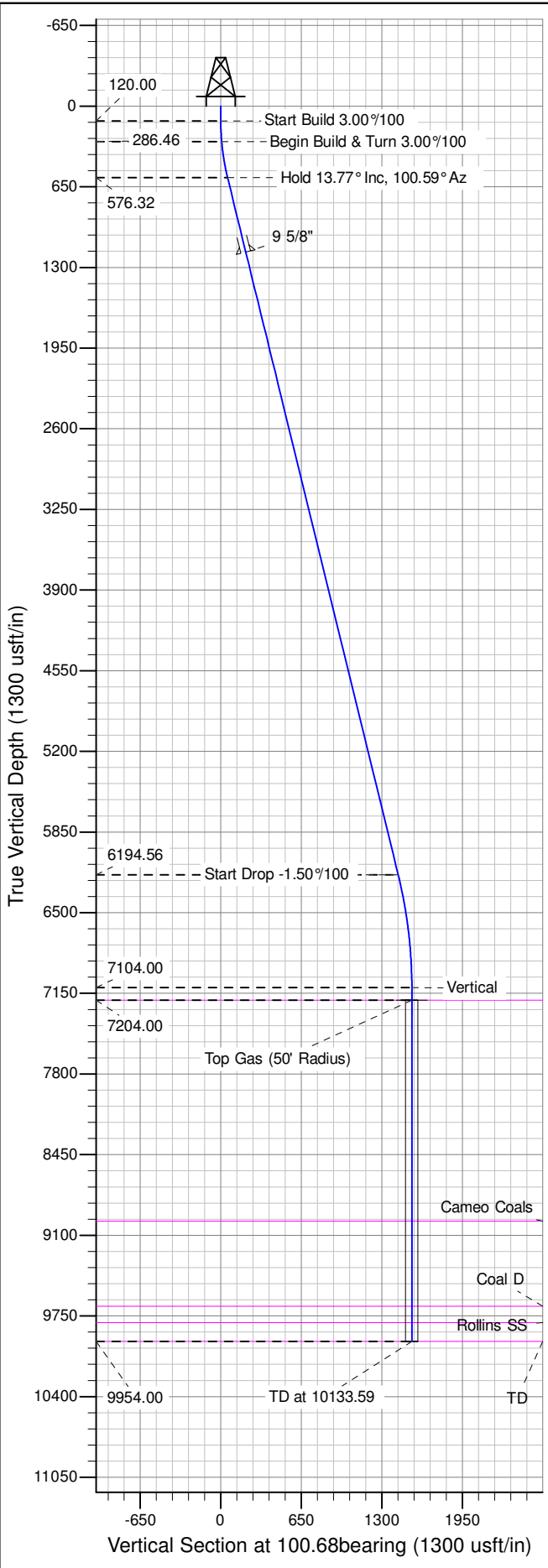
Easting  
2350479.88

Latitude  
39.46549

Longitude  
-107.80088

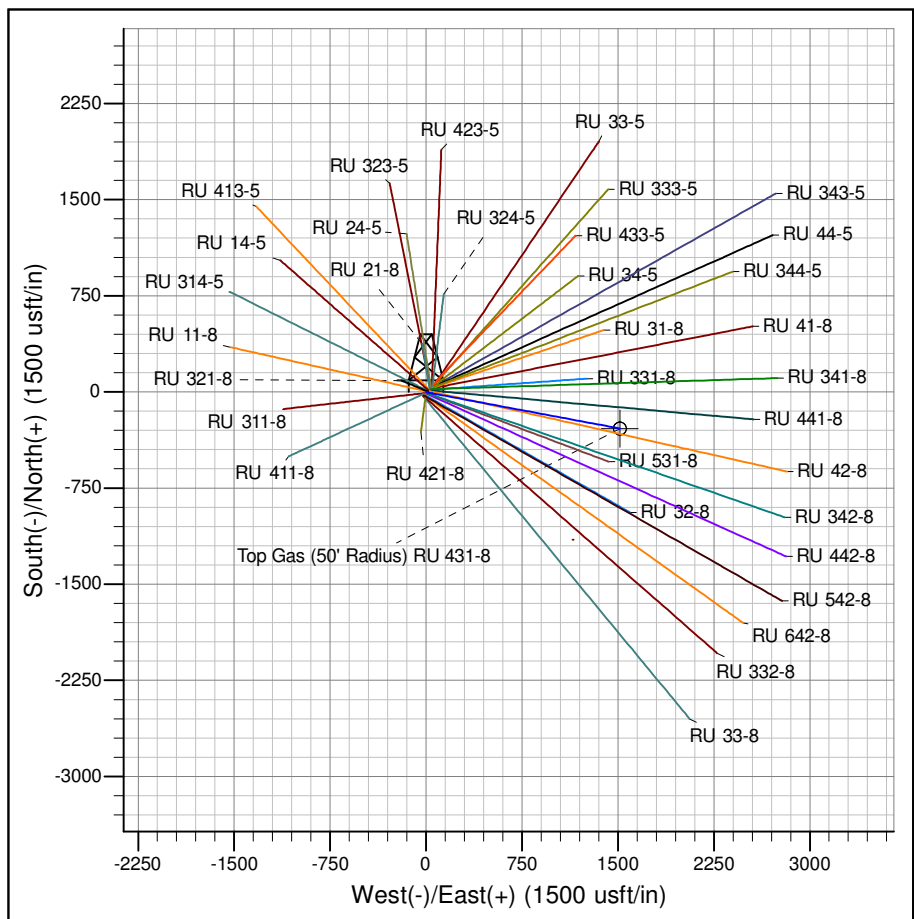
Slot  
B06

KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	V Sect	Departure	Annotation
120.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00%/100
286.46	286.67	5.00	107.00	-2.12	6.95	7.22	7.27	Begin Build & Turn 3.00%/100
576.32	580.75	13.77	100.59	-12.33	53.71	55.06	55.15	Hold 13.77° Inc, 100.59° Az
6194.56	6365.34	13.77	100.59	-265.53	1407.49	1432.32	1432.41	Start Drop -1.50%/100
7104.00	7283.59	0.00	0.00	-285.72	1515.46	1542.16	1542.25	Vertical
7204.00	7383.59	0.00	0.00	-285.72	1515.46	1542.16	1542.25	Top Gas
9954.00	10133.59	0.00	0.00	-285.72	1515.46	1542.16	1542.25	TD at 10133.59



# **PICEANCE VLY NAD 83**

**RU 08-07S-093W**

**RU 21-8 Pad**

**RU 431-8 - Slot B06**

**Wellbore #1**

**Plan: Design #1 08Sep14 mab**

## **Standard Planning Report - Geographic**

**04 November, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 431-8 - Slot B06
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 431-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 mab		

<b>Project</b>	RU 08-07S-093W		
<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>	RU 21-8 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,602,707.70000 usft	<b>Latitude:</b>	39.46563
<b>From:</b>	Map	<b>Easting:</b>	2,350,555.60000 usft	<b>Longitude:</b>	-107.80061
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	-1.45 °

<b>Well</b>	RU 431-8 - Slot B06					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,602,658.03719 usft	<b>Latitude:</b>	39.46549
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,350,479.87942 usft	<b>Longitude:</b>	-107.80088
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	7,736.00 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	9/8/2014	9.84	65.66	51,918

<b>Design</b>	Design #1 08Sep14 mab			
<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 (bearing)</b>
	0.00	0.00	0.00	100.68

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
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	
286.67	5.00	107.00	286.46	-2.12	6.95	3.00	3.00	0.00	107.00	
580.75	13.77	100.59	576.32	-12.33	53.71	3.00	2.98	-2.18	-9.97	
6,365.34	13.77	100.59	6,194.56	-265.53	1,407.49	0.00	0.00	0.00	0.00	
7,283.59	0.00	0.00	7,104.00	-285.72	1,515.46	1.50	-1.50	0.00	180.00	
10,133.59	0.00	0.00	9,954.00	-285.72	1,515.46	0.00	0.00	0.00	0.00	TD / PBHL RU 431-8

**WPX**  
 Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 431-8 - Slot B06
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 431-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 mab		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	1,602,658.03719	2,350,479.87942	39.46549	-107.80088	
120.00	0.00	0.00	120.00	0.00	0.00	1,602,658.03719	2,350,479.87942	39.46549	-107.80088	
<b>Start Build 3.00°/100</b>										
200.00	2.40	107.00	199.98	-0.49	1.60	1,602,657.50697	2,350,481.46857	39.46549	-107.80087	
286.67	5.00	107.00	286.46	-2.12	6.95	1,602,655.73703	2,350,486.77342	39.46548	-107.80085	
<b>Begin Build &amp; Turn 3.00°/100</b>										
400.00	8.37	102.95	399.00	-5.42	19.71	1,602,652.12108	2,350,499.45080	39.46547	-107.80081	
580.75	13.77	100.59	576.32	-12.33	53.71	1,602,644.35291	2,350,533.25999	39.46545	-107.80069	
<b>Hold 13.77° Inc, 100.59° Az</b>										
600.00	13.77	100.59	595.02	-13.17	58.22	1,602,643.39632	2,350,537.74308	39.46545	-107.80067	
800.00	13.77	100.59	789.27	-21.92	105.02	1,602,633.45943	2,350,584.31283	39.46543	-107.80051	
1,000.00	13.77	100.59	983.52	-30.68	151.83	1,602,623.52255	2,350,630.88258	39.46540	-107.80034	
1,200.00	13.77	100.59	1,177.77	-39.43	198.64	1,602,613.58566	2,350,677.45233	39.46538	-107.80017	
<b>9 5/8"</b>										
1,400.00	13.77	100.59	1,372.01	-48.19	245.44	1,602,603.64877	2,350,724.02208	39.46535	-107.80001	
1,600.00	13.77	100.59	1,566.26	-56.94	292.25	1,602,593.71189	2,350,770.59181	39.46533	-107.79984	
1,800.00	13.77	100.59	1,760.51	-65.70	339.05	1,602,583.77501	2,350,817.16156	39.46531	-107.79968	
2,000.00	13.77	100.59	1,954.76	-74.45	385.86	1,602,573.83812	2,350,863.73131	39.46528	-107.79951	
2,200.00	13.77	100.59	2,149.01	-83.21	432.67	1,602,563.90123	2,350,910.30106	39.46526	-107.79935	
2,400.00	13.77	100.59	2,343.26	-91.96	479.47	1,602,553.96434	2,350,956.87081	39.46523	-107.79918	
2,600.00	13.77	100.59	2,537.51	-100.71	526.28	1,602,544.02746	2,351,003.44056	39.46521	-107.79901	
2,800.00	13.77	100.59	2,731.75	-109.47	573.09	1,602,534.09057	2,351,050.01031	39.46519	-107.79885	
3,000.00	13.77	100.59	2,926.00	-118.22	619.89	1,602,524.15368	2,351,096.58006	39.46516	-107.79868	
3,200.00	13.77	100.59	3,120.25	-126.98	666.70	1,602,514.21679	2,351,143.14981	39.46514	-107.79852	
3,400.00	13.77	100.59	3,314.50	-135.73	713.51	1,602,504.27991	2,351,189.71955	39.46511	-107.79835	
3,600.00	13.77	100.59	3,508.75	-144.49	760.31	1,602,494.34302	2,351,236.28930	39.46509	-107.79818	
3,800.00	13.77	100.59	3,703.00	-153.24	807.12	1,602,484.40613	2,351,282.85905	39.46507	-107.79802	
4,000.00	13.77	100.59	3,897.25	-161.99	853.93	1,602,474.46924	2,351,329.42880	39.46504	-107.79785	
4,200.00	13.77	100.59	4,091.49	-170.75	900.73	1,602,464.53236	2,351,375.99855	39.46502	-107.79769	
4,400.00	13.77	100.59	4,285.74	-179.50	947.54	1,602,454.59547	2,351,422.56829	39.46499	-107.79752	
4,600.00	13.77	100.59	4,479.99	-188.26	994.34	1,602,444.65858	2,351,469.13804	39.46497	-107.79736	
4,800.00	13.77	100.59	4,674.24	-197.01	1,041.15	1,602,434.72169	2,351,515.70779	39.46495	-107.79719	
5,000.00	13.77	100.59	4,868.49	-205.77	1,087.96	1,602,424.78481	2,351,562.27753	39.46492	-107.79702	
5,200.00	13.77	100.59	5,062.74	-214.52	1,134.76	1,602,414.84792	2,351,608.84728	39.46490	-107.79686	
5,400.00	13.77	100.59	5,256.99	-223.27	1,181.57	1,602,404.91103	2,351,655.41703	39.46487	-107.79669	
5,600.00	13.77	100.59	5,451.23	-232.03	1,228.38	1,602,394.97414	2,351,701.98678	39.46485	-107.79653	
5,800.00	13.77	100.59	5,645.48	-240.78	1,275.18	1,602,385.03726	2,351,748.55653	39.46483	-107.79636	
6,000.00	13.77	100.59	5,839.73	-249.54	1,321.99	1,602,375.10037	2,351,795.12628	39.46480	-107.79620	
6,200.00	13.77	100.59	6,033.98	-258.29	1,368.80	1,602,365.16348	2,351,841.69603	39.46478	-107.79603	
6,365.34	13.77	100.59	6,194.56	-265.53	1,407.49	1,602,356.94889	2,351,880.19417	39.46476	-107.79589	
<b>Start Drop -1.50°/100</b>										
6,400.00	13.25	100.59	6,228.27	-267.02	1,415.45	1,602,355.25850	2,351,888.11625	39.46475	-107.79586	
6,600.00	10.25	100.59	6,424.05	-274.51	1,455.50	1,602,346.75755	2,351,927.95641	39.46473	-107.79572	
6,800.00	7.25	100.59	6,621.70	-280.10	1,485.41	1,602,340.40648	2,351,957.72101	39.46472	-107.79562	
7,000.00	4.25	100.59	6,820.67	-283.79	1,505.12	1,602,336.22271	2,351,977.32848	39.46471	-107.79555	
7,200.00	1.25	100.59	7,020.41	-285.56	1,514.56	1,602,334.21770	2,351,986.72507	39.46470	-107.79551	
7,283.59	0.00	0.00	7,104.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>Vertical</b>										
7,383.59	0.00	0.00	7,204.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>Top Gas - Approx. Top Gas</b>										
7,400.00	0.00	0.00	7,220.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
7,600.00	0.00	0.00	7,420.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 431-8 - Slot B06
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 431-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 mab		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
7,800.00	0.00	0.00	7,620.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
8,000.00	0.00	0.00	7,820.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
8,200.00	0.00	0.00	8,020.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
8,400.00	0.00	0.00	8,220.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
8,600.00	0.00	0.00	8,420.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
8,800.00	0.00	0.00	8,620.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,000.00	0.00	0.00	8,820.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,165.59	0.00	0.00	8,986.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>Cameo Coals</b>										
9,200.00	0.00	0.00	9,020.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,400.00	0.00	0.00	9,220.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,600.00	0.00	0.00	9,420.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,800.00	0.00	0.00	9,620.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
9,850.59	0.00	0.00	9,671.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>Coal D</b>										
9,983.59	0.00	0.00	9,804.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>Rollins SS</b>										
10,000.00	0.00	0.00	9,820.41	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
10,133.59	0.00	0.00	9,954.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
<b>TD at 10133.59</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top Gas (50' Radius) RL - plan hits target center - Circle (radius 50.00)	0.00	358.55	7,204.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	
TD / PBHL RU 431-8 - plan hits target center - Point	0.00	0.00	9,954.00	-285.72	1,515.46	1,602,334.02683	2,351,987.61960	39.46470	-107.79551	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,200.00	1,177.77	9 5/8"	9.625	13.500		

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RU 431-8 - Slot B06
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 08-07S-093W	<b>MD Reference:</b>	KELLY BUSHING @ 7762.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RU 21-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RU 431-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Sep14 mab		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
7,383.59	7,204.00	Approx. Top Gas				
9,165.59	8,986.00	Cameo Coals				
9,850.59	9,671.00	Coal D				
9,983.59	9,804.00	Rollins SS				
10,133.59	9,954.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
120.00	120.00	0.00	0.00	Start Build 3.00°/100	
286.67	286.46	-2.12	6.95	Begin Build & Turn 3.00°/100	
580.75	576.32	-12.33	53.71	Hold 13.77° Inc, 100.59° Az	
6,365.34	6,194.56	-265.53	1,407.49	Start Drop -1.50°/100	
7,283.59	7,104.00	-285.72	1,515.46	Vertical	
7,383.59	7,204.00	-285.72	1,515.46	Top Gas	
10,133.59	9,954.00	-285.72	1,515.46	TD at 10133.59	