



Company: Carrizo Oil & Gas  
 Site: Castor  
 Well: 2-36-31-9-59  
 Project: Weld County, Colorado (NAD83)  
 Rig Name: Xtreme 19



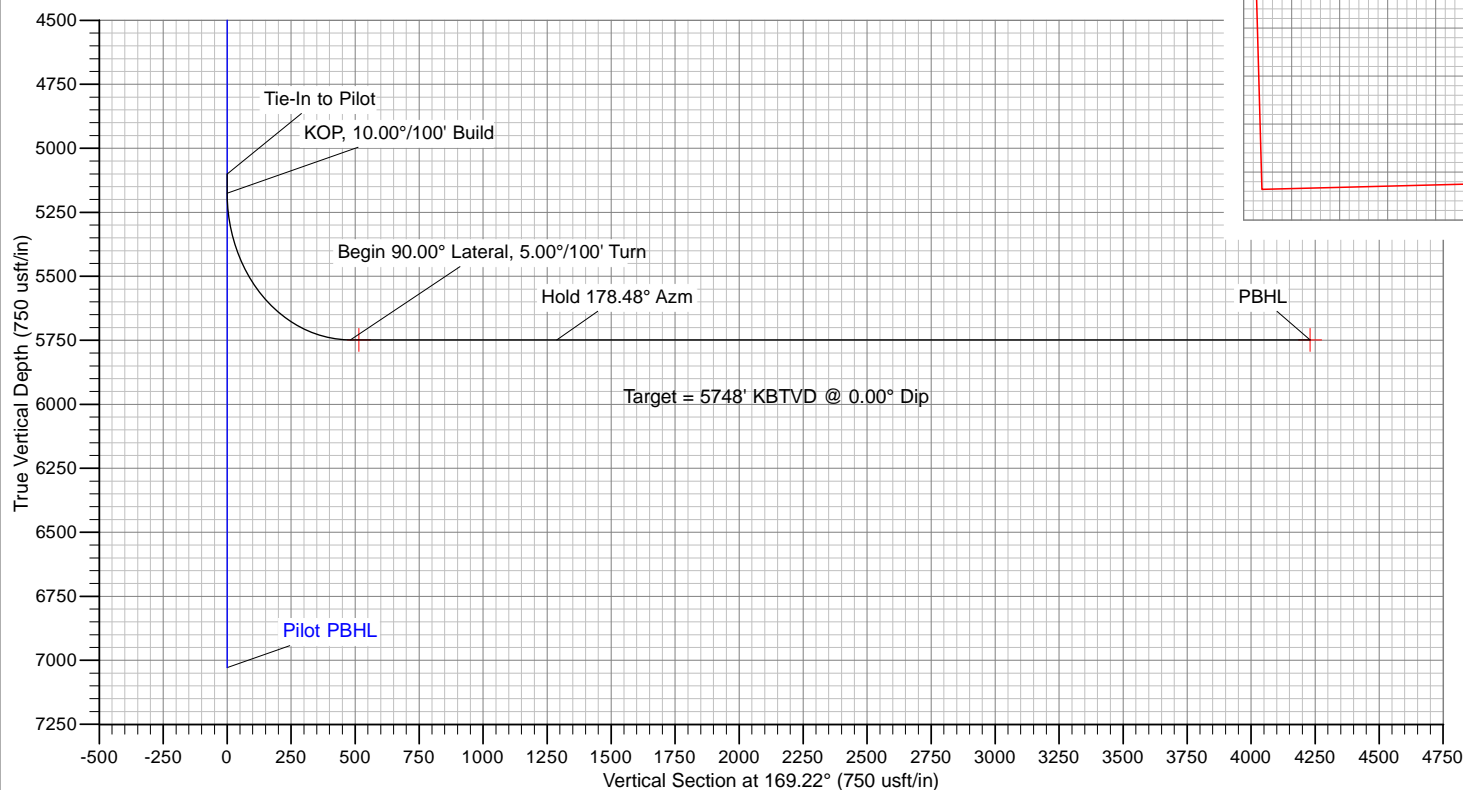
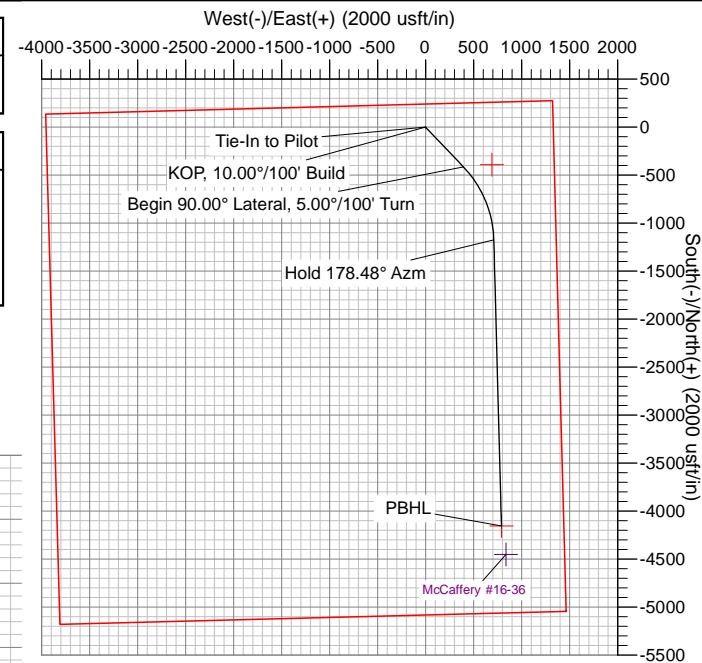
Planning: 936.442.2510 Fax: 936.442.2515  
 Operations: 936.442.2500 Fax: 936.442.2599

#### PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
7028.00	0.00	0.00	7028.00	0.00	0.00	0.00	0.00	Pilot PBHL

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	Tie-In to Pilot
5175.04	0.00	0.00	5175.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6075.04	90.00	136.35	5748.00	-414.57	395.48	481.22	572.96	Begin 90.00° Lateral, 5.00°/100' Turn
6917.64	90.00	178.48	5748.00	-1175.14	711.85	1287.53	1415.55	Hold 178.48° Azm
9898.52	90.00	178.48	5748.00	-4154.98	790.93	4229.59	4396.44	PBHL



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Azimuths to Grid North  
 True North: -1.02°  
 Magnetic North: 7.33°

Magnetic Field  
 Strength: 53334.0snT  
 Dip Angle: 67.42°  
 Date: 12/28/2011  
 Model: WMM\_2010

US State Plane 1983  
 Colorado Northern Zone

Created By: Cindy Darland  
 Date: 12:01, December 28 2011  
 Plan: Design #1

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## **Carrizo Oil & Gas**

Weld County, Colorado (NAD83)

Castor

2-36-31-9-59

Wellbore #1

Plan: Design #1

## **Standard Planning Report**

28 December, 2011

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 2-36-31-9-59
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Site:</b>	Castor	<b>North Reference:</b>	Grid
<b>Well:</b>	2-36-31-9-59	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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

<b>Well</b>	2-36-31-9-59			
<b>Well Position</b>	<b>+N/-S</b>	1,506,783.17 usft	<b>Northing:</b>	1,506,783.17 usft
	<b>+E/-W</b>	3,437,653.47 usft	<b>Easting:</b>	3,437,653.47 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40° 42' 49.7367 N
				<b>Longitude:</b> 103° 55' 16.321 W
				<b>Ground Level:</b> 4,910.50 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	WMM_2010	12/28/2011	8.35	67.42	53,334

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	5,100.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	169.22

<b>Plan Sections</b>										
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
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,175.04	0.00	0.00	5,175.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,075.04	90.00	136.35	5,748.00	-414.57	395.48	10.00	10.00	0.00	136.35	
6,917.64	90.00	178.48	5,748.00	-1,175.14	711.85	5.00	0.00	5.00	90.00	
9,898.52	90.00	178.48	5,748.00	-4,154.98	790.93	0.00	0.00	0.00	0.00	PBHL v1 - Castor 2

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 2-36-31-9-59
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Site:</b>	Castor	<b>North Reference:</b>	Grid
<b>Well:</b>	2-36-31-9-59	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Tie-In to Pilot</b>									
5,175.04	0.00	0.00	5,175.04	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP, 10.00°/100' Build</b>									
5,200.00	2.50	136.35	5,199.99	-0.39	0.38	0.46	10.00	10.00	0.00
5,250.00	7.50	136.35	5,249.79	-3.54	3.38	4.11	10.00	10.00	0.00
5,300.00	12.50	136.35	5,299.01	-9.82	9.37	11.40	10.00	10.00	0.00
5,350.00	17.50	136.35	5,347.29	-19.18	18.30	22.26	10.00	10.00	0.00
5,400.00	22.50	136.35	5,394.26	-31.55	30.09	36.62	10.00	10.00	0.00
5,450.00	27.50	136.35	5,439.57	-46.83	44.67	54.36	10.00	10.00	0.00
5,500.00	32.50	136.35	5,482.86	-64.91	61.92	75.34	10.00	10.00	0.00
5,550.00	37.50	136.35	5,523.80	-85.65	81.71	99.42	10.00	10.00	0.00
5,600.00	42.50	136.35	5,562.10	-108.90	103.88	126.40	10.00	10.00	0.00
5,650.00	47.50	136.35	5,597.44	-134.47	128.28	156.09	10.00	10.00	0.00
5,700.00	52.50	136.35	5,629.57	-162.17	154.71	188.24	10.00	10.00	0.00
5,750.00	57.50	136.35	5,658.25	-191.80	182.97	222.63	10.00	10.00	0.00
5,800.00	62.50	136.35	5,683.24	-223.12	212.85	258.99	10.00	10.00	0.00
5,850.00	67.50	136.35	5,704.37	-255.90	244.11	297.03	10.00	10.00	0.00
5,900.00	72.50	136.35	5,721.47	-289.88	276.53	336.48	10.00	10.00	0.00
5,950.00	77.50	136.35	5,734.41	-324.82	309.86	377.03	10.00	10.00	0.00
6,000.00	82.50	136.35	5,743.09	-360.43	343.84	418.37	10.00	10.00	0.00
6,050.00	87.50	136.35	5,747.45	-396.46	378.21	460.19	10.00	10.00	0.00
6,075.04	90.00	136.35	5,748.00	-414.57	395.48	481.22	10.00	10.00	0.00
<b>Begin 90.00° Lateral, 5.00°/100' Turn</b>									
6,100.00	90.00	137.60	5,748.00	-432.82	412.52	502.33	5.00	0.00	5.00
6,200.00	90.00	142.60	5,748.00	-509.51	476.64	589.66	5.00	0.00	5.00
6,300.00	90.00	147.60	5,748.00	-591.50	533.84	680.89	5.00	0.00	5.00
6,400.00	90.00	152.60	5,748.00	-678.16	583.68	775.34	5.00	0.00	5.00
6,500.00	90.00	157.60	5,748.00	-768.83	625.77	872.29	5.00	0.00	5.00
6,600.00	90.00	162.60	5,748.00	-862.83	659.80	970.99	5.00	0.00	5.00
6,700.00	90.00	167.60	5,748.00	-959.44	685.51	1,070.70	5.00	0.00	5.00
6,800.00	90.00	172.60	5,748.00	-1,057.92	702.70	1,170.66	5.00	0.00	5.00
6,900.00	90.00	177.60	5,748.00	-1,157.52	711.24	1,270.10	5.00	0.00	5.00
6,917.64	90.00	178.48	5,748.00	-1,175.14	711.85	1,287.53	5.00	0.00	5.00
<b>Hold 178.48° Azm</b>									
7,000.00	90.00	178.48	5,748.00	-1,257.48	714.03	1,368.82	0.00	0.00	0.00
7,100.00	90.00	178.48	5,748.00	-1,357.44	716.69	1,467.52	0.00	0.00	0.00
7,200.00	90.00	178.48	5,748.00	-1,457.41	719.34	1,566.22	0.00	0.00	0.00
7,300.00	90.00	178.48	5,748.00	-1,557.37	721.99	1,664.91	0.00	0.00	0.00
7,400.00	90.00	178.48	5,748.00	-1,657.34	724.64	1,763.61	0.00	0.00	0.00
7,500.00	90.00	178.48	5,748.00	-1,757.30	727.30	1,862.31	0.00	0.00	0.00
7,600.00	90.00	178.48	5,748.00	-1,857.27	729.95	1,961.01	0.00	0.00	0.00
7,700.00	90.00	178.48	5,748.00	-1,957.23	732.60	2,059.70	0.00	0.00	0.00
7,800.00	90.00	178.48	5,748.00	-2,057.20	735.26	2,158.40	0.00	0.00	0.00
7,900.00	90.00	178.48	5,748.00	-2,157.16	737.91	2,257.10	0.00	0.00	0.00
8,000.00	90.00	178.48	5,748.00	-2,257.13	740.56	2,355.80	0.00	0.00	0.00
8,100.00	90.00	178.48	5,748.00	-2,357.09	743.22	2,454.49	0.00	0.00	0.00
8,200.00	90.00	178.48	5,748.00	-2,457.06	745.87	2,553.19	0.00	0.00	0.00
8,300.00	90.00	178.48	5,748.00	-2,557.02	748.52	2,651.89	0.00	0.00	0.00
8,400.00	90.00	178.48	5,748.00	-2,656.99	751.17	2,750.59	0.00	0.00	0.00
8,500.00	90.00	178.48	5,748.00	-2,756.95	753.83	2,849.28	0.00	0.00	0.00
8,600.00	90.00	178.48	5,748.00	-2,856.92	756.48	2,947.98	0.00	0.00	0.00
8,700.00	90.00	178.48	5,748.00	-2,956.88	759.13	3,046.68	0.00	0.00	0.00
8,800.00	90.00	178.48	5,748.00	-3,056.85	761.79	3,145.38	0.00	0.00	0.00

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 2-36-31-9-59
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4927.50usft (Xtreme 19)
<b>Site:</b>	Castor	<b>North Reference:</b>	Grid
<b>Well:</b>	2-36-31-9-59	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
8,900.00	90.00	178.48	5,748.00	-3,156.81	764.44	3,244.07	0.00	0.00	0.00
9,000.00	90.00	178.48	5,748.00	-3,256.78	767.09	3,342.77	0.00	0.00	0.00
9,100.00	90.00	178.48	5,748.00	-3,356.74	769.75	3,441.47	0.00	0.00	0.00
9,200.00	90.00	178.48	5,748.00	-3,456.70	772.40	3,540.17	0.00	0.00	0.00
9,300.00	90.00	178.48	5,748.00	-3,556.67	775.05	3,638.86	0.00	0.00	0.00
9,400.00	90.00	178.48	5,748.00	-3,656.63	777.70	3,737.56	0.00	0.00	0.00
9,500.00	90.00	178.48	5,748.00	-3,756.60	780.36	3,836.26	0.00	0.00	0.00
9,600.00	90.00	178.48	5,748.00	-3,856.56	783.01	3,934.96	0.00	0.00	0.00
9,700.00	90.00	178.48	5,748.00	-3,956.53	785.66	4,033.65	0.00	0.00	0.00
9,800.00	90.00	178.48	5,748.00	-4,056.49	788.32	4,132.35	0.00	0.00	0.00
9,898.52	90.00	178.48	5,748.00	-4,154.98	790.93	4,229.59	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 v1 - Castor 2-3i	0.00	0.00	5,748.00	-4,154.98	790.93	1,502,628.19	3,438,444.40	40° 42' 8.5476 N	103° 55' 7.013 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,100.00	5,100.00	0.00	0.00	Tie-In to Pilot
5,175.04	5,175.04	0.00	0.00	KOP, 10.00°/100' Build
6,075.04	5,748.00	-414.57	395.48	Begin 90.00° Lateral, 5.00°/100' Turn
6,917.64	5,748.00	-1,175.14	711.85	Hold 178.48° Azm
9,898.52	5,748.00	-4,154.98	790.93	PBHL