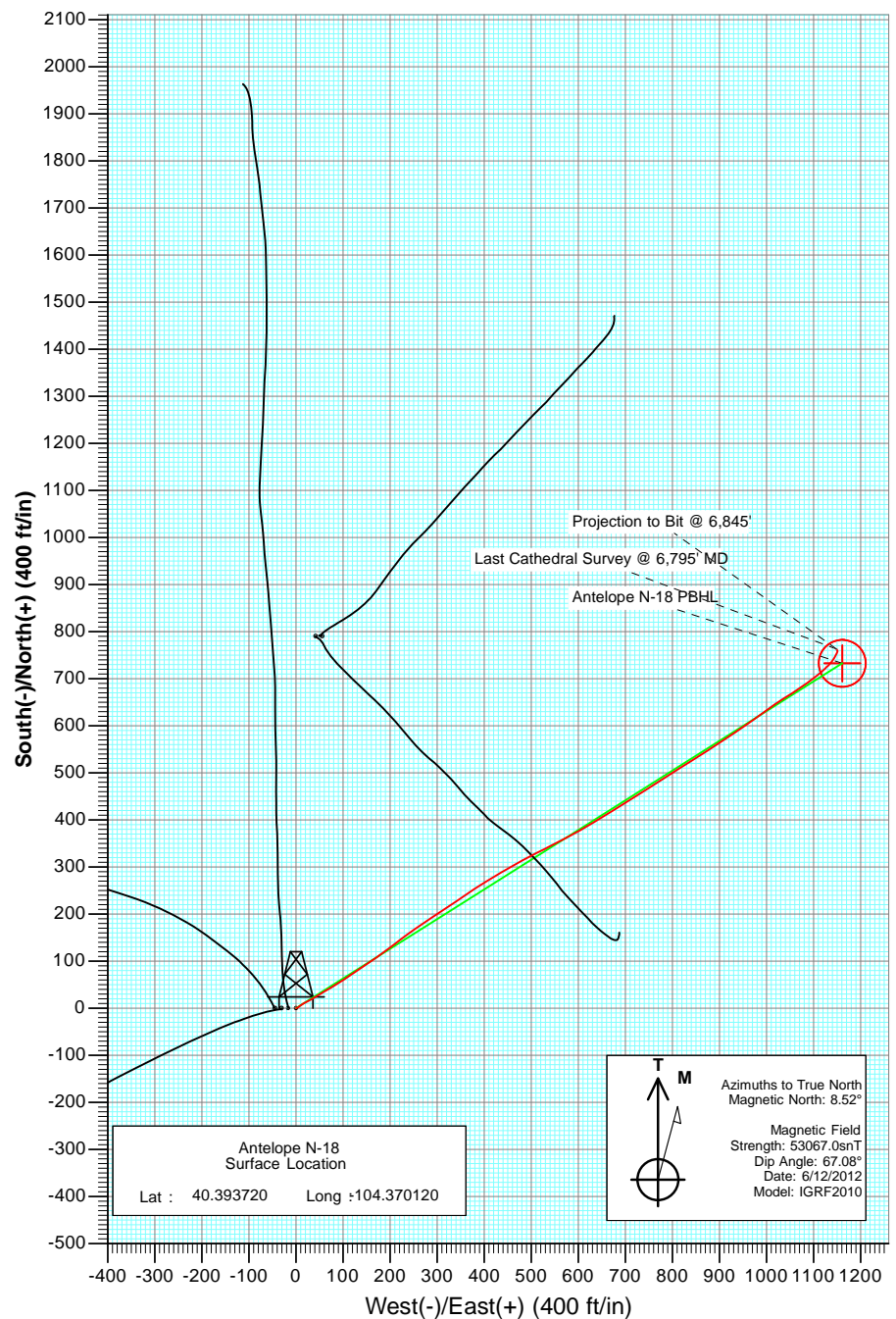
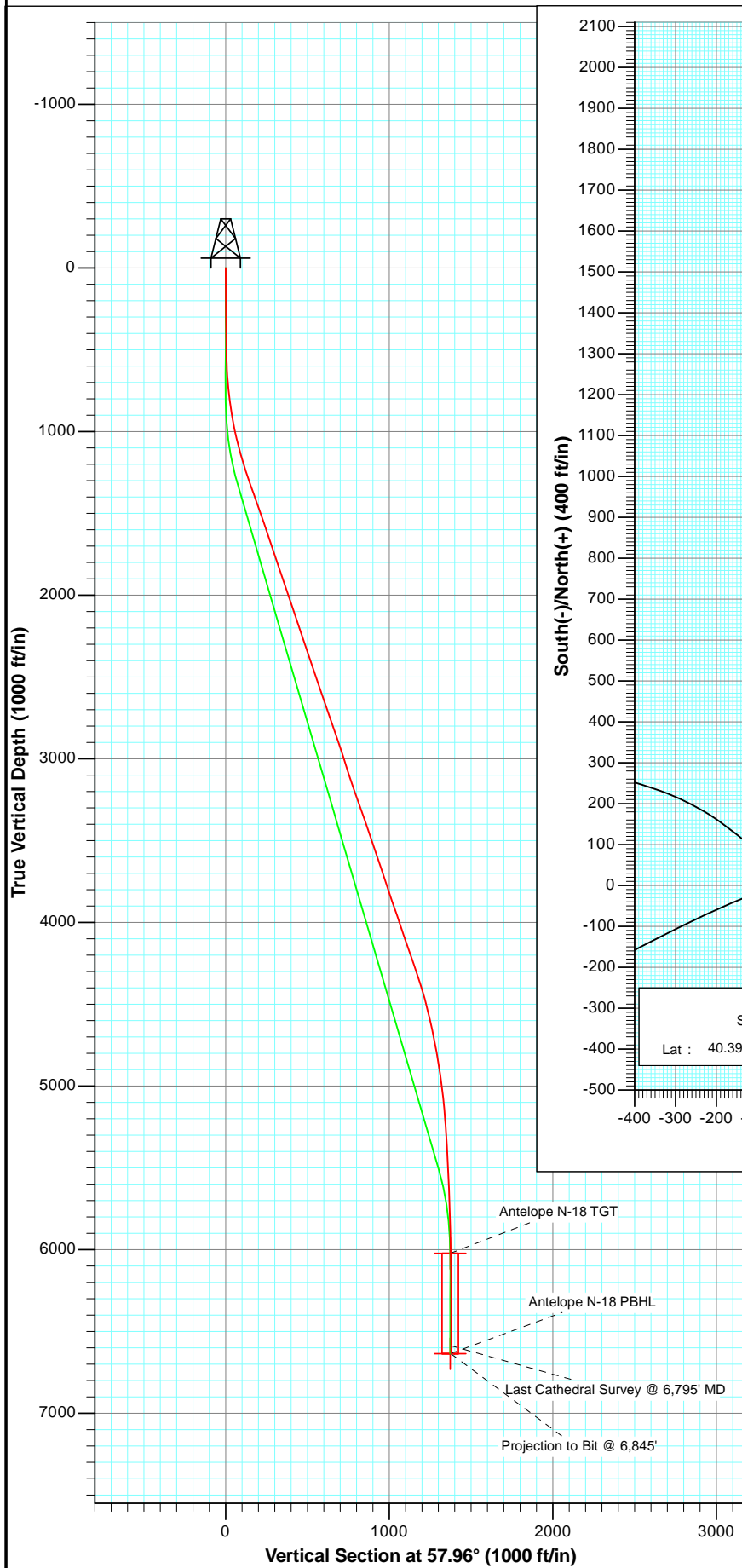




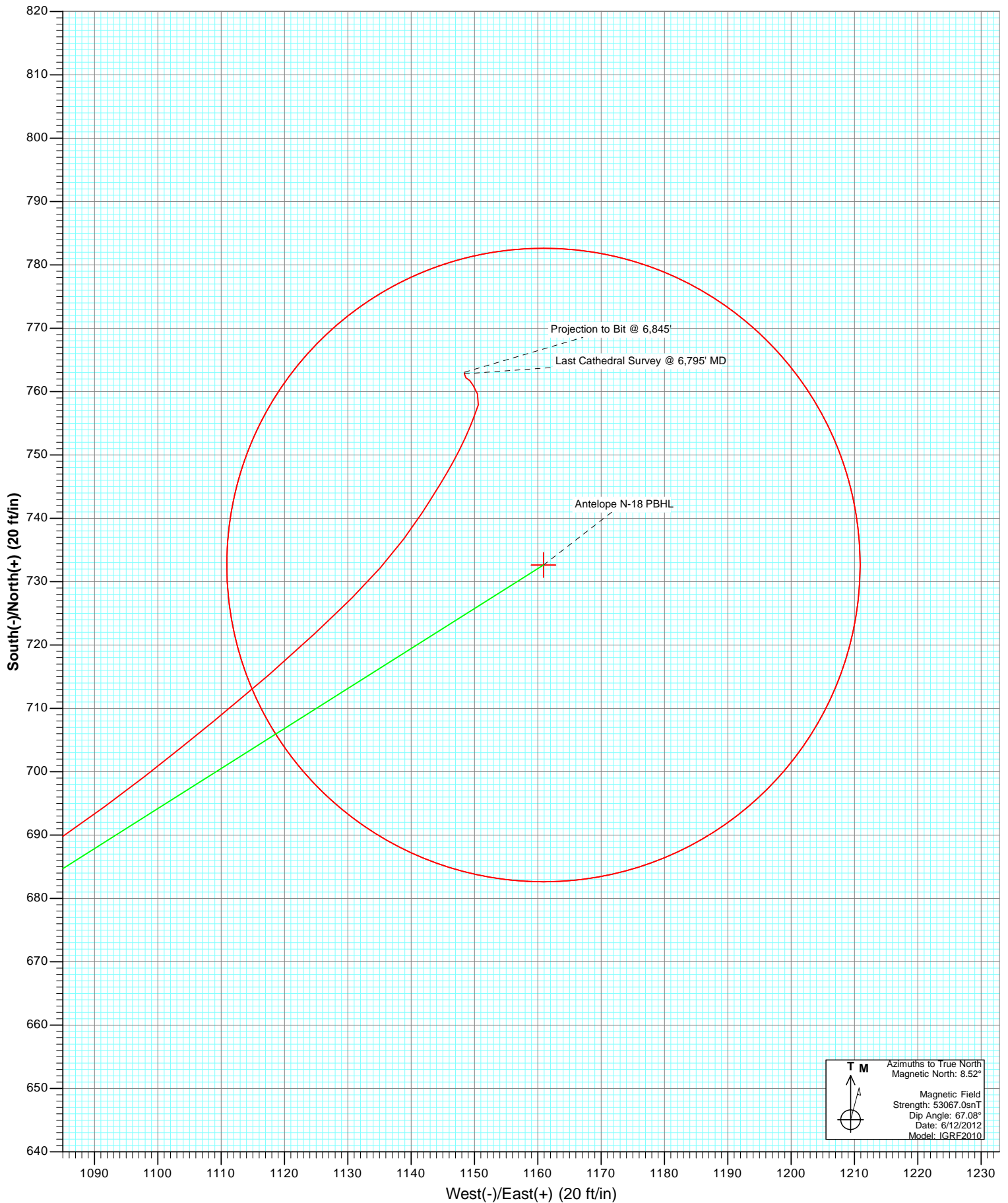
Project: Weld County  
 Site: Antelope D-18 Pad  
 Well: Antelope N-18  
 Wellbore: DD  
 Plan: FINAL



FINAL Antelope N-18 125373/172455; SC						
KBE @ 4605.0ft (Original Well Elev) North American Datum 1983 Well Antelope N-18, True North						
Type	Target		Azimuth	Origin Type	N/S	E/W
User	No Target (Freehand)		57.96	Slot	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope N-18 TGT		6023.0	732.6	1160.9	40.395731	-104.365952
Antelope N-18 PBHL		6636.0	732.6	1160.9	40.395731	-104.365952



Project: Weld County  
Site: Antelope D-18 Pad  
Well: Antelope N-18  
Wellbore: DD  
Plan: FINAL



# Cathedral Energy Services

## Survey Report

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

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

Site		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 N-18					
Well Position	+N/-S	0.0 ft	Northing:	1,388,280.36 ft	Latitude:	40.393720
	+E/-W	0.0 ft	Easting:	3,314,710.55 ft	Longitude:	-104.370120
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,595.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/12/2012	8.52	67.08	53,067

<b>Design</b>	FINAL				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	57.96	

<b>Survey Program</b>	<b>Date</b>	7/24/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
556.0	6,845.0	Survey #1 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
556.0	1.10	63.80	556.0	2.4	4.8	5.3	0.20	0.20		
651.0	3.70	52.70	650.9	4.6	8.0	9.3	2.77	2.74		
745.0	6.00	57.80	744.5	9.1	14.6	17.2	2.49	2.45		
839.0	8.00	63.50	837.8	14.6	24.6	28.6	2.25	2.13		
934.0	10.40	59.40	931.6	21.9	37.9	43.8	2.62	2.53		
1,028.0	12.60	58.70	1,023.7	31.6	54.0	62.5	2.35	2.34		
1,122.0	15.00	60.00	1,115.0	43.0	73.3	84.9	2.57	2.55		
1,217.0	17.20	56.70	1,206.3	56.8	95.7	111.3	2.51	2.32		
1,309.0	19.70	56.20	1,293.5	72.9	119.9	140.4	2.72	2.72		
1,403.0	18.70	55.90	1,382.3	90.2	145.6	171.3	1.07	-1.06		
1,497.0	20.40	54.20	1,470.9	108.2	171.4	202.7	1.91	1.81		
1,592.0	19.00	53.50	1,560.3	127.1	197.2	234.6	1.49	-1.47		

# Cathedral Energy Services

## Survey Report

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

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,687.0	17.80	52.40	1,650.5	145.2	221.1	264.5	1.31	-1.26	
1,781.0	19.20	53.80	1,739.6	163.1	245.0	294.2	1.56	1.49	
1,876.0	19.40	57.80	1,829.3	180.7	271.0	325.6	1.41	0.21	
1,970.0	17.80	56.30	1,918.3	197.0	296.1	355.5	1.78	-1.70	
2,062.0	19.20	56.00	2,005.6	213.3	320.4	384.7	1.53	1.52	
2,155.0	18.50	54.60	2,093.6	230.4	345.1	414.7	0.90	-0.75	
2,281.0	18.80	57.60	2,213.0	252.8	378.5	455.0	0.80	0.24	
2,343.0	17.90	57.50	2,271.8	263.3	395.0	474.5	1.45	-1.45	
2,437.0	18.90	59.20	2,361.0	278.9	420.2	504.2	1.21	1.06	
2,531.0	19.60	60.20	2,449.8	294.5	447.0	535.1	0.82	0.74	
2,626.0	18.60	59.10	2,539.5	310.2	473.8	566.2	1.12	-1.05	
2,719.0	17.90	64.30	2,627.9	324.0	499.4	595.3	1.91	-0.75	
2,812.0	20.30	62.90	2,715.7	337.5	526.7	625.5	2.63	2.58	
2,906.0	19.40	62.70	2,804.2	352.1	555.1	657.3	0.96	-0.96	
2,999.0	17.80	61.60	2,892.3	366.0	581.3	686.9	1.76	-1.72	
3,093.0	18.40	61.40	2,981.6	379.9	607.0	716.1	0.64	0.64	
3,185.0	17.60	58.00	3,069.1	394.2	631.5	744.5	1.44	-0.87	
3,278.0	18.90	59.10	3,157.5	409.4	656.4	773.6	1.45	1.40	
3,371.0	20.30	58.30	3,245.1	425.6	683.0	804.8	1.53	1.51	
3,466.0	18.30	57.30	3,334.7	442.4	709.6	836.2	2.13	-2.11	
3,560.0	18.60	57.70	3,423.9	458.3	734.7	865.9	0.35	0.32	
3,654.0	19.10	57.30	3,512.9	474.7	760.3	896.3	0.55	0.53	
3,749.0	19.00	57.80	3,602.7	491.3	786.5	927.3	0.20	-0.11	
3,843.0	18.90	57.60	3,691.6	507.6	812.3	957.8	0.13	-0.11	
3,937.0	17.60	57.80	3,780.8	523.3	837.1	987.3	1.38	-1.38	
4,031.0	19.20	57.70	3,870.0	539.2	862.2	1,016.9	1.70	1.70	
4,126.0	19.50	56.20	3,959.7	556.3	888.6	1,048.4	0.61	0.32	
4,220.0	18.10	57.70	4,048.6	572.9	914.0	1,078.7	1.58	-1.49	
4,314.0	18.70	54.80	4,137.8	589.4	938.7	1,108.3	1.16	0.64	
4,408.0	19.90	55.20	4,226.5	607.2	964.1	1,139.4	1.28	1.28	
4,503.0	18.70	53.80	4,316.2	625.4	989.7	1,170.7	1.35	-1.26	
4,597.0	16.50	54.60	4,405.8	642.0	1,012.7	1,199.1	2.35	-2.34	
4,691.0	14.60	57.20	4,496.4	656.2	1,033.6	1,224.2	2.15	-2.02	
4,785.0	13.10	57.30	4,587.6	668.4	1,052.5	1,246.7	1.60	-1.60	
4,880.0	11.50	56.70	4,680.4	679.4	1,069.5	1,267.0	1.69	-1.68	
4,974.0	10.90	55.60	4,772.6	689.5	1,084.6	1,285.2	0.68	-0.64	
5,068.0	9.20	51.90	4,865.2	699.2	1,097.9	1,301.6	1.93	-1.81	
5,162.0	7.90	50.60	4,958.2	707.9	1,108.8	1,315.5	1.40	-1.38	
5,256.0	6.20	49.30	5,051.4	715.4	1,117.6	1,326.9	1.82	-1.81	
5,350.0	5.60	46.60	5,144.9	721.8	1,124.8	1,336.4	0.70	-0.64	
5,445.0	4.30	45.60	5,239.6	727.5	1,130.7	1,344.4	1.37	-1.37	
5,538.0	3.70	40.50	5,332.4	732.2	1,135.1	1,350.7	0.75	-0.65	
5,633.0	3.30	37.50	5,427.2	736.7	1,138.8	1,356.2	0.46	-0.42	
5,726.0	2.80	32.90	5,520.1	740.7	1,141.7	1,360.7	0.60	-0.54	
5,820.0	2.20	31.30	5,614.0	744.2	1,143.8	1,364.4	0.64	-0.64	
5,915.0	2.10	31.50	5,708.9	747.3	1,145.7	1,367.6	0.11	-0.11	
6,009.0	2.00	25.90	5,802.8	750.2	1,147.3	1,370.5	0.24	-0.11	
6,103.0	1.80	25.60	5,896.8	753.0	1,148.7	1,373.2	0.21	-0.21	
6,198.0	1.60	20.00	5,991.7	755.6	1,149.8	1,375.5	0.27	-0.21	
6,292.0	1.40	19.30	6,085.7	757.9	1,150.6	1,377.4	0.21	-0.21	
6,386.0	1.00	323.40	6,179.7	759.7	1,150.5	1,378.3	1.25	-0.43	
6,481.0	0.80	344.00	6,274.7	761.0	1,149.8	1,378.4	0.40	-0.21	
6,575.0	0.50	294.40	6,368.7	761.8	1,149.3	1,378.3	0.65	-0.32	

# Cathedral Energy Services

## Survey Report

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

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,669.0	0.40	316.70	6,462.7	762.2	1,148.7	1,378.0	0.21	-0.11	
6,795.0	0.30	9.60	6,588.7	762.8	1,148.4	1,378.2	0.26	-0.08	Last Cathedral Survey @ 6,795' MD
6,845.0	0.30	9.60	6,638.7	763.1	1,148.5	1,378.3	0.00	0.00	Projection to Bit @ 6,845'

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 N-18 PBHL - actual wellpath misses target center by 32.9ft at 6842.2ft MD (6635.9 TVD, 763.1 N, 1148.5 E) - Circle (radius 50.0)	0.00	0.00	6,636.0	732.6	1,160.9	1,389,027.73	3,315,862.02	40.395731	-104.365952
Antelope N-18 TGT - actual wellpath misses target center by 26.1ft at 6228.8ft MD (6022.5 TVD, 756.4 N, 1150.1 E) - Point	0.00	0.00	6,023.0	732.6	1,160.9	1,389,027.73	3,315,862.02	40.395731	-104.365952

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,795.0	6,588.7	762.8	1,148.4	Last Cathedral Survey @ 6,795' MD	
6,845.0	6,638.7	763.1	1,148.5	Projection to Bit @ 6,845'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_