

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

Plan: Plan #1 (SUT L3/Lateral 1 ST1)

Created By: Janie Collins Date: 16:53, August 05 2015

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

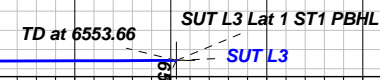
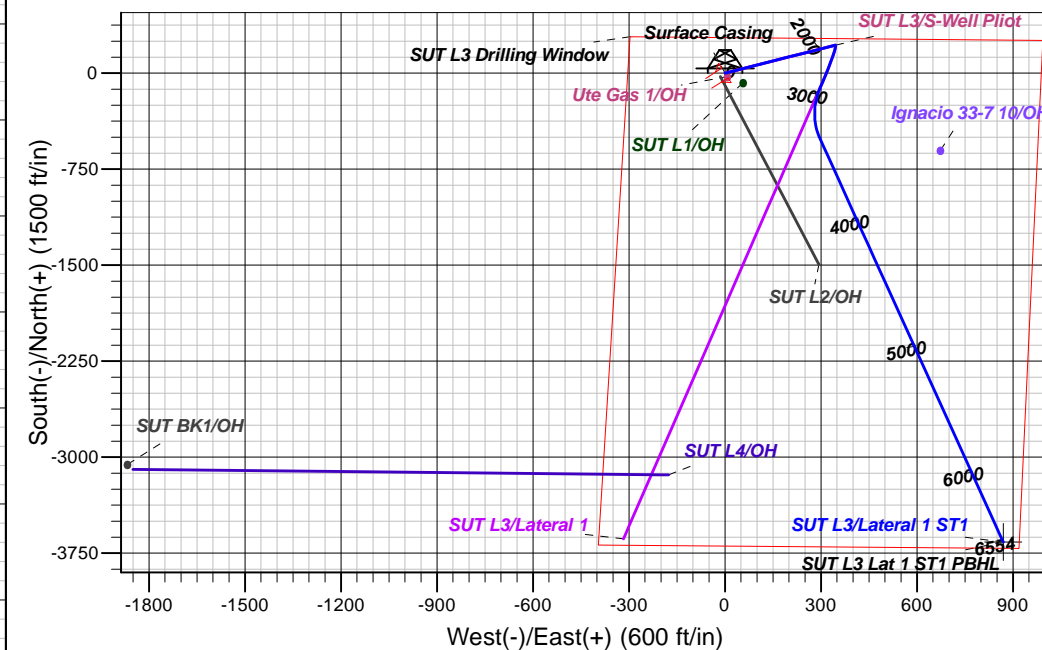
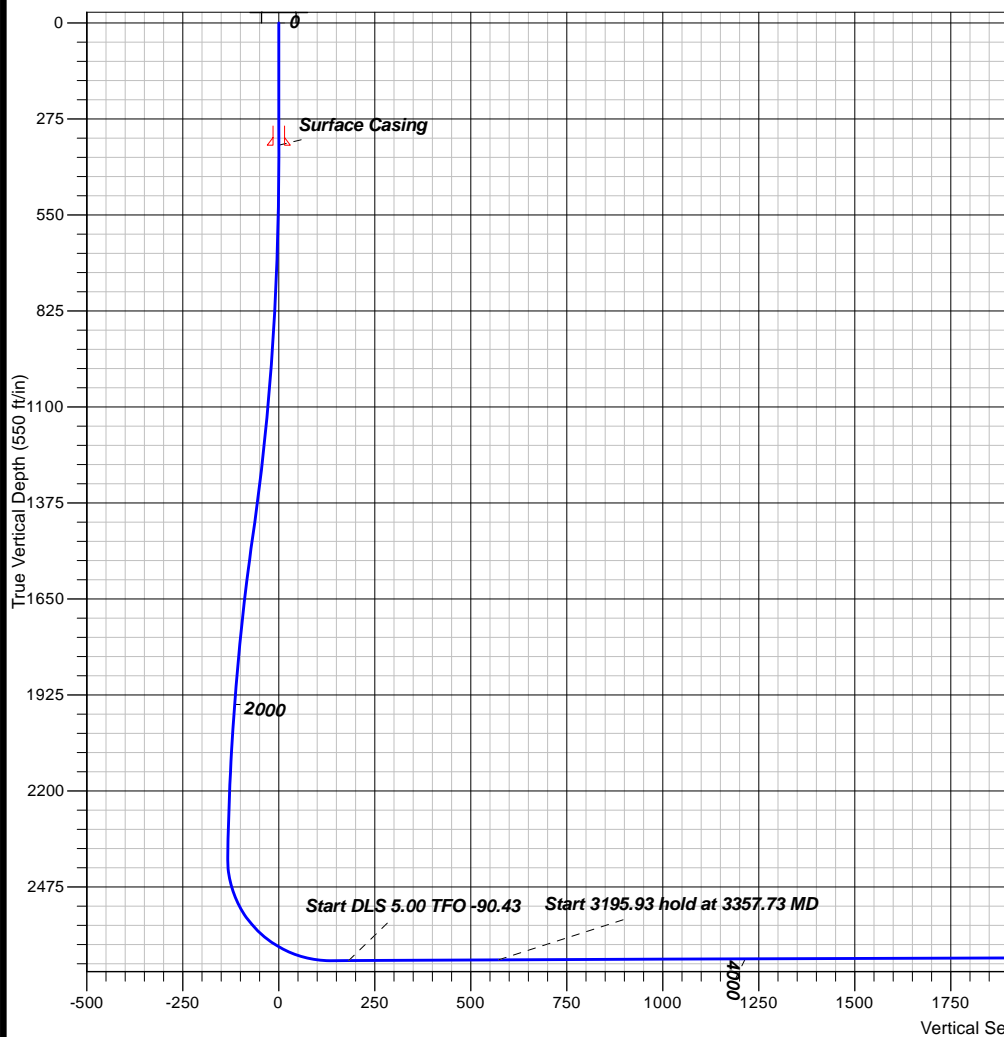
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1157301.95	2386844.06	37.0797221	-107.6019234

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SUT L3 Lat 1 ST1 PBHL	2671.00	-3663.03	869.29	1153638.93	2387713.35	37.0697183	-107.5986624

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
2953.94	90.40	189.89	2686.65	-116.91	296.48	0.00	0.00	182.21		Start DLS 5.00 TFO -90.43
3357.73	90.22	169.70	2683.45	-518.61	297.91	0.00	-90.43	573.39		Start 3195.93 hold at 3357.73 MD
6553.66	90.22	169.70	2671.00	-3663.03	869.29	0.00	0.00	3764.76	SUT L3 Lat 1 ST1 PBHL	TD at 6553.66





B.P.

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

Lateral 1 ST1

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 ST1		
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 ST1				
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:	2,953.94
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	166.65	

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
2,953.94	90.40	189.89	2,685.65	-116.91	296.48	0.00	0.00	0.00	0.00	
3,357.73	90.22	169.70	2,683.45	-518.61	297.91	5.00	-0.04	-5.00	-90.43	
6,553.66	90.22	169.70	2,671.00	-3,663.03	869.29	0.00	0.00	0.00	0.00	SUT L3 Lat 1 ST1 PB



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 ST1		
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	-0.57	2.00	2.00	0.00
600.00	4.00	57.60	599.84	3.74	5.89	-2.28	2.00	2.00	0.00
700.00	6.00	57.60	699.45	8.41	13.25	-5.12	2.00	2.00	0.00
800.00	8.00	57.60	798.70	14.94	23.54	-9.10	2.00	2.00	0.00
900.00	10.00	57.60	897.47	23.32	36.75	-14.21	2.00	2.00	0.00
1,000.00	12.00	57.60	995.62	33.55	52.85	-20.44	2.00	2.00	0.00
1,100.00	14.00	57.60	1,093.06	45.60	71.85	-27.78	2.00	2.00	0.00
1,200.00	16.00	57.60	1,189.64	59.47	93.70	-36.23	2.00	2.00	0.00
1,300.00	18.00	57.60	1,285.27	75.14	118.38	-45.77	2.00	2.00	0.00
1,400.00	20.00	57.60	1,379.82	92.58	145.87	-56.40	2.00	2.00	0.00
1,500.00	20.99	57.60	1,473.33	111.56	175.77	-67.96	0.99	0.99	0.00
1,600.00	19.69	57.60	1,566.96	130.38	205.42	-79.43	1.30	-1.30	0.00
1,700.00	17.69	57.60	1,661.68	147.55	232.47	-89.89	2.00	-2.00	0.00
1,800.00	15.69	57.60	1,757.47	162.94	256.71	-99.26	2.00	-2.00	0.00
1,900.00	13.69	57.60	1,854.19	176.52	278.12	-107.53	2.00	-2.00	0.00
2,000.00	11.69	57.60	1,951.75	188.29	296.66	-114.70	2.00	-2.00	0.00
2,100.00	9.69	57.60	2,050.01	198.23	312.31	-120.76	2.00	-2.00	0.00
2,200.00	7.69	57.60	2,148.86	206.32	325.06	-125.69	2.00	-2.00	0.00
2,300.00	5.69	57.60	2,248.17	212.56	334.89	-129.49	2.00	-2.00	0.00
2,400.00	3.69	57.60	2,347.83	216.93	341.79	-132.15	2.00	-2.00	0.00
2,500.00	9.83	177.66	2,447.50	214.07	345.23	-128.57	12.10	6.15	120.06
2,600.00	29.68	186.19	2,541.16	180.58	342.89	-96.53	20.00	19.84	8.53
2,700.00	49.64	188.09	2,617.76	117.61	334.78	-37.13	20.00	19.97	1.90
2,800.00	69.62	189.10	2,668.06	32.75	321.88	42.46	20.00	19.98	1.01
2,900.00	89.61	189.86	2,686.00	-63.78	305.74	132.65	20.00	19.99	0.77
2,953.94	90.40	189.89	2,685.65	-116.91	296.48	182.21	1.46	1.46	0.05
Start DLS 5.00 TFO -90.43									
3,000.00	90.38	187.59	2,685.34	-162.43	289.48	224.89	5.00	-0.04	-5.00
3,100.00	90.34	182.59	2,684.72	-262.01	280.62	319.72	5.00	-0.04	-5.00
3,200.00	90.29	177.59	2,684.16	-361.97	280.46	416.95	5.00	-0.04	-5.00
3,300.00	90.25	172.59	2,683.69	-461.57	289.02	515.84	5.00	-0.04	-5.00
3,357.73	90.22	169.70	2,683.45	-518.61	297.91	573.39	5.00	-0.05	-5.00
Start 3195.93 hold at 3357.73 MD									
3,400.00	90.22	169.70	2,683.29	-560.20	305.47	615.59	0.00	0.00	0.00
3,500.00	90.22	169.70	2,682.90	-658.59	323.35	715.45	0.00	0.00	0.00
3,600.00	90.22	169.70	2,682.51	-756.97	341.23	815.31	0.00	0.00	0.00
3,700.00	90.22	169.70	2,682.12	-855.36	359.10	915.17	0.00	0.00	0.00
3,800.00	90.22	169.70	2,681.73	-953.75	376.98	1,015.02	0.00	0.00	0.00
3,900.00	90.22	169.70	2,681.34	-1,052.14	394.86	1,114.88	0.00	0.00	0.00
4,000.00	90.22	169.70	2,680.95	-1,150.53	412.74	1,214.74	0.00	0.00	0.00
4,100.00	90.22	169.70	2,680.56	-1,248.91	430.62	1,314.60	0.00	0.00	0.00
4,200.00	90.22	169.70	2,680.17	-1,347.30	448.50	1,414.45	0.00	0.00	0.00
4,300.00	90.22	169.70	2,679.78	-1,445.69	466.37	1,514.31	0.00	0.00	0.00
4,400.00	90.22	169.70	2,679.39	-1,544.08	484.25	1,614.17	0.00	0.00	0.00
4,500.00	90.22	169.70	2,679.00	-1,642.47	502.13	1,714.03	0.00	0.00	0.00



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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 ST1		
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)
4,600.00	90.22	169.70	2,678.61	-1,740.85	520.01	1,813.88	0.00	0.00	0.00
4,700.00	90.22	169.70	2,678.22	-1,839.24	537.89	1,913.74	0.00	0.00	0.00
4,800.00	90.22	169.70	2,677.83	-1,937.63	555.77	2,013.60	0.00	0.00	0.00
4,900.00	90.22	169.70	2,677.44	-2,036.02	573.64	2,113.46	0.00	0.00	0.00
5,000.00	90.22	169.70	2,677.05	-2,134.41	591.52	2,213.31	0.00	0.00	0.00
5,100.00	90.22	169.70	2,676.66	-2,232.80	609.40	2,313.17	0.00	0.00	0.00
5,200.00	90.22	169.70	2,676.27	-2,331.18	627.28	2,413.03	0.00	0.00	0.00
5,300.00	90.22	169.70	2,675.88	-2,429.57	645.16	2,512.89	0.00	0.00	0.00
5,400.00	90.22	169.70	2,675.49	-2,527.96	663.04	2,612.74	0.00	0.00	0.00
5,500.00	90.22	169.70	2,675.10	-2,626.35	680.91	2,712.60	0.00	0.00	0.00
5,600.00	90.22	169.70	2,674.72	-2,724.74	698.79	2,812.46	0.00	0.00	0.00
5,700.00	90.22	169.70	2,674.33	-2,823.12	716.67	2,912.32	0.00	0.00	0.00
5,800.00	90.22	169.70	2,673.94	-2,921.51	734.55	3,012.17	0.00	0.00	0.00
5,900.00	90.22	169.70	2,673.55	-3,019.90	752.43	3,112.03	0.00	0.00	0.00
6,000.00	90.22	169.70	2,673.16	-3,118.29	770.31	3,211.89	0.00	0.00	0.00
6,100.00	90.22	169.70	2,672.77	-3,216.68	788.18	3,311.74	0.00	0.00	0.00
6,200.00	90.22	169.70	2,672.38	-3,315.06	806.06	3,411.60	0.00	0.00	0.00
6,300.00	90.22	169.70	2,671.99	-3,413.45	823.94	3,511.46	0.00	0.00	0.00
6,400.00	90.22	169.70	2,671.60	-3,511.84	841.82	3,611.32	0.00	0.00	0.00
6,500.00	90.22	169.70	2,671.21	-3,610.23	859.70	3,711.17	0.00	0.00	0.00
6,553.66	90.22	169.70	2,671.00	-3,663.03	869.29	3,764.76	0.00	0.00	0.00
TD at 6553.66 - SUT L3 Lat 1 ST1 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 ST1 PBHL - plan hits target center - Point	0.00	360.00	2,671.00	-3,663.03	869.29	1,153,638.93	2,387,713.35	37.0697183	-107.5986624

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

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
2,953.94	2,685.65	-116.91	296.48	Start DLS 5.00 TFO -90.43
3,357.73	2,683.45	-518.61	297.91	Start 3195.93 hold at 3357.73 MD
6,553.66	2,671.00	-3,663.03	869.29	TD at 6553.66