

T7N, R89W, 6th P.M.

AXIA ENERGY

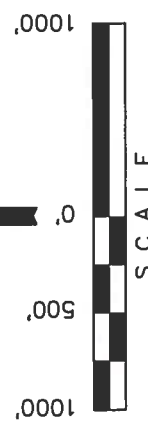
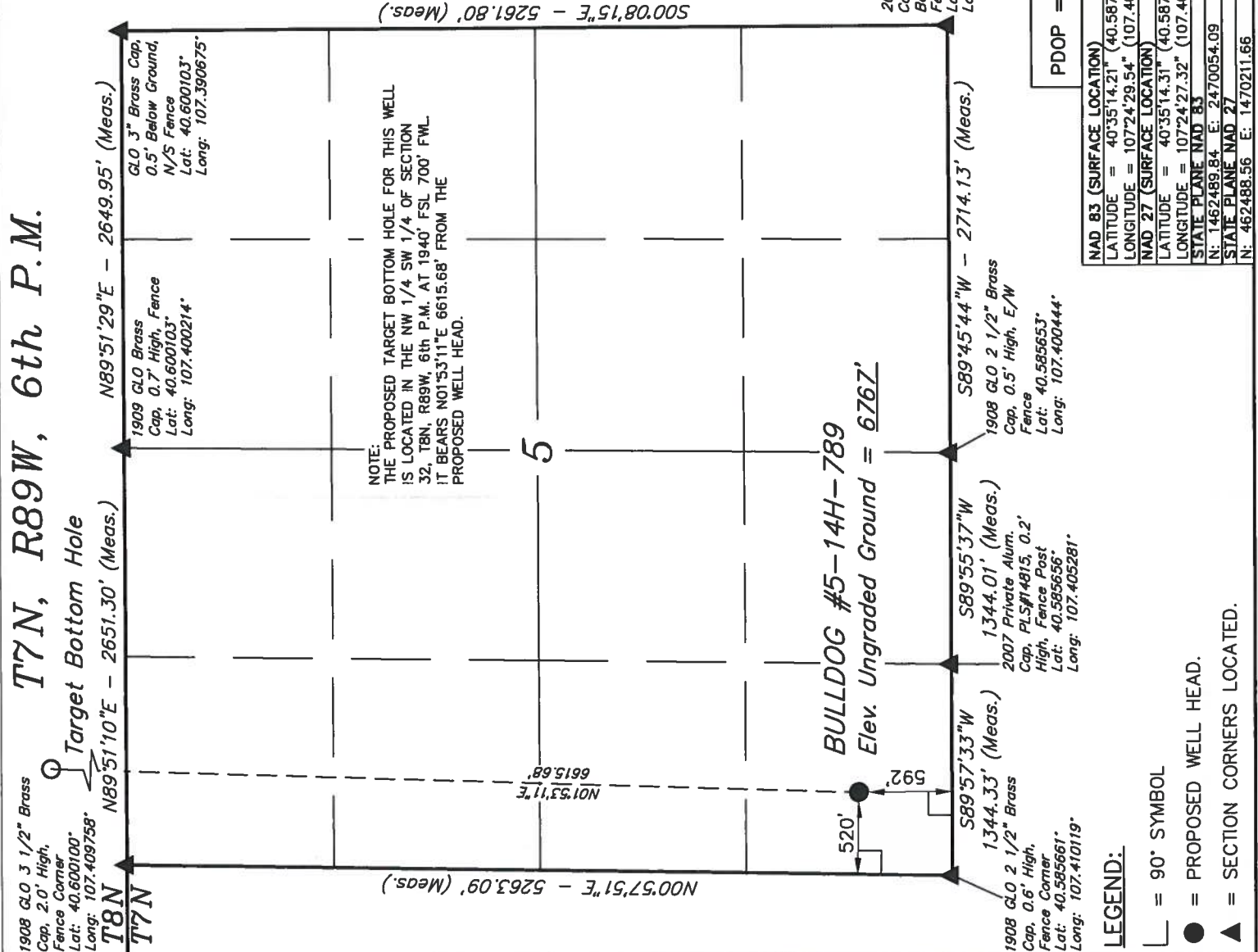
Well location, BULLDOG #5-14H-789 (SURFACE LOCATION), located as shown in the SW 1/4 SW 1/4 of Section 5, T7N, R89W, 6th P.M., Moffat County, Colorado.

BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE SOUTHWEST CORNER OF SECTION 15, T7N, R91W, 6th P.M. TAKEN FROM THE CRAIG QUADRANGLE, COLORADO, MOFFAT COUNTY, 7.5 MINUTE QUAD (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 6672 FEET.

BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLATON WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

2006 Private Alum.  
Cap, PLS#14815, 0.2'  
Below Ground,  
Fence Corner  
Lat: 40.585664°  
Long: 107.390675°

REV: 04-25-13 C.I.

UINTEAH ENGINEERING & LAND SURVEYING  
85 SOUTH 200 EAST - VERNAL, UTAH 84078  
(435) 789-1017

SCALE 1" = 1000'	DATE SURVEYED: 03-06-12	DATE DRAWN: 04-03-12
PARTY G.O. S.W. J.I.	REFERENCES G.L.O. PLAT	
WEATHER COOL	FILE	
		AXIA ENERGY

PDOP = 1.4

NAD 83 (SURFACE LOCATION)
LATITUDE = 40°35'14.21" (40.587281)
LONGITUDE = 107°24'29.54" (107.408206)
NAD 27 (SURFACE LOCATION)
LATITUDE = 40°35'14.31" (40.587308)
LONGITUDE = 107°24'27.32" (107.407589)
STATE PLANE NAD 83
N: 1462489.84 E: 2470054.09
STATE PLANE NAD 27
N: 462488.56 E: 1470211.66

LEGEND:

- = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

T8N, R89W, 6th P.M.

1908 GLO 2 1/2" Brass  
Cap, 0.8' High, E/W  
Fence  
Lat: 40.614344"  
Long: 107.410111"

N89°23'59"E - 5319.96' (Meas.)

NOTE:  
THE PROPOSED TARGET BOTTOM HOLE BEARS N01°53'11"E  
6615.68' FROM THE PROPOSED WELL HEAD WHICH  
IS LOCATED IN THE SW 1/4 SW 1/4 OF SECTION 5,  
T7N, R89W, 6th P.M. AT 592' FSL 520' FWL.

32

Target Bottom Hole

700'

N01°53'11"E, 6615.68'

1909 GLO Brass  
Cap, 0.7' High, Fence  
Lat: 40.600103"  
Long: 107.400214"

N89°51'29"E - 2651.30' (Meas.)

T8N

1908 GLO 3 1/2" Brass  
Cap, 2.0' High,  
Fence Corner  
Lat: 40.213613"  
Long: 107.409758"

BULLDOG #5-14H-789  
Surface Location

LEGEND:

— = 90° SYMBOL

● = PROPOSED WELL HEAD.

▲ = SECTION CORNERS LOCATED.

AXIA ENERGY

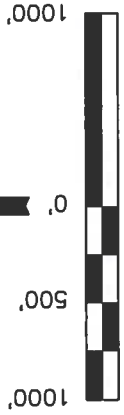
Well location, BULLDOG #5-14H-789 (TARGET  
BOTTOM HOLE), located as shown in the NW 1/4  
SW 1/4 of Section 32, T8N, R89W, 6th P.M.,  
Moffat County, Colorado.

BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE SOUTHWEST CORNER OF  
SECTION 15, T7N, R91W, 6th P.M. TAKEN FROM THE CRAIG  
QUADRANGLE, COLORADO, MOFFAT COUNTY, 7.5 MINUTE QUAD  
(TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES  
DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID  
ELEVATION IS MARKED AS BEING 6672 FEET.

BASIS OF BEARINGS

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SCALE

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLATON WAS PREPARED FROM  
FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY  
SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE  
BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR  
REGISTRATION NO. 17492  
STATE OF COLORADO  
04-26-13

REV: 04-25-13 C.I.

UNTAEH ENGINEERING & LAND SURVEYING

85 SOUTH 200 EAST - VERNAL, UTAH 84078

(435) 789-1017

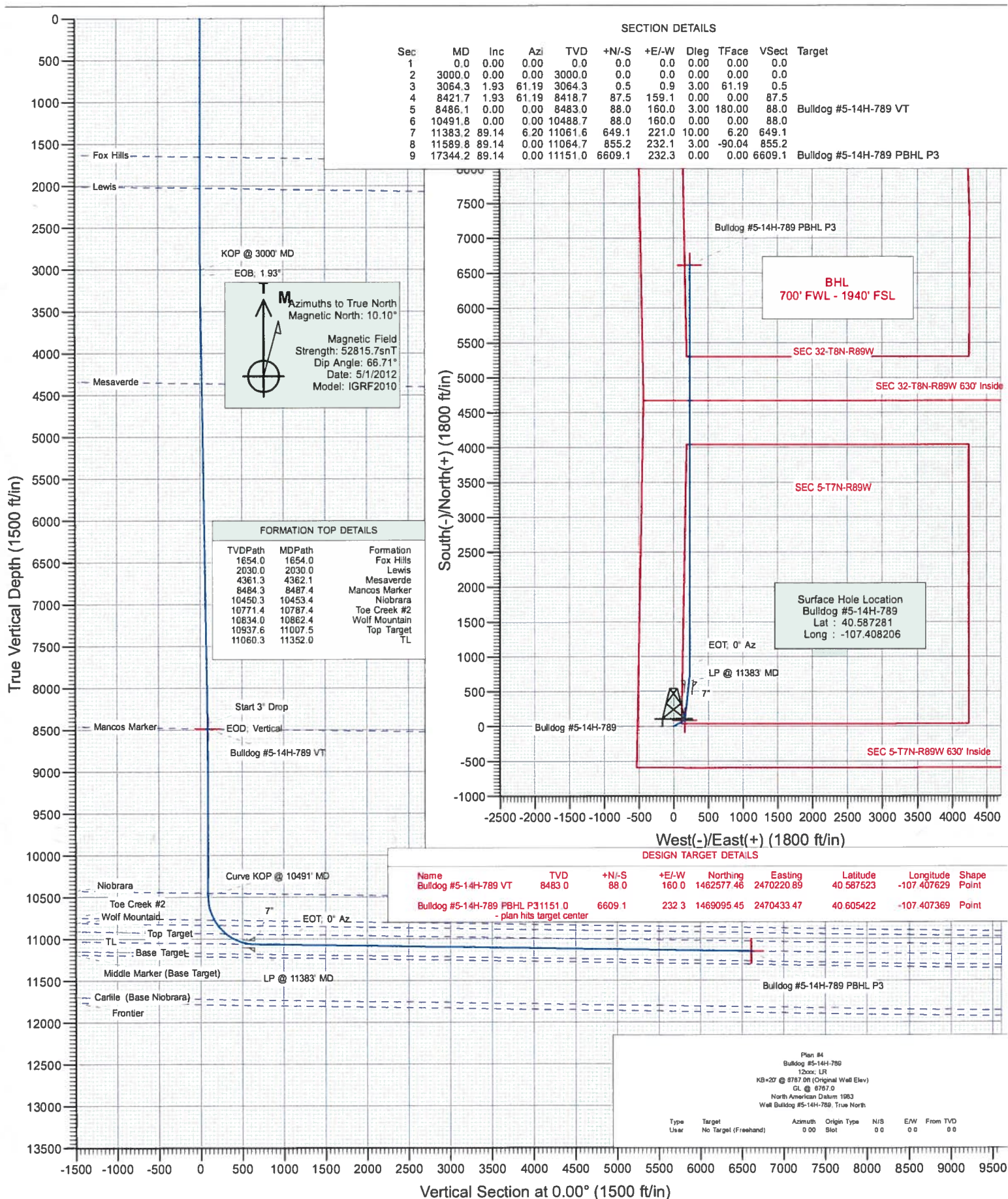
NAD 83 (TARGET BOTTOM HOLE)
LATITUDE = 40°36'19.52" (40.605422)
LONGITUDE = 107°24'26.53" (107.407369)
NAD 27 (TARGET BOTTOM HOLE)
LATITUDE = 40°36'19.63" (40.605453)
LONGITUDE = 107°24'24.31" (107.406753)
STATE PLANE NAD 83
N: 1469093.10 E: 2470428.02
STATE PLANE NAD 27
N: 469091.78 E: 1470585.57

SCALE 1" = 1000'	DATE SURVEYED: 03-06-12	DATE DRAWN: 04-03-12
PARTY G.O. S.W. J.I.	REFERENCES G.L.O. PLAT	
WEATHER COOL	FILE	AXIA ENERGY





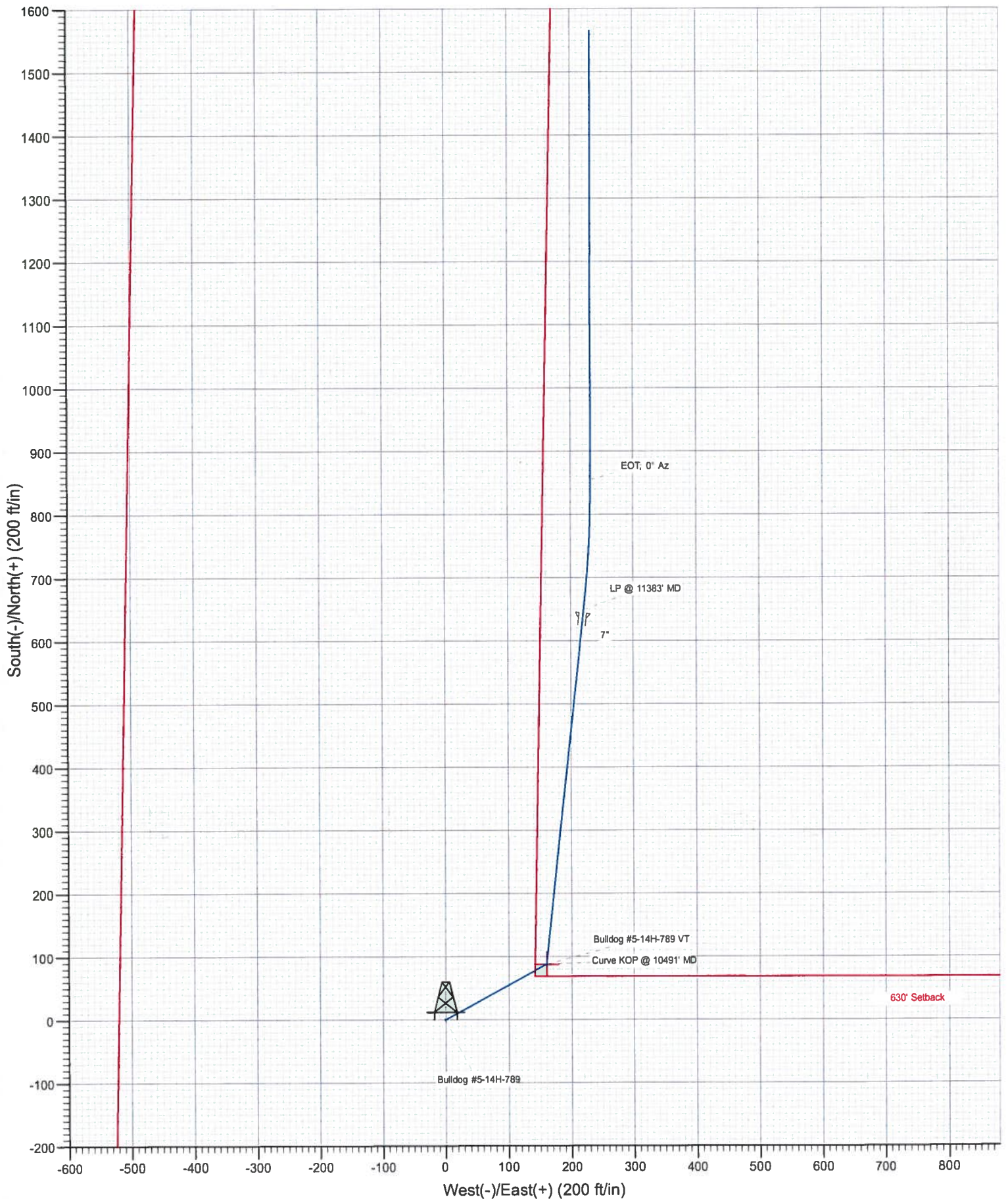
Project: Moffat County, CO  
Site: SEC 5-T7N-R89W  
Well: Bulldog #5-14H-789  
Wellbore: Hz  
Design: Plan #4







Project: Moffat County, CO  
Site: SEC 5-T7N-R89W  
Well: Bulldog #5-14H-789  
Wellbore: Hz  
Design: Plan #4



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Bulldog #5-14H-789
<b>Company:</b>	Axia Energy	<b>TVD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Site:</b>	SEC 5-T7N-R89W	<b>North Reference:</b>	True
<b>Well:</b>	Bulldog #5-14H-789	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #4		

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

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

Well		Bulldog #5-14H-789				
Well Position	+N/-S	0.0 ft	Northing:	1,462,492.93 ft	Latitude:	40.587281
	+E/-W	0.0 ft	Easting:	2,470,059.03 ft	Longitude:	-107.408206
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,767.0 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	Plan #4			
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	0.00

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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,064.3	1.93	61.19	3,064.3	0.5	0.9	3.00	3.00	0.00	61.19	
8,421.7	1.93	61.19	8,418.7	87.5	159.1	0.00	0.00	0.00	0.00	
8,486.1	0.00	0.00	8,483.0	88.0	160.0	3.00	-3.00	0.00	180.00	Bulldog #5-14H-789 V
10,491.8	0.00	0.00	10,488.7	88.0	160.0	0.00	0.00	0.00	0.00	
11,383.2	89.14	6.20	11,061.6	649.1	221.0	10.00	10.00	0.00	6.20	
11,589.8	89.14	0.00	11,064.7	855.2	232.1	3.00	0.00	-3.00	-90.04	
17,344.2	89.14	0.00	11,151.0	6,609.1	232.3	0.00	0.00	0.00	0.00	Bulldog #5-14H-789 F



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<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Site:</b>	SEC 5-T7N-R89W	<b>North Reference:</b>	True
<b>Well:</b>	Bulldog #5-14H-789	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #4		

### 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	
1,654.0	0.00	0.00	1,654.0	0.0	0.0	0.0	0.00	0.00	Fox Hills
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	
2,030.0	0.00	0.00	2,030.0	0.0	0.0	0.0	0.00	0.00	Lewis
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 3000' MD
3,064.3	1.93	61.19	3,064.3	0.5	0.9	0.5	3.06	3.00	EOB; 1.93°
3,100.0	1.93	61.19	3,100.0	1.1	2.0	1.1	0.00	0.00	
3,200.0	1.93	61.19	3,199.9	2.7	5.0	2.7	0.00	0.00	
3,300.0	1.93	61.19	3,299.9	4.3	7.9	4.3	0.00	0.00	
3,400.0	1.93	61.19	3,399.8	6.0	10.9	6.0	0.00	0.00	
3,500.0	1.93	61.19	3,499.7	7.6	13.8	7.6	0.00	0.00	
3,600.0	1.93	61.19	3,599.7	9.2	16.8	9.2	0.00	0.00	
3,700.0	1.93	61.19	3,699.6	10.8	19.7	10.8	0.00	0.00	
3,800.0	1.93	61.19	3,799.6	12.5	22.7	12.5	0.00	0.00	
3,900.0	1.93	61.19	3,899.5	14.1	25.6	14.1	0.00	0.00	
4,000.0	1.93	61.19	3,999.5	15.7	28.6	15.7	0.00	0.00	
4,100.0	1.93	61.19	4,099.4	17.3	31.5	17.3	0.00	0.00	
4,200.0	1.93	61.19	4,199.3	19.0	34.5	19.0	0.00	0.00	
4,300.0	1.93	61.19	4,299.3	20.6	37.4	20.6	0.00	0.00	
4,362.1	1.93	61.19	4,361.3	21.6	39.2	21.6	0.00	0.00	Mesaverde
4,400.0	1.93	61.19	4,399.2	22.2	40.4	22.2	0.00	0.00	
4,500.0	1.93	61.19	4,499.2	23.8	43.3	23.8	0.00	0.00	
4,600.0	1.93	61.19	4,599.1	25.4	46.3	25.4	0.00	0.00	
4,700.0	1.93	61.19	4,699.1	27.1	49.2	27.1	0.00	0.00	

# Cathedral Energy Services

## Planning Report

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<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Site:</b>	SEC 5-T7N-R89W	<b>North Reference:</b>	True
<b>Well:</b>	Bulldog #5-14H-789	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #4		

### 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
4,800.0	1.93	61.19	4,799.0	28.7	52.2	28.7	0.00	0.00	
4,900.0	1.93	61.19	4,898.9	30.3	55.1	30.3	0.00	0.00	
5,000.0	1.93	61.19	4,998.9	31.9	58.1	31.9	0.00	0.00	
5,100.0	1.93	61.19	5,098.8	33.6	61.0	33.6	0.00	0.00	
5,200.0	1.93	61.19	5,198.8	35.2	64.0	35.2	0.00	0.00	
5,300.0	1.93	61.19	5,298.7	36.8	66.9	36.8	0.00	0.00	
5,400.0	1.93	61.19	5,398.7	38.4	69.9	38.4	0.00	0.00	
5,500.0	1.93	61.19	5,498.6	40.1	72.8	40.1	0.00	0.00	
5,600.0	1.93	61.19	5,598.5	41.7	75.8	41.7	0.00	0.00	
5,700.0	1.93	61.19	5,698.5	43.3	78.7	43.3	0.00	0.00	
5,800.0	1.93	61.19	5,798.4	44.9	81.7	44.9	0.00	0.00	
5,900.0	1.93	61.19	5,898.4	46.5	84.6	46.5	0.00	0.00	
6,000.0	1.93	61.19	5,998.3	48.2	87.6	48.2	0.00	0.00	
6,100.0	1.93	61.19	6,098.3	49.8	90.5	49.8	0.00	0.00	
6,200.0	1.93	61.19	6,198.2	51.4	93.5	51.4	0.00	0.00	
6,300.0	1.93	61.19	6,298.2	53.0	96.4	53.0	0.00	0.00	
6,400.0	1.93	61.19	6,398.1	54.7	99.4	54.7	0.00	0.00	
6,500.0	1.93	61.19	6,498.0	56.3	102.3	56.3	0.00	0.00	
6,600.0	1.93	61.19	6,598.0	57.9	105.3	57.9	0.00	0.00	
6,700.0	1.93	61.19	6,697.9	59.5	108.2	59.5	0.00	0.00	
6,800.0	1.93	61.19	6,797.9	61.2	111.2	61.2	0.00	0.00	
6,900.0	1.93	61.19	6,897.8	62.8	114.1	62.8	0.00	0.00	
7,000.0	1.93	61.19	6,997.8	64.4	117.1	64.4	0.00	0.00	
7,100.0	1.93	61.19	7,097.7	66.0	120.0	66.0	0.00	0.00	
7,200.0	1.93	61.19	7,197.6	67.6	123.0	67.6	0.00	0.00	
7,300.0	1.93	61.19	7,297.6	69.3	125.9	69.3	0.00	0.00	
7,400.0	1.93	61.19	7,397.5	70.9	128.9	70.9	0.00	0.00	
7,500.0	1.93	61.19	7,497.5	72.5	131.8	72.5	0.00	0.00	
7,600.0	1.93	61.19	7,597.4	74.1	134.8	74.1	0.00	0.00	
7,700.0	1.93	61.19	7,697.4	75.8	137.8	75.8	0.00	0.00	
7,800.0	1.93	61.19	7,797.3	77.4	140.7	77.4	0.00	0.00	
7,900.0	1.93	61.19	7,897.2	79.0	143.7	79.0	0.00	0.00	
8,000.0	1.93	61.19	7,997.2	80.6	146.6	80.6	0.00	0.00	
8,100.0	1.93	61.19	8,097.1	82.3	149.6	82.3	0.00	0.00	
8,200.0	1.93	61.19	8,197.1	83.9	152.5	83.9	0.00	0.00	
8,300.0	1.93	61.19	8,297.0	85.5	155.5	85.5	0.00	0.00	
8,400.0	1.93	61.19	8,397.0	87.1	158.4	87.1	0.00	0.00	
8,421.7	1.93	61.19	8,418.7	87.5	159.1	87.5	0.00	0.00	Start 3° Drop
8,486.1	0.00	0.00	8,483.0	88.0	160.0	88.0	3.00	-3.00	EOD; Vertical Mancos Marker
8,487.4	0.00	0.00	8,484.3	88.0	160.0	88.0	0.00	0.00	
8,500.0	0.00	0.00	8,496.9	88.0	160.0	88.0	0.00	0.00	
8,600.0	0.00	0.00	8,596.9	88.0	160.0	88.0	0.00	0.00	
8,700.0	0.00	0.00	8,696.9	88.0	160.0	88.0	0.00	0.00	
8,800.0	0.00	0.00	8,796.9	88.0	160.0	88.0	0.00	0.00	
8,900.0	0.00	0.00	8,896.9	88.0	160.0	88.0	0.00	0.00	
9,000.0	0.00	0.00	8,996.9	88.0	160.0	88.0	0.00	0.00	
9,100.0	0.00	0.00	9,096.9	88.0	160.0	88.0	0.00	0.00	
9,200.0	0.00	0.00	9,196.9	88.0	160.0	88.0	0.00	0.00	
9,300.0	0.00	0.00	9,296.9	88.0	160.0	88.0	0.00	0.00	
9,400.0	0.00	0.00	9,396.9	88.0	160.0	88.0	0.00	0.00	
9,500.0	0.00	0.00	9,496.9	88.0	160.0	88.0	0.00	0.00	
9,600.0	0.00	0.00	9,596.9	88.0	160.0	88.0	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Bulldog #5-14H-789
<b>Company:</b>	Axia Energy	<b>TVD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Site:</b>	SEC 5-T7N-R89W	<b>North Reference:</b>	True
<b>Well:</b>	Bulldog #5-14H-789	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #4		

### 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
9,700.0	0.00	0.00	9,696.9	88.0	160.0	88.0	0.00	0.00	
9,800.0	0.00	0.00	9,796.9	88.0	160.0	88.0	0.00	0.00	
9,900.0	0.00	0.00	9,896.9	88.0	160.0	88.0	0.00	0.00	
10,000.0	0.00	0.00	9,996.9	88.0	160.0	88.0	0.00	0.00	
10,100.0	0.00	0.00	10,096.9	88.0	160.0	88.0	0.00	0.00	
10,200.0	0.00	0.00	10,196.9	88.0	160.0	88.0	0.00	0.00	
10,300.0	0.00	0.00	10,296.9	88.0	160.0	88.0	0.00	0.00	
10,400.0	0.00	0.00	10,396.9	88.0	160.0	88.0	0.00	0.00	
10,453.4	0.00	0.00	10,450.3	88.0	160.0	88.0	0.00	0.00	Niobrara
10,491.8	0.00	0.00	10,488.7	88.0	160.0	88.0	0.00	0.00	Curve KOP @ 10491' MD
10,500.0	0.82	6.20	10,496.9	88.1	160.0	88.1	10.00	10.00	
10,600.0	10.82	6.20	10,596.3	98.1	161.1	98.1	10.00	10.00	
10,700.0	20.82	6.20	10,692.4	125.2	164.0	125.2	10.00	10.00	
10,787.4	29.57	6.20	10,771.4	162.2	168.1	162.2	10.00	10.00	Toe Creek #2
10,800.0	30.82	6.20	10,782.3	168.5	168.7	168.5	10.00	10.00	
10,862.4	37.07	6.20	10,834.0	203.1	172.5	203.1	10.00	10.00	Wolf Mountain
10,900.0	40.82	6.20	10,863.3	226.6	175.1	226.6	10.00	10.00	
11,000.0	50.82	6.20	10,932.9	297.8	182.8	297.8	10.00	10.00	
11,007.5	51.57	6.20	10,937.6	303.6	183.4	303.6	10.00	10.00	Top Target
11,100.0	60.82	6.20	10,989.0	379.9	191.7	379.9	10.00	10.00	
11,200.0	70.82	6.20	11,029.9	470.5	201.6	470.5	10.00	10.00	
11,300.0	80.82	6.20	11,054.3	566.8	212.0	566.8	10.00	10.00	
11,352.0	86.02	6.20	11,060.3	618.1	217.6	618.1	10.00	10.00	TL
11,378.2	88.64	6.20	11,061.5	644.1	220.4	644.1	10.00	10.00	7"
11,383.2	89.14	6.20	11,061.6	649.1	221.0	649.1	10.00	10.00	LP @ 11383' MD
11,400.0	89.14	5.69	11,061.8	665.8	222.7	665.8	3.00	0.00	
11,500.0	89.14	2.69	11,063.3	765.5	230.0	765.5	3.00	0.00	
11,589.8	89.14	0.00	11,064.7	855.2	232.1	855.2	3.00	0.00	EOT; 0° Az
11,600.0	89.14	0.00	11,064.8	865.5	232.1	865.5	0.00	0.00	
11,700.0	89.14	0.00	11,066.3	965.5	232.1	965.5	0.00	0.00	
11,800.0	89.14	0.00	11,067.8	1,065.4	232.1	1,065.4	0.00	0.00	
11,900.0	89.14	0.00	11,069.3	1,165.4	232.1	1,165.4	0.00	0.00	
12,000.0	89.14	0.00	11,070.8	1,265.4	232.1	1,265.4	0.00	0.00	
12,100.0	89.14	0.00	11,072.3	1,365.4	232.1	1,365.4	0.00	0.00	
12,200.0	89.14	0.00	11,073.8	1,465.4	232.1	1,465.4	0.00	0.00	
12,300.0	89.14	0.00	11,075.3	1,565.4	232.1	1,565.4	0.00	0.00	
12,400.0	89.14	0.00	11,076.8	1,665.4	232.1	1,665.4	0.00	0.00	
12,500.0	89.14	0.00	11,078.3	1,765.4	232.1	1,765.4	0.00	0.00	
12,600.0	89.14	0.00	11,079.8	1,865.4	232.1	1,865.4	0.00	0.00	
12,700.0	89.14	0.00	11,081.3	1,965.3	232.2	1,965.3	0.00	0.00	
12,800.0	89.14	0.00	11,082.8	2,065.3	232.2	2,065.3	0.00	0.00	
12,900.0	89.14	0.00	11,084.3	2,165.3	232.2	2,165.3	0.00	0.00	
13,000.0	89.14	0.00	11,085.8	2,265.3	232.2	2,265.3	0.00	0.00	
13,100.0	89.14	0.00	11,087.3	2,365.3	232.2	2,365.3	0.00	0.00	
13,200.0	89.14	0.00	11,088.8	2,465.3	232.2	2,465.3	0.00	0.00	
13,300.0	89.14	0.00	11,090.3	2,565.3	232.2	2,565.3	0.00	0.00	
13,400.0	89.14	0.00	11,091.8	2,665.3	232.2	2,665.3	0.00	0.00	
13,500.0	89.14	0.00	11,093.3	2,765.3	232.2	2,765.3	0.00	0.00	
13,600.0	89.14	0.00	11,094.8	2,865.2	232.2	2,865.2	0.00	0.00	
13,700.0	89.14	0.00	11,096.3	2,965.2	232.2	2,965.2	0.00	0.00	
13,800.0	89.14	0.00	11,097.8	3,065.2	232.2	3,065.2	0.00	0.00	
13,900.0	89.14	0.00	11,099.3	3,165.2	232.2	3,165.2	0.00	0.00	



# Cathedral Energy Services

## Planning Report

**Database:** USA EDM 5000 Multi Users DB  
**Company:** Axia Energy  
**Project:** Moffat County, CO  
**Site:** SEC 5-T7N-R89W  
**Well:** Bulldog #5-14H-789  
**Wellbore:** Hz  
**Design:** Plan #4

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**

Well Bulldog #5-14H-789  
 KB=20' @ 6787.0ft (Original Well Elev)  
 KB=20' @ 6787.0ft (Original Well Elev)  
 True  
 Minimum Curvature

### 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
14,000.0	89.14	0.00	11,100.8	3,265.2	232.2	3,265.2	0.00	0.00	
14,100.0	89.14	0.00	11,102.3	3,365.2	232.2	3,365.2	0.00	0.00	
14,200.0	89.14	0.00	11,103.8	3,465.2	232.2	3,465.2	0.00	0.00	
14,300.0	89.14	0.00	11,105.3	3,565.2	232.2	3,565.2	0.00	0.00	
14,400.0	89.14	0.00	11,106.8	3,665.2	232.2	3,665.2	0.00	0.00	
14,500.0	89.14	0.00	11,108.3	3,765.1	232.2	3,765.1	0.00	0.00	
14,600.0	89.14	0.00	11,109.8	3,865.1	232.2	3,865.1	0.00	0.00	
14,700.0	89.14	0.00	11,111.3	3,965.1	232.2	3,965.1	0.00	0.00	
14,800.0	89.14	0.00	11,112.8	4,065.1	232.2	4,065.1	0.00	0.00	
14,900.0	89.14	0.00	11,114.3	4,165.1	232.2	4,165.1	0.00	0.00	
15,000.0	89.14	0.00	11,115.8	4,265.1	232.2	4,265.1	0.00	0.00	
15,100.0	89.14	0.00	11,117.3	4,365.1	232.2	4,365.1	0.00	0.00	
15,200.0	89.14	0.00	11,118.8	4,465.1	232.2	4,465.1	0.00	0.00	
15,300.0	89.14	0.00	11,120.3	4,565.0	232.2	4,565.0	0.00	0.00	
15,400.0	89.14	0.00	11,121.8	4,665.0	232.2	4,665.0	0.00	0.00	
15,500.0	89.14	0.00	11,123.3	4,765.0	232.2	4,765.0	0.00	0.00	
15,600.0	89.14	0.00	11,124.8	4,865.0	232.2	4,865.0	0.00	0.00	
15,700.0	89.14	0.00	11,126.3	4,965.0	232.2	4,965.0	0.00	0.00	
15,800.0	89.14	0.00	11,127.8	5,065.0	232.2	5,065.0	0.00	0.00	
15,900.0	89.14	0.00	11,129.3	5,165.0	232.2	5,165.0	0.00	0.00	
16,000.0	89.14	0.00	11,130.8	5,265.0	232.2	5,265.0	0.00	0.00	
16,100.0	89.14	0.00	11,132.3	5,365.0	232.2	5,365.0	0.00	0.00	
16,200.0	89.14	0.00	11,133.8	5,464.9	232.3	5,464.9	0.00	0.00	
16,300.0	89.14	0.00	11,135.3	5,564.9	232.3	5,564.9	0.00	0.00	
16,400.0	89.14	0.00	11,136.8	5,664.9	232.3	5,664.9	0.00	0.00	
16,500.0	89.14	0.00	11,138.3	5,764.9	232.3	5,764.9	0.00	0.00	
16,600.0	89.14	0.00	11,139.8	5,864.9	232.3	5,864.9	0.00	0.00	
16,700.0	89.14	0.00	11,141.3	5,964.9	232.3	5,964.9	0.00	0.00	
16,800.0	89.14	0.00	11,142.8	6,064.9	232.3	6,064.9	0.00	0.00	
16,900.0	89.14	0.00	11,144.3	6,164.9	232.3	6,164.9	0.00	0.00	
17,000.0	89.14	0.00	11,145.8	6,264.9	232.3	6,264.9	0.00	0.00	
17,100.0	89.14	0.00	11,147.3	6,364.8	232.3	6,364.8	0.00	0.00	
17,200.0	89.14	0.00	11,148.8	6,464.8	232.3	6,464.8	0.00	0.00	
17,300.0	89.14	0.00	11,150.3	6,564.8	232.3	6,564.8	0.00	0.00	
17,344.2	89.14	0.00	11,151.0	6,609.1	232.3	6,609.1	0.00	0.00	PBHL @ 17344' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Bulldog #5-14H-789
<b>Company:</b>	Axia Energy	<b>TVD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Project:</b>	Moffat County, CO	<b>MD Reference:</b>	KB=20' @ 6787.0ft (Original Well Elev)
<b>Site:</b>	SEC 5-T7N-R89W	<b>North Reference:</b>	True
<b>Well:</b>	Bulldog #5-14H-789	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	H2		
<b>Design:</b>	Plan #4		

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 PBI	0.00	0.00	11,151.0	6,609.1	232.3	1,469,095.45	2,470,433.47	40.605422	-107.407369
- plan hits target center									
- Point									
Bulldog #5-14H-789 VT	0.00	0.00	8,483.0	88.0	160.0	1,462,577.46	2,470,220.89	40.587523	-107.407629
- plan hits target center									
- Point									
Bulldog #5-14H-789 PBI	0.00	0.00	10,749.0	9,299.4	4,210.1	1,471,699.55	2,474,468.20	40.612806	-107.393042
- plan misses target center by 4818.9ft at 17344.2ft MD (11151.0 TVD, 6609.1 N, 232.3 E)									
- Point									
Bulldog #5-14H-789 PBI	0.00	0.00	11,051.0	9,299.4	4,210.1	1,471,699.55	2,474,468.20	40.612806	-107.393042
- plan misses target center by 4803.2ft at 17344.2ft MD (11151.0 TVD, 6609.1 N, 232.3 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth		Name	Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
11,378.2	11,061.5	7"		0.000	0.000

Formations						
Measured Depth	Vertical Depth		Name	Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
1,654.0	1,654.0		Fox Hills		0.86	0.00
2,030.0	2,030.0		Lewis		0.86	0.00
4,362.1	4,361.0		Mesaverde		0.86	0.00
8,487.4	8,483.0		Mancos Marker		0.86	0.00
10,453.4	10,449.0		Niobrara		0.86	0.00
10,787.4	10,769.0		Toe Creek #2		0.86	0.00
10,862.4	10,831.0		Wolf Mountain		0.86	0.00
11,007.5	10,933.0		Top Target		0.86	0.00
11,352.0	11,051.0		TL		0.86	0.00

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
3,000.0	3,000.0	0.0	0.0	KOP @ 3000' MD	
3,064.3	3,064.3	0.5	0.9	EOB; 1.93°	
8,421.7	8,418.7	87.5	159.1	Start 3° Drop	
8,486.1	8,483.0	88.0	160.0	EOD; Vertical	
10,491.8	10,488.7	88.0	160.0	Curve KOP @ 10491' MD	
11,383.2	11,061.6	649.1	221.0	LP @ 11383' MD	
11,589.8	11,064.7	855.2	232.1	EOT; 0° Az	
17,344.2	11,151.0	6,609.1	232.3	PBHL @ 17344' MD	