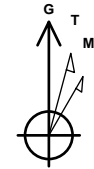




Company: B.P.
Project: Archuleta County, CO NAD83
Site: Kerrigan Pad
Well: Kerrigan GU 32-6-2 #3
Wellbore: Lateral 1
Design: Plan #4

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: 1.21°
Magnetic North: 10.33°

Magnetic Field
Strength: 50080.7snT
Dip Angle: 63.60°
Date: 9/7/2017
Model: HDGM

WELL DETAILS: Kerrigan GU 32-6-2 #3

GL 6392' & 11' @ 6403.00usft (Aztec 507)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1142918.49 2423954.00 37.0424524 -107.4737064

Plan: Plan #4 (Kerrigan GU 32-6-2 #3/Lateral 1)

Created By: Janie Collins Date: 12:15, October 30 2017

DESIGN TARGET DETAILS

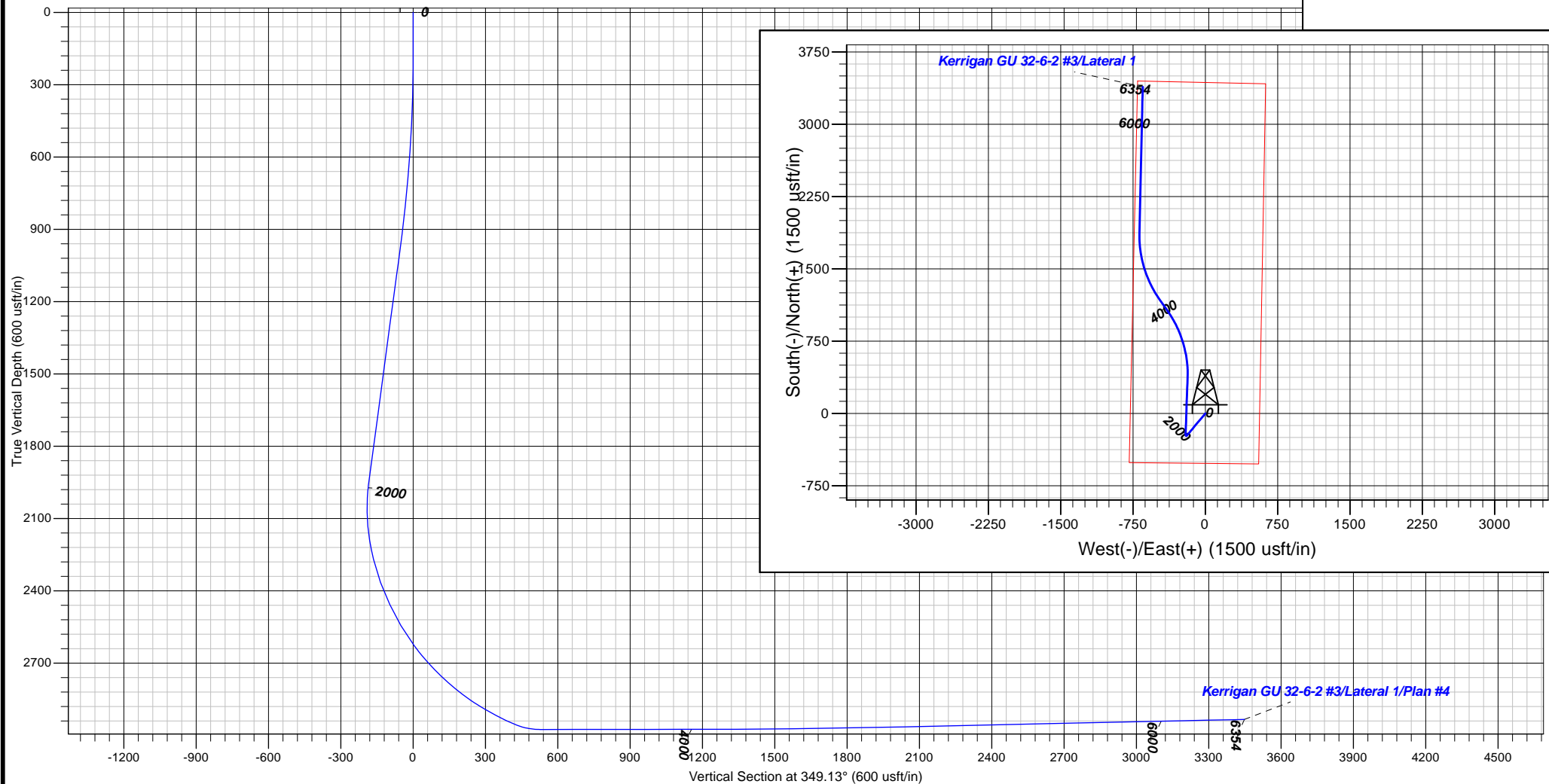
Name TVD +N/-S +E/-W Northing Easting
Kerrigan Lat 1 PBHL JC 2933.00 3386.45 -650.00 1146304.94 2423304.00

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3228.55	65.00	2.00	2947.17	378.42	-184.68	0.00	0.00	406.45	
3358.39	90.07	355.00	2975.00	504.06	-188.35	20.00	-16.16	530.53	
3958.39	90.07	325.00	2974.25	1061.45	-391.22	5.00	-89.98	1116.17	
4108.39	90.07	325.00	2974.07	1184.33	-477.26	0.00	0.00	1253.06	
4834.57	91.23	1.29	2965.56	1867.69	-684.30	5.00	88.02	1963.20	
6354.07	91.23	1.29	2933.00	3386.45	-650.00	0.00	0.00	3448.27	Kerrigan Lat 1 PBHL JC

FORMATION TOP DETAILS

No formation data is available





B.P.

Archuleta County, CO NAD83
Kerrigan Pad
Kerrigan GU 32-6-2 #3

Lateral 1

Plan: Plan #4

Standard Planning Report

30 October, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Kerrigan GU 32-6-2 #3
Company:	B.P.	TVD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Site:	Kerrigan Pad	North Reference:	Grid
Well:	Kerrigan GU 32-6-2 #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #4		

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		Kerrigan Pad			
Site Position:		Northing:	1,142,918.49 usft	Latitude:	37.0424523
From:	Map	Easting:	2,423,954.00 usft	Longitude:	-107.4737065
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.21 °

Well	Kerrigan GU 32-6-2 #3					
Well Position	+N/-S	0.00 usft	Northing:	1,142,918.49 usft	Latitude:	37.0424523
	+E/-W	0.00 usft	Easting:	2,423,954.00 usft	Longitude:	-107.4737065
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,392.00 usft

Wellbore	Lateral 1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/7/2017	9.12	63.60	50,081

Design	Plan #4				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	3,228.55	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	349.13	

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
3,228.55	65.00	2.00	2,947.17	378.42	-184.68	0.00	0.00	0.00	0.00	
3,358.39	90.07	355.00	2,975.00	504.06	-188.35	20.00	19.31	-5.39	-16.16	
3,958.39	90.07	325.00	2,974.25	1,061.45	-391.22	5.00	0.00	-5.00	-89.98	
4,108.39	90.07	325.00	2,974.07	1,184.33	-477.26	0.00	0.00	0.00	0.00	
4,834.58	91.23	1.29	2,965.56	1,867.69	-684.30	5.00	0.16	5.00	88.02	
6,354.07	91.23	1.29	2,933.00	3,386.45	-650.00	0.00	0.00	0.00	0.00	Kerrigan Lat 1 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Kerrigan GU 32-6-2 #3
Company:	B.P.	TVD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Project:	Archuleta County, CO NAD83	MD Reference:	GL 6392' & 11' @ 6403.00usft (Aztec 507)
Site:	Kerrigan Pad	North Reference:	Grid
Well:	Kerrigan GU 32-6-2 #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1		
Design:	Plan #4		

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)	
3,228.55	65.00	2.00	2,947.17	378.42	-184.68	406.45	0.00	0.00	0.00	
3,300.00	78.77	357.98	2,969.33	446.15	-184.78	472.99	20.00	19.28	-5.62	
3,358.39	90.07	355.00	2,975.00	504.06	-188.35	530.53	20.00	19.34	-5.11	
3,400.00	90.07	352.92	2,974.95	545.43	-192.72	571.98	5.00	0.00	-5.00	
3,500.00	90.07	347.92	2,974.83	644.01	-209.36	671.93	5.00	0.00	-5.00	
3,600.00	90.07	342.92	2,974.70	740.76	-234.53	771.68	5.00	0.00	-5.00	
3,700.00	90.07	337.92	2,974.57	834.94	-268.03	870.50	5.00	0.00	-5.00	
3,800.00	90.07	332.92	2,974.45	925.85	-309.61	967.62	5.00	0.00	-5.00	
3,900.00	90.07	327.92	2,974.32	1,012.79	-358.96	1,062.30	5.00	0.00	-5.00	
3,958.39	90.07	325.00	2,974.25	1,061.45	-391.22	1,116.17	5.00	0.00	-5.00	
4,000.00	90.07	325.00	2,974.20	1,095.54	-415.09	1,154.14	0.00	0.00	0.00	
4,100.00	90.07	325.00	2,974.08	1,177.45	-472.45	1,245.40	0.00	0.00	0.00	
4,108.39	90.07	325.00	2,974.07	1,184.33	-477.26	1,253.06	0.00	0.00	0.00	
4,200.00	90.23	329.58	2,973.83	1,261.39	-526.75	1,338.07	5.00	0.17	5.00	
4,300.00	90.40	334.57	2,973.28	1,349.71	-573.56	1,433.63	5.00	0.17	5.00	
4,400.00	90.57	339.57	2,972.44	1,441.78	-612.51	1,531.39	5.00	0.17	5.00	
4,500.00	90.73	344.57	2,971.31	1,536.89	-643.28	1,630.60	5.00	0.16	5.00	
4,600.00	90.89	349.57	2,969.90	1,634.31	-665.65	1,730.49	5.00	0.16	5.00	
4,700.00	91.04	354.57	2,968.22	1,733.31	-679.44	1,830.31	5.00	0.15	5.00	
4,800.00	91.18	359.57	2,966.28	1,833.13	-684.56	1,929.31	5.00	0.14	5.00	
4,834.58	91.23	1.29	2,965.56	1,867.69	-684.30	1,963.20	5.00	0.14	5.00	
4,900.00	91.23	1.29	2,964.16	1,933.09	-682.82	2,027.15	0.00	0.00	0.00	
5,000.00	91.23	1.29	2,962.01	2,033.04	-680.56	2,124.88	0.00	0.00	0.00	
5,100.00	91.23	1.29	2,959.87	2,132.99	-678.31	2,222.61	0.00	0.00	0.00	
5,200.00	91.23	1.29	2,957.73	2,232.94	-676.05	2,320.35	0.00	0.00	0.00	
5,300.00	91.23	1.29	2,955.59	2,332.89	-673.79	2,418.08	0.00	0.00	0.00	
5,400.00	91.23	1.29	2,953.44	2,432.85	-671.54	2,515.82	0.00	0.00	0.00	
5,500.00	91.23	1.29	2,951.30	2,532.80	-669.28	2,613.55	0.00	0.00	0.00	
5,600.00	91.23	1.29	2,949.16	2,632.75	-667.02	2,711.29	0.00	0.00	0.00	
5,700.00	91.23	1.29	2,947.01	2,732.70	-664.76	2,809.02	0.00	0.00	0.00	
5,800.00	91.23	1.29	2,944.87	2,832.65	-662.51	2,906.75	0.00	0.00	0.00	
5,900.00	91.23	1.29	2,942.73	2,932.60	-660.25	3,004.49	0.00	0.00	0.00	
6,000.00	91.23	1.29	2,940.59	3,032.55	-657.99	3,102.22	0.00	0.00	0.00	
6,100.00	91.23	1.29	2,938.44	3,132.51	-655.73	3,199.96	0.00	0.00	0.00	
6,200.00	91.23	1.29	2,936.30	3,232.46	-653.48	3,297.69	0.00	0.00	0.00	
6,300.00	91.23	1.29	2,934.16	3,332.41	-651.22	3,395.42	0.00	0.00	0.00	
6,354.07	91.23	1.29	2,933.00	3,386.45	-650.00	3,448.27	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Kerrigan Lat 1 PBHL JC	0.00	360.00	2,933.00	3,386.45	-650.00	1,146,304.94	2,423,304.00	37.0517130	-107.4761784
- plan hits target center									
- Point									