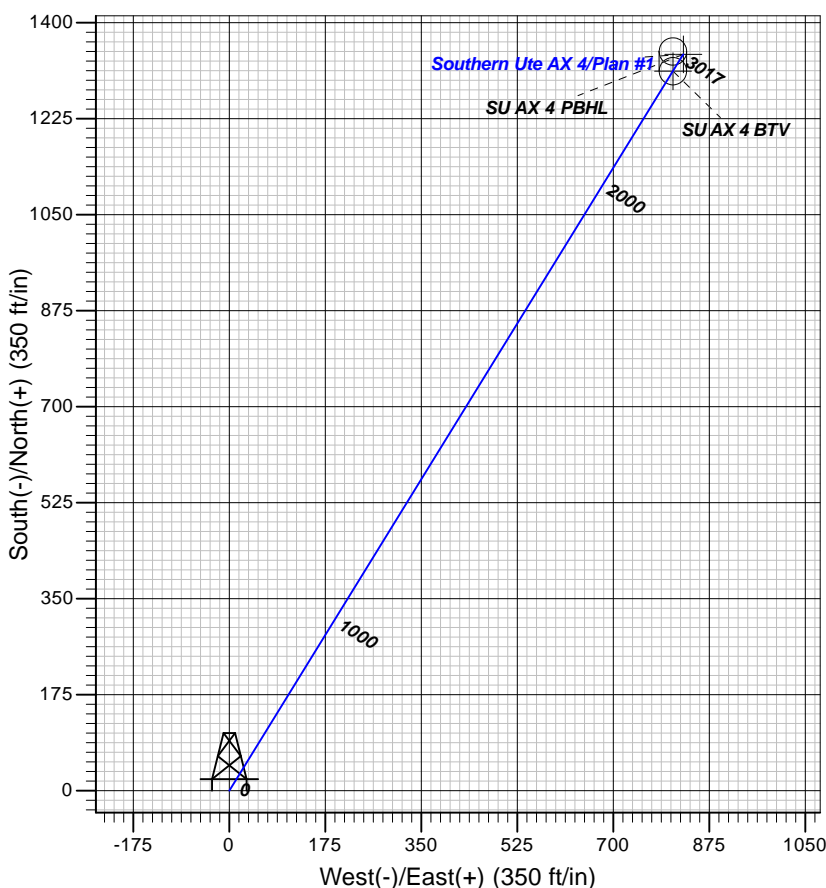
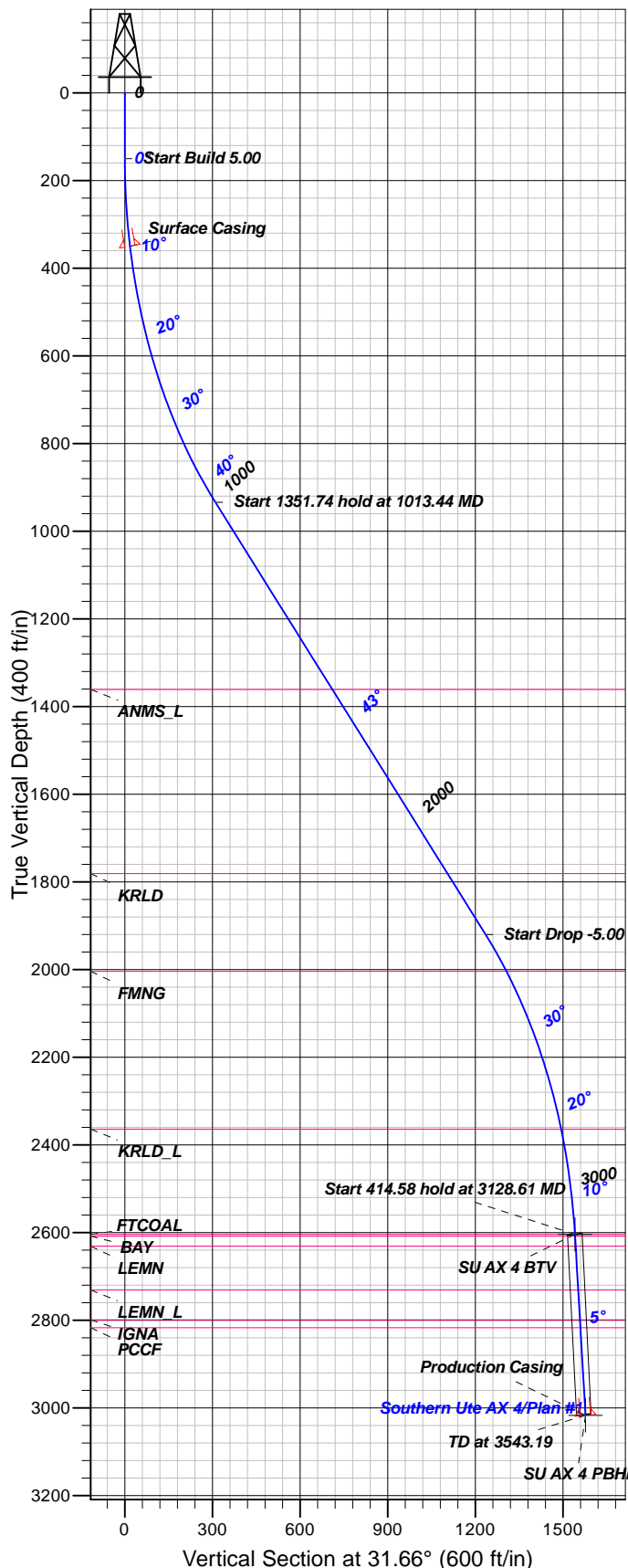


## Well Details: Southern Ute AX 4

GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1177466.71	2374321.63	37.1343060	-107.6464240	

**G** Azimuths to Grid North  
**T** True North: 1.32°  
**M** Magnetic North: 10.67°  
 Magnetic Field  
 Strength: 50355.5nT  
 Dip Angle: 63.70°  
 Date: 5/8/2015  
 Model: HDGM



### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1361.00	1598.89	ANMS_L
1781.00	2174.78	KRLD
2004.00	2475.73	FMNG
2364.00	2883.54	KRLD_L
2604.00	3128.61	FTCOAL
2608.00	3132.62	BAY
2631.00	3155.71	LEMN
2731.00	3256.09	LEMN_L
2799.00	3324.35	IGNA
2817.00	3342.42	PCCF

### Plan: Plan #1

12:00, May 08 2015  
Created By: Janie Collins

PROJECT DETAILS: La Plata County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Southern Zone

System Datum: Mean Sea Level

### CASING DETAILS

TVD	MD	Name	Size
350.00	351.03	Surface Casing	8.625
3017.00	3543.19	Production Casing	5.500

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	1013.44	43.17	31.66	934.02	264.03	162.80	5.00	31.66	310.19	
4	2365.17	43.17	31.66	1919.85	1051.26	648.20	0.00	0.001235.03		
5	3128.61	5.00	31.66	2604.00	1311.58	808.72	5.00	180.001540.87	SU AX 4 BTV	
6	3543.19	5.00	31.66	3017.00	1342.34	827.68	0.00	0.001577.00	SU AX 4 PBHL	

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SU AX 4 BTV	2604.00	1311.58	808.72	1178778.29	2375130.35	37.1379582	-107.6437538	Circle (Radius: 25.00)
- plan hits target center								
SU AX 4 PBHL	3017.00	1342.34	827.68	1178809.05	2375149.31	37.1380438	-107.6436912	Point
- plan misses target center by 0.01ft at 3543.19ft MD (3017.00 TVD, 1342.34 N, 827.68 E)								



**B.P.**

La Plata County, CO NAD83  
SEC 6-T33N-R7W  
Southern Ute AX 4

OH

Plan: Plan #1

## **Standard Planning Report**

08 May, 2015





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute AX 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Site:</b>	SEC 6-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute AX 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	La Plata County, CO NAD83		
<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 Southern Zone		

Site		SEC 6-T33N-R7W			
Site Position:		Northing:	1,177,466.71 usft	Latitude:	37.1343060
From:	Lat/Long	Easting:	2,374,321.63 usft	Longitude:	-107.6464240
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.32 °

Well	Southern Ute AX 4					
Well Position	+N/-S	0.00 ft	Northing:	1,177,466.71 usft	Latitude:	37.1343060
	+E/-W	0.00 ft	Easting:	2,374,321.63 usft	Longitude:	-107.6464240
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,567.40 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	5/8/2015	9.35	63.70	50,356

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	31.66

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,013.44	43.17	31.66	934.02	264.03	162.80	5.00	5.00	0.00	31.66	
2,365.17	43.17	31.66	1,919.85	1,051.26	648.20	0.00	0.00	0.00	0.00	
3,128.61	5.00	31.66	2,604.00	1,311.58	808.72	5.00	-5.00	0.00	180.00	SU AX 4 BTV
3,543.19	5.00	31.66	3,017.00	1,342.34	827.68	0.00	0.00	0.00	0.00	SU AX 4 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute AX 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Site:</b>	SEC 6-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute AX 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 5.00</b>									
200.00	2.50	31.66	199.98	0.93	0.57	1.09	5.00	5.00	0.00
300.00	7.50	31.66	299.57	8.34	5.15	9.80	5.00	5.00	0.00
351.03	10.05	31.66	350.00	14.97	9.23	17.59	5.00	5.00	0.00
<b>Surface Casing</b>									
400.00	12.50	31.66	398.02	23.12	14.26	27.16	5.00	5.00	0.00
500.00	17.50	31.66	494.58	45.14	27.84	53.04	5.00	5.00	0.00
600.00	22.50	31.66	588.52	74.25	45.78	87.23	5.00	5.00	0.00
700.00	27.50	31.66	679.12	110.21	67.96	129.48	5.00	5.00	0.00
800.00	32.50	31.66	765.70	152.76	94.19	179.46	5.00	5.00	0.00
900.00	37.50	31.66	847.59	201.56	124.28	236.80	5.00	5.00	0.00
1,000.00	42.50	31.66	924.17	256.26	158.01	301.06	5.00	5.00	0.00
1,013.44	43.17	31.66	934.02	264.03	162.80	310.19	5.00	5.00	0.00
<b>Start 1351.74 hold at 1013.44 MD</b>									
1,100.00	43.17	31.66	997.15	314.45	193.89	369.42	0.00	0.00	0.00
1,200.00	43.17	31.66	1,070.08	372.69	229.80	437.84	0.00	0.00	0.00
1,300.00	43.17	31.66	1,143.01	430.92	265.71	506.26	0.00	0.00	0.00
1,400.00	43.17	31.66	1,215.95	489.16	301.62	574.68	0.00	0.00	0.00
1,500.00	43.17	31.66	1,288.88	547.40	337.53	643.09	0.00	0.00	0.00
1,598.89	43.17	31.66	1,361.00	604.99	373.04	710.76	0.00	0.00	0.00
<b>ANMS_L</b>									
1,600.00	43.17	31.66	1,361.81	605.64	373.44	711.51	0.00	0.00	0.00
1,700.00	43.17	31.66	1,434.74	663.87	409.35	779.93	0.00	0.00	0.00
1,800.00	43.17	31.66	1,507.67	722.11	445.25	848.35	0.00	0.00	0.00
1,900.00	43.17	31.66	1,580.60	780.35	481.16	916.77	0.00	0.00	0.00
2,000.00	43.17	31.66	1,653.53	838.59	517.07	985.19	0.00	0.00	0.00
2,100.00	43.17	31.66	1,726.46	896.83	552.98	1,053.61	0.00	0.00	0.00
2,174.78	43.17	31.66	1,781.00	940.38	579.84	1,104.77	0.00	0.00	0.00
<b>KRLD</b>									
2,200.00	43.17	31.66	1,799.39	955.06	588.89	1,122.03	0.00	0.00	0.00
2,300.00	43.17	31.66	1,872.32	1,013.30	624.80	1,190.44	0.00	0.00	0.00
2,365.17	43.17	31.66	1,919.85	1,051.26	648.20	1,235.03	0.00	0.00	0.00
<b>Start Drop -5.00</b>									
2,400.00	41.43	31.66	1,945.61	1,071.21	660.51	1,258.47	5.00	-5.00	0.00
2,475.73	37.64	31.66	2,004.00	1,112.23	685.80	1,306.67	5.00	-5.00	0.00
<b>FMNG</b>									
2,500.00	36.43	31.66	2,023.38	1,124.68	693.48	1,321.29	5.00	-5.00	0.00
2,600.00	31.43	31.66	2,106.32	1,172.18	722.76	1,377.09	5.00	-5.00	0.00
2,700.00	26.43	31.66	2,193.81	1,213.34	748.14	1,425.45	5.00	-5.00	0.00
2,800.00	21.43	31.66	2,285.19	1,247.85	769.43	1,466.00	5.00	-5.00	0.00
2,883.54	17.25	31.66	2,364.00	1,271.40	783.95	1,493.66	5.00	-5.00	0.00
<b>KRLD_L</b>									
2,900.00	16.43	31.66	2,379.75	1,275.46	786.45	1,498.43	5.00	-5.00	0.00
3,000.00	11.43	31.66	2,476.78	1,295.95	799.08	1,522.50	5.00	-5.00	0.00
3,100.00	6.43	31.66	2,575.54	1,309.16	807.22	1,538.02	5.00	-5.00	0.00
3,128.61	5.00	31.66	2,604.00	1,311.58	808.72	1,540.87	5.00	-5.00	0.00
<b>Start 414.58 hold at 3128.61 MD - FTCOAL - SU AX 4 BTV</b>									
3,132.62	5.00	31.66	2,608.00	1,311.88	808.90	1,541.22	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute AX 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Site:</b>	SEC 6-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute AX 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
BAY										
3,155.71	5.00	31.66	2,631.00	1,313.59	809.96	1,543.23	0.00	0.00	0.00	
LEMN										
3,200.00	5.00	31.66	2,675.12	1,316.88	811.99	1,547.09	0.00	0.00	0.00	
3,256.09	5.00	31.66	2,731.00	1,321.04	814.55	1,551.98	0.00	0.00	0.00	
LEMN_L										
3,300.00	5.00	31.66	2,774.74	1,324.30	816.56	1,555.80	0.00	0.00	0.00	
3,324.35	5.00	31.66	2,799.00	1,326.10	817.67	1,557.93	0.00	0.00	0.00	
IGNA										
3,342.42	5.00	31.66	2,817.00	1,327.44	818.50	1,559.50	0.00	0.00	0.00	
PCCF										
3,400.00	5.00	31.66	2,874.36	1,331.71	821.13	1,564.52	0.00	0.00	0.00	
3,500.00	5.00	31.66	2,973.98	1,339.13	825.71	1,573.24	0.00	0.00	0.00	
3,543.19	5.00	31.66	3,017.00	1,342.34	827.68	1,577.00	0.00	0.00	0.00	
TD at 3543.19 - Production Casing - SU AX 4 PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SU AX 4 BTV	-5.00	360.00	2,604.00	1,311.58	808.72	1,178,778.29	2,375,130.35	37.1379582	-107.6437539
- plan hits target center									
- Circle (radius 25.00)									
SU AX 4 PBHL	0.00	0.00	3,017.00	1,342.34	827.68	1,178,809.05	2,375,149.31	37.1380438	-107.6436913
- plan misses target center by 0.01ft at 3543.19ft MD (3017.00 TVD, 1342.34 N, 827.68 E)									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
351.03	350.00	Surface Casing	8.625	12.250	
3,543.19	3,017.00	Production Casing	5.500	7.875	



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute AX 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6567.40' & RKB 11' @ 6578.40ft (Aztec 507)
<b>Site:</b>	SEC 6-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute AX 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,598.89	1,361.00	ANMS_L		0.00	0.00
2,174.78	1,781.00	KRLD		0.00	0.00
2,475.73	2,004.00	FMNG		0.00	0.00
2,883.54	2,364.00	KRLD_L		0.00	0.00
3,128.61	2,604.00	FTCOAL		0.00	0.00
3,132.62	2,608.00	BAY		0.00	0.00
3,155.71	2,631.00	LEMN		0.00	0.00
3,256.09	2,731.00	LEMN_L		0.00	0.00
3,324.35	2,799.00	IGNA		0.00	0.00
3,342.42	2,817.00	PCCF		0.00	0.00

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.00	0.00	Start Build 5.00
1,013.44	934.02	264.03	162.80	Start 1351.74 hold at 1013.44 MD
2,365.17	1,919.85	1,051.26	648.20	Start Drop -5.00
3,128.61	2,604.00	1,311.58	808.72	Start 414.58 hold at 3128.61 MD
3,543.19	3,017.00	1,342.34	827.68	TD at 3543.19