



B.P.

La Plata County, CO NAD83

Tiffany Pad

Tiffany 1-1

Pilot

Plan: Plan #1

Standard Planning Report

11 January, 2016





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-1
Company:	B.P.	TVD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Site:	Tiffany Pad	North Reference:	Grid
Well:	Tiffany 1-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
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		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 1-1					
Well Position	+N/-S	0.00 usft	Northing:	1,165,118.91 usft	Latitude:	37.1020115
	+E/-W	0.00 usft	Easting:	2,400,363.16 usft	Longitude:	-107.5561843
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,479.14 usft

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

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	86.18

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,167.79	13.36	86.18	1,161.76	5.16	77.31	2.00	2.00	0.00	86.18	
3,213.35	13.36	86.18	3,152.00	36.61	548.78	0.00	0.00	0.00	0.00	Tiff 1-1 PBHL



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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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00
Animas									
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	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	86.18	599.98	0.12	1.74	1.75	2.00	2.00	0.00
700.00	4.00	86.18	699.84	0.46	6.96	6.98	2.00	2.00	0.00
800.00	6.00	86.18	799.45	1.04	15.66	15.69	2.00	2.00	0.00
900.00	8.00	86.18	898.70	1.86	27.82	27.88	2.00	2.00	0.00
1,000.00	10.00	86.18	997.47	2.90	43.43	43.52	2.00	2.00	0.00
1,100.00	12.00	86.18	1,095.62	4.17	62.46	62.60	2.00	2.00	0.00
1,167.79	13.36	86.18	1,161.76	5.16	77.31	77.48	2.00	2.00	0.00
1,200.00	13.36	86.18	1,193.10	5.65	84.73	84.92	0.00	0.00	0.00
1,300.00	13.36	86.18	1,290.39	7.19	107.78	108.02	0.00	0.00	0.00
1,400.00	13.36	86.18	1,387.69	8.73	130.83	131.12	0.00	0.00	0.00
1,500.00	13.36	86.18	1,484.98	10.27	153.88	154.22	0.00	0.00	0.00
1,600.00	13.36	86.18	1,582.28	11.80	176.93	177.32	0.00	0.00	0.00
1,672.69	13.36	86.18	1,653.00	12.92	193.68	194.11	0.00	0.00	0.00
Lwr. Animas									
1,700.00	13.36	86.18	1,679.57	13.34	199.97	200.42	0.00	0.00	0.00
1,800.00	13.36	86.18	1,776.87	14.88	223.02	223.52	0.00	0.00	0.00
1,900.00	13.36	86.18	1,874.17	16.42	246.07	246.62	0.00	0.00	0.00
2,000.00	13.36	86.18	1,971.46	17.95	269.12	269.72	0.00	0.00	0.00
2,008.78	13.36	86.18	1,980.00	18.09	271.14	271.75	0.00	0.00	0.00
Kirtland Sh									
2,100.00	13.36	86.18	2,068.76	19.49	292.17	292.82	0.00	0.00	0.00
2,200.00	13.36	86.18	2,166.05	21.03	315.22	315.92	0.00	0.00	0.00
2,222.56	13.36	86.18	2,188.00	21.38	320.42	321.13	0.00	0.00	0.00
Farmington Ss									
2,300.00	13.36	86.18	2,263.35	22.57	338.27	339.02	0.00	0.00	0.00
2,400.00	13.36	86.18	2,360.64	24.10	361.31	362.12	0.00	0.00	0.00
2,500.00	13.36	86.18	2,457.94	25.64	384.36	385.22	0.00	0.00	0.00
2,594.62	13.36	86.18	2,550.00	27.10	406.17	407.07	0.00	0.00	0.00
Lwr. Kirtland Sh									
2,600.00	13.36	86.18	2,555.23	27.18	407.41	408.32	0.00	0.00	0.00
2,700.00	13.36	86.18	2,652.53	28.72	430.46	431.42	0.00	0.00	0.00
2,800.00	13.36	86.18	2,749.82	30.25	453.51	454.52	0.00	0.00	0.00
2,810.46	13.36	86.18	2,760.00	30.42	455.92	456.93	0.00	0.00	0.00
Fruitland Coal									
2,843.35	13.36	86.18	2,792.00	30.92	463.50	464.53	0.00	0.00	0.00
Lemon Seam									
2,900.00	13.36	86.18	2,847.12	31.79	476.56	477.62	0.00	0.00	0.00
2,926.60	13.36	86.18	2,873.00	32.20	482.69	483.76	0.00	0.00	0.00
Lwr. Lemon Seam									
2,974.91	13.36	86.18	2,920.00	32.94	493.82	494.92	0.00	0.00	0.00
Ignacio Seam									



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Site:	Tiffany Pad	North Reference:	Grid
Well:	Tiffany 1-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	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)
3,000.00	13.36	86.18	2,944.42	33.33	499.60	500.72	0.00	0.00	0.00
3,007.80	13.36	86.18	2,952.00	33.45	501.40	502.52	0.00	0.00	0.00
Pictured Cliffs									
3,100.00	13.36	86.18	3,041.71	34.87	522.65	523.82	0.00	0.00	0.00
3,200.00	13.36	86.18	3,139.01	36.40	545.70	546.91	0.00	0.00	0.00
3,213.35	13.36	86.18	3,152.00	36.61	548.78	550.00	0.00	0.00	0.00
7" Casing" - Tiff 1-1 PBHL									

Design Targets**Target Name**

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
Tiff 1-1 PBHL	0.00	360.00	3,152.00	36.61	548.78	1,165,155.52	2,400,911.94	37.1021452	-107.5543059
- plan hits target center									
- Point									

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
3,213.35	3,152.00	7" Casing"	7.00	8.75

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11.00	11.00	Animas		0.00	0.00
1,672.69	1,653.00	Lwr. Animas		0.00	0.00
2,008.78	1,980.00	Kirtland Sh		0.00	0.00
2,222.56	2,188.00	Farmington Ss		0.00	0.00
2,594.62	2,550.00	Lwr. Kirtland Sh		0.00	0.00
2,810.46	2,760.00	Fruitland Coal		0.00	0.00
2,843.35	2,792.00	Lemon Seam		0.00	0.00
2,926.60	2,873.00	Lwr. Lemon Seam		0.00	0.00
2,974.91	2,920.00	Ignacio Seam		0.00	0.00
3,007.80	2,952.00	Pictured Cliffs		0.00	0.00