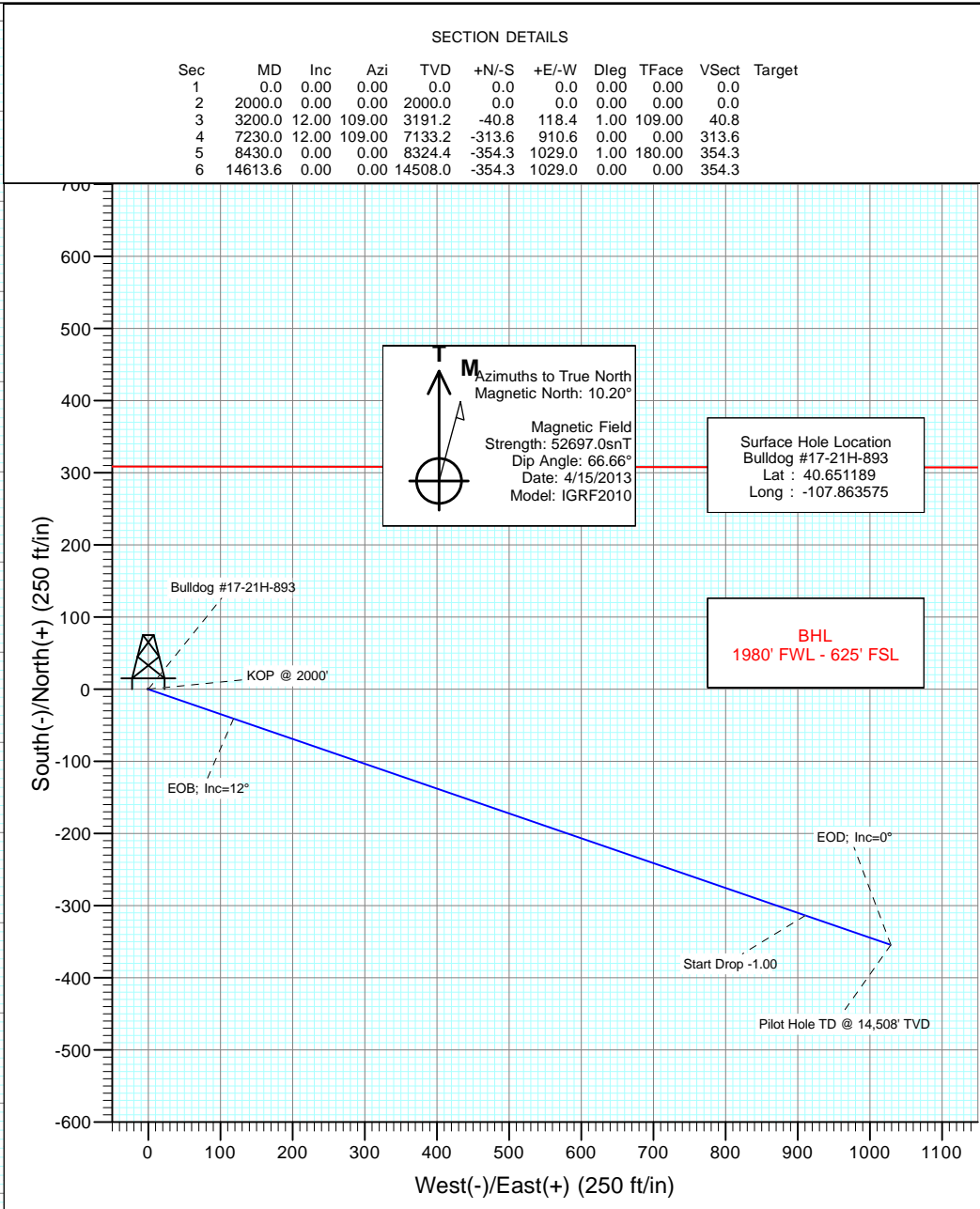
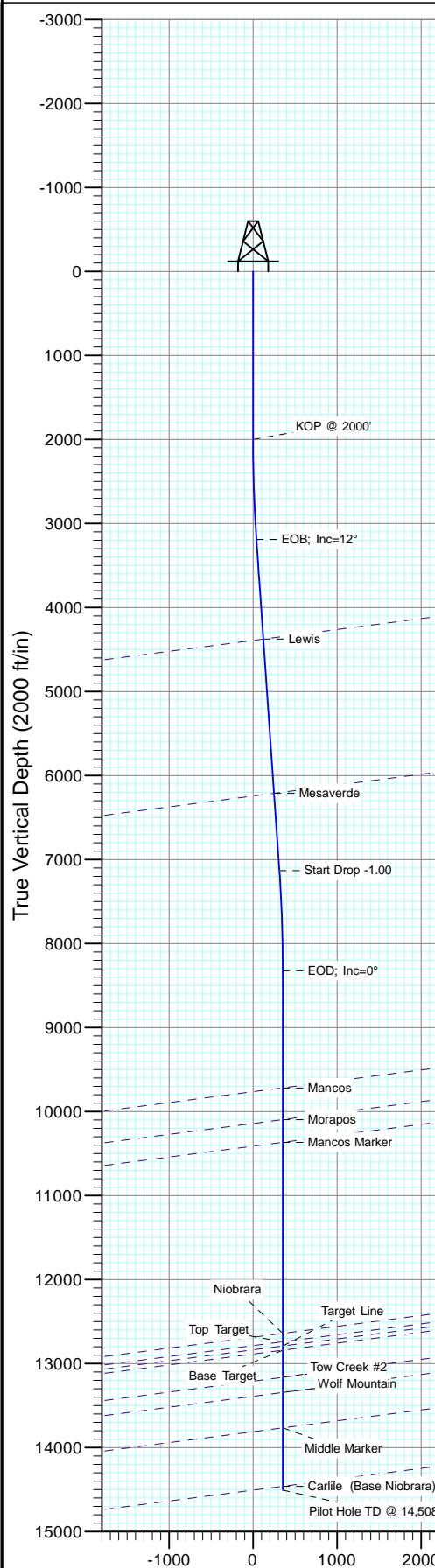




Project: Moffat County, CO
Site: SEC 17-T8N-R93W
Well: Bulldog #17-21H-893
Wellbore: Pilot Hole
Design: Pilot Hole



DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Bulldog #17-21H-893 PBHL	11588.0	-9635.1	1029.3	1479154.40	2345013.52	40.624742	-107.859867	Point
- plan misses target center by 9280.8ft at 11693.6ft MD (11588.0 TVD, -354.3 N, 1029.0 E)								

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4377.1	4412.3	Lewis
6213.6	6289.9	Mesaverde
9720.0	9825.6	Mancos
10098.0	10203.6	Morapos
10368.0	10473.6	Mancos Marker
12642.0	12747.6	Niobrara
12742.0	12847.6	Top Target
12792.0	12897.6	Target Line
12842.0	12947.6	Base Target
13165.0	13270.6	Tow Creek #2
13345.0	13450.6	Wolf Mountain
13767.0	13872.6	Middle Marker
14462.0	14567.6	Carille (Base Niobrara)

Pilot Hole						
Bulldog #17-21H-893						
WELL @ 6558.0ft (Original Well Elev)						
GL @ 6556.0						
North American Datum 1983						
Well Bulldog #17-21H-893, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
User	No Target (Freehand)	180.00	Slot		0.0	0.0
From TVD						
0.0						
Bulldog #17-21H-893 PBHL	TVD	+N/-S	+E/-W	Latitude	Longitude	
	11588.0	-9635.1	1029.3	40.624742	-107.859867	

Vertical Section at 180.00° (2000 ft/in)

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bulldog #17-21H-893
Company:	Axia Energy	TVD Reference:	WELL @ 6588.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 6588.0ft (Original Well Elev)
Site:	SEC 17-T8N-R93W	North Reference:	True
Well:	Bulldog #17-21H-893	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Pilot Hole		

Project	Moffat County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		SEC 17-T8N-R93W			
Site Position:		Northing:	1,488,794.67 ft	Latitude:	40.651136
From:	Lat/Long	Easting:	2,344,225.33 ft	Longitude:	-107.863631
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.53 °

Well	Bulldog #17-21H-893					
Well Position	+N/-S	0.0 ft	Northing:	1,488,813.55 ft	Latitude:	40.651189
	+E/-W	0.0 ft	Easting:	2,344,241.38 ft	Longitude:	-107.863575
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,556.0 ft

Wellbore	Pilot Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/15/2013	10.20	66.66	52,697

Design		Pilot Hole		
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,200.0	12.00	109.00	3,191.2	-40.8	118.4	1.00	1.00	0.00	109.00	
7,230.0	12.00	109.00	7,133.2	-313.6	910.6	0.00	0.00	0.00	0.00	
8,430.0	0.00	0.00	8,324.4	-354.3	1,029.0	1.00	-1.00	0.00	180.00	
14,613.6	0.00	0.00	14,508.0	-354.3	1,029.0	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bulldog #17-21H-893
Company:	Axia Energy	TVD Reference:	WELL @ 6588.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 6588.0ft (Original Well Elev)
Site:	SEC 17-T8N-R93W	North Reference:	True
Well:	Bulldog #17-21H-893	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Pilot Hole		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 2000'
2,100.0	1.00	109.00	2,100.0	-0.3	0.8	0.3	1.00	1.00	
2,200.0	2.00	109.00	2,200.0	-1.1	3.3	1.1	1.00	1.00	
2,300.0	3.00	109.00	2,299.9	-2.6	7.4	2.6	1.00	1.00	
2,400.0	4.00	109.00	2,399.7	-4.5	13.2	4.5	1.00	1.00	
2,500.0	5.00	109.00	2,499.4	-7.1	20.6	7.1	1.00	1.00	
2,600.0	6.00	109.00	2,598.9	-10.2	29.7	10.2	1.00	1.00	
2,700.0	7.00	109.00	2,698.3	-13.9	40.4	13.9	1.00	1.00	
2,800.0	8.00	109.00	2,797.4	-18.2	52.7	18.2	1.00	1.00	
2,900.0	9.00	109.00	2,896.3	-23.0	66.7	23.0	1.00	1.00	
3,000.0	10.00	109.00	2,994.9	-28.3	82.3	28.3	1.00	1.00	
3,100.0	11.00	109.00	3,093.3	-34.3	99.5	34.3	1.00	1.00	
3,200.0	12.00	109.00	3,191.2	-40.8	118.4	40.8	1.00	1.00	EOB; Inc=12°
3,300.0	12.00	109.00	3,289.1	-47.5	138.0	47.5	0.00	0.00	
3,400.0	12.00	109.00	3,386.9	-54.3	157.7	54.3	0.00	0.00	
3,500.0	12.00	109.00	3,484.7	-61.1	177.4	61.1	0.00	0.00	
3,600.0	12.00	109.00	3,582.5	-67.8	197.0	67.8	0.00	0.00	
3,700.0	12.00	109.00	3,680.3	-74.6	216.7	74.6	0.00	0.00	
3,800.0	12.00	109.00	3,778.1	-81.4	236.3	81.4	0.00	0.00	
3,900.0	12.00	109.00	3,875.9	-88.1	256.0	88.1	0.00	0.00	
4,000.0	12.00	109.00	3,973.8	-94.9	275.7	94.9	0.00	0.00	
4,100.0	12.00	109.00	4,071.6	-101.7	295.3	101.7	0.00	0.00	
4,200.0	12.00	109.00	4,169.4	-108.5	315.0	108.5	0.00	0.00	
4,300.0	12.00	109.00	4,267.2	-115.2	334.6	115.2	0.00	0.00	
4,400.0	12.00	109.00	4,365.0	-122.0	354.3	122.0	0.00	0.00	
4,412.3	12.00	109.00	4,377.1	-122.8	356.7	122.8	0.00	0.00	Lewis
4,500.0	12.00	109.00	4,462.8	-128.8	373.9	128.8	0.00	0.00	
4,600.0	12.00	109.00	4,560.7	-135.5	393.6	135.5	0.00	0.00	
4,700.0	12.00	109.00	4,658.5	-142.3	413.3	142.3	0.00	0.00	
4,800.0	12.00	109.00	4,756.3	-149.1	432.9	149.1	0.00	0.00	
4,900.0	12.00	109.00	4,854.1	-155.8	452.6	155.8	0.00	0.00	
5,000.0	12.00	109.00	4,951.9	-162.6	472.2	162.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bulldog #17-21H-893
Company:	Axia Energy	TVD Reference:	WELL @ 6588.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 6588.0ft (Original Well Elev)
Site:	SEC 17-T8N-R93W	North Reference:	True
Well:	Bulldog #17-21H-893	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Pilot Hole		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,100.0	12.00	109.00	5,049.7	-169.4	491.9	169.4	0.00	0.00	
5,200.0	12.00	109.00	5,147.5	-176.1	511.6	176.1	0.00	0.00	
5,300.0	12.00	109.00	5,245.4	-182.9	531.2	182.9	0.00	0.00	
5,400.0	12.00	109.00	5,343.2	-189.7	550.9	189.7	0.00	0.00	
5,500.0	12.00	109.00	5,441.0	-196.4	570.5	196.4	0.00	0.00	
5,600.0	12.00	109.00	5,538.8	-203.2	590.2	203.2	0.00	0.00	
5,700.0	12.00	109.00	5,636.6	-210.0	609.8	210.0	0.00	0.00	
5,800.0	12.00	109.00	5,734.4	-216.8	629.5	216.8	0.00	0.00	
5,900.0	12.00	109.00	5,832.2	-223.5	649.2	223.5	0.00	0.00	
6,000.0	12.00	109.00	5,930.1	-230.3	668.8	230.3	0.00	0.00	
6,100.0	12.00	109.00	6,027.9	-237.1	688.5	237.1	0.00	0.00	
6,200.0	12.00	109.00	6,125.7	-243.8	708.1	243.8	0.00	0.00	
6,289.9	12.00	109.00	6,213.6	-249.9	725.8	249.9	0.00	0.00	Mesaverde
6,300.0	12.00	109.00	6,223.5	-250.6	727.8	250.6	0.00	0.00	
6,400.0	12.00	109.00	6,321.3	-257.4	747.5	257.4	0.00	0.00	
6,500.0	12.00	109.00	6,419.1	-264.1	767.1	264.1	0.00	0.00	
6,600.0	12.00	109.00	6,516.9	-270.9	786.8	270.9	0.00	0.00	
6,700.0	12.00	109.00	6,614.8	-277.7	806.4	277.7	0.00	0.00	
6,800.0	12.00	109.00	6,712.6	-284.4	826.1	284.4	0.00	0.00	
6,900.0	12.00	109.00	6,810.4	-291.2	845.7	291.2	0.00	0.00	
7,000.0	12.00	109.00	6,908.2	-298.0	865.4	298.0	0.00	0.00	
7,100.0	12.00	109.00	7,006.0	-304.8	885.1	304.8	0.00	0.00	
7,200.0	12.00	109.00	7,103.8	-311.5	904.7	311.5	0.00	0.00	
7,230.0	12.00	109.00	7,133.2	-313.6	910.6	313.6	0.00	0.00	Start Drop -1.00
7,300.0	11.30	109.00	7,201.7	-318.2	924.0	318.2	1.00	-1.00	
7,400.0	10.30	109.00	7,300.0	-324.3	941.7	324.3	1.00	-1.00	
7,500.0	9.30	109.00	7,398.5	-329.8	957.8	329.8	1.00	-1.00	
7,600.0	8.30	109.00	7,497.3	-334.8	972.3	334.8	1.00	-1.00	
7,700.0	7.30	109.00	7,596.4	-339.2	985.1	339.2	1.00	-1.00	
7,800.0	6.30	109.00	7,695.7	-343.0	996.3	343.0	1.00	-1.00	
7,900.0	5.30	109.00	7,795.2	-346.3	1,005.8	346.3	1.00	-1.00	
8,000.0	4.30	109.00	7,894.8	-349.1	1,013.8	349.1	1.00	-1.00	
8,100.0	3.30	109.00	7,994.6	-351.2	1,020.0	351.2	1.00	-1.00	
8,200.0	2.30	109.00	8,094.5	-352.8	1,024.6	352.8	1.00	-1.00	
8,300.0	1.30	109.00	8,194.4	-353.8	1,027.6	353.8	1.00	-1.00	
8,400.0	0.30	109.00	8,294.4	-354.3	1,028.9	354.3	1.00	-1.00	
8,430.0	0.00	0.00	8,324.4	-354.3	1,029.0	354.3	1.00	-1.00	EOD; Inc=0°
8,500.0	0.00	0.00	8,394.4	-354.3	1,029.0	354.3	0.00	0.00	
8,600.0	0.00	0.00	8,494.4	-354.3	1,029.0	354.3	0.00	0.00	
8,700.0	0.00	0.00	8,594.4	-354.3	1,029.0	354.3	0.00	0.00	
8,800.0	0.00	0.00	8,694.4	-354.3	1,029.0	354.3	0.00	0.00	
8,900.0	0.00	0.00	8,794.4	-354.3	1,029.0	354.3	0.00	0.00	
9,000.0	0.00	0.00	8,894.4	-354.3	1,029.0	354.3	0.00	0.00	
9,100.0	0.00	0.00	8,994.4	-354.3	1,029.0	354.3	0.00	0.00	
9,200.0	0.00	0.00	9,094.4	-354.3	1,029.0	354.3	0.00	0.00	
9,300.0	0.00	0.00	9,194.4	-354.3	1,029.0	354.3	0.00	0.00	
9,400.0	0.00	0.00	9,294.4	-354.3	1,029.0	354.3	0.00	0.00	
9,500.0	0.00	0.00	9,394.4	-354.3	1,029.0	354.3	0.00	0.00	
9,600.0	0.00	0.00	9,494.4	-354.3	1,029.0	354.3	0.00	0.00	
9,700.0	0.00	0.00	9,594.4	-354.3	1,029.0	354.3	0.00	0.00	
9,800.0	0.00	0.00	9,694.4	-354.3	1,029.0	354.3	0.00	0.00	
9,825.6	0.00	0.00	9,720.0	-354.3	1,029.0	354.3	0.00	0.00	Mancos

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bulldog #17-21H-893
Company:	Axia Energy	TVD Reference:	WELL @ 6588.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 6588.0ft (Original Well Elev)
Site:	SEC 17-T8N-R93W	North Reference:	True
Well:	Bulldog #17-21H-893	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Pilot Hole		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,900.0	0.00	0.00	9,794.4	-354.3	1,029.0	354.3	0.00	0.00	
10,000.0	0.00	0.00	9,894.4	-354.3	1,029.0	354.3	0.00	0.00	
10,100.0	0.00	0.00	9,994.4	-354.3	1,029.0	354.3	0.00	0.00	
10,200.0	0.00	0.00	10,094.4	-354.3	1,029.0	354.3	0.00	0.00	
10,203.6	0.00	0.00	10,098.0	-354.3	1,029.0	354.3	0.00	0.00	Morapos
10,300.0	0.00	0.00	10,194.4	-354.3	1,029.0	354.3	0.00	0.00	
10,400.0	0.00	0.00	10,294.4	-354.3	1,029.0	354.3	0.00	0.00	
10,473.6	0.00	0.00	10,368.0	-354.3	1,029.0	354.3	0.00	0.00	Mancos Marker
10,500.0	0.00	0.00	10,394.4	-354.3	1,029.0	354.3	0.00	0.00	
10,600.0	0.00	0.00	10,494.4	-354.3	1,029.0	354.3	0.00	0.00	
10,700.0	0.00	0.00	10,594.4	-354.3	1,029.0	354.3	0.00	0.00	
10,800.0	0.00	0.00	10,694.4	-354.3	1,029.0	354.3	0.00	0.00	
10,900.0	0.00	0.00	10,794.4	-354.3	1,029.0	354.3	0.00	0.00	
11,000.0	0.00	0.00	10,894.4	-354.3	1,029.0	354.3	0.00	0.00	
11,100.0	0.00	0.00	10,994.4	-354.3	1,029.0	354.3	0.00	0.00	
11,200.0	0.00	0.00	11,094.4	-354.3	1,029.0	354.3	0.00	0.00	
11,300.0	0.00	0.00	11,194.4	-354.3	1,029.0	354.3	0.00	0.00	
11,400.0	0.00	0.00	11,294.4	-354.3	1,029.0	354.3	0.00	0.00	
11,500.0	0.00	0.00	11,394.4	-354.3	1,029.0	354.3	0.00	0.00	
11,600.0	0.00	0.00	11,494.4	-354.3	1,029.0	354.3	0.00	0.00	
11,693.6	0.00	0.00	11,588.0	-354.3	1,029.0	354.3	0.00	0.00	Bulldog #17-21H-893 PBHL
11,700.0	0.00	0.00	11,594.4	-354.3	1,029.0	354.3	0.00	0.00	
11,800.0	0.00	0.00	11,694.4	-354.3	1,029.0	354.3	0.00	0.00	
11,900.0	0.00	0.00	11,794.4	-354.3	1,029.0	354.3	0.00	0.00	
12,000.0	0.00	0.00	11,894.4	-354.3	1,029.0	354.3	0.00	0.00	
12,100.0	0.00	0.00	11,994.4	-354.3	1,029.0	354.3	0.00	0.00	
12,200.0	0.00	0.00	12,094.4	-354.3	1,029.0	354.3	0.00	0.00	
12,300.0	0.00	0.00	12,194.4	-354.3	1,029.0	354.3	0.00	0.00	
12,400.0	0.00	0.00	12,294.4	-354.3	1,029.0	354.3	0.00	0.00	
12,500.0	0.00	0.00	12,394.4	-354.3	1,029.0	354.3	0.00	0.00	
12,600.0	0.00	0.00	12,494.4	-354.3	1,029.0	354.3	0.00	0.00	
12,700.0	0.00	0.00	12,594.4	-354.3	1,029.0	354.3	0.00	0.00	
12,747.6	0.00	0.00	12,642.0	-354.3	1,029.0	354.3	0.00	0.00	Niobrara
12,800.0	0.00	0.00	12,694.4	-354.3	1,029.0	354.3	0.00	0.00	
12,847.6	0.00	0.00	12,742.0	-354.3	1,029.0	354.3	0.00	0.00	Top Target
12,897.6	0.00	0.00	12,792.0	-354.3	1,029.0	354.3	0.00	0.00	Target Line
12,900.0	0.00	0.00	12,794.4	-354.3	1,029.0	354.3	0.00	0.00	
12,947.6	0.00	0.00	12,842.0	-354.3	1,029.0	354.3	0.00	0.00	Base Target
13,000.0	0.00	0.00	12,894.4	-354.3	1,029.0	354.3	0.00	0.00	
13,100.0	0.00	0.00	12,994.4	-354.3	1,029.0	354.3	0.00	0.00	
13,200.0	0.00	0.00	13,094.4	-354.3	1,029.0	354.3	0.00	0.00	
13,270.6	0.00	0.00	13,165.0	-354.3	1,029.0	354.3	0.00	0.00	Tow Creek #2
13,300.0	0.00	0.00	13,194.4	-354.3	1,029.0	354.3	0.00	0.00	
13,400.0	0.00	0.00	13,294.4	-354.3	1,029.0	354.3	0.00	0.00	
13,450.6	0.00	0.00	13,345.0	-354.3	1,029.0	354.3	0.00	0.00	Wolf Mountain
13,500.0	0.00	0.00	13,394.4	-354.3	1,029.0	354.3	0.00	0.00	
13,600.0	0.00	0.00	13,494.4	-354.3	1,029.0	354.3	0.00	0.00	
13,700.0	0.00	0.00	13,594.4	-354.3	1,029.0	354.3	0.00	0.00	
13,800.0	0.00	0.00	13,694.4	-354.3	1,029.0	354.3	0.00	0.00	
13,872.6	0.00	0.00	13,767.0	-354.3	1,029.0	354.3	0.00	0.00	Middle Marker
13,900.0	0.00	0.00	13,794.4	-354.3	1,029.0	354.3	0.00	0.00	
14,000.0	0.00	0.00	13,894.4	-354.3	1,029.0	354.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Bulldog #17-21H-893
Company:	Axia Energy	TVD Reference:	WELL @ 6588.0ft (Original Well Elev)
Project:	Moffat County, CO	MD Reference:	WELL @ 6588.0ft (Original Well Elev)
Site:	SEC 17-T8N-R93W	North Reference:	True
Well:	Bulldog #17-21H-893	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Hole		
Design:	Pilot Hole		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
14,100.0	0.00	0.00	13,994.4	-354.3	1,029.0	354.3	0.00	0.00	
14,200.0	0.00	0.00	14,094.4	-354.3	1,029.0	354.3	0.00	0.00	
14,300.0	0.00	0.00	14,194.4	-354.3	1,029.0	354.3	0.00	0.00	
14,400.0	0.00	0.00	14,294.4	-354.3	1,029.0	354.3	0.00	0.00	
14,500.0	0.00	0.00	14,394.4	-354.3	1,029.0	354.3	0.00	0.00	
14,567.6	0.00	0.00	14,462.0	-354.3	1,029.0	354.3	0.00	0.00	Carlile (Base Niobrara)
14,600.0	0.00	0.00	14,494.4	-354.3	1,029.0	354.3	0.00	0.00	
14,613.6	0.00	0.00	14,508.0	-354.3	1,029.0	354.3	0.00	0.00	Pilot Hole TD @ 14,508' TVD

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Bulldog #17-21H-893 PE	0.00	0.00	11,588.0	-9,635.1	1,029.3	1,479,154.40	2,345,013.52	40.624742	-107.859867
- plan misses target center by 9280.8ft at 11693.6ft MD (11588.0 TVD, -354.3 N, 1029.0 E)									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,412.3	4,393.0	Lewis		-7.39	180.00	
6,289.9	6,246.0	Mesaverde		-7.39	180.00	
9,825.6	9,766.0	Mancos		-7.39	180.00	
10,203.6	10,144.0	Morapos		-7.39	180.00	
10,473.6	10,414.0	Mancos Marker		-7.39	180.00	
12,747.6	12,688.0	Niobrara		-7.39	180.00	
12,847.6	12,788.0	Top Target		-7.39	180.00	
12,897.6	12,838.0	Target Line		-7.39	180.00	
12,947.6	12,888.0	Base Target		-7.39	180.00	
13,270.6	13,211.0	Tow Creek #2		-7.39	180.00	
13,450.6	13,391.0	Wolf Mountain		-7.39	180.00	
13,872.6	13,813.0	Middle Marker		-7.39	180.00	
14,567.6	14,508.0	Carlile (Base Niobrara)		-7.39	180.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	2,000.0	0.0	0.0	KOP @ 2000'
3,200.0	3,191.2	-40.8	118.4	EOB; Inc=12°
7,230.0	7,133.2	-313.6	910.6	Start Drop -1.00
8,430.0	8,324.4	-354.3	1,029.0	EOD; Inc=0°
14,613.6	14,508.0	-354.3	1,029.0	Pilot Hole TD @ 14,508' TVD