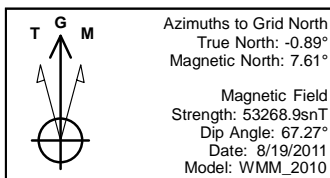




Company: Carrizo Oil & Gas
 Site: Barracuda
 Well: 20-14-7-60
 Project: Weld County, Colorado (NAD83)
 Rig Name: Xtreme 19



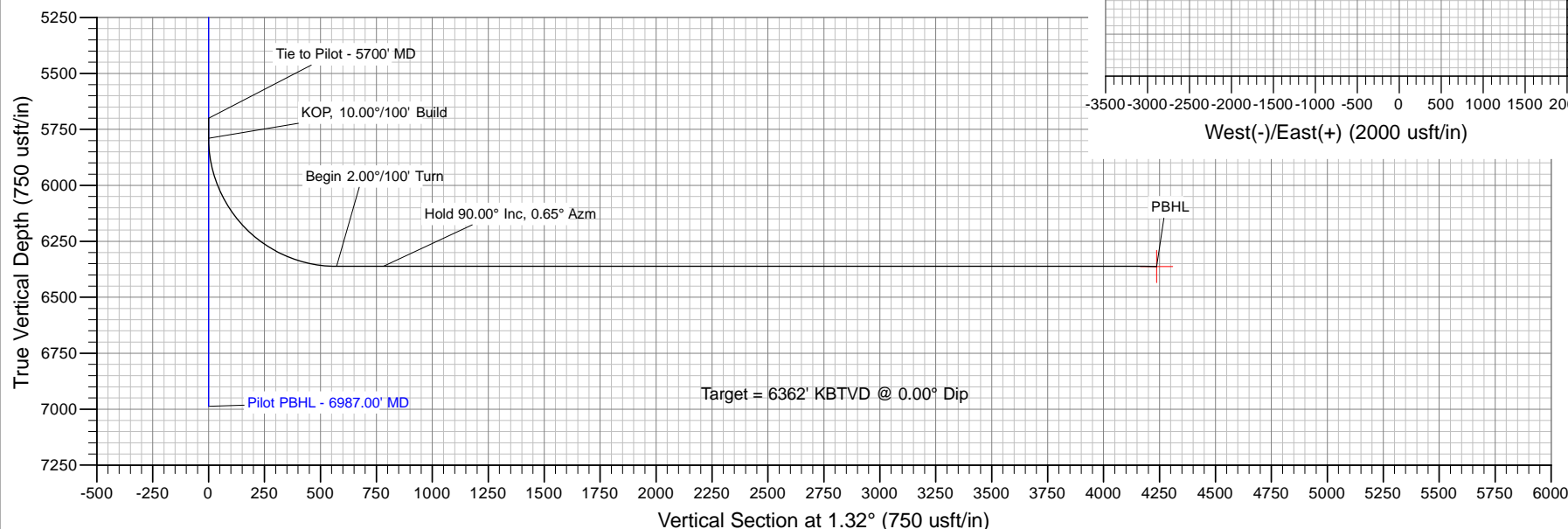
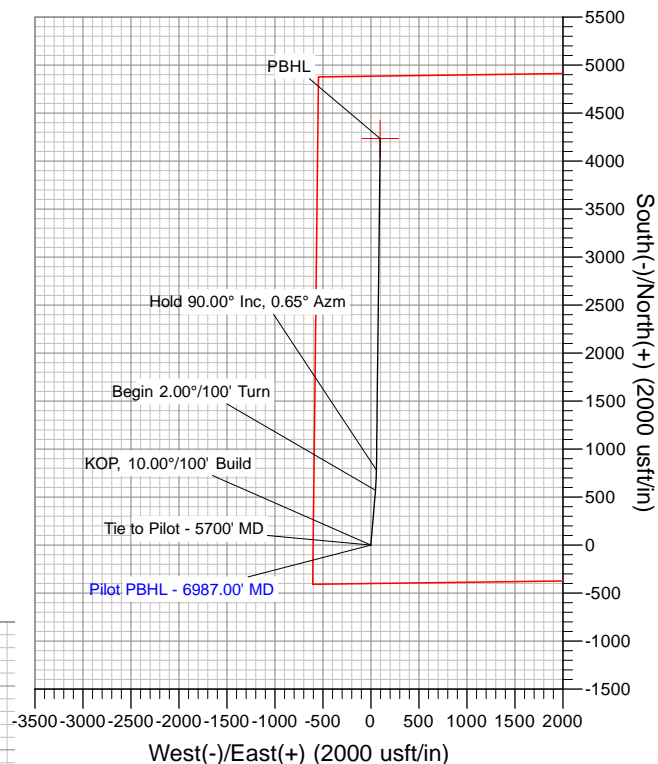
Planning: 936.442.2510 Fax: 936.442.2515
 Operations: 936.442.2500 Fax: 936.442.2599



US State Plane 1983
 Colorado Northern Zone
 Created By: Vanessa Thom
 Date: 10:37, August 19 2011
 Plan: Design #1

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	Tie to Pilot - 5700' MD
5789.04	0.00	0.00	5789.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6689.04	90.00	4.85	6362.00	570.91	48.44	571.87	572.96	Begin 2.00°/100' Turn
6898.97	90.00	0.65	6362.00	780.55	58.51	781.69	782.89	Hold 90.00° Inc, 0.65° Azm
10353.87	90.00	0.65	6362.00	4235.22	97.79	4236.35	4237.78	PBHL

PILOT ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
6987.00	0.00	0.00	6987.00	0.00	0.00	0.00	0.00	Pilot PBHL - 6987.00' MD



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)

Barracuda

20-14-7-60

Wellbore #1

Plan: Design #1

Standard Planning Report

19 August, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 20-14-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4988.50usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4988.50usft (Xtreme 19)
Site:	Barracuda	North Reference:	Grid
Well:	20-14-7-60	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	20-14-7-60			
Well Position	+N/-S	1,447,812.58 usft	Northing:	1,447,812.58 usft
	+E/-W	3,381,933.84 usft	Easting:	3,381,933.84 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 33' 16.2701 N
				Longitude: 104° 7' 31.681 W
				Ground Level: 4,973.50 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	8/19/2011	8.50	67.27	53,269

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,700.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	1.32

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
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,789.04	0.00	0.00	5,789.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,689.04	90.00	4.85	6,362.00	570.91	48.44	10.00	10.00	0.00	4.85	
6,898.97	90.00	0.65	6,362.00	780.55	58.51	2.00	0.00	-2.00	-90.00	
10,353.87	90.00	0.65	6,362.00	4,235.22	97.79	0.00	0.00	0.00	0.00	PBHL v1 - Barracuda

Database:	Southern Region	Local Co-ordinate Reference:	Well 20-14-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4988.50usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4988.50usft (Xtreme 19)
Site:	Barracuda	North Reference:	Grid
Well:	20-14-7-60	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)	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tie to Pilot - 5700' MD										
5,789.04	0.00	0.00	5,789.04	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,800.00	1.10	4.85	5,800.00	0.10	0.01	0.10	10.00	10.00	0.00	
5,850.00	6.10	4.85	5,849.89	3.23	0.27	3.23	10.00	10.00	0.00	
5,900.00	11.10	4.85	5,899.31	10.67	0.91	10.69	10.00	10.00	0.00	
5,950.00	16.10	4.85	5,947.89	22.38	1.90	22.42	10.00	10.00	0.00	
6,000.00	21.10	4.85	5,995.27	38.26	3.25	38.33	10.00	10.00	0.00	
6,050.00	26.10	4.85	6,041.07	58.20	4.94	58.30	10.00	10.00	0.00	
6,100.00	31.10	4.85	6,084.96	82.04	6.96	82.18	10.00	10.00	0.00	
6,150.00	36.10	4.85	6,126.59	109.60	9.30	109.78	10.00	10.00	0.00	
6,200.00	41.10	4.85	6,165.66	140.67	11.94	140.90	10.00	10.00	0.00	
6,250.00	46.10	4.85	6,201.86	175.01	14.85	175.31	10.00	10.00	0.00	
6,300.00	51.10	4.85	6,234.92	212.37	18.02	212.73	10.00	10.00	0.00	
6,350.00	56.10	4.85	6,264.58	252.45	21.42	252.88	10.00	10.00	0.00	
6,400.00	61.10	4.85	6,290.63	294.96	25.03	295.46	10.00	10.00	0.00	
6,450.00	66.10	4.85	6,312.85	339.57	28.81	340.15	10.00	10.00	0.00	
6,500.00	71.10	4.85	6,331.09	385.94	32.75	386.60	10.00	10.00	0.00	
6,550.00	76.10	4.85	6,345.21	433.72	36.80	434.45	10.00	10.00	0.00	
6,600.00	81.10	4.85	6,355.09	482.54	40.94	483.36	10.00	10.00	0.00	
6,650.00	86.10	4.85	6,360.67	532.04	45.14	532.94	10.00	10.00	0.00	
6,689.04	90.00	4.85	6,362.00	570.91	48.44	571.87	10.00	10.00	0.00	
Begin 2.00°/100' Turn										
6,700.00	90.00	4.63	6,362.00	581.83	49.35	582.81	2.00	0.00	-2.00	
6,800.00	90.00	2.63	6,362.00	681.62	55.68	682.73	2.00	0.00	-2.00	
6,898.97	90.00	0.65	6,362.00	780.55	58.51	781.69	2.00	0.00	-2.00	
Hold 90.00° Inc, 0.65° Azm										
6,900.00	90.00	0.65	6,362.00	781.58	58.53	782.72	0.00	0.00	0.00	
7,000.00	90.00	0.65	6,362.00	881.57	59.66	882.71	0.00	0.00	0.00	
7,100.00	90.00	0.65	6,362.00	981.56	60.80	982.71	0.00	0.00	0.00	
7,200.00	90.00	0.65	6,362.00	1,081.56	61.94	1,082.70	0.00	0.00	0.00	
7,300.00	90.00	0.65	6,362.00	1,181.55	63.07	1,182.69	0.00	0.00	0.00	
7,400.00	90.00	0.65	6,362.00	1,281.55	64.21	1,282.69	0.00	0.00	0.00	
7,500.00	90.00	0.65	6,362.00	1,381.54	65.35	1,382.68	0.00	0.00	0.00	
7,600.00	90.00	0.65	6,362.00	1,481.53	66.48	1,482.67	0.00	0.00	0.00	
7,700.00	90.00	0.65	6,362.00	1,581.53	67.62	1,582.67	0.00	0.00	0.00	
7,800.00	90.00	0.65	6,362.00	1,681.52	68.76	1,682.66	0.00	0.00	0.00	
7,900.00	90.00	0.65	6,362.00	1,781.51	69.89	1,782.65	0.00	0.00	0.00	
8,000.00	90.00	0.65	6,362.00	1,881.51	71.03	1,882.64	0.00	0.00	0.00	
8,100.00	90.00	0.65	6,362.00	1,981.50	72.17	1,982.64	0.00	0.00	0.00	
8,200.00	90.00	0.65	6,362.00	2,081.49	73.30	2,082.63	0.00	0.00	0.00	
8,300.00	90.00	0.65	6,362.00	2,181.49	74.44	2,182.62	0.00	0.00	0.00	
8,400.00	90.00	0.65	6,362.00	2,281.48	75.58	2,282.62	0.00	0.00	0.00	
8,500.00	90.00	0.65	6,362.00	2,381.47	76.72	2,382.61	0.00	0.00	0.00	
8,600.00	90.00	0.65	6,362.00	2,481.47	77.85	2,482.60	0.00	0.00	0.00	
8,700.00	90.00	0.65	6,362.00	2,581.46	78.99	2,582.60	0.00	0.00	0.00	
8,800.00	90.00	0.65	6,362.00	2,681.45	80.13	2,682.59	0.00	0.00	0.00	
8,900.00	90.00	0.65	6,362.00	2,781.45	81.26	2,782.58	0.00	0.00	0.00	
9,000.00	90.00	0.65	6,362.00	2,881.44	82.40	2,882.58	0.00	0.00	0.00	
9,100.00	90.00	0.65	6,362.00	2,981.44	83.54	2,982.57	0.00	0.00	0.00	
9,200.00	90.00	0.65	6,362.00	3,081.43	84.67	3,082.56	0.00	0.00	0.00	
9,300.00	90.00	0.65	6,362.00	3,181.42	85.81	3,182.56	0.00	0.00	0.00	
9,400.00	90.00	0.65	6,362.00	3,281.42	86.95	3,282.55	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 20-14-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4988.50usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4988.50usft (Xtreme 19)
Site:	Barracuda	North Reference:	Grid
Well:	20-14-7-60	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)
9,500.00	90.00	0.65	6,362.00	3,381.41	88.08	3,382.54	0.00	0.00	0.00
9,600.00	90.00	0.65	6,362.00	3,481.40	89.22	3,482.53	0.00	0.00	0.00
9,700.00	90.00	0.65	6,362.00	3,581.40	90.36	3,582.53	0.00	0.00	0.00
9,800.00	90.00	0.65	6,362.00	3,681.39	91.49	3,682.52	0.00	0.00	0.00
9,900.00	90.00	0.65	6,362.00	3,781.38	92.63	3,782.51	0.00	0.00	0.00
10,000.00	90.00	0.65	6,362.00	3,881.38	93.77	3,882.51	0.00	0.00	0.00
10,100.00	90.00	0.65	6,362.00	3,981.37	94.90	3,982.50	0.00	0.00	0.00
10,200.00	90.00	0.65	6,362.00	4,081.36	96.04	4,082.49	0.00	0.00	0.00
10,300.00	90.00	0.65	6,362.00	4,181.36	97.18	4,182.49	0.00	0.00	0.00
10,353.87	90.00	0.65	6,362.00	4,235.22	97.79	4,236.35	0.00	0.00	0.00
PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL v1 - Barracuda 20 - plan hits target center - Point	0.00	0.00	6,362.00	4,235.22	97.79	1,452,047.80	3,382,031.63	40° 33' 58.1011 N	104° 7' 29.563 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,700.00	5,700.00	0.00	0.00	Tie to Pilot - 5700' MD
5,789.04	5,789.04	0.00	0.00	KOP, 10.00°/100' Build
6,689.04	6,362.00	570.91	48.44	Begin 2.00°/100' Turn
6,898.97	6,362.00	780.55	58.51	Hold 90.00° Inc, 0.65° Azm
10,353.87	6,362.00	4,235.22	97.79	PBHL