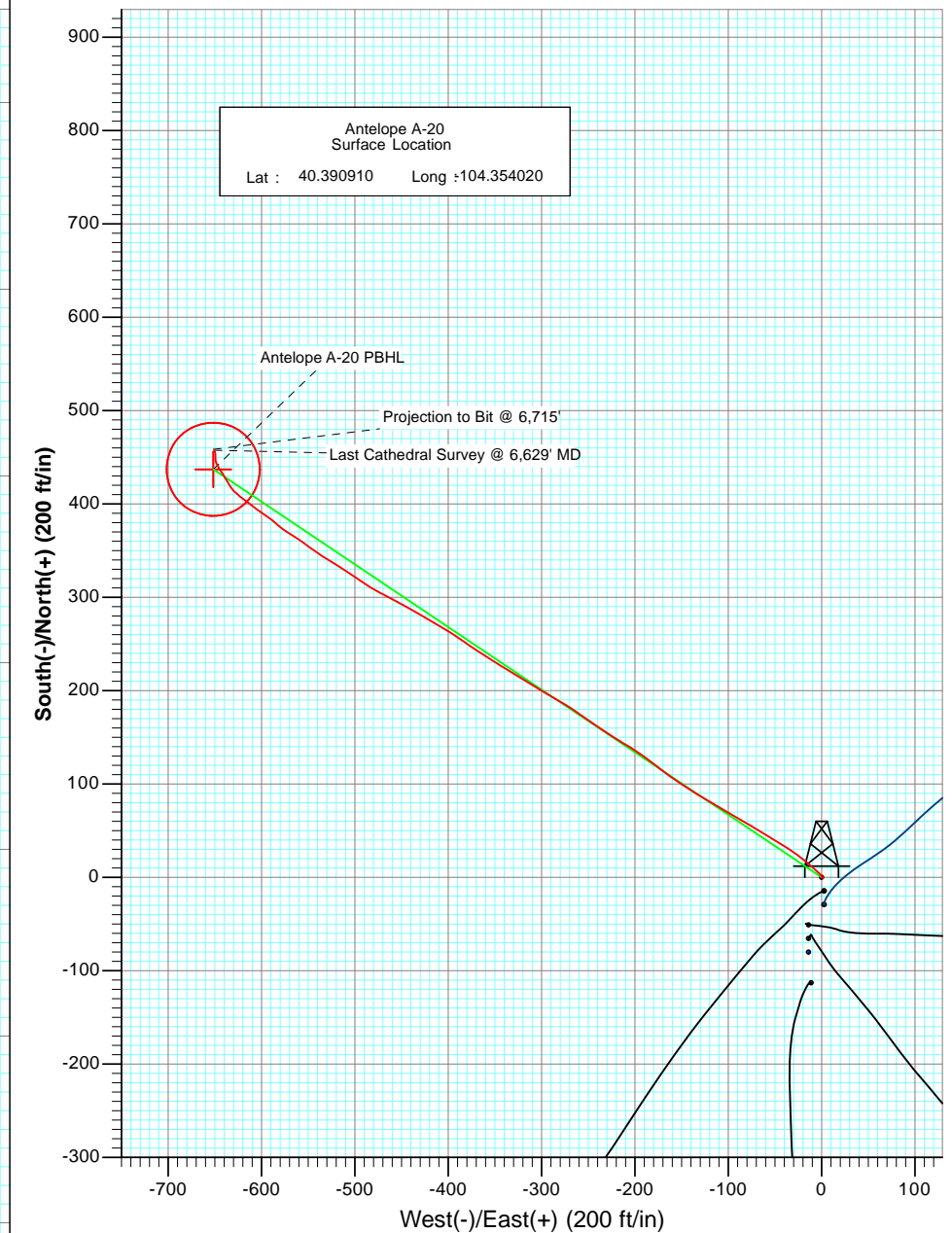
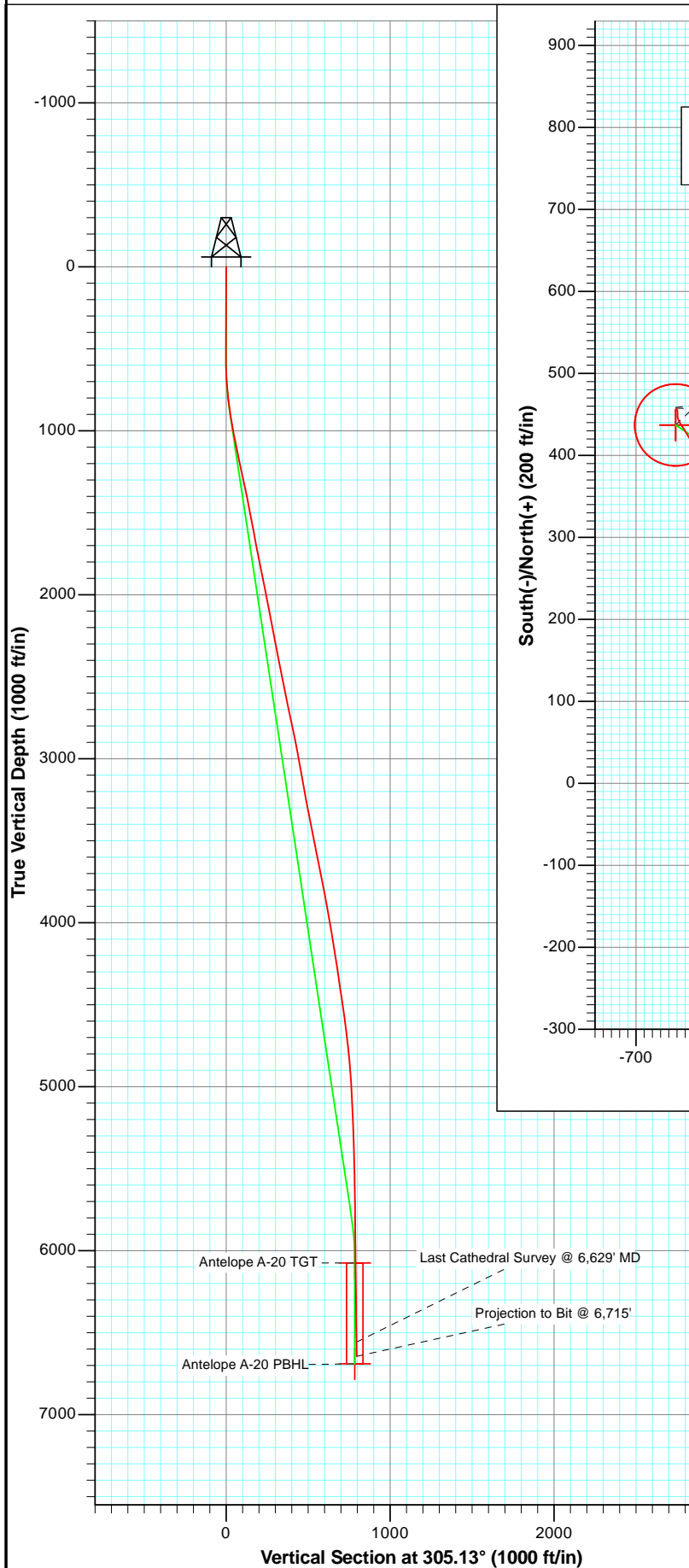




Project: Weld County
 Site: Antelope 11-20 Pad
 Well: Antelope A-20
 Wellbore: DD
 Plan: FINAL



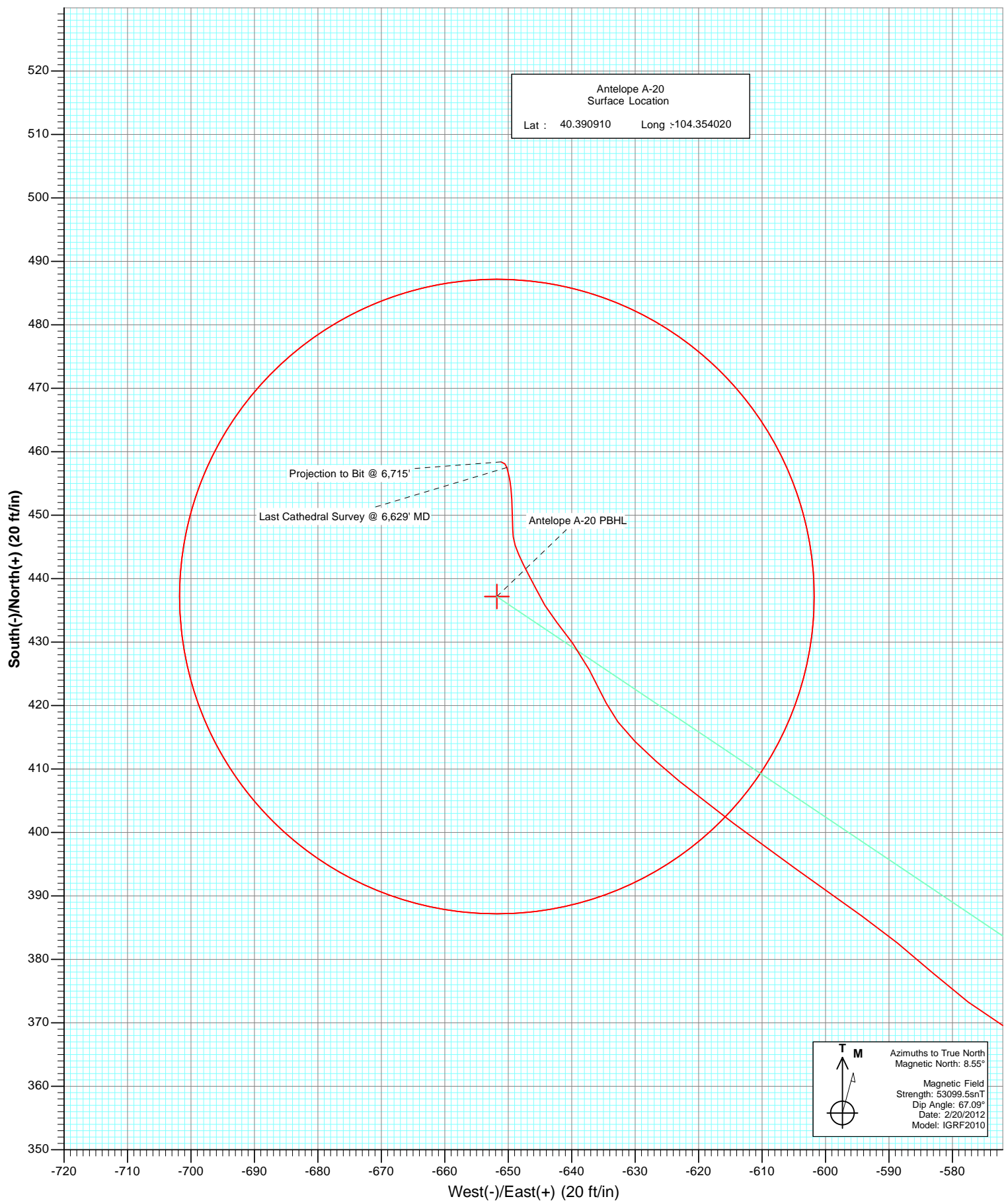
Azimuths to True North
 Magnetic North: 8.55°

Magnetic Field
 Strength: 53099.5nT
 Dip Angle: 67.09°
 Date: 2/20/2012
 Model: IGRF2010

DD Antelope A-20 147755 125196; SC KBE @ 4660.0ft (Mid Con) North American Datum 1983 Well Antelope A-20, True North						
Type User	Target No Target (Freehand)	Azimuth 305.13	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Antelope A-20 TGT	6075.0	437.2	-651.8	40.392110	-104.356360	
Antelope A-20 PBHL	6690.0	437.2	-651.8	40.392110	-104.356360	



Project: Weld County
Site: Antelope 11-20 Pad
Well: Antelope A-20
Wellbore: DD
Plan: FINAL



Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope A-20
Project:	Weld County	TVD Reference:	KBE @ 4660.0ft (Mid Con)
Site:	Antelope 11-20 Pad	MD Reference:	KBE @ 4660.0ft (Mid Con)
Well:	Antelope A-20	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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 11-20 Pad			
Site Position:		Northing:	1,387,248.61 ft	Latitude:	40.390730
From:	Lat/Long	Easting:	3,319,197.55 ft	Longitude:	-104.354060
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope A-20					
Well Position	+N/-S	0.0 ft	Northing:	1,387,314.30 ft	Latitude:	40.390910
	+E/-W	0.0 ft	Easting:	3,319,207.85 ft	Longitude:	-104.354020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,650.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/20/2012	8.55	67.09	53,100

Design	DD			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	305.13

Survey Program	Date	3/16/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
493.0	6,715.0	Survey #1 (DD)	MWD	Geolink MWD	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
493.0	0.40	113.80	493.0	-0.7	1.6	-1.7	0.08	0.08	
588.0	1.00	322.40	588.0	-0.2	1.4	-1.2	1.44	0.63	
682.0	3.30	318.50	681.9	2.5	-0.9	2.2	2.45	2.45	
777.0	5.90	311.50	776.6	7.8	-6.4	9.7	2.79	2.74	
871.0	8.00	311.20	869.9	15.3	-14.9	21.0	2.23	2.23	
966.0	9.50	305.60	963.8	24.2	-26.3	35.4	1.81	1.58	
1,060.0	11.40	301.90	1,056.2	33.6	-40.5	52.5	2.14	2.02	
1,155.0	12.70	301.80	1,149.1	44.1	-57.3	72.3	1.37	1.37	
1,249.0	12.20	299.90	1,240.9	54.5	-74.7	92.5	0.69	-0.53	
1,343.0	11.70	301.10	1,332.9	64.4	-91.5	111.9	0.59	-0.53	
1,438.0	11.20	300.60	1,426.0	74.1	-107.7	130.7	0.54	-0.53	
1,532.0	10.50	298.90	1,518.3	82.8	-123.0	148.3	0.82	-0.74	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope A-20
Project:	Weld County	TVD Reference:	KBE @ 4660.0ft (Mid Con)
Site:	Antelope 11-20 Pad	MD Reference:	KBE @ 4660.0ft (Mid Con)
Well:	Antelope A-20	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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
1,626.0	11.30	304.00	1,610.6	92.1	-138.2	166.0	1.33	0.85	
1,721.0	10.50	302.70	1,703.9	102.0	-153.2	184.0	0.88	-0.84	
1,814.0	12.10	307.30	1,795.1	112.5	-168.1	202.2	1.97	1.72	
1,908.0	11.30	307.50	1,887.2	124.1	-183.2	221.2	0.85	-0.85	
2,003.0	10.00	304.40	1,980.5	134.4	-197.4	238.8	1.49	-1.37	
2,098.0	11.50	299.30	2,073.9	143.7	-212.5	256.4	1.87	1.58	
2,192.0	11.60	304.90	2,166.0	153.7	-228.4	275.2	1.20	0.11	
2,287.0	10.50	303.70	2,259.2	164.0	-243.4	293.4	1.18	-1.16	
2,381.0	11.50	305.40	2,351.5	174.1	-258.2	311.4	1.12	1.06	
2,476.0	10.60	301.80	2,444.7	184.2	-273.3	329.5	1.19	-0.95	
2,570.0	11.80	300.30	2,536.9	193.6	-289.0	347.8	1.31	1.28	
2,664.0	10.90	299.80	2,629.1	202.9	-305.0	366.2	0.96	-0.96	
2,759.0	12.60	302.50	2,722.1	212.9	-321.5	385.5	1.88	1.79	
2,853.0	12.20	302.30	2,813.9	223.7	-338.6	405.6	0.43	-0.43	
2,948.0	11.20	302.00	2,906.9	234.0	-354.9	424.9	1.05	-1.05	
3,042.0	9.80	302.30	2,999.3	243.1	-369.4	442.0	1.49	-1.49	
3,136.0	10.50	306.40	3,091.9	252.5	-383.0	458.5	1.07	0.74	
3,231.0	10.40	301.40	3,185.3	262.1	-397.3	475.7	0.96	-0.11	
3,325.0	10.70	299.80	3,277.7	270.8	-412.1	492.9	0.45	0.32	
3,420.0	10.90	301.50	3,371.0	279.9	-427.4	510.6	0.40	0.21	
3,514.0	11.30	298.40	3,463.3	288.9	-443.1	528.7	0.76	0.43	
3,609.0	11.40	298.10	3,556.4	297.8	-459.6	547.2	0.12	0.11	
3,703.0	11.50	298.20	3,648.5	306.6	-476.0	565.7	0.11	0.11	
3,798.0	11.50	304.70	3,741.6	316.4	-492.2	584.6	1.36	0.00	
3,893.0	10.70	303.30	3,834.9	326.7	-507.3	602.9	0.89	-0.84	
3,987.0	10.00	302.50	3,927.3	335.9	-521.5	619.8	0.76	-0.74	
4,082.0	9.40	301.80	4,021.0	344.4	-535.1	635.8	0.64	-0.63	
4,176.0	10.00	307.10	4,113.6	353.3	-548.1	651.6	1.14	0.64	
4,271.0	8.50	303.60	4,207.4	362.2	-560.5	666.8	1.69	-1.58	
4,365.0	8.00	301.40	4,300.4	369.5	-571.9	680.3	0.63	-0.53	
4,460.0	9.10	311.70	4,394.4	377.9	-583.1	694.4	1.98	1.16	
4,554.0	8.30	305.60	4,487.3	386.8	-594.2	708.5	1.30	-0.85	
4,648.0	7.70	305.40	4,580.4	394.4	-604.9	721.6	0.64	-0.64	
4,742.0	6.90	307.00	4,673.6	401.4	-614.5	733.6	0.88	-0.85	
4,837.0	6.20	308.90	4,768.0	408.1	-623.1	744.4	0.77	-0.74	
4,931.0	5.30	315.30	4,861.5	414.4	-630.1	753.7	1.17	-0.96	
5,025.0	4.00	333.70	4,955.2	420.4	-634.6	760.9	2.09	-1.38	
5,119.0	3.20	331.70	5,049.0	425.6	-637.3	766.1	0.86	-0.85	
5,215.0	2.70	324.00	5,144.9	429.8	-639.9	770.6	0.66	-0.52	
5,310.0	2.20	321.10	5,239.8	433.1	-642.3	774.5	0.54	-0.53	
5,404.0	1.90	330.10	5,333.7	435.8	-644.2	777.7	0.47	-0.32	
5,499.0	1.60	333.40	5,428.7	438.4	-645.6	780.3	0.33	-0.32	
5,593.0	1.30	330.80	5,522.7	440.5	-646.7	782.4	0.33	-0.32	
5,687.0	1.10	335.40	5,616.6	442.2	-647.6	784.1	0.24	-0.21	
5,782.0	1.00	334.80	5,711.6	443.8	-648.3	785.6	0.11	-0.11	
5,876.0	0.90	342.50	5,805.6	445.3	-648.9	786.9	0.17	-0.11	
5,970.0	0.80	352.90	5,899.6	446.6	-649.2	788.0	0.20	-0.11	
6,064.0	0.80	0.10	5,993.6	447.9	-649.3	788.8	0.11	0.00	
6,158.0	0.70	357.70	6,087.6	449.1	-649.3	789.5	0.11	-0.11	
6,253.0	1.00	356.40	6,182.6	450.6	-649.4	790.4	0.32	0.32	
6,347.0	1.10	359.50	6,276.6	452.3	-649.5	791.4	0.12	0.11	
6,441.0	1.10	354.40	6,370.5	454.1	-649.5	792.5	0.10	0.00	
6,535.0	1.10	349.50	6,464.5	455.9	-649.8	793.8	0.10	0.00	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope A-20
Project:	Weld County	TVD Reference:	KBE @ 4660.0ft (Mid Con)
Site:	Antelope 11-20 Pad	MD Reference:	KBE @ 4660.0ft (Mid Con)
Well:	Antelope A-20	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	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
6,629.0	1.00	343.10	6,558.5	457.5	-650.2	795.0	0.16	-0.11	Last Cathedral Survey @ 6,629' MD Projection to Bit @ 6,715'
6,715.0	1.00	282.80	6,644.5	458.4	-651.2	796.3	1.17	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 A-20 PBHL - actual wellpath misses target center by 50.2ft at 6715.0ft MD (6644.5 TVD, 458.4 N, -651.2 E) - Circle (radius 50.0)	0.00	0.00	6,690.0	437.2	-651.8	1,387,743.03	3,318,550.46	40.392110	-104.356360
Antelope A-20 TGT - actual wellpath misses target center by 12.1ft at 6145.3ft MD (6074.8 TVD, 449.0 N, -649.3 E) - Point	0.00	0.00	6,075.0	437.2	-651.8	1,387,743.03	3,318,550.46	40.392110	-104.356360

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,629.0	6,558.5	457.5	-650.2	Last Cathedral Survey @ 6,629' MD
6,715.0	6,644.5	458.4	-651.2	Projection to Bit @ 6,715'

Checked By: _____ Approved By: _____ Date: _____