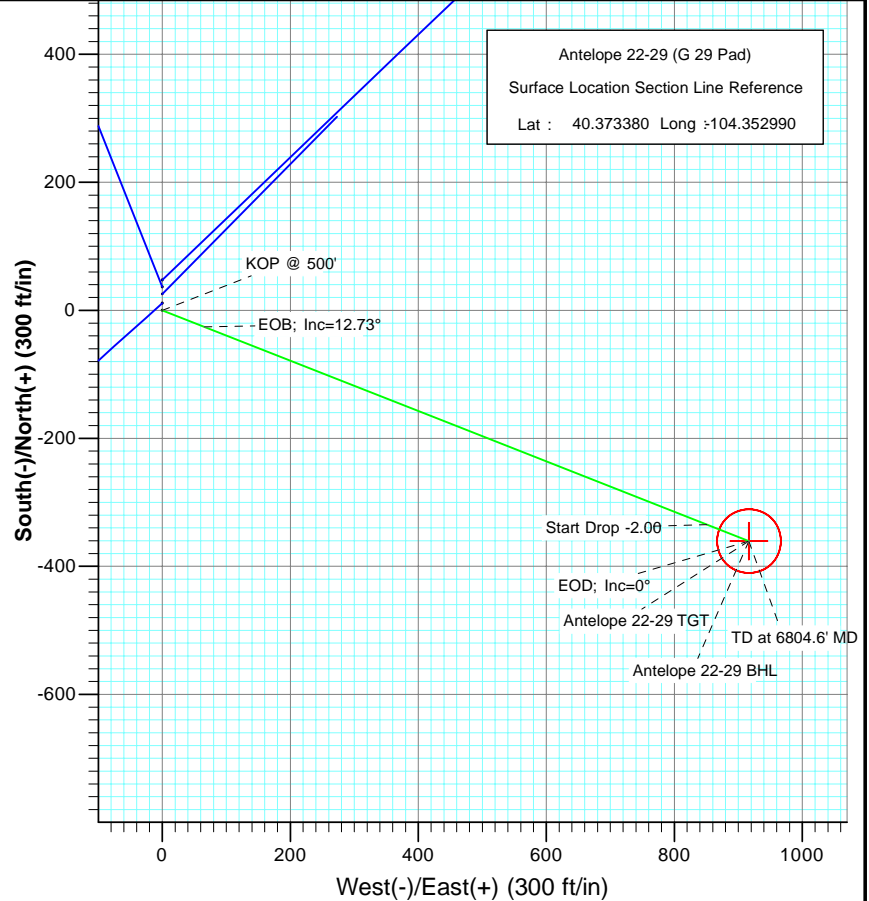


SECTION DETAILS

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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1136.4	12.73	111.48	1131.2	-25.8	65.5	2.00	111.48	70.4	
4	4968.2	12.73	111.48	4868.8	-334.9	851.2	0.00	0.00	914.7	
5	5604.6	0.00	0.00	5500.0	-360.6	916.7	2.00	180.00	985.1	Antelope 22-29 TGT
6	6804.6	0.00	0.00	6700.0	-360.6	916.7	0.00	0.00	985.1	Antelope 22-29 BHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5800.0	5904.6	Target #1
6267.0	6371.6	Niobrara



Azimuths to True North
Magnetic North: 8.68°

Magnetic Field
Strength: 53195.2nT
Dip Angle: 67.11°
Date: 2/24/2011
Model: IGRF2010

Plan #1
Antelope 22-29 (G 29 Pad)

KBE @ 4667.0ft (Original Well Elev)
North American Datum 1983
Well Antelope 22-29 (G 29 Pad), True North

Target	Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope 22-29 BHL	Antelope 22-29 BHL	6700.0	-360.6	916.7	40.372390	-104.349700
Antelope 22-29 TGT	Antelope 22-29 TGT	5500.0	-360.6	916.7	40.372390	-104.349700

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site:	Antelope G 29 Pad	North Reference:	True
Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
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 G 29 Pad			
Site Position:		Northing:	1,380,957.95 ft	Latitude:	40.373450
From:	Lat/Long	Easting:	3,319,577.00 ft	Longitude:	-104.352990
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope 22-29 (G 29 Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,380,932.44 ft	Latitude:	40.373380
	+E/-W	0.0 ft	Easting:	3,319,577.33 ft	Longitude:	-104.352990
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,657.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	2/24/2011	8.68	67.11	53,195

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	111.48

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,136.4	12.73	111.48	1,131.2	-25.8	65.5	2.00	2.00	0.00	111.48	
4,968.2	12.73	111.48	4,868.8	-334.9	851.2	0.00	0.00	0.00	0.00	
5,604.6	0.00	0.00	5,500.0	-360.6	916.7	2.00	-2.00	0.00	180.00	Antelope 22-29 TGT
6,804.6	0.00	0.00	6,700.0	-360.6	916.7	0.00	0.00	0.00	0.00	Antelope 22-29 BHL

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site:	Antelope G 29 Pad	North Reference:	True
Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
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	KOP @ 500'
600.0	2.00	111.48	600.0	-0.6	1.6	1.7	2.00	2.00	
700.0	4.00	111.48	699.8	-2.6	6.5	7.0	2.00	2.00	
800.0	6.00	111.48	799.5	-5.7	14.6	15.7	2.00	2.00	
900.0	8.00	111.48	898.7	-10.2	25.9	27.9	2.00	2.00	
1,000.0	10.00	111.48	997.5	-15.9	40.5	43.5	2.00	2.00	
1,100.0	12.00	111.48	1,095.6	-22.9	58.3	62.6	2.00	2.00	
1,136.4	12.73	111.48	1,131.2	-25.8	65.5	70.4	2.00	2.00	EOB; Inc=12.73°
1,200.0	12.73	111.48	1,193.2	-30.9	78.5	84.4	0.00	0.00	
1,300.0	12.73	111.48	1,290.8	-39.0	99.1	106.4	0.00	0.00	
1,400.0	12.73	111.48	1,388.3	-47.0	119.6	128.5	0.00	0.00	
1,500.0	12.73	111.48	1,485.8	-55.1	140.1	150.5	0.00	0.00	
1,600.0	12.73	111.48	1,583.4	-63.2	160.6	172.5	0.00	0.00	
1,700.0	12.73	111.48	1,680.9	-71.2	181.1	194.6	0.00	0.00	
1,800.0	12.73	111.48	1,778.5	-79.3	201.6	216.6	0.00	0.00	
1,900.0	12.73	111.48	1,876.0	-87.4	222.1	238.6	0.00	0.00	
2,000.0	12.73	111.48	1,973.6	-95.4	242.6	260.7	0.00	0.00	
2,100.0	12.73	111.48	2,071.1	-103.5	263.1	282.7	0.00	0.00	
2,200.0	12.73	111.48	2,168.6	-111.6	283.6	304.7	0.00	0.00	
2,300.0	12.73	111.48	2,266.2	-119.6	304.1	326.8	0.00	0.00	
2,400.0	12.73	111.48	2,363.7	-127.7	324.6	348.8	0.00	0.00	
2,500.0	12.73	111.48	2,461.3	-135.8	345.1	370.8	0.00	0.00	
2,600.0	12.73	111.48	2,558.8	-143.8	365.6	392.9	0.00	0.00	
2,700.0	12.73	111.48	2,656.4	-151.9	386.1	414.9	0.00	0.00	
2,800.0	12.73	111.48	2,753.9	-160.0	406.6	436.9	0.00	0.00	
2,900.0	12.73	111.48	2,851.4	-168.0	427.1	459.0	0.00	0.00	
3,000.0	12.73	111.48	2,949.0	-176.1	447.6	481.0	0.00	0.00	
3,100.0	12.73	111.48	3,046.5	-184.2	468.1	503.0	0.00	0.00	
3,200.0	12.73	111.48	3,144.1	-192.2	488.6	525.1	0.00	0.00	
3,300.0	12.73	111.48	3,241.6	-200.3	509.1	547.1	0.00	0.00	
3,400.0	12.73	111.48	3,339.2	-208.4	529.6	569.1	0.00	0.00	
3,500.0	12.73	111.48	3,436.7	-216.4	550.1	591.2	0.00	0.00	
3,600.0	12.73	111.48	3,534.2	-224.5	570.6	613.2	0.00	0.00	
3,700.0	12.73	111.48	3,631.8	-232.6	591.1	635.2	0.00	0.00	
3,800.0	12.73	111.48	3,729.3	-240.6	611.6	657.3	0.00	0.00	
3,900.0	12.73	111.48	3,826.9	-248.7	632.1	679.3	0.00	0.00	
4,000.0	12.73	111.48	3,924.4	-256.8	652.6	701.3	0.00	0.00	
4,100.0	12.73	111.48	4,021.9	-264.8	673.2	723.4	0.00	0.00	
4,200.0	12.73	111.48	4,119.5	-272.9	693.7	745.4	0.00	0.00	
4,300.0	12.73	111.48	4,217.0	-281.0	714.2	767.4	0.00	0.00	
4,400.0	12.73	111.48	4,314.6	-289.0	734.7	789.5	0.00	0.00	
4,500.0	12.73	111.48	4,412.1	-297.1	755.2	811.5	0.00	0.00	
4,600.0	12.73	111.48	4,509.7	-305.2	775.7	833.5	0.00	0.00	
4,700.0	12.73	111.48	4,607.2	-313.2	796.2	855.6	0.00	0.00	
4,800.0	12.73	111.48	4,704.7	-321.3	816.7	877.6	0.00	0.00	
4,900.0	12.73	111.48	4,802.3	-329.4	837.2	899.6	0.00	0.00	
4,968.2	12.73	111.48	4,868.8	-334.9	851.2	914.7	0.00	0.00	Start Drop -2.00

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site:	Antelope G 29 Pad	North Reference:	True
Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
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
5,000.0	12.09	111.48	4,899.9	-337.4	857.5	921.5	2.00	-2.00	
5,100.0	10.09	111.48	4,998.0	-344.4	875.4	940.7	2.00	-2.00	
5,200.0	8.09	111.48	5,096.7	-350.2	890.1	956.5	2.00	-2.00	
5,300.0	6.09	111.48	5,196.0	-354.7	901.6	968.9	2.00	-2.00	
5,400.0	4.09	111.48	5,295.6	-358.0	909.9	977.8	2.00	-2.00	
5,500.0	2.09	111.48	5,395.4	-359.9	914.9	983.2	2.00	-2.00	
5,600.0	0.09	111.48	5,495.4	-360.6	916.7	985.1	2.00	-2.00	
5,604.6	0.00	0.00	5,500.0	-360.6	916.7	985.1	2.00	-2.00	EOD; Inc=0° - Antelope 22-29 TGT
5,700.0	0.00	0.00	5,595.4	-360.6	916.7	985.1	0.00	0.00	
5,800.0	0.00	0.00	5,695.4	-360.6	916.7	985.1	0.00	0.00	
5,900.0	0.00	0.00	5,795.4	-360.6	916.7	985.1	0.00	0.00	
5,904.6	0.00	0.00	5,800.0	-360.6	916.7	985.1	0.00	0.00	Target #1
6,000.0	0.00	0.00	5,895.4	-360.6	916.7	985.1	0.00	0.00	
6,100.0	0.00	0.00	5,995.4	-360.6	916.7	985.1	0.00	0.00	
6,200.0	0.00	0.00	6,095.4	-360.6	916.7	985.1	0.00	0.00	
6,300.0	0.00	0.00	6,195.4	-360.6	916.7	985.1	0.00	0.00	
6,371.6	0.00	0.00	6,267.0	-360.6	916.7	985.1	0.00	0.00	Niobrara
6,400.0	0.00	0.00	6,295.4	-360.6	916.7	985.1	0.00	0.00	
6,500.0	0.00	0.00	6,395.4	-360.6	916.7	985.1	0.00	0.00	
6,600.0	0.00	0.00	6,495.4	-360.6	916.7	985.1	0.00	0.00	
6,700.0	0.00	0.00	6,595.4	-360.6	916.7	985.1	0.00	0.00	
6,800.0	0.00	0.00	6,695.4	-360.6	916.7	985.1	0.00	0.00	
6,804.6	0.00	0.00	6,700.0	-360.6	916.7	985.1	0.00	0.00	TD at 6804.6' MD - Antelope 22-29 BHL

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 22-29 BHL - plan hits target center - Circle (radius 50.0)	0.00	0.00	6,700.0	-360.6	916.7	1,380,583.70	3,320,498.59	40.372390	-104.349700
Antelope 22-29 TGT - plan hits target center - Point	0.00	0.00	5,500.0	-360.6	916.7	1,380,583.70	3,320,498.59	40.372390	-104.349700

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,904.6	5,800.0	Target #1		0.00	
6,371.6	6,267.0	Niobrara		0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Project:	Weld County	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site:	Antelope G 29 Pad	North Reference:	True
Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500'
1,136.4	1,131.2	-25.8	65.5	EOB; Inc=12.73°
4,968.2	4,868.8	-334.9	851.2	Start Drop -2.00
5,604.6	5,500.0	-360.6	916.7	EOD; Inc=0°
6,804.6	6,700.0	-360.6	916.7	TD at 6804.6' MD

Bonanza Creek Energy Operating Company, LLC

Weld County

Antelope G 29 Pad

Antelope 22-29 (G 29 Pad)

DD

Plan #1

Anticollision Report

24 February, 2011

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
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 880.5ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	2/24/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,804.6	Plan #1 (DD)	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						
Antelope G 29 Pad						
Antelope 11-29 (G 29 Pad) - DD - Plan #1	0.0	0.0	36.4			
Antelope 11-29 (G 29 Pad) - DD - Plan #1	500.0	500.0	36.4	36.4	10,000.000	CC, ES
Antelope 12-29 (G 29 Pad) - DD - Plan #1	0.0	0.0	10.9			
Antelope 12-29 (G 29 Pad) - DD - Plan #1	580.5	580.7	10.8	10.8	10,000.000	CC, ES
Antelope 21-29 (G29 Pad) - DD - Plan #1	0.0	0.0	47.4			
Antelope 21-29 (G29 Pad) - DD - Plan #1	500.0	500.0	47.4	47.4	10,000.000	CC, ES
Antelope G 29 (G 29 Pad) - DD - Plan #1	0.0	0.0	25.5			
Antelope G 29 (G 29 Pad) - DD - Plan #1	500.0	500.0	25.5	25.5	10,000.000	CC, ES

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope G 29 Pad - Antelope 11-29 (G 29 Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-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		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	36.4	0.0	36.4					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	36.4	0.0	36.4	36.4	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	36.4	0.0	36.4	36.4	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	36.4	0.0	36.4	36.4	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	36.4	0.0	36.4	36.4	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	0.00	36.4	0.0	36.4	36.4	0.00	N/A CC, ES		
600.0	600.0	598.7	598.7	1.0	1.0	-114.74	38.0	-0.6	38.7	38.7	0.00	N/A		
700.0	699.8	696.9	696.7	1.2	1.2	-122.42	42.7	-2.5	46.3	46.3	0.00	N/A		
800.0	799.5	793.8	793.3	1.4	1.4	-130.60	50.4	-5.6	60.0	60.0	0.00	N/A		
900.0	898.7	889.1	887.9	1.7	1.6	-137.09	60.9	-9.7	80.3	80.3	0.00	N/A		
1,000.0	997.5	982.1	979.8	2.0	1.9	-141.65	74.0	-14.9	107.1	107.1	0.00	N/A		
1,100.0	1,095.6	1,072.4	1,068.6	2.3	2.2	-144.74	89.4	-21.0	140.1	140.1	0.00	N/A		
1,200.0	1,193.2	1,160.4	1,154.6	2.7	2.5	-147.01	106.8	-28.0	178.4	178.4	0.00	N/A		
1,300.0	1,290.8	1,252.1	1,243.9	3.1	2.9	-148.61	126.0	-35.6	218.0	218.0	0.00	N/A		
1,400.0	1,388.3	1,343.7	1,333.2	3.5	3.2	-149.72	145.2	-43.2	257.8	257.8	0.00	N/A		
1,500.0	1,485.8	1,435.4	1,422.5	3.9	3.6	-150.53	164.3	-50.8	297.6	297.6	0.00	N/A		
1,600.0	1,583.4	1,527.0	1,511.8	4.3	4.0	-151.15	183.5	-58.4	337.5	337.5	0.00	N/A		
1,700.0	1,680.9	1,618.7	1,601.1	4.7	4.3	-151.64	202.6	-66.0	377.4	377.4	0.00	N/A		
1,800.0	1,778.5	1,710.3	1,690.4	5.1	4.7	-152.03	221.8	-73.6	417.3	417.3	0.00	N/A		
1,900.0	1,876.0	1,802.0	1,779.7	5.5	5.1	-152.36	241.0	-81.3	457.2	457.2	0.00	N/A		
2,000.0	1,973.6	1,893.6	1,869.0	5.9	5.5	-152.63	260.1	-88.9	497.2	497.2	0.00	N/A		
2,100.0	2,071.1	1,985.3	1,958.3	6.4	5.9	-152.87	279.3	-96.5	537.1	537.1	0.00	N/A		
2,200.0	2,168.6	2,077.0	2,047.6	6.8	6.3	-153.07	298.4	-104.1	577.1	577.1	0.00	N/A		
2,300.0	2,266.2	2,168.6	2,136.9	7.2	6.7	-153.24	317.6	-111.7	617.0	617.0	0.00	N/A		
2,400.0	2,363.7	2,260.3	2,226.3	7.6	7.0	-153.40	336.7	-119.3	657.0	657.0	0.00	N/A		
2,500.0	2,461.3	2,351.9	2,315.6	8.1	7.4	-153.53	355.9	-126.9	697.0	697.0	0.00	N/A		
2,600.0	2,558.8	2,443.6	2,404.9	8.5	7.8	-153.66	375.1	-134.5	736.9	736.9	0.00	N/A		
2,700.0	2,656.4	2,535.2	2,494.2	8.9	8.2	-153.77	394.2	-142.2	776.9	776.9	0.00	N/A		
2,800.0	2,753.9	2,626.9	2,583.5	9.3	8.6	-153.86	413.4	-149.8	816.9	816.9	0.00	N/A		
2,900.0	2,851.4	2,718.5	2,672.8	9.8	9.0	-153.95	432.5	-157.4	856.9	856.9	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope G 29 Pad - Antelope 12-29 (G 29 Pad) - DD - 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 Uncertainty Axis	Separation Factor	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)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	10.9	0.0	10.9	10.9	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	10.9	0.0	10.9	10.9	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	10.9	0.0	10.9	10.9	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	10.9	0.0	10.9	10.9	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	0.00	10.9	0.0	10.9	10.9	0.00	N/A		
580.5	580.5	580.7	580.7	1.0	1.0	-121.66	10.2	-0.8	10.8	10.8	0.00	N/A CC, ES		
600.0	600.0	600.2	600.1	1.0	1.0	-127.22	9.8	-1.3	10.8	10.8	0.00	N/A		
700.0	699.8	699.8	699.6	1.2	1.2	-164.31	6.3	-5.2	14.7	14.7	0.00	N/A		
800.0	799.5	798.4	797.9	1.4	1.4	172.03	0.6	-11.6	27.0	27.0	0.00	N/A		
900.0	898.7	896.2	895.0	1.7	1.6	162.44	-6.8	-19.9	46.1	46.1	0.00	N/A		
1,000.0	997.5	993.5	991.6	2.0	1.9	159.34	-14.3	-28.2	69.0	69.0	0.00	N/A		
1,100.0	1,095.6	1,090.0	1,087.5	2.3	2.1	158.48	-21.7	-36.5	95.1	95.1	0.00	N/A		
1,200.0	1,193.2	1,185.8	1,182.7	2.7	2.3	158.53	-29.0	-44.7	123.8	123.8	0.00	N/A		
1,300.0	1,290.8	1,281.5	1,277.8	3.1	2.6	158.64	-36.4	-53.0	152.6	152.6	0.00	N/A		
1,400.0	1,388.3	1,377.3	1,372.9	3.5	2.8	158.71	-43.7	-61.2	181.4	181.4	0.00	N/A		
1,500.0	1,485.8	1,473.0	1,468.0	3.9	3.1	158.76	-51.1	-69.4	210.3	210.3	0.00	N/A		
1,600.0	1,583.4	1,568.8	1,563.1	4.3	3.3	158.81	-58.4	-77.7	239.1	239.1	0.00	N/A		
1,700.0	1,680.9	1,664.5	1,658.3	4.7	3.6	158.84	-65.7	-85.9	268.0	268.0	0.00	N/A		
1,800.0	1,778.5	1,760.3	1,753.4	5.1	3.8	158.86	-73.1	-94.1	296.8	296.8	0.00	N/A		
1,900.0	1,876.0	1,856.0	1,848.5	5.5	4.1	158.89	-80.4	-102.4	325.7	325.7	0.00	N/A		
2,000.0	1,973.6	1,951.8	1,943.6	5.9	4.3	158.90	-87.8	-110.6	354.5	354.5	0.00	N/A		
2,100.0	2,071.1	2,047.5	2,038.7	6.4	4.6	158.92	-95.1	-118.8	383.4	383.4	0.00	N/A		
2,200.0	2,168.6	2,143.3	2,133.8	6.8	4.8	158.93	-102.5	-127.0	412.2	412.2	0.00	N/A		
2,300.0	2,266.2	2,239.0	2,228.9	7.2	5.1	158.94	-109.8	-135.3	441.1	441.1	0.00	N/A		
2,400.0	2,363.7	2,334.8	2,324.0	7.6	5.3	158.95	-117.2	-143.5	469.9	469.9	0.00	N/A		
2,500.0	2,461.3	2,430.5	2,419.1	8.1	5.6	158.96	-124.5	-151.7	498.7	498.7	0.00	N/A		
2,600.0	2,558.8	2,526.3	2,514.3	8.5	5.8	158.97	-131.9	-160.0	527.6	527.6	0.00	N/A		
2,700.0	2,656.4	2,622.0	2,609.4	8.9	6.1	158.98	-139.2	-168.2	556.4	556.4	0.00	N/A		
2,800.0	2,753.9	2,717.8	2,704.5	9.3	6.3	158.98	-146.6	-176.4	585.3	585.3	0.00	N/A		
2,900.0	2,851.4	2,813.5	2,799.6	9.8	6.6	158.99	-153.9	-184.7	614.1	614.1	0.00	N/A		
3,000.0	2,949.0	2,909.3	2,894.7	10.2	6.9	158.99	-161.3	-192.9	643.0	643.0	0.00	N/A		
3,100.0	3,046.5	3,005.0	2,989.8	10.6	7.1	159.00	-168.6	-201.1	671.8	671.8	0.00	N/A		
3,200.0	3,144.1	3,100.8	3,084.9	11.0	7.4	159.00	-176.0	-209.4	700.7	700.7	0.00	N/A		
3,300.0	3,241.6	3,196.5	3,180.0	11.5	7.6	159.01	-183.3	-217.6	729.5	729.5	0.00	N/A		
3,400.0	3,339.2	3,292.3	3,275.1	11.9	7.9	159.01	-190.6	-225.8	758.4	758.4	0.00	N/A		
3,500.0	3,436.7	3,388.0	3,370.3	12.3	8.1	159.02	-198.0	-234.0	787.2	787.2	0.00	N/A		
3,600.0	3,534.2	3,483.8	3,465.4	12.7	8.4	159.02	-205.3	-242.3	816.0	816.0	0.00	N/A		
3,700.0	3,631.8	3,579.5	3,560.5	13.2	8.6	159.02	-212.7	-250.5	844.9	844.9	0.00	N/A		
3,800.0	3,729.3	3,675.3	3,655.6	13.6	8.9	159.02	-220.0	-258.7	873.7	873.7	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope G 29 Pad - Antelope 21-29 (G29 Pad) - DD - 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	0.00	47.4	0.0	47.4					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	47.4	0.0	47.4	47.4	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	47.4	0.0	47.4	47.4	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	47.4	0.0	47.4	47.4	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	47.4	0.0	47.4	47.4	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	0.00	47.4	0.0	47.4	47.4	0.00	N/A CC, ES		
600.0	600.0	598.8	598.8	1.0	1.0	-111.88	48.5	1.2	49.2	49.2	0.00	N/A		
700.0	699.8	697.5	697.3	1.2	1.2	-112.91	52.1	4.9	54.7	54.7	0.00	N/A		
800.0	799.5	795.7	795.2	1.4	1.4	-114.22	57.9	11.0	63.9	63.9	0.00	N/A		
900.0	898.7	893.3	892.1	1.7	1.7	-115.49	66.0	19.5	76.8	76.8	0.00	N/A		
1,000.0	997.5	990.1	987.7	2.0	1.9	-116.56	76.3	30.2	93.3	93.3	0.00	N/A		
1,100.0	1,095.6	1,085.9	1,081.9	2.3	2.2	-117.37	88.7	43.1	113.5	113.5	0.00	N/A		
1,200.0	1,193.2	1,180.7	1,174.3	2.7	2.6	-117.97	103.1	58.1	136.8	136.8	0.00	N/A		
1,300.0	1,290.8	1,274.6	1,265.2	3.1	3.0	-117.65	119.4	75.1	162.2	162.2	0.00	N/A		
1,400.0	1,388.3	1,367.3	1,354.2	3.5	3.5	-116.66	137.5	94.1	189.4	189.4	0.00	N/A		
1,500.0	1,485.8	1,462.2	1,444.5	3.9	4.0	-115.42	157.5	114.9	218.1	218.1	0.00	N/A		
1,600.0	1,583.4	1,557.9	1,535.6	4.3	4.5	-114.44	177.7	136.0	246.8	246.8	0.00	N/A		
1,700.0	1,680.9	1,653.6	1,626.7	4.7	5.0	-113.67	198.0	157.1	275.6	275.6	0.00	N/A		
1,800.0	1,778.5	1,749.3	1,717.9	5.1	5.6	-113.04	218.2	178.2	304.5	304.5	0.00	N/A		
1,900.0	1,876.0	1,845.0	1,809.0	5.5	6.1	-112.52	238.4	199.3	333.4	333.4	0.00	N/A		
2,000.0	1,973.6	1,940.7	1,900.1	5.9	6.6	-112.08	258.6	220.4	362.3	362.3	0.00	N/A		
2,100.0	2,071.1	2,036.4	1,991.2	6.4	7.1	-111.71	278.9	241.5	391.2	391.2	0.00	N/A		
2,200.0	2,168.6	2,132.1	2,082.4	6.8	7.7	-111.39	299.1	262.6	420.1	420.1	0.00	N/A		
2,300.0	2,266.2	2,227.8	2,173.5	7.2	8.2	-111.11	319.3	283.7	449.1	449.1	0.00	N/A		
2,400.0	2,363.7	2,323.5	2,264.6	7.6	8.8	-110.87	339.5	304.8	478.0	478.0	0.00	N/A		
2,500.0	2,461.3	2,419.2	2,355.7	8.1	9.3	-110.65	359.8	325.9	507.0	507.0	0.00	N/A		
2,600.0	2,558.8	2,514.9	2,446.9	8.5	9.8	-110.46	380.0	347.0	536.0	536.0	0.00	N/A		
2,700.0	2,656.4	2,610.6	2,538.0	8.9	10.4	-110.28	400.2	368.1	564.9	564.9	0.00	N/A		
2,800.0	2,753.9	2,706.2	2,629.1	9.3	10.9	-110.13	420.4	389.2	593.9	593.9	0.00	N/A		
2,900.0	2,851.4	2,801.9	2,720.2	9.8	11.5	-109.98	440.7	410.3	622.9	622.9	0.00	N/A		
3,000.0	2,949.0	2,897.6	2,811.4	10.2	12.0	-109.85	460.9	431.4	651.9	651.9	0.00	N/A		
3,100.0	3,046.5	2,993.3	2,902.5	10.6	12.6	-109.74	481.1	452.5	680.9	680.9	0.00	N/A		
3,200.0	3,144.1	3,089.0	2,993.6	11.0	13.1	-109.63	501.3	473.6	709.8	709.8	0.00	N/A		
3,300.0	3,241.6	3,184.7	3,084.8	11.5	13.7	-109.53	521.6	494.7	738.8	738.8	0.00	N/A		
3,400.0	3,339.2	3,280.4	3,175.9	11.9	14.2	-109.43	541.8	515.7	767.8	767.8	0.00	N/A		
3,500.0	3,436.7	3,376.1	3,267.0	12.3	14.7	-109.35	562.0	536.8	796.8	796.8	0.00	N/A		
3,600.0	3,534.2	3,471.8	3,358.1	12.7	15.3	-109.27	582.2	557.9	825.8	825.8	0.00	N/A		
3,700.0	3,631.8	3,567.5	3,449.3	13.2	15.8	-109.19	602.4	579.0	854.8	854.8	0.00	N/A		

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Antelope G 29 Pad - Antelope G 29 (G 29 Pad) - DD - 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 Uncertainty Axis	Separation Factor	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)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	25.5	0.0	25.5					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	25.5	0.0	25.5	25.5	0.00	N/A		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	25.5	0.0	25.5	25.5	0.00	N/A		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	25.5	0.0	25.5	25.5	0.00	N/A		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	25.5	0.0	25.5	25.5	0.00	N/A		
500.0	500.0	500.0	500.0	0.9	0.9	0.00	25.5	0.0	25.5	25.5	0.00	N/A CC, ES		
600.0	600.0	599.3	599.3	1.0	1.0	-112.29	26.7	1.2	27.4	27.4	0.00	N/A		
700.0	699.8	698.4	698.3	1.2	1.2	-114.15	30.4	4.8	33.0	33.0	0.00	N/A		
800.0	799.5	797.7	797.3	1.4	1.4	-116.89	36.0	10.3	42.0	42.0	0.00	N/A		
900.0	898.7	897.1	896.3	1.7	1.6	-121.73	41.7	16.0	52.9	52.9	0.00	N/A		
1,000.0	997.5	996.0	994.9	2.0	1.8	-127.28	47.5	21.7	66.2	66.2	0.00	N/A		
1,100.0	1,095.6	1,094.4	1,093.0	2.3	2.0	-132.71	53.2	27.3	82.2	82.2	0.00	N/A		
1,200.0	1,193.2	1,192.4	1,190.6	2.7	2.2	-137.52	58.8	32.9	100.7	100.7	0.00	N/A		
1,300.0	1,290.8	1,290.3	1,288.2	3.1	2.5	-140.96	64.5	38.5	119.9	119.9	0.00	N/A		
1,400.0	1,388.3	1,388.2	1,385.8	3.5	2.7	-143.45	70.2	44.1	139.4	139.4	0.00	N/A		
1,500.0	1,485.8	1,486.2	1,483.4	3.9	2.9	-145.32	75.8	49.6	159.1	159.1	0.00	N/A		
1,600.0	1,583.4	1,584.1	1,581.0	4.3	3.1	-146.79	81.5	55.2	179.0	179.0	0.00	N/A		
1,700.0	1,680.9	1,682.0	1,678.6	4.7	3.3	-147.96	87.2	60.8	198.9	198.9	0.00	N/A		
1,800.0	1,778.5	1,779.9	1,776.2	5.1	3.5	-148.91	92.9	66.4	218.9	218.9	0.00	N/A		
1,900.0	1,876.0	1,877.9	1,873.8	5.5	3.8	-149.71	98.5	72.0	238.9	238.9	0.00	N/A		
2,000.0	1,973.6	1,975.8	1,971.4	5.9	4.0	-150.39	104.2	77.6	259.0	259.0	0.00	N/A		
2,100.0	2,071.1	2,073.7	2,069.0	6.4	4.2	-150.96	109.9	83.2	279.1	279.1	0.00	N/A		
2,200.0	2,168.6	2,171.6	2,166.6	6.8	4.4	-151.46	115.5	88.8	299.2	299.2	0.00	N/A		
2,300.0	2,266.2	2,269.6	2,264.2	7.2	4.6	-151.90	121.2	94.4	319.3	319.3	0.00	N/A		
2,400.0	2,363.7	2,367.5	2,361.8	7.6	4.8	-152.28	126.9	100.0	339.5	339.5	0.00	N/A		
2,500.0	2,461.3	2,465.4	2,459.4	8.1	5.1	-152.63	132.5	105.6	359.7	359.7	0.00	N/A		
2,600.0	2,558.8	2,563.3	2,557.0	8.5	5.3	-152.93	138.2	111.1	379.9	379.9	0.00	N/A		
2,700.0	2,656.4	2,661.2	2,654.6	8.9	5.5	-153.21	143.9	116.7	400.1	400.1	0.00	N/A		
2,800.0	2,753.9	2,759.2	2,752.2	9.3	5.7	-153.45	149.5	122.3	420.3	420.3	0.00	N/A		
2,900.0	2,851.4	2,857.1	2,849.8	9.8	5.9	-153.68	155.2	127.9	440.5	440.5	0.00	N/A		
3,000.0	2,949.0	2,955.0	2,947.4	10.2	6.2	-153.88	160.9	133.5	460.7	460.7	0.00	N/A		
3,100.0	3,046.5	3,052.9	3,045.0	10.6	6.4	-154.07	166.6	139.1	480.9	480.9	0.00	N/A		
3,200.0	3,144.1	3,150.9	3,142.6	11.0	6.6	-154.25	172.2	144.7	501.1	501.1	0.00	N/A		
3,300.0	3,241.6	3,248.8	3,240.2	11.5	6.8	-154.41	177.9	150.3	521.3	521.3	0.00	N/A		
3,400.0	3,339.2	3,346.7	3,337.8	11.9	7.0	-154.55	183.6	155.9	541.6	541.6	0.00	N/A		
3,500.0	3,436.7	3,444.6	3,435.4	12.3	7.3	-154.69	189.2	161.5	561.8	561.8	0.00	N/A		
3,600.0	3,534.2	3,542.6	3,533.0	12.7	7.5	-154.82	194.9	167.1	582.0	582.0	0.00	N/A		
3,700.0	3,631.8	3,640.5	3,630.6	13.2	7.7	-154.94	200.6	172.6	602.3	602.3	0.00	N/A		
3,800.0	3,729.3	3,738.4	3,728.2	13.6	7.9	-155.05	206.2	178.2	622.5	622.5	0.00	N/A		
3,900.0	3,826.9	3,836.3	3,825.8	14.0	8.1	-155.15	211.9	183.8	642.8	642.8	0.00	N/A		
4,000.0	3,924.4	3,934.2	3,923.4	14.5	8.4	-155.25	217.6	189.4	663.0	663.0	0.00	N/A		
4,100.0	4,021.9	4,032.2	4,021.0	14.9	8.6	-155.34	223.2	195.0	683.3	683.3	0.00	N/A		
4,200.0	4,119.5	4,130.1	4,118.6	15.3	8.8	-155.43	228.9	200.6	703.5	703.5	0.00	N/A		
4,300.0	4,217.0	4,228.0	4,216.2	15.7	9.0	-155.51	234.6	206.2	723.7	723.7	0.00	N/A		
4,400.0	4,314.6	4,325.9	4,313.8	16.2	9.2	-155.59	240.3	211.8	744.0	744.0	0.00	N/A		
4,500.0	4,412.1	4,423.9	4,411.4	16.6	9.5	-155.66	245.9	217.4	764.3	764.3	0.00	N/A		
4,600.0	4,509.7	4,521.8	4,509.0	17.0	9.7	-155.73	251.6	223.0	784.5	784.5	0.00	N/A		
4,700.0	4,607.2	4,619.7	4,606.6	17.5	9.9	-155.80	257.3	228.6	804.8	804.8	0.00	N/A		
4,800.0	4,704.7	4,717.6	4,704.2	17.9	10.1	-155.86	262.9	234.1	825.0	825.0	0.00	N/A		
4,900.0	4,802.3	4,815.6	4,801.8	18.3	10.3	-155.92	268.6	239.7	845.3	845.3	0.00	N/A		
5,000.0	4,899.9	4,913.5	4,899.4	18.7	10.6	-156.03	274.3	245.3	865.4	865.4	0.00	N/A		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope 22-29 (G 29 Pad)
Project:	Weld County	TVD Reference:	KBE @ 4667.0ft (Original Well Elev)
Reference Site:	Antelope G 29 Pad	MD Reference:	KBE @ 4667.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope 22-29 (G 29 Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4667.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Antelope 22-29 (G 29 Pad)
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.74°

