



Company: Antero Resources
 Field: Garfield Country
 Cty/Blk/Par: Colorado
 Well Name: River Ranch A5 Side Track
 Rig: Grey Wolf 706

Job Number: 1260646 Calculation Method
 Magnetic Decl.: 10.85 Proposed Azimuth 313.25
 Grid Corr.: 1.38 Depth Reference RKB
 Total Survey Corr.: 12.23 Tie Into Surface
 Target Info: TVD 6400,N 4354.41,E -448.43,VS 625.1

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)			
0	Tie In	22	0.00	300.00		22.00	0.00	0.00	N	0.00	E	
1	MWD	197	1.40	210.50	175	196.98	-0.47	1.84	S	1.09	W	0.80
2	MWD	289	1.90	285.80	92	288.95	0.63	2.40	S	3.12	W	2.23
3	MWD	382	3.90	319.20	93	381.84	5.15	0.42	N	6.67	W	2.73
4	MWD	474	6.00	323.00	92	473.49	13.00	6.63	N	11.61	W	2.31
5	MWD	567	7.70	319.90	93	565.82	23.98	15.28	N	18.55	W	1.87
6	MWD	659	8.40	324.10	92	656.91	36.70	25.43	N	26.46	W	0.99
7	MWD	752	8.80	324.10	93	748.87	50.36	36.70	N	34.62	W	0.43
8	MWD	845	9.20	325.50	93	840.72	64.61	48.59	N	43.00	W	0.49
9	MWD	885	9.30	325.10	40	880.20	70.90	53.88	N	46.66	W	0.30
10	MWD	1022	9.30	325.10	137	1015.40	92.57	72.03	N	59.33	W	0.00
11	MWD	1116	9.30	323.70	94	1108.17	107.47	84.38	N	68.17	W	0.24
12	MWD	1212	9.00	317.40	96	1202.95	122.59	96.16	N	77.84	W	1.09
13	MWD	1307	8.40	315.30	95	1296.85	136.93	106.56	N	87.75	W	0.71
14	MWD	1402	7.70	309.00	95	1390.92	150.22	115.50	N	97.58	W	1.18
15	MWD	1498	7.70	306.90	96	1486.05	163.02	123.41	N	107.72	W	0.29
16	MWD	1593	7.90	304.00	95	1580.18	175.79	130.88	N	118.22	W	0.46
17	MWD	1688	7.20	306.50	95	1674.35	188.15	138.08	N	128.42	W	0.81
18	MWD	1783	7.80	314.30	95	1768.54	200.50	146.12	N	137.82	W	1.24
19	MWD	1878	8.30	315.30	95	1862.60	213.80	155.50	N	147.26	W	0.55
20	MWD	1974	8.70	313.20	96	1957.55	227.99	165.39	N	157.43	W	0.53
21	MWD	2069	7.70	315.60	95	2051.58	241.53	174.86	N	167.12	W	1.11
22	MWD	2164	7.90	313.90	95	2145.70	254.42	183.93	N	176.27	W	0.32



Company: Antero Resources
 Field: Garfield Country
 Cty/Blk/Par: Colorado
 Well Name: River Ranch A5 Side Track
 Rig: Grey Wolf 706

Job Number: 1260646 Calculation Method
 Magnetic Decl.: 10.85 Proposed Azimuth 313.25
 Grid Corr.: 1.38 Depth Reference RKB
 Total Survey Corr.: 12.23 Tie Into Surface
 Target Info: TVD 6400,N 4354.41,E -448.43,VS 625.1

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)	E/W (ft)			
23	MWD	2259	7.90	309.70	95	2239.80	267.46	192.63	N 186.00	W 0.61	0.0	-4.4
24	MWD	2355	8.20	317.00	96	2334.85	280.88	201.85	N 195.75	W 1.11	0.3	7.6
25	MWD	2450	8.30	313.30	95	2428.87	294.50	211.51	N 205.36	W 0.57	0.1	-3.9
26	MWD	2544	8.50	311.10	94	2521.86	308.22	220.73	N 215.53	W 0.40	0.2	-2.3
27	MWD	2639	7.30	312.80	95	2615.96	321.28	229.44	N 225.25	W 1.29	-1.3	1.8
28	MWD	2735	7.50	310.70	96	2711.16	333.63	237.67	N 234.47	W 0.35	0.2	-2.2
29	MWD	2830	7.70	307.90	95	2805.33	346.16	245.63	N 244.20	W 0.44	0.2	-2.9
30	MWD	2925	7.00	316.30	95	2899.55	358.28	253.72	N 253.22	W 1.35	-0.7	8.8
31	MWD	3020	7.00	306.20	95	2993.84	369.81	261.33	N 261.89	W 1.29	0.0	-10.6
32	MWD	3115	6.50	318.40	95	3088.19	380.91	268.77	N 270.13	W 1.59	-0.5	12.8
33	MWD	3210	6.30	308.30	95	3182.60	391.46	276.02	N 277.79	W 1.20	-0.2	-10.6
34	MWD	3306	6.40	316.00	96	3278.01	402.05	283.13	N 285.64	W 0.89	0.1	8.0
35	MWD	3401	6.20	323.40	95	3372.44	412.39	291.06	N 292.38	W 0.88	-0.2	7.8
36	MWD	3496	5.90	320.60	95	3466.91	422.28	298.95	N 298.54	W 0.44	-0.3	-2.9
37	MWD	3591	6.00	319.90	95	3561.40	432.06	306.52	N 304.83	W 0.13	0.1	-0.7
38	MWD	3687	7.00	323.30	96	3656.78	442.80	315.05	N 311.56	W 1.12	1.0	3.5
39	MWD	3782	6.70	322.10	95	3751.10	453.98	324.06	N 318.43	W 0.35	-0.3	-1.3
40	MWD	3877	7.60	321.30	95	3845.36	465.67	333.34	N 325.76	W 0.95	0.9	-0.8
41	MWD	3973	7.70	321.60	96	3940.51	478.32	343.33	N 333.72	W 0.11	0.1	0.3
42	MWD	4068	7.40	315.60	95	4034.69	490.73	352.69	N 341.96	W 0.89	-0.3	-6.3
43	MWD	4162	7.20	313.90	94	4127.93	502.67	361.10	N 350.44	W 0.31	-0.2	-1.8
44	MWD	4258	7.10	308.30	96	4223.18	514.60	368.95	N 359.43	W 0.73	-0.1	-5.8
45	MWD	4353	6.60	305.10	95	4317.50	525.85	375.73	N 368.50	W 0.66	-0.5	-3.4



Company: Antero Resources
 Field: Garfield Country
 Cty/Blk/Par: Colorado
 Well Name: River Ranch A5 Side Track
 Rig: Grey Wolf 706

Job Number: 1260646
 Magnetic Decl.: 10.85
 Grid Corr.: 1.38
 Total Survey Corr.: 12.23
 Target Info: TVD 6400,N 4354.41,E -448.43,VS 625.1
 Calculation Method
 Proposed Azimuth 313.25
 Depth Reference RKB
 Tie Into Surface

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')		
								N/S (ft)	E/W (ft)					
46	MWD	4450	4.48	258.68	97	4414.09	533.57	378.19	N	376.78	W	4.92	-2.2	-47.9
47	MWD	4577	1.30	333.90	127	4540.94	537.79	378.51	N	382.28	W	3.41	-2.5	59.2
48	MWD	4673	3.30	327.20	96	4636.86	541.49	381.81	N	384.26	W	2.10	2.1	-7.0
49	MWD	4768	4.10	321.20	95	4731.66	547.51	386.76	N	387.87	W	0.93	0.8	-6.3
50	MWD	4864	4.57	308.25	96	4827.39	554.72	391.80	N	393.02	W	1.13	0.5	-13.5
51	MWD	4959	4.75	302.97	95	4922.07	562.36	396.28	N	399.29	W	0.49	0.2	-5.6
52	MWD	5051	4.13	285.04	92	5013.80	569.03	399.22	N	405.69	W	1.64	-0.7	-19.5
53	MWD	5146	4.31	308.25	95	5108.55	575.60	402.32	N	411.80	W	1.80	0.2	24.4
54	MWD	5241	5.10	319.14	95	5203.23	583.36	407.72	N	417.36	W	1.25	0.8	11.5
55	MWD	5334	4.90	307.20	93	5295.88	591.42	413.25	N	423.23	W	1.14	-0.2	-12.8
56	MWD	5429	4.66	303.68	95	5390.55	599.26	417.84	N	429.67	W	0.40	-0.3	-3.7
57	MWD	5525	4.31	298.40	96	5486.26	606.59	421.72	N	436.09	W	0.56	-0.4	-5.5
58	MWD	5622	3.10	291.00	97	5583.05	612.54	424.39	N	441.75	W	1.34	-1.2	-7.6
59	MWD	5714	3.43	295.24	92	5674.90	617.46	426.46	N	446.56	W	0.44	0.4	4.6
60	MWD	5809	2.05	306.84	95	5769.79	621.85	428.69	N	450.49	W	1.56	-1.5	12.2
61	MWD	5892	1.07	13.28	83	5852.77	623.72	430.33	N	451.50	W	2.28	-1.2	-353.7
62	MWD	5996	1.34	36.16	104	5956.74	624.35	432.26	N	450.56	W	0.53	0.3	22.0
63	MWD	6091	0.98	37.54	95	6051.72	624.57	433.80	N	449.41	W	0.38	-0.4	1.5
64	MWD	6186	0.80	19.61	95	6146.71	624.92	435.07	N	448.69	W	0.35	-0.2	-18.9
65	MWD	6281	0.71	355.71	95	6241.70	625.62	436.28	N	448.51	W	0.34	-0.1	353.8
66	MWD	6376	0.54	345.86	95	6336.70	626.43	437.30	N	448.67	W	0.21	-0.2	-10.4
67	MWD	6470	0.09	323.01	94	6430.70	626.87	437.79	N	448.82	W	0.49	-0.5	-24.3



Company: Antero Resources
 Field: Garfield Country
 Cty/Blk/Par: Colorado
 Well Name: River Ranch A5 Side Track
 Rig: Grey Wolf 706

Job Number: 1260646 Calculation Method
 Magnetic Decl.: 10.85 Proposed Azimuth 313.25
 Grid Corr.: 1.38 Depth Reference RKB
 Total Survey Corr.: 12.23 Tie Into Surface
 Target Info: TVD 6400,N 4354.41,E -448.43,VS 625.1

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')		
								N/S (ft)	E/W (ft)					
68	MWD	6566	0.18	197.15	96	6526.70	626.88	437.71	N	448.91	W	0.25	0.1	-131.1
69	MWD	6661	0.54	170.08	95	6621.69	626.46	437.12	N	448.88	W	0.41	0.4	-28.5
70	MWD	6756	0.63	164.10	95	6716.69	625.65	436.18	N	448.66	W	0.11	0.1	-6.3
71	MWD	6852	1.07	176.41	96	6812.68	624.54	434.78	N	448.45	W	0.49	0.5	12.8
72	MWD	6945	1.61	152.85	93	6905.65	622.68	432.75	N	447.80	W	0.82	0.6	-25.3
73	MWD	7042	1.70	118.75	97	7002.62	620.00	430.84	N	445.92	W	1.00	0.1	-35.2
74	MWD	7136	2.20	92.00	94	7096.56	617.30	430.11	N	442.90	W	1.09	0.5	-28.5
75	MWD	7233	1.61	61.45	97	7193.51	615.47	430.70	N	439.84	W	1.19	-0.6	-31.5
76	MWD	7328	1.07	15.75	95	7288.49	615.46	432.19	N	438.42	W	1.21	-0.6	-48.1
77	MWD	7423	0.98	56.18	95	7383.47	615.69	433.49	N	437.51	W	0.75	-0.1	42.6
78	MWD	7518	1.40	4.14	95	7478.46	616.24	435.10	N	436.75	W	1.17	0.4	-54.8
79	MWD	7614	1.43	334.61	96	7574.43	618.10	437.36	N	437.18	W	0.75	0.0	344.2
80	MWD	7709	0.89	335.67	95	7669.41	619.88	439.10	N	437.99	W	0.57	-0.6	1.1
81	MWD	7804	0.89	338.13	95	7764.40	621.23	440.46	N	438.57	W	0.04	0.0	2.6
82	MWD	7899	0.71	341.64	95	7859.39	622.42	441.70	N	439.03	W	0.20	-0.2	3.7
83	MWD	7994	0.54	6.61	95	7954.38	623.21	442.70	N	439.16	W	0.33	-0.2	-352.7
84	MWD	8089	0.09	28.40	95	8049.38	623.49	443.21	N	439.08	W	0.48	-0.5	22.9
85	MWD	8185	0.18	167.97	96	8145.38	623.39	443.13	N	439.01	W	0.27	0.1	145.4
86	MWD	8278	0.18	160.24	93	8238.38	623.14	442.85	N	438.93	W	0.03	0.0	-8.3
87	MWD	8375	0.36	182.39	97	8335.38	622.80	442.40	N	438.89	W	0.21	0.2	22.8
88	MWD	8470	0.54	173.60	95	8430.37	622.27	441.66	N	438.85	W	0.20	0.2	-9.3
89	MWD	8565	0.71	175.00	95	8525.37	621.49	440.63	N	438.75	W	0.18	0.2	1.5
90	MWD	8661	0.71	168.68	96	8621.36	620.56	439.45	N	438.58	W	0.08	0.0	-6.6



Company: Antero Resources
 Field: Garfield Country
 Cty/Blk/Par: Colorado
 Well Name: River Ranch A5 Side Track
 Rig: Grey Wolf 706

Job Number: 1260646 Calculation Method
 Magnetic Decl.: 10.85 Proposed Azimuth 313.25
 Grid Corr.: 1.38 Depth Reference RKB
 Total Survey Corr.: 12.23 Tie Into Surface
 Target Info: TVD 6400,N 4354.41,E -448.43,VS 625.0

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates				DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')
								N/S (ft)		E/W (ft)				
91	MWD	8756	0.63	169.03	95	8716.35	619.65	438.36	N	438.37	W	0.08	-0.1	0.4
92	MWD	8815	0.80	167.62	59	8775.35	619.05	437.64	N	438.22	W	0.29	0.3	-2.4
93														
94														
95														
96														
97														
98														
99														
100														