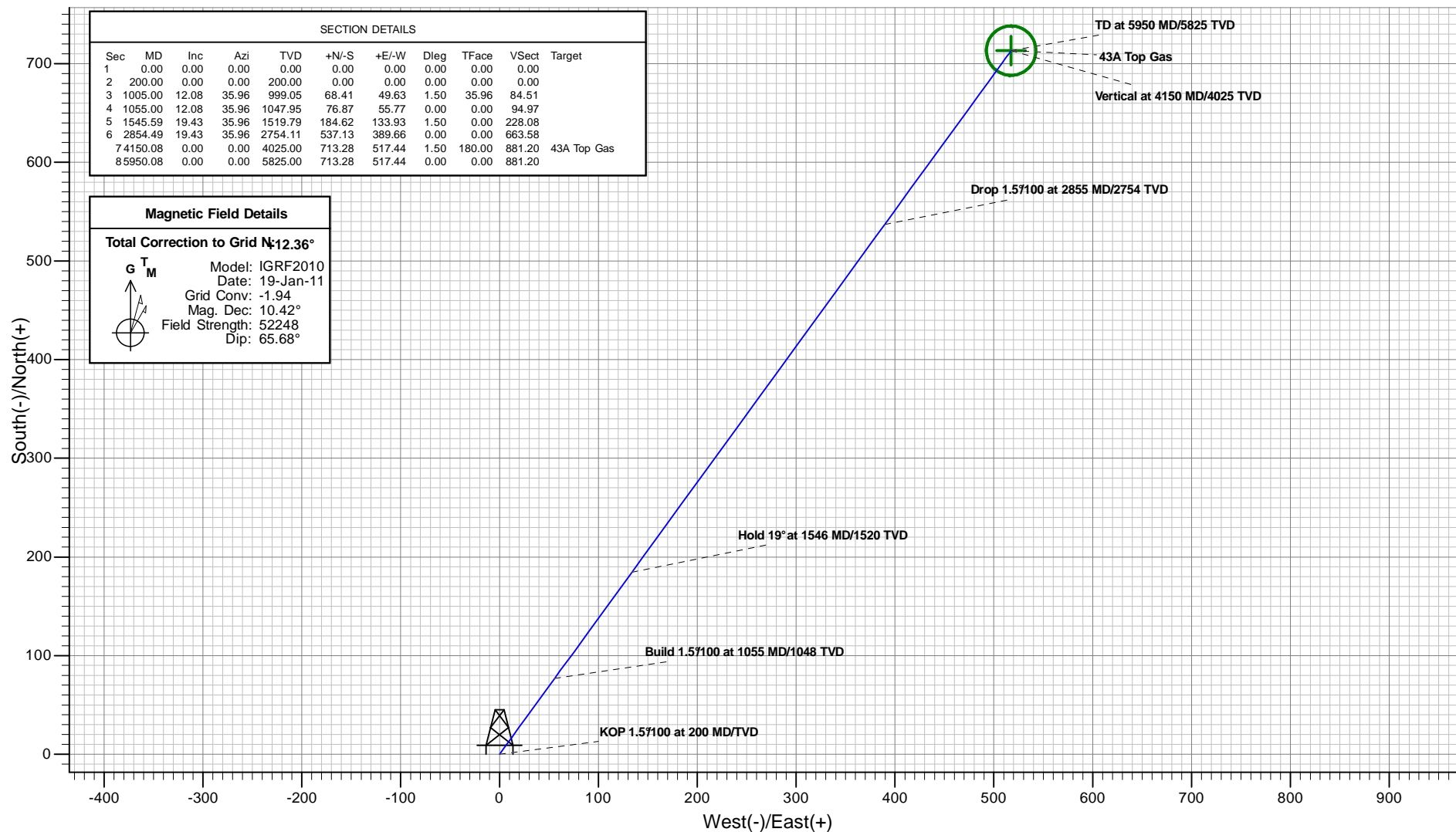




PLAN VIEW

Antero Resources BAT 43A-24-07-96 (111297)

Project: Speakman
Site: Speakman B Pad
Well: BAT 43A-24-07-96 (111297)
Wellbore: BAT 43A
Design: BAT 43A P01



Plan: BAT 43A P01
Created By: ARK Directional Services
Date: 9:04, October 25 2010

PROJECT DETAILS: Speakman

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: Well BAT 43A-24-07-96 (111297), Grid North
Vertical (TVD) Reference: KB @ 5275.00ft (Original Well Elev)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: KB @ 5275.00ft (Original Well Elev)
Calculation Method: Minimum Curvature

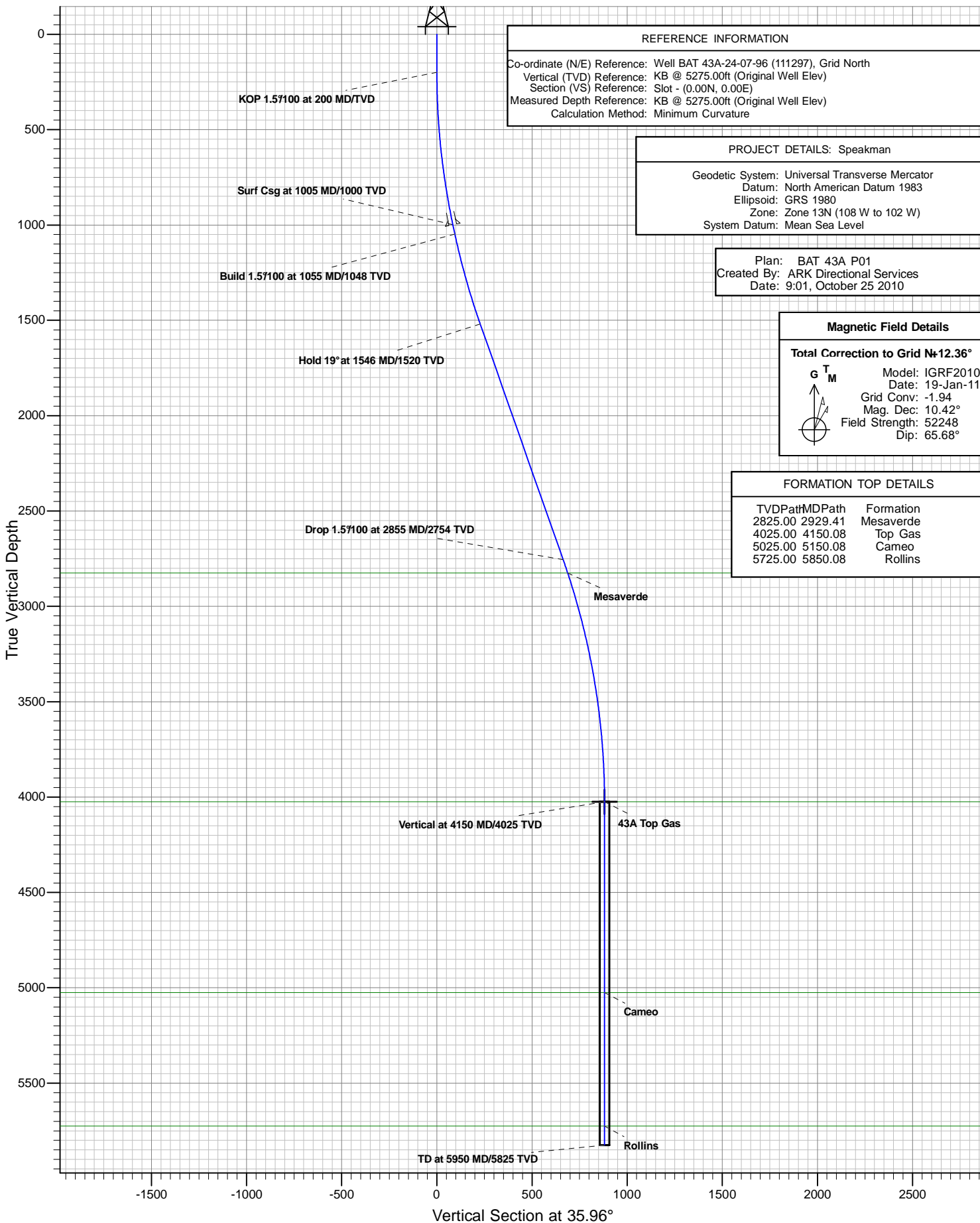


Antero Resources



BAT 43A-24-07-96 (111297)

VERTICAL SECTION VIEW



Antero Resources

Speakman

Speakman B Pad

BAT 43A-24-07-96 (111297)

BAT 43A

Plan: BAT 43A P01

Standard Planning Report - Geographic

25 October, 2010

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well BAT 43A-24-07-96 (111297)
Company:	Antero Resources	TVD Reference:	KB @ 5275.00ft (Original Well Elev)
Project:	Speakman	MD Reference:	KB @ 5275.00ft (Original Well Elev)
Site:	Speakman B Pad	North Reference:	Grid
Well:	BAT 43A-24-07-96 (111297)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 43A		
Design:	BAT 43A P01		

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

Site		Speakman B Pad			
Site Position:		Northing:	14,330,324.404 usft	Latitude:	39.420512610°N
From:	Lat/Long	Easting:	778,167.274 usft	Longitude:	108.052966905°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.94 °

Well	BAT 43A-24-07-96 (111297)					
Well Position	+N/-S	0.00 ft	Northing:	14,330,284.377 usft	Latitude:	39.420406313°N
	+E/-W	0.00 ft	Easting:	778,204.745 usft	Longitude:	108.052829615°W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,256.00 ft

Wellbore	BAT 43A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/01/19	10.42	65.68	52,248

Design	BAT 43A P01				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	4,025.00	0.00	0.00	35.96	

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
0.00	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	
1,005.00	12.08	35.96	999.05	68.41	49.63	1.50	1.50	0.00	35.96	
1,055.00	12.08	35.96	1,047.95	76.87	55.77	0.00	0.00	0.00	0.00	
1,545.59	19.43	35.96	1,519.79	184.62	133.93	1.50	1.50	0.00	0.00	
2,854.49	19.43	35.96	2,754.11	537.13	389.66	0.00	0.00	0.00	0.00	
4,150.08	0.00	0.00	4,025.00	713.28	517.44	1.50	-1.50	0.00	180.00	43A Top Gas
5,950.08	0.00	0.00	5,825.00	713.28	517.44	0.00	0.00	0.00	0.00	

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well BAT 43A-24-07-96 (111297)
Company:	Antero Resources	TVD Reference:	KB @ 5275.00ft (Original Well Elev)
Project:	Speakman	MD Reference:	KB @ 5275.00ft (Original Well Elev)
Site:	Speakman B Pad	North Reference:	Grid
Well:	BAT 43A-24-07-96 (111297)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 43A		
Design:	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	14,330,284.377	778,204.745	39.420406313°N	108.052829615°W
100.00	0.00	0.00	100.00	0.00	0.00	14,330,284.377	778,204.745	39.420406313°N	108.052829615°W
200.00	0.00	0.00	200.00	0.00	0.00	14,330,284.377	778,204.745	39.420406313°N	108.052829615°W
KOP 1.5°/100 at 200 MD/TVD									
300.00	1.50	35.96	299.99	1.06	0.77	14,330,285.436	778,205.513	39.420409290°N	108.052827024°W
400.00	3.00	35.96	399.91	4.24	3.07	14,330,288.614	778,207.819	39.420418219°N	108.052819253°W
500.00	4.50	35.96	499.69	9.53	6.91	14,330,293.908	778,211.659	39.420433094°N	108.052806307°W
600.00	6.00	35.96	599.27	16.94	12.29	14,330,301.314	778,217.032	39.420453905°N	108.052788195°W
700.00	7.50	35.96	698.57	26.45	19.19	14,330,310.828	778,223.934	39.420480638°N	108.052764929°W
800.00	9.00	35.96	797.54	38.06	27.62	14,330,322.442	778,232.360	39.420513273°N	108.052736526°W
900.00	10.50	35.96	896.09	51.77	37.56	14,330,336.149	778,242.304	39.420551790°N	108.052703005°W
1,000.00	12.00	35.96	994.16	67.56	49.02	14,330,351.940	778,253.760	39.420596160°N	108.052664388°W
1,005.00	12.08	35.96	999.05	68.41	49.63	14,330,352.784	778,254.372	39.420598532°N	108.052662324°W
Surf Csg at 1005 MD/1000 TVD									
1,055.00	12.08	35.96	1,047.95	76.87	55.77	14,330,361.250	778,260.514	39.420622322°N	108.052641620°W
Build 1.5°/100 at 1055 MD/1048 TVD									
1,100.00	12.75	35.96	1,091.90	84.70	61.45	14,330,369.080	778,266.194	39.420644322°N	108.052622474°W
1,200.00	14.25	35.96	1,189.13	103.60	75.16	14,330,387.975	778,279.901	39.420697417°N	108.052576267°W
1,300.00	15.75	35.96	1,285.72	124.55	90.35	14,330,408.924	778,295.099	39.420756283°N	108.052525037°W
1,400.00	17.25	35.96	1,381.60	147.54	107.03	14,330,431.913	778,311.776	39.420820880°N	108.052468821°W
1,500.00	18.75	35.96	1,476.70	172.55	125.18	14,330,456.925	778,329.921	39.420891163°N	108.052407655°W
1,545.59	19.43	35.96	1,519.78	184.62	133.93	14,330,468.995	778,338.677	39.420925079°N	108.052378138°W
Hold 19° at 1546 MD/1520 TVD									
1,600.00	19.43	35.96	1,571.09	199.27	144.56	14,330,483.649	778,349.307	39.420966255°N	108.052342304°W
1,700.00	19.43	35.96	1,665.40	226.20	164.10	14,330,510.581	778,368.844	39.421041931°N	108.052276445°W
1,800.00	19.43	35.96	1,759.70	253.14	183.64	14,330,537.512	778,388.381	39.421117607°N	108.052210585°W
1,900.00	19.43	35.96	1,854.00	280.07	203.17	14,330,564.444	778,407.919	39.421193282°N	108.052144725°W
2,000.00	19.43	35.96	1,948.30	307.00	222.71	14,330,591.375	778,427.456	39.421268958°N	108.052078865°W
2,100.00	19.43	35.96	2,042.61	333.93	242.25	14,330,618.307	778,446.993	39.421344634°N	108.052013005°W
2,200.00	19.43	35.96	2,136.91	360.86	261.79	14,330,645.239	778,466.531	39.421420310°N	108.051947145°W
2,300.00	19.43	35.96	2,231.21	387.79	281.32	14,330,672.170	778,486.068	39.421495986°N	108.051881285°W
2,400.00	19.43	35.96	2,325.51	414.73	300.86	14,330,699.102	778,505.605	39.421571661°N	108.051815424°W
2,500.00	19.43	35.96	2,419.82	441.66	320.40	14,330,726.033	778,525.142	39.421647337°N	108.051749564°W
2,600.00	19.43	35.96	2,514.12	468.59	339.94	14,330,752.965	778,544.680	39.421723013°N	108.051683703°W
2,700.00	19.43	35.96	2,608.42	495.52	359.47	14,330,779.897	778,564.217	39.421798688°N	108.051617842°W
2,800.00	19.43	35.96	2,702.73	522.45	379.01	14,330,806.828	778,583.754	39.421874364°N	108.051551981°W
2,854.49	19.43	35.96	2,754.11	537.13	389.66	14,330,821.503	778,594.400	39.421915600°N	108.051516093°W
Drop 1.5°/100 at 2855 MD/2754 TVD									
2,900.00	18.75	35.96	2,797.12	549.18	398.40	14,330,833.552	778,603.141	39.421949457°N	108.051486627°W
2,929.41	18.31	35.96	2,825.00	556.74	403.89	14,330,841.118	778,608.629	39.421970714°N	108.051468126°W
Mesaverde									
3,000.00	17.25	35.96	2,892.22	574.19	416.54	14,330,858.566	778,621.287	39.422019744°N	108.051425455°W
3,100.00	15.75	35.96	2,988.10	597.18	433.22	14,330,881.557	778,637.965	39.422084345°N	108.051369232°W
3,200.00	14.25	35.96	3,084.69	618.13	448.42	14,330,902.508	778,653.164	39.422143215°N	108.051317997°W
3,300.00	12.75	35.96	3,181.92	637.03	462.13	14,330,921.405	778,666.872	39.422196314°N	108.051271784°W
3,400.00	11.25	35.96	3,279.73	653.86	474.34	14,330,938.235	778,679.082	39.422243606°N	108.051230625°W
3,500.00	9.75	35.96	3,378.06	668.61	485.04	14,330,952.987	778,689.784	39.422285058°N	108.051194548°W
3,600.00	8.25	35.96	3,476.82	681.28	494.23	14,330,965.651	778,698.970	39.422320642°N	108.051163579°W
3,700.00	6.75	35.96	3,575.96	691.84	501.89	14,330,976.217	778,706.636	39.422350333°N	108.051137738°W
3,800.00	5.25	35.96	3,675.41	700.30	508.03	14,330,984.680	778,712.775	39.422374112°N	108.051117043°W
3,900.00	3.75	35.96	3,775.10	706.66	512.64	14,330,991.032	778,717.383	39.422391961°N	108.051101508°W
4,000.00	2.25	35.96	3,874.96	710.89	515.71	14,330,995.270	778,720.457	39.422403869°N	108.051091144°W
4,100.00	0.75	35.96	3,974.92	713.01	517.25	14,330,997.390	778,721.996	39.422409827°N	108.051085959°W

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well BAT 43A-24-07-96 (111297)
Company:	Antero Resources	TVD Reference:	KB @ 5275.00ft (Original Well Elev)
Project:	Speakman	MD Reference:	KB @ 5275.00ft (Original Well Elev)
Site:	Speakman B Pad	North Reference:	Grid
Well:	BAT 43A-24-07-96 (111297)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 43A		
Design:	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	
4,150.08	0.00	0.00	4,025.00	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
Vertical at 4150 MD/4025 TVD - Top Gas										
4,200.00	0.00	0.00	4,074.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,300.00	0.00	0.00	4,174.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,400.00	0.00	0.00	4,274.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,500.00	0.00	0.00	4,374.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,600.00	0.00	0.00	4,474.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,700.00	0.00	0.00	4,574.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,800.00	0.00	0.00	4,674.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
4,900.00	0.00	0.00	4,774.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,000.00	0.00	0.00	4,874.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,100.00	0.00	0.00	4,974.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,150.08	0.00	0.00	5,025.00	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
Cameo										
5,200.00	0.00	0.00	5,074.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,300.00	0.00	0.00	5,174.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,400.00	0.00	0.00	5,274.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,500.00	0.00	0.00	5,374.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,600.00	0.00	0.00	5,474.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,700.00	0.00	0.00	5,574.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,800.00	0.00	0.00	5,674.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,850.08	0.00	0.00	5,725.00	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
Rollins										
5,900.00	0.00	0.00	5,774.92	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	
5,950.08	0.00	0.00	5,825.00	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	

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	
43A Top Gas - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,025.00	713.28	517.44	14,330,997.656	778,722.188	39.422410574°N	108.051085309°W	

Casing Points										
Measured Depth (ft)	Vertical Depth (ft)	Name				Casing Diameter (in)	Hole Diameter (in)			
1,005.00	999.05	Surf Csg at 1005 MD/1000 TVD				5.50	6.00			

Formations										
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)					
2,929.41	2,825.00	Mesaverde								
4,150.08	4,025.00	Top Gas								
5,150.08	5,025.00	Cameo								
5,850.08	5,725.00	Rollins								

ARK Directional Services

Planning Report - Geographic

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Company:	Antero Resources	TVD Reference:	KB @ 5275.00ft (Original Well Elev)
Project:	Speakman	MD Reference:	KB @ 5275.00ft (Original Well Elev)
Site:	Speakman B Pad	North Reference:	Grid
Well:	BAT 43A-24-07-96 (111297)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 43A		
Design:	BAT 43A P01		

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 1.5°/100 at 200 MD/TVD
1,055.00	1,047.95	68.41	49.63	Build 1.5°/100 at 1055 MD/1048 TVD
1,545.59	1,519.79	76.87	55.77	Hold 19° at 1546 MD/1520 TVD
2,854.49	2,754.11	184.62	133.93	Drop 1.5°/100 at 2855 MD/2754 TVD
4,150.08	4,025.00	537.13	389.66	Vertical at 4150 MD/4025 TVD
5,950.08	5,825.00	713.28	517.44	TD at 5950 MD/5825 TVD