

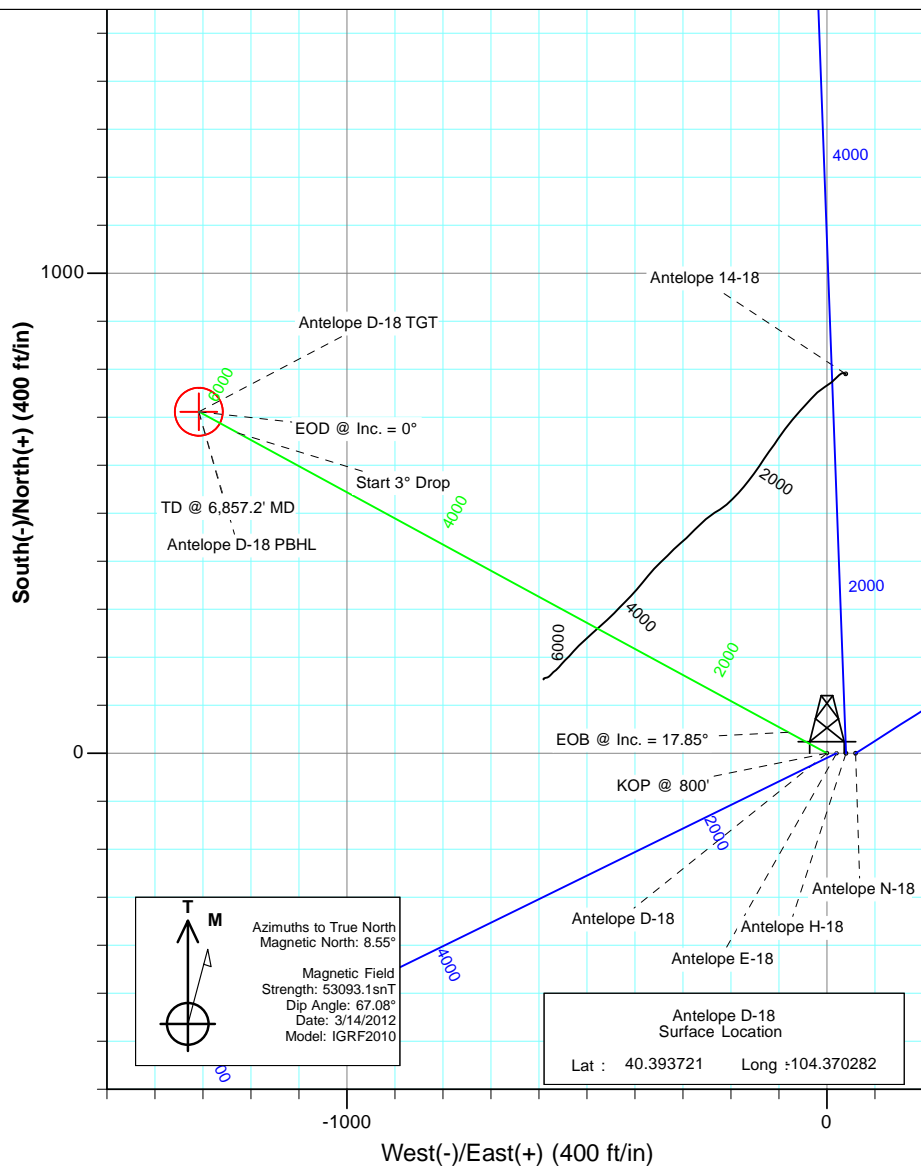
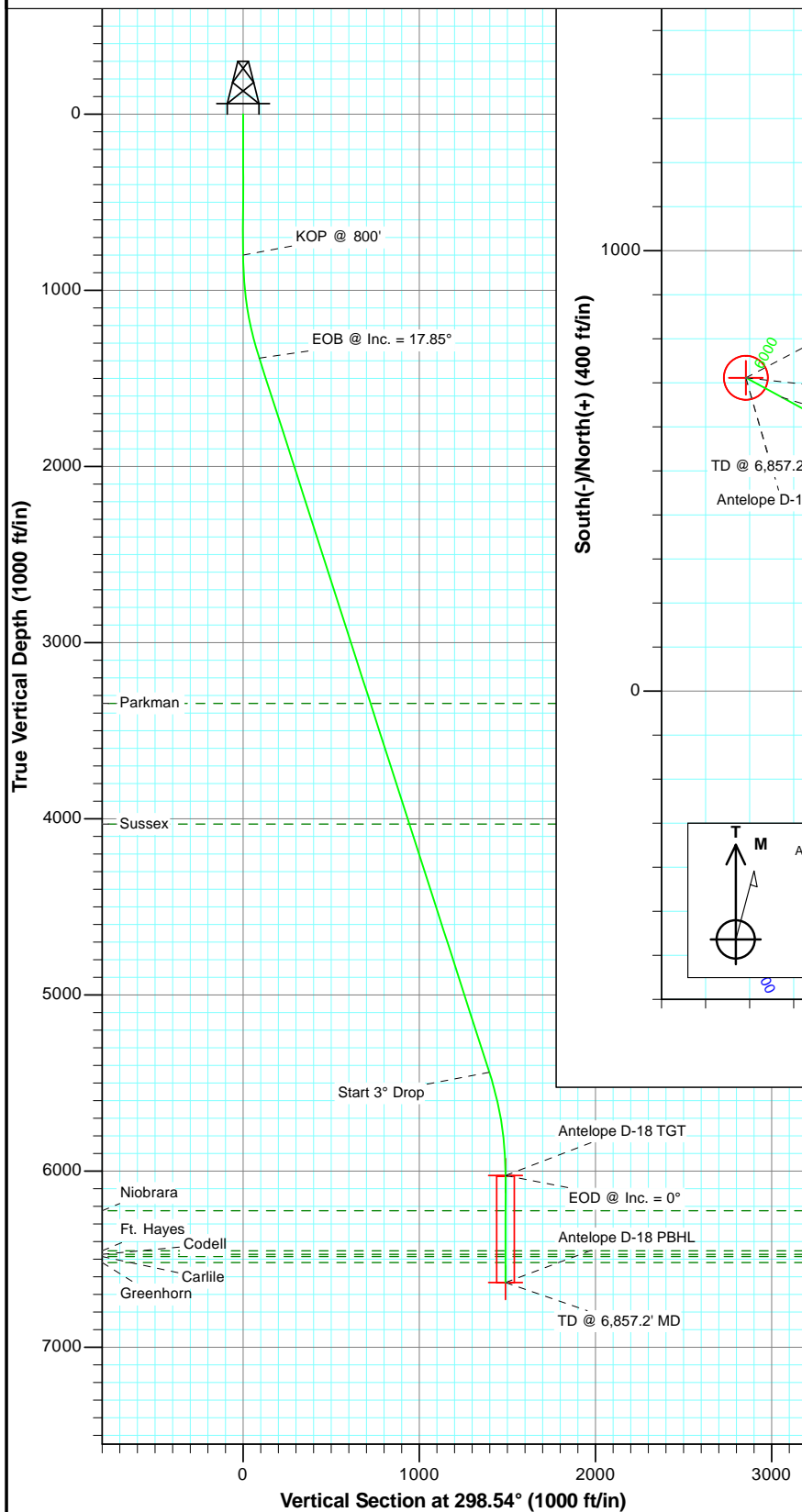


Project: Weld County
Site: Antelope D-18 Pad
Well: Antelope D-18
Wellbore: OH
Plan: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	1395.0	17.85	298.54	1385.4	43.9	-80.8	3.00	298.54	91.9	
4	5654.2	17.85	298.54	5439.6	667.6	-1227.8	0.00	0.00	1397.5	
5	6249.2	0.00	0.00	6025.0	711.5	-1308.5	3.00	180.00	1489.5	Antelope D-18 TGT
6	6857.2	0.00	0.00	6633.0	711.5	-1308.5	0.00	0.00	1489.5	Antelope D-18 PBHL



FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3345.0	3453.7	Parkman
4030.0	4173.3	Sussex
6225.0	6449.2	Niobrara
6453.0	6677.2	Ft. Hayes
6473.0	6697.2	Codell
6485.0	6709.2	Carlile
6519.0	6743.2	Greenhorn

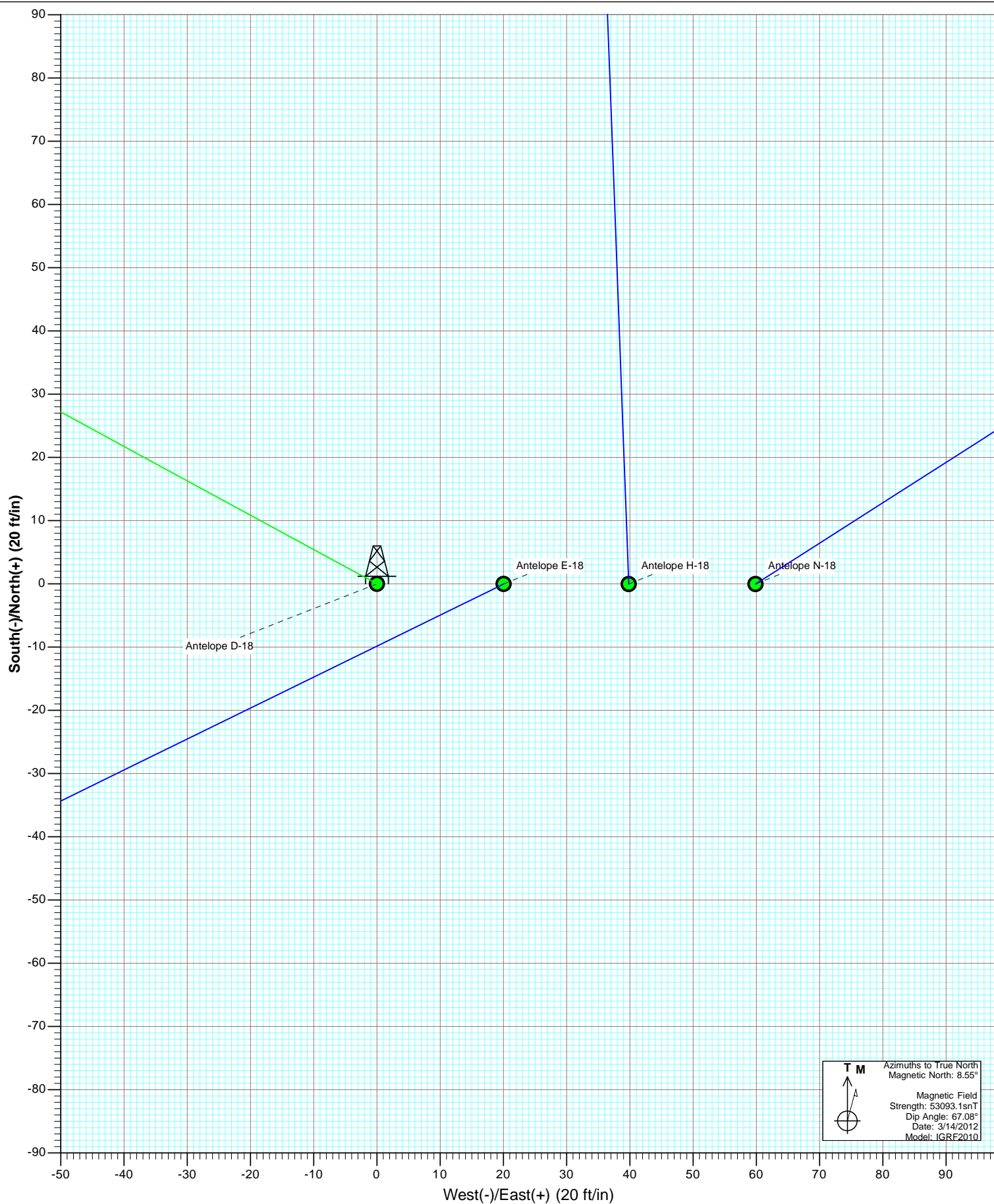
Plan #1
Antelope D-18
125XXX; SC

KBE @ 4605.0ft (Original Well Elev)
North American Datum 1983
Well Antelope D-18, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
TD	No Target (Freehand)	298.54	Slot		0.0	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude	
Antelope D-18 TGT		6025.0	711.5	-1308.5	40.395674	-104.374980	
Antelope D-18 PBHL		6633.0	711.5	-1308.5	40.395674	-104.374980	

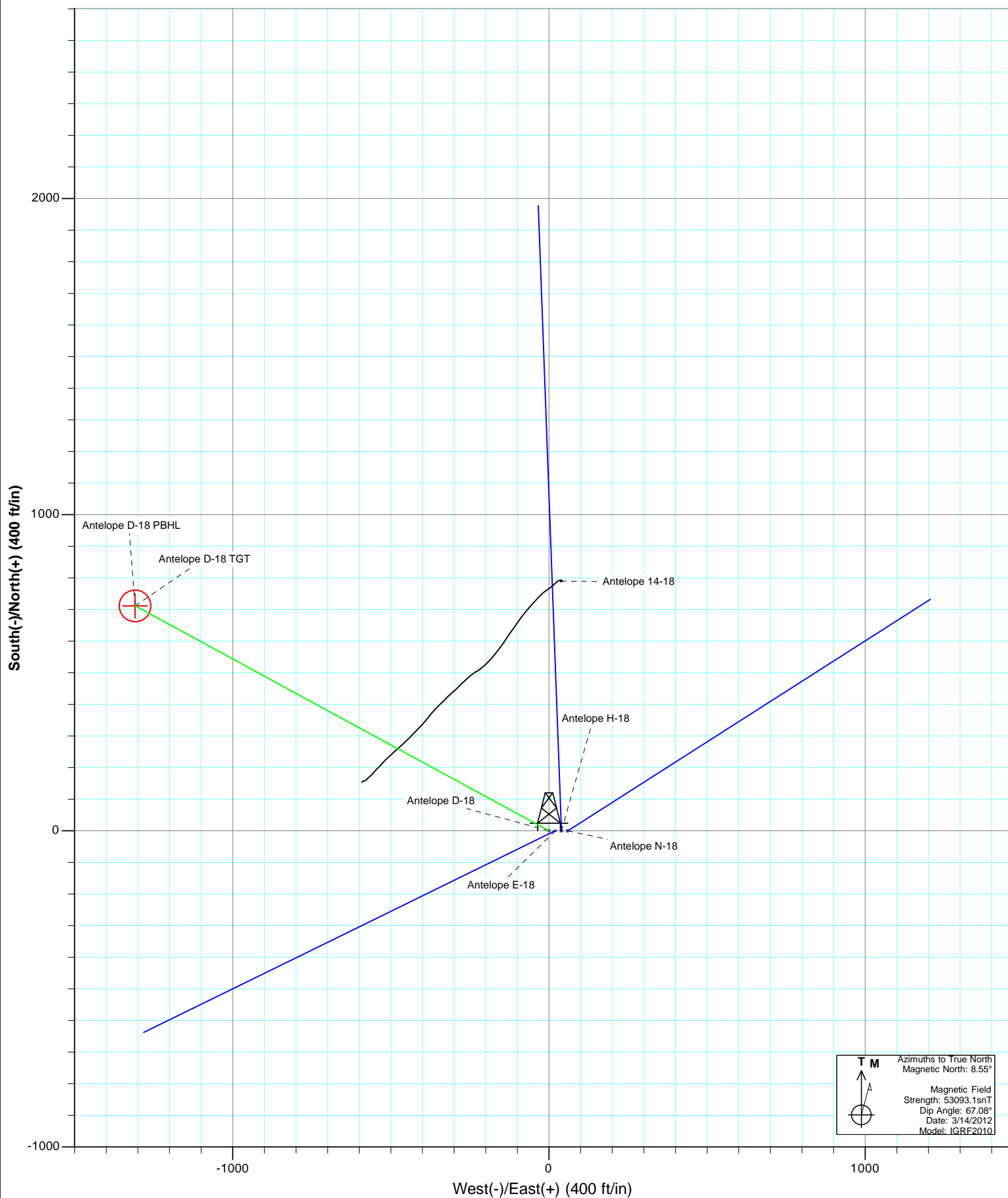


Project: Weld County
Site: Antelope D-18 Pad
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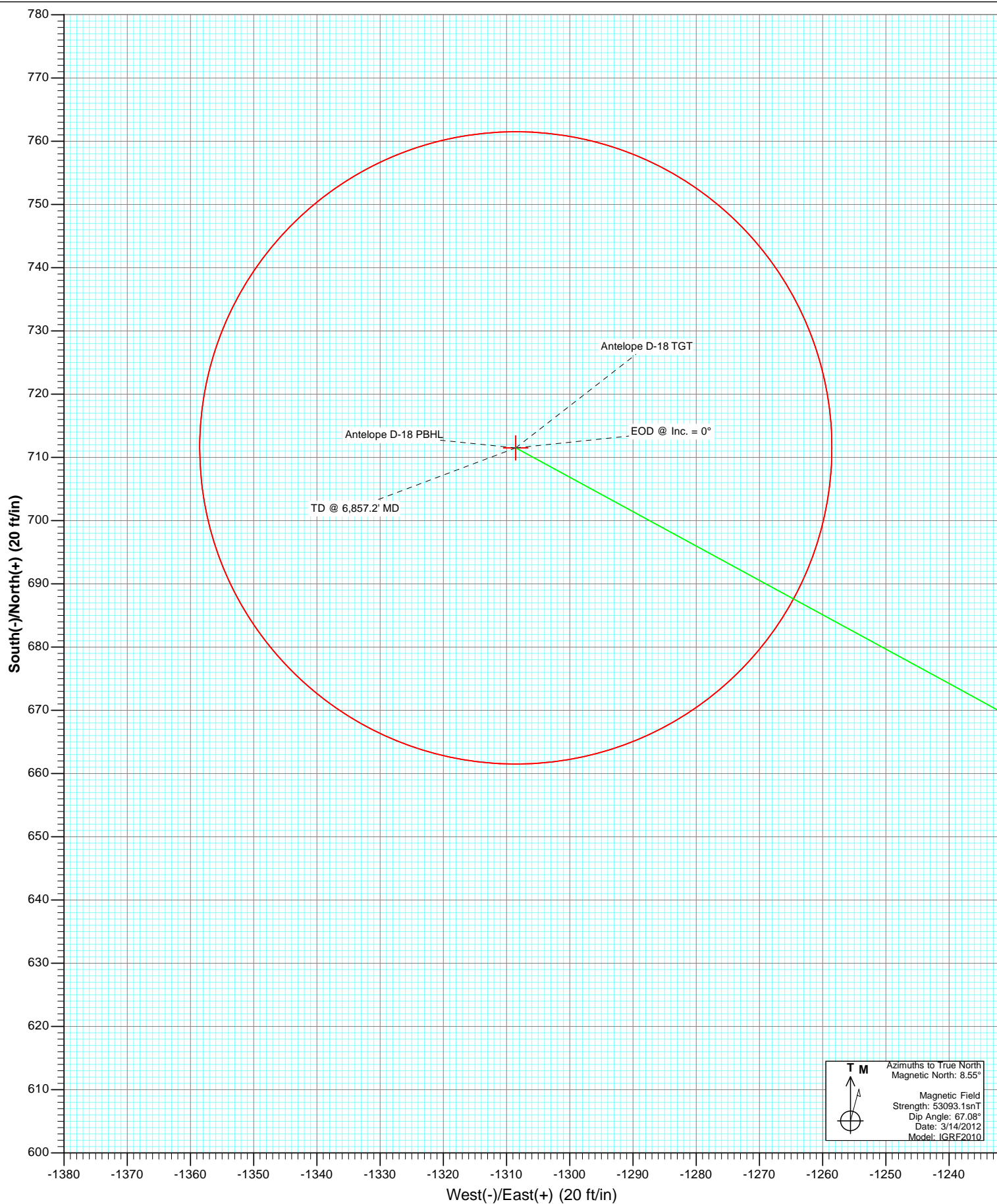


Project: Weld County
Site: Antelope D-18 Pad
Well: Antelope D-18
Wellbore: OH
Plan: Plan #1





Project: Weld County
Site: Antelope D-18 Pad
Well: Antelope D-18
Wellbore: OH
Plan: Plan #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope D-18
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site:	Antelope D-18 Pad	North Reference:	True
Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Weld County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Antelope D-18 Pad			
Site Position:		Northing:	1,388,280.15 ft	Latitude:	40.393721
From:	Lat/Long	Easting:	3,314,665.42 ft	Longitude:	-104.370282
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.73 °

Well	Antelope D-18					
Well Position	+N/-S	0.0 ft	Northing:	1,388,280.15 ft	Latitude:	40.393721
	+E/-W	0.0 ft	Easting:	3,314,665.42 ft	Longitude:	-104.370282
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,595.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	3/14/2012	8.55	67.08	53,093

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	298.54

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(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	
1,395.0	17.85	298.54	1,385.4	43.9	-80.8	3.00	3.00	0.00	298.54	
5,654.2	17.85	298.54	5,439.6	667.6	-1,227.8	0.00	0.00	0.00	0.00	
6,249.2	0.00	0.00	6,025.0	711.5	-1,308.5	3.00	-3.00	0.00	180.00	Antelope D-18 TGT
6,857.2	0.00	0.00	6,633.0	711.5	-1,308.5	0.00	0.00	0.00	0.00	Antelope D-18 PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope D-18
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site:	Antelope D-18 Pad	North Reference:	True
Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	298.54	900.0	1.3	-2.3	2.6	3.00	3.00	
1,000.0	6.00	298.54	999.6	5.0	-9.2	10.5	3.00	3.00	
1,100.0	9.00	298.54	1,098.8	11.2	-20.7	23.5	3.00	3.00	
1,200.0	12.00	298.54	1,197.1	19.9	-36.7	41.7	3.00	3.00	
1,300.0	15.00	298.54	1,294.3	31.1	-57.2	65.1	3.00	3.00	
1,395.0	17.85	298.54	1,385.4	43.9	-80.8	91.9	3.00	3.00	EOB @ Inc. = 17.85°
1,400.0	17.85	298.54	1,390.2	44.6	-82.1	93.5	0.00	0.00	
1,500.0	17.85	298.54	1,485.4	59.3	-109.0	124.1	0.00	0.00	
1,600.0	17.85	298.54	1,580.6	73.9	-136.0	154.8	0.00	0.00	
1,700.0	17.85	298.54	1,675.7	88.6	-162.9	185.4	0.00	0.00	
1,800.0	17.85	298.54	1,770.9	103.2	-189.8	216.1	0.00	0.00	
1,900.0	17.85	298.54	1,866.1	117.9	-216.8	246.7	0.00	0.00	
2,000.0	17.85	298.54	1,961.3	132.5	-243.7	277.4	0.00	0.00	
2,100.0	17.85	298.54	2,056.5	147.2	-270.6	308.0	0.00	0.00	
2,200.0	17.85	298.54	2,151.7	161.8	-297.6	338.7	0.00	0.00	
2,300.0	17.85	298.54	2,246.9	176.4	-324.5	369.3	0.00	0.00	
2,400.0	17.85	298.54	2,342.0	191.1	-351.4	400.0	0.00	0.00	
2,500.0	17.85	298.54	2,437.2	205.7	-378.3	430.7	0.00	0.00	
2,600.0	17.85	298.54	2,532.4	220.4	-405.3	461.3	0.00	0.00	
2,700.0	17.85	298.54	2,627.6	235.0	-432.2	492.0	0.00	0.00	
2,800.0	17.85	298.54	2,722.8	249.7	-459.1	522.6	0.00	0.00	
2,900.0	17.85	298.54	2,818.0	264.3	-486.1	553.3	0.00	0.00	
3,000.0	17.85	298.54	2,913.2	278.9	-513.0	583.9	0.00	0.00	
3,100.0	17.85	298.54	3,008.3	293.6	-539.9	614.6	0.00	0.00	
3,200.0	17.85	298.54	3,103.5	308.2	-566.9	645.2	0.00	0.00	
3,300.0	17.85	298.54	3,198.7	322.9	-593.8	675.9	0.00	0.00	
3,400.0	17.85	298.54	3,293.9	337.5	-620.7	706.5	0.00	0.00	
3,453.7	17.85	298.54	3,345.0	345.4	-635.2	723.0	0.00	0.00	Parkman
3,500.0	17.85	298.54	3,389.1	352.2	-647.6	737.2	0.00	0.00	
3,600.0	17.85	298.54	3,484.3	366.8	-674.6	767.8	0.00	0.00	
3,700.0	17.85	298.54	3,579.5	381.4	-701.5	798.5	0.00	0.00	
3,800.0	17.85	298.54	3,674.6	396.1	-728.4	829.2	0.00	0.00	
3,900.0	17.85	298.54	3,769.8	410.7	-755.4	859.8	0.00	0.00	
4,000.0	17.85	298.54	3,865.0	425.4	-782.3	890.5	0.00	0.00	
4,100.0	17.85	298.54	3,960.2	440.0	-809.2	921.1	0.00	0.00	
4,173.3	17.85	298.54	4,030.0	450.7	-829.0	943.6	0.00	0.00	Sussex
4,200.0	17.85	298.54	4,055.4	454.7	-836.1	951.8	0.00	0.00	
4,300.0	17.85	298.54	4,150.6	469.3	-863.1	982.4	0.00	0.00	
4,400.0	17.85	298.54	4,245.8	483.9	-890.0	1,013.1	0.00	0.00	
4,500.0	17.85	298.54	4,340.9	498.6	-916.9	1,043.7	0.00	0.00	
4,600.0	17.85	298.54	4,436.1	513.2	-943.9	1,074.4	0.00	0.00	
4,700.0	17.85	298.54	4,531.3	527.9	-970.8	1,105.0	0.00	0.00	
4,800.0	17.85	298.54	4,626.5	542.5	-997.7	1,135.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope D-18
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site:	Antelope D-18 Pad	North Reference:	True
Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	17.85	298.54	4,721.7	557.2	-1,024.7	1,166.3	0.00	0.00	
5,000.0	17.85	298.54	4,816.9	571.8	-1,051.6	1,197.0	0.00	0.00	
5,100.0	17.85	298.54	4,912.1	586.4	-1,078.5	1,227.6	0.00	0.00	
5,200.0	17.85	298.54	5,007.2	601.1	-1,105.4	1,258.3	0.00	0.00	
5,300.0	17.85	298.54	5,102.4	615.7	-1,132.4	1,289.0	0.00	0.00	
5,400.0	17.85	298.54	5,197.6	630.4	-1,159.3	1,319.6	0.00	0.00	
5,500.0	17.85	298.54	5,292.8	645.0	-1,186.2	1,350.3	0.00	0.00	
5,600.0	17.85	298.54	5,388.0	659.7	-1,213.2	1,380.9	0.00	0.00	
5,654.2	17.85	298.54	5,439.6	667.6	-1,227.8	1,397.5	0.00	0.00	Start 3° Drop
5,700.0	16.48	298.54	5,483.3	674.1	-1,239.6	1,411.0	3.00	-3.00	
5,800.0	13.48	298.54	5,579.9	686.4	-1,262.3	1,436.9	3.00	-3.00	
5,900.0	10.48	298.54	5,677.7	696.3	-1,280.6	1,457.6	3.00	-3.00	
6,000.0	7.48	298.54	5,776.5	703.8	-1,294.3	1,473.2	3.00	-3.00	
6,100.0	4.48	298.54	5,876.0	708.7	-1,303.4	1,483.6	3.00	-3.00	
6,200.0	1.48	298.54	5,975.8	711.2	-1,308.0	1,488.8	3.00	-3.00	
6,249.2	0.00	0.00	6,025.0	711.5	-1,308.5	1,489.5	3.00	-3.00	EOD @ Inc. = 0°
6,300.0	0.00	0.00	6,075.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,400.0	0.00	0.00	6,175.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,449.2	0.00	0.00	6,225.0	711.5	-1,308.5	1,489.5	0.00	0.00	Niobrara
6,500.0	0.00	0.00	6,275.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,600.0	0.00	0.00	6,375.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,677.2	0.00	0.00	6,453.0	711.5	-1,308.5	1,489.5	0.00	0.00	Ft. Hayes
6,697.2	0.00	0.00	6,473.0	711.5	-1,308.5	1,489.5	0.00	0.00	Codell
6,700.0	0.00	0.00	6,475.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,709.2	0.00	0.00	6,485.0	711.5	-1,308.5	1,489.5	0.00	0.00	Carlile
6,743.2	0.00	0.00	6,519.0	711.5	-1,308.5	1,489.5	0.00	0.00	Greenhorn
6,800.0	0.00	0.00	6,575.8	711.5	-1,308.5	1,489.5	0.00	0.00	
6,857.2	0.00	0.00	6,633.0	711.5	-1,308.5	1,489.5	0.00	0.00	TD @ 6,857.2' 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									
Antelope D-18 PBHL - plan hits target center - Circle (radius 50.0)	0.00	0.00	6,633.0	711.5	-1,308.5	1,388,974.93	3,313,347.94	40.395674	-104.374980
Antelope D-18 TGT - plan hits target center - Point	0.00	0.00	6,025.0	711.5	-1,308.5	1,388,974.93	3,313,347.94	40.395674	-104.374980

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Antelope D-18
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site:	Antelope D-18 Pad	North Reference:	True
Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,453.7	3,345.0	Parkman				
4,173.3	4,030.0	Sussex				
6,449.2	6,225.0	Niobrara				
6,677.2	6,453.0	Ft. Hayes				
6,697.2	6,473.0	Codell				
6,709.2	6,485.0	Carlile				
6,743.2	6,519.0	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'	
1,395.0	1,385.4	43.9	-80.8	EOB @ Inc. = 17.85°	
5,654.2	5,439.6	667.6	-1,227.8	Start 3° Drop	
6,249.2	6,025.0	711.5	-1,308.5	EOD @ Inc. = 0°	
6,857.2	6,633.0	711.5	-1,308.5	TD @ 6,857.2' MD	

Bonanza Creek Energy Operating Company, LLC

Weld County

Antelope D-18 Pad

Antelope D-18

OH

Plan #1

Anticollision Report

14 March, 2012

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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	3/14/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,857.2	Plan #1 (OH)	MWD	Geolink MWD	

Summary								
		Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)		Distance Between Ellipses (ft)	Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design							
Antelope 18 Pad								
	Antelope 14-18 - DD - DD							Out of range
	Antelope 14-18 - DD - DD	3,160.0	3,173.9	307.1	307.1	10,000.000	CC, ES	
Antelope D-18 Pad								
	Antelope E-18 - OH - Plan #1	0.0	0.0	20.1				
	Antelope E-18 - OH - Plan #1	849.3	849.8	20.0	20.0	10,000.000	CC, ES	
	Antelope H-18 - OH - Plan #1	0.0	0.0	39.8				
	Antelope H-18 - OH - Plan #1	800.0	800.0	39.8	39.8	10,000.000	CC, ES	
	Antelope N-18 - OH - Plan #1	0.0	0.0	59.9				
	Antelope N-18 - OH - Plan #1	800.0	800.0	59.9	59.9	10,000.000	CC, ES	

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope 18 Pad - Antelope 14-18 - DD - DD													Offset Site Error: 0.0 ft
Survey Program: 439-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						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)	Total Uncertainty Axis	Separation Factor	
2,000.0	1,961.3	2,086.7	2,060.0	6.3	6.1	77.53	591.0	-145.7	477.2	477.2	0.00	N/A	
2,100.0	2,056.5	2,174.5	2,146.0	6.9	6.5	80.13	577.2	-156.0	452.2	452.2	0.00	N/A	
2,200.0	2,151.7	2,263.8	2,233.8	7.4	6.8	83.04	564.3	-166.0	429.5	429.5	0.00	N/A	
2,300.0	2,246.9	2,356.8	2,325.3	8.0	7.1	86.29	551.7	-176.6	409.1	409.1	0.00	N/A	
2,400.0	2,342.0	2,453.2	2,420.1	8.6	7.5	89.91	538.6	-188.1	390.0	390.0	0.00	N/A	
2,500.0	2,437.2	2,546.7	2,512.0	9.1	7.8	93.62	526.4	-200.0	372.6	372.6	0.00	N/A	
2,600.0	2,532.4	2,639.3	2,603.2	9.7	8.1	97.44	515.3	-212.3	357.7	357.7	0.00	N/A	
2,700.0	2,627.6	2,737.8	2,700.0	10.3	8.5	101.42	505.0	-227.3	344.6	344.6	0.00	N/A	
2,800.0	2,722.8	2,837.4	2,797.6	10.8	8.9	105.61	494.2	-243.8	332.2	332.2	0.00	N/A	
2,900.0	2,818.0	2,933.9	2,892.2	11.4	9.3	110.30	481.9	-258.7	321.2	321.2	0.00	N/A	
3,000.0	2,913.2	3,028.1	2,984.5	12.0	9.6	115.38	468.9	-272.3	312.7	312.7	0.00	N/A	
3,100.0	3,008.3	3,119.3	3,074.0	12.6	10.0	120.57	456.4	-284.6	307.9	307.9	0.00	N/A	
3,160.0	3,065.5	3,173.9	3,127.7	12.9	10.1	123.67	449.5	-291.6	307.1	307.1	0.00	N/A	CC, ES
3,200.0	3,103.5	3,213.2	3,166.4	13.1	10.3	125.86	444.8	-296.7	307.3	307.3	0.00	N/A	
3,300.0	3,198.7	3,312.7	3,264.2	13.7	10.7	131.30	432.9	-310.7	308.8	308.8	0.00	N/A	
3,400.0	3,293.9	3,408.5	3,358.1	14.3	11.0	136.76	419.6	-324.1	312.5	312.5	0.00	N/A	
3,500.0	3,389.1	3,505.3	3,452.9	14.9	11.4	142.12	406.0	-337.8	319.1	319.1	0.00	N/A	
3,600.0	3,484.3	3,600.7	3,546.3	15.4	11.8	147.15	392.7	-352.0	327.7	327.7	0.00	N/A	
3,700.0	3,579.5	3,691.1	3,634.8	16.0	12.2	151.84	379.1	-364.7	339.9	339.9	0.00	N/A	
3,800.0	3,674.6	3,782.1	3,724.0	16.6	12.5	156.23	365.3	-376.2	355.8	355.8	0.00	N/A	
3,900.0	3,769.8	3,877.4	3,817.4	17.2	12.9	160.50	350.5	-387.9	374.3	374.3	0.00	N/A	
4,000.0	3,865.0	3,974.7	3,912.8	17.8	13.2	164.36	336.1	-400.4	393.9	393.9	0.00	N/A	
4,100.0	3,960.2	4,069.4	4,005.7	18.3	13.6	167.69	322.7	-412.7	415.0	415.0	0.00	N/A	
4,200.0	4,055.4	4,164.3	4,099.1	18.9	13.9	170.50	310.8	-424.6	437.2	437.2	0.00	N/A	
4,300.0	4,150.6	4,258.7	4,192.1	19.5	14.3	173.02	299.1	-436.2	460.6	460.6	0.00	N/A	
4,400.0	4,245.8	4,353.9	4,285.9	20.1	14.6	175.31	287.3	-447.8	484.9	484.9	0.00	N/A	

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope D-18 Pad - Antelope E-18 - 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							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	20.1	20.1					
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
700.0	700.0	700.0	700.0	1.2	1.2	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
800.0	800.0	800.0	800.0	1.4	1.4	90.05	0.0	20.1	20.1	20.1	0.00	N/A		
849.3	849.3	849.8	849.8	1.5	1.5	153.20	-0.3	19.5	20.0	20.0	0.00	N/A	CC, ES	
900.0	900.0	900.9	900.8	1.6	1.6	158.45	-1.2	17.7	20.1	20.1	0.00	N/A		
1,000.0	999.6	1,001.4	1,001.1	1.7	1.8	177.63	-4.7	10.5	22.0	22.0	0.00	N/A		
1,100.0	1,098.8	1,101.3	1,100.0	2.0	2.0	-160.29	-10.5	-1.2	29.1	29.1	0.00	N/A		
1,200.0	1,197.1	1,200.1	1,197.2	2.3	2.3	-144.59	-18.4	-17.4	42.9	42.9	0.00	N/A		
1,300.0	1,294.3	1,297.6	1,292.0	2.6	2.6	-135.17	-28.4	-37.8	62.6	62.6	0.00	N/A		
1,400.0	1,390.2	1,393.6	1,384.2	3.1	3.1	-129.47	-40.3	-62.1	87.4	87.4	0.00	N/A		
1,500.0	1,485.4	1,489.8	1,476.0	3.6	3.5	-126.75	-52.8	-87.7	114.5	114.5	0.00	N/A		
1,600.0	1,580.6	1,586.0	1,567.8	4.1	4.0	-125.07	-65.4	-113.4	141.7	141.7	0.00	N/A		
1,700.0	1,675.7	1,682.1	1,659.6	4.6	4.5	-123.94	-78.0	-139.0	169.0	169.0	0.00	N/A		
1,800.0	1,770.9	1,778.3	1,751.4	5.2	5.0	-123.11	-90.5	-164.7	196.4	196.4	0.00	N/A		
1,900.0	1,866.1	1,874.4	1,843.3	5.7	5.5	-122.49	-103.1	-190.3	223.7	223.7	0.00	N/A		
2,000.0	1,961.3	1,970.6	1,935.1	6.3	6.0	-122.01	-115.7	-216.0	251.1	251.1	0.00	N/A		
2,100.0	2,056.5	2,066.8	2,026.9	6.9	6.6	-121.62	-128.2	-241.6	278.5	278.5	0.00	N/A		
2,200.0	2,151.7	2,162.9	2,118.7	7.4	7.1	-121.30	-140.8	-267.3	305.9	305.9	0.00	N/A		
2,300.0	2,246.9	2,259.1	2,210.5	8.0	7.6	-121.03	-153.4	-292.9	333.3	333.3	0.00	N/A		
2,400.0	2,342.0	2,355.2	2,302.3	8.6	8.1	-120.80	-165.9	-318.6	360.7	360.7	0.00	N/A		
2,500.0	2,437.2	2,451.4	2,394.2	9.1	8.7	-120.61	-178.5	-344.2	388.1	388.1	0.00	N/A		
2,600.0	2,532.4	2,547.6	2,486.0	9.7	9.2	-120.44	-191.1	-369.9	415.6	415.6	0.00	N/A		
2,700.0	2,627.6	2,643.7	2,577.8	10.3	9.7	-120.29	-203.6	-395.5	443.0	443.0	0.00	N/A		
2,800.0	2,722.8	2,739.9	2,669.6	10.8	10.3	-120.16	-216.2	-421.1	470.4	470.4	0.00	N/A		
2,900.0	2,818.0	2,836.0	2,761.4	11.4	10.8	-120.05	-228.8	-446.8	497.9	497.9	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope D-18 Pad - Antelope H-18 - 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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	39.8	39.8					
100.0	100.0	100.0	100.0	0.2	0.2	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
700.0	700.0	700.0	700.0	1.2	1.2	90.04	0.0	39.8	39.8	39.8	0.00	N/A		
800.0	800.0	800.0	800.0	1.4	1.4	90.04	0.0	39.8	39.8	39.8	0.00	N/A CC, ES		
900.0	900.0	900.0	900.0	1.6	1.6	149.60	2.6	39.7	42.1	42.1	0.00	N/A		
1,000.0	999.6	999.6	999.3	1.7	1.7	144.96	10.4	39.4	48.9	48.9	0.00	N/A		
1,100.0	1,098.8	1,098.4	1,097.2	2.0	2.0	139.59	23.2	39.0	60.8	60.8	0.00	N/A		
1,200.0	1,197.1	1,196.1	1,193.3	2.3	2.3	134.81	40.9	38.3	77.9	77.9	0.00	N/A		
1,300.0	1,294.3	1,292.3	1,286.8	2.6	2.6	130.98	63.0	37.5	100.2	100.2	0.00	N/A		
1,400.0	1,390.2	1,386.6	1,377.4	3.1	3.0	128.03	89.3	36.5	127.4	127.4	0.00	N/A		
1,500.0	1,485.4	1,479.3	1,465.0	3.6	3.5	125.60	119.4	35.4	157.8	157.8	0.00	N/A		
1,600.0	1,580.6	1,570.2	1,549.5	4.1	4.1	122.68	153.1	34.1	190.2	190.2	0.00	N/A		
1,700.0	1,675.7	1,662.0	1,633.3	4.6	4.7	119.71	190.3	32.8	224.6	224.6	0.00	N/A		
1,800.0	1,770.9	1,755.2	1,718.4	5.2	5.3	117.41	228.5	31.3	259.6	259.6	0.00	N/A		
1,900.0	1,866.1	1,848.4	1,803.4	5.7	6.0	115.66	266.7	29.9	294.8	294.8	0.00	N/A		
2,000.0	1,961.3	1,941.7	1,888.5	6.3	6.6	114.28	304.9	28.5	330.3	330.3	0.00	N/A		
2,100.0	2,056.5	2,034.9	1,973.5	6.9	7.3	113.16	343.0	27.1	365.9	365.9	0.00	N/A		
2,200.0	2,151.7	2,128.1	2,058.6	7.4	7.9	112.24	381.2	25.7	401.6	401.6	0.00	N/A		
2,300.0	2,246.9	2,221.4	2,143.6	8.0	8.6	111.48	419.4	24.2	437.4	437.4	0.00	N/A		
2,400.0	2,342.0	2,314.6	2,228.7	8.6	9.3	110.82	457.5	22.8	473.2	473.2	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope D-18 Pad - Antelope N-18 - 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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.03	0.0	59.9	59.9					
100.0	100.0	100.0	100.0	0.2	0.2	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
600.0	600.0	600.0	600.0	1.0	1.0	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
700.0	700.0	700.0	700.0	1.2	1.2	90.03	0.0	59.9	59.9	59.9	0.00	N/A		
800.0	800.0	800.0	800.0	1.4	1.4	90.03	0.0	59.9	59.9	59.9	0.00	N/A CC, ES		
900.0	900.0	897.2	897.2	1.6	1.6	151.33	1.3	62.0	64.3	64.3	0.00	N/A		
1,000.0	999.6	993.3	993.0	1.7	1.7	150.91	5.2	68.1	77.6	77.6	0.00	N/A		
1,100.0	1,098.8	1,087.2	1,086.1	2.0	2.0	150.39	11.6	78.1	99.5	99.5	0.00	N/A		
1,200.0	1,197.1	1,177.9	1,175.5	2.3	2.2	149.86	20.0	91.3	129.8	129.8	0.00	N/A		
1,300.0	1,294.3	1,264.6	1,260.0	2.6	2.5	149.30	30.2	107.3	168.0	168.0	0.00	N/A		
1,400.0	1,390.2	1,347.2	1,339.8	3.1	2.8	148.75	41.9	125.5	213.7	213.7	0.00	N/A		
1,500.0	1,485.4	1,434.5	1,423.6	3.6	3.2	148.97	55.0	146.0	262.5	262.5	0.00	N/A		
1,600.0	1,580.6	1,521.8	1,507.4	4.1	3.6	149.13	68.1	166.5	311.3	311.3	0.00	N/A		
1,700.0	1,675.7	1,609.0	1,591.2	4.6	4.0	149.24	81.2	187.1	360.1	360.1	0.00	N/A		
1,800.0	1,770.9	1,696.3	1,675.0	5.2	4.5	149.33	94.3	207.6	408.9	408.9	0.00	N/A		
1,900.0	1,866.1	1,783.6	1,758.8	5.7	4.9	149.40	107.5	228.1	457.8	457.8	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope D-18
Project:	Weld County	TVD Reference:	KBE @ 4605.0ft (Original Well Elev)
Reference Site:	Antelope D-18 Pad	MD Reference:	KBE @ 4605.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope D-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4605.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Antelope D-18
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.73°

