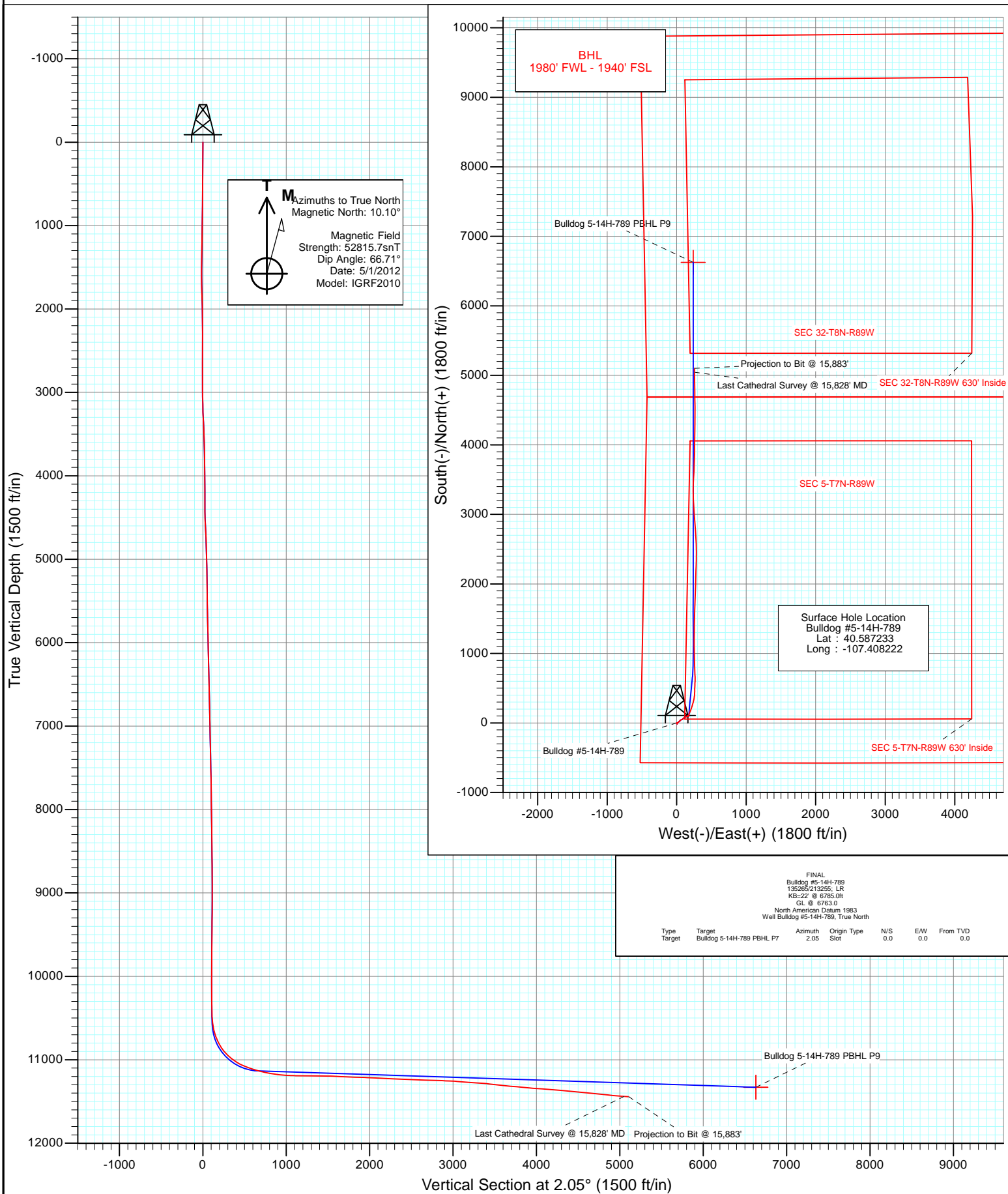




Project: Moffat County, CO
Site: SEC 5-T7N-R89W
Well: Bulldog #5-14H-789
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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 5-T7N-R89W			
Site Position:		Northing:	1,462,492.93 ft	Latitude:	40.587281
From:	Lat/Long	Easting:	2,470,059.03 ft	Longitude:	-107.408206
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.23 °

Well	Bulldog #5-14H-789					
Well Position	+N/-S	0.0 ft	Northing:	1,462,475.54 ft	Latitude:	40.587233
	+E/-W	0.0 ft	Easting:	2,470,054.09 ft	Longitude:	-107.408222
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,763.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/1/2012	10.10	66.71	52,816

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	2.05	

Survey Program	Date	8/20/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
1,525.0	15,883.0	Survey #1 (Hz)	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		
1,525.0	1.20	166.00	1,524.9	-15.5	3.9	-15.3	0.08	0.08		
1,619.0	0.40	36.70	1,618.9	-16.2	4.3	-16.0	1.58	-0.85		
1,713.0	1.80	22.40	1,712.9	-14.6	5.1	-14.4	1.51	1.49		
1,809.0	1.50	23.10	1,808.8	-12.0	6.1	-11.8	0.31	-0.31		
1,904.0	1.50	13.40	1,903.8	-9.7	6.9	-9.4	0.27	0.00		
1,999.0	1.10	16.00	1,998.8	-7.6	7.4	-7.3	0.43	-0.42		
2,095.0	1.10	338.60	2,094.8	-5.8	7.4	-5.6	0.73	0.00		
2,191.0	0.90	343.10	2,190.7	-4.2	6.8	-4.0	0.22	-0.21		
2,286.0	0.50	341.70	2,285.7	-3.1	6.5	-2.9	0.42	-0.42		
2,382.0	1.50	286.20	2,381.7	-2.4	5.1	-2.2	1.34	1.04		
2,475.0	1.80	272.00	2,474.7	-2.0	2.5	-1.9	0.54	0.32		
2,571.0	1.40	256.50	2,570.6	-2.2	-0.2	-2.2	0.61	-0.42		

Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
2,664.0	1.20	240.40	2,663.6	-3.0	-2.1	-3.0	0.45	-0.22	
2,760.0	1.10	188.50	2,759.6	-4.4	-3.1	-4.5	1.05	-0.10	
2,855.0	0.60	141.40	2,854.6	-5.7	-2.9	-5.8	0.86	-0.53	
2,951.0	1.80	71.40	2,950.6	-5.6	-1.2	-5.6	1.76	1.25	
3,047.0	3.10	64.20	3,046.5	-4.0	2.6	-3.9	1.39	1.35	
3,143.0	3.10	60.70	3,142.3	-1.6	7.2	-1.3	0.20	0.00	
3,239.0	3.30	62.80	3,238.2	1.0	11.9	1.4	0.24	0.21	
3,334.0	4.70	42.70	3,333.0	5.1	17.0	5.7	2.06	1.47	
3,429.0	4.30	42.40	3,427.7	10.6	22.0	11.3	0.42	-0.42	
3,524.0	2.90	61.70	3,522.5	14.3	26.5	15.3	1.93	-1.47	
3,620.0	1.50	74.40	3,618.4	15.8	29.9	16.9	1.54	-1.46	
3,715.0	1.60	48.20	3,713.4	17.0	32.1	18.2	0.75	0.11	
3,811.0	1.50	40.50	3,809.3	18.9	33.9	20.1	0.24	-0.10	
3,908.0	1.20	21.60	3,906.3	20.8	35.1	22.0	0.55	-0.31	
4,003.0	0.80	45.40	4,001.3	22.2	35.9	23.5	0.60	-0.42	
4,098.0	0.80	57.90	4,096.3	23.0	36.9	24.3	0.18	0.00	
4,194.0	0.50	86.90	4,192.3	23.4	37.9	24.7	0.45	-0.31	
4,287.0	0.80	107.20	4,285.3	23.2	38.9	24.6	0.40	0.32	
4,382.0	0.40	81.50	4,380.3	23.1	39.9	24.5	0.50	-0.42	
4,478.0	1.70	31.30	4,476.3	24.3	41.0	25.8	1.54	1.35	
4,575.0	3.70	36.10	4,573.1	28.1	43.6	29.6	2.07	2.06	
4,671.0	3.40	37.70	4,669.0	32.9	47.1	34.5	0.33	-0.31	
4,765.0	2.90	48.00	4,762.8	36.6	50.6	38.4	0.80	-0.53	
4,858.0	2.90	47.30	4,855.7	39.8	54.1	41.7	0.04	0.00	
4,952.0	2.60	59.80	4,949.6	42.5	57.7	44.5	0.71	-0.32	
5,049.0	2.50	63.80	5,046.5	44.5	61.5	46.7	0.21	-0.10	
5,147.0	2.50	66.60	5,144.4	46.3	65.4	48.6	0.12	0.00	
5,240.0	2.30	73.10	5,237.3	47.7	69.0	50.1	0.36	-0.22	
5,333.0	2.20	78.30	5,330.3	48.6	72.5	51.2	0.24	-0.11	
5,428.0	2.00	83.30	5,425.2	49.2	76.0	51.8	0.29	-0.21	
5,524.0	1.20	73.10	5,521.2	49.6	78.6	52.4	0.88	-0.83	
5,620.0	2.20	45.10	5,617.1	51.2	80.9	54.1	1.32	1.04	
5,714.0	2.20	45.50	5,711.0	53.8	83.4	56.7	0.02	0.00	
5,810.0	2.00	45.50	5,807.0	56.2	85.9	59.3	0.21	-0.21	
5,906.0	1.90	52.30	5,902.9	58.4	88.4	61.5	0.26	-0.10	
6,000.0	1.90	52.10	5,996.9	60.3	90.9	63.5	0.01	0.00	
6,096.0	1.60	53.80	6,092.8	62.1	93.2	65.4	0.32	-0.31	
6,190.0	1.70	49.90	6,186.8	63.7	95.3	67.1	0.16	0.11	
6,284.0	1.70	47.80	6,280.7	65.6	97.4	69.0	0.07	0.00	
6,379.0	1.80	35.30	6,375.7	67.7	99.3	71.2	0.41	0.11	
6,475.0	1.70	33.00	6,471.7	70.2	101.0	73.7	0.13	-0.10	
6,571.0	2.50	56.80	6,567.6	72.5	103.5	76.2	1.22	0.83	
6,666.0	2.50	60.80	6,662.5	74.6	107.0	78.4	0.18	0.00	
6,762.0	2.30	61.20	6,758.4	76.6	110.6	80.5	0.21	-0.21	
6,857.0	2.30	54.40	6,853.3	78.6	113.8	82.6	0.29	0.00	
6,954.0	3.80	67.40	6,950.2	81.0	118.3	85.2	1.69	1.55	
7,049.0	2.50	77.70	7,045.0	82.6	123.3	87.0	1.49	-1.37	
7,144.0	2.60	76.60	7,140.0	83.6	127.4	88.1	0.12	0.11	
7,239.0	2.20	53.60	7,234.9	85.2	130.9	89.8	1.09	-0.42	
7,333.0	2.20	55.30	7,328.8	87.3	133.9	92.0	0.07	0.00	
7,428.0	1.90	54.30	7,423.7	89.2	136.7	94.0	0.32	-0.32	
7,525.0	1.80	56.40	7,520.7	91.0	139.2	95.9	0.12	-0.10	
7,619.0	1.80	58.10	7,614.6	92.6	141.7	97.6	0.06	0.00	

Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
7,713.0	1.60	54.70	7,708.6	94.1	144.0	99.2	0.24	-0.21	
7,808.0	1.50	64.40	7,803.6	95.4	146.2	100.6	0.30	-0.11	
7,904.0	1.50	58.00	7,899.5	96.7	148.4	101.9	0.17	0.00	
8,001.0	1.50	58.60	7,996.5	98.0	150.6	103.3	0.02	0.00	
8,096.0	1.20	54.00	8,091.5	99.2	152.5	104.6	0.34	-0.32	
8,191.0	1.20	54.30	8,186.5	100.4	154.1	105.8	0.01	0.00	
8,286.0	1.20	60.30	8,281.4	101.5	155.7	107.0	0.13	0.00	
8,382.0	1.20	59.60	8,377.4	102.5	157.5	108.0	0.02	0.00	
8,477.0	1.20	60.20	8,472.4	103.5	159.2	109.1	0.01	0.00	
8,563.0	1.30	58.00	8,558.4	104.4	160.8	110.1	0.13	0.12	
8,673.0	0.70	71.60	8,668.4	105.3	162.5	111.0	0.58	-0.55	
8,768.0	0.90	48.50	8,763.3	106.0	163.6	111.8	0.40	0.21	
8,864.0	0.40	125.30	8,859.3	106.3	164.5	112.1	0.93	-0.52	
8,959.0	0.50	145.80	8,954.3	105.7	165.0	111.6	0.20	0.11	
9,055.0	0.30	100.00	9,050.3	105.4	165.4	111.2	0.38	-0.21	
9,151.0	0.40	100.00	9,146.3	105.3	166.0	111.1	0.10	0.10	
9,247.0	0.70	95.50	9,242.3	105.1	166.9	111.0	0.32	0.31	
9,341.0	0.40	115.30	9,336.3	104.9	167.8	110.9	0.37	-0.32	
9,436.0	0.50	187.20	9,431.3	104.4	168.1	110.3	0.56	0.11	
9,532.0	1.10	210.50	9,527.3	103.2	167.5	109.1	0.70	0.62	
9,627.0	1.10	231.90	9,622.3	101.8	166.4	107.7	0.43	0.00	
9,723.0	0.80	234.70	9,718.3	100.9	165.1	106.7	0.32	-0.31	
9,819.0	0.80	255.60	9,814.3	100.3	163.9	106.1	0.30	0.00	
9,914.0	0.30	221.30	9,909.3	100.0	163.1	105.7	0.61	-0.53	
9,955.0	0.20	205.50	9,950.3	99.8	163.0	105.6	0.29	-0.24	
10,056.0	0.50	94.20	10,051.3	99.6	163.3	105.4	0.60	0.30	
10,152.0	2.10	95.60	10,147.2	99.4	165.5	105.3	1.67	1.67	
10,249.0	2.90	78.20	10,244.2	99.8	169.7	105.8	1.13	0.82	
10,345.0	1.30	47.70	10,340.1	101.0	172.9	107.1	1.98	-1.67	
10,376.0	1.00	48.80	10,371.1	101.4	173.3	107.5	0.97	-0.97	
10,408.0	1.20	38.80	10,403.1	101.9	173.7	108.0	0.86	0.62	
10,440.0	1.70	356.30	10,435.1	102.6	173.9	108.7	3.59	1.56	
10,471.0	2.30	359.90	10,466.0	103.7	173.9	109.8	1.98	1.94	
10,504.0	4.20	353.70	10,499.0	105.5	173.8	111.7	5.85	5.76	
10,536.0	5.70	353.50	10,530.9	108.3	173.5	114.4	4.69	4.69	
10,566.0	7.40	359.80	10,560.7	111.7	173.3	117.8	6.14	5.67	
10,597.0	9.30	6.30	10,591.3	116.2	173.5	122.3	6.83	6.13	
10,629.0	11.30	18.60	10,622.8	121.7	174.8	127.9	9.26	6.25	
10,661.0	14.10	23.90	10,654.0	128.3	177.4	134.5	9.47	8.75	
10,693.0	17.90	22.50	10,684.8	136.4	180.9	142.7	11.94	11.87	
10,724.0	21.00	22.30	10,714.0	145.9	184.8	152.4	10.00	10.00	
10,756.0	24.60	22.00	10,743.5	157.4	189.5	164.1	11.26	11.25	
10,788.0	27.30	20.80	10,772.3	170.4	194.6	177.3	8.60	8.44	
10,820.0	28.30	22.20	10,800.6	184.3	200.1	191.3	3.73	3.12	
10,852.0	31.50	21.90	10,828.3	199.1	206.0	206.3	10.01	10.00	
10,884.0	34.50	19.60	10,855.2	215.4	212.2	222.8	10.16	9.37	
10,916.0	37.80	17.90	10,881.0	233.3	218.3	240.9	10.78	10.31	
10,948.0	41.60	16.70	10,905.6	252.8	224.3	260.6	12.11	11.87	
10,980.0	44.80	15.90	10,929.0	273.8	230.5	281.9	10.15	10.00	
11,012.0	48.30	14.20	10,951.0	296.2	236.5	304.5	11.60	10.94	
11,044.0	50.60	14.30	10,971.8	319.8	242.5	328.3	7.19	7.19	
11,076.0	53.00	11.10	10,991.5	344.3	248.0	353.0	10.86	7.50	
11,108.0	54.90	8.60	11,010.4	369.8	252.4	378.6	8.67	5.94	

Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
11,140.0	57.90	4.90	11,028.1	396.3	255.5	405.2	13.44	9.37	
11,171.0	60.20	2.60	11,044.0	422.8	257.3	431.7	9.77	7.42	
11,204.0	63.80	1.30	11,059.5	451.9	258.2	460.9	11.45	10.91	
11,235.0	67.10	2.00	11,072.4	480.1	259.1	489.0	10.84	10.65	
11,268.0	69.70	2.80	11,084.6	510.8	260.3	519.7	8.19	7.88	
11,300.0	71.10	2.20	11,095.3	540.9	261.7	549.9	4.72	4.37	
11,332.0	72.00	1.40	11,105.4	571.2	262.6	580.2	3.68	2.81	
11,364.0	72.40	1.20	11,115.2	601.7	263.3	610.7	1.38	1.25	
11,396.0	73.80	359.90	11,124.5	632.3	263.6	641.3	5.85	4.37	
11,428.0	75.50	358.50	11,133.0	663.1	263.2	672.1	6.78	5.31	
11,460.0	76.60	357.80	11,140.7	694.2	262.2	703.1	4.04	3.44	
11,491.0	77.00	357.60	11,147.8	724.3	260.9	733.2	1.44	1.29	
11,523.0	77.20	357.60	11,154.9	755.5	259.6	764.3	0.62	0.62	
11,555.0	78.80	357.80	11,161.6	786.8	258.4	795.5	5.04	5.00	
11,587.0	81.10	358.90	11,167.1	818.3	257.5	826.9	7.94	7.19	
11,619.0	82.00	358.50	11,171.8	849.9	256.8	858.5	3.07	2.81	
11,651.0	83.60	358.40	11,175.9	881.6	255.9	890.2	5.01	5.00	
11,683.0	84.20	358.80	11,179.3	913.5	255.1	922.0	2.25	1.87	
11,716.0	84.60	358.80	11,182.5	946.3	254.4	954.8	1.21	1.21	
11,748.0	85.80	357.90	11,185.2	978.2	253.5	986.6	4.68	3.75	
11,780.0	86.60	357.80	11,187.3	1,010.1	252.3	1,018.4	2.52	2.50	
11,812.0	88.10	359.20	11,188.8	1,042.0	251.5	1,050.3	6.41	4.69	
11,845.0	88.80	359.60	11,189.6	1,075.0	251.1	1,083.3	2.44	2.12	
11,876.0	89.30	0.10	11,190.2	1,106.0	251.1	1,114.3	2.28	1.61	
11,972.0	88.80	0.80	11,191.8	1,202.0	251.8	1,210.2	0.90	-0.52	
12,067.0	89.80	359.70	11,192.9	1,297.0	252.2	1,305.2	1.56	1.05	
12,163.0	89.80	0.40	11,193.2	1,393.0	252.3	1,401.1	0.73	0.00	
12,259.0	88.40	1.30	11,194.8	1,488.9	253.7	1,497.1	1.73	-1.46	
12,354.0	86.80	3.30	11,198.7	1,583.8	257.5	1,592.0	2.69	-1.68	
12,449.0	87.50	2.20	11,203.5	1,678.6	262.1	1,686.8	1.37	0.74	
12,546.0	88.20	1.60	11,207.1	1,775.4	265.3	1,783.8	0.95	0.72	
12,641.0	89.20	1.20	11,209.3	1,870.4	267.6	1,878.7	1.13	1.05	
12,737.0	86.80	1.30	11,212.6	1,966.3	269.7	1,974.7	2.50	-2.50	
12,832.0	87.10	1.60	11,217.7	2,061.1	272.1	2,069.5	0.45	0.32	
12,926.0	88.30	2.80	11,221.4	2,155.0	275.7	2,163.4	1.80	1.28	
13,022.0	85.90	1.40	11,226.3	2,250.8	279.2	2,259.3	2.89	-2.50	
13,118.0	86.90	1.30	11,232.3	2,346.6	281.5	2,355.1	1.05	1.04	
13,214.0	87.70	359.60	11,236.8	2,442.4	282.2	2,451.0	1.96	0.83	
13,310.0	88.80	358.90	11,239.8	2,538.4	281.0	2,546.8	1.36	1.15	
13,340.0	89.30	358.50	11,240.3	2,568.4	280.3	2,576.8	2.13	1.67	
13,436.0	88.60	357.70	11,242.0	2,664.3	277.1	2,672.5	1.11	-0.73	
13,533.0	87.90	355.60	11,245.0	2,761.1	271.5	2,769.0	2.28	-0.72	
13,627.0	86.60	355.80	11,249.5	2,854.7	264.4	2,862.3	1.40	-1.38	
13,723.0	87.80	356.20	11,254.2	2,950.4	257.7	2,957.7	1.32	1.25	
13,818.0	85.90	354.60	11,259.4	3,044.9	250.1	3,051.9	2.61	-2.00	
13,915.0	85.60	356.10	11,266.6	3,141.3	242.3	3,148.0	1.57	-0.31	
14,011.0	86.20	358.10	11,273.5	3,236.9	237.4	3,243.4	2.17	0.62	
14,106.0	85.50	359.80	11,280.3	3,331.7	235.7	3,338.0	1.93	-0.74	
14,202.0	83.90	2.60	11,289.2	3,427.2	237.7	3,433.5	3.35	-1.67	
14,297.0	83.10	3.20	11,300.0	3,521.5	242.5	3,527.9	1.05	-0.84	
14,393.0	84.20	2.70	11,310.6	3,616.8	247.4	3,623.3	1.26	1.15	
14,488.0	85.70	2.60	11,318.9	3,711.3	251.8	3,717.9	1.58	1.58	
14,583.0	84.30	1.30	11,327.2	3,805.9	255.0	3,812.6	2.01	-1.47	

Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
14,679.0	84.90	0.50	11,336.3	3,901.5	256.5	3,908.1	1.04	0.62	
14,775.0	86.30	0.60	11,343.6	3,997.2	257.4	4,003.8	1.46	1.46	
14,871.0	85.80	0.60	11,350.2	4,092.9	258.4	4,099.5	0.52	-0.52	
14,967.0	84.80	1.40	11,358.1	4,188.6	260.1	4,195.2	1.33	-1.04	
15,062.0	85.10	0.90	11,366.5	4,283.2	262.0	4,289.8	0.61	0.32	
15,158.0	83.90	0.10	11,375.7	4,378.8	262.8	4,385.3	1.50	-1.25	
15,254.0	85.30	0.20	11,384.7	4,474.3	263.1	4,480.9	1.46	1.46	
15,350.0	84.20	359.30	11,393.5	4,569.9	262.6	4,576.4	1.48	-1.15	
15,446.0	85.10	358.70	11,402.4	4,665.5	261.0	4,671.8	1.13	0.94	
15,541.0	83.40	359.60	11,411.9	4,760.0	259.6	4,766.2	2.02	-1.79	
15,636.0	84.00	359.00	11,422.4	4,854.4	258.4	4,860.5	0.89	0.63	
15,732.0	85.20	359.20	11,431.4	4,950.0	256.9	4,956.0	1.27	1.25	
15,828.0	86.20	359.10	11,438.6	5,045.7	255.5	5,051.6	1.05	1.04	Last Cathedral Survey @ 15,828' MD
15,883.0	86.20	359.10	11,442.3	5,100.6	254.6	5,106.4	0.00	0.00	Projection to Bit @ 15,883'

Cathedral Energy Services

Survey Report

Company:	Axia Energy	Local Co-ordinate Reference:	Well Bulldog #5-14H-789
Project:	Moffat County, CO	TVD Reference:	KB=22' @ 6785.0ft
Site:	SEC 5-T7N-R89W	MD Reference:	KB=22' @ 6785.0ft
Well:	Bulldog #5-14H-789	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Bulldog #5-14H-789 PBH	0.00	0.00	11,149.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1554.0ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog 5-14H-789 PBH	0.00	0.00	11,218.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1542.5ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog #5-14H-789 VT	0.00	0.00	8,481.0	105.5	164.6	1,462,577.46	2,470,220.89	40.587523	-107.407629
- actual wellpath misses target center by 5.5ft at 8485.7ft MD (8481.1 TVD, 103.6 N, 159.4 E)									
- Point									
Bulldog 5-14H-789 PBH	0.00	0.00	11,329.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1530.3ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog #5-14H-789 PBH	0.00	0.00	10,747.0	9,316.9	4,214.6	1,471,699.55	2,474,468.20	40.612806	-107.393042
- actual wellpath misses target center by 5826.0ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog 5-14H-789 VT P	0.00	0.00	8,483.0	106.0	164.0	1,462,577.98	2,470,220.33	40.587524	-107.407632
- actual wellpath misses target center by 5.2ft at 8487.7ft MD (8483.1 TVD, 103.6 N, 159.4 E)									
- Point									
Bulldog 5-14H-789 PBH	0.00	0.00	11,218.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1542.5ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog #5-14H-789 PBH	0.00	0.00	11,049.0	9,316.9	4,214.6	1,471,699.55	2,474,468.20	40.612806	-107.393042
- actual wellpath misses target center by 5797.7ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog 5-14H-789 PBH	0.00	0.00	11,151.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1553.6ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									
Bulldog 5-14H-789 PBH	0.00	0.00	11,159.0	6,626.5	236.8	1,469,095.45	2,470,433.47	40.605422	-107.407369
- actual wellpath misses target center by 1552.1ft at 15883.0ft MD (11442.3 TVD, 5100.6 N, 254.6 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
15,828.0	11,438.6	5,045.7	255.5	Last Cathedral Survey @ 15,828' MD	
15,883.0	11,442.3	5,100.6	254.6	Projection to Bit @ 15,883'	

Checked By: _____ Approved By: _____ Date: _____