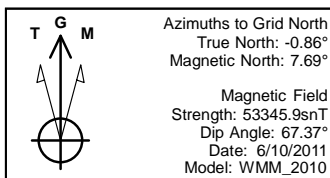




Company: Carrizo Oil & Gas
 Site: Rothe
 Well: 12-14-8-61
 Project: Weld County, Colorado (NAD83)
 Rig Name: Xtreme 19



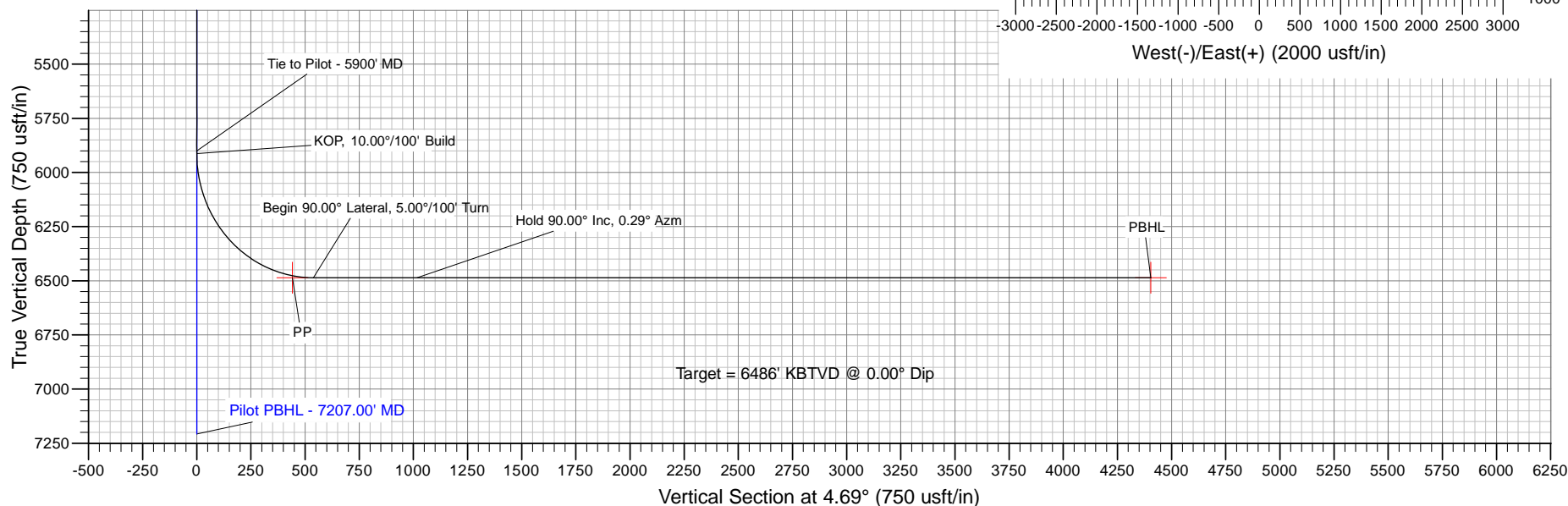
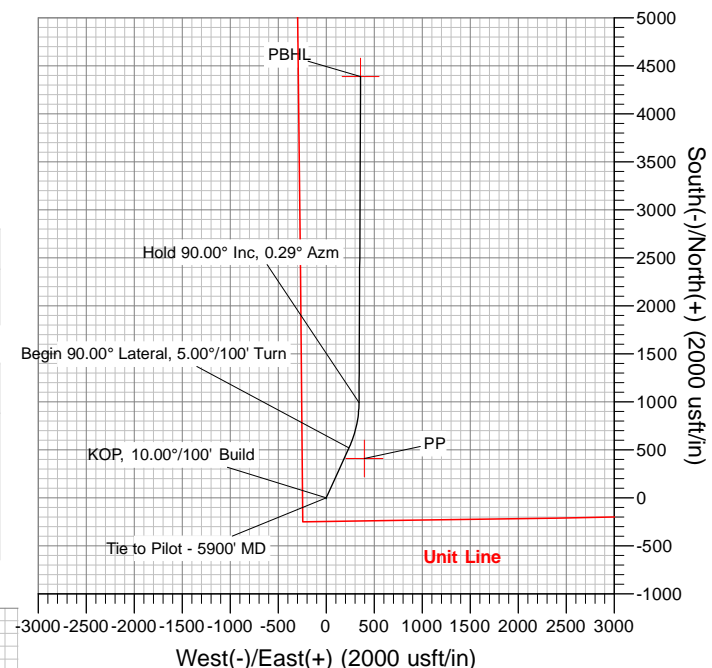
Planning: 936.442.2510 Fax: 936.442.2515
 Operations: 936.442.2500 Fax: 936.442.2599



US State Plane 1983
 Colorado Northern Zone
 Created By: Vanessa Thom
 Date: 10:20, June 10 2011
 Plan: Design #1

PILOT ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
7207.00	0.00	0.00	7207.00	0.00	0.00	0.00	0.00	Pilot PBHL - 7207.00' MD

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	Tie to Pilot - 5900' MD
5913.04	0.00	0.00	5913.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6813.04	90.00	24.60	6486.00	520.95	238.51	538.70	572.96	Begin 90.00° Lateral, 5.00°/100' Turn
7299.16	90.00	0.29	6486.00	992.10	342.50	1016.77	1059.08	Hold 90.00° Inc, 0.29° Azm
10696.15	90.00	0.29	6486.00	4389.04	359.92	4403.77	4456.07	PBHL



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.



Carrizo Oil & Gas

Weld County, Colorado (NAD83)

Rothe

12-14-8-61

Wellbore #1

Plan: Design #1

Standard Planning Report

10 June, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 12-14-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4996.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4996.00usft (Xtreme 19)
Site:	Rothe	North Reference:	Grid
Well:	12-14-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Weld County, Colorado (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Well	12-14-8-61			
Well Position	+N/-S	1,489,755.96 usft	Northing:	1,489,755.96 usft
	+E/-W	3,371,193.91 usft	Easting:	3,371,193.91 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	40° 40' 12.3092 N
			Longitude:	104° 9' 42.606 W
			Ground Level:	4,981.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	6/10/2011	8.55	67.37	53,346

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,900.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	4.69

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
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,913.04	0.00	0.00	5,913.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,813.04	90.00	24.60	6,486.00	520.95	238.51	10.00	10.00	0.00	24.60	
7,299.17	90.00	0.29	6,486.00	992.10	342.50	5.00	0.00	-5.00	-90.00	
10,696.15	90.00	0.29	6,486.00	4,389.04	359.92	0.00	0.00	0.00	0.00	PBHL - Rothe 12-14-8

Database:	Southern Region	Local Co-ordinate Reference:	Well 12-14-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4996.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4996.00usft (Xtreme 19)
Site:	Rothe	North Reference:	Grid
Well:	12-14-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
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	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	Southern Region	Local Co-ordinate Reference:	Well 12-14-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4996.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4996.00usft (Xtreme 19)
Site:	Rothe	North Reference:	Grid
Well:	12-14-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie to Pilot - 5900' MD									
5,913.04	0.00	0.00	5,913.04	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 10.00°/100' Build									
5,950.00	3.70	24.60	5,949.97	1.08	0.50	1.12	10.00	10.00	0.00
6,000.00	8.70	24.60	5,999.67	5.99	2.74	6.19	10.00	10.00	0.00
6,050.00	13.70	24.60	6,048.70	14.81	6.78	15.32	10.00	10.00	0.00
6,100.00	18.70	24.60	6,096.70	27.49	12.59	28.43	10.00	10.00	0.00
6,150.00	23.70	24.60	6,143.30	43.92	20.11	45.42	10.00	10.00	0.00
6,200.00	28.70	24.60	6,188.15	63.98	29.29	66.16	10.00	10.00	0.00
6,250.00	33.70	24.60	6,230.91	87.52	40.07	90.51	10.00	10.00	0.00
6,300.00	38.70	24.60	6,271.25	114.36	52.36	118.26	10.00	10.00	0.00
6,350.00	43.70	24.60	6,308.86	144.30	66.06	149.21	10.00	10.00	0.00
6,400.00	48.70	24.60	6,343.46	177.10	81.08	183.13	10.00	10.00	0.00
6,450.00	53.70	24.60	6,374.78	212.51	97.30	219.75	10.00	10.00	0.00
6,500.00	58.70	24.60	6,402.59	250.28	114.59	258.80	10.00	10.00	0.00
6,550.00	63.70	24.60	6,426.67	290.10	132.82	299.98	10.00	10.00	0.00
6,600.00	68.70	24.60	6,446.85	331.68	151.86	342.98	10.00	10.00	0.00
6,650.00	73.70	24.60	6,462.96	374.70	171.55	387.47	10.00	10.00	0.00
6,700.00	78.70	24.60	6,474.88	418.84	191.76	433.11	10.00	10.00	0.00
6,750.00	83.70	24.60	6,482.53	463.75	212.32	479.55	10.00	10.00	0.00
6,800.00	88.70	24.60	6,485.85	509.10	233.08	526.44	10.00	10.00	0.00
6,813.04	90.00	24.60	6,486.00	520.95	238.51	538.70	10.00	10.00	0.00
Begin 90.00° Lateral, 5.00°/100' Turn									
6,900.00	90.00	20.25	6,486.00	601.32	271.68	621.51	5.00	0.00	-5.00
7,000.00	90.00	15.25	6,486.00	696.53	302.16	718.89	5.00	0.00	-5.00
7,100.00	90.00	10.25	6,486.00	794.03	324.22	817.87	5.00	0.00	-5.00
7,200.00	90.00	5.25	6,486.00	893.08	337.71	917.69	5.00	0.00	-5.00
7,299.17	90.00	0.29	6,486.00	992.10	342.50	1,016.77	5.00	0.00	-5.00
Hold 90.00° Inc, 0.29° Azm									
7,400.00	90.00	0.29	6,486.00	1,092.94	343.02	1,117.31	0.00	0.00	0.00
7,500.00	90.00	0.29	6,486.00	1,192.93	343.53	1,217.02	0.00	0.00	0.00
7,600.00	90.00	0.29	6,486.00	1,292.93	344.05	1,316.72	0.00	0.00	0.00
7,700.00	90.00	0.29	6,486.00	1,392.93	344.56	1,416.43	0.00	0.00	0.00
7,800.00	90.00	0.29	6,486.00	1,492.93	345.07	1,516.13	0.00	0.00	0.00
7,900.00	90.00	0.29	6,486.00	1,592.93	345.58	1,615.84	0.00	0.00	0.00
8,000.00	90.00	0.29	6,486.00	1,692.93	346.10	1,715.55	0.00	0.00	0.00
8,100.00	90.00	0.29	6,486.00	1,792.93	346.61	1,815.25	0.00	0.00	0.00
8,200.00	90.00	0.29	6,486.00	1,892.92	347.12	1,914.96	0.00	0.00	0.00
8,300.00	90.00	0.29	6,486.00	1,992.92	347.64	2,014.67	0.00	0.00	0.00
8,400.00	90.00	0.29	6,486.00	2,092.92	348.15	2,114.37	0.00	0.00	0.00
8,500.00	90.00	0.29	6,486.00	2,192.92	348.66	2,214.08	0.00	0.00	0.00
8,600.00	90.00	0.29	6,486.00	2,292.92	349.17	2,313.78	0.00	0.00	0.00
8,700.00	90.00	0.29	6,486.00	2,392.92	349.69	2,413.49	0.00	0.00	0.00
8,800.00	90.00	0.29	6,486.00	2,492.92	350.20	2,513.20	0.00	0.00	0.00
8,900.00	90.00	0.29	6,486.00	2,592.92	350.71	2,612.90	0.00	0.00	0.00
9,000.00	90.00	0.29	6,486.00	2,692.91	351.22	2,712.61	0.00	0.00	0.00
9,100.00	90.00	0.29	6,486.00	2,792.91	351.74	2,812.31	0.00	0.00	0.00

Database:	Southern Region	Local Co-ordinate Reference:	Well 12-14-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4996.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4996.00usft (Xtreme 19)
Site:	Rothe	North Reference:	Grid
Well:	12-14-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)	
9,200.00	90.00	0.29	6,486.00	2,892.91	352.25	2,912.02	0.00	0.00	0.00	
9,300.00	90.00	0.29	6,486.00	2,992.91	352.76	3,011.73	0.00	0.00	0.00	
9,400.00	90.00	0.29	6,486.00	3,092.91	353.27	3,111.43	0.00	0.00	0.00	
9,500.00	90.00	0.29	6,486.00	3,192.91	353.79	3,211.14	0.00	0.00	0.00	
9,600.00	90.00	0.29	6,486.00	3,292.91	354.30	3,310.85	0.00	0.00	0.00	
9,700.00	90.00	0.29	6,486.00	3,392.91	354.81	3,410.55	0.00	0.00	0.00	
9,800.00	90.00	0.29	6,486.00	3,492.90	355.33	3,510.26	0.00	0.00	0.00	
9,900.00	90.00	0.29	6,486.00	3,592.90	355.84	3,609.96	0.00	0.00	0.00	
10,000.00	90.00	0.29	6,486.00	3,692.90	356.35	3,709.67	0.00	0.00	0.00	
10,100.00	90.00	0.29	6,486.00	3,792.90	356.86	3,809.38	0.00	0.00	0.00	
10,200.00	90.00	0.29	6,486.00	3,892.90	357.38	3,909.08	0.00	0.00	0.00	
10,300.00	90.00	0.29	6,486.00	3,992.90	357.89	4,008.79	0.00	0.00	0.00	
10,400.00	90.00	0.29	6,486.00	4,092.90	358.40	4,108.49	0.00	0.00	0.00	
10,500.00	90.00	0.29	6,486.00	4,192.89	358.91	4,208.20	0.00	0.00	0.00	
10,600.00	90.00	0.29	6,486.00	4,292.89	359.43	4,307.91	0.00	0.00	0.00	
10,696.15	90.00	0.29	6,486.00	4,389.04	359.92	4,403.77	0.00	0.00	0.00	
PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL - Rothe 12-14-8-6	0.00	0.00	6,486.00	4,389.04	359.92	1,494,145.00	3,371,553.83	40° 40' 55.6202 N	104° 9' 37.075 W	
- hit/miss target										
- Shape										
- Point										
PP - Rothe 12-14-8-61 -	0.00	0.00	6,486.00	410.58	399.48	1,490,166.54	3,371,593.39	40° 40' 16.3062 N	104° 9' 37.341 W	
- plan misses target center by 192.31usft at 6779.74usft MD (6485.03 TVD, 490.69 N, 224.66 E)										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,900.00	5,900.00	0.00	0.00	Tie to Pilot - 5900' MD	
5,913.04	5,913.04	0.00	0.00	KOP, 10.00°/100' Build	
6,813.04	6,486.00	520.95	238.51	Begin 90.00° Lateral, 5.00°/100' Turn	
7,299.17	6,486.00	992.10	342.50	Hold 90.00° Inc, 0.29° Azm	
10,696.15	6,486.00	4,389.04	359.92	PBHL	