



## REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well McLin C15 (111234), Grid North  
Vertical (TVD) Reference: KB @ 5750.00ft (Original Well Elev)  
Section (VS) Reference: Slot - (0.00N, 0.00E)  
Measured Depth Reference: KB @ 5750.00ft (Original Well Elev)  
Calculation Method: Minimum Curvature

## 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

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V/Sect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	
1741.90	17.76	287.40	1732.47	27.21	-86.83	3.00	287.40	90.99	
3789.51	17.76	287.40	3682.53	213.98	-682.73	0.00	0.00	715.47	
4381.41	0.00	287.40	4265.00	241.19	-769.55	3.00	180.00	806.46	
7231.41	0.00	287.40	7115.00	241.19	-769.55	0.00	287.40	806.46	C15 BH

# **Antero Resources**

**McLin**

**McLin C**

**McLin C15 (111234)**

**McLin C15**

**Plan: McLin C15 P02**

## **Standard Planning Report - Geographic**

**22 March, 2012**

# Planning Report - Geographic

<b>Database:</b>	EDM5000-New	<b>Local Co-ordinate Reference:</b>	Well McLin C15 (111234)
<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 C15 (111234)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C15		
<b>Design:</b>	McLin C15 P02		

<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>	14,364,522.75 usft
<b>From:</b>	Map	<b>Easting:</b>	905,235.88 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 C15 (111234)		
<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>	39.525269395°N
		<b>Longitude:</b>	107.607121363°W
		<b>Ground Level:</b>	5,726.00 ft

<b>Wellbore</b>	McLin C15				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	06/07/12	10.05	65.81	52,219

<b>Design</b>	McLin C15 P02			
<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>
	7,115.00	0.00	0.00	287.40

<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	
1,150.00	0.00	0.00	1,150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,741.90	17.76	287.40	1,732.47	27.21	-86.83	3.00	3.00	0.00	287.40	
3,789.51	17.76	287.40	3,682.53	213.98	-682.73	0.00	0.00	0.00	0.00	
4,381.41	0.00	287.40	4,265.00	241.19	-769.55	3.00	-3.00	0.00	180.00	
7,231.41	0.00	287.40	7,115.00	241.19	-769.55	0.00	0.00	0.00	287.40	C15 BH

# Planning Report - Geographic

<b>Database:</b>	EDM5000-New	<b>Local Co-ordinate Reference:</b>	Well McLin C15 (111234)
<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 C15 (111234)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C15		
<b>Design:</b>	McLin C15 P02		

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	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
<b>Wasatch</b>									
100.00	0.00	0.00	100.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
200.00	0.00	0.00	200.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
300.00	0.00	0.00	300.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
400.00	0.00	0.00	400.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
500.00	0.00	0.00	500.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
600.00	0.00	0.00	600.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
700.00	0.00	0.00	700.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
800.00	0.00	0.00	800.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
900.00	0.00	0.00	900.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
<b>Surf Csg at 1000 MD/TVD</b>									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
1,150.00	0.00	0.00	1,150.00	0.00	0.00	14,364,521.40	905,210.18	39.525269395°N	107.607121363°W
<b>KOP 3°/100 at 1150 MD/TVD</b>									
1,200.00	1.50	287.40	1,199.99	0.20	-0.62	14,364,521.59	905,209.56	39.525269883°N	107.607123595°W
1,300.00	4.50	287.40	1,299.85	1.76	-5.62	14,364,523.16	905,204.56	39.525273780°N	107.607141446°W
1,400.00	7.50	287.40	1,399.29	4.89	-15.59	14,364,526.28	905,194.59	39.525281563°N	107.607177099°W
1,500.00	10.50	287.40	1,498.04	9.56	-30.52	14,364,530.96	905,179.67	39.525293210°N	107.607230456°W
1,600.00	13.50	287.40	1,595.85	15.78	-50.35	14,364,537.18	905,159.83	39.525308691°N	107.607301371°W
1,700.00	16.50	287.40	1,692.43	23.52	-75.05	14,364,544.92	905,135.13	39.525327962°N	107.607389650°W
1,741.90	17.76	287.40	1,732.47	27.21	-86.83	14,364,548.61	905,123.36	39.525337152°N	107.607431748°W
<b>Hold 18° at 1742 MD/1732 TVD</b>									
1,800.00	17.76	287.40	1,787.80	32.51	-103.73	14,364,553.91	905,106.45	39.525350346°N	107.607492189°W
1,900.00	17.76	287.40	1,883.04	41.63	-132.83	14,364,563.03	905,077.35	39.525373057°N	107.607596225°W
2,000.00	17.76	287.40	1,978.27	50.75	-161.94	14,364,572.15	905,048.25	39.525395768°N	107.607700261°W
2,100.00	17.76	287.40	2,073.51	59.88	-191.04	14,364,581.27	905,019.14	39.525418478°N	107.607804298°W
2,200.00	17.76	287.40	2,168.75	69.00	-220.14	14,364,590.39	904,990.04	39.525441189°N	107.607908334°W
2,300.00	17.76	287.40	2,263.98	78.12	-249.24	14,364,599.52	904,960.94	39.525463899°N	107.608012371°W
2,400.00	17.76	287.40	2,359.22	87.24	-278.35	14,364,608.64	904,931.84	39.525486609°N	107.608116407°W
2,500.00	17.76	287.40	2,454.45	96.36	-307.45	14,364,617.76	904,902.73	39.525509319°N	107.608220444°W
2,600.00	17.76	287.40	2,549.69	105.48	-336.55	14,364,626.88	904,873.63	39.525532029°N	107.608324481°W
2,700.00	17.76	287.40	2,644.92	114.60	-365.65	14,364,636.00	904,844.53	39.525554739°N	107.608428517°W
2,800.00	17.76	287.40	2,740.16	123.73	-394.76	14,364,645.12	904,815.43	39.525577449°N	107.608532554°W
2,900.00	17.76	287.40	2,835.40	132.85	-423.86	14,364,654.24	904,786.33	39.525600159°N	107.608636591°W
3,000.00	17.76	287.40	2,930.63	141.97	-452.96	14,364,663.37	904,757.22	39.525622869°N	107.608740628°W
3,100.00	17.76	287.40	3,025.87	151.09	-482.06	14,364,672.49	904,728.12	39.525645578°N	107.608844665°W
3,200.00	17.76	287.40	3,121.10	160.21	-511.17	14,364,681.61	904,699.02	39.525668288°N	107.608948702°W
3,300.00	17.76	287.40	3,216.34	169.33	-540.27	14,364,690.73	904,669.92	39.525690997°N	107.609052739°W
3,400.00	17.76	287.40	3,311.57	178.45	-569.37	14,364,699.85	904,640.81	39.525713706°N	107.609156777°W
3,500.00	17.76	287.40	3,406.81	187.57	-598.47	14,364,708.97	904,611.71	39.525736415°N	107.609260814°W
3,561.10	17.76	287.40	3,465.00	193.15	-616.25	14,364,714.54	904,593.93	39.525750291°N	107.609324381°W
<b>Mesaverde</b>									
3,600.00	17.76	287.40	3,502.05	196.70	-627.57	14,364,718.09	904,582.61	39.525759124°N	107.609364851°W
3,700.00	17.76	287.40	3,597.28	205.82	-656.68	14,364,727.21	904,553.51	39.525781833°N	107.609468889°W
3,789.51	17.76	287.40	3,682.53	213.98	-682.73	14,364,735.38	904,527.46	39.525802160°N	107.609562011°W
<b>Drop 3°/100 at 3790 MD/3683 TVD</b>									
3,800.00	17.44	287.40	3,692.53	214.93	-685.75	14,364,736.33	904,524.43	39.525804522°N	107.609572832°W
3,900.00	14.44	287.40	3,788.67	223.14	-711.96	14,364,744.54	904,498.22	39.525824971°N	107.609666519°W
4,000.00	11.44	287.40	3,886.12	229.84	-733.33	14,364,751.24	904,476.85	39.525841646°N	107.609742912°W
4,100.00	8.44	287.40	3,984.60	235.00	-749.80	14,364,756.40	904,460.38	39.525854501°N	107.609801804°W
4,200.00	5.44	287.40	4,083.86	238.62	-761.34	14,364,760.02	904,448.85	39.525863499°N	107.609843031°W
4,300.00	2.44	287.40	4,183.61	240.68	-767.90	14,364,762.07	904,442.29	39.525868618°N	107.609866482°W

# Planning Report - Geographic

<b>Database:</b>	EDM5000-New	<b>Local Co-ordinate Reference:</b>	Well McLin C15 (111234)
<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 C15 (111234)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C15		
<b>Design:</b>	McLin C15 P02		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,381.41	0.00	287.40	4,265.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
Vertical at 4381 MD/4265 TVD - Price Coal										
4,400.00	0.00	287.40	4,283.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
4,500.00	0.00	287.40	4,383.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
4,600.00	0.00	287.40	4,483.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
4,700.00	0.00	287.40	4,583.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
4,800.00	0.00	287.40	4,683.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
4,900.00	0.00	287.40	4,783.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,000.00	0.00	287.40	4,883.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,081.41	0.00	287.40	4,965.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
Top Gas										
5,100.00	0.00	287.40	4,983.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,200.00	0.00	287.40	5,083.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,300.00	0.00	287.40	5,183.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,400.00	0.00	287.40	5,283.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,500.00	0.00	287.40	5,383.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,600.00	0.00	287.40	5,483.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,700.00	0.00	287.40	5,583.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,800.00	0.00	287.40	5,683.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,900.00	0.00	287.40	5,783.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
5,981.41	0.00	287.40	5,865.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
Cameo										
6,000.00	0.00	287.40	5,883.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,100.00	0.00	287.40	5,983.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,200.00	0.00	287.40	6,083.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,300.00	0.00	287.40	6,183.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,400.00	0.00	287.40	6,283.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,500.00	0.00	287.40	6,383.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,600.00	0.00	287.40	6,483.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,700.00	0.00	287.40	6,583.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,800.00	0.00	287.40	6,683.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
6,900.00	0.00	287.40	6,783.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
7,000.00	0.00	287.40	6,883.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
7,081.41	0.00	287.40	6,965.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
Rollins										
7,100.00	0.00	287.40	6,983.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
7,200.00	0.00	287.40	7,083.59	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
7,231.41	0.00	287.40	7,115.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
TD at 7231 MD/7115 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
C15 BH	0.00	360.00	7,115.00	241.19	-769.55	14,364,762.59	904,440.63	39.525869910°N	107.609872400°W	
- hit/miss target										
- Shape										
- plan hits target center										
- Circle (radius 20.00)										

## Planning Report - Geographic

<b>Database:</b>	EDM5000-New	<b>Local Co-ordinate Reference:</b>	Well McLin C15 (111234)
<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 C15 (111234)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	McLin C15		
<b>Design:</b>	McLin C15 P02		

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

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Wasatch				
3,561.10	3,465.00	Mesaverde				
4,381.41	4,265.00	Price Coal		0.00		
5,081.41	4,965.00	Top Gas				
5,981.41	5,865.00	Cameo				
7,081.41	6,965.00	Rollins				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,150.00	1,150.00	0.00	0.00	KOP 3°/100 at 1150 MD/TVD	
1,741.90	1,732.47	27.21	-86.83	Hold 18° at 1742 MD/1732 TVD	
3,789.51	3,682.53	213.98	-682.73	Drop 3°/100 at 3790 MD/3683 TVD	
4,381.41	4,265.00	241.19	-769.55	Vertical at 4381 MD/4265 TVD	
7,231.41	7,115.00	241.19	-769.55	TD at 7231 MD/7115 TVD	