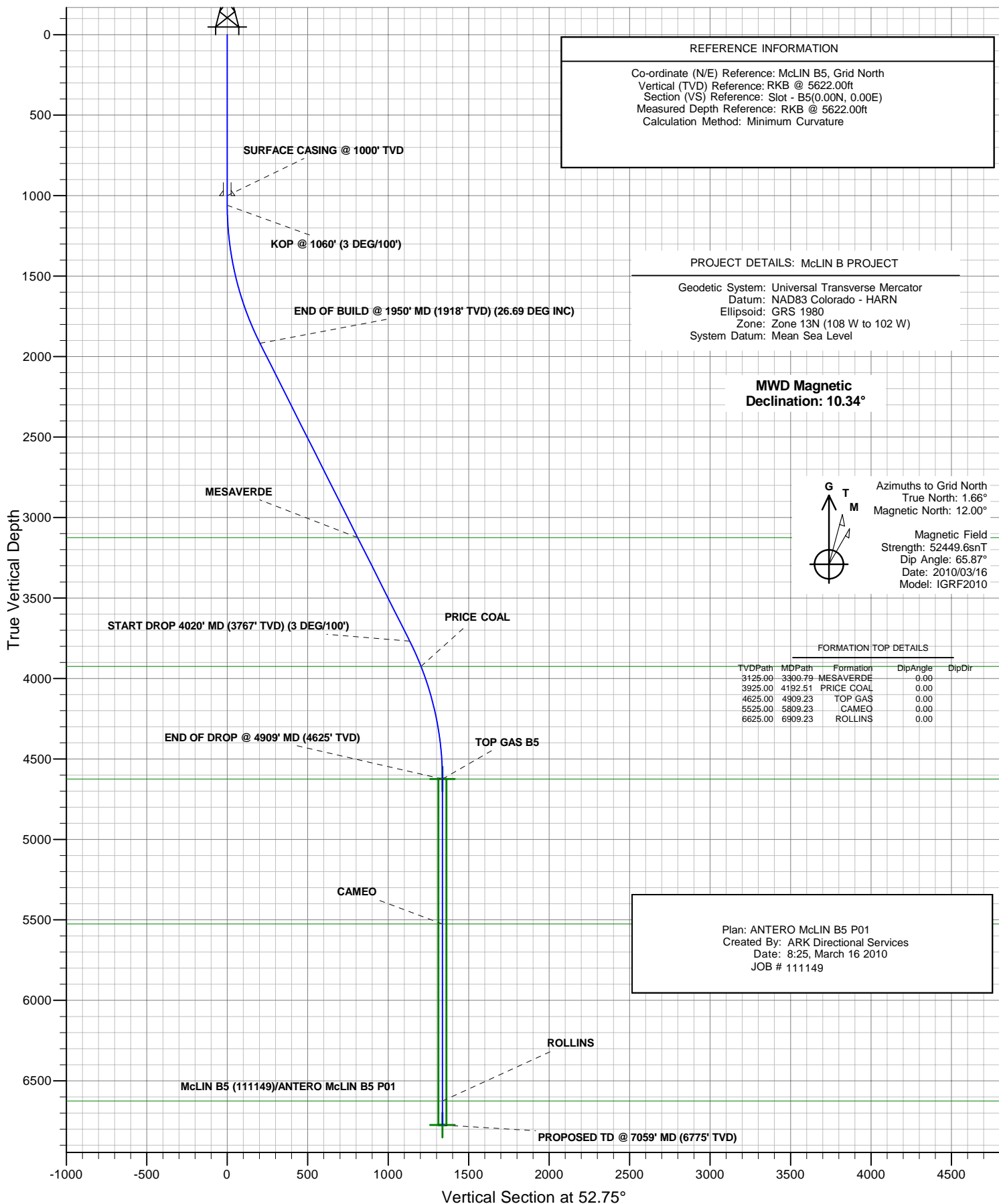




# ANTERO RESOURCES

ANTERO McLIN B5

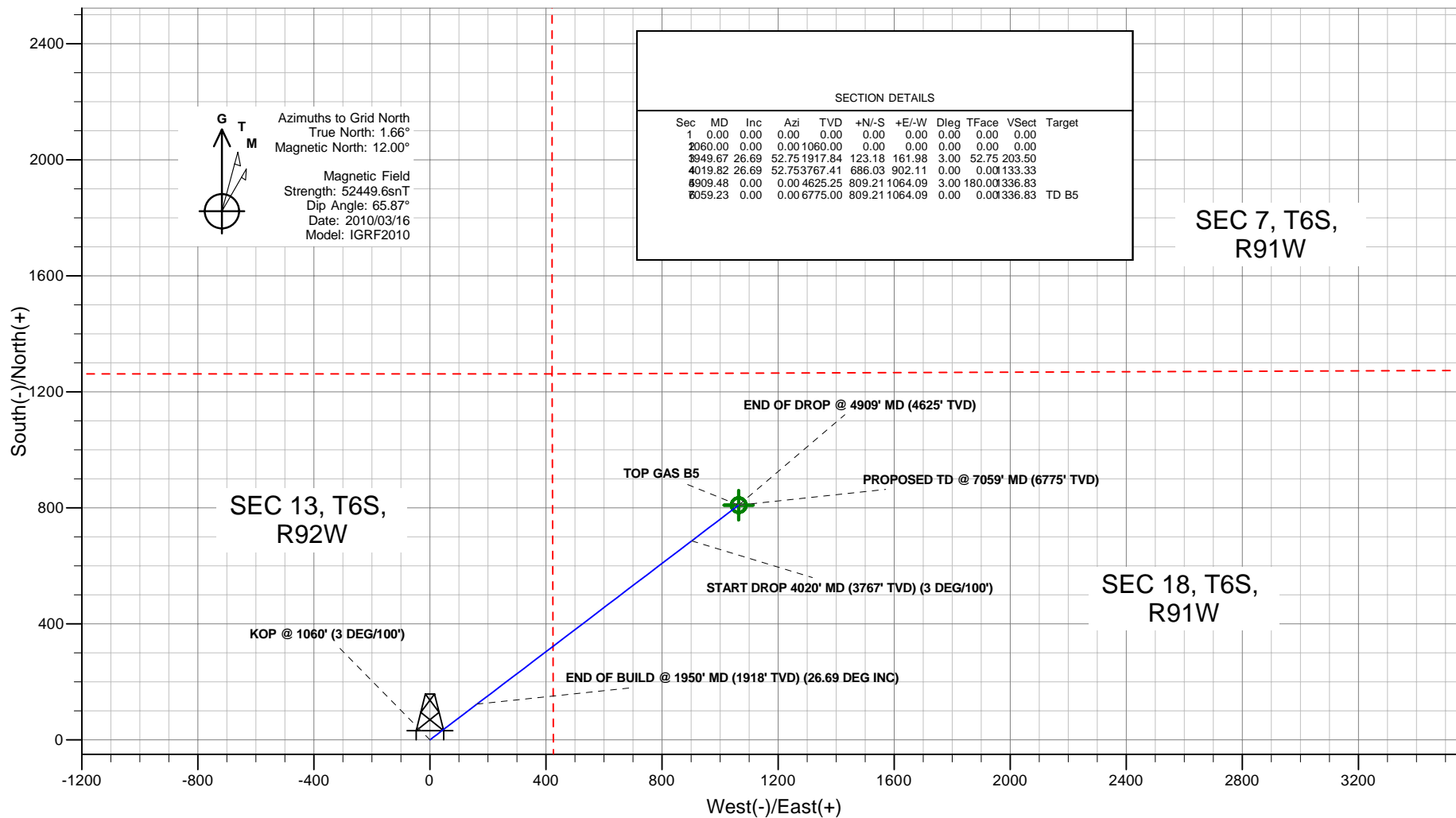




## PLAN VIEW

## ANTERO RESOURCES

Project: McLIN B PROJECT  
Site: FRONTIER 12  
Well: McLIN B5 (111149)  
Wellbore: ANTERO McLIN B5  
Design: ANTERO McLIN B5 P01  
JOB # 111149



Plan: ANTERO McLIN B5 P01  
Created By: ARK Directional Services  
Date: 8:28, March 16 2010

### PROJECT DETAILS: McLIN B PROJECT

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

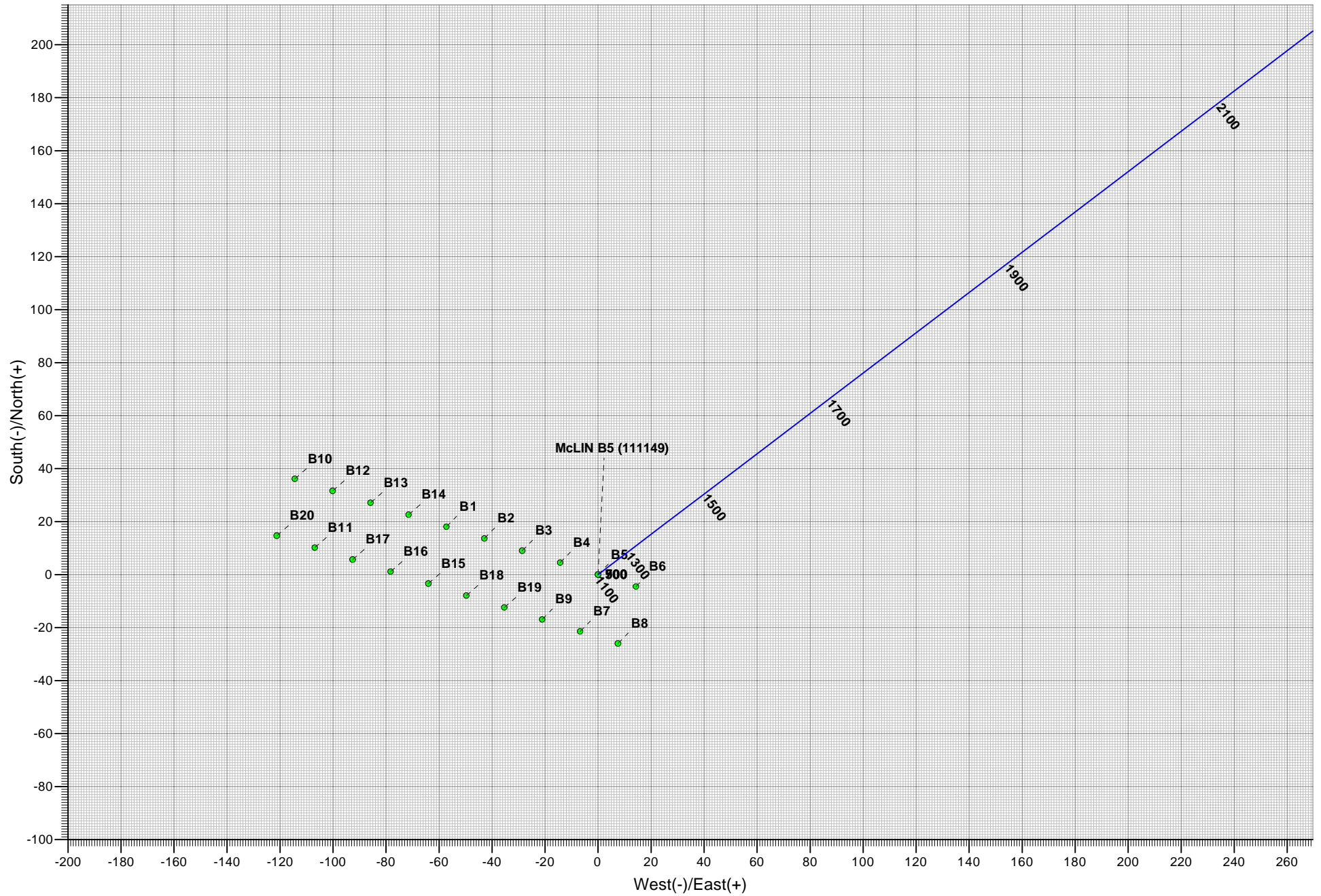
### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: McLIN B5, Grid North  
Vertical (TVD) Reference: RKB @ 5622.00ft  
Section (VS) Reference: Slot - B5(0.00N, 0.00E)  
Measured Depth Reference: RKB @ 5622.00ft  
Calculation Method: Minimum Curvature



ANTERO McLIN B5

SPIDER PLOT



# **ANTERO RESOURCES**

**McLIN B PROJECT  
FRONTIER 12**

**Plan: ANTERO McLIN B5 P01**

## **Standard Planning Report - Geographic**

**16 March, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B5 (111149) - Slot B5
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B5 (111149)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B5		
<b>Design:</b>	ANTERO McLIN B5 P01		

<b>Project</b>	McLIN B PROJECT		
<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)		

Site		FRONTIER 12			
Site Position:		Northing:	14,366,636.75 usft	Latitude:	39° 31' 51.798 N
From:	Lat/Long	Easting:	904,982.97 usft	Longitude:	107° 36' 29.317 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	McLIN B5 (111149) - Slot B5					
Well Position	+N/-S	0.00 ft	Northing:	14,366,618.68 usft	Latitude:	39° 31' 51.636 N
	+E/-W	0.00 ft	Easting:	905,040.18 usft	Longitude:	107° 36' 28.580 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,598.00 ft

<b>Wellbore</b>	ANTERO McLIN B5				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2010/03/16	10.34	65.87	52,450

<b>Design</b>	ANTERO McLIN B5 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	52.75	

<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	0.00	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	
1,949.67	26.69	52.75	1,917.84	123.18	161.98	3.00	3.00	0.00	52.75	
4,019.82	26.69	52.75	3,767.41	686.03	902.11	0.00	0.00	0.00	0.00	
4,909.48	0.00	0.00	4,625.25	809.21	1,064.09	3.00	-3.00	0.00	180.00	
7,059.23	0.00	0.00	6,775.00	809.21	1,064.09	0.00	0.00	0.00	0.00	TD B5

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B5 (111149) - Slot B5
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B5 (111149)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B5		
<b>Design:</b>	ANTERO McLIN B5 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	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
100.00	0.00	0.00	100.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
200.00	0.00	0.00	200.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
300.00	0.00	0.00	300.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
400.00	0.00	0.00	400.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
500.00	0.00	0.00	500.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
600.00	0.00	0.00	600.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
700.00	0.00	0.00	700.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
800.00	0.00	0.00	800.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
900.00	0.00	0.00	900.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
<b>SURFACE CASING @ 1000' TVD</b>									
1,060.00	0.00	0.00	1,060.00	0.00	0.00	14,366,618.68	905,040.18	39° 31' 51.636 N	107° 36' 28.580 W
<b>KOP @ 1060' (3 DEG/100')</b>									
1,100.00	1.20	52.75	1,100.00	0.25	0.33	14,366,618.93	905,040.51	39° 31' 51.638 N	107° 36' 28.576 W
1,200.00	4.20	52.75	1,199.87	3.10	4.08	14,366,621.79	905,044.26	39° 31' 51.668 N	107° 36' 28.530 W
1,300.00	7.20	52.75	1,299.37	9.12	11.99	14,366,627.80	905,052.17	39° 31' 51.729 N	107° 36' 28.431 W
1,400.00	10.20	52.75	1,398.21	18.27	24.03	14,366,636.95	905,064.21	39° 31' 51.823 N	107° 36' 28.281 W
1,500.00	13.20	52.75	1,496.12	30.54	40.17	14,366,649.23	905,080.35	39° 31' 51.949 N	107° 36' 28.079 W
1,600.00	16.20	52.75	1,592.83	45.90	60.36	14,366,664.58	905,100.54	39° 31' 52.106 N	107° 36' 27.828 W
1,700.00	19.20	52.75	1,688.09	64.31	84.56	14,366,682.99	905,124.74	39° 31' 52.295 N	107° 36' 27.526 W
1,800.00	22.20	52.75	1,781.62	85.70	112.69	14,366,704.38	905,152.87	39° 31' 52.514 N	107° 36' 27.175 W
1,900.00	25.20	52.75	1,873.18	110.03	144.68	14,366,728.71	905,184.86	39° 31' 52.764 N	107° 36' 26.776 W
1,949.67	26.69	52.75	1,917.84	123.18	161.98	14,366,741.86	905,202.16	39° 31' 52.899 N	107° 36' 26.560 W
<b>END OF BUILD @ 1950' MD (1918' TVD) (26.69 DEG INC)</b>									
2,000.00	26.69	52.75	1,962.81	136.87	179.97	14,366,755.55	905,220.15	39° 31' 53.039 N	107° 36' 26.336 W
2,100.00	26.69	52.75	2,052.15	164.05	215.73	14,366,782.74	905,255.91	39° 31' 53.318 N	107° 36' 25.890 W
2,200.00	26.69	52.75	2,141.50	191.24	251.48	14,366,809.92	905,291.66	39° 31' 53.597 N	107° 36' 25.444 W
2,300.00	26.69	52.75	2,230.84	218.43	287.23	14,366,837.11	905,327.41	39° 31' 53.875 N	107° 36' 24.998 W
2,400.00	26.69	52.75	2,320.19	245.62	322.98	14,366,864.30	905,363.16	39° 31' 54.154 N	107° 36' 24.552 W
2,500.00	26.69	52.75	2,409.53	272.81	358.74	14,366,891.49	905,398.92	39° 31' 54.433 N	107° 36' 24.106 W
2,600.00	26.69	52.75	2,498.88	300.00	394.49	14,366,918.68	905,434.67	39° 31' 54.712 N	107° 36' 23.660 W
2,700.00	26.69	52.75	2,588.22	327.19	430.24	14,366,945.87	905,470.42	39° 31' 54.990 N	107° 36' 23.214 W
2,800.00	26.69	52.75	2,677.57	354.38	465.99	14,366,973.06	905,506.17	39° 31' 55.269 N	107° 36' 22.768 W
2,900.00	26.69	52.75	2,766.91	381.57	501.75	14,367,000.25	905,541.93	39° 31' 55.548 N	107° 36' 22.322 W
3,000.00	26.69	52.75	2,856.26	408.75	537.50	14,367,027.43	905,577.68	39° 31' 55.827 N	107° 36' 21.876 W
3,100.00	26.69	52.75	2,945.60	435.94	573.25	14,367,054.62	905,613.43	39° 31' 56.106 N	107° 36' 21.430 W
3,200.00	26.69	52.75	3,034.95	463.13	609.00	14,367,081.81	905,649.18	39° 31' 56.384 N	107° 36' 20.984 W
3,300.00	26.69	52.75	3,124.29	490.32	644.76	14,367,109.00	905,684.94	39° 31' 56.663 N	107° 36' 20.538 W
3,300.79	26.69	52.75	3,125.00	490.54	645.04	14,367,109.22	905,685.22	39° 31' 56.665 N	107° 36' 20.534 W
<b>MESAVERDE</b>									
3,400.00	26.69	52.75	3,213.64	517.51	680.51	14,367,136.19	905,720.69	39° 31' 56.942 N	107° 36' 20.092 W
3,500.00	26.69	52.75	3,302.98	544.70	716.26	14,367,163.38	905,756.44	39° 31' 57.221 N	107° 36' 19.646 W
3,600.00	26.69	52.75	3,392.33	571.89	752.01	14,367,190.57	905,792.19	39° 31' 57.499 N	107° 36' 19.200 W
3,700.00	26.69	52.75	3,481.67	599.08	787.77	14,367,217.76	905,827.95	39° 31' 57.778 N	107° 36' 18.754 W
3,800.00	26.69	52.75	3,571.02	626.26	823.52	14,367,244.94	905,863.70	39° 31' 58.057 N	107° 36' 18.308 W
3,900.00	26.69	52.75	3,660.36	653.45	859.27	14,367,272.13	905,899.45	39° 31' 58.336 N	107° 36' 17.862 W
4,000.00	26.69	52.75	3,749.71	680.64	895.02	14,367,299.32	905,935.20	39° 31' 58.614 N	107° 36' 17.416 W
4,019.82	26.69	52.75	3,767.42	686.03	902.11	14,367,304.71	905,942.29	39° 31' 58.670 N	107° 36' 17.328 W
<b>START DROP 4020' MD (3767' TVD) (3 DEG/100')</b>									
4,100.00	24.28	52.75	3,839.79	706.91	929.57	14,367,325.59	905,969.75	39° 31' 58.884 N	107° 36' 16.985 W
4,192.51	21.51	52.75	3,925.00	728.70	958.22	14,367,347.38	905,998.40	39° 31' 59.107 N	107° 36' 16.628 W
<b>PRICE COAL</b>									
4,200.00	21.28	52.75	3,931.97	730.35	960.39	14,367,349.03	906,000.57	39° 31' 59.124 N	107° 36' 16.601 W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B5 (111149) - Slot B5
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B5 (111149)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B5		
<b>Design:</b>	ANTERO McLIN B5 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	18.28	52.75	4,026.06	750.84	987.33	14,367,369.52	906,027.51	39° 31' 59.334 N	107° 36' 16.265 W
4,400.00	15.28	52.75	4,121.79	768.32	1,010.32	14,367,387.00	906,050.49	39° 31' 59.513 N	107° 36' 15.978 W
4,500.00	12.28	52.75	4,218.90	782.74	1,029.28	14,367,401.42	906,069.46	39° 31' 59.661 N	107° 36' 15.741 W
4,600.00	9.28	52.75	4,317.12	794.07	1,044.17	14,367,412.74	906,084.35	39° 31' 59.777 N	107° 36' 15.556 W
4,700.00	6.28	52.75	4,416.19	802.26	1,054.95	14,367,420.94	906,095.13	39° 31' 59.861 N	107° 36' 15.421 W
4,800.00	3.28	52.75	4,515.83	807.31	1,061.59	14,367,425.99	906,101.77	39° 31' 59.913 N	107° 36' 15.338 W
4,909.23	0.01	52.75	4,625.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
TOP GAS - TOP GAS B5									
4,909.48	0.00	0.00	4,625.25	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
END OF DROP @ 4909' MD (4625' TVD)									
5,000.00	0.00	0.00	4,715.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,100.00	0.00	0.00	4,815.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,200.00	0.00	0.00	4,915.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,300.00	0.00	0.00	5,015.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,400.00	0.00	0.00	5,115.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,500.00	0.00	0.00	5,215.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,600.00	0.00	0.00	5,315.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,700.00	0.00	0.00	5,415.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,800.00	0.00	0.00	5,515.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
5,809.23	0.00	0.00	5,525.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
CAMEO									
5,900.00	0.00	0.00	5,615.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,000.00	0.00	0.00	5,715.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,100.00	0.00	0.00	5,815.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,200.00	0.00	0.00	5,915.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,300.00	0.00	0.00	6,015.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,400.00	0.00	0.00	6,115.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,500.00	0.00	0.00	6,215.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,600.00	0.00	0.00	6,315.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,700.00	0.00	0.00	6,415.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,800.00	0.00	0.00	6,515.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,900.00	0.00	0.00	6,615.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
6,909.23	0.00	0.00	6,625.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
ROLLINS									
7,000.00	0.00	0.00	6,715.77	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
7,059.20	0.00	0.00	6,774.97	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
PROPOSED TD @ 7059' MD (6775' TVD)									
7,059.23	0.00	0.00	6,775.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
TD B5									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
TOP GAS B5	0.00	0.00	4,625.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
- plan hits target center									
- Circle (radius 25.00)									
TD B5	0.00	360.00	6,775.00	809.21	1,064.09	14,367,427.89	906,104.27	39° 31' 59.933 N	107° 36' 15.307 W
- plan hits target center									
- Circle (radius 25.00)									

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLIN B5 (111149) - Slot B5
<b>Company:</b>	ANTERO RESOURCES	<b>TVD Reference:</b>	RKB @ 5622.00ft
<b>Project:</b>	McLIN B PROJECT	<b>MD Reference:</b>	RKB @ 5622.00ft
<b>Site:</b>	FRONTIER 12	<b>North Reference:</b>	Grid
<b>Well:</b>	McLIN B5 (111149)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ANTERO McLIN B5		
<b>Design:</b>	ANTERO McLIN B5 P01		

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

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,300.79	3,125.00	MESAVERDE		0.00	
4,192.51	3,925.00	PRICE COAL		0.00	
4,909.23	4,625.00	TOP GAS		0.00	
5,809.23	5,525.00	CAMEO		0.00	
6,909.23	6,625.00	ROLLINS		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,060.00	1,060.00	0.00	0.00	KOP @ 1060' (3 DEG/100')	
1,949.67	1,917.84	123.18	161.98	END OF BUILD @ 1950' MD (1918' TVD) (26.69 DEG INC)	
4,019.82	3,767.42	686.03	902.11	START DROP 4020' MD (3767' TVD) (3 DEG/100')	
4,909.48	4,625.25	809.21	1,064.09	END OF DROP @ 4909' MD (4625' TVD)	
7,059.20	6,774.97	809.21	1,064.09	PROPOSED TD @ 7059' MD (6775' TVD)	