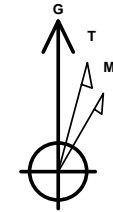




Company: B.P.
Project: La Plata County, CO NAD83
Site: Southern Ute Tribal L Pad
Well: SUT L3
Wellbore: Lateral 1
Design: Plan #1

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
Local North: Grid



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

WELL DETAILS: SUT L3

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

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

Plan: Plan #1 (SUT L3/Lateral 1)

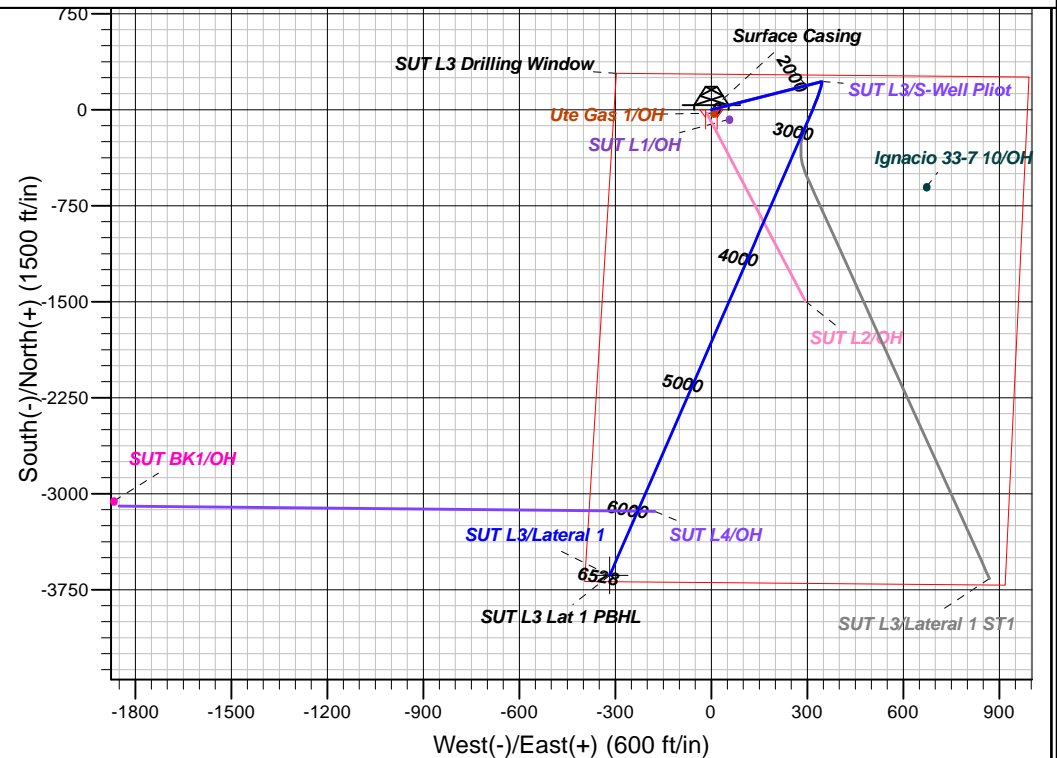
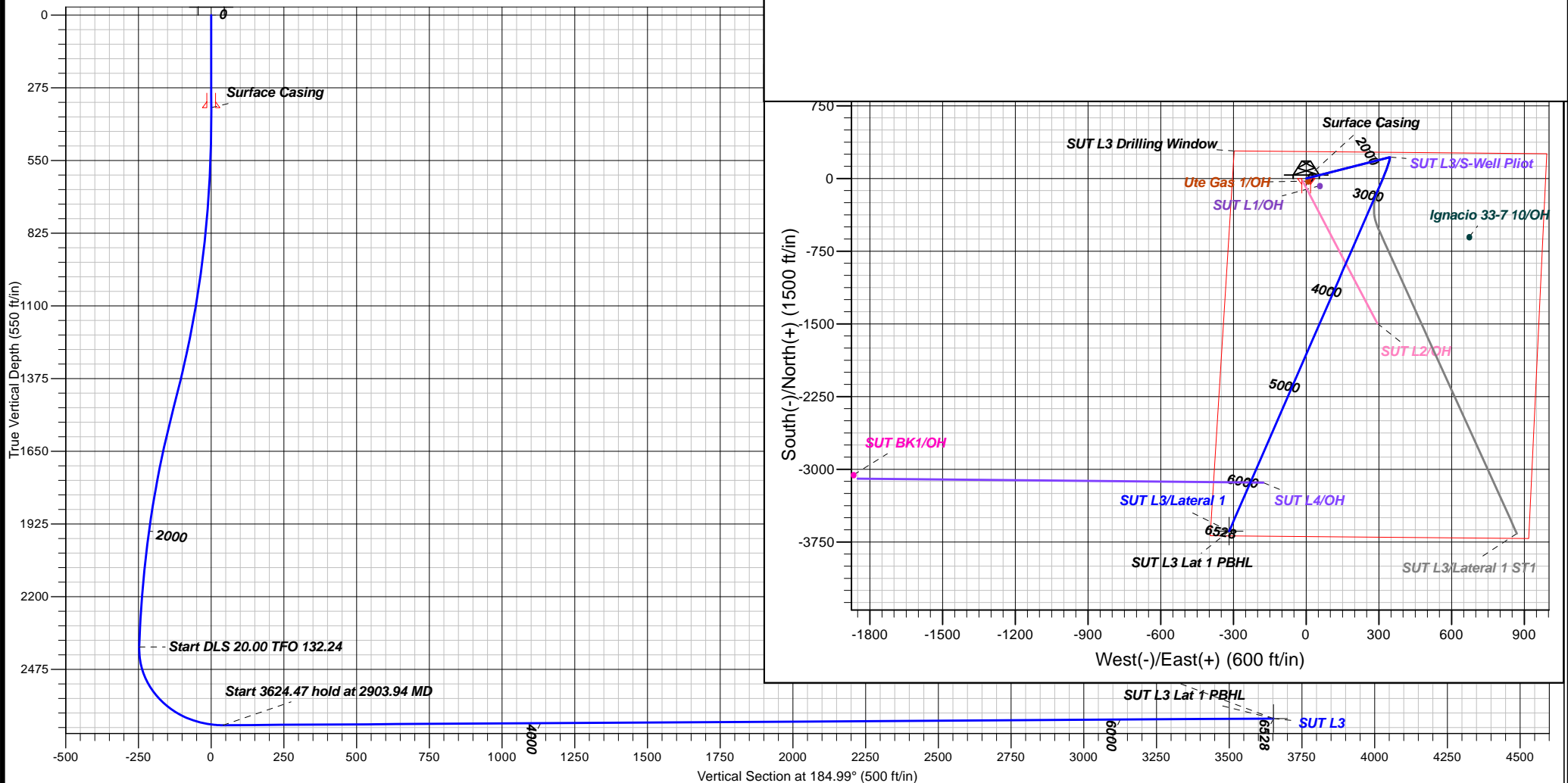
Created By: Janie Collins Date: 16:47, August 05 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SUT L3 Lat 1 PBHL	2661.00	-3638.18	-317.46	1153663.78	2386526.60	37.0697133	-107.6027306

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
2442.42	2.84	57.60	2390.18	218.23	343.83	0.00	0.00	-247.29		
2903.94	90.40	189.89	2686.00	-67.66	305.07	20.00	132.24	40.88		
6528.41	90.40	189.89	2661.00	-3638.18	-317.46	0.00	0.00	3652.00	SUT L3 Lat 1 PBHL	





B.P.

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

Lateral 1

Plan: Plan #1

Standard Planning Report

05 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:	Lateral 1		
Design:	Plan #1		

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	Lateral 1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/5/2015	9.32	63.67	50,303

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	2,442.42
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	184.99	

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
2,442.42	2.84	57.60	2,390.18	218.23	343.83	0.00	0.00	0.00	0.00	
2,903.94	90.40	189.89	2,686.00	-67.66	305.07	20.00	18.97	28.66	132.24	
6,528.41	90.40	189.89	2,661.00	-3,638.18	-317.46	0.00	0.00	0.00	0.00	SUT L3 Lat 1 PBHL



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:	Lateral 1		
Design:	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
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
500.00	2.00	57.60	499.98	0.94	1.47	-1.06	2.00	2.00	0.00
600.00	4.00	57.60	599.84	3.74	5.89	-4.24	2.00	2.00	0.00
700.00	6.00	57.60	699.45	8.41	13.25	-9.53	2.00	2.00	0.00
800.00	8.00	57.60	798.70	14.94	23.54	-16.93	2.00	2.00	0.00
900.00	10.00	57.60	897.47	23.32	36.75	-26.43	2.00	2.00	0.00
1,000.00	12.00	57.60	995.62	33.55	52.85	-38.01	2.00	2.00	0.00
1,100.00	14.00	57.60	1,093.06	45.60	71.85	-51.67	2.00	2.00	0.00
1,200.00	16.00	57.60	1,189.64	59.47	93.70	-67.39	2.00	2.00	0.00
1,300.00	18.00	57.60	1,285.27	75.14	118.38	-85.14	2.00	2.00	0.00
1,400.00	20.00	57.60	1,379.82	92.58	145.87	-104.91	2.00	2.00	0.00
1,500.00	20.99	57.60	1,473.33	111.56	175.77	-126.42	0.99	0.99	0.00
1,600.00	19.69	57.60	1,566.96	130.38	205.42	-147.75	1.30	-1.30	0.00
1,700.00	17.69	57.60	1,661.68	147.55	232.47	-167.20	2.00	-2.00	0.00
1,800.00	15.69	57.60	1,757.47	162.94	256.71	-184.64	2.00	-2.00	0.00
1,900.00	13.69	57.60	1,854.19	176.52	278.12	-200.03	2.00	-2.00	0.00
2,000.00	11.69	57.60	1,951.75	188.29	296.66	-213.37	2.00	-2.00	0.00
2,100.00	9.69	57.60	2,050.01	198.23	312.31	-224.62	2.00	-2.00	0.00
2,200.00	7.69	57.60	2,148.86	206.32	325.06	-233.79	2.00	-2.00	0.00
2,300.00	5.69	57.60	2,248.17	212.56	334.89	-240.86	2.00	-2.00	0.00
2,400.00	3.69	57.60	2,347.83	216.93	341.79	-245.82	2.00	-2.00	0.00
2,442.42	2.84	57.60	2,390.18	218.23	343.83	-247.29	2.00	-2.00	0.00
2,500.00	9.83	177.66	2,447.50	214.07	345.23	-243.27	20.00	12.15	208.52
2,600.00	29.68	186.19	2,541.16	180.58	342.89	-209.71	20.00	19.84	8.53
2,700.00	49.64	188.09	2,617.76	117.61	334.78	-146.27	20.00	19.97	1.90
2,800.00	69.62	189.10	2,668.06	32.75	321.88	-60.60	20.00	19.98	1.01
2,900.00	89.61	189.86	2,686.00	-63.78	305.74	36.96	20.00	19.99	0.77
2,903.94	90.40	189.89	2,686.00	-67.66	305.07	40.88	20.00	19.99	0.73
3,000.00	90.40	189.89	2,685.33	-162.29	288.57	136.59	0.00	0.00	0.00
3,100.00	90.40	189.89	2,684.65	-260.80	271.39	236.22	0.00	0.00	0.00
3,200.00	90.40	189.89	2,683.96	-359.31	254.22	335.85	0.00	0.00	0.00
3,300.00	90.40	189.89	2,683.27	-457.82	237.04	435.48	0.00	0.00	0.00
3,400.00	90.40	189.89	2,682.58	-556.33	219.86	535.12	0.00	0.00	0.00
3,500.00	90.40	189.89	2,681.89	-654.85	202.69	634.75	0.00	0.00	0.00
3,600.00	90.40	189.89	2,681.20	-753.36	185.51	734.38	0.00	0.00	0.00
3,700.00	90.40	189.89	2,680.51	-851.87	168.34	834.01	0.00	0.00	0.00
3,800.00	90.40	189.89	2,679.82	-950.38	151.16	933.64	0.00	0.00	0.00
3,900.00	90.40	189.89	2,679.13	-1,048.89	133.99	1,033.27	0.00	0.00	0.00
4,000.00	90.40	189.89	2,678.44	-1,147.40	116.81	1,132.91	0.00	0.00	0.00
4,100.00	90.40	189.89	2,677.75	-1,245.91	99.63	1,232.54	0.00	0.00	0.00
4,200.00	90.40	189.89	2,677.06	-1,344.43	82.46	1,332.17	0.00	0.00	0.00
4,300.00	90.40	189.89	2,676.37	-1,442.94	65.28	1,431.80	0.00	0.00	0.00
4,400.00	90.40	189.89	2,675.68	-1,541.45	48.11	1,531.43	0.00	0.00	0.00
4,500.00	90.40	189.89	2,674.99	-1,639.96	30.93	1,631.06	0.00	0.00	0.00
4,600.00	90.40	189.89	2,674.30	-1,738.47	13.76	1,730.70	0.00	0.00	0.00
4,700.00	90.40	189.89	2,673.61	-1,836.98	-3.42	1,830.33	0.00	0.00	0.00



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:	Lateral 1		
Design:	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)
4,800.00	90.40	189.89	2,672.92	-1,935.50	-20.59	1,929.96	0.00	0.00	0.00
4,900.00	90.40	189.89	2,672.23	-2,034.01	-37.77	2,029.59	0.00	0.00	0.00
5,000.00	90.40	189.89	2,671.54	-2,132.52	-54.95	2,129.22	0.00	0.00	0.00
5,100.00	90.40	189.89	2,670.85	-2,231.03	-72.12	2,228.85	0.00	0.00	0.00
5,200.00	90.40	189.89	2,670.16	-2,329.54	-89.30	2,328.49	0.00	0.00	0.00
5,300.00	90.40	189.89	2,669.47	-2,428.05	-106.47	2,428.12	0.00	0.00	0.00
5,400.00	90.40	189.89	2,668.78	-2,526.56	-123.65	2,527.75	0.00	0.00	0.00
5,500.00	90.40	189.89	2,668.09	-2,625.08	-140.82	2,627.38	0.00	0.00	0.00
5,600.00	90.40	189.89	2,667.40	-2,723.59	-158.00	2,727.01	0.00	0.00	0.00
5,700.00	90.40	189.89	2,666.71	-2,822.10	-175.18	2,826.64	0.00	0.00	0.00
5,800.00	90.40	189.89	2,666.02	-2,920.61	-192.35	2,926.28	0.00	0.00	0.00
5,900.00	90.40	189.89	2,665.33	-3,019.12	-209.53	3,025.91	0.00	0.00	0.00
6,000.00	90.40	189.89	2,664.64	-3,117.63	-226.70	3,125.54	0.00	0.00	0.00
6,100.00	90.40	189.89	2,663.95	-3,216.15	-243.88	3,225.17	0.00	0.00	0.00
6,200.00	90.40	189.89	2,663.27	-3,314.66	-261.05	3,324.80	0.00	0.00	0.00
6,300.00	90.40	189.89	2,662.58	-3,413.17	-278.23	3,424.43	0.00	0.00	0.00
6,400.00	90.40	189.89	2,661.89	-3,511.68	-295.41	3,524.07	0.00	0.00	0.00
6,500.00	90.40	189.89	2,661.20	-3,610.19	-312.58	3,623.70	0.00	0.00	0.00
6,528.41	90.40	189.89	2,661.00	-3,638.18	-317.46	3,652.00	0.00	0.00	0.00
SUT L3 Lat 1 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 Lat 1 PBHL - plan hits target center - Point	0.00	0.00	2,661.00	-3,638.18	-317.46	1,153,663.78	2,386,526.60	37.0697132	-107.6027306

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