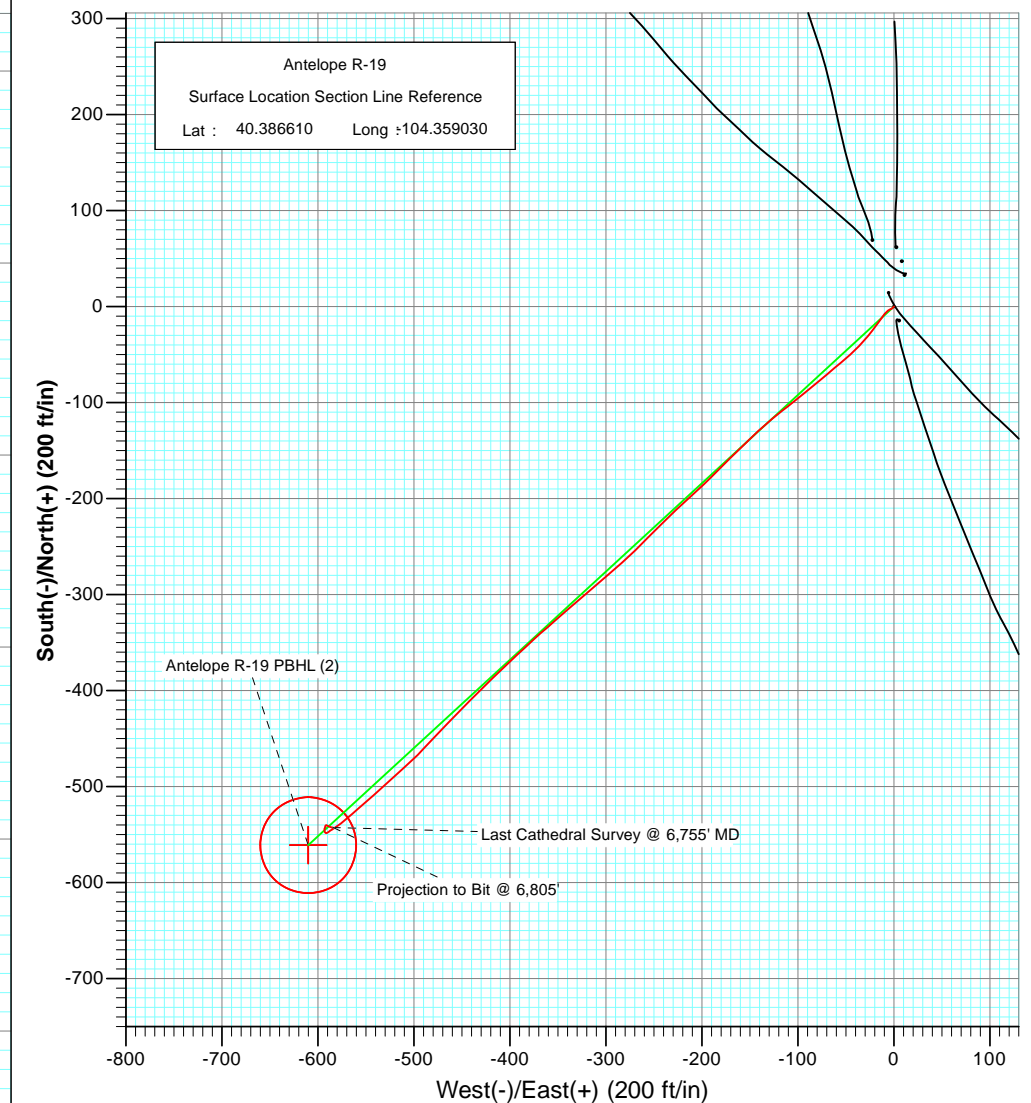
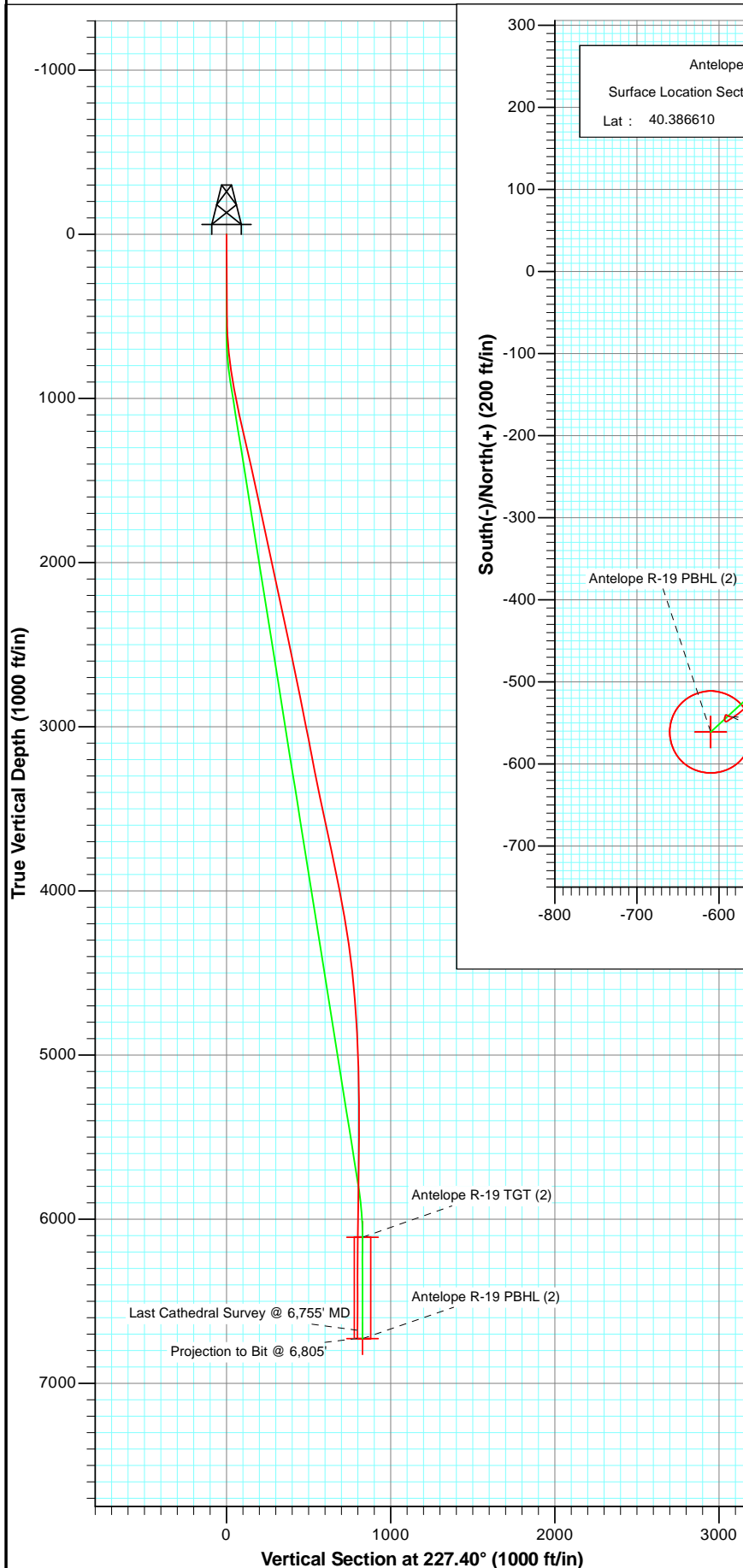




Project: Weld County
Site: Antelope 42-19 Pad
Well: Antelope R-19
Wellbore: OH
Plan: FINAL



Azimuths to True North
Magnetic North: 8.54°

Magnetic Field
Strength: 53090.4nT
Dip Angle: 67.08°
Date: 3/13/2012
Model: IGRF2010

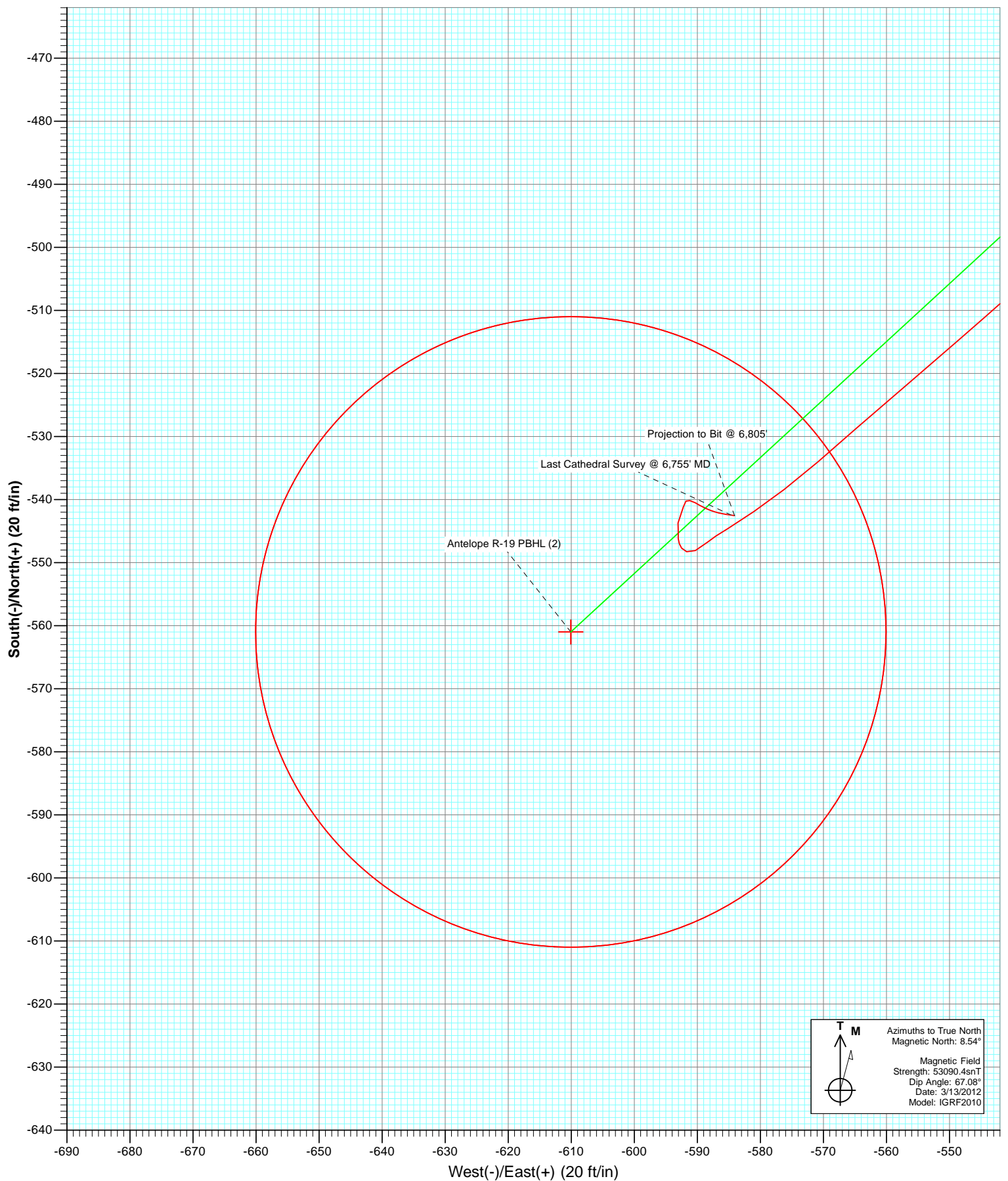
OH
Antelope R-19
125226/152755; SC

kbe @ 4662.0ft
North American Datum 1983
Well Antelope R-19, True North

Type	Target	Antelope R-19 PBHL (2)	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Antelope R-19 PBHL (2)		227.40	Slot		0.0	0.0		0.0
Name	Antelope R-19 TGT (2)	TVD	+N/-S	+E/-W	Latitude	Longitude			
	Antelope R-19 TGT (2)	6110.0	-561.0	-610.1	40.385070	-104.361220			
	Antelope R-19 PBHL (2)	6728.0	-561.0	-610.1	40.385070	-104.361220			



Project: Weld County
Site: Antelope 42-19 Pad
Well: Antelope R-19
Wellbore: OH
Plan: FINAL



Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope R-19
Project:	Weld County	TVD Reference:	kbe @ 4662.0ft
Site:	Antelope 42-19 Pad	MD Reference:	kbe @ 4662.0ft
Well:	Antelope R-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 42-19 Pad			
Site Position:		Northing:	1,385,777.44 ft	Latitude:	40.386740
From:	Lat/Long	Easting:	3,317,840.34 ft	Longitude:	-104.359000
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.74 °

Well	Antelope R-19					
Well Position	+N/-S	0.0 ft	Northing:	1,385,729.95 ft	Latitude:	40.386610
	+E/-W	0.0 ft	Easting:	3,317,832.59 ft	Longitude:	-104.359030
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,652.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/13/2012	8.54	67.08	53,090

Design	OH			
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	227.40

Survey Program		Date	5/8/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
493.0	6,805.0	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	
493.0	0.60	225.40	493.0	-1.8	-1.8	2.6	0.12	0.12	
588.0	2.60	248.60	587.9	-2.9	-4.2	5.1	2.17	2.11	
682.0	4.80	221.90	681.8	-6.7	-8.8	11.0	2.91	2.34	
777.0	6.90	214.60	776.3	-14.3	-14.7	20.5	2.34	2.21	
871.0	9.10	218.20	869.3	-24.8	-22.5	33.4	2.40	2.34	
966.0	11.30	220.80	962.8	-37.8	-33.2	50.0	2.37	2.32	
1,060.0	12.20	230.50	1,054.9	-51.0	-46.9	69.1	2.31	0.96	
1,155.0	11.80	228.70	1,147.8	-63.8	-62.0	88.8	0.58	-0.42	
1,249.0	13.30	230.10	1,239.5	-77.1	-77.5	109.2	1.63	1.60	
1,343.0	13.00	231.20	1,331.1	-90.7	-94.0	130.6	0.42	-0.32	
1,438.0	12.60	231.60	1,423.7	-103.8	-110.5	151.6	0.43	-0.42	
1,532.0	12.00	231.10	1,515.6	-116.3	-126.1	171.6	0.65	-0.64	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope R-19
Project:	Weld County	TVD Reference:	kbe @ 4662.0ft
Site:	Antelope 42-19 Pad	MD Reference:	kbe @ 4662.0ft
Well:	Antelope R-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
1,626.0	12.70	226.60	1,607.4	-129.6	-141.2	191.6	1.27	0.74	
1,721.0	11.70	226.60	1,700.2	-143.3	-155.8	211.7	1.05	-1.05	
1,814.0	12.50	225.20	1,791.2	-156.9	-169.8	231.2	0.92	0.86	
1,908.0	11.50	224.20	1,883.1	-170.8	-183.5	250.7	1.09	-1.06	
2,003.0	12.70	226.90	1,976.0	-184.7	-197.8	270.6	1.40	1.26	
2,098.0	11.90	228.00	2,068.8	-198.4	-212.7	290.9	0.88	-0.84	
2,192.0	12.70	225.50	2,160.7	-212.1	-227.3	310.9	1.02	0.85	
2,287.0	11.70	226.20	2,253.5	-226.1	-241.7	330.9	1.06	-1.05	
2,381.0	12.50	224.80	2,345.4	-239.9	-255.7	350.6	0.91	0.85	
2,476.0	11.30	225.10	2,438.4	-253.8	-269.5	370.2	1.26	-1.26	
2,570.0	12.00	228.60	2,530.5	-266.8	-283.4	389.2	1.06	0.74	
2,664.0	11.00	228.80	2,622.6	-279.1	-297.5	407.9	1.06	-1.06	
2,759.0	12.10	229.50	2,715.6	-291.6	-311.9	426.9	1.17	1.16	
2,853.0	11.60	229.80	2,807.6	-304.1	-326.6	446.2	0.54	-0.53	
2,947.0	10.90	229.10	2,899.8	-316.0	-340.5	464.5	0.76	-0.74	
3,042.0	10.90	228.00	2,993.1	-327.9	-354.0	482.5	0.22	0.00	
3,136.0	11.90	229.10	3,085.3	-340.2	-367.9	501.1	1.09	1.06	
3,231.0	10.40	226.50	3,178.5	-352.5	-381.5	519.4	1.66	-1.58	
3,325.0	11.00	227.30	3,270.8	-364.4	-394.3	536.9	0.66	0.64	
3,419.0	12.20	226.30	3,362.9	-377.4	-408.0	555.8	1.29	1.28	
3,514.0	11.90	225.70	3,455.8	-391.1	-422.3	575.6	0.34	-0.32	
3,609.0	12.00	224.60	3,548.8	-405.0	-436.3	595.3	0.26	0.11	
3,703.0	12.20	224.20	3,640.7	-419.1	-450.0	614.9	0.23	0.21	
3,798.0	11.70	224.60	3,733.6	-433.1	-463.8	634.6	0.53	-0.53	
3,892.0	10.90	224.00	3,825.8	-446.3	-476.7	653.0	0.86	-0.85	
3,987.0	11.80	222.10	3,918.9	-460.0	-489.4	671.6	1.03	0.95	
4,082.0	11.80	228.00	4,011.9	-473.7	-503.2	691.0	1.27	0.00	
4,176.0	10.20	227.40	4,104.2	-485.8	-516.4	708.9	1.71	-1.70	
4,271.0	9.50	227.70	4,197.8	-496.7	-528.4	725.2	0.74	-0.74	
4,365.0	8.30	228.20	4,290.7	-506.5	-539.2	739.7	1.28	-1.28	
4,460.0	7.30	229.30	4,384.8	-515.0	-548.9	752.6	1.06	-1.05	
4,554.0	6.50	229.10	4,478.1	-522.4	-557.4	763.9	0.85	-0.85	
4,648.0	5.30	229.50	4,571.6	-528.7	-564.8	773.6	1.28	-1.28	
4,742.0	4.60	228.20	4,665.2	-534.0	-570.9	781.7	0.75	-0.74	
4,837.0	3.80	233.50	4,760.0	-538.4	-576.2	788.6	0.94	-0.84	
4,931.0	3.40	234.60	4,853.8	-541.9	-581.0	794.5	0.43	-0.43	
5,024.0	2.80	239.50	4,946.7	-544.6	-585.2	799.4	0.70	-0.65	
5,119.0	1.80	231.20	5,041.6	-546.7	-588.4	803.2	1.11	-1.05	
5,215.0	1.00	243.40	5,137.6	-548.1	-590.3	805.5	0.88	-0.83	
5,310.0	0.80	286.00	5,232.6	-548.3	-591.7	806.6	0.72	-0.21	
5,404.0	0.50	335.80	5,326.5	-547.7	-592.5	806.9	0.65	-0.32	
5,498.0	0.50	331.00	5,420.5	-547.0	-592.9	806.6	0.04	0.00	
5,593.0	0.50	4.70	5,515.5	-546.2	-593.0	806.2	0.31	0.00	
5,687.0	1.00	357.00	5,609.5	-545.0	-593.0	805.4	0.54	0.53	
5,782.0	0.50	1.90	5,704.5	-543.7	-593.1	804.6	0.53	-0.53	
5,876.0	0.90	27.30	5,798.5	-542.7	-592.7	803.6	0.53	0.43	
5,970.0	1.00	10.10	5,892.5	-541.2	-592.2	802.3	0.32	0.11	
6,064.0	0.40	61.20	5,986.5	-540.2	-591.8	801.3	0.86	-0.64	
6,158.0	0.40	104.30	6,080.5	-540.1	-591.2	800.8	0.31	0.00	
6,253.0	0.70	116.10	6,175.5	-540.5	-590.4	800.4	0.34	0.32	
6,347.0	0.90	120.60	6,269.5	-541.1	-589.2	800.0	0.22	0.21	
6,441.0	0.70	109.30	6,363.5	-541.7	-588.0	799.5	0.27	-0.21	
6,535.0	0.80	104.80	6,457.5	-542.0	-586.8	798.9	0.12	0.11	

Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	Local Co-ordinate Reference:	Well Antelope R-19
Project:	Weld County	TVD Reference:	kbe @ 4662.0ft
Site:	Antelope 42-19 Pad	MD Reference:	kbe @ 4662.0ft
Well:	Antelope R-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
6,629.0	0.50	98.50	6,551.5	-542.3	-585.8	798.3	0.33	-0.32	
6,755.0	0.60	98.50	6,677.4	-542.4	-584.6	797.5	0.08	0.08	Last Cathedral Survey @ 6,755' MD
6,805.0	0.60	98.50	6,727.4	-542.5	-584.1	797.2	0.00	0.00	Projection to Bit @ 6,805'

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 R-19 TGT (2) - actual wellpath misses target center by 28.2ft at 6187.4ft MD (6109.9 TVD, -540.2 N, -591.0 E) - Point	0.00	0.00	6,110.0	-561.0	-610.1	1,385,161.17	3,317,229.79	40.385070	-104.361220
Antelope R-19 TGT - actual wellpath misses target center by 28.2ft at 6194.4ft MD (6116.9 TVD, -540.2 N, -590.9 E) - Point	0.00	0.00	6,117.0	-561.0	-610.1	1,385,161.17	3,317,229.79	40.385070	-104.361220
Antelope R-19 PBHL - actual wellpath misses target center by 32.8ft at 6805.0ft MD (6727.4 TVD, -542.5 N, -584.1 E) - Circle (radius 50.0)	0.00	0.00	6,735.0	-561.0	-610.1	1,385,161.17	3,317,229.79	40.385070	-104.361220
Antelope R-19 PBHL (2) - actual wellpath misses target center by 31.9ft at 6805.0ft MD (6727.4 TVD, -542.5 N, -584.1 E) - Circle (radius 50.0)	0.00	0.00	6,728.0	-561.0	-610.1	1,385,161.17	3,317,229.79	40.385070	-104.361220

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,755.0	6,677.4	-542.4	-584.6	Last Cathedral Survey @ 6,755' MD
6,805.0	6,727.4	-542.5	-584.1	Projection to Bit @ 6,805'

Checked By: _____ Approved By: _____ Date: _____