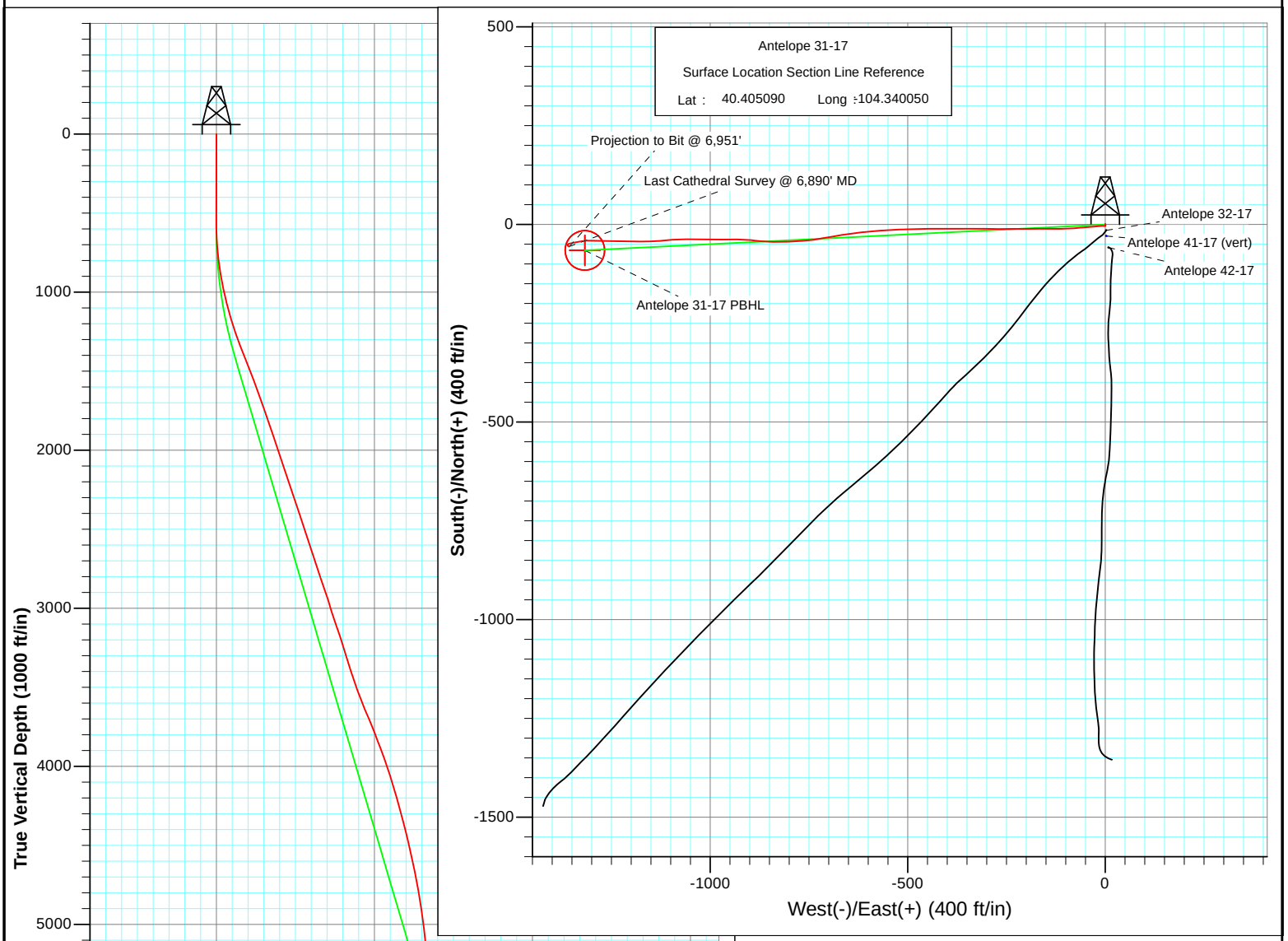
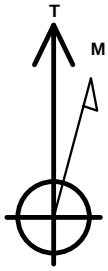
BONANZA CREEK ENERGY COMPANY

Project: Weld County
Site: Antelope 41-17 Pad
Well: Antelope 31-17
Wellbore: DD
Plan: FINAL

CATHEDRAL





Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 53188.3snT
Dip Angle: 67.13°
Date: 5/19/2011
Model: IGRF2010

DD
Antelope 31-17
115290; SC

KBE @ 4717.0ft (Original Well Elev)
North American Datum 1983
Well Antelope 31-17, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	Antelope 31-17 PBHL	267.15	Slot	0.0	0.0	0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Antelope 31-17 TGT	5887.0	-65.5	-1317.3	40.404910	-104.344780
Antelope 31-17 PBHL	6787.0	-65.5	-1317.3	40.404910	-104.344780

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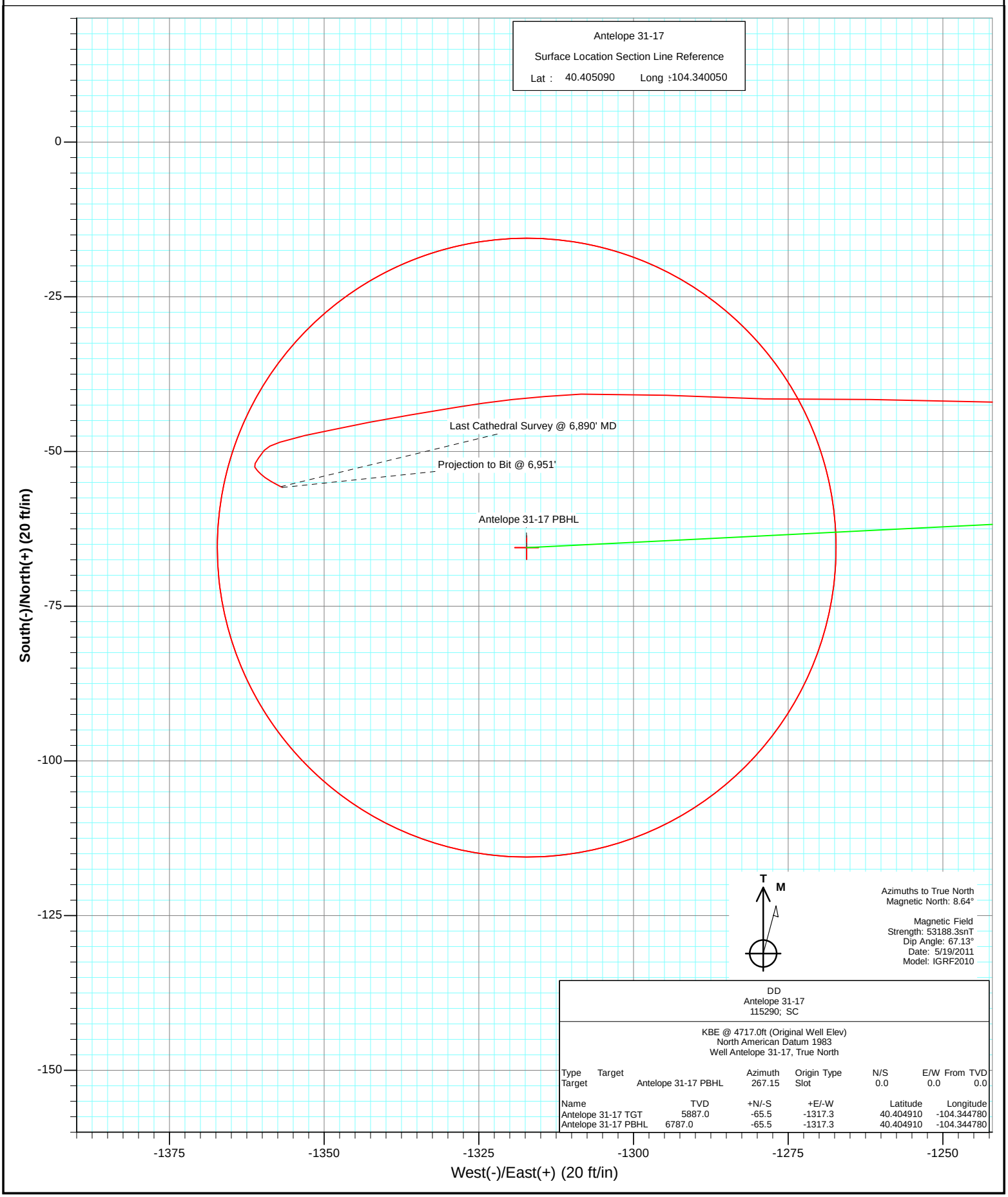

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North American Datum 1983
Well Antelope 31-17, True North

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Cathedral Energy Services

Survey Report

Company:	Bonanza Creek Energy Operating Company, LLC	**Local Co-ordinate Reference:**	Well Antelope 31-17
Project:	Weld County	**TVD Reference:**	KBE @ 4717.0ft (Original Well Elev)
Site:	Antelope 41-17 Pad	**MD Reference:**	KBE @ 4717.0ft (Original Well Elev)
Well:	Antelope 31-17	**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 41-17 Pad

Site Position:		**Northing:**	1,392,513.33 ft	**Latitude:**	40.405050
From:	Lat/Long	**Easting:**	3,322,856.02 ft	**Longitude:**	-104.340680
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.75 °

Well Antelope 31-17

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,392,530.20 ft	**Latitude:**	40.405090
	+E/-W	0.0 ft	**Easting:**	3,323,031.27 ft	**Longitude:**	-104.340050
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,707.0 ft

Wellbore DD

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/19/2011	8.65	67.13	53,188

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	267.15

Survey Program **Date** 8/31/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
561.0	6,951.0	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	
561.0	0.70	166.00	561.0	-3.3	0.8	-0.7	0.12	0.12	
655.0	2.60	274.00	655.0	-3.7	-1.2	1.3	3.08	2.02	
748.0	5.90	270.60	747.7	-3.5	-8.0	8.2	3.56	3.55	
843.0	8.30	261.40	842.0	-4.5	-19.7	19.9	2.79	2.53	
937.0	10.60	267.70	934.7	-5.9	-35.1	35.3	2.68	2.45	
1,030.0	13.10	264.60	1,025.7	-7.2	-54.1	54.4	2.77	2.69	
1,125.0	15.50	265.80	1,117.7	-9.2	-77.5	77.8	2.55	2.53	
1,218.0	17.30	267.20	1,206.9	-10.7	-103.7	104.1	1.98	1.94	
1,312.0	19.90	271.60	1,296.0	-11.0	-133.6	134.0	3.14	2.77	
1,406.0	21.80	269.30	1,383.9	-10.7	-167.1	167.4	2.20	2.02	
1,501.0	21.50	270.10	1,472.2	-10.9	-202.1	202.4	0.44	-0.32	
1,595.0	20.90	269.10	1,559.8	-11.2	-236.1	236.4	0.75	-0.64	

Cathedral Energy Services

Survey Report

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Site:	Antelope 41-17 Pad	**MD Reference:**	KBE @ 4717.0ft (Original Well Elev)
Well:	Antelope 31-17	**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
1,691.0	20.00	270.50	1,649.8	-11.3	-269.7	269.9	1.07	-0.94	
1,785.0	19.30	271.50	1,738.3	-10.7	-301.3	301.4	0.83	-0.74	
1,880.0	18.70	269.50	1,828.1	-10.5	-332.2	332.3	0.93	-0.63	
1,974.0	18.10	271.30	1,917.3	-10.3	-361.9	361.9	0.88	-0.64	
2,069.0	19.30	267.90	2,007.3	-10.5	-392.3	392.3	1.71	1.26	
2,163.0	18.60	269.50	2,096.2	-11.2	-422.8	422.9	0.93	-0.74	
2,257.0	17.80	269.20	2,185.5	-11.5	-452.2	452.2	0.86	-0.85	
2,352.0	19.30	269.00	2,275.6	-12.0	-482.4	482.4	1.58	1.58	
2,446.0	17.80	269.90	2,364.7	-12.3	-512.3	512.3	1.62	-1.60	
2,541.0	19.20	266.30	2,454.8	-13.3	-542.4	542.4	1.90	1.47	
2,636.0	18.20	265.00	2,544.7	-15.6	-572.8	572.9	1.14	-1.05	
2,730.0	17.10	265.30	2,634.3	-18.1	-601.2	601.3	1.17	-1.17	
2,824.0	19.40	261.90	2,723.6	-21.4	-630.4	630.7	2.70	2.45	
2,919.0	19.10	261.10	2,813.3	-26.0	-661.4	661.9	0.42	-0.32	
3,014.0	18.30	261.50	2,903.3	-30.6	-691.5	692.2	0.85	-0.84	
3,108.0	17.10	259.50	2,992.8	-35.3	-719.7	720.5	1.43	-1.28	
3,203.0	19.10	262.90	3,083.1	-39.8	-748.8	749.9	2.38	2.11	
3,298.0	18.80	267.80	3,173.0	-42.3	-779.6	780.7	1.70	-0.32	
3,392.0	16.50	267.20	3,262.5	-43.5	-808.0	809.2	2.45	-2.45	
3,487.0	17.50	269.90	3,353.4	-44.2	-835.8	837.0	1.34	1.05	
3,581.0	18.30	277.00	3,442.8	-42.4	-864.6	865.6	2.47	0.85	
3,676.0	21.40	274.20	3,532.2	-39.4	-896.7	897.5	3.41	3.26	
3,771.0	22.40	270.40	3,620.3	-38.0	-932.1	932.8	1.83	1.05	
3,865.0	22.40	269.40	3,707.2	-38.0	-967.9	968.6	0.41	0.00	
3,960.0	21.50	271.20	3,795.4	-37.8	-1,003.4	1,004.0	1.18	-0.95	
4,054.0	20.30	269.80	3,883.2	-37.5	-1,036.9	1,037.5	1.38	-1.28	
4,149.0	19.50	270.20	3,972.5	-37.5	-1,069.3	1,069.8	0.85	-0.84	
4,243.0	17.80	264.20	4,061.6	-38.9	-1,099.2	1,099.8	2.72	-1.81	
4,338.0	16.10	266.00	4,152.4	-41.3	-1,126.8	1,127.5	1.87	-1.79	
4,433.0	15.20	268.20	4,243.9	-42.6	-1,152.4	1,153.1	1.13	-0.95	
4,528.0	14.80	270.70	4,335.7	-42.9	-1,177.0	1,177.7	0.80	-0.42	
4,623.0	14.10	270.60	4,427.7	-42.6	-1,200.7	1,201.3	0.74	-0.74	
4,718.0	12.70	270.20	4,520.1	-42.5	-1,222.7	1,223.3	1.48	-1.47	
4,812.0	12.00	272.50	4,611.9	-42.0	-1,242.8	1,243.4	0.91	-0.74	
4,907.0	10.90	269.80	4,705.0	-41.6	-1,261.7	1,262.2	1.29	-1.16	
5,001.0	10.20	270.90	4,797.4	-41.5	-1,278.9	1,279.4	0.77	-0.74	
5,095.0	9.20	273.50	4,890.1	-40.9	-1,294.7	1,295.1	1.16	-1.06	
5,190.0	7.50	267.20	4,984.1	-40.7	-1,308.5	1,308.9	2.03	-1.79	
5,284.0	6.10	263.60	5,077.4	-41.6	-1,319.6	1,320.0	1.56	-1.49	
5,379.0	4.90	260.10	5,172.0	-42.9	-1,328.6	1,329.1	1.31	-1.26	
5,473.0	4.40	261.30	5,265.7	-44.1	-1,336.1	1,336.6	0.54	-0.53	
5,567.0	3.80	258.20	5,359.4	-45.3	-1,342.7	1,343.3	0.68	-0.64	
5,663.0	3.20	258.70	5,455.2	-46.4	-1,348.5	1,349.1	0.63	-0.63	
5,757.0	2.60	257.80	5,549.1	-47.4	-1,353.1	1,353.8	0.64	-0.64	
5,851.0	2.50	252.30	5,643.0	-48.5	-1,357.1	1,357.9	0.28	-0.11	
5,946.0	1.10	218.70	5,738.0	-49.8	-1,359.7	1,360.5	1.79	-1.47	
6,041.0	0.80	213.30	5,833.0	-51.1	-1,360.6	1,361.5	0.33	-0.32	
6,135.0	0.40	212.40	5,927.0	-51.9	-1,361.2	1,362.1	0.43	-0.43	
6,230.0	0.40	157.90	6,022.0	-52.5	-1,361.2	1,362.1	0.39	0.00	
6,324.0	0.40	130.10	6,116.0	-53.0	-1,360.8	1,361.8	0.20	0.00	
6,418.0	0.40	140.60	6,210.0	-53.5	-1,360.4	1,361.4	0.08	0.00	
6,513.0	0.40	126.80	6,304.9	-53.9	-1,359.9	1,360.9	0.10	0.00	
6,607.0	0.60	124.10	6,398.9	-54.4	-1,359.2	1,360.3	0.21	0.21	

Cathedral Energy Services

Survey Report

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Site:	Antelope 41-17 Pad	**MD Reference:**	KBE @ 4717.0ft (Original Well Elev)
Well:	Antelope 31-17	**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
6,702.0	0.50	119.70	6,493.9	-54.9	-1,358.5	1,359.5	0.11	-0.11	
6,796.0	0.60	116.80	6,587.9	-55.3	-1,357.7	1,358.7	0.11	0.11	
6,890.0	0.30	117.80	6,681.9	-55.7	-1,357.0	1,358.1	0.32	-0.32	**Last Cathedral Survey @ 6,890' MD**
6,951.0	0.30	117.80	6,742.9	-55.8	-1,356.7	1,357.8	0.00	0.00	**Projection to Bit @ 6,951'**

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 31-17 PBHL	0.00	0.00	6,787.0	-65.5	-1,317.3	1,392,447.45	3,321,714.97	40.404910	-104.344780
- actual wellpath misses target center by 59.9ft at 6951.0ft MD (6742.9 TVD, -55.8 N, -1356.7 E)									
- Circle (radius 50.0)									
Antelope 31-17 TGT	0.00	0.00	5,887.0	-65.5	-1,317.3	1,392,447.45	3,321,714.97	40.404910	-104.344780
- actual wellpath misses target center by 45.9ft at 6094.9ft MD (5886.9 TVD, -51.6 N, -1361.0 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,890.0	6,681.9	-55.7	-1,357.0	Last Cathedral Survey @ 6,890' MD
6,951.0	6,742.9	-55.8	-1,356.7	Projection to Bit @ 6,951'

Checked By: _____ Approved By: _____ Date: _____