

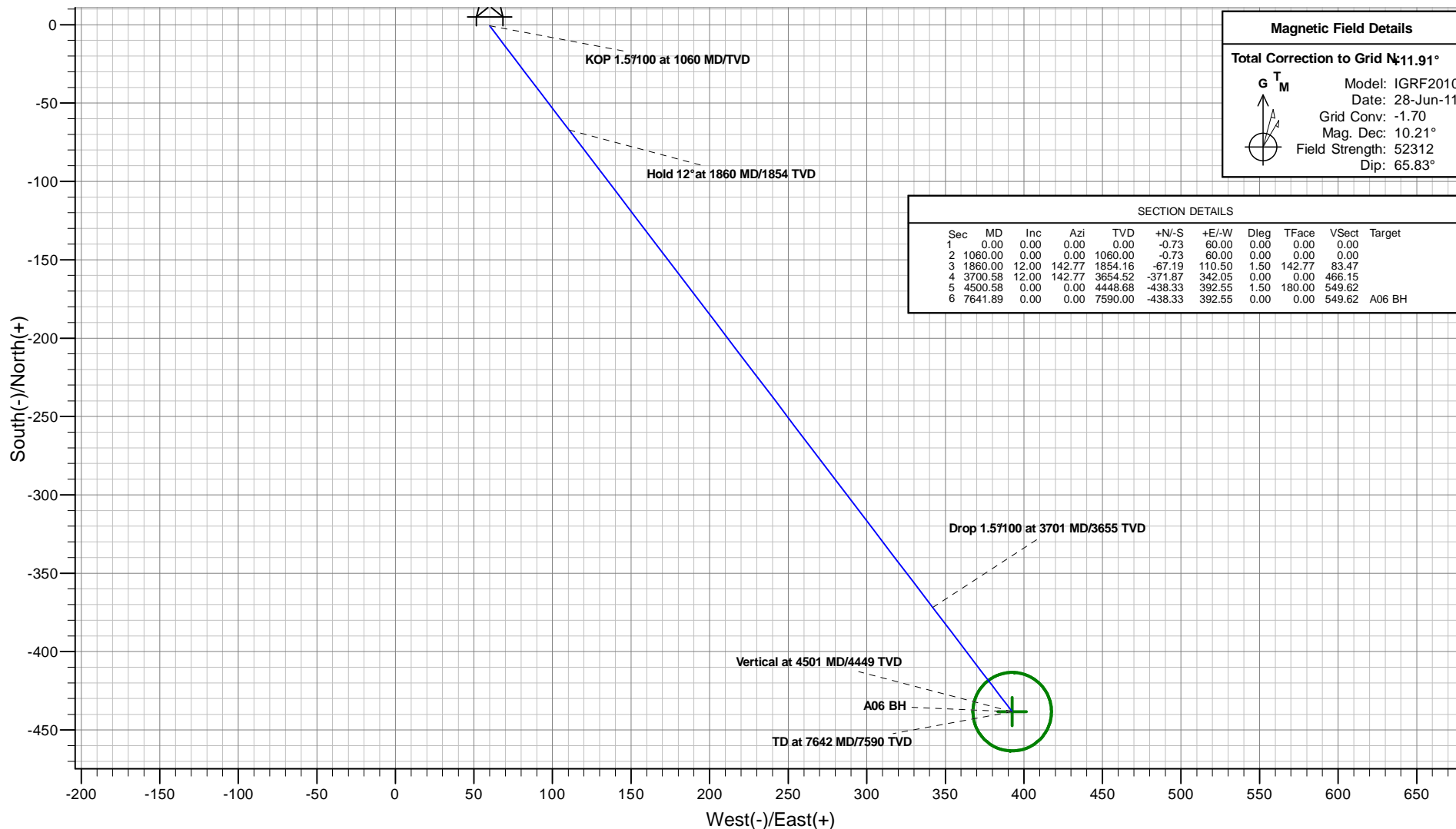


## PLAN VIEW

### Antero Resources

McPherson A06 (111359)

Project: McPherson  
Site: McPherson A Pad  
Well: McPherson A06 (111359)  
Wellbore: A06  
Design: A06 P01



Plan: A06 P01  
Created By: ARK Directional Services  
Date: 9:22, March 30 2011

PROJECT DETAILS: McPherson

Geodetic System: Universal Transverse Mercator  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Zone 13N (108 W to 102 W)  
System Datum: Mean Sea Level

REFERENCE INFORMATION

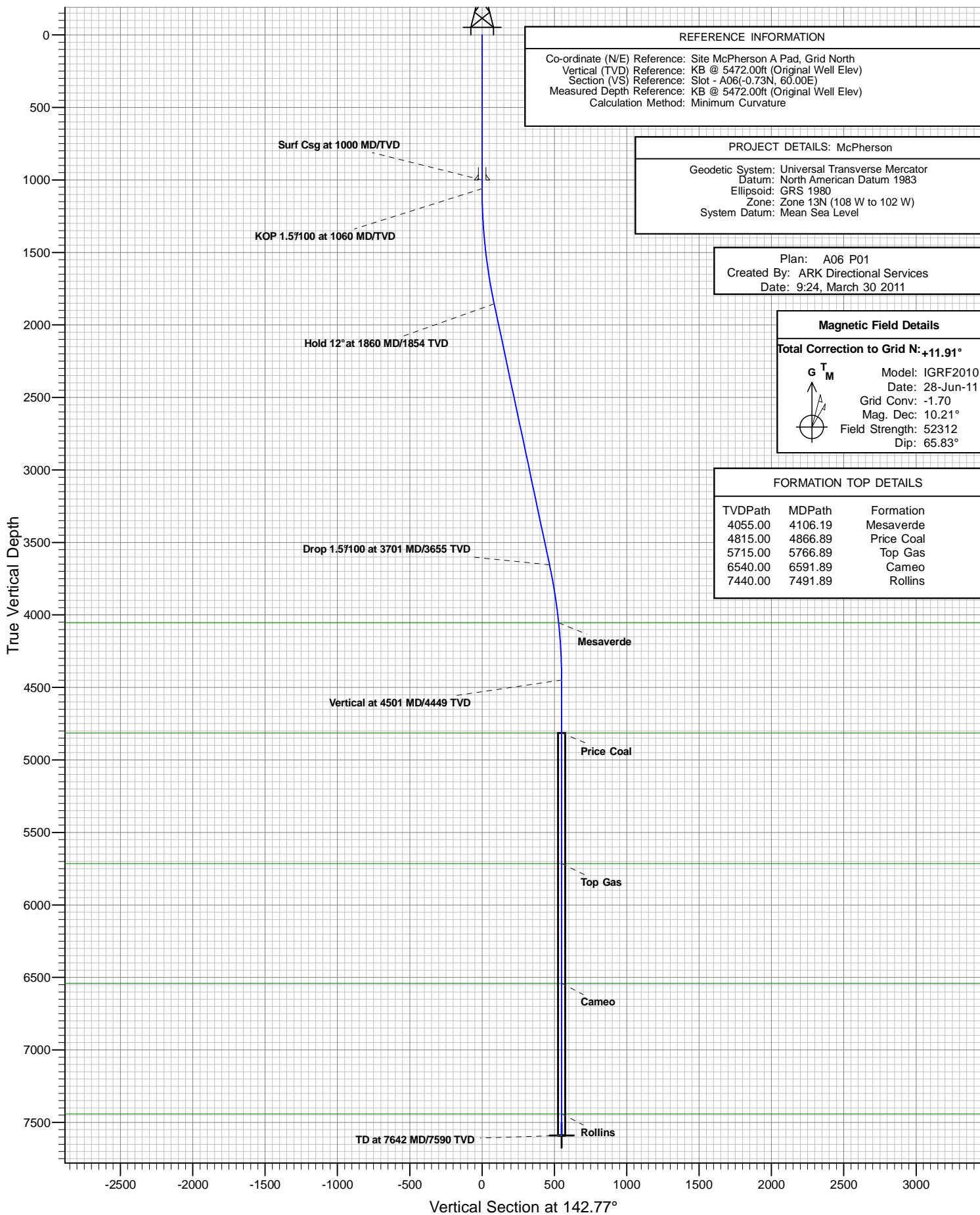
Co-ordinate (N/E) Reference: Site McPherson A Pad, Grid North  
Vertical (TVD) Reference: KB @ 5472.00ft (Original Well Elev)  
Section (VS) Reference: Slot - A06(-0.73N, 60.00E)  
Measured Depth Reference: KB @ 5472.00ft (Original Well Elev)  
Calculation Method: Minimum Curvature



# VERTICAL SECTION VIEW

Antero Resources

McPherson A06 (111359)



## REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Site McPherson A Pad, Grid North  
 Vertical (TVD) Reference: KB @ 5472.00ft (Original Well Elev)  
 Section (VS) Reference: Slot - A06(-0.73N, 60.00E)  
 Measured Depth Reference: KB @ 5472.00ft (Original Well Elev)  
 Calculation Method: Minimum Curvature

## PROJECT DETAILS: McPherson

Geodetic System: Universal Transverse Mercator  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Zone 13N (108 W to 102 W)  
 System Datum: Mean Sea Level

Plan: A06 P01  
 Created By: ARK Directional Services  
 Date: 9:24, March 30 2011

## Magnetic Field Details

Total Correction to Grid N: +11.91°

G T M Model: IGRF2010  
 Date: 28-Jun-11  
 Grid Conv: -1.70  
 Mag. Dec: 10.21°  
 Field Strength: 52312  
 Dip: 65.83°

## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4055.00	4106.19	Mesaverde
4815.00	4866.89	Price Coal
5715.00	5766.89	Top Gas
6540.00	6591.89	Cameo
7440.00	7491.89	Rollins

# **Antero Resources**

**McPherson**

**McPherson A Pad**

**McPherson A06 (111359) - Slot A06**

**A06**

**Plan: A06 P01**

## **Standard Planning Report - Geographic**

**30 March, 2011**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Site McPherson A Pad
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Project:</b>	McPherson	<b>MD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Site:</b>	McPherson A Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	McPherson A06 (111359)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A06		
<b>Design:</b>	A06 P01		

<b>Project</b>	McPherson		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		McPherson A Pad			
Site Position:		Northing:	14,367,218.623 usft	Latitude:	39.531108419°N
From:	Map	Easting:	885,836.083 usft	Longitude:	107.676038841°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.70 °

Well	McPherson A06 (111359) - Slot A06					
Well Position	+N/-S	-0.73 ft	Northing:	14,367,217.889 usft	Latitude:	39.531111302°N
	+E/-W	60.00 ft	Easting:	885,896.079 usft	Longitude:	107.675826212°W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,448.00 ft

<b>Wellbore</b>	A06				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2011/06/28	10.21	65.83	52,312

<b>Design</b>	A06 P01				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	-0.73	60.00	142.77	

<b>Plan Sections</b>										
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
0.00	0.00	0.00	0.00	-0.73	60.00	0.00	0.00	0.00	0.00	
1,060.00	0.00	0.00	1,060.00	-0.73	60.00	0.00	0.00	0.00	0.00	
1,860.00	12.00	142.77	1,854.16	-67.19	110.50	1.50	1.50	0.00	142.77	
3,700.58	12.00	142.77	3,654.52	-371.87	342.05	0.00	0.00	0.00	0.00	
4,500.58	0.00	0.00	4,448.68	-438.33	392.55	1.50	-1.50	0.00	180.00	
7,641.89	0.00	0.00	7,590.00	-438.33	392.55	0.00	0.00	0.00	0.00	A06 BH

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Site McPherson A Pad
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Project:</b>	McPherson	<b>MD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Site:</b>	McPherson A Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	McPherson A06 (111359)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A06		
<b>Design:</b>	A06 P01		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
100.00	0.00	0.00	100.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
200.00	0.00	0.00	200.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
300.00	0.00	0.00	300.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
400.00	0.00	0.00	400.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
500.00	0.00	0.00	500.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
600.00	0.00	0.00	600.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
700.00	0.00	0.00	700.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
800.00	0.00	0.00	800.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
900.00	0.00	0.00	900.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
1,000.00	0.00	0.00	1,000.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
<b>Surf Csg at 1000 MD/TVD</b>									
1,060.00	0.00	0.00	1,060.00	-0.73	60.00	14,367,217.889	885,896.079	39.531111302°N	107.675826212°W
<b>KOP 1.5°/100 at 1060 MD/TVD</b>									
1,100.00	0.60	142.77	1,100.00	-0.90	60.12	14,367,217.722	885,896.206	39.531110854°N	107.675825745°W
1,200.00	2.10	142.77	1,199.97	-2.78	61.55	14,367,215.846	885,897.631	39.531105825°N	107.675820498°W
1,300.00	3.60	142.77	1,299.84	-6.74	64.56	14,367,211.888	885,900.639	39.531095210°N	107.675809422°W
1,400.00	5.10	142.77	1,399.55	-12.77	69.15	14,367,205.849	885,905.229	39.531079018°N	107.675792528°W
1,500.00	6.60	142.77	1,499.03	-20.89	75.31	14,367,197.734	885,911.396	39.531057259°N	107.675769825°W
1,600.00	8.10	142.77	1,598.20	-31.07	83.05	14,367,187.549	885,919.136	39.531029949°N	107.675741329°W
1,700.00	9.60	142.77	1,697.01	-43.32	92.36	14,367,175.300	885,928.445	39.530997106°N	107.675707060°W
1,800.00	11.10	142.77	1,795.38	-57.63	103.23	14,367,160.997	885,939.315	39.530958752°N	107.675667042°W
1,860.00	12.00	142.77	1,854.16	-67.19	110.50	14,367,151.432	885,946.584	39.530933105°N	107.675640282°W
<b>Hold 12° at 1860 MD/1854 TVD</b>									
1,900.00	12.00	142.77	1,893.29	-73.81	115.53	14,367,144.811	885,951.616	39.530915350°N	107.675621758°W
2,000.00	12.00	142.77	1,991.10	-90.37	128.11	14,367,128.257	885,964.196	39.530870964°N	107.675575445°W
2,100.00	12.00	142.77	2,088.92	-106.92	140.69	14,367,111.704	885,976.776	39.530826578°N	107.675529133°W
2,200.00	12.00	142.77	2,186.73	-123.47	153.27	14,367,095.150	885,989.356	39.530782192°N	107.675482821°W
2,300.00	12.00	142.77	2,284.55	-140.03	165.85	14,367,078.597	886,001.936	39.530737805°N	107.675436509°W
2,400.00	12.00	142.77	2,382.36	-156.58	178.43	14,367,062.044	886,014.516	39.530693419°N	107.675390197°W
2,500.00	12.00	142.77	2,480.18	-173.13	191.01	14,367,045.490	886,027.096	39.530649033°N	107.675343885°W
2,600.00	12.00	142.77	2,577.99	-189.69	203.59	14,367,028.937	886,039.676	39.530604646°N	107.675297574°W
2,700.00	12.00	142.77	2,675.81	-206.24	216.17	14,367,012.383	886,052.256	39.530560260°N	107.675251262°W
2,800.00	12.00	142.77	2,773.62	-222.79	228.75	14,366,995.830	886,064.836	39.530515873°N	107.675204950°W
2,900.00	12.00	142.77	2,871.44	-239.35	241.33	14,366,979.277	886,077.416	39.530471487°N	107.675158638°W
3,000.00	12.00	142.77	2,969.25	-255.90	253.91	14,366,962.723	886,089.996	39.530427100°N	107.675112327°W
3,100.00	12.00	142.77	3,067.07	-272.45	266.49	14,366,946.170	886,102.576	39.530382714°N	107.675066015°W
3,200.00	12.00	142.77	3,164.88	-289.01	279.07	14,366,929.616	886,115.156	39.530338327°N	107.675019704°W
3,300.00	12.00	142.77	3,262.70	-305.56	291.65	14,366,913.063	886,127.736	39.530293941°N	107.674973392°W
3,400.00	12.00	142.77	3,360.51	-322.11	304.23	14,366,896.510	886,140.316	39.530249554°N	107.674927081°W
3,500.00	12.00	142.77	3,458.33	-338.67	316.81	14,366,879.956	886,152.895	39.530205168°N	107.674880770°W
3,600.00	12.00	142.77	3,556.14	-355.22	329.39	14,366,863.403	886,165.475	39.530160781°N	107.674834459°W
3,700.00	12.00	142.77	3,653.96	-371.77	341.97	14,366,846.850	886,178.055	39.530116394°N	107.674788147°W
3,700.58	12.00	142.77	3,654.52	-371.87	342.05	14,366,846.754	886,178.128	39.530116139°N	107.674787880°W
<b>Drop 1.5°/100 at 3701 MD/3655 TVD</b>									
3,800.00	10.51	142.77	3,752.03	-387.32	353.79	14,366,831.306	886,189.868	39.530074715°N	107.674744661°W
3,900.00	9.01	142.77	3,850.58	-400.81	364.04	14,366,817.811	886,200.124	39.530038530°N	107.674706907°W
4,000.00	7.51	142.77	3,949.54	-412.25	372.73	14,366,806.375	886,208.815	39.530007865°N	107.674674913°W
4,100.00	6.01	142.77	4,048.84	-421.62	379.85	14,366,797.005	886,215.935	39.529982741°N	107.674648699°W
4,106.19	5.92	142.77	4,055.00	-422.13	380.24	14,366,796.493	886,216.325	39.529981368°N	107.674647266°W
<b>Mesaverde</b>									
4,200.00	4.51	142.77	4,148.42	-428.92	385.40	14,366,789.708	886,221.481	39.529963175°N	107.674628285°W
4,300.00	3.01	142.77	4,248.20	-434.13	389.36	14,366,784.489	886,225.447	39.529949180°N	107.674613684°W
4,400.00	1.51	142.77	4,348.12	-437.27	391.75	14,366,781.352	886,227.832	39.529940767°N	107.674604905°W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Site McPherson A Pad
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Project:</b>	McPherson	<b>MD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Site:</b>	McPherson A Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	McPherson A06 (111359)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A06		
<b>Design:</b>	A06 P01		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,500.00	0.01	142.77	4,448.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
4,500.58	0.00	0.00	4,448.68	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
Vertical at 4501 MD/4449 TVD									
4,600.00	0.00	0.00	4,548.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
4,700.00	0.00	0.00	4,648.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
4,800.00	0.00	0.00	4,748.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
4,866.89	0.00	0.00	4,815.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
Price Coal									
4,900.00	0.00	0.00	4,848.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,000.00	0.00	0.00	4,948.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,100.00	0.00	0.00	5,048.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,200.00	0.00	0.00	5,148.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,300.00	0.00	0.00	5,248.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,400.00	0.00	0.00	5,348.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,500.00	0.00	0.00	5,448.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,600.00	0.00	0.00	5,548.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,700.00	0.00	0.00	5,648.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,766.89	0.00	0.00	5,715.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
Top Gas									
5,800.00	0.00	0.00	5,748.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
5,900.00	0.00	0.00	5,848.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,000.00	0.00	0.00	5,948.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,100.00	0.00	0.00	6,048.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,200.00	0.00	0.00	6,148.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,300.00	0.00	0.00	6,248.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,400.00	0.00	0.00	6,348.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,500.00	0.00	0.00	6,448.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,591.89	0.00	0.00	6,540.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
Cameo									
6,600.00	0.00	0.00	6,548.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,700.00	0.00	0.00	6,648.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,800.00	0.00	0.00	6,748.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
6,900.00	0.00	0.00	6,848.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,000.00	0.00	0.00	6,948.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,100.00	0.00	0.00	7,048.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,200.00	0.00	0.00	7,148.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,300.00	0.00	0.00	7,248.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,400.00	0.00	0.00	7,348.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,491.89	0.00	0.00	7,440.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
Rollins									
7,500.00	0.00	0.00	7,448.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,600.00	0.00	0.00	7,548.11	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
7,641.89	0.00	0.00	7,590.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
TD at 7642 MD/7590 TVD									

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Site McPherson A Pad
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Project:</b>	McPherson	<b>MD Reference:</b>	KB @ 5472.00ft (Original Well Elev)
<b>Site:</b>	McPherson A Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	McPherson A06 (111359)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	A06		
<b>Design:</b>	A06 P01		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
A06 BH	0.00	0.00	7,590.00	-438.33	392.55	14,366,780.297	886,228.633	39.529937940°N	107.674601956°W
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,000.00	1,000.00	Surf Csg at 1000 MD/TVD		5.50	6.00

Formations					
Measured Depth	Vertical Depth	Name		Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,106.19	4,055.00	Mesaverde			
4,866.89	4,815.00	Price Coal			
5,766.89	5,715.00	Top Gas			
6,591.89	6,540.00	Cameo			
7,491.89	7,440.00	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
1,060.00	1,060.00	-0.73	60.00	KOP 1.5°/100 at 1060 MD/TVD	
1,860.00	1,854.16	-67.19	110.50	Hold 12° at 1860 MD/1854 TVD	
3,700.58	3,654.52	-371.87	342.05	Drop 1.5°/100 at 3701 MD/3655 TVD	
4,500.58	4,448.68	-438.33	392.55	Vertical at 4501 MD/4449 TVD	
7,641.89	7,590.00	-438.33	392.55	TD at 7642 MD/7590 TVD	