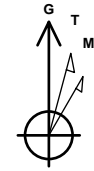




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Glover Pad
Well: Glover 4
Wellbore: Lateral 1
Design: Plan #1

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

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

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

Created By: Janie Collins Date: 10:39, December 01 2017

DESIGN TARGET DETAILS

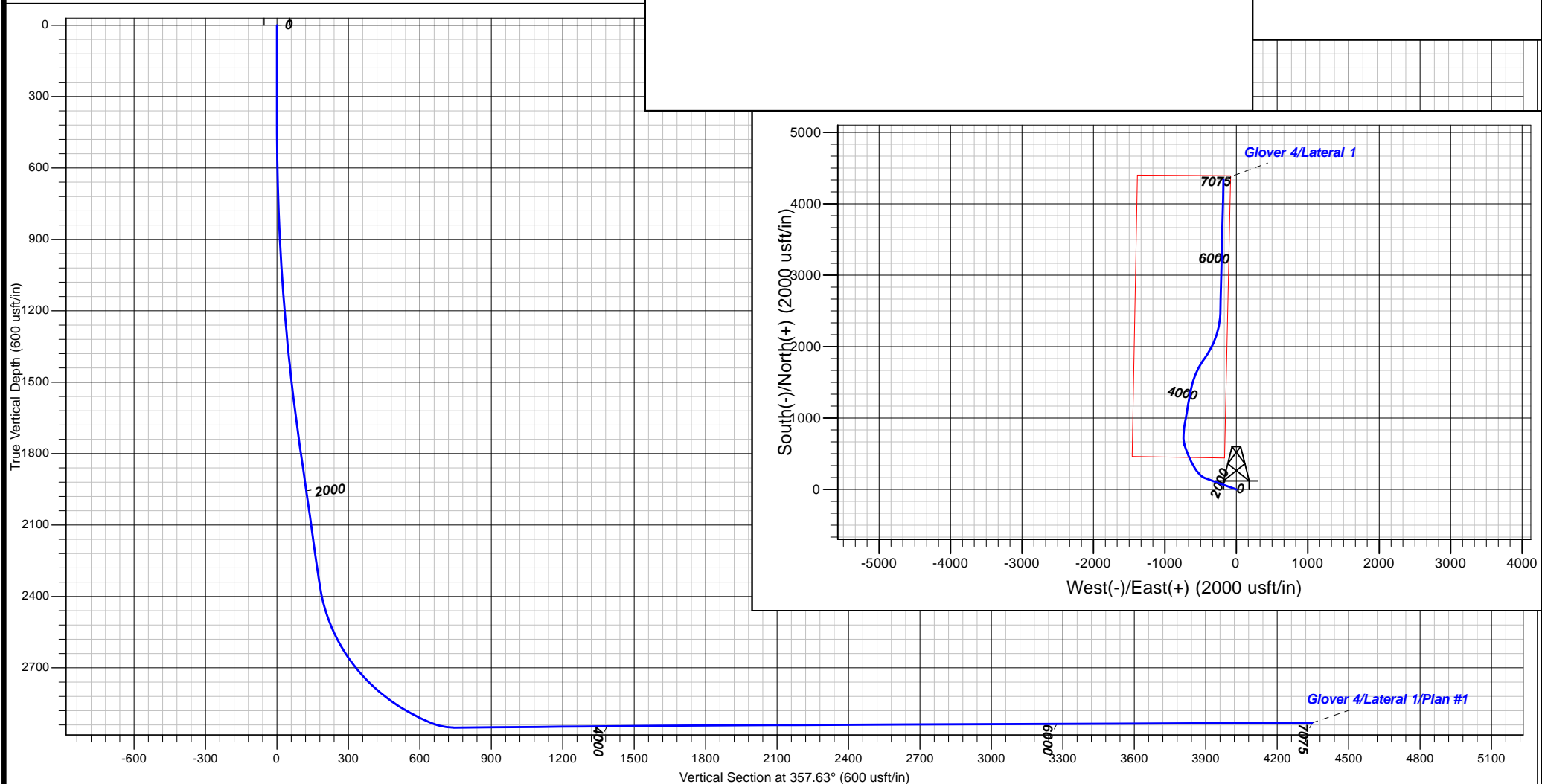
Name TVD +N/-S +E/-W Northing Easting
Glover 4 Lat 1 BHL 2931.00 4343.80 -179.61 1146259.83 2427103.41

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3225.14	65.00	340.00	2923.79	600.25	-718.10	0.00	0.00	629.41	
3353.19	90.50	360.00	2951.00	721.99	-738.48	25.00	40.18	751.88	
3553.18	90.50	10.00	2949.25	920.96	-721.07	5.00	89.96	949.96	
4003.18	90.50	10.00	2945.33	1364.10	-642.93	0.00	0.00	1389.50	
4523.20	90.25	36.00	2941.86	1838.67	-441.49	5.00	90.45	1855.34	
5216.47	90.24	1.34	2938.80	2485.49	-222.96	5.00	-89.94	2492.58	
7075.30	90.24	1.34	2931.00	4343.80	-179.61	0.00	0.00	4347.51	Glover 4 Lat 1 BHL

CASING DETAILS

No casing data is available





B.P.

Archuleta County, CO NAD83

Glover Pad

Glover 4

Lateral 1

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		
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				
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:	3,225.14
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	357.63	

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
3,225.14	65.00	340.00	2,923.79	600.25	-718.10	0.00	0.00	0.00	0.00	
3,353.19	90.50	360.00	2,951.00	721.99	-738.48	25.00	19.91	15.62	40.18	
3,553.18	90.50	10.00	2,949.25	920.96	-721.07	5.00	0.00	5.00	89.96	
4,003.18	90.50	10.00	2,945.33	1,364.10	-642.93	0.00	0.00	0.00	0.00	
4,523.20	90.25	36.00	2,941.86	1,838.67	-441.49	5.00	-0.05	5.00	90.45	
5,216.47	90.24	1.34	2,938.80	2,485.49	-222.96	5.00	0.00	-5.00	-89.94	
7,075.30	90.24	1.34	2,931.00	4,343.80	-179.61	0.00	0.00	0.00	0.00	Glover 4 Lat 1 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		
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)
3,225.14	65.00	340.00	2,923.79	600.25	-718.10	629.41	0.00	0.00	0.00
3,300.00	79.74	352.14	2,946.48	669.23	-734.89	699.02	25.00	19.69	16.22
3,353.19	90.50	360.00	2,951.00	721.99	-738.48	751.88	25.00	20.23	14.77
3,400.00	90.50	2.34	2,950.59	768.78	-737.52	798.59	5.00	0.00	5.00
3,500.00	90.50	7.34	2,949.72	868.39	-729.09	897.77	5.00	0.00	5.00
3,553.18	90.50	10.00	2,949.25	920.96	-721.07	949.96	5.00	0.00	5.00
3,600.00	90.50	10.00	2,948.84	967.06	-712.94	995.69	0.00	0.00	0.00
3,700.00	90.50	10.00	2,947.97	1,065.54	-695.58	1,093.36	0.00	0.00	0.00
3,800.00	90.50	10.00	2,947.10	1,164.01	-678.21	1,191.04	0.00	0.00	0.00
3,900.00	90.50	10.00	2,946.23	1,262.49	-660.85	1,288.72	0.00	0.00	0.00
4,000.00	90.50	10.00	2,945.35	1,360.97	-643.49	1,386.39	0.00	0.00	0.00
4,003.18	90.50	10.00	2,945.33	1,364.10	-642.93	1,389.50	0.00	0.00	0.00
4,100.00	90.46	14.84	2,944.51	1,458.62	-622.12	1,483.08	5.00	-0.04	5.00
4,200.00	90.41	19.84	2,943.75	1,554.04	-592.32	1,577.19	5.00	-0.04	5.00
4,300.00	90.37	24.84	2,943.07	1,646.51	-554.32	1,668.00	5.00	-0.05	5.00
4,400.00	90.32	29.84	2,942.47	1,735.31	-508.41	1,754.83	5.00	-0.05	5.00
4,500.00	90.26	34.84	2,941.97	1,819.77	-454.93	1,837.01	5.00	-0.05	5.00
4,523.20	90.25	36.00	2,941.86	1,838.67	-441.49	1,855.34	5.00	-0.05	5.00
4,600.00	90.25	32.16	2,941.52	1,902.27	-398.46	1,917.11	5.00	0.00	-5.00
4,700.00	90.26	27.16	2,941.08	1,989.14	-348.99	2,001.86	5.00	0.00	-5.00
4,800.00	90.26	22.16	2,940.63	2,079.99	-307.28	2,090.91	5.00	0.00	-5.00
4,900.00	90.26	17.16	2,940.18	2,174.13	-273.65	2,183.58	5.00	0.00	-5.00
5,000.00	90.25	12.16	2,939.74	2,270.84	-248.35	2,279.16	5.00	0.00	-5.00
5,100.00	90.25	7.16	2,939.30	2,369.39	-231.58	2,376.94	5.00	0.00	-5.00
5,200.00	90.24	2.16	2,938.87	2,469.03	-223.46	2,476.15	5.00	-0.01	-5.00
5,216.47	90.24	1.34	2,938.80	2,485.49	-222.96	2,492.58	5.00	-0.01	-5.00
5,300.00	90.24	1.34	2,938.45	2,569.00	-221.01	2,575.94	0.00	0.00	0.00
5,400.00	90.24	1.34	2,938.03	2,668.97	-218.68	2,675.73	0.00	0.00	0.00
5,500.00	90.24	1.34	2,937.61	2,768.94	-216.34	2,775.52	0.00	0.00	0.00
5,600.00	90.24	1.34	2,937.19	2,868.91	-214.01	2,875.31	0.00	0.00	0.00
5,700.00	90.24	1.34	2,936.77	2,968.89	-211.68	2,975.10	0.00	0.00	0.00
5,800.00	90.24	1.34	2,936.35	3,068.86	-209.35	3,074.89	0.00	0.00	0.00
5,900.00	90.24	1.34	2,935.93	3,168.83	-207.02	3,174.68	0.00	0.00	0.00
6,000.00	90.24	1.34	2,935.51	3,268.80	-204.68	3,274.47	0.00	0.00	0.00
6,100.00	90.24	1.34	2,935.09	3,368.77	-202.35	3,374.26	0.00	0.00	0.00
6,200.00	90.24	1.34	2,934.67	3,468.75	-200.02	3,474.05	0.00	0.00	0.00
6,300.00	90.24	1.34	2,934.25	3,568.72	-197.69	3,573.84	0.00	0.00	0.00
6,400.00	90.24	1.34	2,933.83	3,668.69	-195.36	3,673.63	0.00	0.00	0.00
6,500.00	90.24	1.34	2,933.41	3,768.66	-193.03	3,773.42	0.00	0.00	0.00
6,600.00	90.24	1.34	2,932.99	3,868.63	-190.69	3,873.21	0.00	0.00	0.00
6,700.00	90.24	1.34	2,932.58	3,968.61	-188.36	3,973.00	0.00	0.00	0.00
6,800.00	90.24	1.34	2,932.16	4,068.58	-186.03	4,072.79	0.00	0.00	0.00
6,900.00	90.24	1.34	2,931.74	4,168.55	-183.70	4,172.58	0.00	0.00	0.00
7,000.00	90.24	1.34	2,931.32	4,268.52	-181.37	4,272.37	0.00	0.00	0.00
7,075.30	90.24	1.34	2,931.00	4,343.80	-179.61	4,347.51	0.00	0.00	0.00
Glover 4 Lat 1 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		
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 BHL	0.00	360.00	2,931.00	4,343.80	-179.61	1,146,259.83	2,427,103.41	37.0518091	-107.4631594
- plan hits target center									
- Point									