



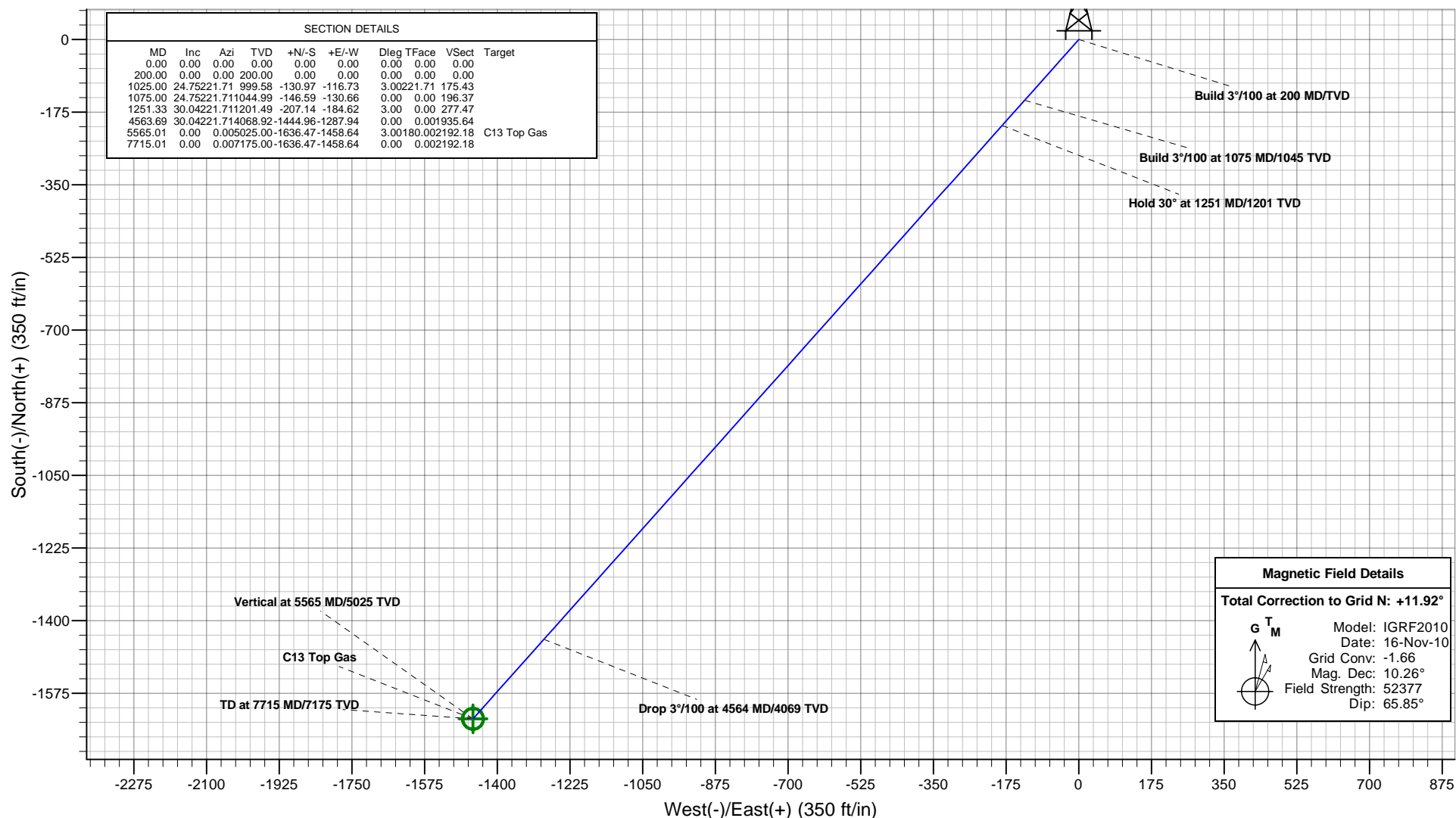
# Antero Resources

## McLin C13 (111232)



### PLAN VIEW

Project: McLin  
Site: McLin C  
Well: McLin C13 (111232)  
Wellbore: McLin C13  
Design: McLin C13 P01



Plan: McLin C13 P01  
Created By: ARK Directional Services  
Date: 14:32, August 17 2010

PROJECT DETAILS: McLin  
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 McLin C13 (111232) - Slot C13, Grid North  
Vertical (TVD) Reference: KB @ 5750.00ft (Original Well Elev)  
Section (VS) Reference: Slot - C13(0.00N, 0.00E)  
Measured Depth Reference: KB @ 5750.00ft (Original Well Elev)  
Calculation Method: Minimum Curvature

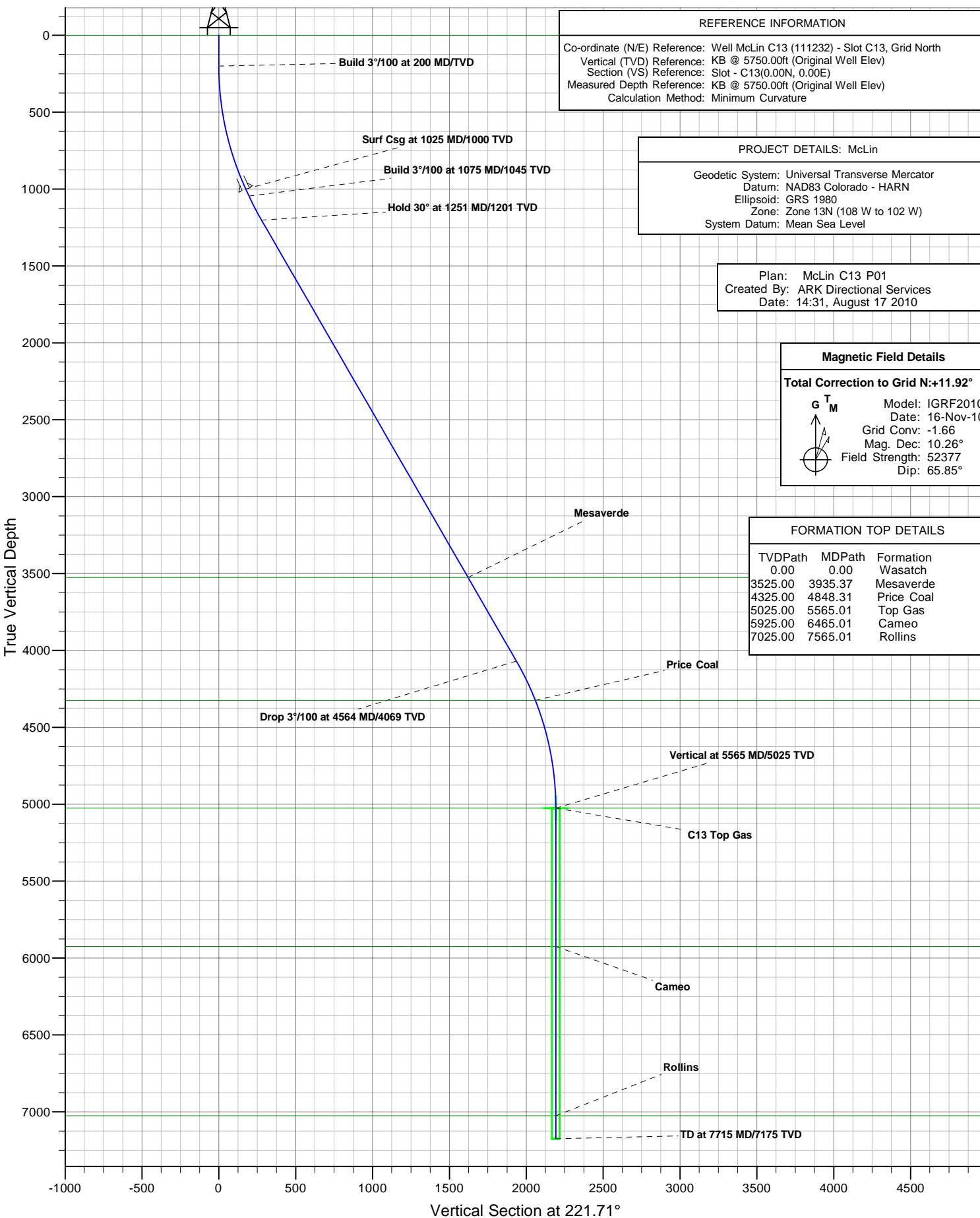


# Antero Resources

McLin C13 (111232)



## VERTICAL SECTION VIEW



# **Antero Resources**

**McLin**

**McLin C**

**McLin C13 (111232) - Slot C13**

**McLin C13**

**Plan: McLin C13 P01**

## **Standard Planning Report - Geographic**

**17 August, 2010**

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C13 (111232) - Slot C13
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C13 (111232)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C13		
<b>Design:</b>	McLin C13 P01		

<b>Project</b>	McLin		
<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>	McLin C		
<b>Site Position:</b>		<b>Northing:</b>	14,364,522.752 usft
<b>From:</b>	Map	<b>Easting:</b>	905,235.880 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39.525275157°N
		<b>Longitude:</b>	107.607030464°W
		<b>Grid Convergence:</b>	-1.66 °

<b>Well</b>	McLin C13 (111232) - Slot C13		
<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>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	McLin C13				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	2010/11/16	10.26	65.85	52,377

<b>Design</b>	McLin C13 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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	221.71

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	(°)	(°)	<b>Depth</b>	(ft)	(ft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
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	221.71	999.58	-130.97	-116.73	3.00	3.00	0.00	221.71	
1,075.00	24.75	221.71	1,044.99	-146.59	-130.66	0.00	0.00	0.00	0.00	
1,251.33	30.04	221.71	1,201.49	-207.14	-184.62	3.00	3.00	0.00	0.00	
4,563.69	30.04	221.71	4,068.92	-1,444.96	-1,287.94	0.00	0.00	0.00	0.00	
5,565.01	0.00	0.00	5,025.00	-1,636.47	-1,458.64	3.00	-3.00	0.00	180.00	C13 Top Gas
7,715.01	0.00	0.00	7,175.00	-1,636.47	-1,458.64	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 McLin C13 (111232) - Slot C13
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C13 (111232)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C13		
<b>Design:</b>	McLin C13 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	14,364,444.143	905,197.449	39.525056433°N	107.607158542°W
<b>Wasatch</b>									
100.00	0.00	0.00	100.00	0.00	0.00	14,364,444.143	905,197.449	39.525056433°N	107.607158542°W
200.00	0.00	0.00	200.00	0.00	0.00	14,364,444.143	905,197.449	39.525056433°N	107.607158542°W
<b>Build 3°/100 at 200 MD/TVD</b>									
300.00	3.00	221.71	299.95	-1.95	-1.74	14,364,442.189	905,195.707	39.525050933°N	107.607164511°W
400.00	6.00	221.71	399.63	-7.81	-6.96	14,364,436.332	905,190.488	39.525034451°N	107.607182401°W
500.00	9.00	221.71	498.77	-17.55	-15.64	14,364,426.589	905,181.804	39.525007030°N	107.607212164°W
600.00	12.00	221.71	597.08	-31.16	-27.77	14,364,412.987	905,169.680	39.524968746°N	107.607253718°W
700.00	15.00	221.71	694.31	-48.58	-43.30	14,364,395.561	905,154.149	39.524919704°N	107.607306949°W
800.00	18.00	221.71	790.18	-69.78	-62.19	14,364,374.362	905,135.254	39.524860038°N	107.607371711°W
900.00	21.00	221.71	884.43	-94.70	-84.40	14,364,349.445	905,113.047	39.524789912°N	107.607447826°W
1,000.00	24.00	221.71	976.81	-123.26	-109.86	14,364,320.880	905,087.588	39.524709518°N	107.607535086°W
1,025.00	24.75	221.71	999.58	-130.97	-116.73	14,364,313.178	905,080.723	39.524687841°N	107.607558615°W
<b>Surf Csg at 1025 MD/1000 TVD</b>									
1,075.00	24.75	221.71	1,044.99	-146.59	-130.66	14,364,297.551	905,066.794	39.524643861°N	107.607606354°W
<b>Build 3°/100 at 1075 MD/1045 TVD</b>									
1,100.00	25.50	221.71	1,067.62	-154.52	-137.72	14,364,289.627	905,059.731	39.524621559°N	107.607630562°W
1,200.00	28.50	221.71	1,156.71	-188.40	-167.92	14,364,255.741	905,029.527	39.524526187°N	107.607734085°W
1,251.33	30.04	221.71	1,201.49	-207.14	-184.62	14,364,237.007	905,012.829	39.524473461°N	107.607791317°W
<b>Hold 30° at 1251 MD/1201 TVD</b>									
1,300.00	30.04	221.71	1,243.62	-225.32	-200.83	14,364,218.819	904,996.617	39.524422272°N	107.607846880°W
1,400.00	30.04	221.71	1,330.19	-262.69	-234.14	14,364,181.449	904,963.308	39.524317096°N	107.607961044°W
1,500.00	30.04	221.71	1,416.76	-300.06	-267.45	14,364,144.079	904,929.999	39.524211920°N	107.608075208°W
1,600.00	30.04	221.71	1,503.32	-337.43	-300.76	14,364,106.709	904,896.690	39.524106744°N	107.608189371°W
1,700.00	30.04	221.71	1,589.89	-374.80	-334.07	14,364,069.339	904,863.381	39.524001567°N	107.608303534°W
1,800.00	30.04	221.71	1,676.46	-412.17	-367.38	14,364,031.969	904,830.072	39.523896391°N	107.608417696°W
1,900.00	30.04	221.71	1,763.03	-449.54	-400.69	14,363,994.599	904,796.762	39.523791214°N	107.608531859°W
2,000.00	30.04	221.71	1,849.60	-486.91	-434.00	14,363,957.229	904,763.453	39.523686037°N	107.608646021°W
2,100.00	30.04	221.71	1,936.16	-524.28	-467.31	14,363,919.859	904,730.144	39.523580861°N	107.608760182°W
2,200.00	30.04	221.71	2,022.73	-561.65	-500.62	14,363,882.489	904,696.835	39.523475684°N	107.608874343°W
2,300.00	30.04	221.71	2,109.30	-599.02	-533.92	14,363,845.119	904,663.526	39.523370507°N	107.608988504°W
2,400.00	30.04	221.71	2,195.87	-636.39	-567.23	14,363,807.749	904,630.217	39.523265330°N	107.609102665°W
2,500.00	30.04	221.71	2,282.43	-673.76	-600.54	14,363,770.379	904,596.908	39.523160153°N	107.609216825°W
2,600.00	30.04	221.71	2,369.00	-711.13	-633.85	14,363,733.009	904,563.598	39.523054975°N	107.609330985°W
2,700.00	30.04	221.71	2,455.57	-748.50	-667.16	14,363,695.639	904,530.289	39.522949798°N	107.609445144°W
2,800.00	30.04	221.71	2,542.14	-785.87	-700.47	14,363,658.270	904,496.980	39.522844620°N	107.609559303°W
2,900.00	30.04	221.71	2,628.71	-823.24	-733.78	14,363,620.900	904,463.671	39.522739443°N	107.609673462°W
3,000.00	30.04	221.71	2,715.27	-860.61	-767.09	14,363,583.530	904,430.362	39.522634265°N	107.609787620°W
3,100.00	30.04	221.71	2,801.84	-897.98	-800.40	14,363,546.160	904,397.053	39.522529087°N	107.609901779°W
3,200.00	30.04	221.71	2,888.41	-935.35	-833.71	14,363,508.790	904,363.744	39.522423909°N	107.610015936°W
3,300.00	30.04	221.71	2,974.98	-972.73	-867.02	14,363,471.420	904,330.435	39.522318731°N	107.610130094°W
3,400.00	30.04	221.71	3,061.54	-1,010.10	-900.33	14,363,434.050	904,297.125	39.522213553°N	107.610244251°W
3,500.00	30.04	221.71	3,148.11	-1,047.47	-933.63	14,363,396.680	904,263.816	39.522108375°N	107.610358408°W
3,600.00	30.04	221.71	3,234.68	-1,084.84	-966.94	14,363,359.310	904,230.507	39.522003197°N	107.610472564°W
3,700.00	30.04	221.71	3,321.25	-1,122.21	-1,000.25	14,363,321.940	904,197.198	39.521898018°N	107.610586720°W
3,800.00	30.04	221.71	3,407.82	-1,159.58	-1,033.56	14,363,284.570	904,163.889	39.521792840°N	107.610700876°W
3,900.00	30.04	221.71	3,494.38	-1,196.95	-1,066.87	14,363,247.200	904,130.580	39.521687661°N	107.610815031°W
3,935.37	30.04	221.71	3,525.00	-1,210.16	-1,078.65	14,363,233.983	904,118.799	39.521650462°N	107.610855405°W
<b>Mesaverde</b>									
4,000.00	30.04	221.71	3,580.95	-1,234.32	-1,100.18	14,363,209.830	904,097.271	39.521582482°N	107.610929186°W
4,100.00	30.04	221.71	3,667.52	-1,271.69	-1,133.49	14,363,172.460	904,063.961	39.521477304°N	107.611104334°W
4,200.00	30.04	221.71	3,754.09	-1,309.06	-1,166.80	14,363,135.090	904,030.652	39.521372125°N	107.611157495°W
4,300.00	30.04	221.71	3,840.65	-1,346.43	-1,200.11	14,363,097.720	903,997.343	39.521266946°N	107.611271649°W

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C13 (111232) - Slot C13
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C13 (111232)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C13		
<b>Design:</b>	McLin C13 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	
4,400.00	30.04	221.71	3,927.22	-1,383.80	-1,233.42	14,363,060.350	903,964.034	39.521161767°N	107.611385803°W	
4,500.00	30.04	221.71	4,013.79	-1,421.17	-1,266.73	14,363,022.980	903,930.725	39.521056587°N	107.611499956°W	
4,563.69	30.04	221.71	4,068.92	-1,444.97	-1,287.94	14,362,999.179	903,909.510	39.520989599°N	107.611572660°W	
Drop 3°/100 at 4564 MD/4069 TVD										
4,600.00	28.95	221.71	4,100.53	-1,458.31	-1,299.84	14,362,985.834	903,897.615	39.520952038°N	107.611613425°W	
4,700.00	25.95	221.71	4,189.26	-1,492.72	-1,330.51	14,362,951.426	903,866.946	39.520855194°N	107.611718531°W	
4,800.00	22.95	221.71	4,280.28	-1,523.61	-1,358.04	14,362,920.531	903,839.409	39.520768240°N	107.611812903°W	
4,848.31	21.50	221.71	4,325.00	-1,537.26	-1,370.20	14,362,906.890	903,827.250	39.520729847°N	107.611854571°W	
Price Coal										
4,900.00	19.95	221.71	4,373.34	-1,550.91	-1,382.37	14,362,893.235	903,815.079	39.520691414°N	107.611896283°W	
5,000.00	16.95	221.71	4,468.19	-1,574.53	-1,403.43	14,362,869.612	903,794.023	39.520624926°N	107.611968442°W	
5,100.00	13.95	221.71	4,564.57	-1,594.42	-1,421.15	14,362,849.728	903,776.299	39.520568960°N	107.612029183°W	
5,200.00	10.95	221.71	4,662.20	-1,610.51	-1,435.50	14,362,833.635	903,761.955	39.520523667°N	107.612078339°W	
5,300.00	7.95	221.71	4,760.84	-1,622.77	-1,446.42	14,362,821.380	903,751.031	39.520489173°N	107.612115776°W	
5,400.00	4.95	221.71	4,860.19	-1,631.15	-1,453.89	14,362,812.994	903,743.557	39.520465571°N	107.612141390°W	
5,500.00	1.95	221.71	4,960.00	-1,635.64	-1,457.90	14,362,808.502	903,739.553	39.520452927°N	107.612155112°W	
5,565.01	0.00	0.00	5,025.00	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
Vertical at 5565 MD/5025 TVD - Top Gas										
5,600.00	0.00	0.00	5,059.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
5,700.00	0.00	0.00	5,159.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
5,800.00	0.00	0.00	5,259.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
5,900.00	0.00	0.00	5,359.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,000.00	0.00	0.00	5,459.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,100.00	0.00	0.00	5,559.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,200.00	0.00	0.00	5,659.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,300.00	0.00	0.00	5,759.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,400.00	0.00	0.00	5,859.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,465.01	0.00	0.00	5,925.00	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
Cameo										
6,500.00	0.00	0.00	5,959.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,600.00	0.00	0.00	6,059.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,700.00	0.00	0.00	6,159.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,800.00	0.00	0.00	6,259.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
6,900.00	0.00	0.00	6,359.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,000.00	0.00	0.00	6,459.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,100.00	0.00	0.00	6,559.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,200.00	0.00	0.00	6,659.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,300.00	0.00	0.00	6,759.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,400.00	0.00	0.00	6,859.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,500.00	0.00	0.00	6,959.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,565.01	0.00	0.00	7,025.00	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
Rollins										
7,600.00	0.00	0.00	7,059.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,700.00	0.00	0.00	7,159.99	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
7,715.01	0.00	0.00	7,175.00	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W	
TD at 7715 MD/7175 TVD										

# ARK Directional Services

## Planning Report - Geographic

<b>Database:</b>	EDM SERVER DB	<b>Local Co-ordinate Reference:</b>	Well McLin C13 (111232) - Slot C13
<b>Company:</b>	Antero Resources	<b>TVD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Project:</b>	McLin	<b>MD Reference:</b>	KB @ 5750.00ft (Original Well Elev)
<b>Site:</b>	McLin C	<b>North Reference:</b>	Grid
<b>Well:</b>	McLin C13 (111232)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C13		
<b>Design:</b>	McLin C13 P01		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
C13 Top Gas	0.00	0.00	5,025.00	-1,636.47	-1,458.64	14,362,807.676	903,738.817	39.520450603°N	107.612157635°W
- plan hits target center									
- Circle (radius 25.00)									

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

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
0.00	0.00	Wasatch				
3,935.37	3,525.00	Mesaverde				
4,848.31	4,325.00	Price Coal				
5,565.01	5,025.00	Top Gas				
6,465.01	5,925.00	Cameo				
7,565.01	7,025.00	Rollins				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
200.00	200.00	0.00	0.00	Build 3°/100 at 200 MD/TVD	
1,075.00	1,044.99	-146.59	-130.66	Build 3°/100 at 1075 MD/1045 TVD	
1,251.33	1,201.49	-207.14	-184.62	Hold 30° at 1251 MD/1201 TVD	
4,563.69	4,068.92	-1,444.97	-1,287.94	Drop 3°/100 at 4564 MD/4069 TVD	
5,565.01	5,025.00	-1,636.47	-1,458.64	Vertical at 5565 MD/5025 TVD	
7,715.01	7,175.00	-1,636.47	-1,458.64	TD at 7715 MD/7175 TVD	