

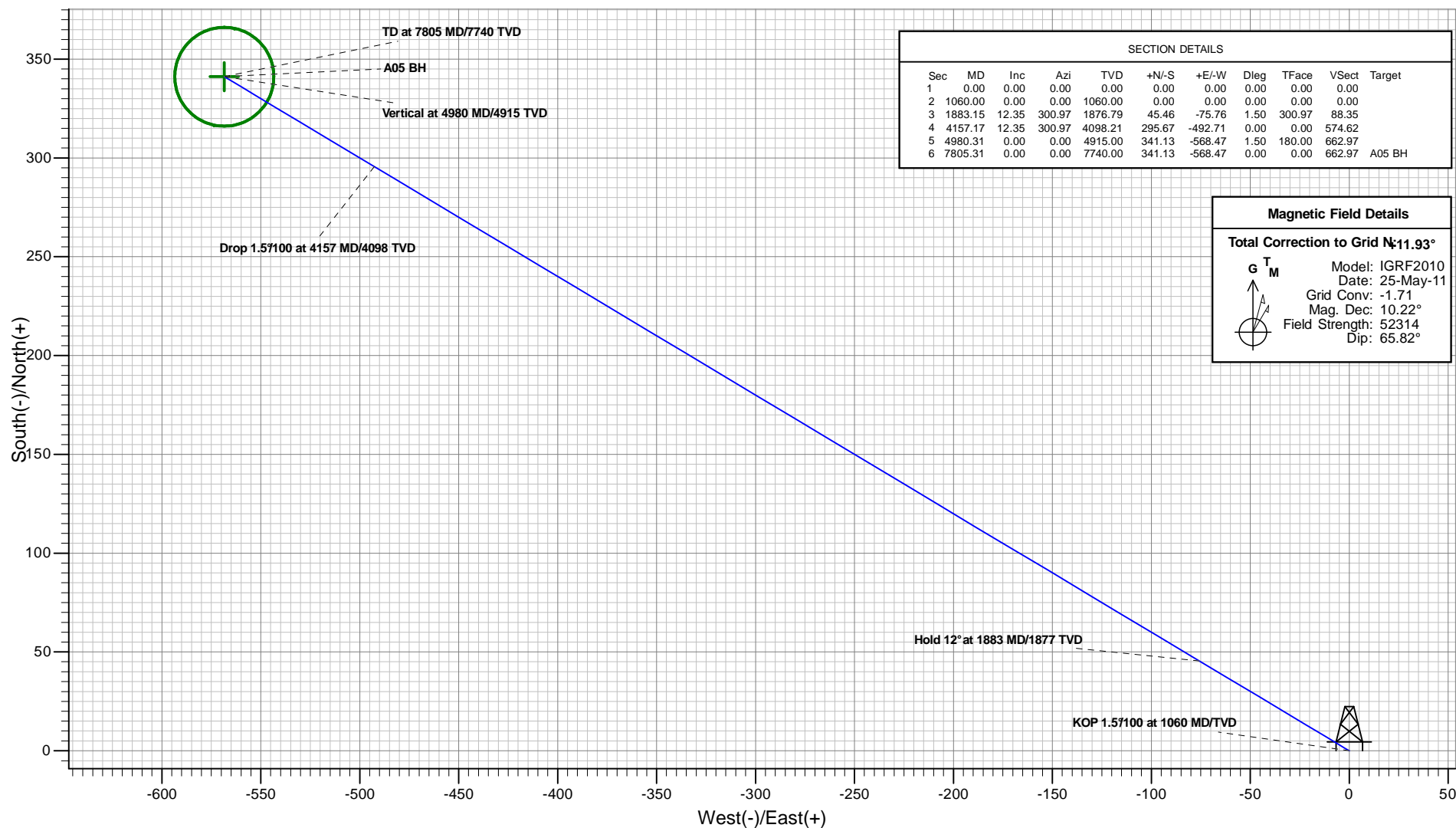


PLAN VIEW

Antero Resources

Left Hand Federal A05 (111342)

Project: Left Hand
Site: Left Hand Federal A
Well: Left Hand Federal A05 (111342)
Wellbore: Left Hand Federal A05
Design: Left Hand Federal A05 P01



Plan: Left Hand Federal A05 P01
Created By: ARK Directional Services
Date: 13:58, February 28 2011

PROJECT DETAILS: Left Hand

Geodetic System: Universal Transverse Mercator (US Survey Feet)
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 Left Hand Federal A05 (111342) - Slot A05, Grid North
Vertical (TVD) Reference: KB @ 5708.00ft (Original Well Elev)
Section (VS) Reference: Slot - A05(0.00N, 0.00E)
Measured Depth Reference: KB @ 5708.00ft (Original Well Elev)
Calculation Method: Minimum Curvature

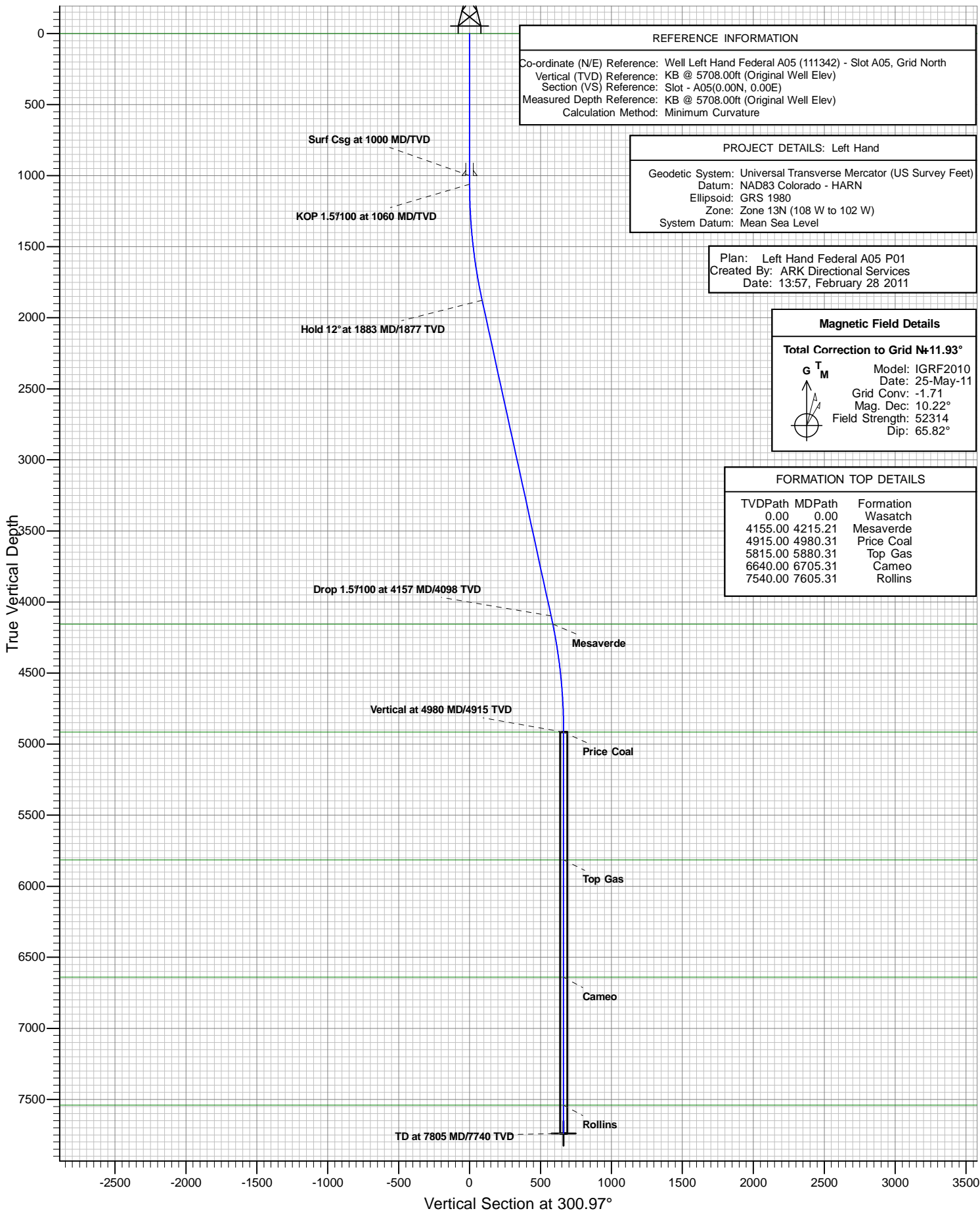


Antero Resources



VERTICAL SECTION VIEW

Left Hand Federal A05 (111342)



Antero Resources

Left Hand

Left Hand Federal A

Left Hand Federal A05 (111342) - Slot A05

Left Hand Federal A05

Plan: Left Hand Federal A05 P01

Standard Planning Report - Geographic

28 February, 2011

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Left Hand Federal A05 (111342) - Slot A05
Company:	Antero Resources	TVD Reference:	KB @ 5708.00ft (Original Well Elev)
Project:	Left Hand	MD Reference:	KB @ 5708.00ft (Original Well Elev)
Site:	Left Hand Federal A	North Reference:	Grid
Well:	Left Hand Federal A05 (111342)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand Federal A05		
Design:	Left Hand Federal A05 P01		

Project	Left Hand		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Left Hand Federal A		
Site Position:		Northing:	14,363,958.160 usft
From:	Map	Easting:	885,193.914 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in
		Latitude:	39.522111194°N
		Longitude:	107.677970034°W
		Grid Convergence:	-1.71 °

Well	Left Hand Federal A05 (111342) - Slot A05		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Left Hand Federal A05				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/05/25	10.22	65.82	52,314

Design	Left Hand Federal A05 P01			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	300.97

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	
1,060.00	0.00	0.00	1,060.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,883.15	12.35	300.97	1,876.79	45.46	-75.76	1.50	1.50	0.00	300.97	
4,157.17	12.35	300.97	4,098.21	295.67	-492.71	0.00	0.00	0.00	0.00	
4,980.31	0.00	0.00	4,915.00	341.13	-568.47	1.50	-1.50	0.00	180.00	
7,805.31	0.00	0.00	7,740.00	341.13	-568.47	0.00	0.00	0.00	0.00	A05 BH

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Left Hand Federal A05 (111342) - Slot A05
Company:	Antero Resources	TVD Reference:	KB @ 5708.00ft (Original Well Elev)
Project:	Left Hand	MD Reference:	KB @ 5708.00ft (Original Well Elev)
Site:	Left Hand Federal A	North Reference:	Grid
Well:	Left Hand Federal A05 (111342)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand Federal A05		
Design:	Left Hand Federal A05 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	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
Wasatch										
100.00	0.00	0.00	100.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
200.00	0.00	0.00	200.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
300.00	0.00	0.00	300.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
400.00	0.00	0.00	400.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
500.00	0.00	0.00	500.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
600.00	0.00	0.00	600.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
700.00	0.00	0.00	700.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
800.00	0.00	0.00	800.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
900.00	0.00	0.00	900.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
Surf Csg at 1000 MD/TVD										
1,060.00	0.00	0.00	1,060.00	0.00	0.00	14,363,946.333	885,195.945	39.522078914°N	107.677961593°W	
KOP 1.5°/100 at 1060 MD/TVD										
1,100.00	0.60	300.97	1,100.00	0.11	-0.18	14,363,946.441	885,195.765	39.522079195°N	107.677962240°W	
1,200.00	2.10	300.97	1,199.97	1.32	-2.20	14,363,947.653	885,193.745	39.522082355°N	107.677969524°W	
1,300.00	3.60	300.97	1,299.84	3.88	-6.46	14,363,950.211	885,189.482	39.522089026°N	107.677984895°W	
1,400.00	5.10	300.97	1,399.55	7.78	-12.97	14,363,954.114	885,182.978	39.522099201°N	107.678008344°W	
1,500.00	6.60	300.97	1,499.03	13.03	-21.71	14,363,959.358	885,174.239	39.522112875°N	107.678039854°W	
1,600.00	8.10	300.97	1,598.20	19.61	-32.68	14,363,965.941	885,163.270	39.522130038°N	107.678079405°W	
1,700.00	9.60	300.97	1,697.01	27.52	-45.87	14,363,973.857	885,150.079	39.522150678°N	107.678126967°W	
1,800.00	11.10	300.97	1,795.38	36.77	-61.27	14,363,983.101	885,134.674	39.522174780°N	107.678182510°W	
1,883.15	12.35	300.97	1,876.79	45.46	-75.76	14,363,991.794	885,120.188	39.522197446°N	107.678234741°W	
Hold 12° at 1883 MD/1877 TVD										
1,900.00	12.35	300.97	1,893.25	47.32	-78.85	14,363,993.648	885,117.098	39.522202281°N	107.678245883°W	
2,000.00	12.35	300.97	1,990.94	58.32	-97.18	14,364,004.651	885,098.762	39.522230969°N	107.678311993°W	
2,100.00	12.35	300.97	2,088.63	69.32	-115.52	14,364,015.654	885,080.427	39.522259657°N	107.678378103°W	
2,200.00	12.35	300.97	2,186.31	80.32	-133.85	14,364,026.657	885,062.091	39.522288345°N	107.678444213°W	
2,300.00	12.35	300.97	2,284.00	91.33	-152.19	14,364,037.660	885,043.756	39.522317033°N	107.678510323°W	
2,400.00	12.35	300.97	2,381.69	102.33	-170.52	14,364,048.663	885,025.420	39.522345721°N	107.678576433°W	
2,500.00	12.35	300.97	2,479.38	113.33	-188.86	14,364,059.666	885,007.085	39.522374409°N	107.678642544°W	
2,600.00	12.35	300.97	2,577.06	124.34	-207.20	14,364,070.669	884,988.750	39.522403097°N	107.678708654°W	
2,700.00	12.35	300.97	2,674.75	135.34	-225.53	14,364,081.672	884,970.414	39.522431785°N	107.678774764°W	
2,800.00	12.35	300.97	2,772.44	146.34	-243.87	14,364,092.675	884,952.079	39.522460472°N	107.678840875°W	
2,900.00	12.35	300.97	2,870.12	157.35	-262.20	14,364,103.677	884,933.743	39.522489160°N	107.678906985°W	
3,000.00	12.35	300.97	2,967.81	168.35	-280.54	14,364,114.680	884,915.408	39.522517848°N	107.678973096°W	
3,100.00	12.35	300.97	3,065.50	179.35	-298.87	14,364,125.683	884,897.072	39.522546535°N	107.679039206°W	
3,200.00	12.35	300.97	3,163.18	190.35	-317.21	14,364,136.686	884,878.737	39.522575223°N	107.679105317°W	
3,300.00	12.35	300.97	3,260.87	201.36	-335.54	14,364,147.689	884,860.401	39.522603911°N	107.679171427°W	
3,400.00	12.35	300.97	3,358.56	212.36	-353.88	14,364,158.692	884,842.066	39.522632598°N	107.679237538°W	
3,500.00	12.35	300.97	3,456.25	223.36	-372.22	14,364,169.695	884,823.731	39.522661286°N	107.679303649°W	
3,600.00	12.35	300.97	3,553.93	234.37	-390.55	14,364,180.698	884,805.395	39.522689973°N	107.679369760°W	
3,700.00	12.35	300.97	3,651.62	245.37	-408.89	14,364,191.701	884,787.060	39.522718661°N	107.679435871°W	
3,800.00	12.35	300.97	3,749.31	256.37	-427.22	14,364,202.704	884,768.724	39.522747348°N	107.679501982°W	
3,900.00	12.35	300.97	3,846.99	267.37	-445.56	14,364,213.707	884,750.389	39.522776035°N	107.679568093°W	
4,000.00	12.35	300.97	3,944.68	278.38	-463.89	14,364,224.710	884,732.053	39.522804723°N	107.679634204°W	
4,100.00	12.35	300.97	4,042.37	289.38	-482.23	14,364,235.712	884,713.718	39.522833410°N	107.679700315°W	
4,157.17	12.35	300.97	4,098.21	295.67	-492.71	14,364,242.002	884,703.236	39.522849809°N	107.679738107°W	
Drop 1.5°/100 at 4157 MD/4098 TVD										
4,200.00	11.70	300.97	4,140.10	300.26	-500.36	14,364,246.595	884,695.584	39.522861782°N	107.679765700°W	
4,215.21	11.48	300.97	4,155.00	301.83	-502.98	14,364,248.167	884,692.964	39.522865881°N	107.679775145°W	
Mesaverde										

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Left Hand Federal A05 (111342) - Slot A05
Company:	Antero Resources	TVD Reference:	KB @ 5708.00ft (Original Well Elev)
Project:	Left Hand	MD Reference:	KB @ 5708.00ft (Original Well Elev)
Site:	Left Hand Federal A	North Reference:	Grid
Well:	Left Hand Federal A05 (111342)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand Federal A05		
Design:	Left Hand Federal A05 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	10.20	300.97	4,238.28	310.04	-516.66	14,364,256.372	884,679.290	39.522887275°N	107.679824450°W
4,400.00	8.70	300.97	4,336.92	318.49	-530.74	14,364,264.825	884,665.205	39.522909312°N	107.679875235°W
4,500.00	7.20	300.97	4,435.95	325.61	-542.61	14,364,271.945	884,653.339	39.522927877°N	107.679918020°W
4,600.00	5.70	300.97	4,535.32	331.40	-552.25	14,364,277.729	884,643.700	39.522942958°N	107.679952775°W
4,700.00	4.20	300.97	4,634.94	335.84	-559.65	14,364,282.173	884,636.295	39.522954545°N	107.679979476°W
4,800.00	2.70	300.97	4,734.76	338.94	-564.82	14,364,285.274	884,631.128	39.522962628°N	107.679998106°W
4,900.00	1.20	300.97	4,834.69	340.70	-567.74	14,364,287.029	884,628.203	39.522967204°N	107.680008651°W
4,980.31	0.00	0.00	4,915.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
Vertical at 4980 MD/4915 TVD - Price Coal									
5,000.00	0.00	0.00	4,934.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,100.00	0.00	0.00	5,034.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,200.00	0.00	0.00	5,134.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,300.00	0.00	0.00	5,234.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,400.00	0.00	0.00	5,334.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,500.00	0.00	0.00	5,434.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,600.00	0.00	0.00	5,534.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,700.00	0.00	0.00	5,634.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,800.00	0.00	0.00	5,734.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
5,880.31	0.00	0.00	5,815.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
Top Gas									
5,900.00	0.00	0.00	5,834.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,000.00	0.00	0.00	5,934.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,100.00	0.00	0.00	6,034.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,200.00	0.00	0.00	6,134.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,300.00	0.00	0.00	6,234.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,400.00	0.00	0.00	6,334.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,500.00	0.00	0.00	6,434.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,600.00	0.00	0.00	6,534.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,700.00	0.00	0.00	6,634.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,705.31	0.00	0.00	6,640.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
Cameo									
6,800.00	0.00	0.00	6,734.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
6,900.00	0.00	0.00	6,834.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,000.00	0.00	0.00	6,934.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,100.00	0.00	0.00	7,034.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,200.00	0.00	0.00	7,134.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,300.00	0.00	0.00	7,234.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,400.00	0.00	0.00	7,334.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,500.00	0.00	0.00	7,434.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,600.00	0.00	0.00	7,534.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,605.31	0.00	0.00	7,540.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
Rollins									
7,700.00	0.00	0.00	7,634.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,800.00	0.00	0.00	7,734.69	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
7,805.31	0.00	0.00	7,740.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
TD at 7805 MD/7740 TVD - A05 BH									

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Left Hand Federal A05 (111342) - Slot A05
Company:	Antero Resources	TVD Reference:	KB @ 5708.00ft (Original Well Elev)
Project:	Left Hand	MD Reference:	KB @ 5708.00ft (Original Well Elev)
Site:	Left Hand Federal A	North Reference:	Grid
Well:	Left Hand Federal A05 (111342)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Left Hand Federal A05		
Design:	Left Hand Federal A05 P01		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
A05 BH	0.00	360.00	7,740.00	341.13	-568.47	14,364,287.463	884,627.479	39.522968337°N	107.680011261°W
- plan hits target center									
- Circle (radius 25.00)									

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

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)	Name	Lithology		(°)	(°)
0.00	0.00	Wasatch				
4,215.21	4,155.00	Mesaverde				
4,980.31	4,915.00	Price Coal				
5,880.31	5,815.00	Top Gas				
6,705.31	6,640.00	Cameo				
7,605.31	7,540.00	Rollins				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
1,060.00	1,060.00	0.00	0.00	KOP 1.5°/100 at 1060 MD/TVD	
1,883.15	1,876.79	45.46	-75.76	Hold 12° at 1883 MD/1877 TVD	
4,157.17	4,098.21	295.67	-492.71	Drop 1.5°/100 at 4157 MD/4098 TVD	
4,980.31	4,915.00	341.13	-568.47	Vertical at 4980 MD/4915 TVD	
7,805.31	7,740.00	341.13	-568.47	TD at 7805 MD/7740 TVD	