



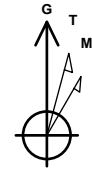
Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad 3  
Well: Tiffany 3-2  
Wellbore: Lateral 1 ST1  
Design: Plan #4

**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



Scientific Drilling



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**

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

Plan: Plan #4 (Tiffany 3-2/Lateral 1 ST1)

Created By: Janie Collins Date: 11:13, October 26 2017

**DESIGN TARGET DETAILS**

Name TVD +N/-S +E/-W Northing Easting  
Tiff 3-2 Lat 1 ST1 PBHL 3224.00 -3820.54 5860.12 1155423.61 2418960.09

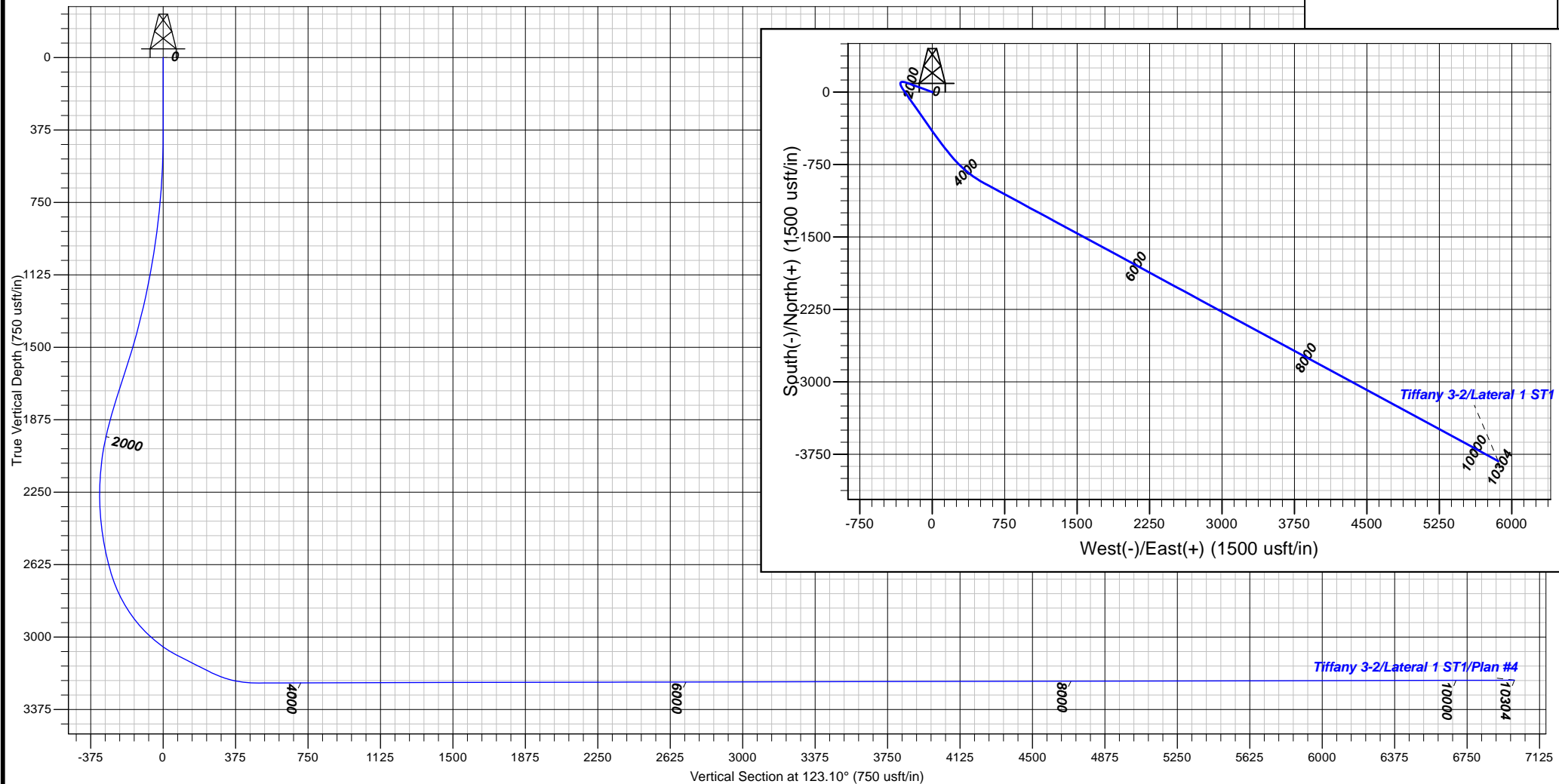
**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3811.00	90.18	140.56	3237.85	-663.59	198.46	0.00	0.00	528.66	
4254.29	90.12	118.40	3236.67	-943.67	538.49	5.00	-90.12	966.46	
10303.78	90.12	118.40	3224.00	-3820.54	5860.12	0.00	0.00	6995.54	

Tiff 3-2 Lat 1 ST1 PBHL

**FORMATION TOP DETAILS**

No formation data is available





**B.P.**

**La Plata County, CO NAD83**

**Tiffany Pad 3**

**Tiffany 3-2**

**Lateral 1 ST1**

**Plan: Plan #4**

## **Standard Planning Report**

**26 October, 2017**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 3-2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Site:</b>	Tiffany Pad 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 3-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #4		

<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		

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

<b>Wellbore</b>	Lateral 1 ST1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	6/9/2017	9.17	63.63	50,125

<b>Design</b>	Plan #4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	3,811.00
<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	123.10

<b>Plan Sections</b>										
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
3,811.00	90.18	140.56	3,237.85	-663.59	198.46	0.00	0.00	0.00	0.00	
4,254.29	90.12	118.40	3,236.67	-943.67	538.49	5.00	-0.01	-5.00	-90.12	
10,303.78	90.12	118.40	3,224.00	-3,820.54	5,860.12	0.00	0.00	0.00	0.00	Tiff 3-2 Lat 1 ST1 PB†



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 3-2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Site:</b>	Tiffany Pad 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 3-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	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)
3,811.00	90.18	140.56	3,237.85	-663.59	198.46	528.66	0.00	0.00	0.00
3,900.00	90.17	136.11	3,237.57	-730.06	257.61	614.51	5.00	-0.01	-5.00
4,000.00	90.16	131.11	3,237.29	-799.01	329.99	712.80	5.00	-0.01	-5.00
4,100.00	90.14	126.11	3,237.03	-861.39	408.11	812.31	5.00	-0.01	-5.00
4,200.00	90.13	121.11	3,236.79	-916.73	491.36	912.27	5.00	-0.01	-5.00
4,254.29	90.12	118.40	3,236.67	-943.67	538.49	966.46	5.00	-0.02	-5.00
4,300.00	90.12	118.40	3,236.57	-965.40	578.70	1,012.02	0.00	0.00	0.00
4,400.00	90.12	118.40	3,236.37	-1,012.96	666.67	1,111.68	0.00	0.00	0.00
4,500.00	90.12	118.40	3,236.16	-1,060.52	754.64	1,211.35	0.00	0.00	0.00
4,600.00	90.12	118.40	3,235.95	-1,108.07	842.61	1,311.01	0.00	0.00	0.00
4,700.00	90.12	118.40	3,235.74	-1,155.63	930.58	1,410.67	0.00	0.00	0.00
4,800.00	90.12	118.40	3,235.53	-1,203.18	1,018.54	1,510.33	0.00	0.00	0.00
4,900.00	90.12	118.40	3,235.32	-1,250.74	1,106.51	1,610.00	0.00	0.00	0.00
5,000.00	90.12	118.40	3,235.11	-1,298.29	1,194.48	1,709.66	0.00	0.00	0.00
5,100.00	90.12	118.40	3,234.90	-1,345.85	1,282.45	1,809.32	0.00	0.00	0.00
5,200.00	90.12	118.40	3,234.69	-1,393.40	1,370.42	1,908.98	0.00	0.00	0.00
5,300.00	90.12	118.40	3,234.48	-1,440.96	1,458.39	2,008.65	0.00	0.00	0.00
5,400.00	90.12	118.40	3,234.27	-1,488.52	1,546.35	2,108.31	0.00	0.00	0.00
5,500.00	90.12	118.40	3,234.06	-1,536.07	1,634.32	2,207.97	0.00	0.00	0.00
5,600.00	90.12	118.40	3,233.85	-1,583.63	1,722.29	2,307.63	0.00	0.00	0.00
5,700.00	90.12	118.40	3,233.64	-1,631.18	1,810.26	2,407.30	0.00	0.00	0.00
5,800.00	90.12	118.40	3,233.43	-1,678.74	1,898.23	2,506.96	0.00	0.00	0.00
5,900.00	90.12	118.40	3,233.22	-1,726.29	1,986.20	2,606.62	0.00	0.00	0.00
6,000.00	90.12	118.40	3,233.01	-1,773.85	2,074.16	2,706.28	0.00	0.00	0.00
6,100.00	90.12	118.40	3,232.80	-1,821.40	2,162.13	2,805.95	0.00	0.00	0.00
6,200.00	90.12	118.40	3,232.60	-1,868.96	2,250.10	2,905.61	0.00	0.00	0.00
6,300.00	90.12	118.40	3,232.39	-1,916.52	2,338.07	3,005.27	0.00	0.00	0.00
6,400.00	90.12	118.40	3,232.18	-1,964.07	2,426.04	3,104.93	0.00	0.00	0.00
6,500.00	90.12	118.40	3,231.97	-2,011.63	2,514.01	3,204.60	0.00	0.00	0.00
6,600.00	90.12	118.40	3,231.76	-2,059.18	2,601.97	3,304.26	0.00	0.00	0.00
6,700.00	90.12	118.40	3,231.55	-2,106.74	2,689.94	3,403.92	0.00	0.00	0.00
6,800.00	90.12	118.40	3,231.34	-2,154.29	2,777.91	3,503.58	0.00	0.00	0.00
6,900.00	90.12	118.40	3,231.13	-2,201.85	2,865.88	3,603.25	0.00	0.00	0.00
7,000.00	90.12	118.40	3,230.92	-2,249.41	2,953.85	3,702.91	0.00	0.00	0.00
7,100.00	90.12	118.40	3,230.71	-2,296.96	3,041.82	3,802.57	0.00	0.00	0.00
7,200.00	90.12	118.40	3,230.50	-2,344.52	3,129.78	3,902.23	0.00	0.00	0.00
7,300.00	90.12	118.40	3,230.29	-2,392.07	3,217.75	4,001.90	0.00	0.00	0.00
7,400.00	90.12	118.40	3,230.08	-2,439.63	3,305.72	4,101.56	0.00	0.00	0.00
7,500.00	90.12	118.40	3,229.87	-2,487.18	3,393.69	4,201.22	0.00	0.00	0.00
7,600.00	90.12	118.40	3,229.66	-2,534.74	3,481.66	4,300.88	0.00	0.00	0.00
7,700.00	90.12	118.40	3,229.45	-2,582.29	3,569.62	4,400.55	0.00	0.00	0.00
7,800.00	90.12	118.40	3,229.24	-2,629.85	3,657.59	4,500.21	0.00	0.00	0.00
7,900.00	90.12	118.40	3,229.03	-2,677.41	3,745.56	4,599.87	0.00	0.00	0.00
8,000.00	90.12	118.40	3,228.83	-2,724.96	3,833.53	4,699.53	0.00	0.00	0.00
8,100.00	90.12	118.40	3,228.62	-2,772.52	3,921.50	4,799.20	0.00	0.00	0.00
8,200.00	90.12	118.40	3,228.41	-2,820.07	4,009.47	4,898.86	0.00	0.00	0.00
8,300.00	90.12	118.40	3,228.20	-2,867.63	4,097.43	4,998.52	0.00	0.00	0.00
8,400.00	90.12	118.40	3,227.99	-2,915.18	4,185.40	5,098.18	0.00	0.00	0.00
8,500.00	90.12	118.40	3,227.78	-2,962.74	4,273.37	5,197.85	0.00	0.00	0.00
8,600.00	90.12	118.40	3,227.57	-3,010.30	4,361.34	5,297.51	0.00	0.00	0.00
8,700.00	90.12	118.40	3,227.36	-3,057.85	4,449.31	5,397.17	0.00	0.00	0.00
8,800.00	90.12	118.40	3,227.15	-3,105.41	4,537.28	5,496.84	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 3-2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
<b>Site:</b>	Tiffany Pad 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 3-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	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)
8,900.00	90.12	118.40	3,226.94	-3,152.96	4,625.24	5,596.50	0.00	0.00	0.00
9,000.00	90.12	118.40	3,226.73	-3,200.52	4,713.21	5,696.16	0.00	0.00	0.00
9,100.00	90.12	118.40	3,226.52	-3,248.07	4,801.18	5,795.82	0.00	0.00	0.00
9,200.00	90.12	118.40	3,226.31	-3,295.63	4,889.15	5,895.49	0.00	0.00	0.00
9,300.00	90.12	118.40	3,226.10	-3,343.18	4,977.12	5,995.15	0.00	0.00	0.00
9,400.00	90.12	118.40	3,225.89	-3,390.74	5,065.09	6,094.81	0.00	0.00	0.00
9,500.00	90.12	118.40	3,225.68	-3,438.30	5,153.05	6,194.47	0.00	0.00	0.00
9,600.00	90.12	118.40	3,225.47	-3,485.85	5,241.02	6,294.14	0.00	0.00	0.00
9,700.00	90.12	118.40	3,225.26	-3,533.41	5,328.99	6,393.80	0.00	0.00	0.00
9,800.00	90.12	118.40	3,225.06	-3,580.96	5,416.96	6,493.46	0.00	0.00	0.00
9,900.00	90.12	118.40	3,224.85	-3,628.52	5,504.93	6,593.12	0.00	0.00	0.00
10,000.00	90.12	118.40	3,224.64	-3,676.07	5,592.90	6,692.79	0.00	0.00	0.00
10,100.00	90.12	118.40	3,224.43	-3,723.63	5,680.86	6,792.45	0.00	0.00	0.00
10,200.00	90.12	118.40	3,224.22	-3,771.18	5,768.83	6,892.11	0.00	0.00	0.00
10,300.00	90.12	118.40	3,224.01	-3,818.74	5,856.80	6,991.77	0.00	0.00	0.00
10,303.78	90.12	118.40	3,224.00	-3,820.54	5,860.12	6,995.54	0.00	0.00	0.00

**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
Tiff 3-2 Lat 1 ST1 PBHL - plan hits target center - Point	0.00	360.00	3,224.00	-3,820.54	5,860.12	1,155,423.61	2,418,960.10	37.0764973	-107.4917254