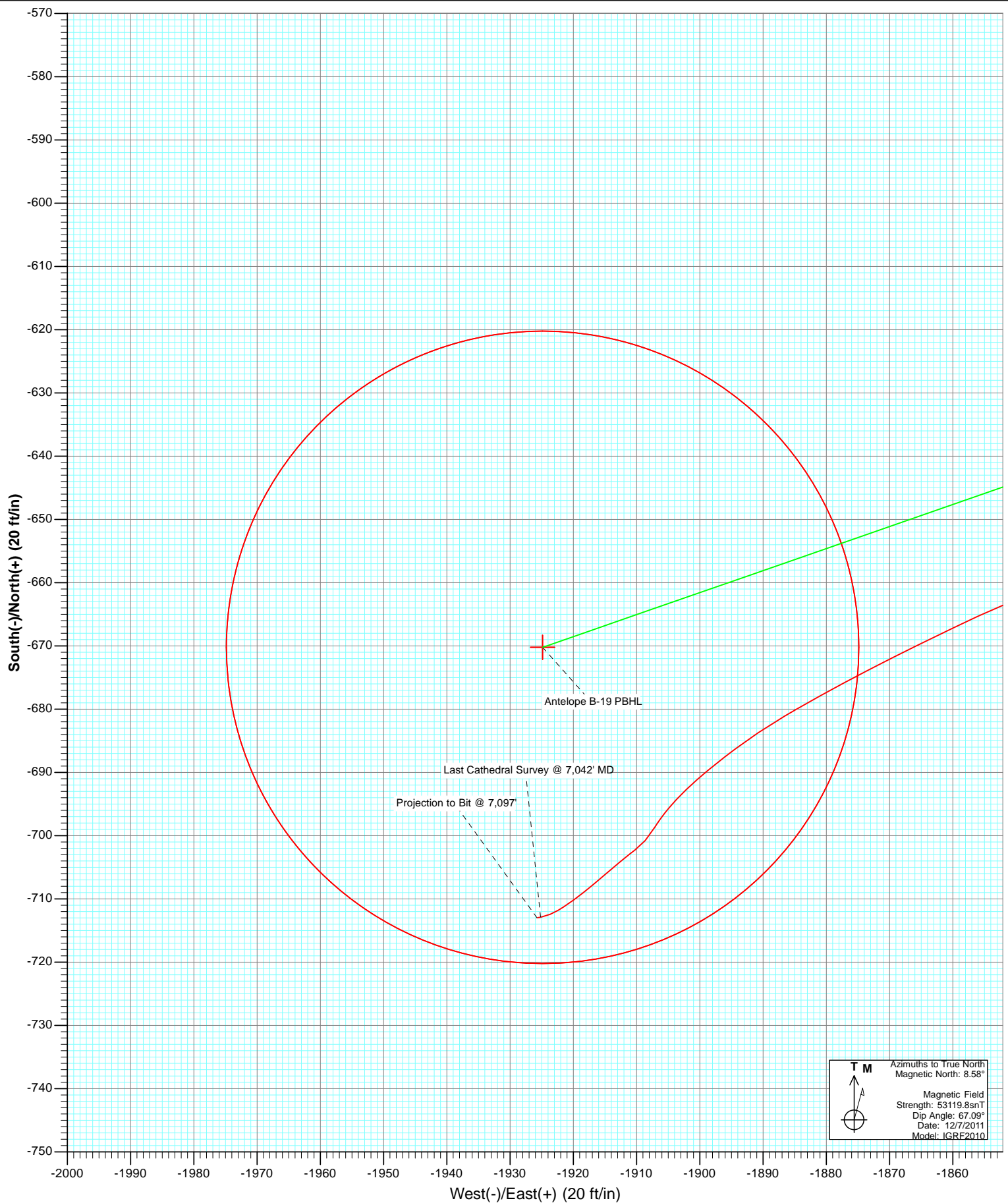


OH Antelope B-19 125209/149455; SC							
KBE @ 4610.0ft (Original Well Elev) North American Datum 1983 Well Antelope B-19, True North							
Type Target	Target	Antelope B-19 PBHL	Azimuth 250.80	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name		TVD	+N/-S	+E/-W		Latitude	Longitude
Antelope B-19 TGT		6060.0	-670.2	-1924.8		40.388240	-104.374810
Antelope B-19 PBHL		6676.0	-670.2	-1924.8		40.388240	-104.374810



Project: Weld County
Site: Antelope 21-19 Pad
Well: Antelope B-19
Wellbore: OH
Plan: AB FINAL



Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope B-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Original Well Elev)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Original Well Elev)
Well:	Antelope B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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 21-19 Pad			
Site Position:		Northing:	1,386,991.60 ft	Latitude:	40.390160
From:	Lat/Long	Easting:	3,315,356.54 ft	Longitude:	-104.367860
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.73 °

Well	Antelope B-19					
Well Position	+N/-S	0.0 ft	Northing:	1,386,962.30 ft	Latitude:	40.390080
	+E/-W	0.0 ft	Easting:	3,315,345.78 ft	Longitude:	-104.367900
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,600.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/7/2011	8.58	67.09	53,120

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	250.80	

Survey Program	Date	4/4/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
468.0	7,097.0	Survey #1 (OH)	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		
468.0	2.30	294.90	467.9	4.0	-8.5	6.7	0.49	0.49		
561.0	5.80	282.20	560.6	5.7	-14.8	12.1	3.86	3.76		
655.0	8.60	270.50	653.9	6.8	-26.5	22.8	3.35	2.98		
750.0	11.20	262.80	747.5	5.7	-42.7	38.5	3.07	2.74		
844.0	12.90	252.10	839.4	1.3	-61.8	57.9	2.98	1.81		
938.0	15.40	248.50	930.5	-6.5	-83.4	80.9	2.82	2.66		
1,032.0	18.10	246.30	1,020.5	-16.9	-108.4	107.9	2.95	2.87		
1,127.0	20.30	247.90	1,110.3	-29.0	-137.2	139.1	2.38	2.32		
1,222.0	22.60	243.40	1,198.7	-43.4	-168.8	173.6	2.98	2.42		
1,317.0	25.20	244.20	1,285.5	-60.4	-203.3	211.8	2.76	2.74		
1,411.0	27.70	246.00	1,369.7	-78.0	-241.3	253.5	2.79	2.66		
1,507.0	27.20	244.80	1,454.9	-96.4	-281.5	297.6	0.78	-0.52		

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope B-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Original Well Elev)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Original Well Elev)
Well:	Antelope B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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
1,602.0	26.60	243.60	1,539.6	-115.1	-320.2	340.3	0.85	-0.63	
1,696.0	28.50	245.40	1,622.9	-133.8	-359.5	383.5	2.21	2.02	
1,792.0	25.30	247.20	1,708.5	-151.3	-399.2	426.8	3.44	-3.33	
1,887.0	24.40	252.70	1,794.8	-165.0	-436.7	466.6	2.61	-0.95	
1,981.0	23.80	256.50	1,880.6	-175.2	-473.6	504.9	1.77	-0.64	
2,075.0	24.90	255.90	1,966.2	-184.5	-511.3	543.5	1.20	1.17	
2,169.0	26.20	255.30	2,051.0	-194.5	-550.5	583.9	1.41	1.38	
2,263.0	26.10	251.50	2,135.4	-206.4	-590.2	625.3	1.78	-0.11	
2,359.0	25.30	251.00	2,221.9	-219.7	-629.6	666.9	0.86	-0.83	
2,453.0	26.40	251.40	2,306.5	-233.0	-668.4	707.9	1.18	1.17	
2,548.0	25.10	251.00	2,392.1	-246.3	-707.5	749.1	1.38	-1.37	
2,642.0	26.90	251.40	2,476.5	-259.5	-746.5	790.3	1.92	1.91	
2,736.0	25.10	250.00	2,561.0	-273.1	-785.4	831.5	2.02	-1.91	
2,831.0	27.50	250.80	2,646.2	-287.2	-825.1	873.6	2.55	2.53	
2,925.0	26.20	249.90	2,730.0	-301.5	-865.1	916.1	1.45	-1.38	
3,020.0	27.20	249.90	2,814.9	-316.2	-905.1	958.8	1.05	1.05	
3,113.0	25.80	249.00	2,898.1	-330.7	-944.0	1,000.3	1.57	-1.51	
3,207.0	26.40	248.60	2,982.6	-345.7	-982.5	1,041.6	0.67	0.64	
3,302.0	23.70	246.60	3,068.6	-361.0	-1,019.7	1,081.7	2.98	-2.84	
3,397.0	21.70	250.40	3,156.3	-374.5	-1,053.8	1,118.3	2.61	-2.11	
3,492.0	20.40	251.30	3,244.9	-385.7	-1,086.0	1,152.5	1.41	-1.37	
3,587.0	20.60	255.20	3,333.9	-395.2	-1,117.9	1,185.7	1.45	0.21	
3,681.0	22.20	253.10	3,421.4	-404.6	-1,150.9	1,219.9	1.89	1.70	
3,776.0	23.50	254.20	3,509.0	-415.0	-1,186.3	1,256.8	1.44	1.37	
3,870.0	26.10	254.50	3,594.3	-425.6	-1,224.2	1,296.1	2.77	2.77	
3,965.0	25.90	253.30	3,679.7	-437.2	-1,264.2	1,337.7	0.59	-0.21	
4,059.0	25.80	254.20	3,764.3	-448.6	-1,303.6	1,378.6	0.43	-0.11	
4,154.0	25.30	252.00	3,850.0	-460.5	-1,342.8	1,419.6	1.13	-0.53	
4,248.0	23.40	248.80	3,935.6	-473.5	-1,379.3	1,458.3	2.46	-2.02	
4,343.0	22.30	245.20	4,023.2	-487.9	-1,413.3	1,495.1	1.87	-1.16	
4,438.0	20.70	249.80	4,111.6	-501.2	-1,445.4	1,529.8	2.45	-1.68	
4,532.0	21.30	250.30	4,199.3	-512.7	-1,477.0	1,563.5	0.67	0.64	
4,628.0	22.40	249.20	4,288.4	-525.1	-1,510.6	1,599.2	1.22	1.15	
4,722.0	22.40	253.00	4,375.3	-536.7	-1,544.4	1,635.0	1.54	0.00	
4,817.0	22.90	250.50	4,463.0	-548.2	-1,579.2	1,671.6	1.14	0.53	
4,911.0	19.90	249.70	4,550.5	-559.8	-1,611.4	1,705.9	3.21	-3.19	
5,006.0	19.50	248.90	4,640.0	-571.1	-1,641.4	1,737.9	0.51	-0.42	
5,100.0	19.70	246.70	4,728.5	-583.1	-1,670.6	1,769.4	0.81	0.21	
5,195.0	20.70	244.80	4,817.7	-596.5	-1,700.5	1,802.1	1.26	1.05	
5,289.0	18.90	246.10	4,906.1	-609.8	-1,729.4	1,833.8	1.97	-1.91	
5,383.0	15.60	242.20	4,995.9	-621.9	-1,754.5	1,861.4	3.72	-3.51	
5,478.0	15.10	243.80	5,087.5	-633.3	-1,776.9	1,886.4	0.69	-0.53	
5,573.0	15.60	248.40	5,179.1	-643.4	-1,799.9	1,911.4	1.39	0.53	
5,669.0	15.50	250.70	5,271.6	-652.4	-1,824.0	1,937.1	0.65	-0.10	
5,763.0	13.60	247.00	5,362.6	-660.9	-1,846.0	1,960.7	2.25	-2.02	
5,858.0	12.30	243.50	5,455.2	-669.8	-1,865.4	1,981.9	1.60	-1.37	
5,953.0	10.30	241.20	5,548.3	-678.4	-1,881.9	2,000.3	2.16	-2.11	
6,048.0	7.70	233.10	5,642.1	-686.3	-1,894.4	2,014.7	3.04	-2.74	
6,142.0	5.20	225.50	5,735.5	-693.1	-1,902.5	2,024.6	2.80	-2.66	
6,237.0	3.50	211.00	5,830.3	-698.6	-1,907.1	2,030.7	2.12	-1.79	
6,333.0	2.50	235.10	5,926.1	-702.3	-1,910.3	2,035.0	1.65	-1.04	
6,428.0	2.50	227.20	6,021.0	-704.9	-1,913.5	2,038.9	0.36	0.00	
6,522.0	2.10	231.40	6,115.0	-707.3	-1,916.4	2,042.4	0.46	-0.43	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope B-19
Project:	Weld County	TVD Reference:	KBE @ 4610.0ft (Original Well Elev)
Site:	Antelope 21-19 Pad	MD Reference:	KBE @ 4610.0ft (Original Well Elev)
Well:	Antelope B-19	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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
6,616.0	1.70	232.20	6,208.9	-709.3	-1,918.8	2,045.3	0.43	-0.43	
6,711.0	1.30	234.70	6,303.9	-710.8	-1,920.8	2,047.7	0.43	-0.42	
6,805.0	1.00	240.60	6,397.9	-711.8	-1,922.4	2,049.5	0.34	-0.32	
6,901.0	0.70	245.60	6,493.9	-712.4	-1,923.6	2,050.9	0.32	-0.31	
7,042.0	0.60	262.20	6,634.8	-712.9	-1,925.2	2,052.5	0.15	-0.07	Last Cathedral Survey @ 7,042' MD Projection to Bit @ 7,097'
7,097.0	0.60	262.20	6,689.8	-713.0	-1,925.7	2,053.1	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Antelope B-19 PBHL	0.00	0.00	6,676.0	-670.2	-1,924.8	1,386,267.56	3,313,429.65	40.388240	-104.374810
- hit/miss target									
- Shape									
- actual wellpath misses target center by 42.7ft at 7083.1ft MD (6675.9 TVD, -713.0 N, -1925.6 E)									
- Circle (radius 50.0)									
Antelope B-19 TGT	0.00	0.00	6,060.0	-670.2	-1,924.8	1,386,267.56	3,313,429.65	40.388240	-104.374810
- actual wellpath misses target center by 37.2ft at 6466.4ft MD (6059.4 TVD, -706.0 N, -1914.7 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,042.0	6,634.8	-712.9	-1,925.2	Last Cathedral Survey @ 7,042' MD	
7,097.0	6,689.8	-713.0	-1,925.7	Projection to Bit @ 7,097'	

Checked By: _____ Approved By: _____ Date: _____