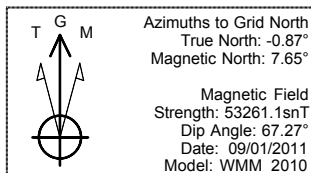




Company: Carrizo Oil & Gas
 Site: Slick Rock
 Well: 19-44-7-60
 Project: Weld County, Colorado (NAD83)
 Rig Name: Xtreme 19



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



US State Plane 1983
 Colorado Northern Zone

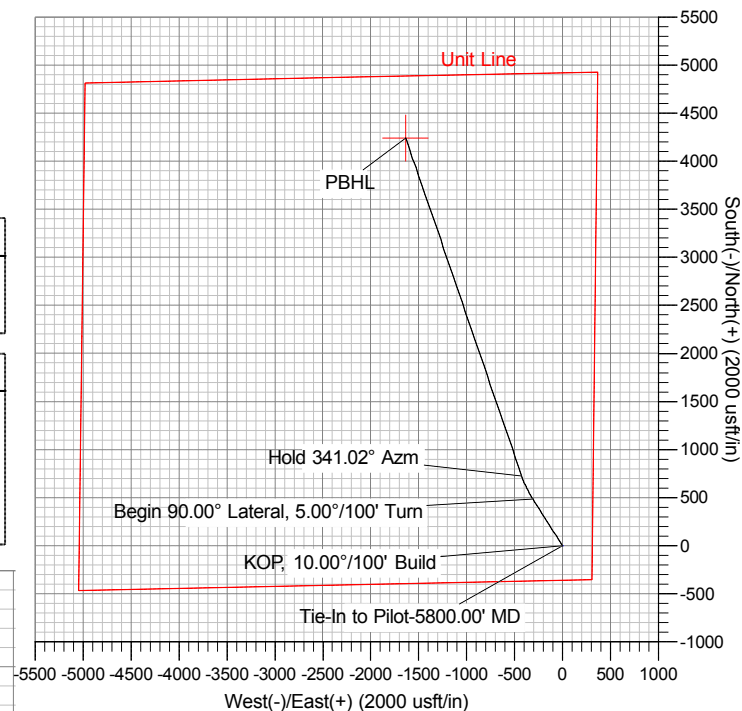
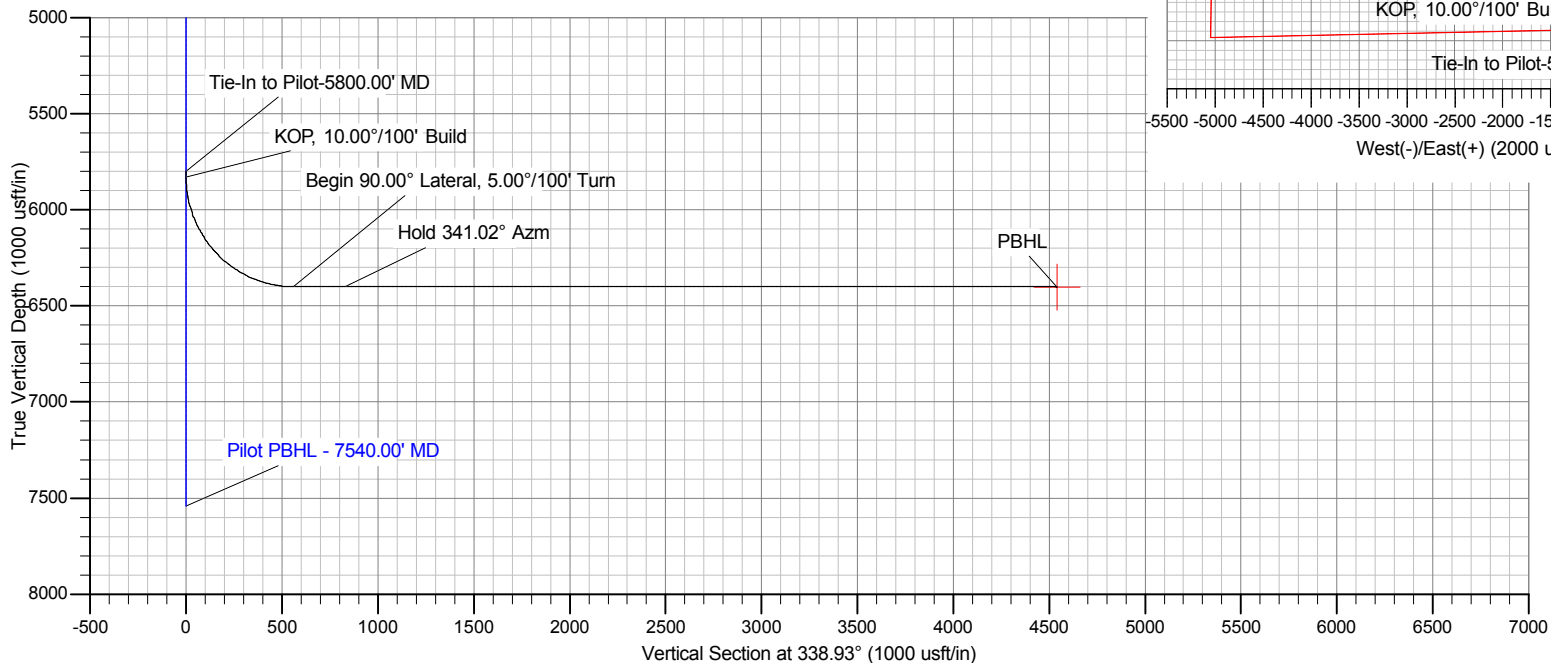
Created By: Vanessa Thom
 Date: 13:30, August 03 2011
 Plan: Design #2

PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
7540.00	0.00	0.00	7540.00	0.00	0.00	0.00	0.00	Pilot PBHL - 7540.00' MD

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	Tie-In to Pilot-5800.00' MD
5828.04	0.00	0.00	5828.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6728.04	90.00	327.50	6401.00	483.23	-307.85	561.60	572.96	Begin 90.00° Lateral, 5.00°/100' Turn
6998.35	90.00	341.02	6401.00	726.15	-424.98	830.39	843.27	Hold 341.02° Azm
10712.71	90.00	341.02	6401.00	4238.47	-1633.31	4542.28	4557.63	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)

Slick Rock

19-44-7-60

Wellbore #1

Plan: Design #2

Standard Planning Report

03 August, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 19-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4991.30usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4991.30usft (Xtreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	19-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	19-44-7-60			
Well Position	+N/-S	1,447,454.69 usft	Northing:	1,447,454.69 usft
	+E/-W	3,372,226.58 usft	Easting:	3,372,226.58 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	Latitude: 40° 33' 14.2019 N
				Longitude: 104° 9' 37.498 W
				Ground Level: 4,976.30 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	09/01/2011	8.51	67.27	53,261

Design	Design #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	5,800.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	338.93

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
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,828.04	0.00	0.00	5,828.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,728.04	90.00	327.50	6,401.00	483.23	-307.85	10.00	10.00	0.00	327.50	
6,998.35	90.00	341.02	6,401.00	726.15	-424.98	5.00	0.00	5.00	90.00	
10,712.71	90.00	341.02	6,401.00	4,238.47	-1,633.31	0.00	0.00	0.00	0.00	PBHL - Slick Rock 19

Database:	Southern Region	Local Co-ordinate Reference:	Well 19-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4991.30usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4991.30usft (Xtreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	19-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
Tie-In to Pilot-5800.00' MD									
5,828.04	0.00	0.00	5,828.04	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 10.00°/100' Build									
5,850.00	2.20	327.50	5,849.99	0.35	-0.23	0.41	10.00	10.00	0.00
5,900.00	7.20	327.50	5,899.81	3.81	-2.42	4.42	10.00	10.00	0.00
5,950.00	12.20	327.50	5,949.08	10.91	-6.95	12.68	10.00	10.00	0.00
6,000.00	17.20	327.50	5,997.43	21.60	-13.76	25.10	10.00	10.00	0.00
6,050.00	22.20	327.50	6,044.49	35.81	-22.81	41.62	10.00	10.00	0.00
6,100.00	27.20	327.50	6,089.90	53.42	-34.03	62.09	10.00	10.00	0.00
6,150.00	32.20	327.50	6,133.32	74.31	-47.34	86.36	10.00	10.00	0.00
6,200.00	37.20	327.50	6,174.42	98.30	-62.63	114.25	10.00	10.00	0.00
6,250.00	42.20	327.50	6,212.88	125.23	-79.78	145.54	10.00	10.00	0.00
6,300.00	47.20	327.50	6,248.41	154.88	-98.67	180.00	10.00	10.00	0.00
6,350.00	52.20	327.50	6,280.74	187.03	-119.15	217.36	10.00	10.00	0.00
6,400.00	57.20	327.50	6,309.63	221.43	-141.07	257.35	10.00	10.00	0.00
6,450.00	62.20	327.50	6,334.85	257.83	-164.25	299.64	10.00	10.00	0.00
6,500.00	67.20	327.50	6,356.21	295.94	-188.53	343.94	10.00	10.00	0.00
6,550.00	72.20	327.50	6,373.56	335.48	-213.72	389.89	10.00	10.00	0.00
6,600.00	77.20	327.50	6,386.75	376.14	-239.63	437.14	10.00	10.00	0.00
6,650.00	82.20	327.50	6,395.69	417.61	-266.05	485.35	10.00	10.00	0.00
6,700.00	87.20	327.50	6,400.31	459.59	-292.79	534.13	10.00	10.00	0.00
6,728.04	90.00	327.50	6,401.00	483.23	-307.85	561.60	10.00	10.00	0.00
Begin 90.00° Lateral, 5.00°/100' Turn									
6,800.00	90.00	331.10	6,401.00	545.09	-344.58	632.54	5.00	0.00	5.00
6,900.00	90.00	336.10	6,401.00	634.63	-389.04	732.07	5.00	0.00	5.00
6,998.35	90.00	341.02	6,401.00	726.15	-424.98	830.39	5.00	0.00	5.00
Hold 341.02° Azm									
7,000.00	90.00	341.02	6,401.00	727.71	-425.52	832.04	0.00	0.00	0.00
7,100.00	90.00	341.02	6,401.00	822.27	-458.05	931.97	0.00	0.00	0.00
7,200.00	90.00	341.02	6,401.00	916.83	-490.58	1,031.91	0.00	0.00	0.00
7,300.00	90.00	341.02	6,401.00	1,011.39	-523.11	1,131.84	0.00	0.00	0.00
7,400.00	90.00	341.02	6,401.00	1,105.95	-555.64	1,231.78	0.00	0.00	0.00
7,500.00	90.00	341.02	6,401.00	1,200.51	-588.17	1,331.71	0.00	0.00	0.00
7,600.00	90.00	341.02	6,401.00	1,295.07	-620.70	1,431.64	0.00	0.00	0.00
7,700.00	90.00	341.02	6,401.00	1,389.63	-653.24	1,531.58	0.00	0.00	0.00
7,800.00	90.00	341.02	6,401.00	1,484.19	-685.77	1,631.51	0.00	0.00	0.00
7,900.00	90.00	341.02	6,401.00	1,578.75	-718.30	1,731.44	0.00	0.00	0.00
8,000.00	90.00	341.02	6,401.00	1,673.31	-750.83	1,831.38	0.00	0.00	0.00
8,100.00	90.00	341.02	6,401.00	1,767.87	-783.36	1,931.31	0.00	0.00	0.00
8,200.00	90.00	341.02	6,401.00	1,862.44	-815.89	2,031.24	0.00	0.00	0.00
8,300.00	90.00	341.02	6,401.00	1,957.00	-848.42	2,131.18	0.00	0.00	0.00
8,400.00	90.00	341.02	6,401.00	2,051.56	-880.96	2,231.11	0.00	0.00	0.00
8,500.00	90.00	341.02	6,401.00	2,146.12	-913.49	2,331.04	0.00	0.00	0.00
8,600.00	90.00	341.02	6,401.00	2,240.68	-946.02	2,430.98	0.00	0.00	0.00
8,700.00	90.00	341.02	6,401.00	2,335.24	-978.55	2,530.91	0.00	0.00	0.00
8,800.00	90.00	341.02	6,401.00	2,429.80	-1,011.08	2,630.84	0.00	0.00	0.00
8,900.00	90.00	341.02	6,401.00	2,524.36	-1,043.61	2,730.78	0.00	0.00	0.00
9,000.00	90.00	341.02	6,401.00	2,618.92	-1,076.14	2,830.71	0.00	0.00	0.00
9,100.00	90.00	341.02	6,401.00	2,713.48	-1,108.67	2,930.64	0.00	0.00	0.00
9,200.00	90.00	341.02	6,401.00	2,808.04	-1,141.21	3,030.58	0.00	0.00	0.00
9,300.00	90.00	341.02	6,401.00	2,902.60	-1,173.74	3,130.51	0.00	0.00	0.00
9,400.00	90.00	341.02	6,401.00	2,997.16	-1,206.27	3,230.45	0.00	0.00	0.00
9,500.00	90.00	341.02	6,401.00	3,091.72	-1,238.80	3,330.38	0.00	0.00	0.00

Database:	Southern Region	Local Co-ordinate Reference:	Well 19-44-7-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4991.30usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 4991.30usft (Xtreme 19)
Site:	Slick Rock	North Reference:	Grid
Well:	19-44-7-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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)
9,600.00	90.00	341.02	6,401.00	3,186.28	-1,271.33	3,430.31	0.00	0.00	0.00
9,700.00	90.00	341.02	6,401.00	3,280.84	-1,303.86	3,530.25	0.00	0.00	0.00
9,800.00	90.00	341.02	6,401.00	3,375.41	-1,336.39	3,630.18	0.00	0.00	0.00
9,900.00	90.00	341.02	6,401.00	3,469.97	-1,368.92	3,730.11	0.00	0.00	0.00
10,000.00	90.00	341.02	6,401.00	3,564.53	-1,401.46	3,830.05	0.00	0.00	0.00
10,100.00	90.00	341.02	6,401.00	3,659.09	-1,433.99	3,929.98	0.00	0.00	0.00
10,200.00	90.00	341.02	6,401.00	3,753.65	-1,466.52	4,029.91	0.00	0.00	0.00
10,300.00	90.00	341.02	6,401.00	3,848.21	-1,499.05	4,129.85	0.00	0.00	0.00
10,400.00	90.00	341.02	6,401.00	3,942.77	-1,531.58	4,229.78	0.00	0.00	0.00
10,500.00	90.00	341.02	6,401.00	4,037.33	-1,564.11	4,329.71	0.00	0.00	0.00
10,600.00	90.00	341.02	6,401.00	4,131.89	-1,596.64	4,429.65	0.00	0.00	0.00
10,700.00	90.00	341.02	6,401.00	4,226.45	-1,629.18	4,529.58	0.00	0.00	0.00
10,712.71	90.00	341.02	6,401.00	4,238.47	-1,633.31	4,542.28	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
- hit/miss target									
- Shape									
PBHL - Slick Rock 19-44	0.00	0.00	6,401.00	4,238.47	-1,633.31	1,451,693.16	3,370,593.27	40° 33' 56.3236 N	104° 9' 57.830 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,800.00	5,800.00	0.00	0.00	Tie-In to Pilot-5800.00' MD
5,828.04	5,828.04	0.00	0.00	KOP, 10.00°/100' Build
6,728.04	6,401.00	483.23	-307.85	Begin 90.00° Lateral, 5.00°/100' Turn
6,998.35	6,401.00	726.15	-424.98	Hold 341.02° Azm
10,712.71	6,401.00	4,238.47	-1,633.31	PBHL