



Company: B.P.  
Project: La Plata County, CO NAD83  
Site: UTE Pad  
Well: UTE AB 2



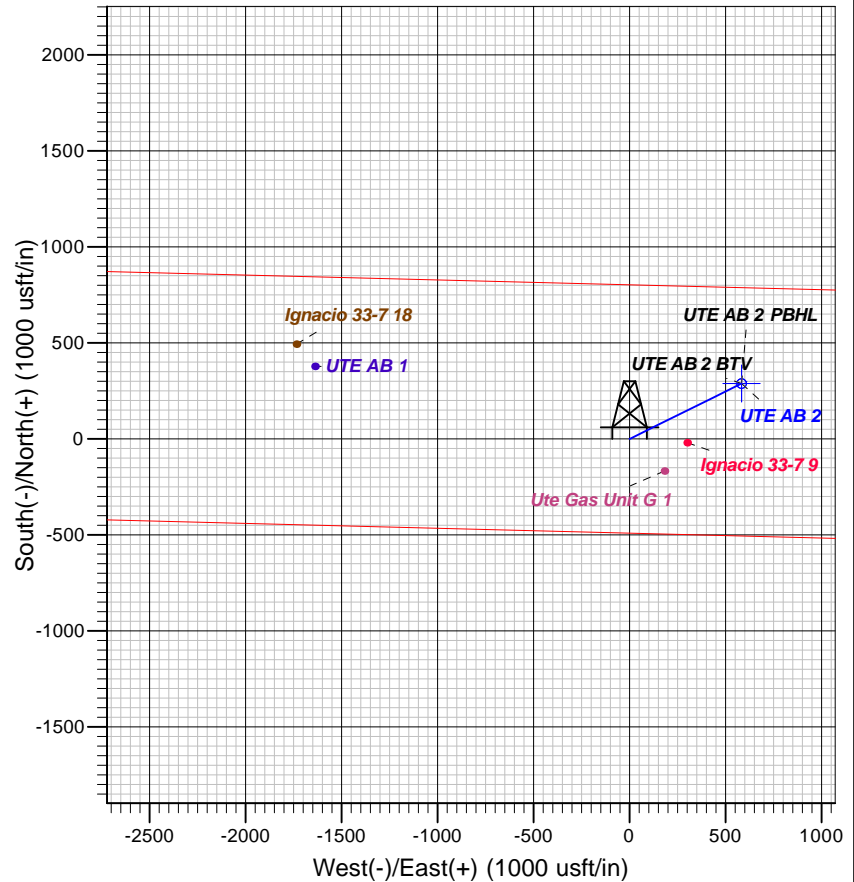
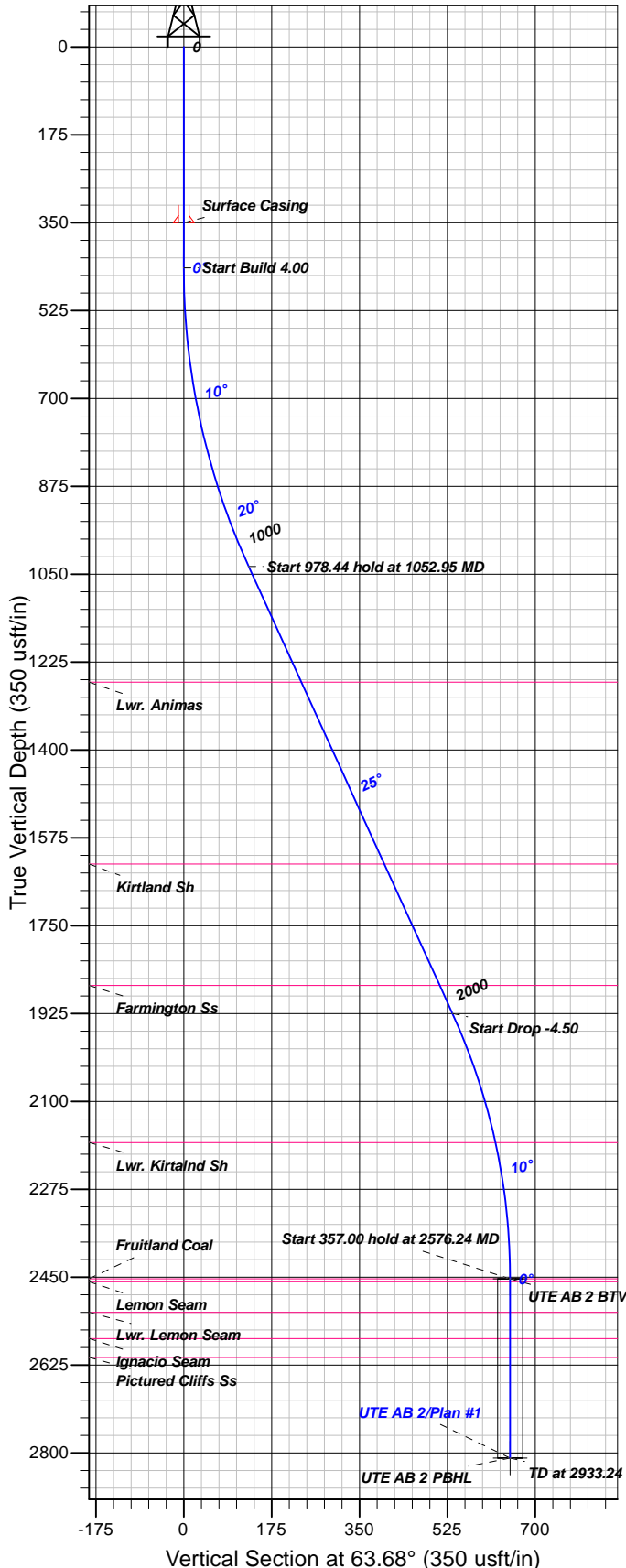
### Well Details: UTE AB 2

GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1164749.28	2384281.72	37.1000115	-107.6112812	

Azimuths to Grid North  
True North: 1.29°  
Magnetic North: 10.60°

Magnetic Field  
Strength: 50287.7snT  
Dip Angle: 63.67°  
Date: 10/28/2015  
Model: HDGM



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1265.00	1306.39	Lwr. Animas
1627.00	1704.27	Kirtland Sh
1869.00	1970.25	Farmington Ss
2182.00	2303.15	Lwr. Kirtland Sh
2453.00	2576.24	Fruitland Coal
2459.00	2582.24	Lemon Seam
2520.00	2643.24	Lwr. Lemon Seam
2572.00	2695.24	Ignacio Seam
2610.00	2733.24	Pictured Cliffs Ss

#### Plan: Plan #1

14:47, October 28 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	350.00	Surface Casing	9.62

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	440.00	0.00	0.00	440.00	0.00	0.00	0.00	0.00	0.00	
3	1052.95	24.52	63.68	1034.42	57.26	115.77	4.00	63.68	129.16	
4	2031.39	24.52	63.68	1924.63	237.25	479.73	0.00	0.00	535.19	
5	2576.24	0.00	0.00	2453.00	288.15	582.64	4.50	180.00	650.00	UTE AB 2 BTM
6	2933.24	0.00	0.00	2810.00	288.15	582.64	0.00	0.00	650.00	UTE AB 2 PBHL

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
UTE AB 2 BTM	2453.00	288.15	582.64	1165037.43	2384864.36	37.1008388	-107.6093063	Circle (Radius: 25.00)
- plan hits target center								
UTE AB 2 PBHL	2810.00	288.15	582.64	1165037.43	2384864.36	37.1008388	-107.6093063	Point
- plan hits target center								



**B.P.**

**La Plata County, CO NAD83**

**UTE Pad**

**UTE AB 2**

**Pilot**

**Plan: Plan #1**

## **Standard Planning Report**

**28 October, 2015**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well UTE AB 2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)
<b>Site:</b>	UTE Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	UTE AB 2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<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		

<b>Site</b>	UTE Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,164,749.28 usft	<b>Latitude:</b> 37.1000114
<b>From:</b> Map		<b>Easting:</b>	2,384,281.72 usft	<b>Longitude:</b> -107.6112812
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.30 °

<b>Well</b>	UTE AB 2			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,164,749.28 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,384,281.72 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	6,443.33 usft

<b>Wellbore</b>	Pilot				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	10/28/2015	9.30	63.67	50,288

<b>Design</b>	Plan #1			
<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	63.68

<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	
440.00	0.00	0.00	440.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,052.95	24.52	63.68	1,034.42	57.26	115.77	4.00	4.00	0.00	63.68	
2,031.39	24.52	63.68	1,924.63	237.25	479.73	0.00	0.00	0.00	0.00	
2,576.24	0.00	0.00	2,453.00	288.15	582.64	4.50	-4.50	0.00	180.00	UTE AB 2 BTV
2,933.24	0.00	0.00	2,810.00	288.15	582.64	0.00	0.00	0.00	0.00	UTE AB 2 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well UTE AB 2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)
<b>Site:</b>	UTE Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	UTE AB 2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #1		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
440.00	0.00	0.00	440.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.40	63.68	499.98	0.56	1.13	1.26	4.00	4.00	0.00
600.00	6.40	63.68	599.67	3.96	8.00	8.93	4.00	4.00	0.00
700.00	10.40	63.68	698.57	10.43	21.09	23.53	4.00	4.00	0.00
800.00	14.40	63.68	796.22	19.95	40.34	45.00	4.00	4.00	0.00
900.00	18.40	63.68	892.13	32.46	65.64	73.23	4.00	4.00	0.00
1,000.00	22.40	63.68	985.84	47.91	96.88	108.08	4.00	4.00	0.00
1,052.95	24.52	63.68	1,034.42	57.26	115.77	129.16	4.00	4.00	0.00
1,100.00	24.52	63.68	1,077.22	65.91	133.27	148.68	0.00	0.00	0.00
1,200.00	24.52	63.68	1,168.20	84.31	170.47	190.18	0.00	0.00	0.00
1,300.00	24.52	63.68	1,259.19	102.70	207.67	231.68	0.00	0.00	0.00
1,306.39	24.52	63.68	1,265.00	103.88	210.05	234.33	0.00	0.00	0.00
<b>Lwr. Animas</b>									
1,400.00	24.52	63.68	1,350.17	121.10	244.87	273.18	0.00	0.00	0.00
1,500.00	24.52	63.68	1,441.15	139.50	282.06	314.67	0.00	0.00	0.00
1,600.00	24.52	63.68	1,532.14	157.89	319.26	356.17	0.00	0.00	0.00
1,700.00	24.52	63.68	1,623.12	176.29	356.46	397.67	0.00	0.00	0.00
1,704.27	24.52	63.68	1,627.00	177.08	358.05	399.44	0.00	0.00	0.00
<b>Kirtland Sh</b>									
1,800.00	24.52	63.68	1,714.10	194.69	393.66	439.17	0.00	0.00	0.00
1,900.00	24.52	63.68	1,805.09	213.08	430.86	480.67	0.00	0.00	0.00
1,970.25	24.52	63.68	1,869.00	226.01	456.99	509.82	0.00	0.00	0.00
<b>Farmington Ss</b>									
2,000.00	24.52	63.68	1,896.07	231.48	468.05	522.16	0.00	0.00	0.00
2,031.39	24.52	63.68	1,924.63	237.25	479.73	535.19	0.00	0.00	0.00
2,100.00	21.43	63.68	1,987.79	249.12	503.73	561.97	4.50	-4.50	0.00
2,200.00	16.93	63.68	2,082.21	263.69	533.17	594.81	4.50	-4.50	0.00
2,300.00	12.43	63.68	2,178.92	274.92	555.88	620.15	4.50	-4.50	0.00
2,303.15	12.29	63.68	2,182.00	275.22	556.49	620.83	4.50	-4.50	0.00
<b>Lwr. Kirtland Sh</b>									
2,400.00	7.93	63.68	2,277.32	282.75	571.72	637.82	4.50	-4.50	0.00
2,500.00	3.43	63.68	2,376.81	287.14	580.59	647.72	4.50	-4.50	0.00
2,576.24	0.00	0.00	2,453.00	288.15	582.64	650.00	4.50	-4.50	-83.53
<b>Fruitland Coal - UTE AB 2 BTV</b>									
2,582.24	0.00	0.00	2,459.00	288.15	582.64	650.00	0.00	0.00	0.00
<b>Lemon Seam</b>									
2,600.00	0.00	0.00	2,476.76	288.15	582.64	650.00	0.00	0.00	0.00
2,643.24	0.00	0.00	2,520.00	288.15	582.64	650.00	0.00	0.00	0.00
<b>Lwr. Lemon Seam</b>									
2,695.24	0.00	0.00	2,572.00	288.15	582.64	650.00	0.00	0.00	0.00
<b>Ignacio Seam</b>									
2,700.00	0.00	0.00	2,576.76	288.15	582.64	650.00	0.00	0.00	0.00
2,733.24	0.00	0.00	2,610.00	288.15	582.64	650.00	0.00	0.00	0.00
<b>Pictured Cliffs Ss</b>									



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<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443.33' & RKB 11' @ 6454.33usft (Aztec 507)
<b>Site:</b>	UTE Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	UTE AB 2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,800.00	0.00	0.00	2,676.76	288.15	582.64	650.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,776.76	288.15	582.64	650.00	0.00	0.00	0.00
2,933.24	0.00	0.00	2,810.00	288.15	582.64	650.00	0.00	0.00	0.00
UTE AB 2 PBHL									

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
UTE AB 2 BTV - plan hits target center - Circle (radius 25.00)	0.00	360.00	2,453.00	288.15	582.64	1,165,037.43	2,384,864.36	37.1008388	-107.6093063
UTE AB 2 PBHL - plan hits target center - Point	0.00	360.00	2,810.00	288.15	582.64	1,165,037.43	2,384,864.36	37.1008388	-107.6093063

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
350.00	350.00	Surface Casing	9.62	12.25	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,306.39	1,290.10	Lwr. Animas		0.00	0.00
1,704.27	1,652.10	Kirtland Sh		0.00	0.00
1,970.25	1,894.10	Farmington Ss		0.00	0.00
2,303.15	2,207.10	Lwr. Kirtland Sh		0.00	0.00
2,576.24	2,478.10	Fruitland Coal		0.00	0.00
2,582.24	2,484.10	Lemon Seam		0.00	0.00
2,643.24	2,545.10	Lwr. Lemon Seam		0.00	0.00
2,695.24	2,597.10	Ignacio Seam		0.00	0.00
2,733.24	2,635.10	Pictured Cliffs Ss		0.00	0.00