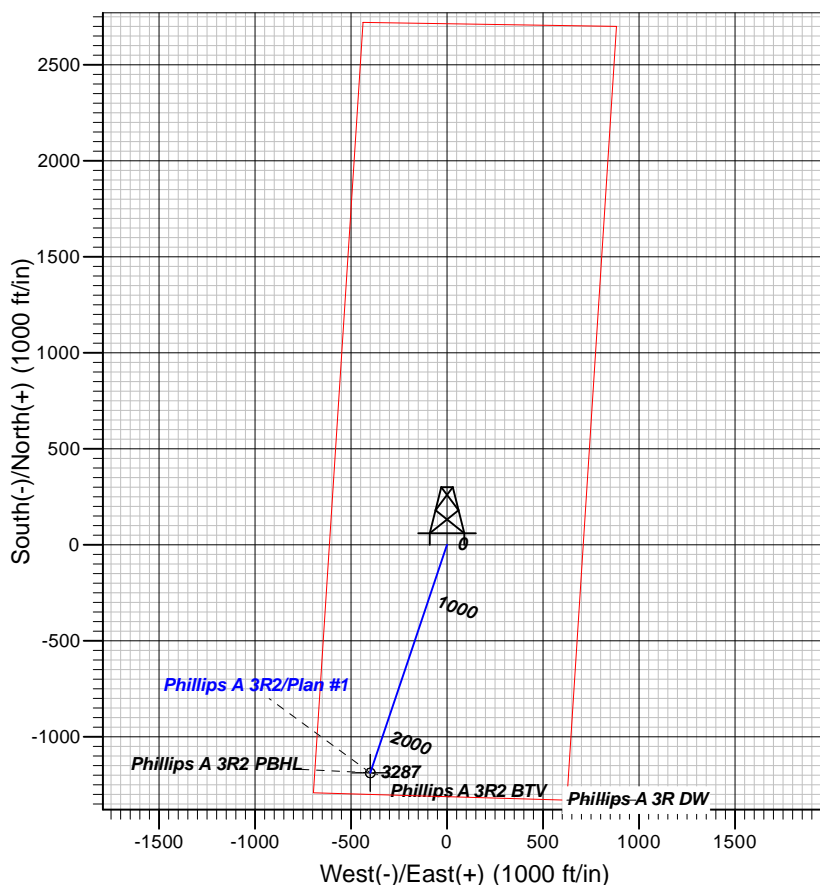
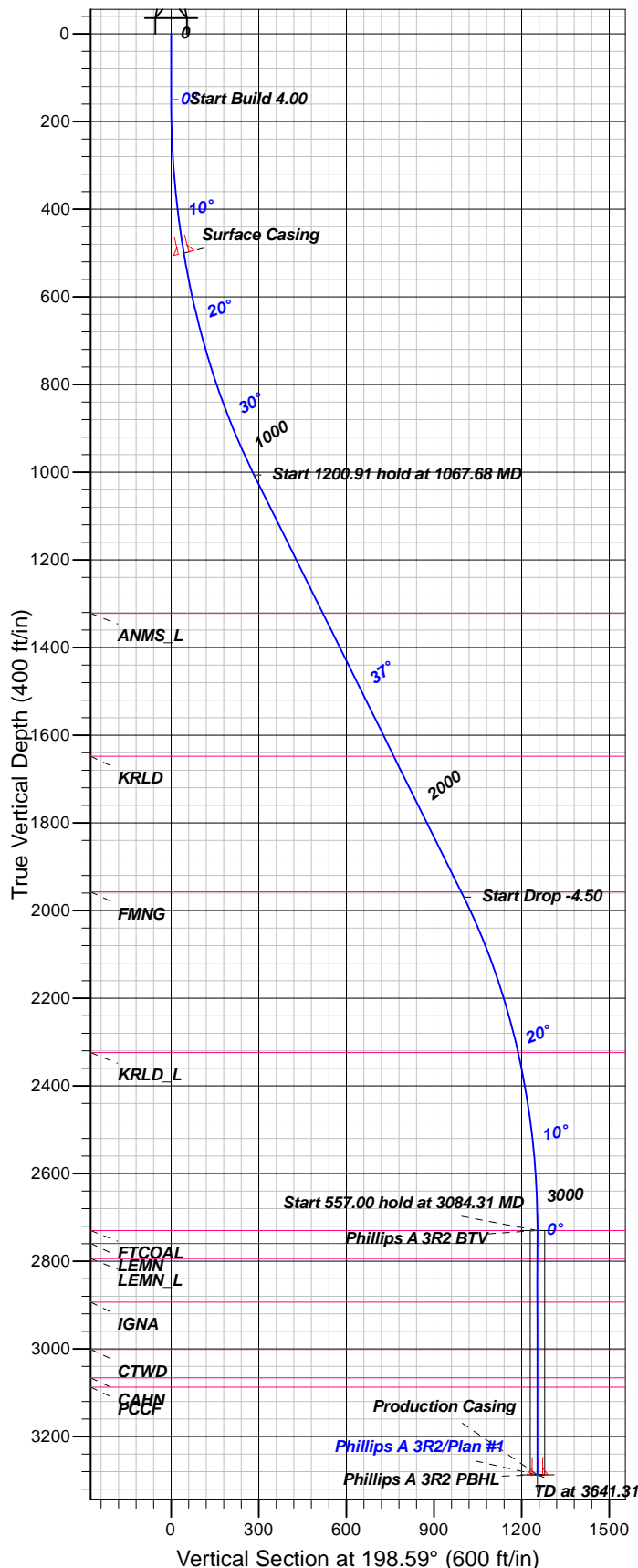


Well Details: Phillips A 3R2

GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1182806.81	2321899.96	37.1455210	-107.8266441	

Azimuths to Grid North
 True North: 1.43°
 Magnetic North: 11.03°
 Magnetic Field
 Strength: 50462.6snT
 Dip Angle: 63.72°
 Date: 4/18/2015
 Model: BGM2014



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1322.00	1461.62	ANMS_L
1648.00	1868.26	KRLD
1957.00	2253.69	FMNG
2324.00	2671.10	KRLD_L
2730.00	3084.31	FTCOAL
2759.00	3113.31	LEMN
2794.00	3148.31	LEMN_L
2893.00	3247.31	IGNA
3001.00	3355.31	CTWD
3066.00	3420.31	CAHN
3087.00	3441.31	PCCF

Plan: Plan #1

15:01, April 20 2015
Created By: Janie Collins

PROJECT DETAILS: La Plata 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

TVD	MD	Name	Size
500.00	503.58	Surface Casing	8.625
3287.00	3641.31	Production Casing	5.500

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	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	1067.69	36.71	198.59	1006.19	-269.23	-90.53	4.00	198.59	284.05	
4	2268.59	36.71	198.59	1968.95	-949.62	-319.31	0.00	0.001001.86		
5	3084.31	0.00	0.00	2730.00	-1188.94	-399.78	4.50	180.001254.35		Phillips A 3R2 BTB
6	3641.31	0.00	0.00	3287.00	-1188.94	-399.78	0.00	0.001254.35		Phillips A 3R2 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Phillips A 3R2 BTB	2730.00	-1188.94	-399.78	1181617.87	2321500.18	37.1422294	-107.8279136	Circle (Radius: 25.00)
- plan hits target center								
Phillips A 3R2 PBHL	3287.00	-1188.94	-399.78	1181617.87	2321500.18	37.1422294	-107.8279136	Point
- plan hits target center								



B.P.

La Plata County, CO NAD83

SEC 33-T34N-R9W

Phillips A 3R2

OH

Plan: Plan #1

Standard Planning Report

20 April, 2015





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Phillips A 3R2
Company:	B.P.	TVD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Site:	SEC 33-T34N-R9W	North Reference:	Grid
Well:	Phillips A 3R2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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	SEC 33-T34N-R9W			
Site Position:		Northing:	1,182,817.87 usft	Latitude: 37.1455514
From:	Lat/Long	Easting:	2,321,900.18 usft	Longitude: -107.8266443
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: -1.43 °

Well	Phillips A 3R2			
Well Position	+N/-S	-11.06 ft	Northing:	1,182,806.80 usft
	+E/-W	-0.22 ft	Easting:	2,321,899.96 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	6,697.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/18/2015	9.60	63.72	50,463

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	198.59

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,067.69	36.71	198.59	1,006.19	-269.23	-90.53	4.00	4.00	0.00	198.59	
2,268.59	36.71	198.59	1,968.95	-949.62	-319.31	0.00	0.00	0.00	0.00	
3,084.31	0.00	0.00	2,730.00	-1,188.94	-399.78	4.50	-4.50	0.00	180.00	Phillips A 3R2 BTW
3,641.31	0.00	0.00	3,287.00	-1,188.94	-399.78	0.00	0.00	0.00	0.00	Phillips A 3R2 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Phillips A 3R2
Company:	B.P.	TVD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Site:	SEC 33-T34N-R9W	North Reference:	Grid
Well:	Phillips A 3R2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.00	198.59	199.99	-0.83	-0.28	0.87	4.00	4.00	0.00
300.00	6.00	198.59	299.73	-7.44	-2.50	7.85	4.00	4.00	0.00
400.00	10.00	198.59	398.73	-20.63	-6.94	21.76	4.00	4.00	0.00
500.00	14.00	198.59	496.53	-40.33	-13.56	42.55	4.00	4.00	0.00
503.58	14.14	198.59	500.00	-41.15	-13.84	43.42	4.00	4.00	0.00
Surface Casing									
600.00	18.00	198.59	592.63	-66.45	-22.34	70.11	4.00	4.00	0.00
700.00	22.00	198.59	686.58	-98.86	-33.24	104.30	4.00	4.00	0.00
800.00	26.00	198.59	777.92	-137.41	-46.20	144.97	4.00	4.00	0.00
900.00	30.00	198.59	866.20	-181.90	-61.16	191.90	4.00	4.00	0.00
1,000.00	34.00	198.59	950.98	-232.12	-78.05	244.89	4.00	4.00	0.00
1,067.69	36.71	198.59	1,006.19	-269.23	-90.53	284.05	4.00	4.00	0.00
1,100.00	36.71	198.59	1,032.09	-287.54	-96.69	303.36	0.00	0.00	0.00
1,200.00	36.71	198.59	1,112.26	-344.20	-115.74	363.13	0.00	0.00	0.00
1,300.00	36.71	198.59	1,192.43	-400.85	-134.79	422.91	0.00	0.00	0.00
1,400.00	36.71	198.59	1,272.60	-457.51	-153.84	482.68	0.00	0.00	0.00
1,461.62	36.71	198.59	1,322.00	-492.42	-165.58	519.51	0.00	0.00	0.00
ANMS_L									
1,500.00	36.71	198.59	1,352.77	-514.17	-172.89	542.45	0.00	0.00	0.00
1,600.00	36.71	198.59	1,432.94	-570.82	-191.94	602.23	0.00	0.00	0.00
1,700.00	36.71	198.59	1,513.11	-627.48	-210.99	662.00	0.00	0.00	0.00
1,800.00	36.71	198.59	1,593.28	-684.13	-230.04	721.77	0.00	0.00	0.00
1,868.26	36.71	198.59	1,648.00	-722.80	-243.04	762.57	0.00	0.00	0.00
KRLD									
1,900.00	36.71	198.59	1,673.45	-740.79	-249.09	781.55	0.00	0.00	0.00
2,000.00	36.71	198.59	1,753.62	-797.44	-268.14	841.32	0.00	0.00	0.00
2,100.00	36.71	198.59	1,833.79	-854.10	-287.19	901.09	0.00	0.00	0.00
2,200.00	36.71	198.59	1,913.96	-910.76	-306.24	960.86	0.00	0.00	0.00
2,253.69	36.71	198.59	1,957.00	-941.17	-316.47	992.96	0.00	0.00	0.00
FMNG									
2,268.59	36.71	198.59	1,968.95	-949.62	-319.31	1,001.86	0.00	0.00	0.00
2,300.00	35.29	198.59	1,994.36	-967.12	-325.19	1,020.33	4.50	-4.50	0.00
2,400.00	30.79	198.59	2,078.16	-1,018.79	-342.57	1,074.84	4.50	-4.50	0.00
2,500.00	26.29	198.59	2,165.98	-1,064.07	-357.79	1,122.61	4.50	-4.50	0.00
2,600.00	21.79	198.59	2,257.28	-1,102.68	-370.77	1,163.34	4.50	-4.50	0.00
2,671.10	18.59	198.59	2,324.00	-1,125.94	-378.60	1,187.88	4.50	-4.50	0.00
KRLD_L									
2,700.00	17.29	198.59	2,351.50	-1,134.38	-381.43	1,196.79	4.50	-4.50	0.00
2,800.00	12.79	198.59	2,448.04	-1,158.97	-389.70	1,222.74	4.50	-4.50	0.00
2,900.00	8.29	198.59	2,546.33	-1,176.31	-395.54	1,241.03	4.50	-4.50	0.00
3,000.00	3.79	198.59	2,645.75	-1,186.29	-398.89	1,251.56	4.50	-4.50	0.00
3,084.31	0.00	0.00	2,730.00	-1,188.94	-399.78	1,254.35	4.50	-4.50	0.00
FTCOAL - Phillips A 3R2 BTV									
3,100.00	0.00	0.00	2,745.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,113.31	0.00	0.00	2,759.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
LEMN									
3,148.31	0.00	0.00	2,794.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
LEMN_L									
3,200.00	0.00	0.00	2,845.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,247.31	0.00	0.00	2,893.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Phillips A 3R2
Company:	B.P.	TVD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Site:	SEC 33-T34N-R9W	North Reference:	Grid
Well:	Phillips A 3R2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
IGNA									
3,300.00	0.00	0.00	2,945.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,355.31	0.00	0.00	3,001.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
CTWD									
3,400.00	0.00	0.00	3,045.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,420.31	0.00	0.00	3,066.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
CAHN									
3,441.31	0.00	0.00	3,087.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
PCCF									
3,500.00	0.00	0.00	3,145.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,600.00	0.00	0.00	3,245.69	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
3,641.31	0.00	0.00	3,287.00	-1,188.94	-399.78	1,254.35	0.00	0.00	0.00
Production Casing - Phillips A 3R2 PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Phillips A 3R2 BTV	0.00	1.43	2,730.00	-1,188.94	-399.78	1,181,617.87	2,321,500.18	37.1422294	-107.8279136
- plan hits target center									
- Circle (radius 25.00)									
Phillips A 3R2 PBHL	0.00	1.43	3,287.00	-1,188.94	-399.78	1,181,617.87	2,321,500.18	37.1422294	-107.8279136
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
503.58	500.00	Surface Casing	8.625	12.250	
3,641.31	3,287.00	Production Casing	5.500	6.000	



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Phillips A 3R2
Company:	B.P.	TVD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6697' & RKB 11' @ 6708.00ft (Aztec 507)
Site:	SEC 33-T34N-R9W	North Reference:	Grid
Well:	Phillips A 3R2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,461.62	1,322.00	ANMS_L		0.00	360.00	
1,868.26	1,648.00	KRLD		0.00	360.00	
2,253.69	1,957.00	FMNG		0.00	360.00	
2,671.10	2,324.00	KRLD_L		0.00	360.00	
3,084.31	2,730.00	FTCOAL		0.00	360.00	
3,113.31	2,759.00	LEMN		0.00	360.00	
3,148.31	2,794.00	LEMN_L		0.00	360.00	
3,247.31	2,893.00	IGNA		0.00	360.00	
3,355.31	3,001.00	CTWD		0.00	360.00	
3,420.31	3,066.00	CAHN		0.00	360.00	
3,441.31	3,087.00	PCCF		0.00	360.00	