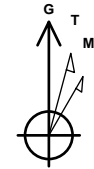




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 3
Well: Tiffany 3-2
Wellbore: Lateral 1
Design: Plan #4

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: 1.23°
Magnetic North: 10.40°

Magnetic Field
Strength: 50124.8snT
Dip Angle: 63.63°
Date: 6/9/2017
Model: HDGM

WELL DETAILS: Tiffany 3-2

Plan: Plan #4 (Tiffany 3-2/Lateral 1)

Created By: Janie Collins Date: 10:40, October 26 2017

GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1159244.15 2413099.97 37.0866427 -107.5120889

DESIGN TARGET DETAILS

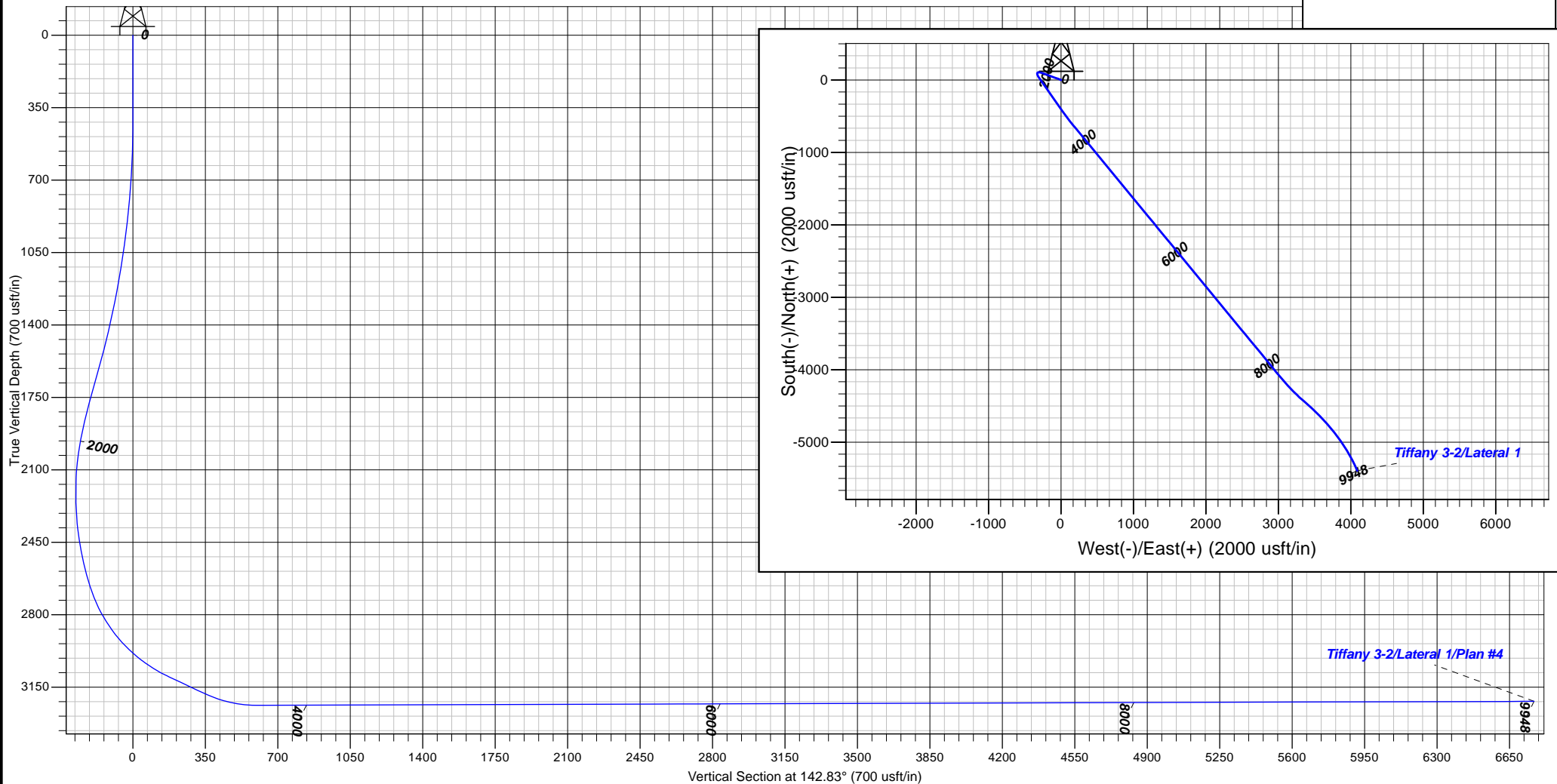
Name TVD +N/-S +E/-W Northing Easting
Tiff 3-2 Lat 1 PBHL 3219.00 -5393.24 4088.83 1153850.91 2417188.80

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3505.81	65.00	145.00	3183.52	-428.44	16.83	0.00	0.00	351.58	
3761.25	90.18	140.56	3238.00	-625.16	166.85	10.00	-10.34	598.98	
8261.25	90.18	140.56	3223.86	-4100.45	3025.55	0.00	0.00	5095.42	
8689.25	90.18	132.00	3222.52	-4409.49	3321.08	2.00	-89.99	5520.22	
8889.25	90.18	132.00	3221.89	-4543.32	3469.71	0.00	0.00	5716.66	
9895.37	90.13	154.72	3219.12	-5345.35	4066.22	2.26	90.09	6716.16	
9948.33	90.13	154.72	3219.00	-5393.24	4088.83	0.00	0.00	6767.99	Tiff 3-2 Lat 1 PBHL

FORMATION TOP DETAILS

No formation data is available





B.P.

La Plata County, CO NAD83

Tiffany Pad 3

Tiffany 3-2

Lateral 1

Plan: Plan #4

Standard Planning Report

26 October, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #4		

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	Tiffany Pad 3					
Site Position:		Northing:	1,159,281.94 usft	Latitude:	37.0867476	
From:	Map	Easting:	2,413,119.43 usft	Longitude:	-107.5120251	
Position Uncertainty:		0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.23 °

Well	Tiffany 3-2					
Well Position	+N/-S	-37.79 usft	Northing:	1,159,244.15 usft	Latitude:	37.0866426
	+E/-W	-19.46 usft	Easting:	2,413,099.97 usft	Longitude:	-107.5120890
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,717.01 usft

Wellbore	Lateral 1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/9/2017	9.17	63.63	50,125

Design	Plan #4				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	3,505.81
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	142.83	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
3,505.81	65.00	145.00	3,183.52	-428.44	16.83	0.00	0.00	0.00	0.00	
3,761.25	90.18	140.56	3,238.00	-625.16	166.85	10.00	9.86	-1.74	-10.34	
8,261.25	90.18	140.56	3,223.86	-4,100.45	3,025.55	0.00	0.00	0.00	0.00	
8,689.25	90.18	132.00	3,222.52	-4,409.49	3,321.08	2.00	0.00	-2.00	-89.99	
8,889.25	90.18	132.00	3,221.89	-4,543.32	3,469.71	0.00	0.00	0.00	0.00	
9,895.37	90.13	154.72	3,219.12	-5,345.35	4,066.22	2.26	0.00	2.26	90.09	
9,948.33	90.13	154.72	3,219.00	-5,393.24	4,088.83	0.00	0.00	0.00	0.00	Tiff 3-2 Lat 1 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #4		

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)
3,505.81	65.00	145.00	3,183.52	-428.44	16.83	351.58	0.00	0.00	0.00
3,600.00	74.28	143.25	3,216.26	-499.89	68.55	439.77	10.00	9.85	-1.86
3,700.00	84.14	141.56	3,234.97	-577.61	128.42	537.87	10.00	9.86	-1.69
3,761.25	90.18	140.56	3,238.00	-625.16	166.85	598.98	10.00	9.87	-1.63
3,800.00	90.18	140.56	3,237.88	-655.09	191.47	637.70	0.00	0.00	0.00
3,900.00	90.18	140.56	3,237.57	-732.32	255.00	737.62	0.00	0.00	0.00
4,000.00	90.18	140.56	3,237.25	-809.55	318.53	837.55	0.00	0.00	0.00
4,100.00	90.18	140.56	3,236.94	-886.78	382.05	937.47	0.00	0.00	0.00
4,200.00	90.18	140.56	3,236.62	-964.01	445.58	1,037.39	0.00	0.00	0.00
4,300.00	90.18	140.56	3,236.31	-1,041.24	509.11	1,137.31	0.00	0.00	0.00
4,400.00	90.18	140.56	3,236.00	-1,118.46	572.63	1,237.23	0.00	0.00	0.00
4,500.00	90.18	140.56	3,235.68	-1,195.69	636.16	1,337.15	0.00	0.00	0.00
4,600.00	90.18	140.56	3,235.37	-1,272.92	699.69	1,437.07	0.00	0.00	0.00
4,700.00	90.18	140.56	3,235.05	-1,350.15	763.21	1,536.99	0.00	0.00	0.00
4,800.00	90.18	140.56	3,234.74	-1,427.38	826.74	1,636.91	0.00	0.00	0.00
4,900.00	90.18	140.56	3,234.42	-1,504.61	890.27	1,736.83	0.00	0.00	0.00
5,000.00	90.18	140.56	3,234.11	-1,581.84	953.79	1,836.75	0.00	0.00	0.00
5,100.00	90.18	140.56	3,233.80	-1,659.06	1,017.32	1,936.67	0.00	0.00	0.00
5,200.00	90.18	140.56	3,233.48	-1,736.29	1,080.85	2,036.60	0.00	0.00	0.00
5,300.00	90.18	140.56	3,233.17	-1,813.52	1,144.37	2,136.52	0.00	0.00	0.00
5,400.00	90.18	140.56	3,232.85	-1,890.75	1,207.90	2,236.44	0.00	0.00	0.00
5,500.00	90.18	140.56	3,232.54	-1,967.98	1,271.43	2,336.36	0.00	0.00	0.00
5,600.00	90.18	140.56	3,232.23	-2,045.21	1,334.95	2,436.28	0.00	0.00	0.00
5,700.00	90.18	140.56	3,231.91	-2,122.44	1,398.48	2,536.20	0.00	0.00	0.00
5,800.00	90.18	140.56	3,231.60	-2,199.67	1,462.01	2,636.12	0.00	0.00	0.00
5,900.00	90.18	140.56	3,231.28	-2,276.89	1,525.53	2,736.04	0.00	0.00	0.00
6,000.00	90.18	140.56	3,230.97	-2,354.12	1,589.06	2,835.96	0.00	0.00	0.00
6,100.00	90.18	140.56	3,230.65	-2,431.35	1,652.59	2,935.88	0.00	0.00	0.00
6,200.00	90.18	140.56	3,230.34	-2,508.58	1,716.11	3,035.80	0.00	0.00	0.00
6,300.00	90.18	140.56	3,230.03	-2,585.81	1,779.64	3,135.72	0.00	0.00	0.00
6,400.00	90.18	140.56	3,229.71	-2,663.04	1,843.17	3,235.65	0.00	0.00	0.00
6,500.00	90.18	140.56	3,229.40	-2,740.27	1,906.69	3,335.57	0.00	0.00	0.00
6,600.00	90.18	140.56	3,229.08	-2,817.49	1,970.22	3,435.49	0.00	0.00	0.00
6,700.00	90.18	140.56	3,228.77	-2,894.72	2,033.75	3,535.41	0.00	0.00	0.00
6,800.00	90.18	140.56	3,228.46	-2,971.95	2,097.27	3,635.33	0.00	0.00	0.00
6,900.00	90.18	140.56	3,228.14	-3,049.18	2,160.80	3,735.25	0.00	0.00	0.00
7,000.00	90.18	140.56	3,227.83	-3,126.41	2,224.33	3,835.17	0.00	0.00	0.00
7,100.00	90.18	140.56	3,227.51	-3,203.64	2,287.85	3,935.09	0.00	0.00	0.00
7,200.00	90.18	140.56	3,227.20	-3,280.87	2,351.38	4,035.01	0.00	0.00	0.00
7,300.00	90.18	140.56	3,226.88	-3,358.09	2,414.91	4,134.93	0.00	0.00	0.00
7,400.00	90.18	140.56	3,226.57	-3,435.32	2,478.43	4,234.85	0.00	0.00	0.00
7,500.00	90.18	140.56	3,226.26	-3,512.55	2,541.96	4,334.77	0.00	0.00	0.00
7,600.00	90.18	140.56	3,225.94	-3,589.78	2,605.49	4,434.70	0.00	0.00	0.00
7,700.00	90.18	140.56	3,225.63	-3,667.01	2,669.01	4,534.62	0.00	0.00	0.00
7,800.00	90.18	140.56	3,225.31	-3,744.24	2,732.54	4,634.54	0.00	0.00	0.00
7,900.00	90.18	140.56	3,225.00	-3,821.47	2,796.07	4,734.46	0.00	0.00	0.00
8,000.00	90.18	140.56	3,224.69	-3,898.70	2,859.59	4,834.38	0.00	0.00	0.00
8,100.00	90.18	140.56	3,224.37	-3,975.92	2,923.12	4,934.30	0.00	0.00	0.00
8,200.00	90.18	140.56	3,224.06	-4,053.15	2,986.65	5,034.22	0.00	0.00	0.00
8,261.25	90.18	140.56	3,223.86	-4,100.45	3,025.55	5,095.42	0.00	0.00	0.00
8,300.00	90.18	139.78	3,223.74	-4,130.21	3,050.37	5,134.13	2.00	0.00	-2.00
8,400.00	90.18	137.78	3,223.43	-4,205.43	3,116.26	5,233.88	2.00	0.00	-2.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #4		

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)
8,500.00	90.18	135.78	3,223.11	-4,278.31	3,184.73	5,333.31	2.00	0.00	-2.00
8,600.00	90.18	133.78	3,222.80	-4,348.75	3,255.70	5,432.32	2.00	0.00	-2.00
8,689.25	90.18	132.00	3,222.52	-4,409.49	3,321.08	5,520.22	2.00	0.00	-2.00
8,700.00	90.18	132.00	3,222.48	-4,416.69	3,329.07	5,530.79	0.00	0.00	0.00
8,800.00	90.18	132.00	3,222.17	-4,483.60	3,403.39	5,629.00	0.00	0.00	0.00
8,889.25	90.18	132.00	3,221.89	-4,543.32	3,469.71	5,716.66	0.00	0.00	0.00
8,900.00	90.18	132.24	3,221.86	-4,550.53	3,477.69	5,727.23	2.26	0.00	2.26
9,000.00	90.18	134.50	3,221.55	-4,619.20	3,550.37	5,825.86	2.26	0.00	2.26
9,100.00	90.17	136.76	3,221.24	-4,690.68	3,620.30	5,925.06	2.26	0.00	2.26
9,200.00	90.17	139.02	3,220.95	-4,764.85	3,687.35	6,024.68	2.26	0.00	2.26
9,300.00	90.16	141.28	3,220.66	-4,841.62	3,751.43	6,124.57	2.26	0.00	2.26
9,400.00	90.16	143.53	3,220.38	-4,920.85	3,812.43	6,224.56	2.26	0.00	2.26
9,500.00	90.15	145.79	3,220.10	-5,002.42	3,870.27	6,324.50	2.26	-0.01	2.26
9,600.00	90.15	148.05	3,219.84	-5,086.20	3,924.84	6,424.24	2.26	-0.01	2.26
9,700.00	90.14	150.31	3,219.59	-5,172.08	3,976.07	6,523.62	2.26	-0.01	2.26
9,800.00	90.14	152.57	3,219.34	-5,259.90	4,023.88	6,622.49	2.26	-0.01	2.26
9,895.37	90.13	154.72	3,219.12	-5,345.35	4,066.22	6,716.16	2.26	-0.01	2.26
9,900.00	90.13	154.72	3,219.11	-5,349.54	4,068.19	6,720.69	0.00	0.00	0.00
9,948.33	90.13	154.72	3,219.00	-5,393.24	4,088.83	6,767.99	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Tiff 3-2 Lat 1 PBHL	0.00	0.00	3,219.00	-5,393.24	4,088.83	1,153,850.90	2,417,188.81	37.0720751	-107.4976800
- plan hits target center									
- Point									