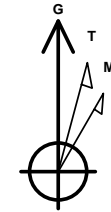




Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad  
Well: Tiffany 1-4  
Wellbore: Lateral 3  
Design: Plan #1

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 1-4

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1164991.41	2400363.16	37.1016614	-107.5561747

D

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

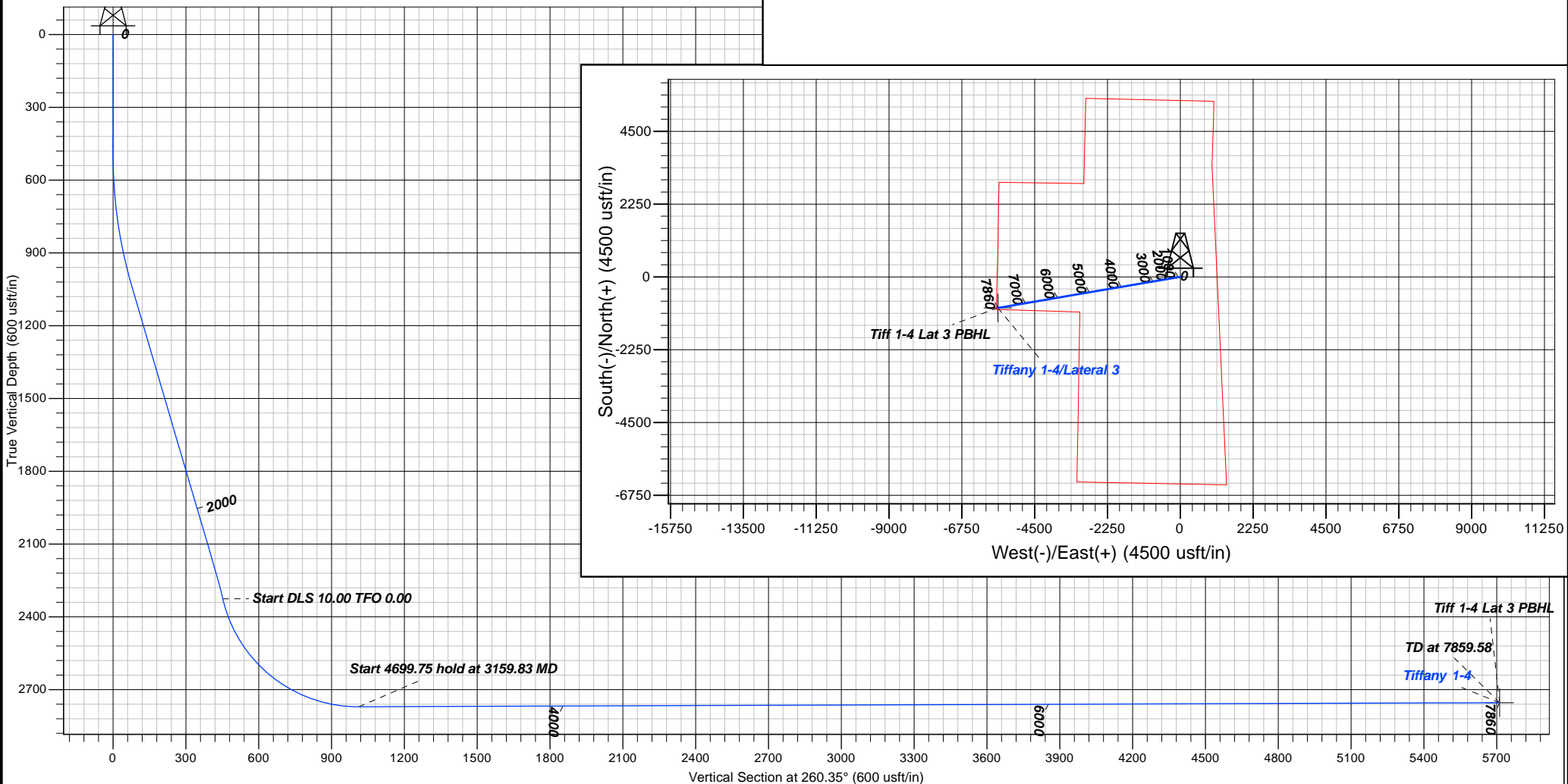
Created By: Janie Collins Date: 16:19, December 21 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-4 Lat 3 PBHL	2754.00	-957.71	-5631.30	1164033.70	2394731.86	37.0986898	-107.5754053

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
2386.68	12.89	260.35	2325.88	-75.76	-445.46	0.00	0.00	451.85		
3159.83	90.21	260.35	2771.00	-169.75	-998.11	10.00	0.00	1012.44		
7859.58	90.21	260.35	2754.00	-957.71	-5631.30	0.00	0.00	5712.16	Tiff 1-4 Lat 3 PBHL	





**B.P.**

**La Plata County, CO NAD83**

**Tiffany Pad**

**Tiffany 1-4 - Slot D**

**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 1-4 - Slot D
<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 1-4	<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 1-4 - Slot D					
Well Position	+N/-S	-127.50 usft	Northing:	1,164,991.41 usft	Latitude:	37.1016614
	+E/-W	0.00 usft	Easting:	2,400,363.16 usft	Longitude:	-107.5561747
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>	2,386.68
<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	260.35	

<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
2,386.68	12.89	260.35	2,325.88	-75.76	-445.46	0.00	0.00	0.00	0.00	
3,159.83	90.21	260.35	2,771.00	-169.75	-998.11	10.00	10.00	0.00	0.00	
7,859.58	90.21	260.35	2,754.00	-957.71	-5,631.30	0.00	0.00	0.00	0.00	Tiff 1-4 Lat 3 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-4 - Slot D
<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 1-4	<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)
2,386.68	12.89	260.35	2,325.88	-75.76	-445.46	451.85	0.00	0.00	0.00
2,400.00	14.22	260.35	2,338.83	-76.28	-448.54	454.98	10.00	10.00	0.00
2,500.00	24.22	260.35	2,433.14	-81.80	-480.96	487.86	10.00	10.00	0.00
2,600.00	34.22	260.35	2,520.30	-89.97	-529.03	536.62	10.00	10.00	0.00
2,700.00	44.22	260.35	2,597.67	-100.56	-591.29	599.78	10.00	10.00	0.00
2,800.00	54.22	260.35	2,662.89	-113.24	-665.85	675.41	10.00	10.00	0.00
2,900.00	64.22	260.35	2,714.00	-127.63	-750.44	761.22	10.00	10.00	0.00
3,000.00	74.22	260.35	2,749.42	-143.28	-842.50	854.60	10.00	10.00	0.00
3,100.00	84.22	260.35	2,768.10	-159.73	-939.22	952.71	10.00	10.00	0.00
3,159.83	90.21	260.35	2,771.00	-169.75	-998.11	1,012.44	10.00	10.00	0.00
3,200.00	90.21	260.35	2,770.86	-176.48	-1,037.71	1,052.61	0.00	0.00	0.00
3,300.00	90.21	260.35	2,770.50	-193.25	-1,136.29	1,152.61	0.00	0.00	0.00
3,400.00	90.21	260.35	2,770.13	-210.01	-1,234.88	1,252.61	0.00	0.00	0.00
3,500.00	90.21	260.35	2,769.77	-226.78	-1,333.46	1,352.61	0.00	0.00	0.00
3,600.00	90.21	260.35	2,769.41	-243.55	-1,432.04	1,452.61	0.00	0.00	0.00
3,700.00	90.21	260.35	2,769.05	-260.31	-1,530.63	1,552.61	0.00	0.00	0.00
3,800.00	90.21	260.35	2,768.69	-277.08	-1,629.21	1,652.61	0.00	0.00	0.00
3,900.00	90.21	260.35	2,768.32	-293.84	-1,727.80	1,752.60	0.00	0.00	0.00
4,000.00	90.21	260.35	2,767.96	-310.61	-1,826.38	1,852.60	0.00	0.00	0.00
4,100.00	90.21	260.35	2,767.60	-327.38	-1,924.96	1,952.60	0.00	0.00	0.00
4,200.00	90.21	260.35	2,767.24	-344.14	-2,023.55	2,052.60	0.00	0.00	0.00
4,300.00	90.21	260.35	2,766.88	-360.91	-2,122.13	2,152.60	0.00	0.00	0.00
4,400.00	90.21	260.35	2,766.52	-377.67	-2,220.71	2,252.60	0.00	0.00	0.00
4,500.00	90.21	260.35	2,766.15	-394.44	-2,319.30	2,352.60	0.00	0.00	0.00
4,600.00	90.21	260.35	2,765.79	-411.21	-2,417.88	2,452.60	0.00	0.00	0.00
4,700.00	90.21	260.35	2,765.43	-427.97	-2,516.47	2,552.60	0.00	0.00	0.00
4,800.00	90.21	260.35	2,765.07	-444.74	-2,615.05	2,652.60	0.00	0.00	0.00
4,900.00	90.21	260.35	2,764.71	-461.50	-2,713.63	2,752.60	0.00	0.00	0.00
5,000.00	90.21	260.35	2,764.35	-478.27	-2,812.22	2,852.60	0.00	0.00	0.00
5,100.00	90.21	260.35	2,763.98	-495.04	-2,910.80	2,952.60	0.00	0.00	0.00
5,200.00	90.21	260.35	2,763.62	-511.80	-3,009.39	3,052.60	0.00	0.00	0.00
5,300.00	90.21	260.35	2,763.26	-528.57	-3,107.97	3,152.60	0.00	0.00	0.00
5,400.00	90.21	260.35	2,762.90	-545.34	-3,206.55	3,252.59	0.00	0.00	0.00
5,500.00	90.21	260.35	2,762.54	-562.10	-3,305.14	3,352.59	0.00	0.00	0.00
5,600.00	90.21	260.35	2,762.17	-578.87	-3,403.72	3,452.59	0.00	0.00	0.00
5,700.00	90.21	260.35	2,761.81	-595.63	-3,502.30	3,552.59	0.00	0.00	0.00
5,800.00	90.21	260.35	2,761.45	-612.40	-3,600.89	3,652.59	0.00	0.00	0.00
5,900.00	90.21	260.35	2,761.09	-629.17	-3,699.47	3,752.59	0.00	0.00	0.00
6,000.00	90.21	260.35	2,760.73	-645.93	-3,798.06	3,852.59	0.00	0.00	0.00
6,100.00	90.21	260.35	2,760.37	-662.70	-3,896.64	3,952.59	0.00	0.00	0.00
6,200.00	90.21	260.35	2,760.00	-679.46	-3,995.22	4,052.59	0.00	0.00	0.00
6,300.00	90.21	260.35	2,759.64	-696.23	-4,093.81	4,152.59	0.00	0.00	0.00
6,400.00	90.21	260.35	2,759.28	-713.00	-4,192.39	4,252.59	0.00	0.00	0.00
6,500.00	90.21	260.35	2,758.92	-729.76	-4,290.98	4,352.59	0.00	0.00	0.00
6,600.00	90.21	260.35	2,758.56	-746.53	-4,389.56	4,452.59	0.00	0.00	0.00
6,700.00	90.21	260.35	2,758.20	-763.29	-4,488.14	4,552.59	0.00	0.00	0.00
6,800.00	90.21	260.35	2,757.83	-780.06	-4,586.73	4,652.59	0.00	0.00	0.00
6,900.00	90.21	260.35	2,757.47	-796.83	-4,685.31	4,752.59	0.00	0.00	0.00
7,000.00	90.21	260.35	2,757.11	-813.59	-4,783.89	4,852.58	0.00	0.00	0.00
7,100.00	90.21	260.35	2,756.75	-830.36	-4,882.48	4,952.58	0.00	0.00	0.00
7,200.00	90.21	260.35	2,756.39	-847.12	-4,981.06	5,052.58	0.00	0.00	0.00
7,300.00	90.21	260.35	2,756.02	-863.89	-5,079.65	5,152.58	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-4 - Slot D
<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 1-4	<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)
7,400.00	90.21	260.35	2,755.66	-880.66	-5,178.23	5,252.58	0.00	0.00	0.00
7,500.00	90.21	260.35	2,755.30	-897.42	-5,276.81	5,352.58	0.00	0.00	0.00
7,600.00	90.21	260.35	2,754.94	-914.19	-5,375.40	5,452.58	0.00	0.00	0.00
7,700.00	90.21	260.35	2,754.58	-930.95	-5,473.98	5,552.58	0.00	0.00	0.00
7,800.00	90.21	260.35	2,754.22	-947.72	-5,572.56	5,652.58	0.00	0.00	0.00
7,859.58	90.21	260.35	2,754.00	-957.71	-5,631.30	5,712.16	0.00	0.00	0.00
Tiff 1-4 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 1-4 Lat 3 PBHL - plan hits target center - Point	0.00	360.00	2,754.00	-957.71	-5,631.30	1,164,033.70	2,394,731.86	37.0986898	-107.5754053

## 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
7,859.58	2,754.00	4 1/2" Casing	4.50	6.13