



Company: B.P.
Project: La Plata County, CO NAD83
Site: Southern Ute Tribal L Pad
Well: SUT L3



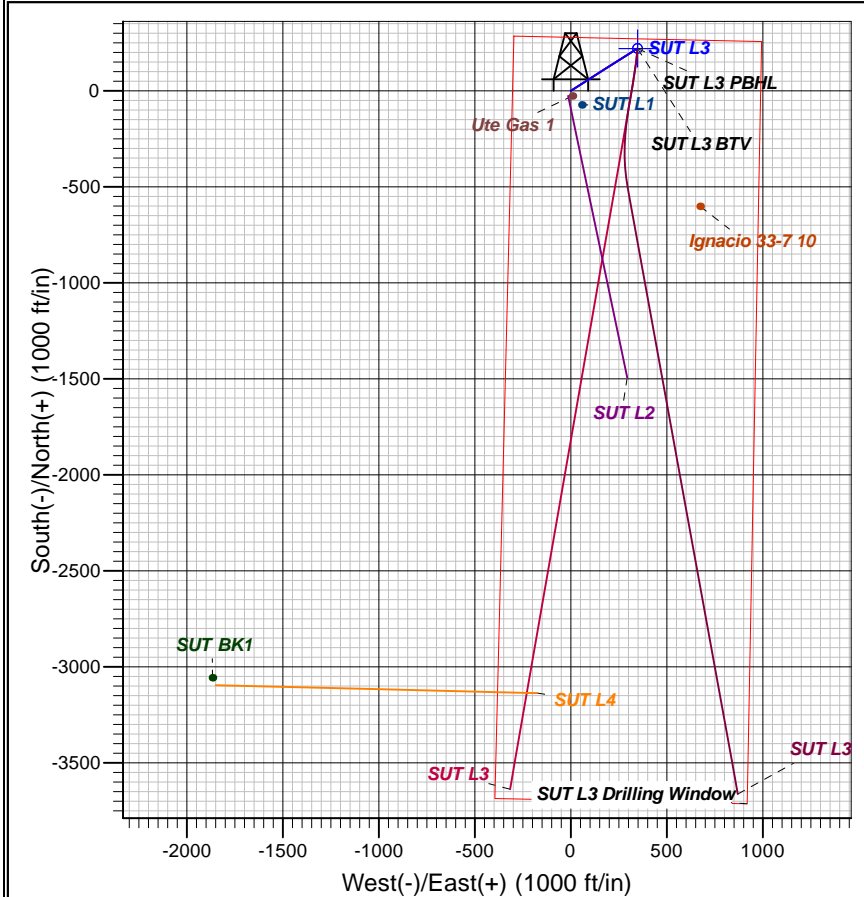
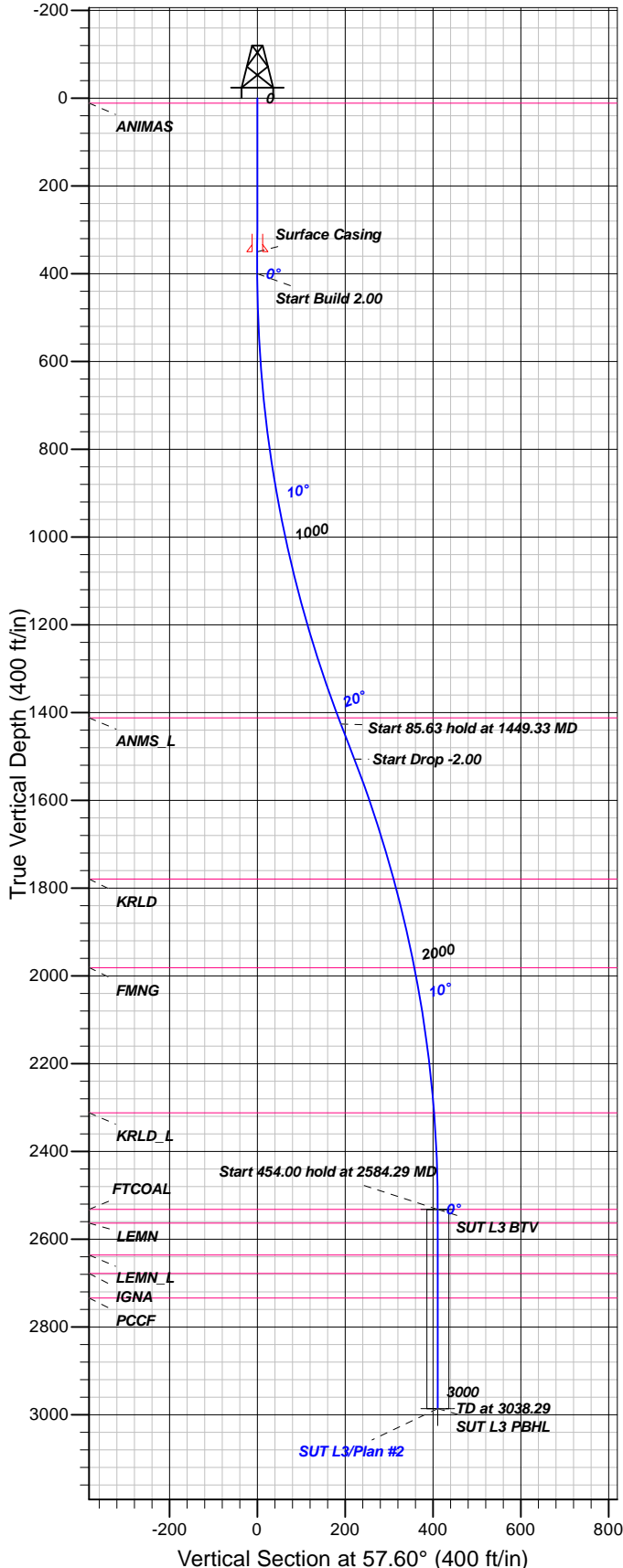
Well Details: SUT L3

GL 6574.65' & RKB 11' @ 6585.65ft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1157301.95	2386844.06	37.0797221	-107.6019234	

Azimuths to Grid North
True North: 1.29°
Magnetic North: 10.61°

Magnetic Field
Strength: 50303.4snT
Dip Angle: 63.67°
Date: 8/5/2015
Model: HDGM



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
11.00	11.00	ANIMAS
1412.00	1434.33	ANMS_L
1779.00	1822.34	KRLD
1981.00	2029.84	FMNG
2312.00	2364.08	KRLD_L
2532.00	2584.29	FTCOAL
2563.00	2615.29	LEMN
2636.00	2688.29	LEMN_L
2678.00	2730.29	IGNA
2734.00	2786.29	PCCF

Plan: Plan #2

15:05, August 13 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	8.625

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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1449.33	20.99	57.60	1426.03	101.84	160.45	2.00	57.60	190.04	
4	1534.96	20.99	57.60	1505.97	118.27	186.34	0.00	0.00	220.71	
5	2584.29	0.00	0.00	2532.00	220.11	346.79	2.00	180.00	410.75	SUT L3 BTV
6	3038.29	0.00	0.00	2986.00	220.11	346.79	0.00	0.00	410.75	SUT L3 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SUT L3 BTV	2532.00	220.11	346.79	1157522.06	2387190.85	37.0803479	-107.6007520	Circle (Radius: 25.00)
- plan hits target center								
SUT L3 PBHL	2986.00	220.11	346.79	1157522.06	2387190.85	37.0803479	-107.6007520	Point
- plan hits target center								



B.P.

La Plata County, CO NAD83
Southern Ute Tribal L Pad
SUT L3

S-Well Pliot

Plan: Plan #2

Standard Planning Report

13 August, 2015





Database:	Grand Junction District	Local Co-ordinate Reference:	Well SUT L3
Company:	B.P.	TVD Reference:	GL 6574.65' & RKB 11' @ 6585.65ft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6574.65' & RKB 11' @ 6585.65ft (Aztec 507)
Site:	Southern Ute Tribal L Pad	North Reference:	Grid
Well:	SUT L3	Survey Calculation Method:	Minimum Curvature
Wellbore:	S-Well Pilot		
Design:	Plan #2		

Project	La Plata County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site		Southern Ute Tribal L Pad			
Site Position:		Northing:	1,157,275.72 usft	Latitude:	37.0796492
From:	Map	Easting:	2,386,829.51 usft	Longitude:	-107.6019713
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.29 °

Well	SUT L3					
Well Position	+N/-S	26.23 ft	Northing:	1,157,301.95 usft	Latitude:	37.0797221
	+E/-W	14.55 ft	Easting:	2,386,844.06 usft	Longitude:	-107.6019234
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,574.65 ft

Wellbore	S-Well Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/5/2015	9.32	63.67	50,303

Design	Plan #2				
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	57.60	

Plan Sections										
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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,449.33	20.99	57.60	1,426.03	101.84	160.45	2.00	2.00	0.00	57.60	
1,534.96	20.99	57.60	1,505.97	118.27	186.34	0.00	0.00	0.00	0.00	
2,584.29	0.00	0.00	2,532.00	220.11	346.79	2.00	-2.00	0.00	180.00	SUT L3 BTV
3,038.29	0.00	0.00	2,986.00	220.11	346.79	0.00	0.00	0.00	0.00	SUT L3 PBHL



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Site:	Southern Ute Tribal L Pad	North Reference:	Grid
Well:	SUT L3	Survey Calculation Method:	Minimum Curvature
Wellbore:	S-Well Pilot		
Design:	Plan #2		

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	
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00	
ANIMAS										
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	
Surface Casing										
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 2.00										
500.00	2.00	57.60	499.98	0.94	1.47	1.75	2.00	2.00	0.00	
600.00	4.00	57.60	599.84	3.74	5.89	6.98	2.00	2.00	0.00	
700.00	6.00	57.60	699.45	8.41	13.25	15.69	2.00	2.00	0.00	
800.00	8.00	57.60	798.70	14.94	23.54	27.88	2.00	2.00	0.00	
900.00	10.00	57.60	897.47	23.32	36.75	43.52	2.00	2.00	0.00	
1,000.00	12.00	57.60	995.63	33.55	52.86	62.60	2.00	2.00	0.00	
1,100.00	14.00	57.60	1,093.06	45.60	71.85	85.10	2.00	2.00	0.00	
1,200.00	16.00	57.60	1,189.65	59.47	93.70	110.98	2.00	2.00	0.00	
1,300.00	18.00	57.60	1,285.27	75.14	118.38	140.21	2.00	2.00	0.00	
1,400.00	20.00	57.60	1,379.82	92.58	145.87	172.77	2.00	2.00	0.00	
1,434.33	20.69	57.60	1,412.00	98.98	155.94	184.70	2.00	2.00	0.00	
ANMS_L										
1,449.33	20.99	57.60	1,426.03	101.84	160.45	190.04	2.00	2.00	0.00	
Start 85.63 hold at 1449.33 MD										
1,500.00	20.99	57.60	1,473.33	111.56	175.77	208.19	0.00	0.00	0.00	
1,534.96	20.99	57.60	1,505.97	118.27	186.34	220.71	0.00	0.00	0.00	
Start Drop -2.00										
1,600.00	19.69	57.60	1,566.96	130.39	205.43	243.31	2.00	-2.00	0.00	
1,700.00	17.69	57.60	1,661.68	147.55	232.47	275.35	2.00	-2.00	0.00	
1,800.00	15.69	57.60	1,757.47	162.94	256.71	304.06	2.00	-2.00	0.00	
1,822.34	15.24	57.60	1,779.00	166.13	261.74	310.01	2.00	-2.00	0.00	
KRLD										
1,900.00	13.69	57.60	1,854.20	176.52	278.12	329.41	2.00	-2.00	0.00	
2,000.00	11.69	57.60	1,951.75	188.29	296.66	351.37	2.00	-2.00	0.00	
2,029.84	11.09	57.60	1,981.00	191.45	301.63	357.26	2.00	-2.00	0.00	
FMNG										
2,100.00	9.69	57.60	2,050.01	198.23	312.31	369.91	2.00	-2.00	0.00	
2,200.00	7.69	57.60	2,148.86	206.32	325.06	385.01	2.00	-2.00	0.00	
2,300.00	5.69	57.60	2,248.18	212.56	334.89	396.65	2.00	-2.00	0.00	
2,364.08	4.40	57.60	2,312.00	215.58	339.65	402.29	2.00	-2.00	0.00	
KRLD_L										
2,400.00	3.69	57.60	2,347.84	216.94	341.79	404.82	2.00	-2.00	0.00	
2,500.01	1.69	57.60	2,447.72	219.45	345.74	409.51	2.00	-2.00	0.00	
2,584.29	0.00	0.00	2,532.00	220.11	346.79	410.75	2.00	-2.00	0.00	
Start 454.00 hold at 2584.29 MD - FTCOAL - SUT L3 BTV										
2,600.01	0.00	0.00	2,547.71	220.11	346.79	410.75	0.00	0.00	0.00	
2,615.29	0.00	0.00	2,563.00	220.11	346.79	410.75	0.00	0.00	0.00	
LEMN										
2,688.29	0.00	0.00	2,636.00	220.11	346.79	410.75	0.00	0.00	0.00	
LEMN_L										
2,700.01	0.00	0.00	2,647.71	220.11	346.79	410.75	0.00	0.00	0.00	



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Site:	Southern Ute Tribal L Pad	North Reference:	Grid
Well:	SUT L3	Survey Calculation Method:	Minimum Curvature
Wellbore:	S-Well Pilot		
Design:	Plan #2		

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)
2,730.29	0.00	0.00	2,678.00	220.11	346.79	410.75	0.00	0.00	0.00
IGNA									
2,786.29	0.00	0.00	2,734.00	220.11	346.79	410.75	0.00	0.00	0.00
PCCF									
2,800.01	0.00	0.00	2,747.71	220.11	346.79	410.75	0.00	0.00	0.00
2,900.01	0.00	0.00	2,847.71	220.11	346.79	410.75	0.00	0.00	0.00
3,000.01	0.00	0.00	2,947.71	220.11	346.79	410.75	0.00	0.00	0.00
3,038.29	0.00	0.00	2,986.00	220.11	346.79	410.75	0.00	0.00	0.00
TD at 3038.29 - SUT L3 PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SUT L3 BTV - plan hits target center - Circle (radius 25.00)	0.00	360.00	2,532.00	220.11	346.79	1,157,522.06	2,387,190.85	37.0803479	-107.6007520
SUT L3 PBHL - plan hits target center - Point	0.00	360.00	2,986.00	220.11	346.79	1,157,522.06	2,387,190.85	37.0803479	-107.6007520

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
350.00	350.00	Surface Casing	8.625	12.250	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
11.00	11.00	ANIMAS		0.00	360.00	
1,434.33	1,412.00	ANMS_L		0.00	360.00	
1,822.34	1,779.00	KRLD		0.00	360.00	
2,029.84	1,981.00	FMNG		0.00	360.00	
2,364.08	2,312.00	KRLD_L		0.00	360.00	
2,584.29	2,532.00	FTCOAL		0.00	360.00	
2,615.29	2,563.00	LEMN		0.00	360.00	
2,688.29	2,636.00	LEMN_L		0.00	360.00	
2,730.29	2,678.00	IGNA		0.00	360.00	
2,786.29	2,734.00	PCCF		0.00	360.00	



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Site:	Southern Ute Tribal L Pad	North Reference:	Grid
Well:	SUT L3	Survey Calculation Method:	Minimum Curvature
Wellbore:	S-Well Pilot		
Design:	Plan #2		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.00	400.00	0.00	0.00	Start Build 2.00
1,449.33	1,426.03	101.84	160.45	Start 85.63 hold at 1449.33 MD
1,534.96	1,505.97	118.27	186.34	Start Drop -2.00
2,584.29	2,532.00	220.11	346.79	Start 454.00 hold at 2584.29 MD
3,038.29	2,986.00	220.11	346.79	TD at 3038.29