



Company: B.P.  
Project: Archuleta County, CO NAD83  
Site: Glover Pad  
Well: Glover 4



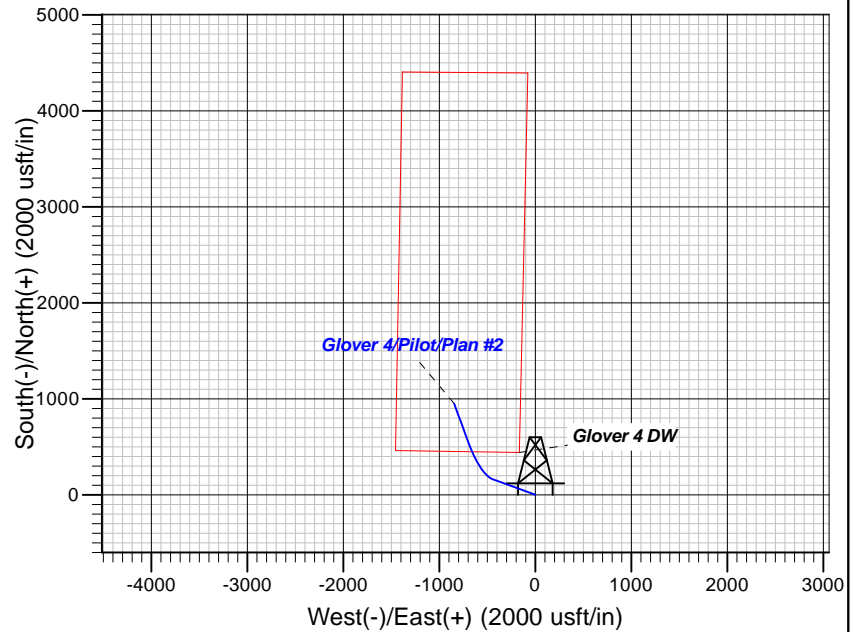
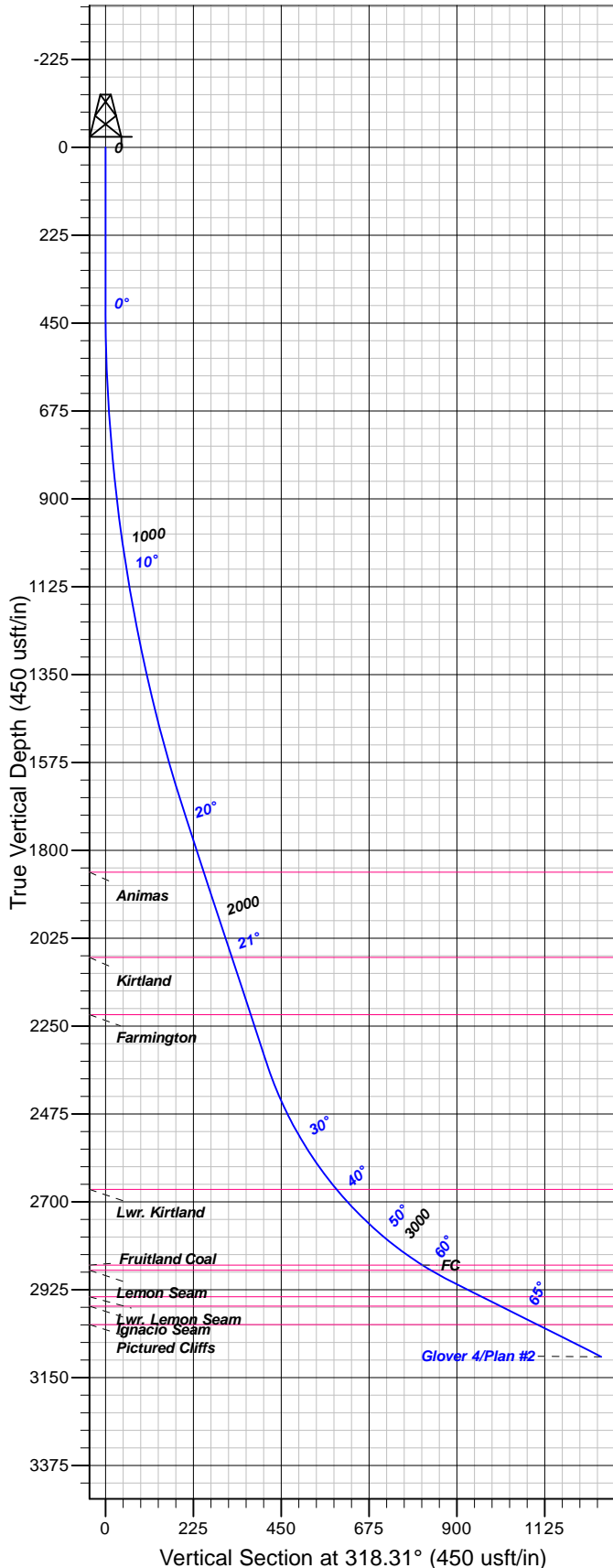
### Well Details: Glover 4

GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1141916.03	2427283.02	37.0398924	-107.4622314	

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



### FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1856.00	1892.97	Animas
2074.00	2125.71	Kirtland
2221.00	2282.65	Farmington
2668.00	2787.83	Lwr. Kirtland
2862.00	3088.22	Fruitland Coal
2875.00	3114.30	Lemon Seam
2943.00	3270.59	Lwr. Lemon Seam
2967.00	3327.38	Ignacio Seam
3014.00	3438.59	Pictured Cliffs

### Plan: Plan #2

14:43, December 04 2017  
Created By: Janie Collins

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

### CASING DETAILS

No casing data is available

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1766.67	20.50	290.00	1737.69	82.73	-227.31	1.50	290.00	212.97	
4	2416.67	20.50	290.00	2346.53	160.59	-441.21	0.00	0.00	413.38	
5	3175.80	65.00	340.00	2902.94	558.23	-702.81	7.00	60.20	884.30	
6	3634.00	65.00	340.00	3096.58	948.46	-844.84	0.00	0.00	1270.17	

### DESIGN TARGET DETAILS

No target data is available.



**B.P.**

**Archuleta County, CO NAD83**

**Glover Pad**

**Glover 4**

**Pilot**

**Plan: Plan #2**

## **Standard Planning Report**

**06 December, 2017**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Glover 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
<b>Project:</b>	Archuleta County, CO NAD83	<b>MD Reference:</b>	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
<b>Site:</b>	Glover Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Glover 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #2		

<b>Project</b>	Archuleta 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		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

<b>Wellbore</b>	Pilot				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	11/29/2017	9.10	63.60	50,057

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<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	318.31

<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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,766.67	20.50	290.00	1,737.69	82.73	-227.31	1.50	1.50	0.00	290.00	
2,416.67	20.50	290.00	2,346.53	160.59	-441.21	0.00	0.00	0.00	0.00	
3,175.80	65.00	340.00	2,902.94	558.23	-702.81	7.00	5.86	6.59	60.20	
3,634.00	65.00	340.00	3,096.58	948.46	-844.84	0.00	0.00	0.00	0.00	



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Glover 4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
<b>Project:</b>	Archuleta County, CO NAD83	<b>MD Reference:</b>	GL 6380' & RKB 11' @ 6391.00usft (Aztec 507)
<b>Site:</b>	Glover Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Glover 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #2		

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	
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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	1.50	290.00	499.99	0.45	-1.23	1.15	1.50	1.50	0.00	
600.00	3.00	290.00	599.91	1.79	-4.92	4.61	1.50	1.50	0.00	
700.00	4.50	290.00	699.69	4.03	-11.06	10.37	1.50	1.50	0.00	
800.00	6.00	290.00	799.27	7.16	-19.66	18.42	1.50	1.50	0.00	
900.00	7.50	290.00	898.57	11.18	-30.71	28.77	1.50	1.50	0.00	
1,000.00	9.00	290.00	997.54	16.08	-44.19	41.40	1.50	1.50	0.00	
1,100.00	10.50	290.00	1,096.09	21.88	-60.10	56.31	1.50	1.50	0.00	
1,200.00	12.00	290.00	1,194.16	28.55	-78.44	73.49	1.50	1.50	0.00	
1,300.00	13.50	290.00	1,291.70	36.10	-99.17	92.92	1.50	1.50	0.00	
1,400.00	15.00	290.00	1,388.62	44.52	-122.30	114.59	1.50	1.50	0.00	
1,500.00	16.50	290.00	1,484.86	53.80	-147.81	138.49	1.50	1.50	0.00	
1,600.00	18.00	290.00	1,580.36	63.94	-175.68	164.59	1.50	1.50	0.00	
1,700.00	19.50	290.00	1,675.05	74.93	-205.88	192.89	1.50	1.50	0.00	
1,766.67	20.50	290.00	1,737.69	82.73	-227.31	212.97	1.50	1.50	0.00	
1,800.00	20.50	290.00	1,768.92	86.73	-238.28	223.25	0.00	0.00	0.00	
1,892.97	20.50	290.00	1,856.00	97.86	-268.87	251.91	0.00	0.00	0.00	
<b>Animas</b>										
1,900.00	20.50	290.00	1,862.58	98.70	-271.18	254.08	0.00	0.00	0.00	
2,000.00	20.50	290.00	1,956.25	110.68	-304.09	284.91	0.00	0.00	0.00	
2,100.00	20.50	290.00	2,049.92	122.66	-337.00	315.74	0.00	0.00	0.00	
2,125.71	20.50	290.00	2,074.00	125.74	-345.46	323.67	0.00	0.00	0.00	
<b>Kirtland</b>										
2,200.00	20.50	290.00	2,143.58	134.64	-369.91	346.58	0.00	0.00	0.00	
2,282.65	20.50	290.00	2,221.00	144.54	-397.11	372.06	0.00	0.00	0.00	
<b>Farmington</b>										
2,300.00	20.50	290.00	2,237.25	146.61	-402.82	377.41	0.00	0.00	0.00	
2,400.00	20.50	290.00	2,330.92	158.59	-435.73	408.24	0.00	0.00	0.00	
2,416.67	20.50	290.00	2,346.53	160.59	-441.21	413.38	0.00	0.00	0.00	
2,500.00	23.92	302.56	2,423.71	174.68	-469.19	442.51	7.00	4.10	15.08	
2,600.00	29.00	313.42	2,513.26	202.29	-503.92	486.23	7.00	5.08	10.86	
2,700.00	34.71	321.13	2,598.20	241.17	-539.43	538.89	7.00	5.71	7.71	
2,787.83	40.03	326.23	2,668.00	284.16	-570.85	591.89	7.00	6.05	5.81	
<b>Lwr. Kirtland</b>										
2,800.00	40.78	326.85	2,677.27	290.74	-575.20	599.69	7.00	6.18	5.06	
2,900.00	47.07	331.29	2,749.27	350.26	-610.69	667.74	7.00	6.29	4.44	
3,000.00	53.50	334.90	2,813.16	418.85	-645.37	742.02	7.00	6.43	3.61	
3,088.22	59.24	337.61	2,862.00	486.07	-674.87	811.85	7.00	6.52	3.07	
<b>FC - Fruitland Coal</b>										
3,100.00	60.02	337.95	2,867.96	495.48	-678.72	821.43	7.00	6.55	2.86	
3,114.30	60.95	338.35	2,875.00	507.03	-683.35	833.13	7.00	6.56	2.81	
<b>Lemon Seam</b>										
3,175.80	65.00	340.00	2,902.94	558.23	-702.81	884.30	7.00	6.58	2.68	
3,200.00	65.00	340.00	2,913.17	578.84	-710.31	904.69	0.00	0.00	0.00	
3,270.59	65.00	340.00	2,943.00	638.96	-732.19	964.13	0.00	0.00	0.00	
<b>Lwr. Lemon Seam</b>										
3,300.00	65.00	340.00	2,955.43	664.01	-741.30	988.90	0.00	0.00	0.00	
3,327.38	65.00	340.00	2,967.00	687.33	-749.79	1,011.96	0.00	0.00	0.00	



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<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #2		

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)	
Ignacio Seam										
3,400.00	65.00	340.00	2,997.69	749.17	-772.30	1,073.11	0.00	0.00	0.00	
3,438.59	65.00	340.00	3,014.00	782.04	-784.26	1,105.61	0.00	0.00	0.00	
Pictured Cliffs										
3,500.00	65.00	340.00	3,039.95	834.34	-803.30	1,157.32	0.00	0.00	0.00	
3,600.00	65.00	340.00	3,082.21	919.50	-834.30	1,241.53	0.00	0.00	0.00	
3,634.00	65.00	340.00	3,096.58	948.46	-844.84	1,270.17	0.00	0.00	0.00	
Glover 4 Lat 1 BHL - Glover 4 Lat 1 ST1 BHL										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3,088.22	2,862.00	486.07	-674.87	FC	