

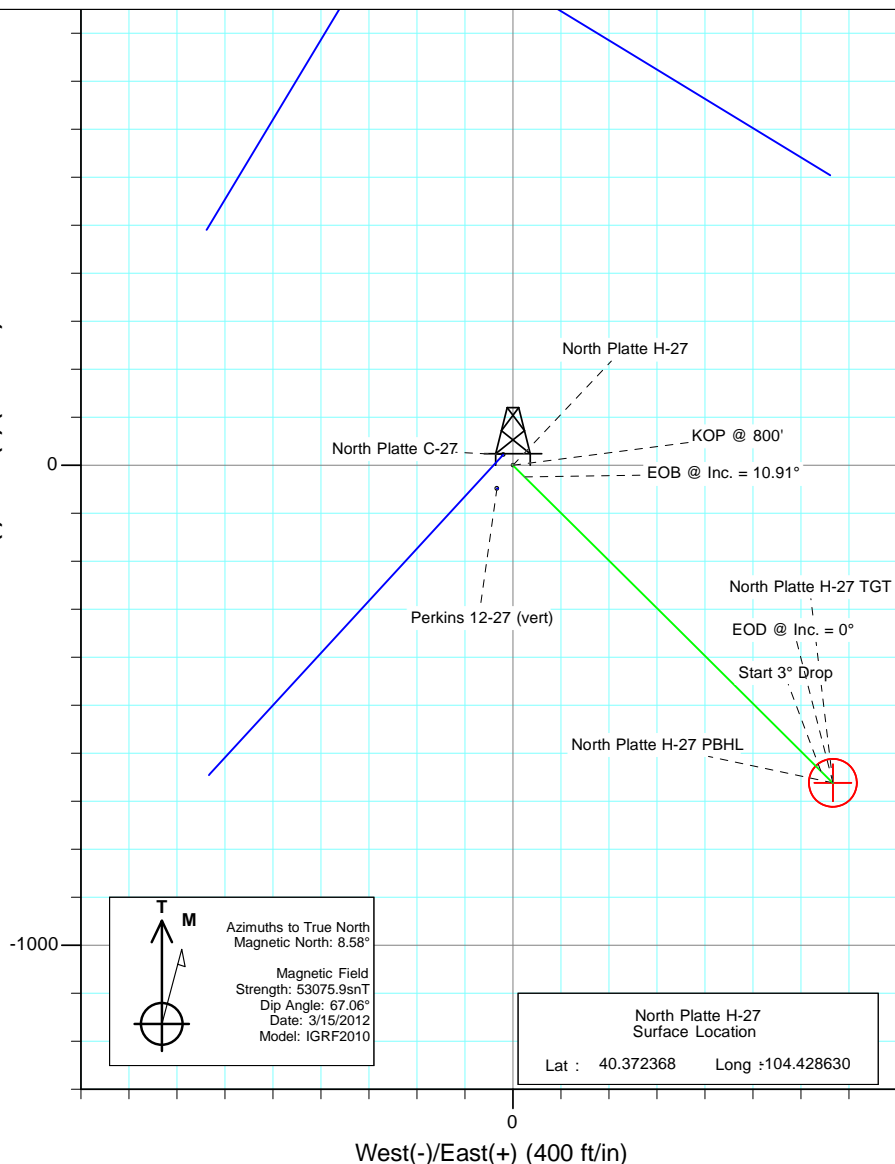
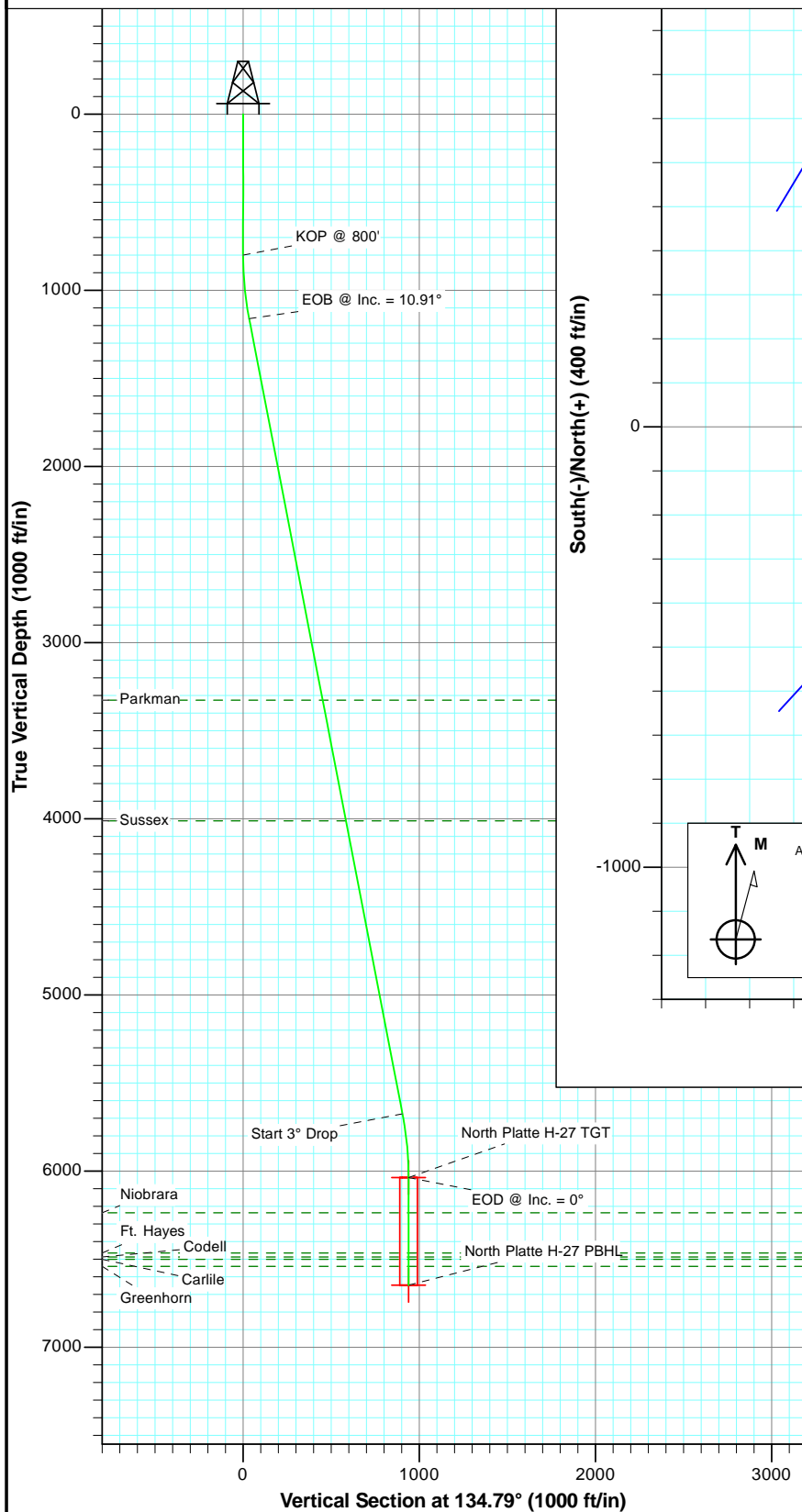


Project: Weld County  
Site: Perkins 12-27 Pad  
Well: North Platte H-27  
Wellbore: OH  
Plan: Plan #2



#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1163.6	10.91	134.79	1161.4	-24.3	24.5	3.00	134.79	34.5	
4	5760.8	10.91	134.79	5675.6	-637.2	642.0	0.00	0.00	904.5	
5	6124.5	0.00	0.00	6037.0	-661.5	666.5	3.00	180.00	939.1	North Platte H-27 TGT
6	6735.5	0.00	0.00	6648.0	-661.5	666.5	0.00	0.00	939.1	North Platte H-27 PBHL



#### FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3327.0	3369.0	Parkman
4012.0	4066.7	Sussex
6237.0	6324.5	Niobrara
6465.0	6552.5	Ft. Hayes
6488.0	6575.5	Codell
6501.0	6588.5	Carlile
6541.0	6628.5	Greenhorn

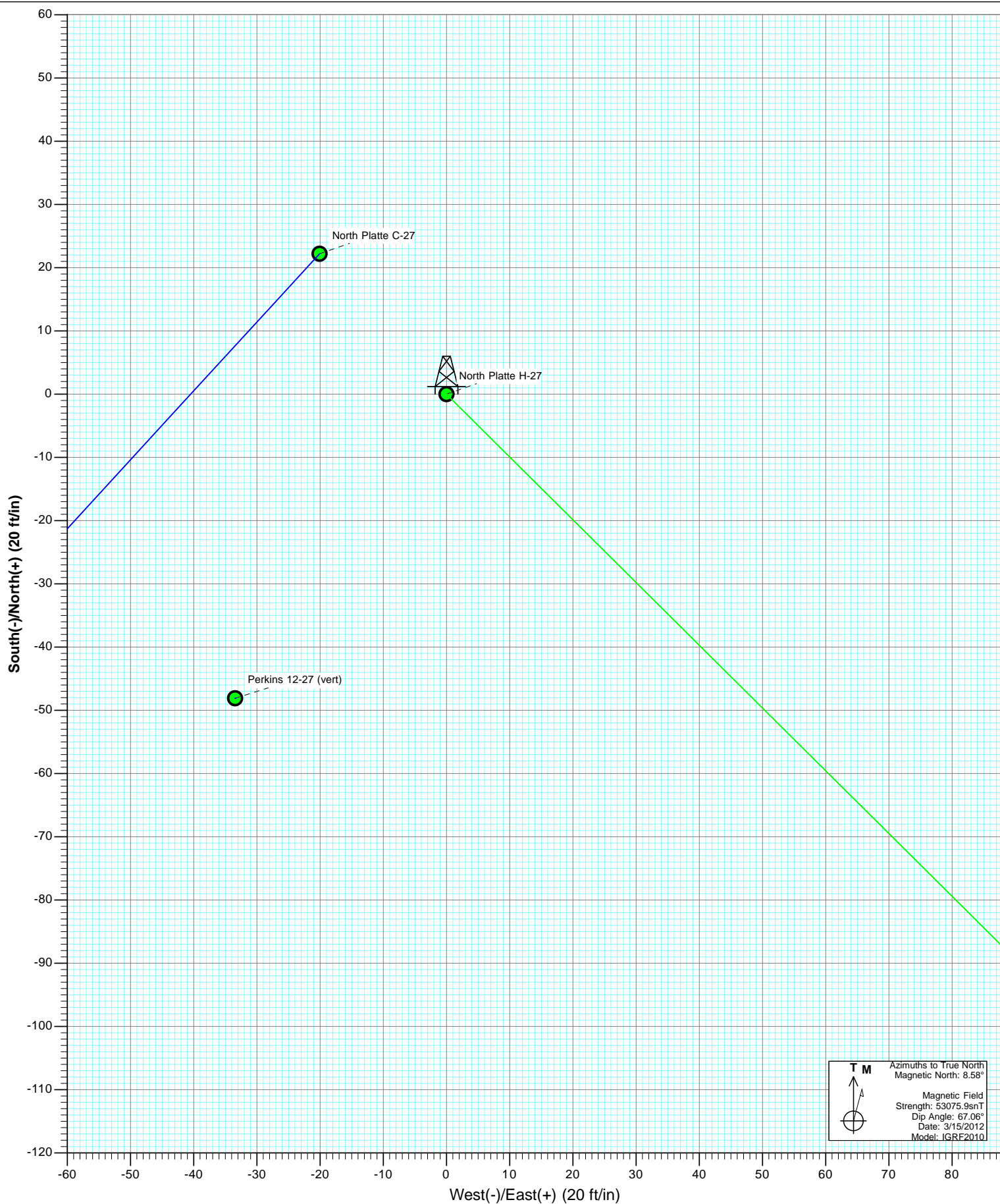
Plan #2  
North Platte H-27  
125XXX; SC

KBE @ 4552.0ft  
North American Datum 1983  
Well North Platte H-27, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
TD	No Target (Freehand)	134.79	Slot		0.0	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude	
North Platte H-27 TGT		6037.0	-661.5	666.5	40.370552	-104.426238	
North Platte H-27 PBHL		6648.0	-661.5	666.5	40.370552	-104.426238	

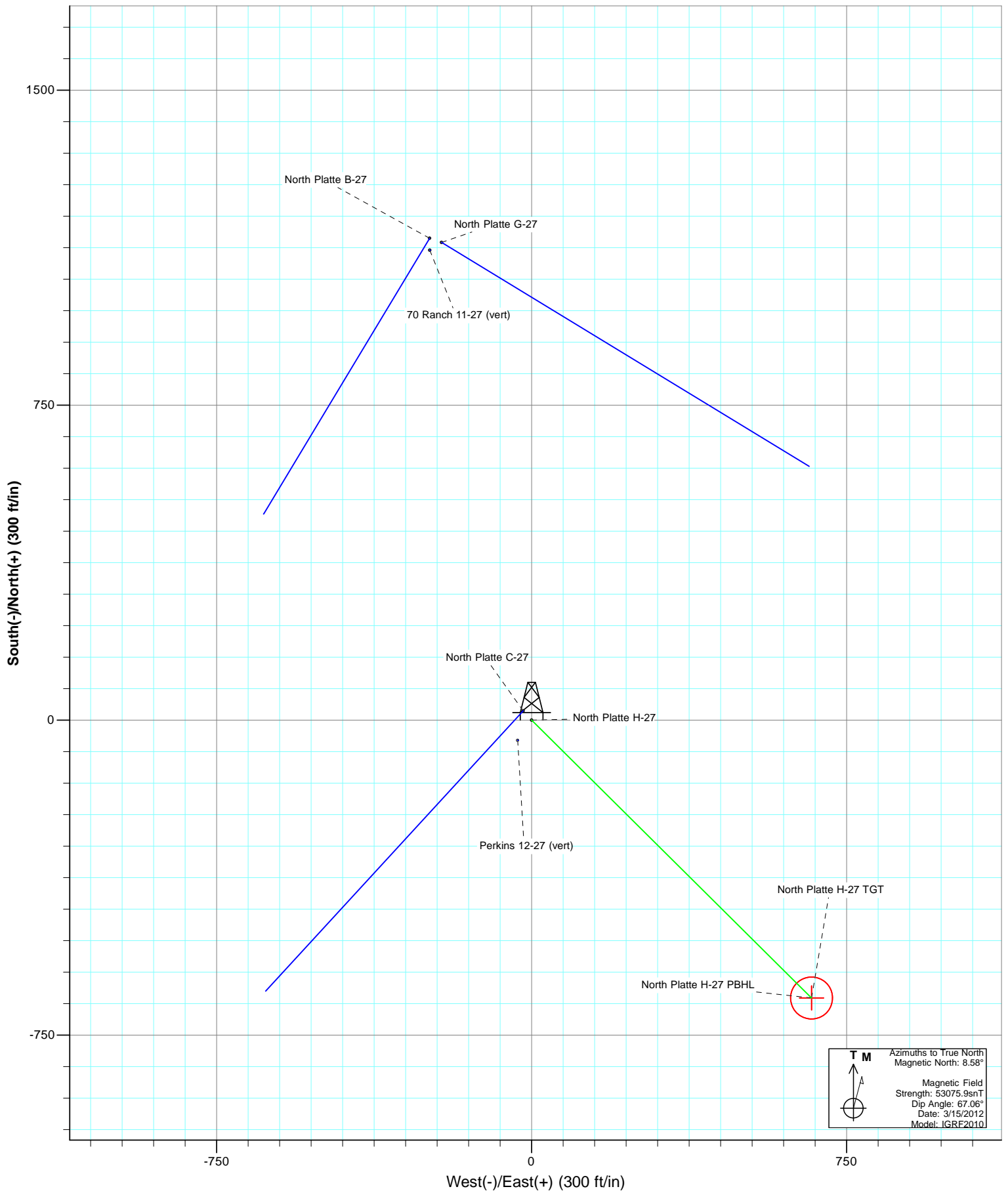


Project: Weld County  
Site: Perkins 12-27 Pad  
Well: North Platte H-27  
Wellbore: OH  
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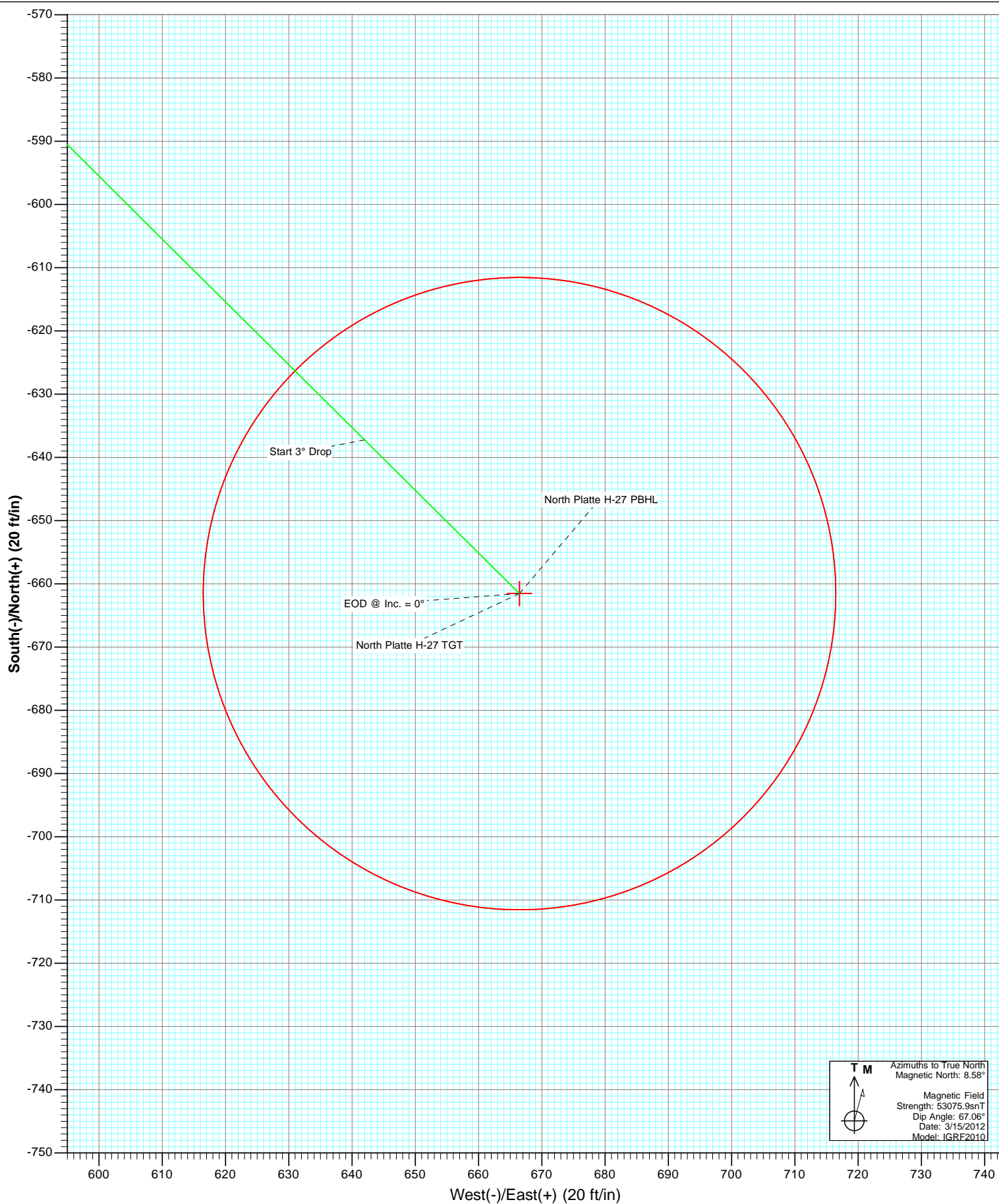


Project: Weld County  
Site: Perkins 12-27 Pad  
Well: North Platte H-27  
Wellbore: OH  
Plan: Plan #2





Project: Weld County  
Site: Perkins 12-27 Pad  
Well: North Platte H-27  
Wellbore: OH  
Plan: Plan #2



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site:</b>	Perkins 12-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

<b>Project</b>	Weld County		
<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		

Site		Perkins 12-27 Pad			
Site Position:		Northing:	1,380,251.72 ft	Latitude:	40.372236
From:	Lat/Long	Easting:	3,298,475.74 ft	Longitude:	-104.428750
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.69 °

Well	North Platte H-27					
Well Position	+N/-S	0.0 ft	Northing:	1,380,300.19 ft	Latitude:	40.372368
	+E/-W	0.0 ft	Easting:	3,298,508.60 ft	Longitude:	-104.428630
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,542.0 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	3/15/2012	8.58	67.06	53,076

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	134.79

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,163.6	10.91	134.79	1,161.4	-24.3	24.5	3.00	3.00	0.00	134.79	
5,760.8	10.91	134.79	5,675.6	-637.2	642.0	0.00	0.00	0.00	0.00	
6,124.5	0.00	0.00	6,037.0	-661.5	666.5	3.00	-3.00	0.00	180.00	North Platte H-27 TG
6,735.5	0.00	0.00	6,648.0	-661.5	666.5	0.00	0.00	0.00	0.00	North Platte H-27 PB

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site:</b>	Perkins 12-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	
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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	KOP @ 800'
900.0	3.00	134.79	900.0	-1.8	1.9	2.6	3.00	3.00	
1,000.0	6.00	134.79	999.6	-7.4	7.4	10.5	3.00	3.00	
1,100.0	9.00	134.79	1,098.8	-16.6	16.7	23.5	3.00	3.00	
1,163.6	10.91	134.79	1,161.4	-24.3	24.5	34.5	3.00	3.00	EOB @ Inc. = 10.91°
1,200.0	10.91	134.79	1,197.1	-29.2	29.4	41.4	0.00	0.00	
1,300.0	10.91	134.79	1,295.3	-42.5	42.8	60.3	0.00	0.00	
1,400.0	10.91	134.79	1,393.5	-55.8	56.2	79.2	0.00	0.00	
1,500.0	10.91	134.79	1,491.7	-69.2	69.7	98.2	0.00	0.00	
1,600.0	10.91	134.79	1,589.9	-82.5	83.1	117.1	0.00	0.00	
1,700.0	10.91	134.79	1,688.1	-95.8	96.5	136.0	0.00	0.00	
1,800.0	10.91	134.79	1,786.3	-109.2	110.0	154.9	0.00	0.00	
1,900.0	10.91	134.79	1,884.5	-122.5	123.4	173.9	0.00	0.00	
2,000.0	10.91	134.79	1,982.7	-135.8	136.8	192.8	0.00	0.00	
2,100.0	10.91	134.79	2,080.9	-149.2	150.3	211.7	0.00	0.00	
2,200.0	10.91	134.79	2,179.1	-162.5	163.7	230.6	0.00	0.00	
2,300.0	10.91	134.79	2,277.3	-175.8	177.1	249.6	0.00	0.00	
2,400.0	10.91	134.79	2,375.5	-189.1	190.6	268.5	0.00	0.00	
2,500.0	10.91	134.79	2,473.7	-202.5	204.0	287.4	0.00	0.00	
2,600.0	10.91	134.79	2,571.8	-215.8	217.4	306.3	0.00	0.00	
2,700.0	10.91	134.79	2,670.0	-229.1	230.9	325.3	0.00	0.00	
2,800.0	10.91	134.79	2,768.2	-242.5	244.3	344.2	0.00	0.00	
2,900.0	10.91	134.79	2,866.4	-255.8	257.7	363.1	0.00	0.00	
3,000.0	10.91	134.79	2,964.6	-269.1	271.2	382.1	0.00	0.00	
3,100.0	10.91	134.79	3,062.8	-282.5	284.6	401.0	0.00	0.00	
3,200.0	10.91	134.79	3,161.0	-295.8	298.0	419.9	0.00	0.00	
3,300.0	10.91	134.79	3,259.2	-309.1	311.5	438.8	0.00	0.00	
3,369.0	10.91	134.79	3,327.0	-318.3	320.7	451.9	0.00	0.00	Parkman
3,400.0	10.91	134.79	3,357.4	-322.5	324.9	457.8	0.00	0.00	
3,500.0	10.91	134.79	3,455.6	-335.8	338.3	476.7	0.00	0.00	
3,600.0	10.91	134.79	3,553.8	-349.1	351.7	495.6	0.00	0.00	
3,700.0	10.91	134.79	3,652.0	-362.5	365.2	514.5	0.00	0.00	
3,800.0	10.91	134.79	3,750.2	-375.8	378.6	533.5	0.00	0.00	
3,900.0	10.91	134.79	3,848.4	-389.1	392.0	552.4	0.00	0.00	
4,000.0	10.91	134.79	3,946.5	-402.5	405.5	571.3	0.00	0.00	
4,066.7	10.91	134.79	4,012.0	-411.4	414.4	583.9	0.00	0.00	Sussex
4,100.0	10.91	134.79	4,044.7	-415.8	418.9	590.2	0.00	0.00	
4,200.0	10.91	134.79	4,142.9	-429.1	432.3	609.2	0.00	0.00	
4,300.0	10.91	134.79	4,241.1	-442.5	445.8	628.1	0.00	0.00	
4,400.0	10.91	134.79	4,339.3	-455.8	459.2	647.0	0.00	0.00	
4,500.0	10.91	134.79	4,437.5	-469.1	472.6	665.9	0.00	0.00	
4,600.0	10.91	134.79	4,535.7	-482.5	486.1	684.9	0.00	0.00	
4,700.0	10.91	134.79	4,633.9	-495.8	499.5	703.8	0.00	0.00	
4,800.0	10.91	134.79	4,732.1	-509.1	512.9	722.7	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site:</b>	Perkins 12-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
4,900.0	10.91	134.79	4,830.3	-522.5	526.4	741.6	0.00	0.00	
5,000.0	10.91	134.79	4,928.5	-535.8	539.8	760.6	0.00	0.00	
5,100.0	10.91	134.79	5,026.7	-549.1	553.2	779.5	0.00	0.00	
5,200.0	10.91	134.79	5,124.9	-562.5	566.7	798.4	0.00	0.00	
5,300.0	10.91	134.79	5,223.1	-575.8	580.1	817.3	0.00	0.00	
5,400.0	10.91	134.79	5,321.2	-589.1	593.5	836.3	0.00	0.00	
5,500.0	10.91	134.79	5,419.4	-602.4	607.0	855.2	0.00	0.00	
5,600.0	10.91	134.79	5,517.6	-615.8	620.4	874.1	0.00	0.00	
5,700.0	10.91	134.79	5,615.8	-629.1	633.8	893.0	0.00	0.00	
5,760.8	10.91	134.79	5,675.6	-637.2	642.0	904.5	0.00	0.00	Start 3° Drop
5,800.0	9.73	134.79	5,714.1	-642.2	647.0	911.6	3.00	-3.00	
5,900.0	6.73	134.79	5,813.1	-652.3	657.1	925.9	3.00	-3.00	
6,000.0	3.73	134.79	5,912.6	-658.7	663.6	935.0	3.00	-3.00	
6,100.0	0.73	134.79	6,012.5	-661.4	666.4	938.9	3.00	-3.00	
6,124.5	0.00	0.00	6,037.0	-661.5	666.5	939.1	3.00	-3.00	EOD @ Inc. = 0°
6,200.0	0.00	0.00	6,112.5	-661.5	666.5	939.1	0.00	0.00	
6,300.0	0.00	0.00	6,212.5	-661.5	666.5	939.1	0.00	0.00	
6,324.5	0.00	0.00	6,237.0	-661.5	666.5	939.1	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,312.5	-661.5	666.5	939.1	0.00	0.00	
6,500.0	0.00	0.00	6,412.5	-661.5	666.5	939.1	0.00	0.00	
6,552.5	0.00	0.00	6,465.0	-661.5	666.5	939.1	0.00	0.00	Ft. Hayes
6,575.5	0.00	0.00	6,488.0	-661.5	666.5	939.1	0.00	0.00	Codell
6,588.5	0.00	0.00	6,501.0	-661.5	666.5	939.1	0.00	0.00	Carlile
6,600.0	0.00	0.00	6,512.5	-661.5	666.5	939.1	0.00	0.00	
6,628.5	0.00	0.00	6,541.0	-661.5	666.5	939.1	0.00	0.00	Greenhorn
6,700.0	0.00	0.00	6,612.5	-661.5	666.5	939.1	0.00	0.00	
6,735.5	0.00	0.00	6,648.0	-661.5	666.5	939.1	0.00	0.00	TD @ 6,735.5' MD

### 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									
North Platte H-27 PBHL	0.00	0.00	6,648.0	-661.5	666.5	1,379,646.75	3,299,183.03	40.370552	-104.426238
- plan hits target center									
- Circle (radius 50.0)									
North Platte H-27 TGT	0.00	0.00	6,037.0	-661.5	666.5	1,379,646.75	3,299,183.03	40.370552	-104.426238
- plan hits target center									
- Point									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site:</b>	Perkins 12-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,369.0	3,327.0	Parkman				
4,066.7	4,012.0	Sussex				
6,324.5	6,237.0	Niobrara				
6,552.5	6,465.0	Ft. Hayes				
6,575.5	6,488.0	Codell				
6,588.5	6,501.0	Carlile				
6,628.5	6,541.0	Greenhorn				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.0	800.0	0.0	0.0	KOP @ 800'	
1,163.6	1,161.4	-24.3	24.5	EOB @ Inc. = 10.91°	
5,760.8	5,675.6	-637.2	642.0	Start 3° Drop	
6,124.5	6,037.0	-661.5	666.5	EOD @ Inc. = 0°	
6,735.5	6,648.0	-661.5	666.5	TD @ 6,735.5' MD	



# **Bonanza Creek Energy Operating Company, LLC**

**Weld County  
Perkins 12-27 Pad  
North Platte H-27  
OH  
Plan #2**

## **Anticollision Report**

**16 March, 2012**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Reference Site:</b>	Perkins 12-27 Pad	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	3/16/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,735.3	Plan #2 (OH)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
70 Ranch 11-27 Pad						
70 Ranch 11-27 (vert) - OH - Plan #1						Out of range
North Platte B-27 - OH - Plan #1						Out of range
North Platte G-27 - OH - Plan #1						Out of range
Perkins 12-27 Pad						
North Platte C-27 - OH - Plan #2	0.0	0.0	29.9			
North Platte C-27 - OH - Plan #2	800.0	800.0	29.9	29.9	10,000.000	CC, ES
Perkins 12-27 (vert) - OH - Plan #1	0.0	0.0	58.6			
Perkins 12-27 (vert) - OH - Plan #1	996.9	996.6	57.7	57.7	10,000.000	CC, ES

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Reference Site:</b>	Perkins 12-27 Pad	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Perkins 12-27 Pad - North Platte C-27 - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-42.08	22.2	-20.1	29.9					
100.0	100.0	100.0	100.0	0.2	0.2	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
700.0	700.0	700.0	700.0	1.2	1.2	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A		
800.0	800.0	800.0	800.0	1.4	1.4	-42.08	22.2	-20.1	29.9	29.9	0.00	N/A CC, ES		
900.0	900.0	900.0	900.0	1.6	1.6	178.27	20.3	-21.8	32.4	32.4	0.00	N/A		
1,000.0	999.6	999.2	998.9	1.7	1.7	167.57	14.6	-27.1	40.9	40.9	0.00	N/A		
1,100.0	1,098.8	1,096.9	1,095.7	2.0	2.0	157.41	5.3	-35.6	56.8	56.8	0.00	N/A		
1,200.0	1,197.1	1,193.2	1,190.5	2.3	2.2	150.38	-7.2	-47.0	79.8	79.8	0.00	N/A		
1,300.0	1,295.3	1,289.9	1,285.6	2.6	2.5	146.53	-20.2	-59.0	104.7	104.7	0.00	N/A		
1,400.0	1,393.5	1,386.6	1,380.6	2.9	2.8	144.16	-33.2	-71.0	129.9	129.9	0.00	N/A		
1,500.0	1,491.7	1,483.2	1,475.6	3.2	3.1	142.56	-46.2	-83.0	155.2	155.2	0.00	N/A		
1,600.0	1,589.9	1,579.9	1,570.7	3.6	3.4	141.41	-59.3	-94.9	180.6	180.6	0.00	N/A		
1,700.0	1,688.1	1,676.6	1,665.7	3.9	3.8	140.54	-72.3	-106.9	206.0	206.0	0.00	N/A		
1,800.0	1,786.3	1,773.2	1,760.8	4.2	4.1	139.86	-85.3	-118.9	231.5	231.5	0.00	N/A		
1,900.0	1,884.5	1,869.9	1,855.8	4.6	4.4	139.32	-98.3	-130.8	257.0	257.0	0.00	N/A		
2,000.0	1,982.7	1,966.6	1,950.8	5.0	4.8	138.88	-111.4	-142.8	282.5	282.5	0.00	N/A		
2,100.0	2,080.9	2,063.2	2,045.9	5.3	5.1	138.51	-124.4	-154.8	308.0	308.0	0.00	N/A		
2,200.0	2,179.1	2,159.9	2,140.9	5.7	5.5	138.19	-137.4	-166.7	333.6	333.6	0.00	N/A		
2,300.0	2,277.3	2,256.6	2,235.9	6.1	5.8	137.92	-150.5	-178.7	359.1	359.1	0.00	N/A		
2,400.0	2,375.5	2,353.2	2,331.0	6.4	6.1	137.69	-163.5	-190.7	384.7	384.7	0.00	N/A		
2,500.0	2,473.7	2,449.9	2,426.0	6.8	6.5	137.48	-176.5	-202.6	410.2	410.2	0.00	N/A		
2,600.0	2,571.8	2,546.6	2,521.0	7.2	6.8	137.30	-189.5	-214.6	435.8	435.8	0.00	N/A		
2,700.0	2,670.0	2,643.2	2,616.1	7.5	7.2	137.14	-202.6	-226.6	461.4	461.4	0.00	N/A		
2,800.0	2,768.2	2,739.9	2,711.1	7.9	7.5	137.00	-215.6	-238.6	487.0	487.0	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Reference Site:</b>	Perkins 12-27 Pad	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Perkins 12-27 Pad - Perkins 12-27 (vert) - OH - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-145.19	-48.1	-33.4	58.6					
100.0	100.0	100.0	100.0	0.2	0.2	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
700.0	700.0	700.0	700.0	1.2	1.2	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
800.0	800.0	800.0	800.0	1.4	1.4	-145.19	-48.1	-33.4	58.6	58.6	0.00	N/A		
900.0	900.0	900.0	900.0	1.6	1.6	82.58	-48.1	-33.4	58.2	58.2	0.00	N/A		
996.9	996.6	996.6	996.6	1.7	1.7	90.00	-48.1	-33.4	57.7	57.7	0.00	N/A CC, ES		
1,000.0	999.6	999.6	999.6	1.7	1.7	90.32	-48.1	-33.4	57.7	57.7	0.00	N/A		
1,100.0	1,098.8	1,098.8	1,098.8	2.0	1.9	102.90	-48.1	-33.4	59.2	59.2	0.00	N/A		
1,200.0	1,197.1	1,197.1	1,197.1	2.3	2.1	118.01	-48.1	-33.4	65.6	65.6	0.00	N/A		
1,300.0	1,295.3	1,295.3	1,295.3	2.6	2.2	130.50	-48.1	-33.4	76.5	76.5	0.00	N/A		
1,400.0	1,393.5	1,393.5	1,393.5	2.9	2.4	139.63	-48.1	-33.4	90.0	90.0	0.00	N/A		
1,500.0	1,491.7	1,491.7	1,491.7	3.2	2.6	146.28	-48.1	-33.4	105.2	105.2	0.00	N/A		
1,600.0	1,589.9	1,589.9	1,589.9	3.6	2.8	151.22	-48.1	-33.4	121.5	121.5	0.00	N/A		
1,700.0	1,688.1	1,688.1	1,688.1	3.9	2.9	154.98	-48.1	-33.4	138.5	138.5	0.00	N/A		
1,800.0	1,786.3	1,786.3	1,786.3	4.2	3.1	157.92	-48.1	-33.4	155.9	155.9	0.00	N/A		
1,900.0	1,884.5	1,884.5	1,884.5	4.6	3.3	160.26	-48.1	-33.4	173.6	173.6	0.00	N/A		
2,000.0	1,982.7	1,982.7	1,982.7	5.0	3.4	162.17	-48.1	-33.4	191.5	191.5	0.00	N/A		
2,100.0	2,080.9	2,080.9	2,080.9	5.3	3.6	163.75	-48.1	-33.4	209.7	209.7	0.00	N/A		
2,200.0	2,179.1	2,179.1	2,179.1	5.7	3.8	165.08	-48.1	-33.4	227.9	227.9	0.00	N/A		
2,300.0	2,277.3	2,277.3	2,277.3	6.1	4.0	166.22	-48.1	-33.4	246.3	246.3	0.00	N/A		
2,400.0	2,375.5	2,375.5	2,375.5	6.4	4.1	167.19	-48.1	-33.4	264.7	264.7	0.00	N/A		
2,500.0	2,473.7	2,473.7	2,473.7	6.8	4.3	168.04	-48.1	-33.4	283.2	283.2	0.00	N/A		
2,600.0	2,571.8	2,571.8	2,571.8	7.2	4.5	168.78	-48.1	-33.4	301.8	301.8	0.00	N/A		
2,700.0	2,670.0	2,670.0	2,670.0	7.5	4.6	169.44	-48.1	-33.4	320.4	320.4	0.00	N/A		
2,800.0	2,768.2	2,768.2	2,768.2	7.9	4.8	170.03	-48.1	-33.4	339.0	339.0	0.00	N/A		
2,900.0	2,866.4	2,866.4	2,866.4	8.3	5.0	170.55	-48.1	-33.4	357.7	357.7	0.00	N/A		
3,000.0	2,964.6	2,964.6	2,964.6	8.6	5.2	171.02	-48.1	-33.4	376.4	376.4	0.00	N/A		
3,100.0	3,062.8	3,062.8	3,062.8	9.0	5.3	171.45	-48.1	-33.4	395.1	395.1	0.00	N/A		
3,200.0	3,161.0	3,161.0	3,161.0	9.4	5.5	171.84	-48.1	-33.4	413.8	413.8	0.00	N/A		
3,300.0	3,259.2	3,259.2	3,259.2	9.8	5.7	172.20	-48.1	-33.4	432.5	432.5	0.00	N/A		
3,400.0	3,357.4	3,357.4	3,357.4	10.1	5.8	172.52	-48.1	-33.4	451.3	451.3	0.00	N/A		
3,500.0	3,455.6	3,455.6	3,455.6	10.5	6.0	172.82	-48.1	-33.4	470.1	470.1	0.00	N/A		
3,600.0	3,553.8	3,553.8	3,553.8	10.9	6.2	173.10	-48.1	-33.4	488.9	488.9	0.00	N/A		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well North Platte H-27
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4552.0ft
<b>Reference Site:</b>	Perkins 12-27 Pad	<b>MD Reference:</b>	KBE @ 4552.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	North Platte H-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 4552.0ft

Offset Depths are relative to Offset Datum

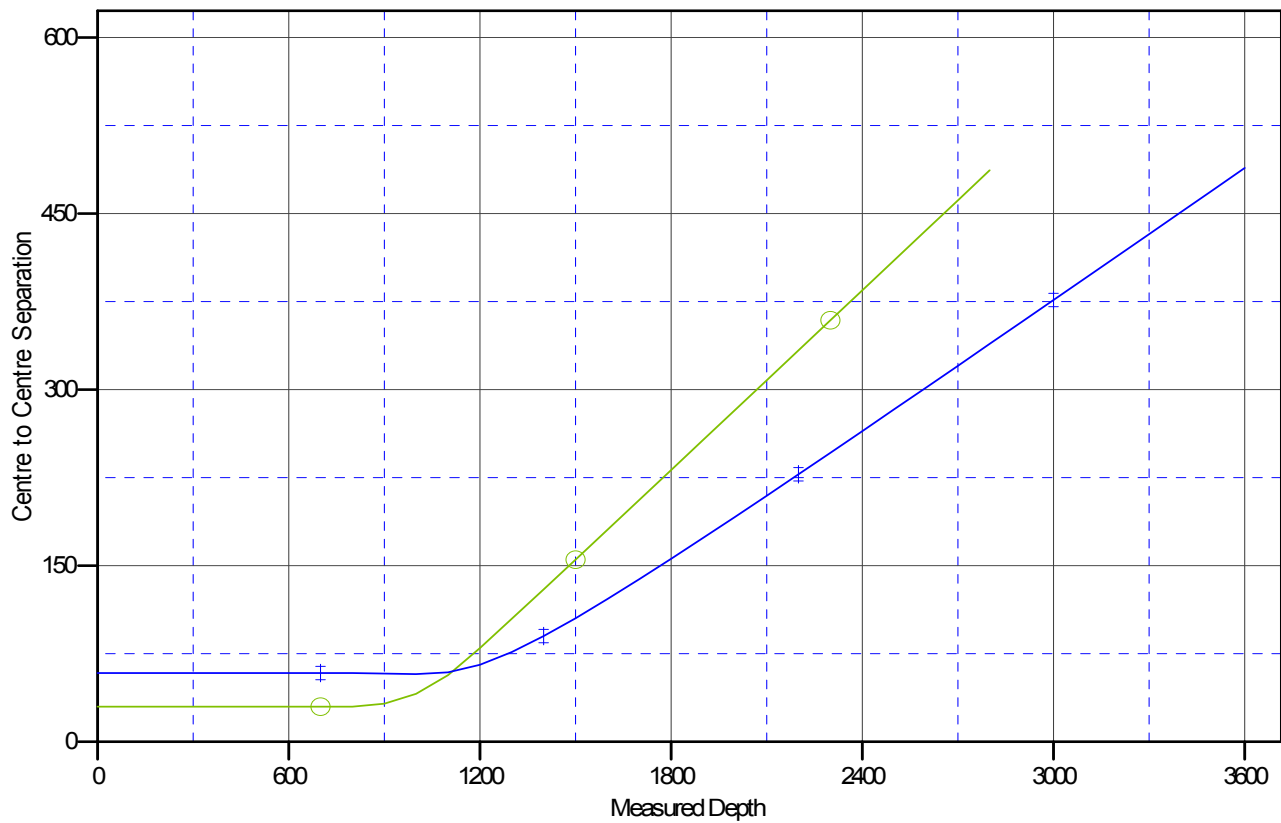
Central Meridian is -105.500000 °

Coordinates are relative to: North Platte H-27

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.69°

### Ladder Plot



### LEGEND

—○— North Platte C-27, OH, Plan #2 V0
 —+— Perkins 12-27 (vert), OH, Plan #1 V0