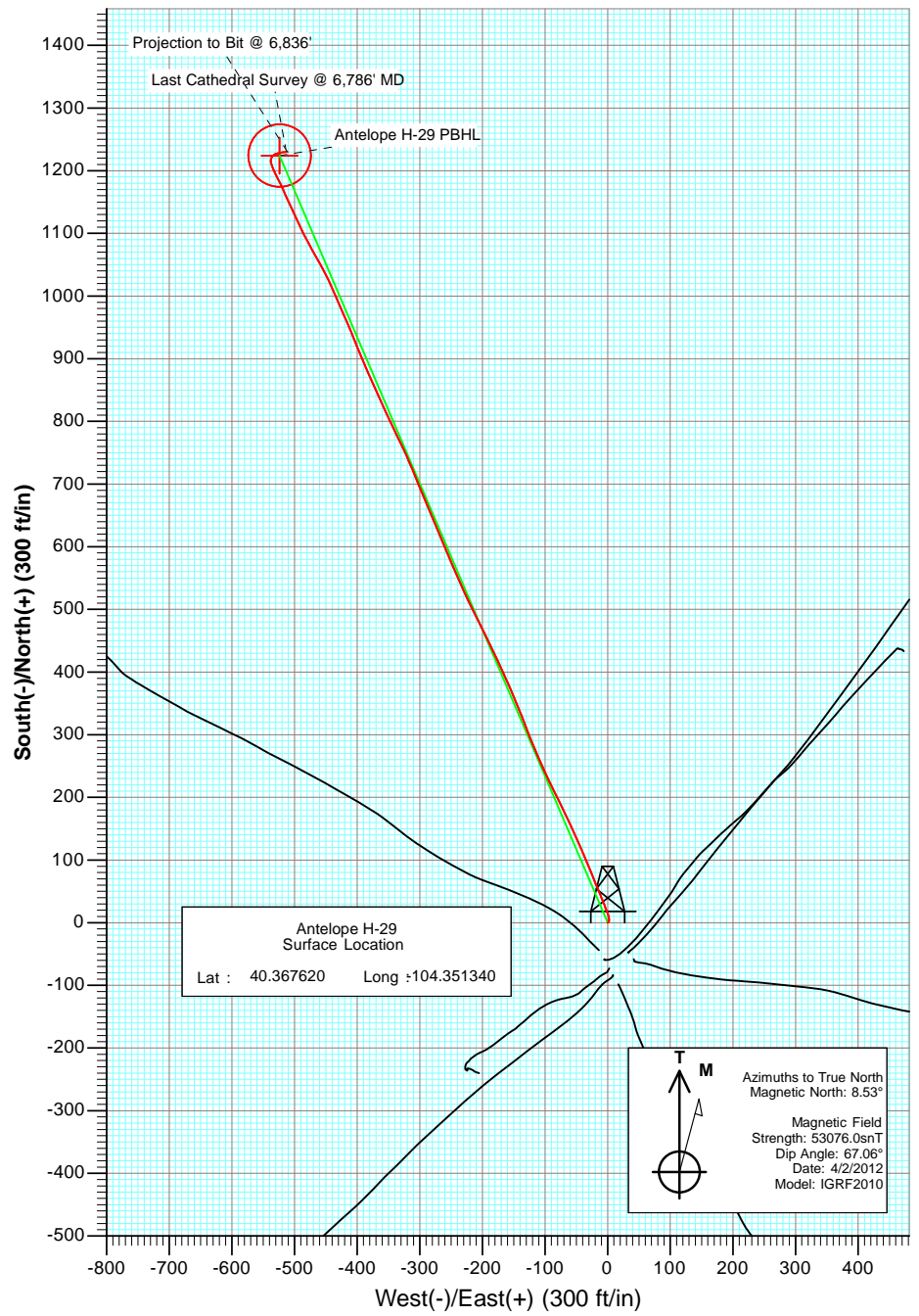
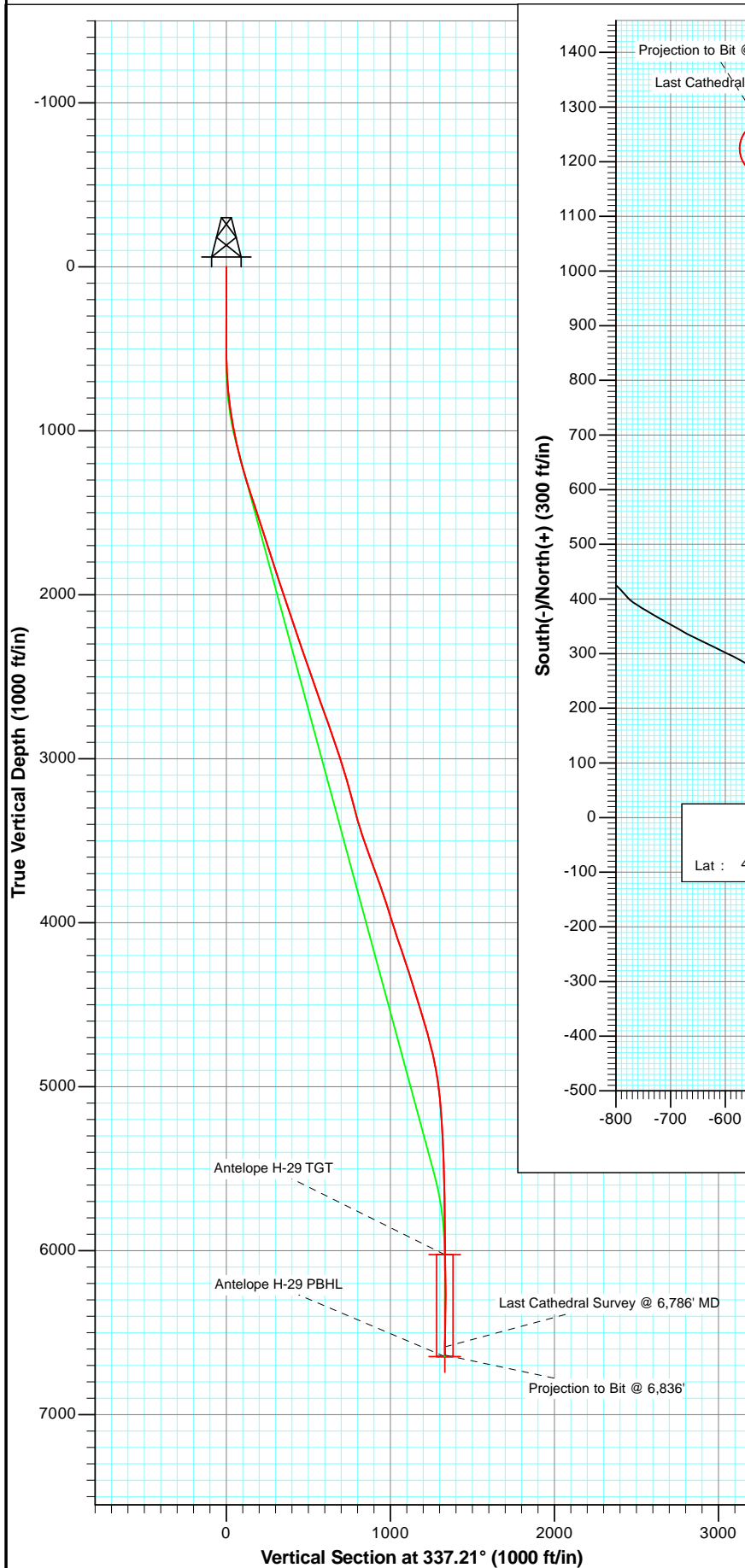




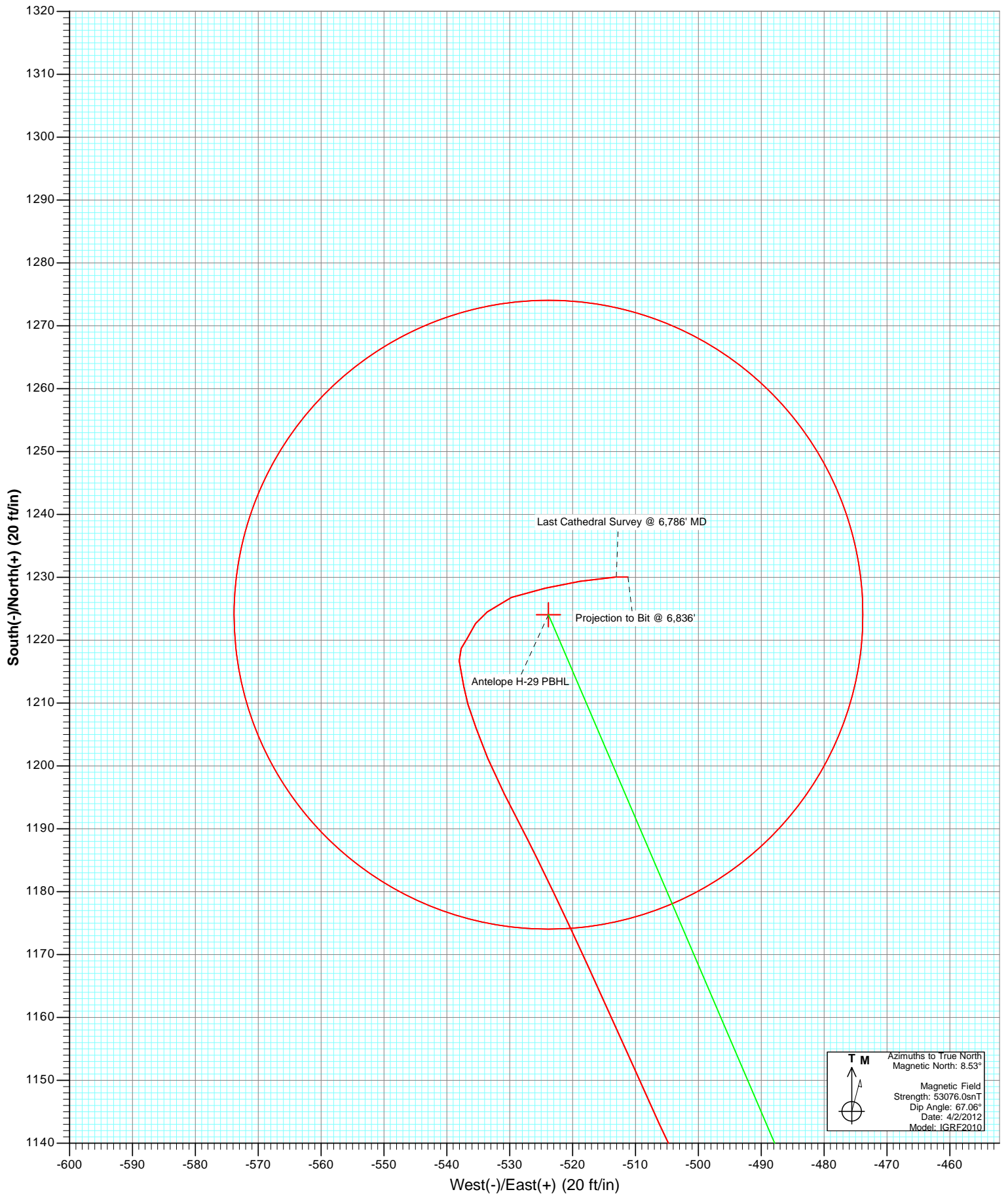
Project: Weld County  
 Site: Antelope I 29 Pad  
 Well: Antelope H-29  
 Wellbore: DD  
 Plan: FINAL



DD Antelope H-29 125240/153855; SC						
KBE @ 4599.0ft (Mid Con #1) North American Datum 1983 Well Antelope H-29, True North						
Type	Target		Azimuth	Origin Type	N/S	E/W
User	No Target (Freehand)		337.21	Slot	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope H-29 TGT		6024.0	1224.1	-523.8	40.370980	-104.353220
Antelope H-29 PBHL		6646.0	1224.1	-523.8	40.370980	-104.353220



Project: Weld County  
Site: Antelope I 29 Pad  
Well: Antelope H-29  
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 H-29
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Site:</b>	Antelope I 29 Pad	<b>MD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Well:</b>	Antelope H-29	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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 I 29 Pad			
Site Position:		Northing:	1,378,781.88 ft	Latitude:	40.367460
From:	Lat/Long	Easting:	3,320,059.38 ft	Longitude:	-104.351360
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope H-29					
Well Position	+N/-S	0.0 ft	Northing:	1,378,840.22 ft	Latitude:	40.367620
	+E/-W	0.0 ft	Easting:	3,320,064.19 ft	Longitude:	-104.351340
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,589.0 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	4/2/2012	8.53	67.06	53,076

<b>Design</b>	DD				
<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	337.21	

<b>Survey Program</b>	<b>Date</b>	4/6/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
525.0	6,836.0	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		
525.0	0.50	52.60	525.0	1.4	1.8	0.6	0.10	0.10		
619.0	2.60	4.00	619.0	3.8	2.3	2.6	2.45	2.23		
713.0	4.50	347.90	712.8	9.5	1.7	8.1	2.26	2.02		
808.0	6.40	336.60	807.3	18.0	-1.2	17.1	2.29	2.00		
902.0	8.00	339.40	900.6	28.9	-5.6	28.8	1.74	1.70		
997.0	11.20	337.00	994.3	43.6	-11.5	44.7	3.39	3.37		
1,091.0	12.70	337.90	1,086.2	61.6	-19.0	64.1	1.61	1.60		
1,186.0	14.70	338.20	1,178.5	82.5	-27.4	86.6	2.11	2.11		
1,280.0	16.70	336.60	1,269.0	105.9	-37.2	112.1	2.18	2.13		
1,375.0	18.40	335.60	1,359.6	132.1	-48.8	140.7	1.82	1.79		
1,468.0	17.80	335.40	1,448.0	158.4	-60.8	169.6	0.65	-0.65		
1,563.0	17.80	333.50	1,538.4	184.6	-73.3	198.6	0.61	0.00		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope H-29
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Site:</b>	Antelope I 29 Pad	<b>MD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Well:</b>	Antelope H-29	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
1,657.0	17.70	334.30	1,627.9	210.3	-85.9	227.2	0.28	-0.11	
1,751.0	18.10	334.40	1,717.4	236.4	-98.4	256.1	0.43	0.43	
1,845.0	18.30	336.80	1,806.7	263.1	-110.5	285.4	0.83	0.21	
1,940.0	18.00	337.80	1,897.0	290.4	-122.0	315.0	0.46	-0.32	
2,034.0	19.20	339.00	1,986.1	318.3	-133.0	345.0	1.34	1.28	
2,129.0	18.50	338.00	2,076.0	346.9	-144.2	375.7	0.81	-0.74	
2,223.0	18.60	337.00	2,165.1	374.5	-155.7	405.6	0.35	0.11	
2,318.0	18.20	334.30	2,255.2	401.8	-168.0	435.5	0.99	-0.42	
2,413.0	18.80	334.70	2,345.3	429.0	-181.0	465.6	0.65	0.63	
2,507.0	19.20	334.10	2,434.2	456.6	-194.2	496.2	0.47	0.43	
2,601.0	19.20	333.00	2,523.0	484.3	-208.0	527.0	0.38	0.00	
2,695.0	19.60	334.10	2,611.6	512.2	-221.9	558.2	0.58	0.43	
2,790.0	20.60	336.40	2,700.8	541.9	-235.6	590.8	1.34	1.05	
2,884.0	18.80	336.40	2,789.3	570.9	-248.2	622.5	1.91	-1.91	
2,979.0	18.40	338.10	2,879.4	598.9	-260.0	652.8	0.71	-0.42	
3,073.0	19.00	337.10	2,968.4	626.7	-271.5	682.9	0.72	0.64	
3,168.0	17.20	336.50	3,058.7	653.9	-283.1	712.5	1.90	-1.89	
3,262.0	16.00	337.20	3,148.8	678.5	-293.6	739.3	1.29	-1.28	
3,356.0	14.50	338.30	3,239.5	701.4	-303.0	764.0	1.63	-1.60	
3,451.0	15.00	337.40	3,331.3	723.8	-312.1	788.2	0.58	0.53	
3,545.0	16.90	336.00	3,421.7	747.5	-322.4	814.0	2.06	2.02	
3,640.0	19.00	334.20	3,512.1	774.1	-334.7	843.3	2.29	2.21	
3,734.0	21.10	335.00	3,600.4	803.2	-348.5	875.5	2.25	2.23	
3,829.0	19.90	334.90	3,689.4	833.3	-362.6	908.7	1.26	-1.26	
3,924.0	18.60	336.40	3,779.1	861.9	-375.5	940.0	1.46	-1.37	
4,018.0	18.00	336.20	3,868.3	888.9	-387.4	969.5	0.64	-0.64	
4,113.0	17.70	338.50	3,958.7	915.7	-398.6	998.7	0.81	-0.32	
4,207.0	17.50	337.10	4,048.3	942.1	-409.3	1,027.1	0.50	-0.21	
4,302.0	18.90	335.70	4,138.6	969.2	-421.2	1,056.7	1.54	1.47	
4,396.0	18.80	337.40	4,227.5	997.1	-433.3	1,087.1	0.59	-0.11	
4,491.0	18.20	335.20	4,317.6	1,024.7	-445.4	1,117.2	0.97	-0.63	
4,585.0	17.00	330.20	4,407.2	1,050.0	-458.4	1,145.6	2.05	-1.28	
4,679.0	16.60	330.50	4,497.2	1,073.6	-471.9	1,172.5	0.44	-0.43	
4,773.0	17.50	333.80	4,587.1	1,097.9	-484.7	1,200.0	1.41	0.96	
4,868.0	15.00	334.40	4,678.3	1,121.8	-496.3	1,226.5	2.64	-2.63	
4,961.0	14.20	335.80	4,768.3	1,143.1	-506.2	1,249.9	0.94	-0.86	
5,055.0	11.60	335.70	4,859.9	1,162.2	-514.8	1,270.9	2.77	-2.77	
5,151.0	8.30	334.50	4,954.5	1,177.3	-521.8	1,287.5	3.44	-3.44	
5,246.0	6.10	333.40	5,048.7	1,188.0	-527.0	1,299.4	2.32	-2.32	
5,341.0	4.10	332.50	5,143.3	1,195.5	-530.8	1,307.8	2.11	-2.11	
5,435.0	3.60	337.70	5,237.1	1,201.2	-533.5	1,314.1	0.65	-0.53	
5,529.0	2.70	340.80	5,331.0	1,206.1	-535.3	1,319.3	0.97	-0.96	
5,624.0	2.10	341.20	5,425.9	1,209.8	-536.6	1,323.2	0.63	-0.63	
5,718.0	1.40	355.10	5,519.8	1,212.6	-537.3	1,326.0	0.87	-0.74	
5,813.0	1.20	343.70	5,614.8	1,214.7	-537.7	1,328.1	0.34	-0.21	
5,907.0	1.30	356.00	5,708.8	1,216.7	-538.0	1,330.1	0.30	0.11	
6,001.0	1.20	22.90	5,802.8	1,218.7	-537.7	1,331.8	0.63	-0.11	
6,095.0	1.10	39.70	5,896.7	1,220.3	-536.8	1,332.9	0.37	-0.11	
6,189.0	0.80	15.30	5,990.7	1,221.6	-536.0	1,333.9	0.53	-0.32	
6,284.0	0.70	44.80	6,085.7	1,222.7	-535.4	1,334.6	0.41	-0.11	
6,378.0	2.50	45.50	6,179.7	1,224.5	-533.6	1,335.6	1.91	1.91	
6,472.0	3.10	69.80	6,273.6	1,226.8	-529.7	1,336.2	1.40	0.64	
6,566.0	3.70	79.00	6,367.4	1,228.3	-524.3	1,335.5	0.86	0.64	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Antelope H-29
<b>Project:</b>	Weld County	<b>TVD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Site:</b>	Antelope I 29 Pad	<b>MD Reference:</b>	KBE @ 4599.0ft (Mid Con #1)
<b>Well:</b>	Antelope H-29	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
6,660.0	3.20	78.80	6,461.2	1,229.4	-518.8	1,334.3	0.53	-0.53	
6,786.0	2.10	90.00	6,587.1	1,230.0	-513.0	1,332.7	0.96	-0.87	Last Cathedral Survey @ 6,786' MD Projection to Bit @ 6,836'
6,836.0	2.10	90.00	6,637.1	1,230.0	-511.2	1,332.0	0.00	0.00	

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 H-29 TGT - actual wellpath misses target center by 12.2ft at 6222.4ft MD (6024.1 TVD, 1222.0 N, -535.9 E) - Point	0.00	0.00	6,024.0	1,224.1	-523.8	1,380,057.39	3,319,524.56	40.370980	-104.353220
Antelope H-29 PBHL - actual wellpath misses target center by 16.6ft at 6836.0ft MD (6637.1 TVD, 1230.0 N, -511.2 E) - Circle (radius 50.0)	0.00	0.00	6,646.0	1,224.1	-523.8	1,380,057.39	3,319,524.56	40.370980	-104.353220

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,786.0	6,587.1	1,230.0	-513.0	Last Cathedral Survey @ 6,786' MD	
6,836.0	6,637.1	1,230.0	-511.2	Projection to Bit @ 6,836'	

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