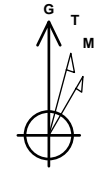




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Glover Pad
Well: Glover 4
Wellbore: Lateral 1 ST1
Design: Plan #1

PROJECT DETAILS: Archuleta 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: 1.20°
Magnetic North: 10.30°

Magnetic Field
Strength: 50057.2snT
Dip Angle: 63.60°
Date: 11/29/2017
Model: HDGM

WELL DETAILS: Glover 4

+N/-S	+E/-W	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)	Northing	Easting	Latitude	Longitude
0.00	0.00		1141916.03	2427283.02	37.0398924	-107.4622314

Plan: Plan #1 (Glover 4/Lateral 1 ST1)

Created By: Janie Collins Date: 10:48, December 01 2017

DESIGN TARGET DETAILS

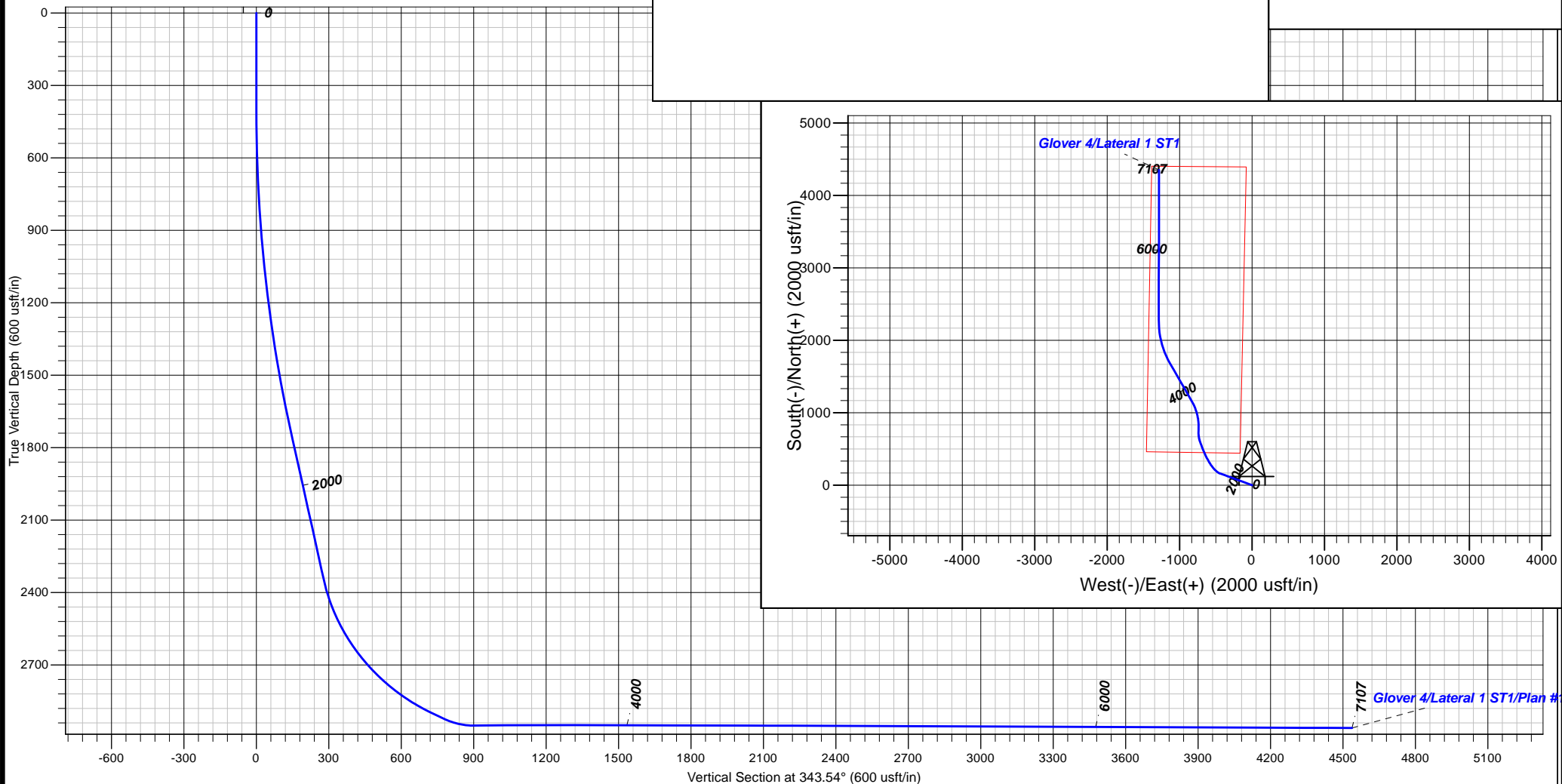
Name	TVD	+N/-S	+E/-W	Northing	Easting
Glover 4 Lat 1 ST1 BHL	2961.00	4351.46	-1286.01	1146267.49	2425997.01

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3403.00	90.50	2.49	2950.57	771.78	-737.40	0.00	0.00	949.12	
3809.21	89.86	330.00	2949.25	1161.07	-832.69	8.00	-91.05	1349.46	
4409.21	89.86	330.00	2950.72	1680.68	-1132.69	0.00	0.00	1932.79	
5009.32	89.77	0.01	2952.68	2253.74	-1286.21	5.00	90.21	2525.87	
7107.05	89.77	0.01	2961.00	4351.46	-1286.01	0.00	0.00	4537.51	Glover 4 Lat 1 ST1 BHL

CASING DETAILS

No casing data is available





B.P.

Archuleta County, CO NAD83

Glover Pad

Glover 4

Lateral 1 ST1

Plan: Plan #1

Standard Planning Report

01 December, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Glover 4
Company:	B.P.	TVD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Site:	Glover Pad	North Reference:	Grid
Well:	Glover 4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #1		

Project	Archuleta 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		Glover Pad			
Site Position:		Northing:	1,141,916.03 usft	Latitude:	37.0398924
From:	Map	Easting:	2,427,283.02 usft	Longitude:	-107.4622315
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.20 °

Well	Glover 4					
Well Position	+N/-S	0.00 usft	Northing:	1,141,916.03 usft	Latitude:	37.0398924
	+E/-W	0.00 usft	Easting:	2,427,283.02 usft	Longitude:	-107.4622315
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,380.00 usft

Wellbore	Lateral 1 ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/29/2017	9.10	63.60	50,057

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	3,403.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	343.54	

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
3,403.00	90.50	2.49	2,950.57	771.78	-737.40	0.00	0.00	0.00	0.00	
3,809.21	89.86	330.00	2,949.25	1,161.07	-832.69	8.00	-0.16	-8.00	-91.05	
4,409.21	89.86	330.00	2,950.72	1,680.68	-1,132.69	0.00	0.00	0.00	0.00	
5,009.32	89.77	0.01	2,952.68	2,253.74	-1,286.21	5.00	-0.01	5.00	90.21	
7,107.05	89.77	0.01	2,961.00	4,351.46	-1,286.01	0.00	0.00	0.00	0.00	Glover 4 Lat 1 ST1 Bl



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Glover 4
Company:	B.P.	TVD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Site:	Glover Pad	North Reference:	Grid
Well:	Glover 4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
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)
3,403.00	90.50	2.49	2,950.57	771.78	-737.40	949.12	0.00	0.00	0.00
3,500.00	90.36	354.73	2,949.84	868.67	-739.75	1,042.71	8.00	-0.15	-8.00
3,600.00	90.20	346.73	2,949.36	967.29	-755.84	1,141.84	8.00	-0.16	-8.00
3,700.00	90.04	338.73	2,949.15	1,062.70	-785.49	1,241.75	8.00	-0.16	-8.00
3,800.00	89.87	330.74	2,949.23	1,153.06	-828.14	1,340.49	8.00	-0.16	-8.00
3,809.21	89.86	330.00	2,949.25	1,161.07	-832.69	1,349.46	8.00	-0.16	-8.00
3,900.00	89.86	330.00	2,949.47	1,239.69	-878.09	1,437.73	0.00	0.00	0.00
4,000.00	89.86	330.00	2,949.72	1,326.30	-928.09	1,534.95	0.00	0.00	0.00
4,100.00	89.86	330.00	2,949.96	1,412.90	-978.09	1,632.17	0.00	0.00	0.00
4,200.00	89.86	330.00	2,950.21	1,499.50	-1,028.09	1,729.39	0.00	0.00	0.00
4,300.00	89.86	330.00	2,950.45	1,586.10	-1,078.09	1,826.62	0.00	0.00	0.00
4,400.00	89.86	330.00	2,950.69	1,672.71	-1,128.09	1,923.84	0.00	0.00	0.00
4,409.21	89.86	330.00	2,950.72	1,680.68	-1,132.69	1,932.79	0.00	0.00	0.00
4,500.00	89.84	334.54	2,950.95	1,761.02	-1,174.93	2,021.81	5.00	-0.02	5.00
4,600.00	89.83	339.54	2,951.24	1,853.07	-1,213.92	2,121.14	5.00	-0.02	5.00
4,700.00	89.81	344.54	2,951.55	1,948.17	-1,244.75	2,221.07	5.00	-0.02	5.00
4,800.00	89.80	349.54	2,951.90	2,045.59	-1,267.17	2,320.85	5.00	-0.01	5.00
4,900.00	89.78	354.54	2,952.26	2,144.59	-1,281.01	2,419.72	5.00	-0.01	5.00
5,000.00	89.77	359.54	2,952.65	2,244.43	-1,286.18	2,516.92	5.00	-0.01	5.00
5,009.32	89.77	0.01	2,952.68	2,253.74	-1,286.21	2,525.87	5.00	-0.01	5.00
5,100.00	89.77	0.01	2,953.04	2,344.43	-1,286.20	2,612.83	0.00	0.00	0.00
5,200.00	89.77	0.01	2,953.44	2,444.43	-1,286.19	2,708.73	0.00	0.00	0.00
5,300.00	89.77	0.01	2,953.84	2,544.42	-1,286.19	2,804.62	0.00	0.00	0.00
5,400.00	89.77	0.01	2,954.23	2,644.42	-1,286.18	2,900.52	0.00	0.00	0.00
5,500.00	89.77	0.01	2,954.63	2,744.42	-1,286.17	2,996.41	0.00	0.00	0.00
5,600.00	89.77	0.01	2,955.03	2,844.42	-1,286.16	3,092.31	0.00	0.00	0.00
5,700.00	89.77	0.01	2,955.42	2,944.42	-1,286.15	3,188.21	0.00	0.00	0.00
5,800.00	89.77	0.01	2,955.82	3,044.42	-1,286.14	3,284.10	0.00	0.00	0.00
5,900.00	89.77	0.01	2,956.22	3,144.42	-1,286.13	3,380.00	0.00	0.00	0.00
6,000.00	89.77	0.01	2,956.61	3,244.42	-1,286.12	3,475.90	0.00	0.00	0.00
6,100.00	89.77	0.01	2,957.01	3,344.42	-1,286.11	3,571.79	0.00	0.00	0.00
6,200.00	89.77	0.01	2,957.40	3,444.42	-1,286.10	3,667.69	0.00	0.00	0.00
6,300.00	89.77	0.01	2,957.80	3,544.42	-1,286.09	3,763.58	0.00	0.00	0.00
6,400.00	89.77	0.01	2,958.20	3,644.42	-1,286.08	3,859.48	0.00	0.00	0.00
6,500.00	89.77	0.01	2,958.59	3,744.42	-1,286.07	3,955.38	0.00	0.00	0.00
6,600.00	89.77	0.01	2,958.99	3,844.41	-1,286.06	4,051.27	0.00	0.00	0.00
6,700.00	89.77	0.01	2,959.39	3,944.41	-1,286.05	4,147.17	0.00	0.00	0.00
6,800.00	89.77	0.01	2,959.78	4,044.41	-1,286.04	4,243.06	0.00	0.00	0.00
6,900.00	89.77	0.01	2,960.18	4,144.41	-1,286.03	4,338.96	0.00	0.00	0.00
7,000.00	89.77	0.01	2,960.58	4,244.41	-1,286.02	4,434.86	0.00	0.00	0.00
7,100.00	89.77	0.01	2,960.97	4,344.41	-1,286.01	4,530.75	0.00	0.00	0.00
7,107.05	89.77	0.01	2,961.00	4,351.46	-1,286.01	4,537.51	0.00	0.00	0.00
Glover 4 Lat 1 ST1 BHL									



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Glover 4
Company:	B.P.	TVD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
Site:	Glover Pad	North Reference:	Grid
Well:	Glover 4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Glover 4 Lat 1 ST1 BHL	0.00	360.00	2,961.00	4,351.46	-1,286.01	1,146,267.49	2,425,997.01	37.0517662	-107.4669502
- plan hits target center									
- Point									