



Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad  
Well: Tiffany 1-3  
Wellbore: Lateral 3  
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: 1.26°  
Magnetic North: 10.56°

Magnetic Field  
Strength: 50285.2snT  
Dip Angle: 63.67°  
Date: 12/7/2015  
Model: HDGM

WELL DETAILS: Tiffany 1-3

GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1165033.91	2400363.16	37.1017781	-107.5561779

C

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

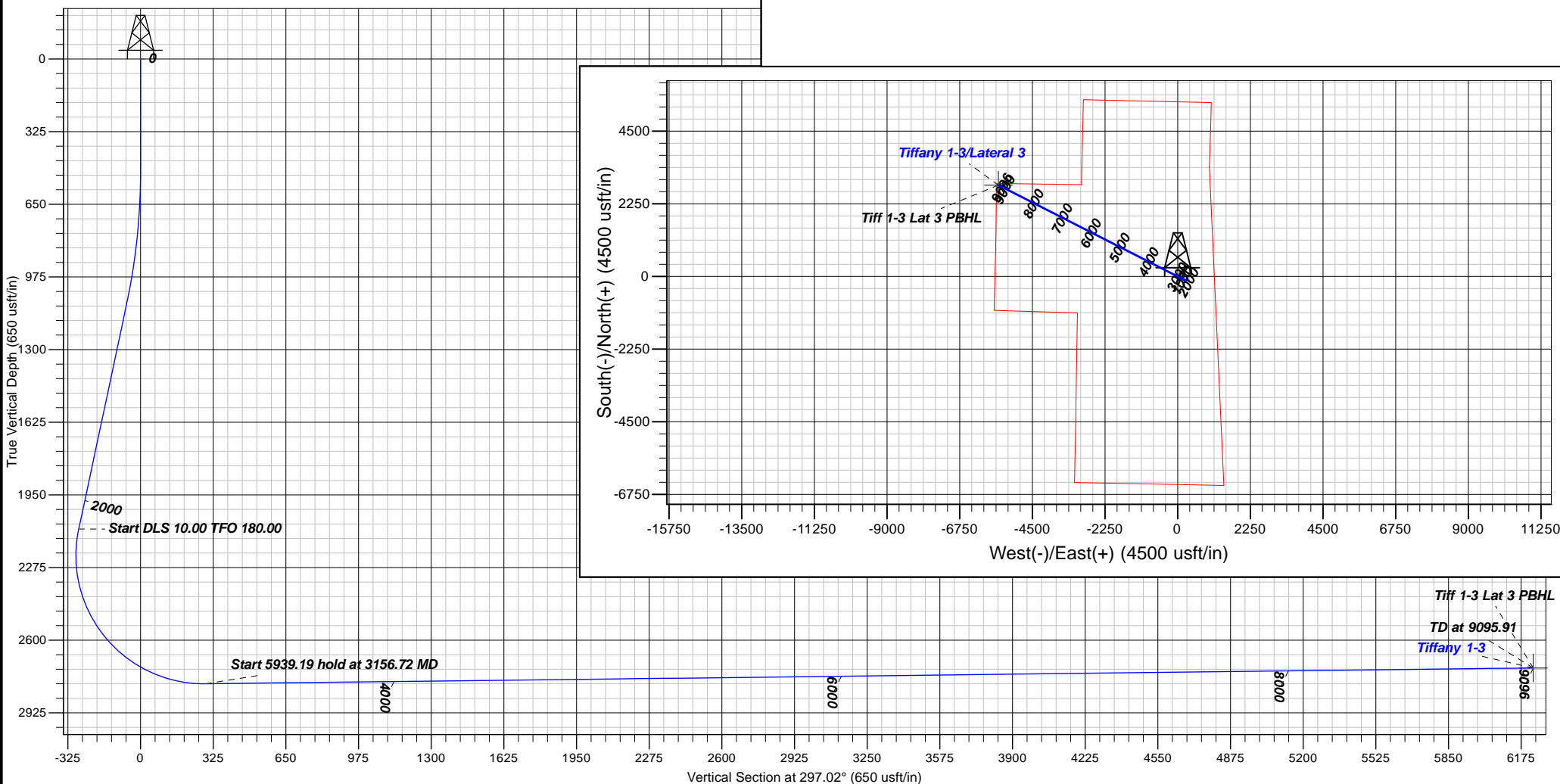
Created By: Janie Collins Date: 16:00, December 21 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-3 Lat 3 PBHL	2724.00	2829.87	-5549.28	1167863.78	2394813.88	37.1092111	-107.5754159

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
2129.79	12.01	117.02	2102.88	-125.77	246.63	0.00	0.00	-276.85		
3156.72	90.68	297.02	2795.00	131.93	-258.72	10.00	180.00	290.42		
9095.91	90.68	297.02	2724.00	2829.87	-5549.28	0.00	0.00	6229.18	Tiff 1-3 Lat 3 PBHL	





**B.P.**

**La Plata County, CO NAD83**

**Tiffany Pad**

**Tiffany 1-3 - Slot C**

**Lateral 3**

**Plan: Plan #1**

## **Standard Planning Report**

**21 December, 2015**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-3 - Slot C
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<b>Design:</b>	Plan #1		

<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			
Site Position:		Northing:	1,165,118.91 usft	Latitude:	37.1020115
From:	Map	Easting:	2,400,363.16 usft	Longitude:	-107.5561843
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.26 °

Well	Tiffany 1-3 - Slot C					
Well Position	+N/-S	-85.00 usft	Northing:	1,165,033.91 usft	Latitude:	37.1017781
	+E/-W	0.00 usft	Easting:	2,400,363.16 usft	Longitude:	-107.5561779
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,479.14 usft

<b>Wellbore</b>	Lateral 3				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	12/7/2015	9.30	63.67	50,285

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	2,129.79	
<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	297.02	

<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
2,129.79	12.01	117.02	2,102.88	-125.77	246.63	0.00	0.00	0.00	0.00	
3,156.72	90.68	297.02	2,795.00	131.93	-258.72	10.00	7.66	17.53	180.00	
9,095.91	90.68	297.02	2,724.00	2,829.87	-5,549.28	0.00	0.00	0.00	0.00	Tiff 1-3 Lat 3 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-3 - Slot C
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<b>Design:</b>	Plan #1		

## 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)
2,129.79	12.01	117.02	2,102.88	-125.77	246.63	-276.85	0.00	0.00	0.00
2,200.00	4.99	117.02	2,172.28	-130.48	255.87	-287.22	10.00	-10.00	0.00
2,300.00	5.01	297.02	2,272.15	-130.47	255.85	-287.20	10.00	0.03	180.00
2,400.00	15.01	297.02	2,370.50	-122.58	240.38	-269.83	10.00	10.00	0.00
2,500.00	25.01	297.02	2,464.34	-107.06	209.93	-235.65	10.00	10.00	0.00
2,600.00	35.01	297.02	2,550.82	-84.36	165.43	-185.70	10.00	10.00	0.00
2,700.00	45.01	297.02	2,627.32	-55.19	108.22	-121.48	10.00	10.00	0.00
2,800.00	55.01	297.02	2,691.50	-20.43	40.05	-44.96	10.00	10.00	0.00
2,900.00	65.01	297.02	2,741.41	18.87	-37.01	41.54	10.00	10.00	0.00
3,000.00	75.01	297.02	2,775.55	61.51	-120.62	135.40	10.00	10.00	0.00
3,100.00	85.01	297.02	2,792.87	106.19	-208.25	233.76	10.00	10.00	0.00
3,156.72	90.68	297.02	2,795.00	131.93	-258.72	290.42	10.00	10.00	0.00
3,200.00	90.68	297.02	2,794.48	151.59	-297.27	333.69	0.00	0.00	0.00
3,300.00	90.68	297.02	2,793.29	197.02	-386.35	433.69	0.00	0.00	0.00
3,400.00	90.68	297.02	2,792.09	242.45	-475.43	533.68	0.00	0.00	0.00
3,500.00	90.68	297.02	2,790.90	287.87	-564.51	633.67	0.00	0.00	0.00
3,600.00	90.68	297.02	2,789.70	333.30	-653.59	733.67	0.00	0.00	0.00
3,700.00	90.68	297.02	2,788.51	378.72	-742.67	833.66	0.00	0.00	0.00
3,800.00	90.68	297.02	2,787.31	424.15	-831.75	933.65	0.00	0.00	0.00
3,900.00	90.68	297.02	2,786.12	469.58	-920.82	1,033.64	0.00	0.00	0.00
4,000.00	90.68	297.02	2,784.92	515.00	-1,009.90	1,133.64	0.00	0.00	0.00
4,100.00	90.68	297.02	2,783.72	560.43	-1,098.98	1,233.63	0.00	0.00	0.00
4,200.00	90.68	297.02	2,782.53	605.85	-1,188.06	1,333.62	0.00	0.00	0.00
4,300.00	90.68	297.02	2,781.33	651.28	-1,277.14	1,433.62	0.00	0.00	0.00
4,400.00	90.68	297.02	2,780.14	696.71	-1,366.22	1,533.61	0.00	0.00	0.00
4,500.00	90.68	297.02	2,778.94	742.13	-1,455.30	1,633.60	0.00	0.00	0.00
4,600.00	90.68	297.02	2,777.75	787.56	-1,544.38	1,733.59	0.00	0.00	0.00
4,700.00	90.68	297.02	2,776.55	832.98	-1,633.46	1,833.59	0.00	0.00	0.00
4,800.00	90.68	297.02	2,775.36	878.41	-1,722.53	1,933.58	0.00	0.00	0.00
4,900.00	90.68	297.02	2,774.16	923.84	-1,811.61	2,033.57	0.00	0.00	0.00
5,000.00	90.68	297.02	2,772.96	969.26	-1,900.69	2,133.57	0.00	0.00	0.00
5,100.00	90.68	297.02	2,771.77	1,014.69	-1,989.77	2,233.56	0.00	0.00	0.00
5,200.00	90.68	297.02	2,770.57	1,060.11	-2,078.85	2,333.55	0.00	0.00	0.00
5,300.00	90.68	297.02	2,769.38	1,105.54	-2,167.93	2,433.54	0.00	0.00	0.00
5,400.00	90.68	297.02	2,768.18	1,150.97	-2,257.01	2,533.54	0.00	0.00	0.00
5,500.00	90.68	297.02	2,766.99	1,196.39	-2,346.09	2,633.53	0.00	0.00	0.00
5,600.00	90.68	297.02	2,765.79	1,241.82	-2,435.17	2,733.52	0.00	0.00	0.00
5,700.00	90.68	297.02	2,764.60	1,287.24	-2,524.24	2,833.52	0.00	0.00	0.00
5,800.00	90.68	297.02	2,763.40	1,332.67	-2,613.32	2,933.51	0.00	0.00	0.00
5,900.00	90.68	297.02	2,762.21	1,378.10	-2,702.40	3,033.50	0.00	0.00	0.00
6,000.00	90.68	297.02	2,761.01	1,423.52	-2,791.48	3,133.49	0.00	0.00	0.00
6,100.00	90.68	297.02	2,759.81	1,468.95	-2,880.56	3,233.49	0.00	0.00	0.00
6,200.00	90.68	297.02	2,758.62	1,514.37	-2,969.64	3,333.48	0.00	0.00	0.00
6,300.00	90.68	297.02	2,757.42	1,559.80	-3,058.72	3,433.47	0.00	0.00	0.00
6,400.00	90.68	297.02	2,756.23	1,605.23	-3,147.80	3,533.47	0.00	0.00	0.00
6,500.00	90.68	297.02	2,755.03	1,650.65	-3,236.88	3,633.46	0.00	0.00	0.00
6,600.00	90.68	297.02	2,753.84	1,696.08	-3,325.95	3,733.45	0.00	0.00	0.00
6,700.00	90.68	297.02	2,752.64	1,741.50	-3,415.03	3,833.44	0.00	0.00	0.00
6,800.00	90.68	297.02	2,751.45	1,786.93	-3,504.11	3,933.44	0.00	0.00	0.00
6,900.00	90.68	297.02	2,750.25	1,832.36	-3,593.19	4,033.43	0.00	0.00	0.00
7,000.00	90.68	297.02	2,749.06	1,877.78	-3,682.27	4,133.42	0.00	0.00	0.00
7,100.00	90.68	297.02	2,747.86	1,923.21	-3,771.35	4,233.42	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-3 - Slot C
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<b>Design:</b>	Plan #1		

**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)
7,200.00	90.68	297.02	2,746.66	1,968.64	-3,860.43	4,333.41	0.00	0.00	0.00
7,300.00	90.68	297.02	2,745.47	2,014.06	-3,949.51	4,433.40	0.00	0.00	0.00
7,400.00	90.68	297.02	2,744.27	2,059.49	-4,038.59	4,533.39	0.00	0.00	0.00
7,500.00	90.68	297.02	2,743.08	2,104.91	-4,127.66	4,633.39	0.00	0.00	0.00
7,600.00	90.68	297.02	2,741.88	2,150.34	-4,216.74	4,733.38	0.00	0.00	0.00
7,700.00	90.68	297.02	2,740.69	2,195.77	-4,305.82	4,833.37	0.00	0.00	0.00
7,800.00	90.68	297.02	2,739.49	2,241.19	-4,394.90	4,933.37	0.00	0.00	0.00
7,900.00	90.68	297.02	2,738.30	2,286.62	-4,483.98	5,033.36	0.00	0.00	0.00
8,000.00	90.68	297.02	2,737.10	2,332.04	-4,573.06	5,133.35	0.00	0.00	0.00
8,100.00	90.68	297.02	2,735.91	2,377.47	-4,662.14	5,233.34	0.00	0.00	0.00
8,200.00	90.68	297.02	2,734.71	2,422.90	-4,751.22	5,333.34	0.00	0.00	0.00
8,300.00	90.68	297.02	2,733.51	2,468.32	-4,840.30	5,433.33	0.00	0.00	0.00
8,400.00	90.68	297.02	2,732.32	2,513.75	-4,929.37	5,533.32	0.00	0.00	0.00
8,500.00	90.68	297.02	2,731.12	2,559.17	-5,018.45	5,633.32	0.00	0.00	0.00
8,600.00	90.68	297.02	2,729.93	2,604.60	-5,107.53	5,733.31	0.00	0.00	0.00
8,700.00	90.68	297.02	2,728.73	2,650.03	-5,196.61	5,833.30	0.00	0.00	0.00
8,800.00	90.68	297.02	2,727.54	2,695.45	-5,285.69	5,933.29	0.00	0.00	0.00
8,900.00	90.68	297.02	2,726.34	2,740.88	-5,374.77	6,033.29	0.00	0.00	0.00
9,000.00	90.68	297.02	2,725.15	2,786.30	-5,463.85	6,133.28	0.00	0.00	0.00
9,095.91	90.68	297.02	2,724.00	2,829.87	-5,549.28	6,229.18	0.00	0.00	0.00
Tiff 1-3 Lat 3 PBHL									

**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 1-3 Lat 3 PBHL - plan hits target center - Point	0.00	0.00	2,724.00	2,829.87	-5,549.28	1,167,863.78	2,394,813.88	37.1092111	-107.5754159

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
350.00	350.00	Surface Casing	9.62	12.25
9,095.91	2,724.00	4 1/2" Casing	4.50	6.13