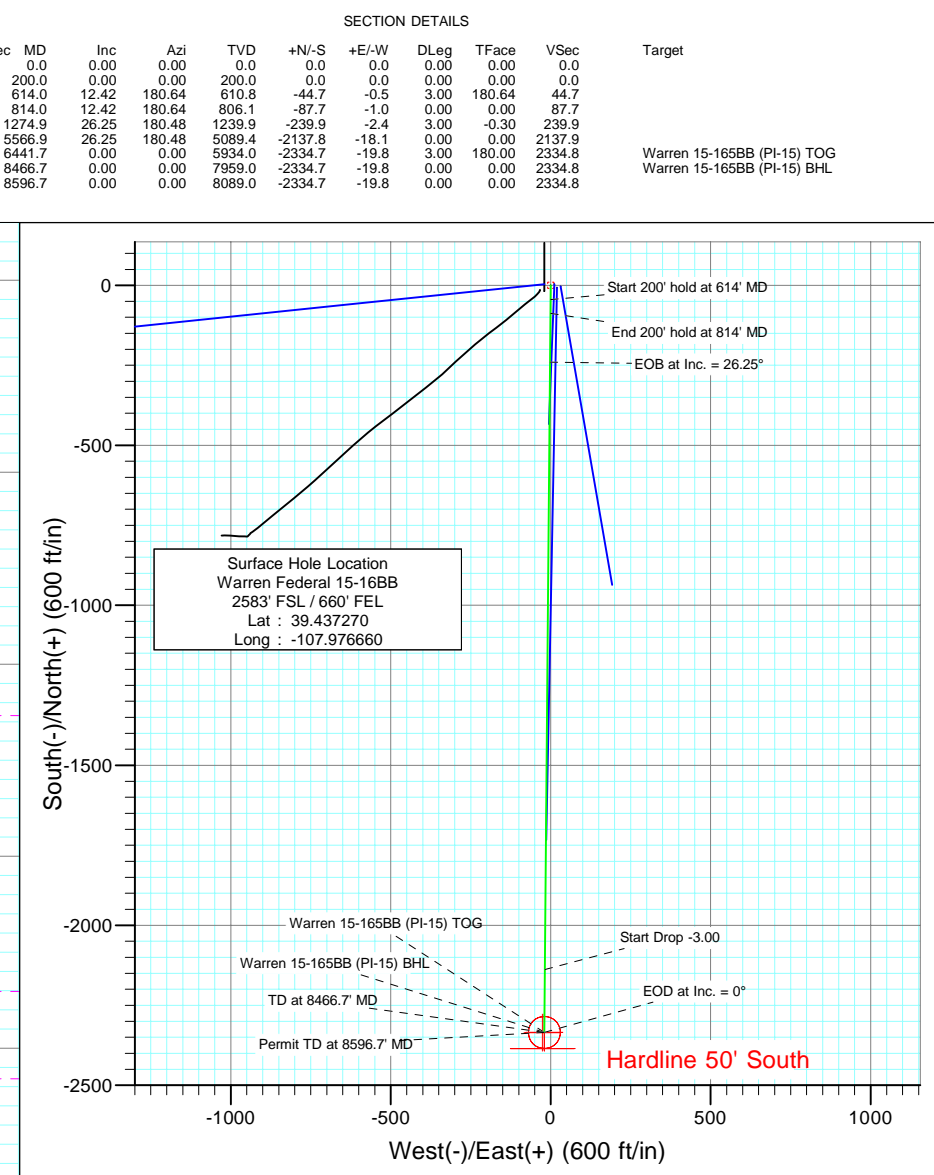
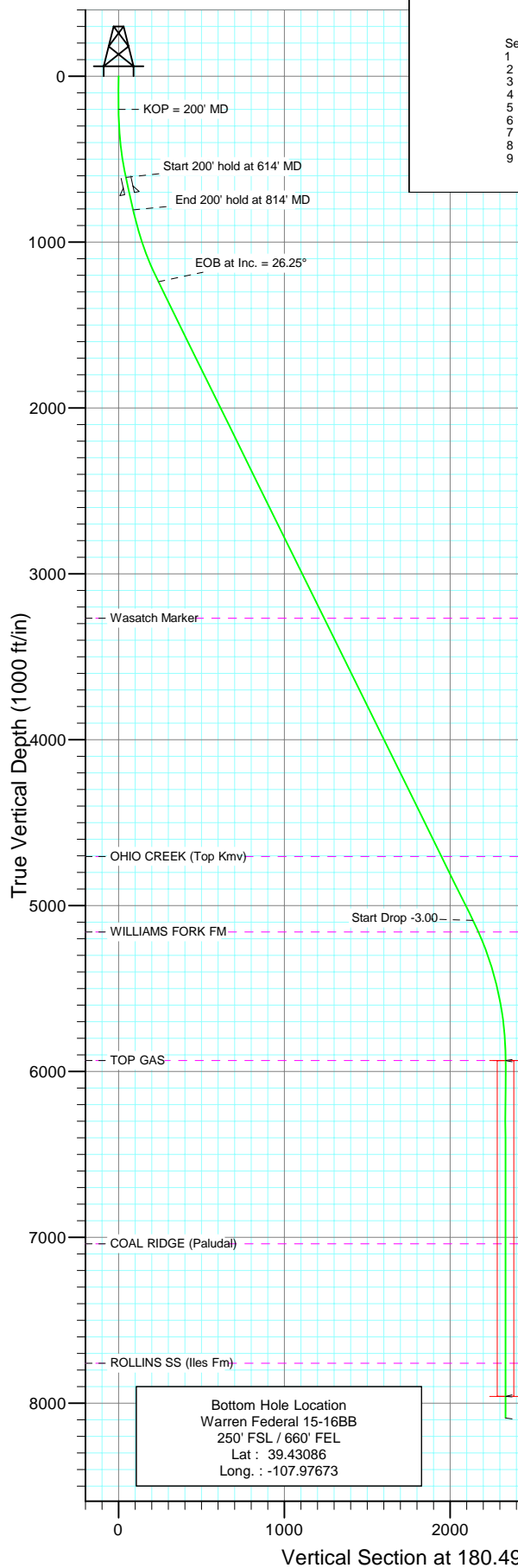




Project: S. Piceance
 Site: NESE S15-T7S-R95W (PI 15 Pad)
 Well: Warren Federal 15-16BB
 Wellbore: DD
 Design: Plan #2



Azimuths to True North
 Magnetic North: 10.52°

Magnetic Field
 Strength: 52407.3snT
 Dip Angle: 65.75°
 Date: 10/27/2009
 Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3269.0	3537.2	Wasatch Marker
4704.0	5137.1	OHIO CREEK (Top Kmv)
5159.0	5643.7	WILLIAMS FORK FM
5934.0	6441.7	TOP GAS
7039.0	7546.7	COAL RIDGE (Paludal)
7759.0	8266.7	ROLLINS SS (Iles Fm)

DESIGN DETAILS: Plan #2

95XXX; KR
 KBE @ 6689.0ft (Nabors M11)

Target	Azimuth	Origin	N/S	E/W	From TVD
Warren 15-165BB (PI-15) BHL	180.49	Slot	0.0	0.0	0.0

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Warren Federal 15-16BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6689.0ft (Nabors M11)
Project:	S. Piceance	MD Reference:	KBE @ 6689.0ft (Nabors M11)
Site:	NESE S15-T7S-R95W (PI 15 Pad)	North Reference:	True
Well:	Warren Federal 15-16BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Project	S. Piceance, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		NESE S15-T7S-R95W (PI 15 Pad)			
Site Position:		Northing:	1,593,681.40 ft	Latitude:	39.437240
From:	Lat/Long	Easting:	2,300,607.26 ft	Longitude:	-107.976610
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.56 °

Well	Warren Federal 15-16BB					
Well Position	+N/-S	0.0 ft	Northing:	1,593,692.70 ft	Latitude:	39.437270
	+E/-W	0.0 ft	Easting:	2,300,593.45 ft	Longitude:	-107.976660
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,676.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/27/2009	10.52	65.75	52,407

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	180.49

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
614.0	12.42	180.64	610.8	-44.7	-0.5	3.00	3.00	0.00	180.64	
814.0	12.42	180.64	806.1	-87.7	-1.0	0.00	0.00	0.00	0.00	
1,274.9	26.25	180.48	1,239.9	-239.9	-2.4	3.00	3.00	-0.04	-0.30	
5,566.9	26.25	180.48	5,089.4	-2,137.8	-18.1	0.00	0.00	0.00	0.00	
6,441.7	0.00	0.00	5,934.0	-2,334.7	-19.8	3.00	-3.00	0.00	180.00	Warren 15-165BB (PI
8,466.7	0.00	0.00	7,959.0	-2,334.7	-19.8	0.00	0.00	0.00	0.00	Warren 15-165BB (PI
8,596.7	0.00	0.00	8,089.0	-2,334.7	-19.8	0.00	0.00	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Warren Federal 15-16BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6689.0ft (Nabors M11)
Project:	S. Piceance	MD Reference:	KBE @ 6689.0ft (Nabors M11)
Site:	NESE S15-T7S-R95W (PI 15 Pad)	North Reference:	True
Well:	Warren Federal 15-16BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	Hardline 50' South
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP = 200' MD
300.0	3.00	180.64	300.0	-2.6	0.0	2.6	3.00	3.00	
400.0	6.00	180.64	399.6	-10.5	-0.1	10.5	3.00	3.00	
500.0	9.00	180.64	498.8	-23.5	-0.3	23.5	3.00	3.00	
600.0	12.00	180.64	597.1	-41.7	-0.5	41.7	3.00	3.00	
614.0	12.42	180.64	610.8	-44.7	-0.5	44.7	3.00	3.00	Start 200' hold at 614' MD
700.0	12.42	180.64	694.8	-63.2	-0.7	63.2	0.00	0.00	
713.6	12.42	180.64	708.0	-66.1	-0.7	66.1	0.00	0.00	Surface Casing
800.0	12.42	180.64	792.4	-84.7	-0.9	84.7	0.00	0.00	
814.0	12.42	180.64	806.1	-87.7	-1.0	87.7	0.00	0.00	End 200' hold at 814' MD
900.0	15.00	180.59	889.6	-108.1	-1.2	108.1	3.00	3.00	
1,000.0	18.00	180.54	985.5	-136.5	-1.5	136.5	3.00	3.00	
1,100.0	21.00	180.51	1,079.8	-169.9	-1.8	169.9	3.00	3.00	
1,200.0	24.00	180.49	1,172.1	-208.1	-2.1	208.1	3.00	3.00	
1,274.9	26.25	180.48	1,239.9	-239.9	-2.4	239.9	3.00	3.00	EOB at Inc. = 26.25°
1,300.0	26.25	180.48	1,262.5	-251.0	-2.5	251.0	0.00	0.00	
1,400.0	26.25	180.48	1,352.1	-295.2	-2.8	295.3	0.00	0.00	
1,500.0	26.25	180.48	1,441.8	-339.5	-3.2	339.5	0.00	0.00	
1,600.0	26.25	180.48	1,531.5	-383.7	-3.6	383.7	0.00	0.00	
1,700.0	26.25	180.48	1,621.2	-427.9	-3.9	427.9	0.00	0.00	
1,800.0	26.25	180.48	1,710.9	-472.1	-4.3	472.1	0.00	0.00	
1,900.0	26.25	180.48	1,800.6	-516.3	-4.7	516.4	0.00	0.00	
2,000.0	26.25	180.48	1,890.3	-560.6	-5.0	560.6	0.00	0.00	
2,100.0	26.25	180.48	1,980.0	-604.8	-5.4	604.8	0.00	0.00	
2,200.0	26.25	180.48	2,069.7	-649.0	-5.8	649.0	0.00	0.00	
2,300.0	26.25	180.48	2,159.4	-693.2	-6.1	693.2	0.00	0.00	
2,400.0	26.25	180.48	2,249.0	-737.4	-6.5	737.5	0.00	0.00	
2,500.0	26.25	180.48	2,338.7	-781.7	-6.9	781.7	0.00	0.00	
2,600.0	26.25	180.48	2,428.4	-825.9	-7.2	825.9	0.00	0.00	
2,700.0	26.25	180.48	2,518.1	-870.1	-7.6	870.1	0.00	0.00	
2,800.0	26.25	180.48	2,607.8	-914.3	-8.0	914.4	0.00	0.00	
2,900.0	26.25	180.48	2,697.5	-958.5	-8.4	958.6	0.00	0.00	
3,000.0	26.25	180.48	2,787.2	-1,002.8	-8.7	1,002.8	0.00	0.00	
3,100.0	26.25	180.48	2,876.9	-1,047.0	-9.1	1,047.0	0.00	0.00	
3,200.0	26.25	180.48	2,966.6	-1,091.2	-9.5	1,091.2	0.00	0.00	
3,300.0	26.25	180.48	3,056.3	-1,135.4	-9.8	1,135.5	0.00	0.00	
3,400.0	26.25	180.48	3,146.0	-1,179.6	-10.2	1,179.7	0.00	0.00	
3,500.0	26.25	180.48	3,235.6	-1,223.9	-10.6	1,223.9	0.00	0.00	
3,537.2	26.25	180.48	3,269.0	-1,240.3	-10.7	1,240.4	0.00	0.00	Wasatch Marker
3,600.0	26.25	180.48	3,325.3	-1,268.1	-10.9	1,268.1	0.00	0.00	
3,700.0	26.25	180.48	3,415.0	-1,312.3	-11.3	1,312.4	0.00	0.00	
3,800.0	26.25	180.48	3,504.7	-1,356.5	-11.7	1,356.6	0.00	0.00	
3,900.0	26.25	180.48	3,594.4	-1,400.8	-12.0	1,400.8	0.00	0.00	
4,000.0	26.25	180.48	3,684.1	-1,445.0	-12.4	1,445.0	0.00	0.00	
4,100.0	26.25	180.48	3,773.8	-1,489.2	-12.8	1,489.2	0.00	0.00	
4,200.0	26.25	180.48	3,863.5	-1,533.4	-13.1	1,533.5	0.00	0.00	
4,300.0	26.25	180.48	3,953.2	-1,577.6	-13.5	1,577.7	0.00	0.00	
4,400.0	26.25	180.48	4,042.9	-1,621.9	-13.9	1,621.9	0.00	0.00	
4,500.0	26.25	180.48	4,132.6	-1,666.1	-14.2	1,666.1	0.00	0.00	
4,600.0	26.25	180.48	4,222.2	-1,710.3	-14.6	1,710.4	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Warren Federal 15-16BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6689.0ft (Nabors M11)
Project:	S. Piceance	MD Reference:	KBE @ 6689.0ft (Nabors M11)
Site:	NESE S15-T7S-R95W (PI 15 Pad)	North Reference:	True
Well:	Warren Federal 15-16BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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)	Comments / Formations
4,700.0	26.25	180.48	4,311.9	-1,754.5	-15.0	1,754.6	0.00	0.00	
4,800.0	26.25	180.48	4,401.6	-1,798.7	-15.3	1,798.8	0.00	0.00	
4,900.0	26.25	180.48	4,491.3	-1,843.0	-15.7	1,843.0	0.00	0.00	
5,000.0	26.25	180.48	4,581.0	-1,887.2	-16.1	1,887.2	0.00	0.00	
5,100.0	26.25	180.48	4,670.7	-1,931.4	-16.4	1,931.5	0.00	0.00	
5,137.1	26.25	180.48	4,704.0	-1,947.8	-16.6	1,947.9	0.00	0.00	OHIO CREEK (Top Kmv)
5,200.0	26.25	180.48	4,760.4	-1,975.6	-16.8	1,975.7	0.00	0.00	
5,300.0	26.25	180.48	4,850.1	-2,019.8	-17.2	2,019.9	0.00	0.00	
5,400.0	26.25	180.48	4,939.8	-2,064.1	-17.5	2,064.1	0.00	0.00	
5,500.0	26.25	180.48	5,029.5	-2,108.3	-17.9	2,108.4	0.00	0.00	
5,566.9	26.25	180.48	5,089.4	-2,137.8	-18.1	2,137.9	0.00	0.00	Start Drop -3.00
5,600.0	25.25	180.48	5,119.3	-2,152.2	-18.3	2,152.3	3.00	-3.00	
5,643.7	23.94	180.48	5,159.0	-2,170.4	-18.4	2,170.5	3.00	-3.00	WILLIAMS FORK FM
5,700.0	22.25	180.48	5,210.8	-2,192.5	-18.6	2,192.6	3.00	-3.00	
5,800.0	19.25	180.48	5,304.3	-2,227.9	-18.9	2,228.0	3.00	-3.00	
5,900.0	16.25	180.48	5,399.5	-2,258.4	-19.1	2,258.5	3.00	-3.00	
6,000.0	13.25	180.48	5,496.2	-2,283.9	-19.4	2,284.0	3.00	-3.00	
6,100.0	10.25	180.48	5,594.1	-2,304.2	-19.5	2,304.3	3.00	-3.00	
6,200.0	7.25	180.48	5,692.9	-2,319.5	-19.6	2,319.5	3.00	-3.00	
6,300.0	4.25	180.48	5,792.4	-2,329.5	-19.7	2,329.6	3.00	-3.00	
6,400.0	1.25	180.48	5,892.3	-2,334.3	-19.8	2,334.4	3.00	-3.00	
6,441.7	0.00	0.00	5,934.0	-2,334.7	-19.8	2,334.8	3.00	-3.00	EOD at Inc. = 0° - TOP GAS - Warren 15-165BI
6,500.0	0.00	0.00	5,992.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
6,600.0	0.00	0.00	6,092.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
6,700.0	0.00	0.00	6,192.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
6,800.0	0.00	0.00	6,292.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
6,900.0	0.00	0.00	6,392.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,000.0	0.00	0.00	6,492.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,100.0	0.00	0.00	6,592.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,200.0	0.00	0.00	6,692.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,300.0	0.00	0.00	6,792.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,400.0	0.00	0.00	6,892.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,500.0	0.00	0.00	6,992.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,546.7	0.00	0.00	7,039.0	-2,334.7	-19.8	2,334.8	0.00	0.00	COAL RIDGE (Paludal)
7,600.0	0.00	0.00	7,092.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,700.0	0.00	0.00	7,192.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,800.0	0.00	0.00	7,292.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
7,900.0	0.00	0.00	7,392.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,000.0	0.00	0.00	7,492.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,100.0	0.00	0.00	7,592.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,200.0	0.00	0.00	7,692.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,266.7	0.00	0.00	7,759.0	-2,334.7	-19.8	2,334.8	0.00	0.00	ROLLINS SS (Iles Fm)
8,300.0	0.00	0.00	7,792.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,400.0	0.00	0.00	7,892.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,466.7	0.00	0.00	7,959.0	-2,334.7	-19.8	2,334.8	0.00	0.00	TD at 8466.7' MD - Warren 15-165BB (PI-15) B
8,500.0	0.00	0.00	7,992.3	-2,334.7	-19.8	2,334.8	0.00	0.00	
8,596.7	0.00	0.00	8,089.0	-2,334.7	-19.8	2,334.8	0.00	0.00	Permit TD at 8596.7' MD

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Warren Federal 15-16BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6689.0ft (Nabors M11)
Project:	S. Piceance	MD Reference:	KBE @ 6689.0ft (Nabors M11)
Site:	NESE S15-T7S-R95W (PI 15 Pad)	North Reference:	True
Well:	Warren Federal 15-16BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Warren 15-165BB (PI-15)	0.00	0.00	7,959.0	-2,334.7	-19.8	1,591,359.37	2,300,510.04	39.430860	-107.976730
- plan hits target center									
- Circle (radius 50.0)									
Warren 15-165BB (PI-15)	0.00	0.00	5,934.0	-2,334.7	-19.8	1,591,359.37	2,300,510.04	39.430860	-107.976730
- plan hits target center									
- Point									
Hardline 50' South	0.00	0.00	-7,959.0	-2,335.2	-26.1	1,591,359.11	2,300,503.73	39.430859	-107.976752
- plan misses target center by 8294.5ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-7,959.0	-50.0	-100.0	1,591,311.85	2,300,402.40		
Point 2			-7,959.0	-50.0	100.0	1,591,306.40	2,300,602.33		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
713.6	708.0	Surface Casing	0.000	0.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,537.2	3,269.0	Wasatch Marker		0.00	
5,137.1	4,704.0	OHIO CREEK (Top Kmv)			
5,643.7	5,159.0	WILLIAMS FORK FM			
6,441.7	5,934.0	TOP GAS			
7,546.7	7,039.0	COAL RIDGE (Paludal)			
8,266.7	7,759.0	ROLLINS SS (Iles Fm)			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP = 200' MD	
614.0	610.8	-44.7	-0.5	Start 200' hold at 614' MD	
814.0	806.1	-87.7	-1.0	End 200' hold at 814' MD	
1,274.9	1,239.9	-239.9	-2.4	EOB at Inc. = 26.25°	
5,566.9	5,089.4	-2,137.8	-18.1	Start Drop -3.00	
6,441.7	5,934.0	-2,334.7	-19.8	EOD at Inc. = 0°	
8,466.7	7,959.0	-2,334.7	-19.8	TD at 8466.7' MD	
8,596.7	8,089.0	-2,334.7	-19.8	Permit TD at 8596.7' MD	