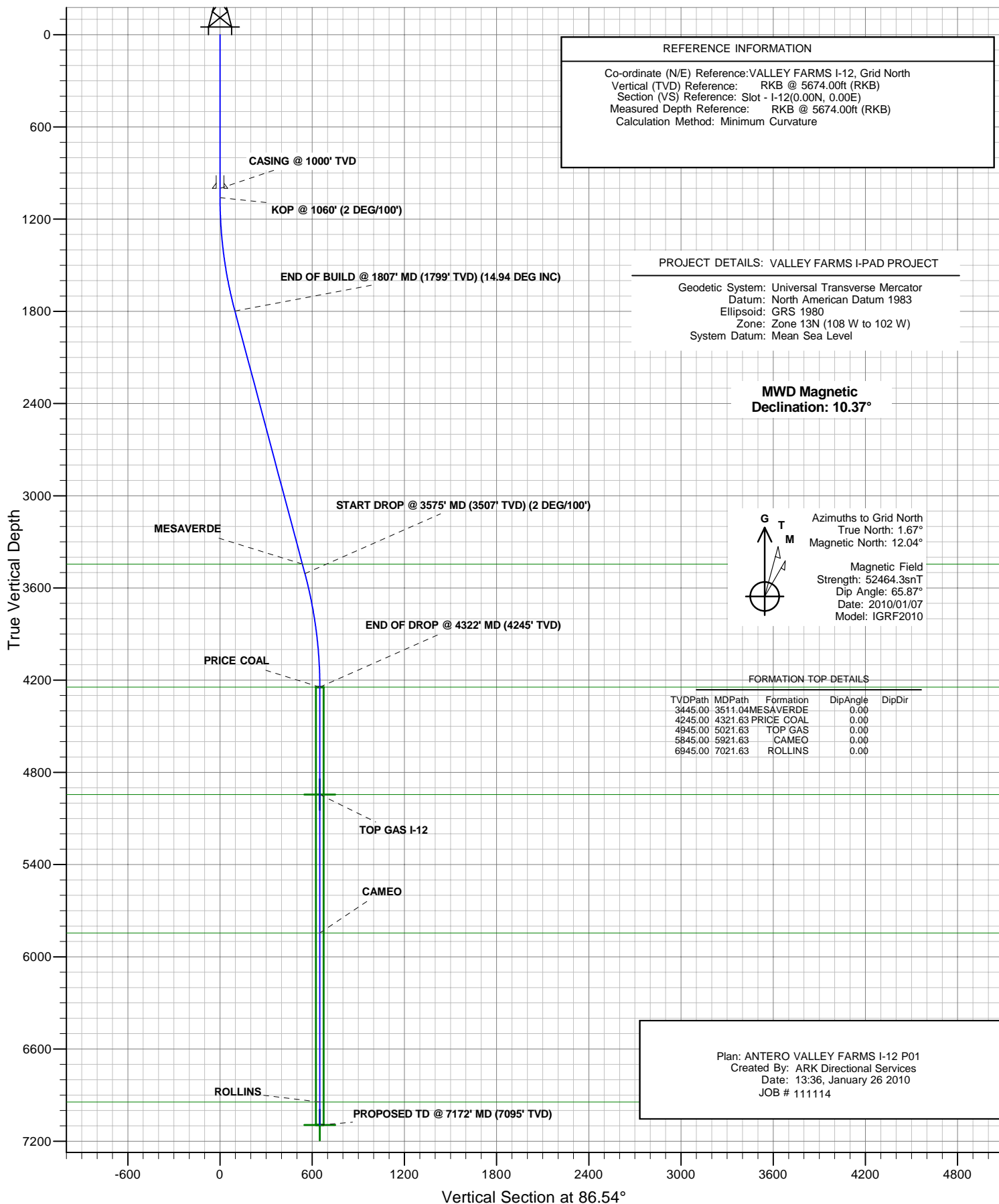




# ANTERO RESOURCES

## ANTERO VALLEY FARMS I-12

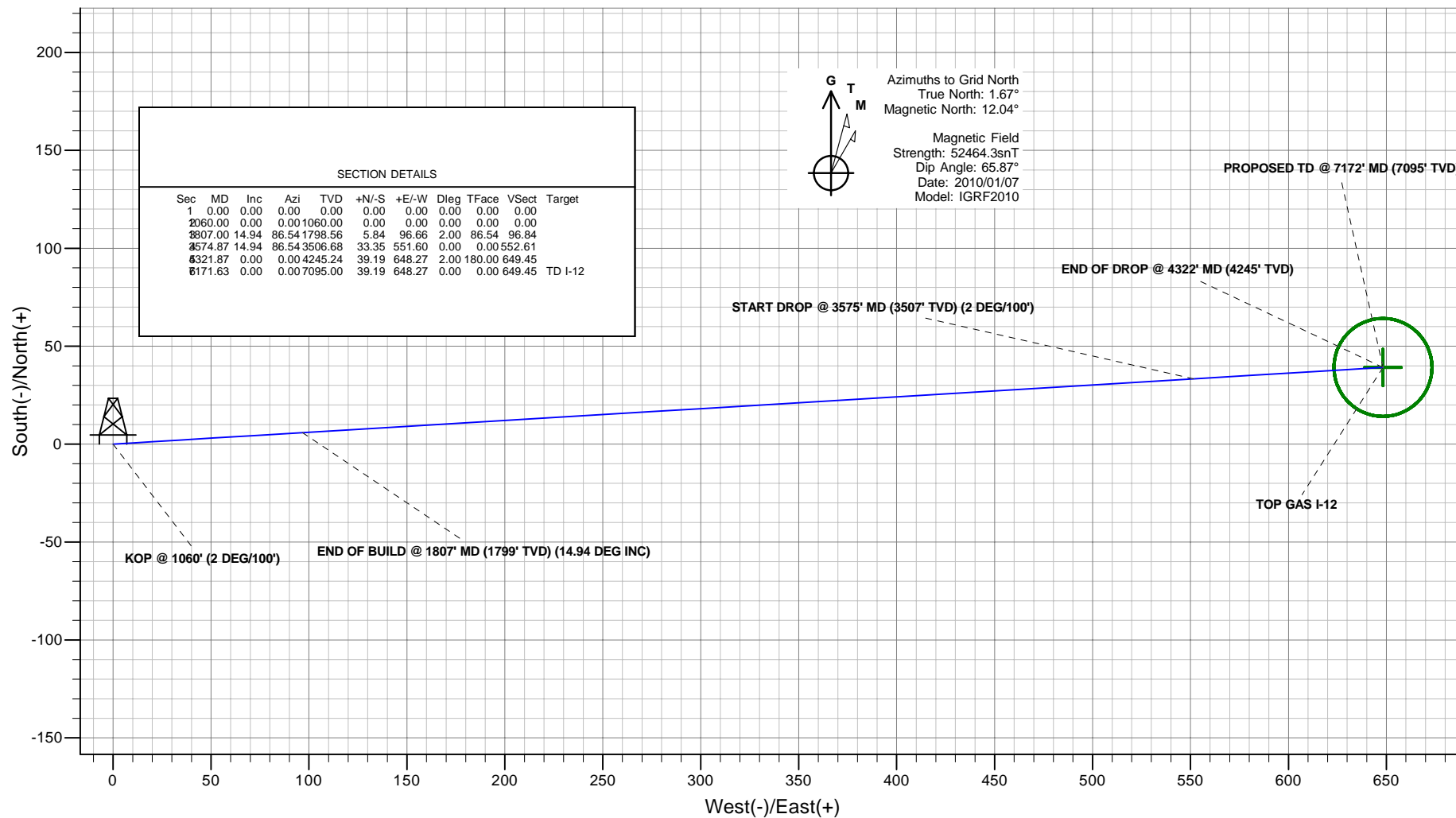




## PLAN VIEW

## ANTERO RESOURCES

Project: VALLEY FARMS I-PAD PROJECT  
 Site: FRONTIER 12  
 Well: VALLEY FARMS I-12 (111114)  
 Wellbore: ANTERO VALLEY FARMS I-12  
 Design: ANTERO VALLEY FARMS I-12 P01  
 JOB # 111114



Plan: ANTERO VALLEY FARMS I-12 P01  
 Created By: ARK Directional Services  
 Date: 13:39, January 26 2010

### PROJECT DETAILS: VALLEY FARMS I-PAD PROJECT

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

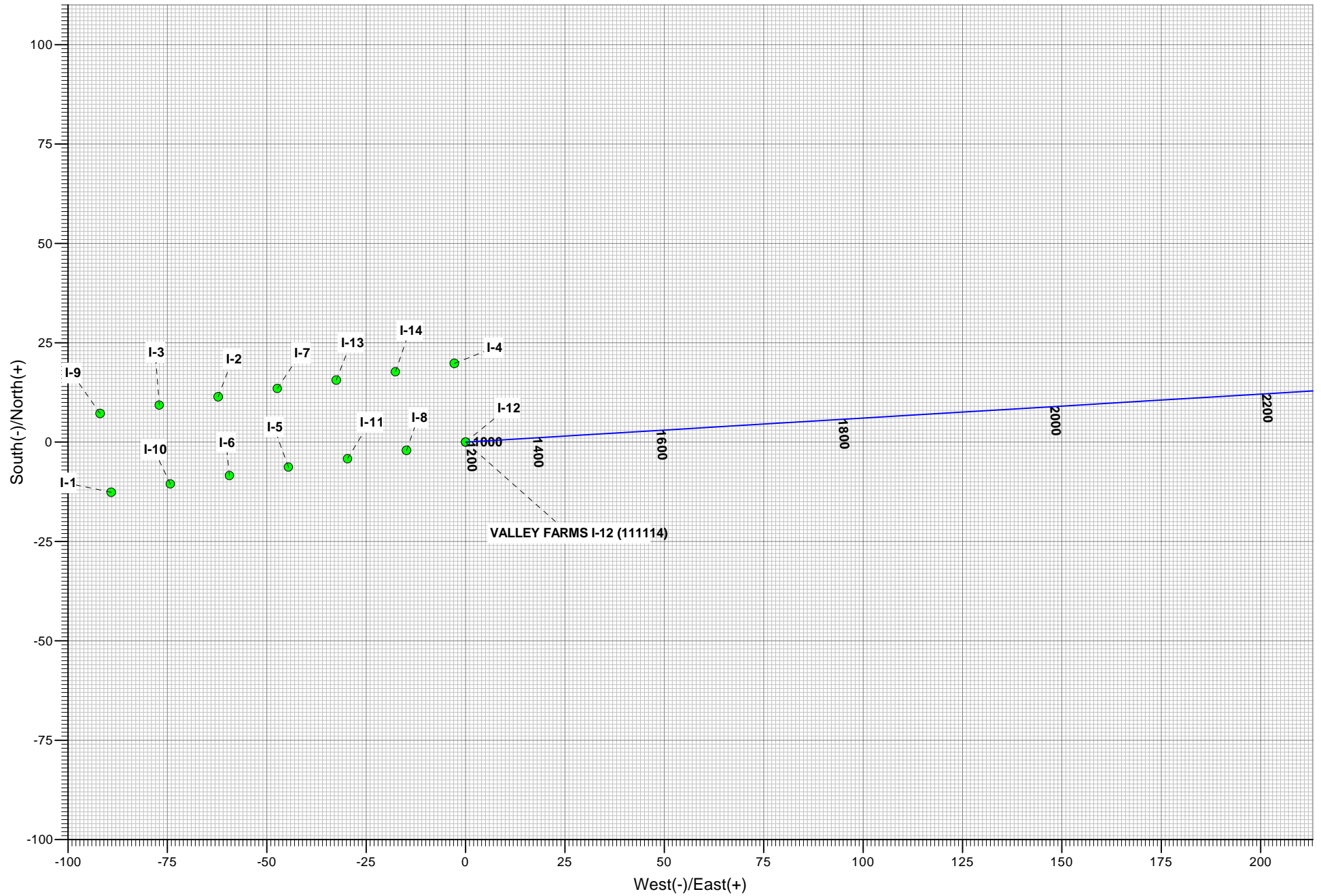
Co-ordinate (N/E) Reference: VALLEY FARMS I-12, Grid North  
 Vertical (TVD) Reference: RKB @ 5674.00ft (RKB)  
 Section (VS) Reference: Slot - I-12(0.00N, 0.00E)  
 Measured Depth Reference: RKB @ 5674.00ft (RKB)  
 Calculation Method: Minimum Curvature



# ANTERO VALLEY FARMS I-12



## SPIDER PLOT



# **ANTERO RESOURCES**

**VALLEY FARMS I-PAD PROJECT  
FRONTIER 12**

**Plan: ANTERO VALLEY FARMS I-12 P01**

## **Standard Planning Report - Geographic**

**26 January, 2010**

# Ark Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VALLEY FARMS I-12 (111114) - Slot I-12
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Project:</b>	VALLEY FARMS I-PAD PROJECT	<b>MD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	VALLEY FARMS I-12 (111114)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO VALLEY FARMS I-12		
<b>Design:</b>	ANTERO VALLEY FARMS I-12 P01		

<b>Project</b>	VALLEY FARMS I-PAD PROJECT		
<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		FRONTIER 12			
Site Position:		Northing:	14,365,113.22 usft	Latitude:	39° 31' 35.888 N
From:	Lat/Long	Easting:	901,976.81 usft	Longitude:	107° 37' 7.093 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.67 °

Well	VALLEY FARMS I-12 (111114) - Slot I-12					
Well Position	+N/-S	0.00 ft	Northing:	14,365,119.52 usft	Latitude:	39° 31' 35.963 N
	+E/-W	0.00 ft	Easting:	902,021.37 usft	Longitude:	107° 37' 6.527 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,650.00 ft

<b>Wellbore</b>	ANTERO VALLEY FARMS I-12				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2010/01/07	10.37	65.87	52,464

<b>Design</b>	ANTERO VALLEY FARMS I-12 P01			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	0.00	0.00	86.54

<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	
1,060.00	0.00	0.00	1,060.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,807.00	14.94	86.54	1,798.56	5.84	96.66	2.00	2.00	0.00	86.54	
3,574.87	14.94	86.54	3,506.68	33.35	551.60	0.00	0.00	0.00	0.00	
4,321.87	0.00	0.00	4,245.24	39.19	648.27	2.00	-2.00	0.00	180.00	
7,171.63	0.00	0.00	7,095.00	39.19	648.27	0.00	0.00	0.00	0.00	TD I-12

# Ark Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VALLEY FARMS I-12 (111114) - Slot I-12
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Project:</b>	VALLEY FARMS I-PAD PROJECT	<b>MD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	VALLEY FARMS I-12 (111114)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO VALLEY FARMS I-12		
<b>Design:</b>	ANTERO VALLEY FARMS I-12 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	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
300.00	0.00	0.00	300.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
400.00	0.00	0.00	400.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
500.00	0.00	0.00	500.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
600.00	0.00	0.00	600.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
700.00	0.00	0.00	700.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
800.00	0.00	0.00	800.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
900.00	0.00	0.00	900.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
<b>CASING @ 1000' TVD</b>										
1,060.00	0.00	0.00	1,060.00	0.00	0.00	14,365,119.52	902,021.37	39° 31' 35.963 N	107° 37' 6.527 W	
<b>KOP @ 1060' (2 DEG/100')</b>										
1,100.00	0.80	86.54	1,100.00	0.02	0.28	14,365,119.54	902,021.65	39° 31' 35.963 N	107° 37' 6.524 W	
1,200.00	2.80	86.54	1,199.94	0.21	3.41	14,365,119.73	902,024.78	39° 31' 35.966 N	107° 37' 6.484 W	
1,300.00	4.80	86.54	1,299.72	0.61	10.03	14,365,120.13	902,031.40	39° 31' 35.972 N	107° 37' 6.400 W	
1,400.00	6.80	86.54	1,399.20	1.22	20.12	14,365,120.74	902,041.49	39° 31' 35.980 N	107° 37' 6.271 W	
1,500.00	8.80	86.54	1,498.27	2.03	33.66	14,365,121.56	902,055.03	39° 31' 35.992 N	107° 37' 6.099 W	
1,600.00	10.80	86.54	1,596.81	3.06	50.65	14,365,122.58	902,072.02	39° 31' 36.007 N	107° 37' 5.883 W	
1,700.00	12.80	86.54	1,694.69	4.30	71.06	14,365,123.82	902,092.43	39° 31' 36.026 N	107° 37' 5.623 W	
1,807.00	14.94	86.54	1,798.56	5.84	96.66	14,365,125.36	902,118.03	39° 31' 36.048 N	107° 37' 5.297 W	
<b>END OF BUILD @ 1807' MD (1799' TVD) (14.94 DEG INC)</b>										
1,900.00	14.94	86.54	1,888.42	7.29	120.60	14,365,126.81	902,141.97	39° 31' 36.069 N	107° 37' 4.992 W	
2,000.00	14.94	86.54	1,985.04	8.85	146.33	14,365,128.37	902,167.70	39° 31' 36.092 N	107° 37' 4.665 W	
2,100.00	14.94	86.54	2,081.66	10.40	172.06	14,365,129.92	902,193.43	39° 31' 36.115 N	107° 37' 4.337 W	
2,200.00	14.94	86.54	2,178.28	11.96	197.80	14,365,131.48	902,219.17	39° 31' 36.138 N	107° 37' 4.009 W	
2,300.00	14.94	86.54	2,274.90	13.51	223.53	14,365,133.03	902,244.90	39° 31' 36.160 N	107° 37' 3.682 W	
2,400.00	14.94	86.54	2,371.52	15.07	249.27	14,365,134.59	902,270.63	39° 31' 36.183 N	107° 37' 3.354 W	
2,500.00	14.94	86.54	2,468.14	16.62	275.00	14,365,136.15	902,296.37	39° 31' 36.206 N	107° 37' 3.026 W	
2,600.00	14.94	86.54	2,564.76	18.18	300.73	14,365,137.70	902,322.10	39° 31' 36.229 N	107° 37' 2.699 W	
2,700.00	14.94	86.54	2,661.38	19.74	326.47	14,365,139.26	902,347.84	39° 31' 36.251 N	107° 37' 2.371 W	
2,800.00	14.94	86.54	2,758.00	21.29	352.20	14,365,140.81	902,373.57	39° 31' 36.274 N	107° 37' 2.044 W	
2,900.00	14.94	86.54	2,854.62	22.85	377.93	14,365,142.37	902,399.30	39° 31' 36.297 N	107° 37' 1.716 W	
3,000.00	14.94	86.54	2,951.24	24.40	403.67	14,365,143.92	902,425.04	39° 31' 36.320 N	107° 37' 1.388 W	
3,100.00	14.94	86.54	3,047.86	25.96	429.40	14,365,145.48	902,450.77	39° 31' 36.342 N	107° 37' 1.061 W	
3,200.00	14.94	86.54	3,144.48	27.51	455.14	14,365,147.04	902,476.50	39° 31' 36.365 N	107° 37' 0.733 W	
3,300.00	14.94	86.54	3,241.09	29.07	480.87	14,365,148.59	902,502.24	39° 31' 36.388 N	107° 37' 0.405 W	
3,400.00	14.94	86.54	3,337.71	30.63	506.60	14,365,150.15	902,527.97	39° 31' 36.411 N	107° 37' 0.078 W	
3,500.00	14.94	86.54	3,434.33	32.18	532.34	14,365,151.70	902,553.71	39° 31' 36.433 N	107° 36' 59.750 W	
3,511.04	14.94	86.54	3,445.00	32.35	535.18	14,365,151.87	902,556.55	39° 31' 36.436 N	107° 36' 59.714 W	
<b>MESAVERDE</b>										
3,574.87	14.94	86.54	3,506.67	33.35	551.60	14,365,152.87	902,572.97	39° 31' 36.451 N	107° 36' 59.505 W	
<b>START DROP @ 3575' MD (3507' TVD) (2 DEG/100')</b>										
3,600.00	14.44	86.54	3,530.98	33.73	557.96	14,365,153.25	902,579.33	39° 31' 36.456 N	107° 36' 59.424 W	
3,700.00	12.44	86.54	3,628.24	35.13	581.16	14,365,154.65	902,602.53	39° 31' 36.477 N	107° 36' 59.129 W	
3,800.00	10.44	86.54	3,726.25	36.33	600.95	14,365,155.85	902,622.32	39° 31' 36.494 N	107° 36' 58.877 W	
3,900.00	8.44	86.54	3,824.89	37.32	617.32	14,365,156.84	902,638.69	39° 31' 36.509 N	107° 36' 58.668 W	
4,000.00	6.44	86.54	3,924.04	38.10	630.24	14,365,157.62	902,651.61	39° 31' 36.520 N	107° 36' 58.504 W	
4,100.00	4.44	86.54	4,023.59	38.67	639.70	14,365,158.19	902,661.06	39° 31' 36.528 N	107° 36' 58.383 W	
4,200.00	2.44	86.54	4,123.40	39.03	645.68	14,365,158.56	902,667.05	39° 31' 36.534 N	107° 36' 58.307 W	
4,300.00	0.44	86.54	4,223.37	39.19	648.18	14,365,158.71	902,669.55	39° 31' 36.536 N	107° 36' 58.275 W	

# Ark Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VALLEY FARMS I-12 (111114) - Slot I-12
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Project:</b>	VALLEY FARMS I-PAD PROJECT	<b>MD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	VALLEY FARMS I-12 (111114)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO VALLEY FARMS I-12		
<b>Design:</b>	ANTERO VALLEY FARMS I-12 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
4,321.63	0.00	86.54	4,245.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>PRICE COAL</b>									
4,321.87	0.00	0.00	4,245.24	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>END OF DROP @ 4322' MD (4245' TVD)</b>									
4,400.00	0.00	0.00	4,323.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
4,500.00	0.00	0.00	4,423.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
4,600.00	0.00	0.00	4,523.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
4,700.00	0.00	0.00	4,623.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
4,800.00	0.00	0.00	4,723.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
4,900.00	0.00	0.00	4,823.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,000.00	0.00	0.00	4,923.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,021.63	0.00	0.00	4,945.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>TOP GAS - TOP GAS I-12</b>									
5,100.00	0.00	0.00	5,023.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,200.00	0.00	0.00	5,123.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,300.00	0.00	0.00	5,223.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,400.00	0.00	0.00	5,323.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,500.00	0.00	0.00	5,423.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,600.00	0.00	0.00	5,523.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,700.00	0.00	0.00	5,623.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,800.00	0.00	0.00	5,723.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,900.00	0.00	0.00	5,823.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
5,921.63	0.00	0.00	5,845.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>CAMEO</b>									
6,000.00	0.00	0.00	5,923.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,100.00	0.00	0.00	6,023.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,200.00	0.00	0.00	6,123.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,300.00	0.00	0.00	6,223.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,400.00	0.00	0.00	6,323.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,500.00	0.00	0.00	6,423.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,600.00	0.00	0.00	6,523.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,700.00	0.00	0.00	6,623.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,800.00	0.00	0.00	6,723.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
6,900.00	0.00	0.00	6,823.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
7,000.00	0.00	0.00	6,923.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
7,021.63	0.00	0.00	6,945.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>ROLLINS</b>									
7,100.00	0.00	0.00	7,023.37	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
7,171.61	0.00	0.00	7,094.98	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>PROPOSED TD @ 7172' MD (7095' TVD)</b>									
7,171.63	0.00	0.00	7,095.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
<b>TD I-12</b>									

# Ark Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VALLEY FARMS I-12 (111114) - Slot I-12
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Project:</b>	VALLEY FARMS I-PAD PROJECT	<b>MD Reference:</b>	RKB @ 5674.00ft (RKB)
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	VALLEY FARMS I-12 (111114)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO VALLEY FARMS I-12		
<b>Design:</b>	ANTERO VALLEY FARMS I-12 P01		

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
TOP GAS I-12 - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,945.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W
TD I-12 - plan hits target center - Circle (radius 25.00)	0.00	360.00	7,095.00	39.19	648.27	14,365,158.71	902,669.64	39° 31' 36.536 N	107° 36' 58.274 W

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	1,000.00	CASING @ 1000' TVD	9.62	12.25

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,511.04	3,445.00	MESAVERDE		0.00	
4,321.63	4,245.00	PRICE COAL		0.00	
5,021.63	4,945.00	TOP GAS		0.00	
5,921.63	5,845.00	CAMEO		0.00	
7,021.63	6,945.00	ROLLINS		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,060.00	1,060.00	0.00	0.00	KOP @ 1060' (2 DEG/100')
1,807.00	1,798.56	5.84	96.66	END OF BUILD @ 1807' MD (1799' TVD) (14.94 DEG INC)
3,574.87	3,506.67	33.35	551.60	START DROP @ 3575' MD (3507' TVD) (2 DEG/100')
4,321.87	4,245.24	39.19	648.27	END OF DROP @ 4322' MD (4245' TVD)
7,171.61	7,094.98	39.19	648.27	PROPOSED TD @ 7172' MD (7095' TVD)