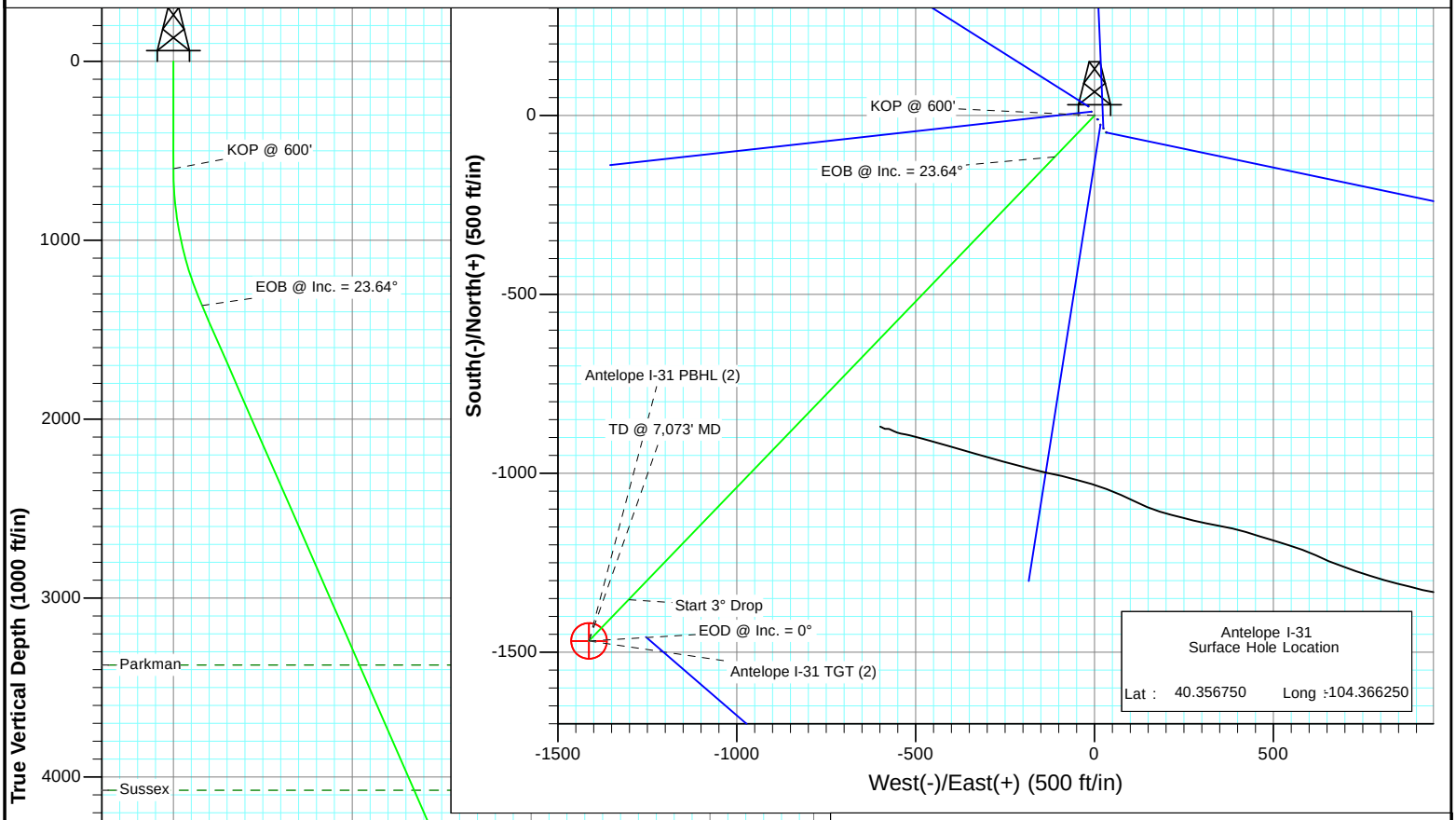
Project: Weld County
Site: Antelope M-31 Pad
Well: Antelope I-31
Wellbore: OH
Plan: Plan #2

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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1388.1	23.64	223.91	1365.9	-115.5	-111.2	3.00	223.91	160.3	
4	5669.6	23.64	223.91	5288.1	-1352.6	-1301.9	0.00	0.00	1877.3	
5	6457.7	0.00	0.00	6054.0	-1468.1	-1413.0	3.00	180.00	2037.6	Antelope I-31 TGT (2)
6	7073.7	0.00	0.00	6670.0	-1468.1	-1413.0	0.00	0.00	2037.6	Antelope I-31 PBHL (2)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3374.0	3580.2	Parkman
4074.0	4344.3	Sussex
6254.0	6657.7	Niobrara
6486.0	6889.7	Ft. Hayes
6510.0	6913.7	Codell
6564.0	6967.7	Carlile
6606.0	7009.7	Greenhorn

Azimuths to True North
Magnetic North: 8.57°

Magnetic Field
Strength: 53090.7snT
Dip Angle: 67.06°
Date: 1/17/2012
Model: IGRF2010

Plan #2
Antelope I-31
126XXX; SC

KB @ 4599.0ft (Original Well Elev)
North American Datum 1983
Well Antelope I-31, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
TD	No Target (Freehand)	223.91	Slot	0.0	0.0	0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope I-31 TGT (2)	6054.0	-1468.1	-1413.0	40.352720	-104.371320
Antelope I-31 PBHL (2)	6670.0	-1468.1	-1413.0	40.352720	-104.371320

Project: Weld County
Site: Antelope M-31 Pad
Well: Antelope I-31
Wellbore: OH
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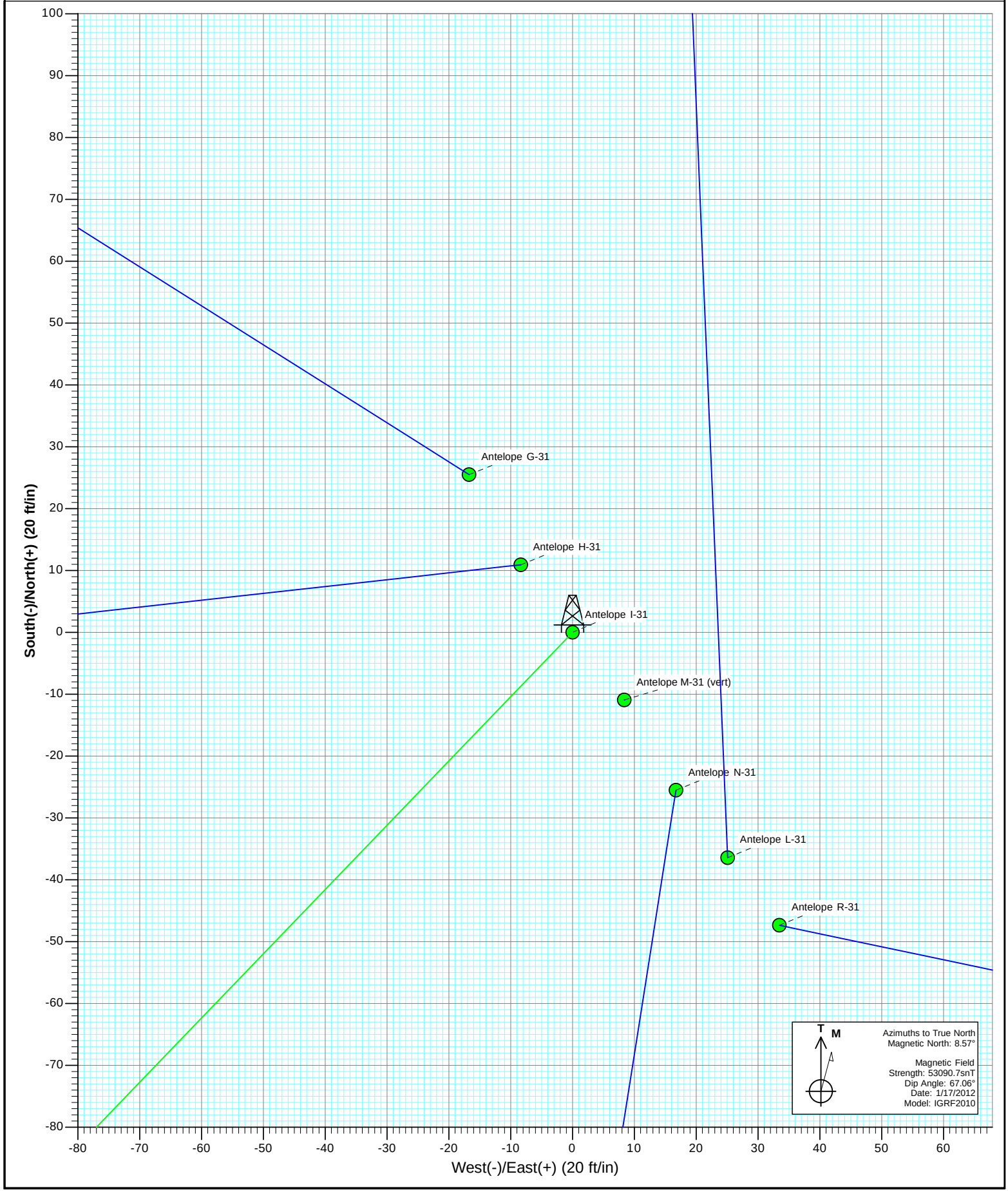
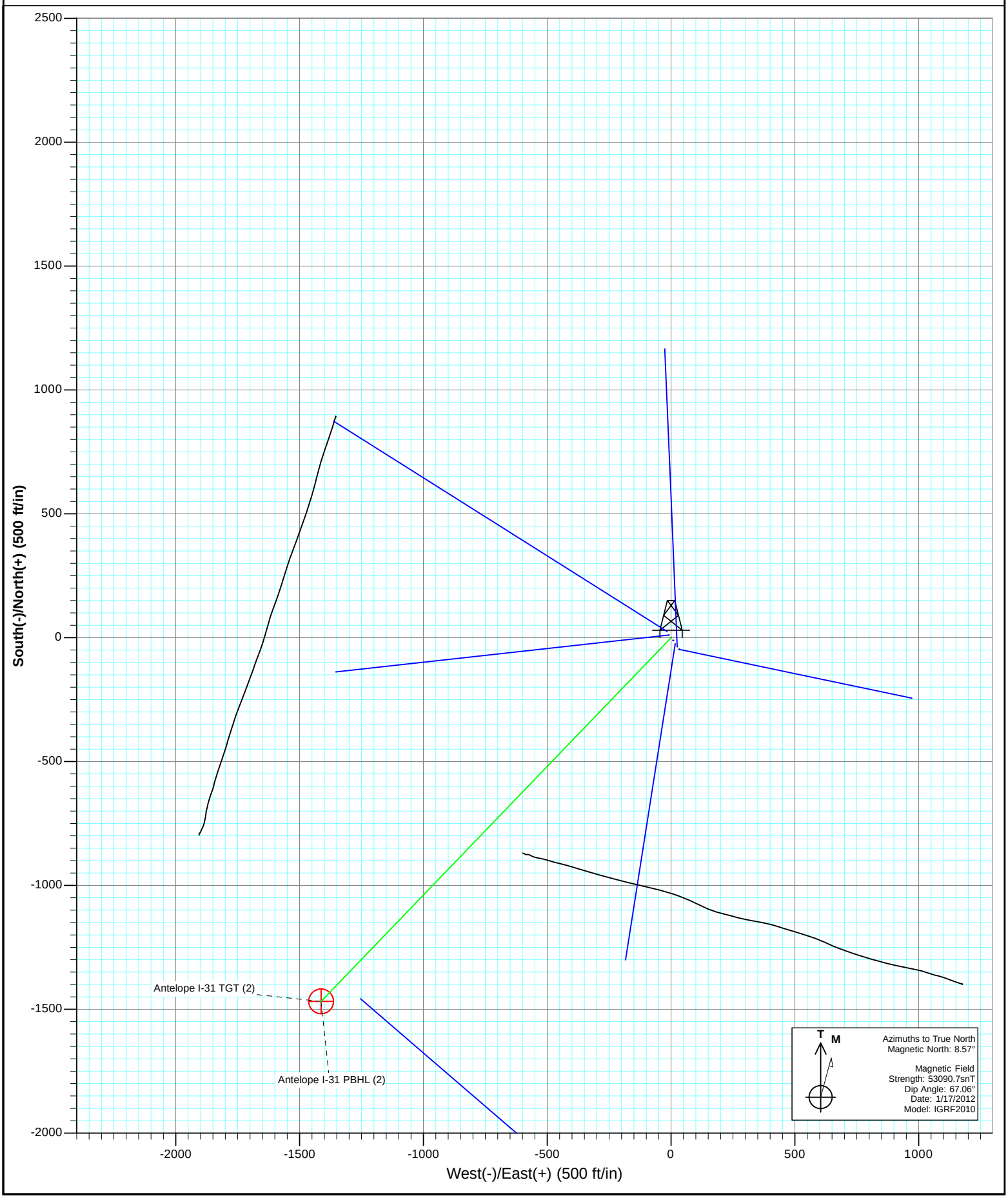
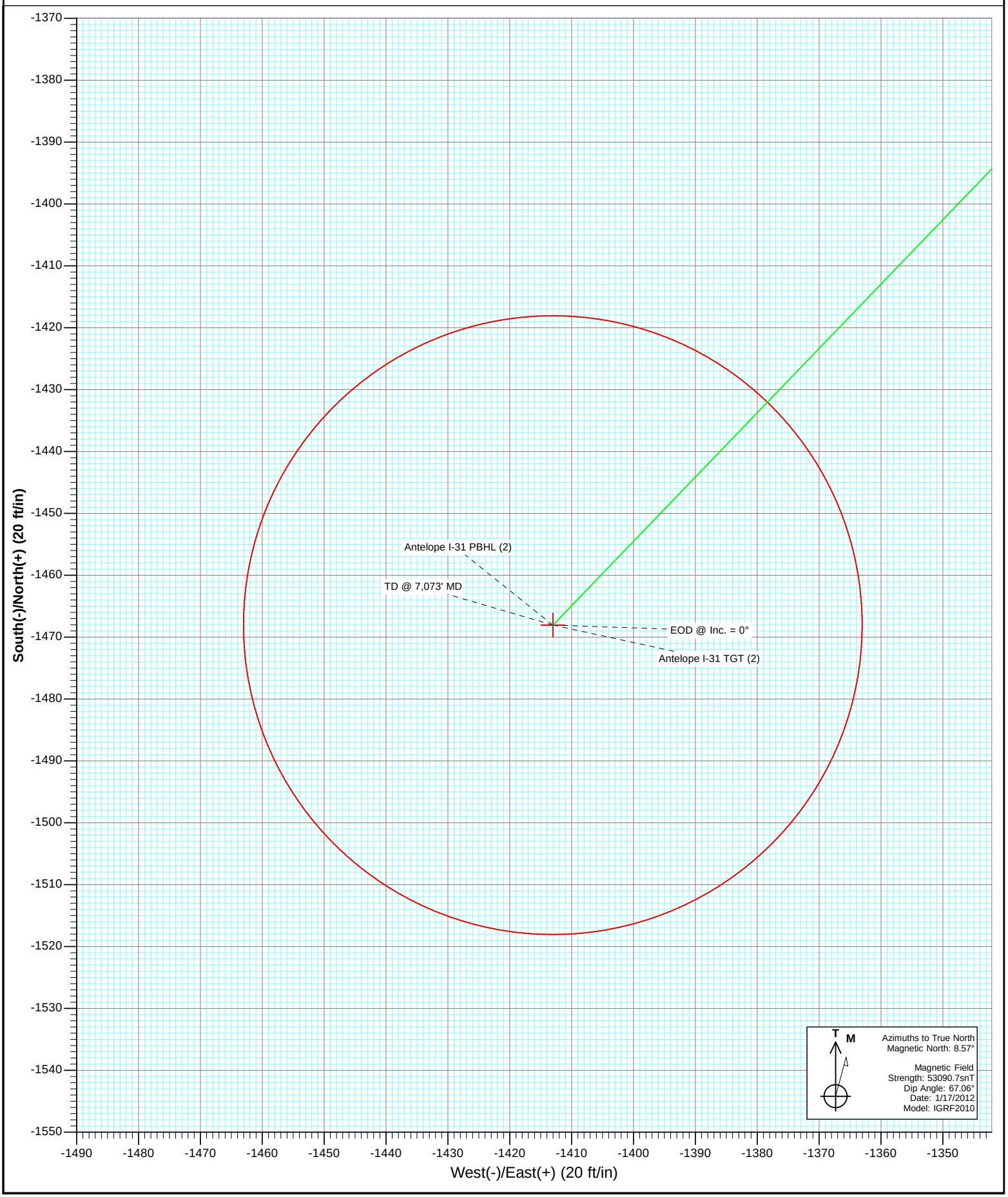


Project: Weld County
Site: Antelope M-31 Pad
Well: Antelope I-31
Wellbore: OH
Plan: Plan #2



Project: Weld County
Site: Antelope M-31 Pad
Well: Antelope I-31
Wellbore: OH
Plan: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Antelope I-31
Company:	Bonanza Creek Energy Operating Company, LLC	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Project:	Weld County	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site:	Antelope M-31 Pad	**North Reference:**	True
Well:	Antelope I-31	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 M-31 Pad

Site Position:		**Northing:**	1,374,816.39 ft	**Latitude:**	40.356720
From:	Lat/Long	**Easting:**	3,315,969.08 ft	**Longitude:**	-104.366220
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.73 °

Well Antelope I-31

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,374,827.20 ft	**Latitude:**	40.356750
	+E/-W	0.0 ft	**Easting:**	3,315,960.59 ft	**Longitude:**	-104.366250
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,589.0 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/17/2012	8.57	67.06	53,091

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	223.91

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,388.1	23.64	223.91	1,365.9	-115.5	-111.2	3.00	3.00	0.00	223.91	
5,669.6	23.64	223.91	5,288.1	-1,352.6	-1,301.9	0.00	0.00	0.00	0.00	
6,457.7	0.00	0.00	6,054.0	-1,468.1	-1,413.0	3.00	-3.00	0.00	180.00	Antelope I-31 TGT (2)
7,073.7	0.00	0.00	6,670.0	-1,468.1	-1,413.0	0.00	0.00	0.00	0.00	Antelope I-31 PBHL (2

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Antelope I-31
Company:	Bonanza Creek Energy Operating Company, LLC	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Project:	Weld County	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site:	Antelope M-31 Pad	**North Reference:**	True
Well:	Antelope I-31	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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	
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	KOP @ 600'
700.0	3.00	223.91	700.0	-1.9	-1.8	2.6	3.00	3.00	
800.0	6.00	223.91	799.6	-7.5	-7.3	10.5	3.00	3.00	
900.0	9.00	223.91	898.8	-16.9	-16.3	23.5	3.00	3.00	
1,000.0	12.00	223.91	997.1	-30.1	-28.9	41.7	3.00	3.00	
1,100.0	15.00	223.91	1,094.3	-46.9	-45.1	65.1	3.00	3.00	
1,200.0	18.00	223.91	1,190.2	-67.3	-64.8	93.5	3.00	3.00	
1,300.0	21.00	223.91	1,284.4	-91.4	-88.0	126.9	3.00	3.00	
1,388.1	23.64	223.91	1,365.9	-115.5	-111.2	160.3	3.00	3.00	EOB @ Inc. = 23.64°
1,400.0	23.64	223.91	1,376.8	-118.9	-114.5	165.1	0.00	0.00	
1,500.0	23.64	223.91	1,468.4	-147.8	-142.3	205.2	0.00	0.00	
1,600.0	23.64	223.91	1,560.0	-176.7	-170.1	245.3	0.00	0.00	
1,700.0	23.64	223.91	1,651.6	-205.6	-197.9	285.4	0.00	0.00	
1,800.0	23.64	223.91	1,743.3	-234.5	-225.7	325.5	0.00	0.00	
1,900.0	23.64	223.91	1,834.9	-263.4	-253.5	365.6	0.00	0.00	
2,000.0	23.64	223.91	1,926.5	-292.3	-281.3	405.7	0.00	0.00	
2,100.0	23.64	223.91	2,018.1	-321.2	-309.2	445.8	0.00	0.00	
2,200.0	23.64	223.91	2,109.7	-350.1	-337.0	485.9	0.00	0.00	
2,300.0	23.64	223.91	2,201.3	-379.0	-364.8	526.0	0.00	0.00	
2,400.0	23.64	223.91	2,292.9	-407.9	-392.6	566.1	0.00	0.00	
2,500.0	23.64	223.91	2,384.5	-436.8	-420.4	606.2	0.00	0.00	
2,600.0	23.64	223.91	2,476.1	-465.7	-448.2	646.3	0.00	0.00	
2,700.0	23.64	223.91	2,567.7	-494.5	-476.0	686.4	0.00	0.00	
2,800.0	23.64	223.91	2,659.3	-523.4	-503.8	726.5	0.00	0.00	
2,900.0	23.64	223.91	2,750.9	-552.3	-531.6	766.6	0.00	0.00	
3,000.0	23.64	223.91	2,842.5	-581.2	-559.4	806.7	0.00	0.00	
3,100.0	23.64	223.91	2,934.1	-610.1	-587.3	846.8	0.00	0.00	
3,200.0	23.64	223.91	3,025.7	-639.0	-615.1	886.9	0.00	0.00	
3,300.0	23.64	223.91	3,117.4	-667.9	-642.9	927.0	0.00	0.00	
3,400.0	23.64	223.91	3,209.0	-696.8	-670.7	967.1	0.00	0.00	
3,500.0	23.64	223.91	3,300.6	-725.7	-698.5	1,007.2	0.00	0.00	
3,580.2	23.64	223.91	3,374.0	-748.9	-720.8	1,039.4	0.00	0.00	Parkman
3,600.0	23.64	223.91	3,392.2	-754.6	-726.3	1,047.3	0.00	0.00	
3,700.0	23.64	223.91	3,483.8	-783.5	-754.1	1,087.4	0.00	0.00	
3,800.0	23.64	223.91	3,575.4	-812.4	-781.9	1,127.5	0.00	0.00	
3,900.0	23.64	223.91	3,667.0	-841.3	-809.7	1,167.6	0.00	0.00	
4,000.0	23.64	223.91	3,758.6	-870.2	-837.5	1,207.7	0.00	0.00	
4,100.0	23.64	223.91	3,850.2	-899.0	-865.4	1,247.8	0.00	0.00	
4,200.0	23.64	223.91	3,941.8	-927.9	-893.2	1,287.9	0.00	0.00	
4,300.0	23.64	223.91	4,033.4	-956.8	-921.0	1,328.1	0.00	0.00	
4,344.3	23.64	223.91	4,074.0	-969.6	-933.3	1,345.8	0.00	0.00	Sussex
4,400.0	23.64	223.91	4,125.0	-985.7	-948.8	1,368.2	0.00	0.00	
4,500.0	23.64	223.91	4,216.6	-1,014.6	-976.6	1,408.3	0.00	0.00	
4,600.0	23.64	223.91	4,308.2	-1,043.5	-1,004.4	1,448.4	0.00	0.00	
4,700.0	23.64	223.91	4,399.8	-1,072.4	-1,032.2	1,488.5	0.00	0.00	
4,800.0	23.64	223.91	4,491.5	-1,101.3	-1,060.0	1,528.6	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Antelope I-31
Company:	Bonanza Creek Energy Operating Company, LLC	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Project:	Weld County	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site:	Antelope M-31 Pad	**North Reference:**	True
Well:	Antelope I-31	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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
4,900.0	23.64	223.91	4,583.1	-1,130.2	-1,087.8	1,568.7	0.00	0.00	
5,000.0	23.64	223.91	4,674.7	-1,159.1	-1,115.6	1,608.8	0.00	0.00	
5,100.0	23.64	223.91	4,766.3	-1,188.0	-1,143.5	1,648.9	0.00	0.00	
5,200.0	23.64	223.91	4,857.9	-1,216.9	-1,171.3	1,689.0	0.00	0.00	
5,300.0	23.64	223.91	4,949.5	-1,245.8	-1,199.1	1,729.1	0.00	0.00	
5,400.0	23.64	223.91	5,041.1	-1,274.7	-1,226.9	1,769.2	0.00	0.00	
5,500.0	23.64	223.91	5,132.7	-1,303.5	-1,254.7	1,809.3	0.00	0.00	
5,600.0	23.64	223.91	5,224.3	-1,332.4	-1,282.5	1,849.4	0.00	0.00	
5,669.6	23.64	223.91	5,288.1	-1,352.6	-1,301.9	1,877.3	0.00	0.00	Start 3° Drop
5,700.0	22.73	223.91	5,316.0	-1,361.2	-1,310.2	1,889.3	3.00	-3.00	
5,800.0	19.73	223.91	5,409.2	-1,387.3	-1,335.3	1,925.5	3.00	-3.00	
5,900.0	16.73	223.91	5,504.2	-1,409.8	-1,357.0	1,956.8	3.00	-3.00	
6,000.0	13.73	223.91	5,600.7	-1,428.7	-1,375.2	1,983.0	3.00	-3.00	
6,100.0	10.73	223.91	5,698.4	-1,444.0	-1,389.9	2,004.2	3.00	-3.00	
6,200.0	7.73	223.91	5,797.1	-1,455.5	-1,401.0	2,020.2	3.00	-3.00	
6,300.0	4.73	223.91	5,896.5	-1,463.4	-1,408.5	2,031.1	3.00	-3.00	
6,400.0	1.73	223.91	5,996.3	-1,467.4	-1,412.4	2,036.7	3.00	-3.00	
6,457.7	0.00	0.00	6,054.0	-1,468.1	-1,413.0	2,037.6	3.00	-3.00	EOD @ Inc. = 0°
6,500.0	0.00	0.00	6,096.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
6,600.0	0.00	0.00	6,196.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
6,657.7	0.00	0.00	6,254.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	Niobrara
6,700.0	0.00	0.00	6,296.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
6,800.0	0.00	0.00	6,396.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
6,889.7	0.00	0.00	6,486.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	Ft. Hayes
6,900.0	0.00	0.00	6,496.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
6,913.7	0.00	0.00	6,510.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	Codell
6,967.7	0.00	0.00	6,564.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	Carlile
7,000.0	0.00	0.00	6,596.3	-1,468.1	-1,413.0	2,037.6	0.00	0.00	
7,009.7	0.00	0.00	6,606.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	Greenhorn
7,073.7	0.00	0.00	6,670.0	-1,468.1	-1,413.0	2,037.6	0.00	0.00	TD @ 7,073' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Antelope I-31 TGT (2) - plan hits target center - Point	0.00	0.00	6,054.0	-1,468.1	-1,413.0	1,373,341.20	3,314,566.44	40.352720	-104.371320
Antelope I-31 PBHL (2) - plan hits target center - Circle (radius 50.0)	0.00	0.00	6,670.0	-1,468.1	-1,413.0	1,373,341.20	3,314,566.44	40.352720	-104.371320

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Antelope I-31
Company:	Bonanza Creek Energy Operating Company, LLC	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Project:	Weld County	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site:	Antelope M-31 Pad	**North Reference:**	True
Well:	Antelope I-31	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,580.2	3,374.0	Parkman			
4,344.3	4,074.0	Sussex			
6,657.7	6,254.0	Niobrara			
6,889.7	6,486.0	Ft. Hayes			
6,913.7	6,510.0	Codell			
6,967.7	6,564.0	Carlile			
7,009.7	6,606.0	Greenhorn			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
600.0	600.0	0.0	0.0	KOP @ 600'
1,388.1	1,365.9	-115.5	-111.2	EOB @ Inc. = 23.64°
5,669.6	5,288.1	-1,352.6	-1,301.9	Start 3° Drop
6,457.7	6,054.0	-1,468.1	-1,413.0	EOD @ Inc. = 0°
7,073.7	6,670.0	-1,468.1	-1,413.0	TD @ 7,073' MD

Bonanza Creek Energy Operating Company, LLC

Weld County
Antelope M-31 Pad
Antelope I-31
OH
Plan #2

Anticollision Report

23 January, 2012

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	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 883.6ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 1/23/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,073.7	Plan #2 (OH)	MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Antelope G-31 Pad (was 31 A)						
Antelope 13-31 - DD - DD						Out of range
Antelope 13-31 - DD - DD	7,057.3	6,973.0	832.4	832.4	10,000.000	CC, ES
Antelope I-31 Pad (was 31 C)						
Antelope 14-31 - DD - Plan #2						Out of range
Antelope 14-31 - DD - Plan #2	6,483.8	6,439.1	844.7	844.7	10,000.000	CC, ES
Antelope I-31 (was 31-C) - DD - Plan #2						Out of range
Antelope I-31 (was 31-C) - DD - Plan #2	6,031.9	5,883.4	148.1	148.1	10,000.000	CC, ES
Antelope M-31 Pad						
Antelope G-31 - OH - Plan #1	0.0	1.0	30.5			
Antelope G-31 - OH - Plan #1	566.3	567.3	30.5	30.5	10,000.000	CC, ES
Antelope H-31 - OH - Plan #1	0.0	1.0	13.8			
Antelope H-31 - OH - Plan #1	566.3	567.3	13.8	13.8	10,000.000	CC, ES
Antelope L-31 - OH - Plan #1	0.0	0.0	44.2			
Antelope L-31 - OH - Plan #1	828.2	830.0	36.3	36.3	10,000.000	CC, ES
Antelope M-31 (vert) - OH - Plan #1	0.0	1.0	13.8			
Antelope M-31 (vert) - OH - Plan #1	689.1	690.0	13.6	13.6	10,000.000	CC, ES
Antelope N-31 - OH - Plan #2	0.0	1.0	30.5			
Antelope N-31 - OH - Plan #2	566.3	567.3	30.5	30.5	10,000.000	CC, ES
Antelope R-31 - OH - Plan #2	0.0	0.0	58.0			
Antelope R-31 - OH - Plan #2	600.0	600.0	58.0	58.0	10,000.000	CC, ES
Antelope S-31 Pad (was 31 I)						
Antelope 23-31 (moved from I-31 Pad) - DD - DD						Out of range
Antelope 23-31 (moved from I-31 Pad) - DD - DD	4,578.4	4,811.8	702.1	702.1	10,000.000	CC, ES

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope G-31 Pad (was 31 A) - Antelope 13-31 - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 472-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,400.0	5,041.1	5,426.1	5,113.3	33.7	30.8	90.40	-687.3	-1,873.8	876.8	876.8	0.00	N/A	
5,500.0	5,132.7	5,532.7	5,218.2	34.4	31.2	92.23	-705.6	-1,877.6	867.8	867.8	0.00	N/A	
5,600.0	5,224.3	5,630.8	5,314.9	35.2	31.5	94.02	-722.3	-1,879.9	858.8	858.8	0.00	N/A	
5,700.0	5,316.0	5,715.5	5,398.2	35.9	31.8	95.49	-736.7	-1,882.3	851.0	851.0	0.00	N/A	
5,800.0	5,409.2	5,796.6	5,478.3	36.5	32.1	96.62	-749.1	-1,885.3	845.4	845.4	0.00	N/A	
5,900.0	5,504.2	5,878.4	5,559.3	37.1	32.3	97.62	-759.8	-1,888.6	841.6	841.6	0.00	N/A	
6,000.0	5,600.7	5,959.9	5,640.2	37.5	32.5	98.40	-769.1	-1,892.8	839.5	839.5	0.00	N/A	
6,100.0	5,698.4	6,053.9	5,733.7	37.9	32.7	99.11	-777.8	-1,897.1	838.1	838.1	0.00	N/A	
6,200.0	5,797.1	6,136.0	5,815.6	38.2	32.8	99.63	-783.4	-1,899.4	836.9	836.9	0.00	N/A	
6,300.0	5,896.5	6,230.0	5,909.5	38.3	32.9	100.04	-787.3	-1,901.5	836.8	836.8	0.00	N/A	
6,302.1	5,898.6	6,230.0	5,909.5	38.4	32.9	100.04	-787.3	-1,901.5	836.8	836.8	0.00	N/A	
6,400.0	5,996.3	6,315.0	5,994.5	38.4	33.0	100.20	-788.9	-1,903.3	837.4	837.4	0.00	N/A	
6,500.0	6,096.3	6,419.6	6,099.1	38.5	33.0	-35.95	-790.1	-1,904.7	837.5	837.5	0.00	N/A	
6,600.0	6,196.3	6,521.8	6,201.3	38.6	33.1	-36.04	-791.4	-1,905.4	836.9	836.9	0.00	N/A	
6,700.0	6,296.3	6,623.6	6,303.0	38.6	33.2	-36.11	-792.7	-1,905.8	836.1	836.1	0.00	N/A	
6,800.0	6,396.3	6,726.2	6,405.7	38.7	33.3	-36.16	-794.0	-1,905.7	835.0	835.0	0.00	N/A	
6,900.0	6,496.3	6,825.2	6,504.6	38.7	33.4	-36.20	-795.3	-1,905.5	833.7	833.7	0.00	N/A	
7,000.0	6,596.3	6,922.6	6,602.0	38.8	33.4	-36.23	-796.3	-1,905.2	832.8	832.8	0.00	N/A	
7,057.3	6,653.6	6,973.0	6,652.4	38.8	33.5	-36.24	-796.7	-1,905.1	832.4	832.4	0.00	N/A	CC, ES
7,073.7	6,670.0	6,973.0	6,652.4	38.8	33.5	-36.24	-796.7	-1,905.1	832.5	832.5	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope I-31 Pad (was 31 C) - Antelope 14-31 - DD - Plan #2

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,100.0	5,698.4	6,011.0	5,603.8	37.9	38.0	-5.41	-2,124.3	-1,931.6	870.9	870.9	0.00	N/A	
6,200.0	5,797.1	6,125.6	5,717.9	38.2	38.2	-4.83	-2,121.9	-1,942.6	859.2	859.2	0.00	N/A	
6,300.0	5,896.5	6,240.9	5,832.9	38.3	38.3	-4.48	-2,120.5	-1,949.0	851.0	851.0	0.00	N/A	
6,400.0	5,996.3	6,355.3	5,947.3	38.4	38.4	-4.38	-2,120.1	-1,951.0	846.2	846.2	0.00	N/A	
6,483.8	6,080.1	6,439.1	6,031.1	38.5	38.4	-4.39	-2,120.1	-1,951.0	844.7	844.7	0.00	N/A	CC, ES
6,500.0	6,096.3	6,455.3	6,047.3	38.5	38.4	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
6,600.0	6,196.3	6,555.3	6,147.3	38.6	38.5	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
6,700.0	6,296.3	6,655.3	6,247.3	38.6	38.5	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
6,800.0	6,396.3	6,755.3	6,347.3	38.7	38.6	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
6,900.0	6,496.3	6,855.3	6,447.3	38.7	38.6	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
7,000.0	6,596.3	6,955.3	6,547.3	38.8	38.7	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	
7,073.7	6,670.0	7,029.0	6,621.0	38.8	38.7	-140.48	-2,120.1	-1,951.0	845.3	845.3	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope I-31 Pad (was 31 C) - Antelope I-31 (was 31-C) - DD - Plan #2

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
4,300.0	4,033.4	4,404.2	4,196.6	25.5	22.9	-53.08	-1,764.7	-897.3	835.1	835.1	0.00	N/A	
4,400.0	4,125.0	4,490.5	4,277.1	26.2	23.5	-53.58	-1,744.4	-920.8	784.9	784.9	0.00	N/A	
4,500.0	4,216.6	4,576.8	4,357.6	27.0	24.1	-54.15	-1,724.2	-944.3	734.8	734.8	0.00	N/A	
4,600.0	4,308.2	4,663.0	4,438.1	27.7	24.7	-54.80	-1,703.9	-967.8	684.7	684.7	0.00	N/A	
4,700.0	4,399.8	4,749.3	4,518.6	28.5	25.2	-55.56	-1,683.7	-991.3	634.7	634.7	0.00	N/A	
4,800.0	4,491.5	4,835.6	4,599.1	29.2	25.8	-56.44	-1,663.4	-1,014.8	584.8	584.8	0.00	N/A	
4,900.0	4,583.1	4,921.8	4,679.6	30.0	26.4	-57.48	-1,643.2	-1,038.3	535.0	535.0	0.00	N/A	
5,000.0	4,674.7	5,008.1	4,760.1	30.7	27.0	-58.74	-1,622.9	-1,061.8	485.4	485.4	0.00	N/A	
5,100.0	4,766.3	5,094.4	4,840.6	31.4	27.6	-60.28	-1,602.7	-1,085.3	436.0	436.0	0.00	N/A	
5,200.0	4,857.9	5,180.7	4,921.1	32.2	28.1	-62.20	-1,582.4	-1,108.8	386.9	386.9	0.00	N/A	
5,300.0	4,949.5	5,259.4	4,994.9	32.9	28.6	-64.54	-1,564.6	-1,129.5	339.2	339.2	0.00	N/A	
5,400.0	5,041.1	5,339.5	5,070.8	33.7	29.1	-67.84	-1,547.8	-1,149.0	294.2	294.2	0.00	N/A	
5,500.0	5,132.7	5,421.0	5,148.7	34.4	29.5	-72.48	-1,532.2	-1,167.1	252.8	252.8	0.00	N/A	
5,600.0	5,224.3	5,503.7	5,228.4	35.2	29.9	-78.91	-1,517.8	-1,183.8	216.1	216.1	0.00	N/A	
5,700.0	5,316.0	5,587.7	5,309.9	35.9	30.3	-87.31	-1,504.7	-1,199.0	186.1	186.1	0.00	N/A	
5,800.0	5,409.2	5,674.0	5,394.3	36.5	30.6	-96.79	-1,492.9	-1,212.7	165.0	165.0	0.00	N/A	
5,900.0	5,504.2	5,762.8	5,481.7	37.1	30.9	-107.07	-1,482.5	-1,224.7	152.9	152.9	0.00	N/A	
6,000.0	5,600.7	5,853.9	5,571.8	37.5	31.1	-116.98	-1,473.7	-1,235.0	148.3	148.3	0.00	N/A	
6,031.9	5,631.7	5,883.4	5,601.1	37.6	31.2	-119.88	-1,471.2	-1,237.8	148.1	148.1	0.00	N/A	CC, ES
6,100.0	5,698.4	5,946.8	5,664.1	37.9	31.3	-125.42	-1,466.6	-1,243.2	149.0	149.0	0.00	N/A	
6,200.0	5,797.1	6,041.2	5,758.1	38.2	31.5	-131.74	-1,461.4	-1,249.2	152.1	152.1	0.00	N/A	
6,300.0	5,896.5	6,136.6	5,853.4	38.3	31.6	-135.78	-1,458.2	-1,252.9	155.8	155.8	0.00	N/A	
6,400.0	5,996.3	6,232.6	5,949.4	38.4	31.7	-137.61	-1,457.1	-1,254.2	158.6	158.6	0.00	N/A	
6,500.0	6,096.3	6,332.5	6,049.3	38.5	31.7	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
6,600.0	6,196.3	6,432.5	6,149.3	38.6	31.8	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
6,700.0	6,296.3	6,532.5	6,249.3	38.6	31.8	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
6,800.0	6,396.3	6,632.5	6,349.3	38.7	31.9	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
6,900.0	6,496.3	6,732.5	6,449.3	38.7	32.0	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
7,000.0	6,596.3	6,832.5	6,549.3	38.8	32.0	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	
7,073.7	6,670.0	6,906.2	6,623.0	38.8	32.1	86.07	-1,457.1	-1,254.2	159.2	159.2	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope G-31 - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-33.25	25.5	-16.7	30.5				
100.0	100.0	101.0	101.0	0.2	0.2	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
200.0	200.0	201.0	201.0	0.3	0.3	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
300.0	300.0	301.0	301.0	0.5	0.5	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
400.0	400.0	401.0	401.0	0.7	0.7	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
500.0	500.0	501.0	501.0	0.9	0.9	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
566.3	566.3	567.3	567.3	1.0	1.0	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	CC, ES
600.0	600.0	601.0	601.0	1.0	1.0	-33.25	25.5	-16.7	30.5	30.5	0.00	N/A	
700.0	700.0	700.0	700.0	1.2	1.2	105.24	26.9	-18.9	33.5	33.5	0.00	N/A	
800.0	799.6	797.3	796.9	1.4	1.4	110.33	30.9	-25.3	42.7	42.7	0.00	N/A	
900.0	898.8	893.9	892.7	1.6	1.6	115.12	37.5	-35.8	58.3	58.3	0.00	N/A	
1,000.0	997.1	988.6	986.0	2.0	1.9	118.53	46.5	-50.1	80.4	80.4	0.00	N/A	
1,100.0	1,094.3	1,081.1	1,076.0	2.3	2.3	120.67	57.7	-67.7	108.7	108.7	0.00	N/A	
1,200.0	1,190.2	1,170.8	1,162.4	2.8	2.7	121.91	70.7	-88.3	142.9	142.9	0.00	N/A	
1,300.0	1,284.4	1,260.5	1,247.6	3.4	3.2	122.76	85.5	-111.8	182.4	182.4	0.00	N/A	
1,400.0	1,376.8	1,350.6	1,333.2	4.1	3.6	124.12	100.5	-135.7	225.0	225.0	0.00	N/A	
1,500.0	1,468.4	1,440.2	1,418.3	4.8	4.1	126.14	115.5	-159.5	268.8	268.8	0.00	N/A	
1,600.0	1,560.0	1,529.7	1,503.3	5.5	4.6	127.59	130.5	-183.2	312.9	312.9	0.00	N/A	
1,700.0	1,651.6	1,619.2	1,588.3	6.2	5.1	128.69	145.5	-206.9	357.0	357.0	0.00	N/A	
1,800.0	1,743.3	1,708.8	1,673.3	6.9	5.7	129.54	160.4	-230.7	401.3	401.3	0.00	N/A	
1,900.0	1,834.9	1,798.3	1,758.3	7.7	6.2	130.23	175.4	-254.4	445.6	445.6	0.00	N/A	
2,000.0	1,926.5	1,887.8	1,843.3	8.4	6.7	130.79	190.4	-278.2	490.0	490.0	0.00	N/A	
2,100.0	2,018.1	1,977.4	1,928.4	9.1	7.2	131.26	205.4	-301.9	534.4	534.4	0.00	N/A	
2,200.0	2,109.7	2,066.9	2,013.4	9.9	7.7	131.65	220.3	-325.7	578.8	578.8	0.00	N/A	
2,300.0	2,201.3	2,156.4	2,098.4	10.6	8.3	131.99	235.3	-349.4	623.2	623.2	0.00	N/A	
2,400.0	2,292.9	2,246.0	2,183.4	11.3	8.8	132.29	250.3	-373.1	667.6	667.6	0.00	N/A	
2,500.0	2,384.5	2,335.5	2,268.4	12.1	9.3	132.55	265.3	-396.9	712.1	712.1	0.00	N/A	
2,600.0	2,476.1	2,425.0	2,353.4	12.8	9.8	132.78	280.2	-420.6	756.6	756.6	0.00	N/A	
2,700.0	2,567.7	2,514.6	2,438.5	13.6	10.3	132.98	295.2	-444.4	801.0	801.0	0.00	N/A	
2,800.0	2,659.3	2,604.1	2,523.5	14.3	10.9	133.16	310.2	-468.1	845.5	845.5	0.00	N/A	

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope H-31 - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-37.42	10.9	-8.4	13.8				
100.0	100.0	101.0	101.0	0.2	0.2	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
200.0	200.0	201.0	201.0	0.3	0.3	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
300.0	300.0	301.0	301.0	0.5	0.5	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
400.0	400.0	401.0	401.0	0.7	0.7	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
500.0	500.0	501.0	501.0	0.9	0.9	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
566.3	566.3	567.3	567.3	1.0	1.0	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	CC, ES
600.0	600.0	601.0	601.0	1.0	1.0	-37.42	10.9	-8.4	13.8	13.8	0.00	N/A	
700.0	700.0	700.6	700.5	1.2	1.2	99.77	10.6	-11.0	15.5	15.5	0.00	N/A	
800.0	799.6	800.0	799.6	1.4	1.4	102.14	9.8	-18.8	20.8	20.8	0.00	N/A	
900.0	898.8	899.0	897.8	1.6	1.6	104.22	8.4	-31.6	29.6	29.6	0.00	N/A	
1,000.0	997.1	997.5	994.7	2.0	2.0	105.58	6.4	-49.3	41.9	41.9	0.00	N/A	
1,100.0	1,094.3	1,095.3	1,089.8	2.3	2.3	106.38	3.9	-71.8	57.6	57.6	0.00	N/A	
1,200.0	1,190.2	1,193.3	1,184.3	2.8	2.8	108.02	1.0	-97.6	76.1	76.1	0.00	N/A	
1,300.0	1,284.4	1,291.0	1,278.5	3.4	3.2	111.70	-1.8	-123.3	96.6	96.6	0.00	N/A	
1,400.0	1,376.8	1,387.9	1,371.9	4.1	3.7	116.20	-4.7	-148.9	119.5	119.5	0.00	N/A	
1,500.0	1,468.4	1,484.4	1,464.9	4.8	4.1	120.35	-7.5	-174.3	144.0	144.0	0.00	N/A	
1,600.0	1,560.0	1,580.9	1,558.0	5.5	4.6	123.28	-10.3	-199.7	169.1	169.1	0.00	N/A	
1,700.0	1,651.6	1,677.4	1,651.0	6.2	5.1	125.46	-13.1	-225.2	194.4	194.4	0.00	N/A	
1,800.0	1,743.3	1,773.9	1,744.1	6.9	5.5	127.14	-15.9	-250.6	220.0	220.0	0.00	N/A	
1,900.0	1,834.9	1,870.4	1,837.1	7.7	6.0	128.46	-18.8	-276.0	245.7	245.7	0.00	N/A	
2,000.0	1,926.5	1,966.9	1,930.2	8.4	6.5	129.54	-21.6	-301.5	271.5	271.5	0.00	N/A	
2,100.0	2,018.1	2,063.4	2,023.2	9.1	7.0	130.43	-24.4	-326.9	297.3	297.3	0.00	N/A	
2,200.0	2,109.7	2,159.9	2,116.3	9.9	7.5	131.18	-27.2	-352.4	323.3	323.3	0.00	N/A	
2,300.0	2,201.3	2,256.4	2,209.3	10.6	8.0	131.81	-30.1	-377.8	349.2	349.2	0.00	N/A	
2,400.0	2,292.9	2,352.9	2,302.4	11.3	8.4	132.36	-32.9	-403.2	375.2	375.2	0.00	N/A	
2,500.0	2,384.5	2,449.4	2,395.4	12.1	8.9	132.84	-35.7	-428.7	401.3	401.3	0.00	N/A	
2,600.0	2,476.1	2,545.9	2,488.4	12.8	9.4	133.26	-38.5	-454.1	427.3	427.3	0.00	N/A	
2,700.0	2,567.7	2,642.4	2,581.5	13.6	9.9	133.63	-41.3	-479.5	453.4	453.4	0.00	N/A	
2,800.0	2,659.3	2,738.9	2,674.5	14.3	10.4	133.96	-44.2	-505.0	479.5	479.5	0.00	N/A	
2,900.0	2,750.9	2,835.4	2,767.6	15.1	10.9	134.26	-47.0	-530.4	505.6	505.6	0.00	N/A	
3,000.0	2,842.5	2,931.9	2,860.6	15.8	11.4	134.52	-49.8	-555.8	531.7	531.7	0.00	N/A	
3,100.0	2,934.1	3,028.4	2,953.7	16.5	11.8	134.77	-52.6	-581.3	557.8	557.8	0.00	N/A	
3,200.0	3,025.7	3,124.9	3,046.7	17.3	12.3	134.99	-55.4	-606.7	584.0	584.0	0.00	N/A	
3,300.0	3,117.4	3,221.4	3,139.8	18.0	12.8	135.19	-58.3	-632.1	610.1	610.1	0.00	N/A	
3,400.0	3,209.0	3,317.9	3,232.8	18.8	13.3	135.37	-61.1	-657.6	636.3	636.3	0.00	N/A	
3,500.0	3,300.6	3,414.4	3,325.9	19.5	13.8	135.54	-63.9	-683.0	662.4	662.4	0.00	N/A	
3,600.0	3,392.2	3,510.9	3,418.9	20.3	14.3	135.70	-66.7	-708.4	688.6	688.6	0.00	N/A	
3,700.0	3,483.8	3,607.4	3,512.0	21.0	14.8	135.85	-69.5	-733.9	714.7	714.7	0.00	N/A	
3,800.0	3,575.4	3,703.9	3,605.0	21.7	15.3	135.98	-72.4	-759.3	740.9	740.9	0.00	N/A	
3,900.0	3,667.0	3,800.4	3,698.1	22.5	15.8	136.11	-75.2	-784.7	767.1	767.1	0.00	N/A	
4,000.0	3,758.6	3,896.9	3,791.1	23.2	16.3	136.23	-78.0	-810.2	793.2	793.2	0.00	N/A	
4,100.0	3,850.2	3,993.4	3,884.1	24.0	16.7	136.34	-80.8	-835.6	819.4	819.4	0.00	N/A	
4,200.0	3,941.8	4,089.9	3,977.2	24.7	17.2	136.44	-83.7	-861.0	845.6	845.6	0.00	N/A	
4,300.0	4,033.4	4,186.4	4,070.2	25.5	17.7	136.54	-86.5	-886.5	871.8	871.8	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope L-31 - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	145.46	-36.4	25.1	44.2				
100.0	100.0	100.0	100.0	0.2	0.2	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
200.0	200.0	200.0	200.0	0.3	0.3	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
300.0	300.0	300.0	300.0	0.5	0.5	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
400.0	400.0	400.0	400.0	0.7	0.7	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
500.0	500.0	500.0	500.0	0.9	0.9	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
600.0	600.0	600.0	600.0	1.0	1.0	145.46	-36.4	25.1	44.2	44.2	0.00	N/A	
700.0	700.0	701.8	701.7	1.2	1.2	-84.11	-33.7	25.0	41.6	41.6	0.00	N/A	
800.0	799.6	802.1	801.7	1.4	1.4	-104.42	-25.8	24.6	36.8	36.8	0.00	N/A	
828.2	827.7	830.0	829.4	1.5	1.5	-113.39	-22.6	24.5	36.3	36.3	0.00	N/A	CC, ES
900.0	898.8	899.6	898.4	1.6	1.6	-139.08	-13.0	24.1	40.6	40.6	0.00	N/A	
1,000.0	997.1	993.2	990.5	2.0	1.9	-166.28	3.9	23.4	62.7	62.7	0.00	N/A	
1,100.0	1,094.3	1,083.0	1,077.9	2.3	2.3	179.75	24.0	22.6	99.4	99.4	0.00	N/A	
1,200.0	1,190.2	1,171.6	1,164.0	2.8	2.6	173.02	44.8	21.7	144.0	144.0	0.00	N/A	
1,300.0	1,284.4	1,257.8	1,247.9	3.4	2.9	169.53	64.9	20.9	194.0	194.0	0.00	N/A	
1,400.0	1,376.8	1,341.4	1,329.2	4.1	3.3	167.58	84.5	20.0	248.5	248.5	0.00	N/A	
1,500.0	1,468.4	1,424.0	1,409.4	4.8	3.6	166.65	103.9	19.2	304.8	304.8	0.00	N/A	
1,600.0	1,560.0	1,506.6	1,489.7	5.5	4.0	166.00	123.2	18.4	361.2	361.2	0.00	N/A	
1,700.0	1,651.6	1,589.1	1,570.0	6.2	4.3	165.53	142.5	17.6	417.5	417.5	0.00	N/A	
1,800.0	1,743.3	1,671.7	1,650.2	6.9	4.7	165.18	161.9	16.8	473.9	473.9	0.00	N/A	
1,900.0	1,834.9	1,754.2	1,730.5	7.7	5.0	164.89	181.2	16.0	530.3	530.3	0.00	N/A	
2,000.0	1,926.5	1,836.8	1,810.7	8.4	5.4	164.67	200.5	15.2	586.7	586.7	0.00	N/A	
2,100.0	2,018.1	1,919.4	1,891.0	9.1	5.7	164.48	219.9	14.4	643.1	643.1	0.00	N/A	
2,200.0	2,109.7	2,001.9	1,971.3	9.9	6.1	164.32	239.2	13.6	699.5	699.5	0.00	N/A	
2,300.0	2,201.3	2,084.5	2,051.5	10.6	6.5	164.19	258.5	12.8	755.9	755.9	0.00	N/A	
2,400.0	2,292.9	2,167.1	2,131.8	11.3	6.8	164.07	277.9	12.0	812.3	812.3	0.00	N/A	
2,500.0	2,384.5	2,249.6	2,212.1	12.1	7.2	163.97	297.2	11.2	868.7	868.7	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope M-31 (vert) - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	142.58	-10.9	8.4	13.8				
100.0	100.0	101.0	101.0	0.2	0.2	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
200.0	200.0	201.0	201.0	0.3	0.3	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
300.0	300.0	301.0	301.0	0.5	0.5	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
400.0	400.0	401.0	401.0	0.7	0.7	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
500.0	500.0	501.0	501.0	0.9	0.9	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
600.0	600.0	601.0	601.0	1.0	1.0	142.58	-10.9	8.4	13.8	13.8	0.00	N/A	
689.1	689.0	690.0	690.0	1.2	1.2	-90.00	-10.9	8.4	13.6	13.6	0.00	N/A	CC, ES
700.0	700.0	701.0	701.0	1.2	1.2	-92.28	-10.9	8.4	13.6	13.6	0.00	N/A	
800.0	799.6	800.6	800.6	1.4	1.4	-121.51	-10.9	8.4	16.0	16.0	0.00	N/A	
900.0	898.8	899.8	899.8	1.6	1.6	-147.28	-10.9	8.4	25.4	25.4	0.00	N/A	
1,000.0	997.1	998.1	998.1	2.0	1.7	-160.68	-10.9	8.4	41.9	41.9	0.00	N/A	
1,100.0	1,094.3	1,095.3	1,095.3	2.3	1.9	-167.40	-10.9	8.4	64.5	64.5	0.00	N/A	
1,200.0	1,190.2	1,191.2	1,191.2	2.8	2.1	-171.11	-10.9	8.4	92.4	92.4	0.00	N/A	
1,300.0	1,284.4	1,285.4	1,285.4	3.4	2.2	-173.34	-10.9	8.4	125.5	125.5	0.00	N/A	
1,400.0	1,376.8	1,377.8	1,377.8	4.1	2.4	-174.80	-10.9	8.4	163.6	163.6	0.00	N/A	
1,500.0	1,468.4	1,469.4	1,469.4	4.8	2.5	-175.82	-10.9	8.4	203.6	203.6	0.00	N/A	
1,600.0	1,560.0	1,561.0	1,561.0	5.5	2.7	-176.51	-10.9	8.4	243.6	243.6	0.00	N/A	
1,700.0	1,651.6	1,652.6	1,652.6	6.2	2.9	-177.00	-10.9	8.4	283.6	283.6	0.00	N/A	
1,800.0	1,743.3	1,744.3	1,744.3	6.9	3.0	-177.37	-10.9	8.4	323.7	323.7	0.00	N/A	
1,900.0	1,834.9	1,835.9	1,835.9	7.7	3.2	-177.66	-10.9	8.4	363.8	363.8	0.00	N/A	
2,000.0	1,926.5	1,927.5	1,927.5	8.4	3.3	-177.89	-10.9	8.4	403.8	403.8	0.00	N/A	
2,100.0	2,018.1	2,019.1	2,019.1	9.1	3.5	-178.08	-10.9	8.4	443.9	443.9	0.00	N/A	
2,200.0	2,109.7	2,110.7	2,110.7	9.9	3.7	-178.24	-10.9	8.4	484.0	484.0	0.00	N/A	
2,300.0	2,201.3	2,202.3	2,202.3	10.6	3.8	-178.38	-10.9	8.4	524.1	524.1	0.00	N/A	
2,400.0	2,292.9	2,293.9	2,293.9	11.3	4.0	-178.49	-10.9	8.4	564.2	564.2	0.00	N/A	
2,500.0	2,384.5	2,385.5	2,385.5	12.1	4.1	-178.59	-10.9	8.4	604.3	604.3	0.00	N/A	
2,600.0	2,476.1	2,477.1	2,477.1	12.8	4.3	-178.68	-10.9	8.4	644.4	644.4	0.00	N/A	
2,700.0	2,567.7	2,568.7	2,568.7	13.6	4.5	-178.76	-10.9	8.4	684.5	684.5	0.00	N/A	
2,800.0	2,659.3	2,660.3	2,660.3	14.3	4.6	-178.83	-10.9	8.4	724.6	724.6	0.00	N/A	
2,900.0	2,750.9	2,751.9	2,751.9	15.1	4.8	-178.89	-10.9	8.4	764.7	764.7	0.00	N/A	
3,000.0	2,842.5	2,843.5	2,843.5	15.8	4.9	-178.94	-10.9	8.4	804.8	804.8	0.00	N/A	
3,100.0	2,934.1	2,935.1	2,935.1	16.5	5.1	-178.99	-10.9	8.4	844.9	844.9	0.00	N/A	

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope N-31 - OH - Plan #2

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	146.75	-25.5	16.7	30.5				
100.0	100.0	101.0	101.0	0.2	0.2	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
200.0	200.0	201.0	201.0	0.3	0.3	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
300.0	300.0	301.0	301.0	0.5	0.5	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
400.0	400.0	401.0	401.0	0.7	0.7	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
500.0	500.0	501.0	501.0	0.9	0.9	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
566.3	566.3	567.3	567.3	1.0	1.0	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	CC, ES
600.0	600.0	601.0	601.0	1.0	1.0	146.75	-25.5	16.7	30.5	30.5	0.00	N/A	
700.0	700.0	700.0	700.0	1.2	1.2	-78.51	-28.1	16.3	31.9	31.9	0.00	N/A	
800.0	799.6	798.5	798.1	1.4	1.4	-82.02	-35.7	15.1	36.0	36.0	0.00	N/A	
900.0	898.8	896.8	895.6	1.6	1.6	-86.33	-48.2	13.1	43.2	43.2	0.00	N/A	
1,000.0	997.1	994.8	992.0	2.0	1.9	-90.36	-65.7	10.4	53.4	53.4	0.00	N/A	
1,100.0	1,094.3	1,092.3	1,086.9	2.3	2.3	-93.63	-87.8	6.9	66.8	66.8	0.00	N/A	
1,200.0	1,190.2	1,191.0	1,182.4	2.8	2.7	-97.95	-112.4	3.1	81.9	81.9	0.00	N/A	
1,300.0	1,284.4	1,289.1	1,277.3	3.4	3.1	-103.72	-136.8	-0.8	98.6	98.6	0.00	N/A	
1,400.0	1,376.8	1,386.4	1,371.5	4.1	3.5	-110.04	-161.0	-4.6	117.8	117.8	0.00	N/A	
1,500.0	1,468.4	1,483.3	1,465.3	4.8	4.0	-115.68	-185.1	-8.4	139.0	139.0	0.00	N/A	
1,600.0	1,560.0	1,580.2	1,559.1	5.5	4.4	-119.82	-209.2	-12.2	161.2	161.2	0.00	N/A	
1,700.0	1,651.6	1,677.2	1,652.9	6.2	4.9	-122.95	-233.3	-16.0	184.0	184.0	0.00	N/A	
1,800.0	1,743.3	1,774.1	1,746.7	6.9	5.3	-125.39	-257.4	-19.8	207.2	207.2	0.00	N/A	
1,900.0	1,834.9	1,871.0	1,840.5	7.7	5.7	-127.35	-281.5	-23.6	230.7	230.7	0.00	N/A	
2,000.0	1,926.5	1,968.0	1,934.3	8.4	6.2	-128.94	-305.6	-27.4	254.4	254.4	0.00	N/A	
2,100.0	2,018.1	2,064.9	2,028.1	9.1	6.6	-130.25	-329.7	-31.2	278.3	278.3	0.00	N/A	
2,200.0	2,109.7	2,161.8	2,121.9	9.9	7.1	-131.37	-353.8	-35.0	302.2	302.2	0.00	N/A	
2,300.0	2,201.3	2,258.7	2,215.7	10.6	7.5	-132.31	-377.9	-38.7	326.3	326.3	0.00	N/A	
2,400.0	2,292.9	2,355.7	2,309.5	11.3	8.0	-133.13	-402.0	-42.5	350.4	350.4	0.00	N/A	
2,500.0	2,384.5	2,452.6	2,403.4	12.1	8.5	-133.85	-426.2	-46.3	374.6	374.6	0.00	N/A	
2,600.0	2,476.1	2,549.5	2,497.2	12.8	8.9	-134.47	-450.3	-50.1	398.9	398.9	0.00	N/A	
2,700.0	2,567.7	2,646.5	2,591.0	13.6	9.4	-135.03	-474.4	-53.9	423.2	423.2	0.00	N/A	
2,800.0	2,659.3	2,743.4	2,684.8	14.3	9.8	-135.52	-498.5	-57.7	447.5	447.5	0.00	N/A	
2,900.0	2,750.9	2,840.3	2,778.6	15.1	10.3	-135.96	-522.6	-61.5	471.8	471.8	0.00	N/A	
3,000.0	2,842.5	2,937.3	2,872.4	15.8	10.7	-136.36	-546.7	-65.3	496.2	496.2	0.00	N/A	
3,100.0	2,934.1	3,034.2	2,966.2	16.5	11.2	-136.73	-570.8	-69.1	520.6	520.6	0.00	N/A	
3,200.0	3,025.7	3,131.1	3,060.0	17.3	11.6	-137.06	-594.9	-72.9	545.0	545.0	0.00	N/A	
3,300.0	3,117.4	3,228.0	3,153.8	18.0	12.1	-137.36	-619.0	-76.7	569.4	569.4	0.00	N/A	
3,400.0	3,209.0	3,325.0	3,247.6	18.8	12.5	-137.64	-643.1	-80.5	593.8	593.8	0.00	N/A	
3,500.0	3,300.6	3,421.9	3,341.4	19.5	13.0	-137.89	-667.2	-84.3	618.3	618.3	0.00	N/A	
3,600.0	3,392.2	3,518.8	3,435.2	20.3	13.5	-138.13	-691.3	-88.1	642.7	642.7	0.00	N/A	
3,700.0	3,483.8	3,615.8	3,529.0	21.0	13.9	-138.35	-715.5	-91.9	667.2	667.2	0.00	N/A	
3,800.0	3,575.4	3,712.7	3,622.9	21.7	14.4	-138.55	-739.6	-95.7	691.7	691.7	0.00	N/A	
3,900.0	3,667.0	3,809.6	3,716.7	22.5	14.8	-138.74	-763.7	-99.5	716.2	716.2	0.00	N/A	
4,000.0	3,758.6	3,906.6	3,810.5	23.2	15.3	-138.91	-787.8	-103.2	740.7	740.7	0.00	N/A	
4,100.0	3,850.2	4,003.5	3,904.3	24.0	15.7	-139.08	-811.9	-107.0	765.1	765.1	0.00	N/A	
4,200.0	3,941.8	4,100.4	3,998.1	24.7	16.2	-139.24	-836.0	-110.8	789.6	789.6	0.00	N/A	
4,300.0	4,033.4	4,197.4	4,091.9	25.5	16.7	-139.38	-860.1	-114.6	814.2	814.2	0.00	N/A	
4,400.0	4,125.0	4,294.3	4,185.7	26.2	17.1	-139.52	-884.2	-118.4	838.7	838.7	0.00	N/A	
4,500.0	4,216.6	4,391.2	4,279.5	27.0	17.6	-139.65	-908.3	-122.2	863.2	863.2	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope M-31 Pad - Antelope R-31 - OH - Plan #2

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	144.77	-47.4	33.4	58.0				
100.0	100.0	100.0	100.0	0.2	0.2	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	
200.0	200.0	200.0	200.0	0.3	0.3	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	
300.0	300.0	300.0	300.0	0.5	0.5	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	
400.0	400.0	400.0	400.0	0.7	0.7	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	
500.0	500.0	500.0	500.0	0.9	0.9	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	
600.0	600.0	600.0	600.0	1.0	1.0	144.77	-47.4	33.4	58.0	58.0	0.00	N/A	CC, ES
700.0	700.0	697.6	697.6	1.2	1.2	-83.14	-47.9	35.9	59.5	59.5	0.00	N/A	
800.0	799.6	794.1	793.7	1.4	1.4	-93.61	-49.4	43.1	65.7	65.7	0.00	N/A	
900.0	898.8	888.2	887.1	1.6	1.6	-106.28	-51.8	54.7	79.9	79.9	0.00	N/A	
1,000.0	997.1	980.2	977.8	2.0	1.9	-117.21	-55.1	70.2	104.1	104.1	0.00	N/A	
1,100.0	1,094.3	1,073.5	1,069.4	2.3	2.2	-125.58	-58.6	87.2	135.1	135.1	0.00	N/A	
1,200.0	1,190.2	1,164.9	1,159.2	2.8	2.5	-131.76	-62.1	103.8	171.5	171.5	0.00	N/A	
1,300.0	1,284.4	1,254.2	1,247.0	3.4	2.8	-136.43	-65.5	120.0	212.9	212.9	0.00	N/A	
1,400.0	1,376.8	1,341.2	1,332.4	4.1	3.1	-140.13	-68.8	135.9	259.1	259.1	0.00	N/A	
1,500.0	1,468.4	1,427.3	1,417.0	4.8	3.4	-143.62	-72.1	151.5	307.7	307.7	0.00	N/A	
1,600.0	1,560.0	1,513.3	1,501.6	5.5	3.7	-146.17	-75.4	167.1	357.0	357.0	0.00	N/A	
1,700.0	1,651.6	1,599.4	1,586.1	6.2	4.0	-148.12	-78.6	182.8	406.6	406.6	0.00	N/A	
1,800.0	1,743.3	1,685.4	1,670.7	6.9	4.3	-149.64	-81.9	198.4	456.6	456.6	0.00	N/A	
1,900.0	1,834.9	1,771.5	1,755.2	7.7	4.6	-150.87	-85.2	214.1	506.7	506.7	0.00	N/A	
2,000.0	1,926.5	1,857.6	1,839.8	8.4	4.9	-151.88	-88.5	229.7	557.0	557.0	0.00	N/A	
2,100.0	2,018.1	1,943.6	1,924.4	9.1	5.2	-152.72	-91.7	245.4	607.4	607.4	0.00	N/A	
2,200.0	2,109.7	2,029.7	2,008.9	9.9	5.5	-153.43	-95.0	261.0	657.9	657.9	0.00	N/A	
2,300.0	2,201.3	2,115.7	2,093.5	10.6	5.9	-154.04	-98.3	276.7	708.4	708.4	0.00	N/A	
2,400.0	2,292.9	2,201.8	2,178.0	11.3	6.2	-154.57	-101.6	292.3	759.0	759.0	0.00	N/A	
2,500.0	2,384.5	2,287.8	2,262.6	12.1	6.5	-155.04	-104.8	308.0	809.6	809.6	0.00	N/A	
2,600.0	2,476.1	2,373.9	2,347.2	12.8	6.8	-155.45	-108.1	323.6	860.3	860.3	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design Antelope S-31 Pad (was 31 I) - Antelope 23-31 (moved from I-31 Pad) - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 466-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
3,600.0	3,392.2	4,014.5	3,763.7	20.3	24.5	-121.74	-1,030.6	-5.2	873.5	873.5	0.00	N/A	
3,700.0	3,483.8	4,108.0	3,846.2	21.0	25.3	-124.05	-1,018.3	-47.5	845.0	845.0	0.00	N/A	
3,800.0	3,575.4	4,177.3	3,907.5	21.7	25.9	-125.76	-1,010.6	-78.6	818.6	818.6	0.00	N/A	
3,900.0	3,667.0	4,273.7	3,993.7	22.5	26.8	-128.23	-1,000.9	-120.7	795.3	795.3	0.00	N/A	
4,000.0	3,758.6	4,372.5	4,081.3	23.2	27.7	-130.91	-990.4	-165.4	771.7	771.7	0.00	N/A	
4,100.0	3,850.2	4,449.4	4,149.4	24.0	28.3	-133.16	-981.4	-199.7	750.2	750.2	0.00	N/A	
4,200.0	3,941.8	4,522.8	4,215.3	24.7	28.9	-135.35	-973.6	-231.1	732.7	732.7	0.00	N/A	
4,300.0	4,033.4	4,598.1	4,283.7	25.5	29.5	-137.71	-965.1	-261.5	719.3	719.3	0.00	N/A	
4,400.0	4,125.0	4,676.0	4,354.9	26.2	30.1	-140.18	-956.7	-291.9	709.6	709.6	0.00	N/A	
4,500.0	4,216.6	4,756.0	4,428.7	27.0	30.7	-142.71	-948.7	-321.8	703.6	703.6	0.00	N/A	
4,578.4	4,288.5	4,811.8	4,480.6	27.6	31.1	-144.48	-943.0	-341.5	702.1	702.1	0.00	N/A	CC, ES
4,600.0	4,308.2	4,826.9	4,494.7	27.7	31.2	-144.95	-941.5	-346.6	702.2	702.2	0.00	N/A	
4,700.0	4,399.8	4,903.4	4,566.8	28.5	31.6	-147.33	-934.0	-371.1	705.6	705.6	0.00	N/A	
4,800.0	4,491.5	4,992.7	4,651.3	29.2	32.2	-150.05	-925.2	-398.5	712.3	712.3	0.00	N/A	
4,900.0	4,583.1	5,081.7	4,735.7	30.0	32.7	-152.64	-917.7	-425.8	720.7	720.7	0.00	N/A	
5,000.0	4,674.7	5,155.7	4,806.5	30.7	33.1	-154.62	-912.5	-446.7	732.7	732.7	0.00	N/A	
5,100.0	4,766.3	5,238.0	4,886.1	31.4	33.4	-156.64	-907.4	-467.1	748.8	748.8	0.00	N/A	
5,200.0	4,857.9	5,299.3	4,945.8	32.2	33.7	-158.03	-903.8	-480.5	768.7	768.7	0.00	N/A	
5,300.0	4,949.5	5,376.4	5,021.4	32.9	34.0	-159.63	-899.4	-495.0	792.2	792.2	0.00	N/A	
5,400.0	5,041.1	5,456.0	5,099.7	33.7	34.2	-161.15	-895.2	-508.5	818.0	818.0	0.00	N/A	
5,500.0	5,132.7	5,535.8	5,178.8	34.4	34.4	-162.39	-892.7	-519.3	846.4	846.4	0.00	N/A	
5,600.0	5,224.3	5,633.5	5,275.6	35.2	34.7	-163.75	-890.5	-531.9	875.5	875.5	0.00	N/A	

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope I-31
Project:	Weld County	**TVD Reference:**	KB @ 4599.0ft (Original Well Elev)
Reference Site:	Antelope M-31 Pad	**MD Reference:**	KB @ 4599.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Antelope I-31	**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 #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 4599.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Antelope I-31
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.73°