



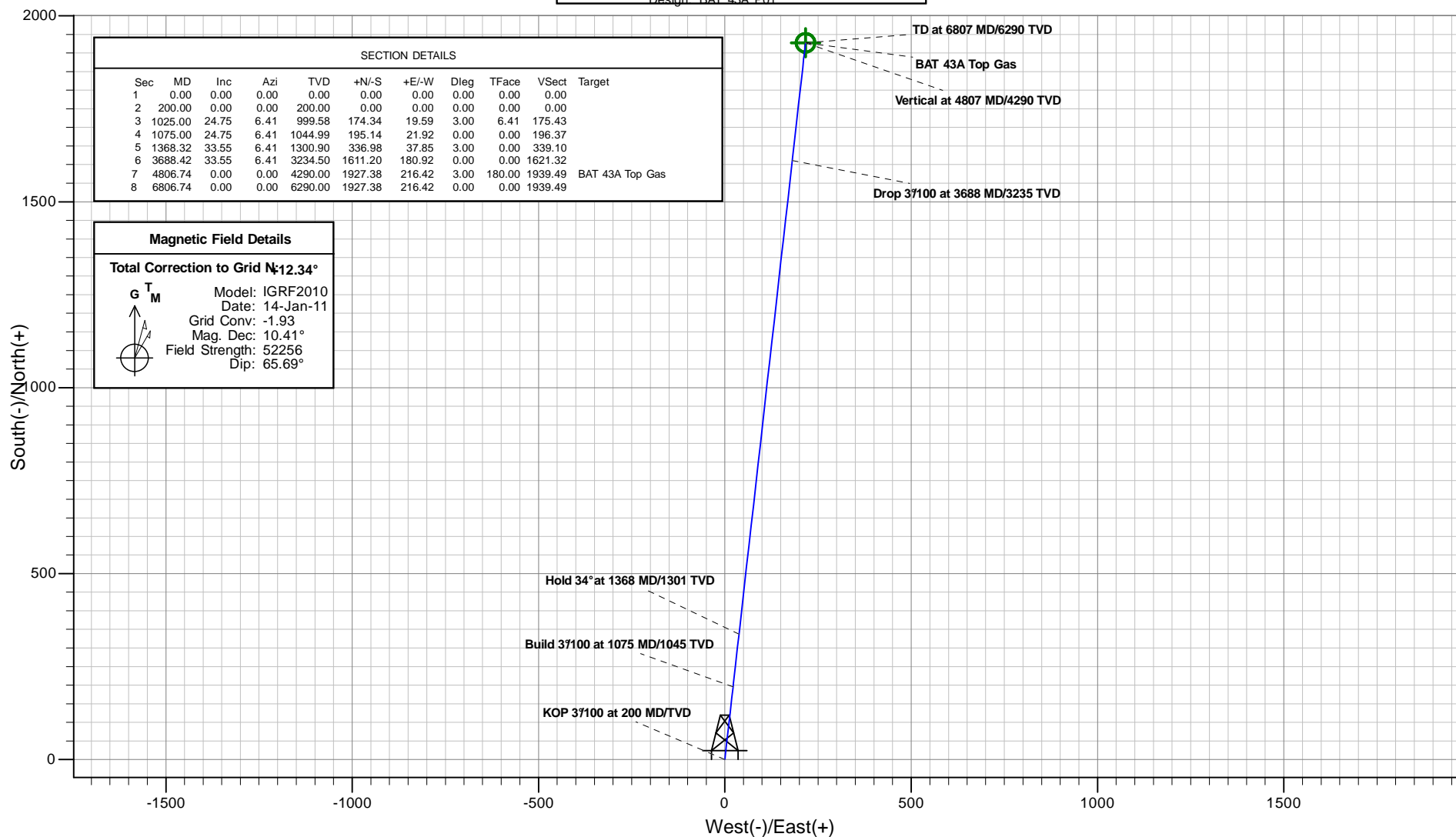
# Antero Resources

BAT 43A-18-07-95 (111278)



## PLAN VIEW

Project: Monument Ridge  
Site: Monument Ridge Pad  
Well: BAT 43A-18-07-95 (111278)  
Wellbore: BAT 43A  
Design: BAT 43A P01



Plan: BAT 43A P01  
Created By: ARK Directional Services  
Date: 8:51, October 14 2010

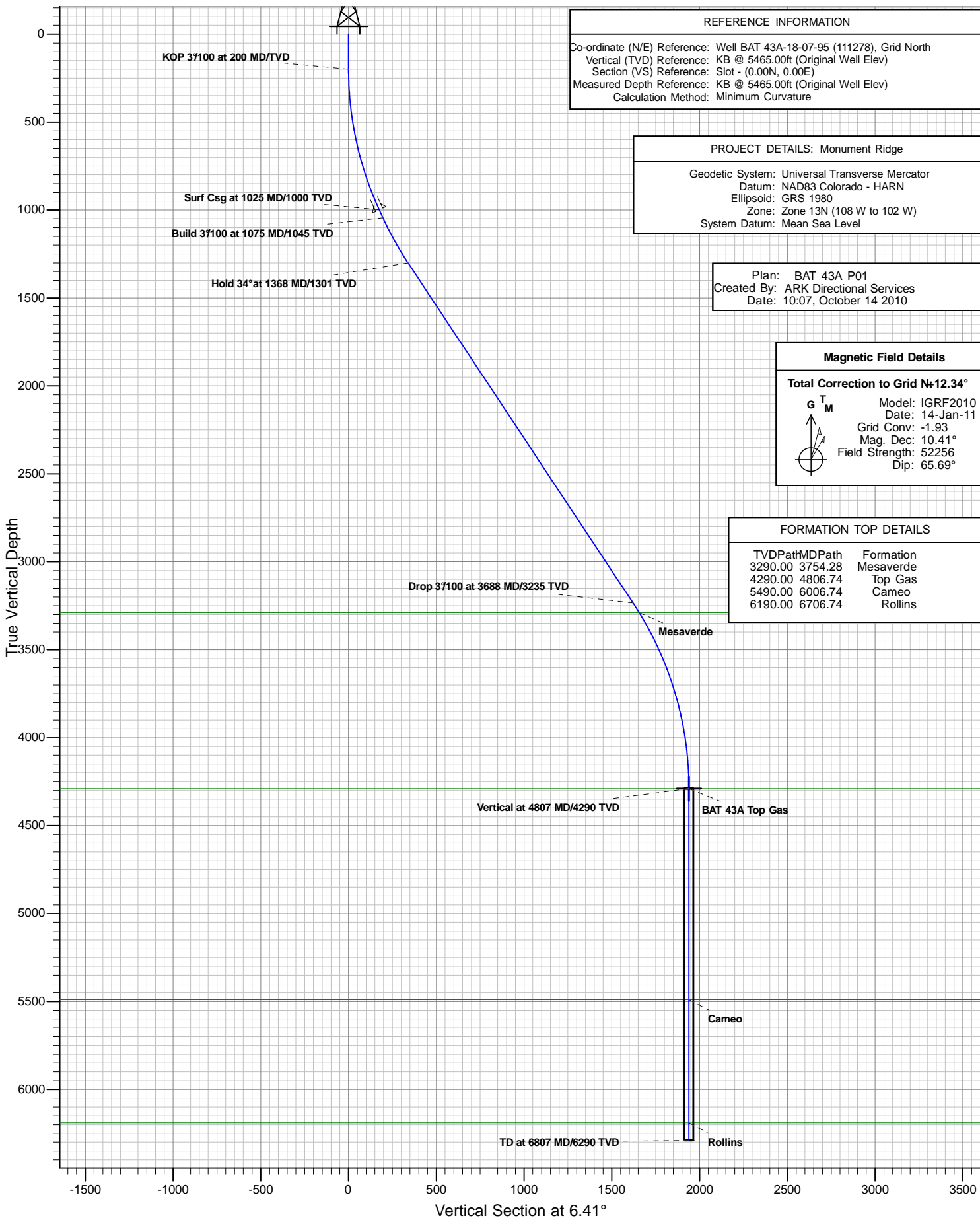
PROJECT DETAILS: Monument Ridge

Geodetic System: Universal Transverse Mercator  
Datum: NAD83 Colorado - HARN  
Ellipsoid: GRS 1980  
Zone: Zone 13N (108 W to 102 W)  
System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well BAT 43A-18-07-95 (111278), Grid North  
Vertical (TVD) Reference: KB @ 5465.00ft (Original Well Elev)  
Section (VS) Reference: Slot - (0.00N, 0.00E)  
Measured Depth Reference: KB @ 5465.00ft (Original Well Elev)  
Calculation Method: Minimum Curvature

## VERTICAL SECTION VIEW



# **Antero Resources**

**Monument Ridge**

**Monument Ridge Pad**

**BAT 43A-18-07-95 (111278)**

**BAT 43A**

**Plan: BAT 43A P01**

## **Standard Planning Report - Geographic**

**14 October, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 43A-18-07-95 (111278)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 43A-18-07-95 (111278)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 43A		
<b>Design:</b>	BAT 43A P01		

<b>Project</b>	Monument Ridge		
<b>Map System:</b>	Universal Transverse Mercator	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD83 Colorado - HARN		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	Monument Ridge Pad		
<b>Site Position:</b>		<b>Northing:</b>	14,334,067.020 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	783,868.932 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39.431305000°N
		<b>Longitude:</b>	108.033251000°W
		<b>Grid Convergence:</b>	-1.93 °

<b>Well</b>	BAT 43A-18-07-95 (111278)		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b>
			5,441.00 ft

<b>Wellbore</b>	BAT 43A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2011/01/14	10.41	65.69	52,256

<b>Design</b>	BAT 43A 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>	
	4,290.00	0.00	0.00	6.41	

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,025.00	24.75	6.41	999.58	174.34	19.59	3.00	3.00	0.00	6.41	
1,075.00	24.75	6.41	1,044.99	195.14	21.92	0.00	0.00	0.00	0.00	
1,368.32	33.55	6.41	1,300.90	336.98	37.85	3.00	3.00	0.00	0.00	
3,688.42	33.55	6.41	3,234.50	1,611.20	180.92	0.00	0.00	0.00	0.00	
4,806.74	0.00	0.00	4,290.00	1,927.38	216.42	3.00	-3.00	0.00	180.00	BAT 43A Top Gas
6,806.74	0.00	0.00	6,290.00	1,927.38	216.42	0.00	0.00	0.00	0.00	

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 43A-18-07-95 (111278)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 43A-18-07-95 (111278)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 43A		
<b>Design:</b>	BAT 43A 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	0.00	0.00	14,334,079.422	783,868.784	39.431339000°N	108.033253000°W
100.00	0.00	0.00	100.00	0.00	0.00	14,334,079.422	783,868.784	39.431339000°N	108.033253000°W
200.00	0.00	0.00	200.00	0.00	0.00	14,334,079.422	783,868.784	39.431339000°N	108.033253000°W
<b>KOP 3°/100 at 200 MD/TVD</b>									
300.00	3.00	6.41	299.95	2.60	0.29	14,334,082.023	783,869.076	39.431346161°N	108.033252277°W
400.00	6.00	6.41	399.63	10.40	1.17	14,334,089.819	783,869.952	39.431367623°N	108.033250107°W
500.00	9.00	6.41	498.77	23.37	2.63	14,334,102.788	783,871.409	39.431403328°N	108.033246498°W
600.00	12.00	6.41	597.08	41.47	4.66	14,334,120.896	783,873.444	39.431453177°N	108.033241459°W
700.00	15.00	6.41	694.31	64.67	7.27	14,334,144.092	783,876.050	39.431517035°N	108.033235004°W
800.00	18.00	6.41	790.18	92.89	10.44	14,334,172.312	783,879.220	39.431594726°N	108.033227150°W
900.00	21.00	6.41	884.43	126.06	14.16	14,334,205.480	783,882.946	39.431686037°N	108.033217920°W
1,000.00	24.00	6.41	976.81	164.08	18.43	14,334,243.505	783,887.218	39.431790718°N	108.033207338°W
1,025.00	24.75	6.41	999.58	174.34	19.59	14,334,253.758	783,888.370	39.431818945°N	108.033204484°W
<b>Surf Csg at 1025 MD/1000 TVD</b>									
1,075.00	24.75	6.41	1,044.99	195.14	21.92	14,334,274.560	783,890.706	39.431876212°N	108.033198700°W
<b>Build 3°/100 at 1075 MD/1045 TVD</b>									
1,100.00	25.50	6.41	1,067.62	205.69	23.11	14,334,285.109	783,891.890	39.431905252°N	108.033195767°W
1,200.00	28.50	6.41	1,156.71	250.80	28.17	14,334,330.219	783,896.955	39.432029439°N	108.033183223°W
1,300.00	31.50	6.41	1,243.31	300.48	33.75	14,334,379.901	783,902.534	39.432166213°N	108.033169408°W
1,368.32	33.55	6.41	1,300.91	336.98	37.85	14,334,416.403	783,906.632	39.432266701°N	108.033159258°W
<b>Hold 34° at 1368 MD/1301 TVD</b>									
1,400.00	33.55	6.41	1,327.31	354.38	39.80	14,334,433.802	783,908.586	39.432314599°N	108.033154420°W
1,500.00	33.55	6.41	1,410.65	409.30	45.97	14,334,488.722	783,914.752	39.432465794°N	108.033139148°W
1,600.00	33.55	6.41	1,493.99	464.22	52.13	14,334,543.643	783,920.919	39.432616988°N	108.033123877°W
1,700.00	33.55	6.41	1,577.33	519.14	58.30	14,334,598.563	783,927.085	39.432768183°N	108.033108605°W
1,800.00	33.55	6.41	1,660.67	574.06	64.47	14,334,653.484	783,933.252	39.432919377°N	108.033093333°W
1,900.00	33.55	6.41	1,744.01	628.98	70.63	14,334,708.404	783,939.418	39.433070572°N	108.033078061°W
2,000.00	33.55	6.41	1,827.36	683.90	76.80	14,334,763.325	783,945.585	39.433221766°N	108.033062789°W
2,100.00	33.55	6.41	1,910.70	738.83	82.97	14,334,818.245	783,951.752	39.433372961°N	108.033047517°W
2,200.00	33.55	6.41	1,994.04	793.75	89.13	14,334,873.166	783,957.918	39.433524155°N	108.033032245°W
2,300.00	33.55	6.41	2,077.38	848.67	95.30	14,334,928.086	783,964.085	39.433675350°N	108.033016973°W
2,400.00	33.55	6.41	2,160.72	903.59	101.47	14,334,983.007	783,970.251	39.433826544°N	108.033001701°W
2,500.00	33.55	6.41	2,244.06	958.51	107.63	14,335,037.927	783,976.418	39.433977739°N	108.032986429°W
2,600.00	33.55	6.41	2,327.40	1,013.43	113.80	14,335,092.848	783,982.584	39.434128933°N	108.032971156°W
2,700.00	33.55	6.41	2,410.74	1,068.35	119.97	14,335,147.768	783,988.751	39.434280128°N	108.032955884°W
2,800.00	33.55	6.41	2,494.08	1,123.27	126.13	14,335,202.689	783,994.917	39.434431322°N	108.032940612°W
2,900.00	33.55	6.41	2,577.42	1,178.19	132.30	14,335,257.609	784,001.084	39.434582517°N	108.032925339°W
3,000.00	33.55	6.41	2,660.76	1,233.11	138.47	14,335,312.530	784,007.251	39.434733711°N	108.032910067°W
3,100.00	33.55	6.41	2,744.10	1,288.03	144.63	14,335,367.450	784,013.417	39.434884906°N	108.032894794°W
3,200.00	33.55	6.41	2,827.45	1,342.95	150.80	14,335,422.371	784,019.584	39.435036100°N	108.032879522°W
3,300.00	33.55	6.41	2,910.79	1,397.87	156.97	14,335,477.291	784,025.750	39.435187295°N	108.032864249°W
3,400.00	33.55	6.41	2,994.13	1,452.79	163.13	14,335,532.212	784,031.917	39.435338489°N	108.032848977°W
3,500.00	33.55	6.41	3,077.47	1,507.71	169.30	14,335,587.132	784,038.083	39.435489683°N	108.032833704°W
3,600.00	33.55	6.41	3,160.81	1,562.63	175.47	14,335,642.053	784,044.250	39.435640878°N	108.032818431°W
3,688.42	33.55	6.41	3,234.50	1,611.20	180.92	14,335,690.614	784,049.702	39.435774564°N	108.032804927°W
<b>Drop 3°/100 at 3688 MD/3235 TVD</b>									
3,700.00	33.20	6.41	3,244.17	1,617.53	181.63	14,335,696.944	784,050.413	39.435791992°N	108.032803167°W
3,754.28	31.57	6.41	3,290.00	1,646.42	184.87	14,335,725.834	784,053.657	39.435871526°N	108.032795133°W
<b>Mesaverde</b>									
3,800.00	30.20	6.41	3,329.24	1,669.74	187.49	14,335,749.160	784,056.276	39.435935742°N	108.032788646°W
3,900.00	27.20	6.41	3,416.94	1,717.46	192.85	14,335,796.881	784,061.634	39.436067115°N	108.032775376°W
4,000.00	24.20	6.41	3,507.04	1,760.56	197.69	14,335,839.974	784,066.473	39.436185750°N	108.032763392°W
4,100.00	21.20	6.41	3,599.28	1,798.91	201.99	14,335,878.323	784,070.779	39.436291323°N	108.032752727°W
4,200.00	18.20	6.41	3,693.41	1,832.40	205.76	14,335,911.822	784,074.540	39.436383544°N	108.032743412°W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well BAT 43A-18-07-95 (111278)
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 43A-18-07-95 (111278)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 43A		
<b>Design:</b>	BAT 43A 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
4,300.00	15.20	6.41	3,789.18	1,860.96	208.96	14,335,940.379	784,077.746	39.436462160°N	108.032735470°W
4,400.00	12.20	6.41	3,886.33	1,884.50	211.61	14,335,963.916	784,080.389	39.436526957°N	108.032728925°W
4,500.00	9.20	6.41	3,984.58	1,902.95	213.68	14,335,982.368	784,082.461	39.436577756°N	108.032723793°W
4,600.00	6.20	6.41	4,083.66	1,916.27	215.17	14,335,995.685	784,083.956	39.436614418°N	108.032720090°W
4,700.00	3.20	6.41	4,183.31	1,924.41	216.09	14,336,003.831	784,084.871	39.436636842°N	108.032717824°W
4,800.00	0.20	6.41	4,283.26	1,927.36	216.42	14,336,006.783	784,085.202	39.436644968°N	108.032717004°W
4,806.74	0.00	0.00	4,290.00	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
Vertical at 4807 MD/4290 TVD - Top Gas									
4,900.00	0.00	0.00	4,383.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,000.00	0.00	0.00	4,483.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,100.00	0.00	0.00	4,583.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,200.00	0.00	0.00	4,683.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,300.00	0.00	0.00	4,783.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,400.00	0.00	0.00	4,883.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,500.00	0.00	0.00	4,983.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,600.00	0.00	0.00	5,083.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,700.00	0.00	0.00	5,183.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,800.00	0.00	0.00	5,283.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
5,900.00	0.00	0.00	5,383.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,000.00	0.00	0.00	5,483.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,006.74	0.00	0.00	5,490.00	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
Cameo									
6,100.00	0.00	0.00	5,583.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,200.00	0.00	0.00	5,683.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,300.00	0.00	0.00	5,783.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,400.00	0.00	0.00	5,883.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,500.00	0.00	0.00	5,983.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,600.00	0.00	0.00	6,083.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,700.00	0.00	0.00	6,183.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,706.74	0.00	0.00	6,190.00	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
Rollins									
6,800.00	0.00	0.00	6,283.26	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
6,806.74	0.00	0.00	6,290.00	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W
TD at 6807 MD/6290 TVD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BAT 43A Top Gas - plan hits target center - Circle (radius 25.00)	0.00	360.00	4,290.00	1,927.38	216.42	14,336,006.794	784,085.204	39.436645000°N	108.032717000°W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,025.00	999.58	Surf Csg at 1025 MD/1000 TVD	5.50	6.00	

# ARK Directional Services

## Planning Report - Geographic

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<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Project:</b>	Monument Ridge	<b>MD Reference:</b>	KB @ 5465.00ft (Original Well Elev)
<b>Site:</b>	Monument Ridge Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BAT 43A-18-07-95 (111278)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BAT 43A		
<b>Design:</b>	BAT 43A P01		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,754.28	3,290.00	Mesaverde			
4,806.74	4,290.00	Top Gas			
6,006.74	5,490.00	Cameo			
6,706.74	6,190.00	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	KOP 3°/100 at 200 MD/TVD
1,075.00	1,044.99	174.34	19.59	Build 3°/100 at 1075 MD/1045 TVD
1,368.32	1,300.90	195.14	21.92	Hold 34° at 1368 MD/1301 TVD
3,688.42	3,234.50	336.98	37.85	Drop 3°/100 at 3688 MD/3235 TVD
4,806.74	4,290.00	1,611.20	180.92	Vertical at 4807 MD/4290 TVD
6,806.74	6,290.00	1,927.38	216.42	TD at 6807 MD/6290 TVD