



End of Well Report

Prepared for



CSF 32C-09-07-91

September 23, 2010

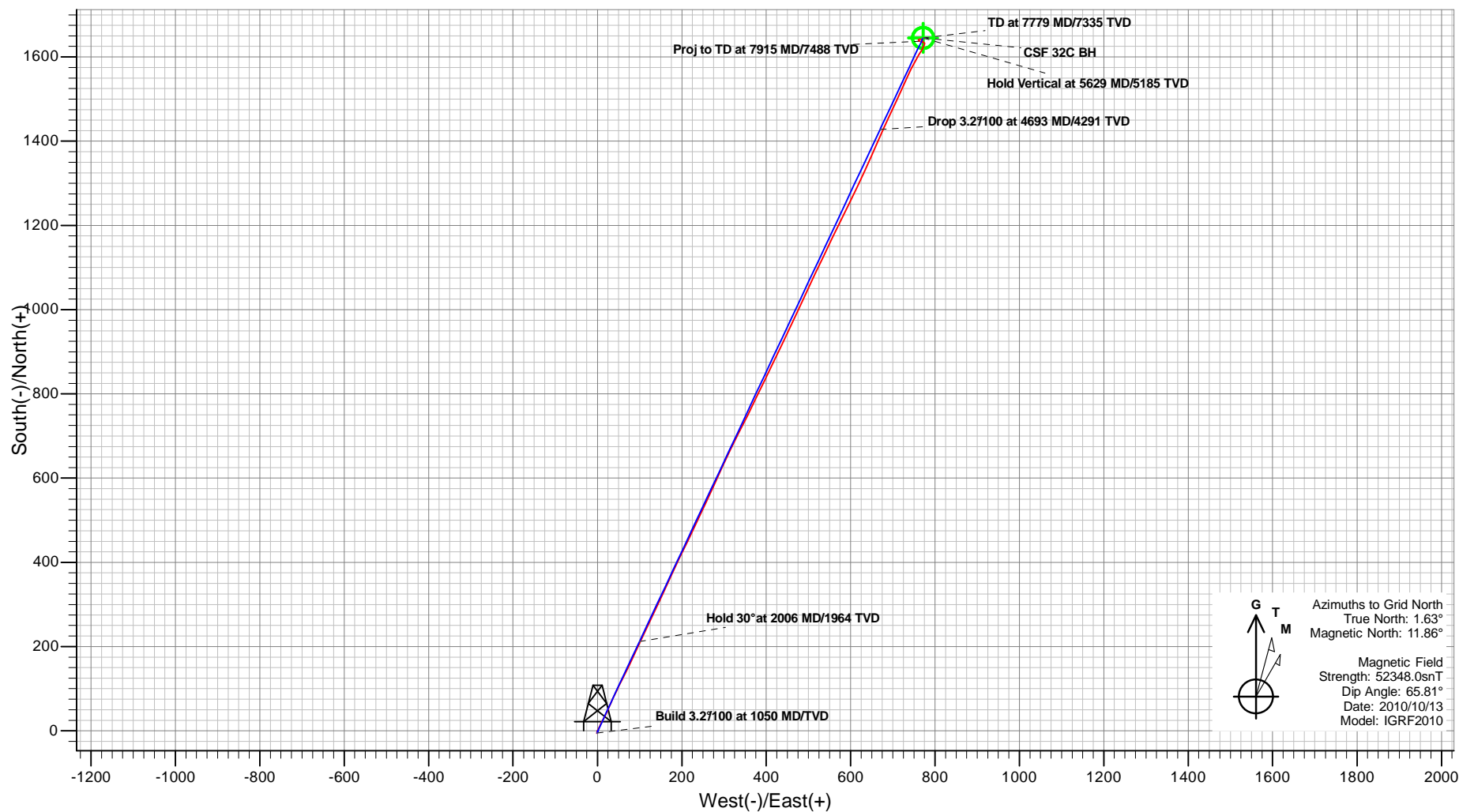
ARK Directional Services Inc
191 University Blvd, # 601
Denver, CO 80206



PLAN VIEW

Antero Resources

Project: Castle Springs Federal
Site: CSF E Pad
Well: CSF 32C-09-07-91 (111195)
Wellbore: CSF 32C
Design: CSF 32C P03



CSF 32C P03
Created By: ARK Directional Services
Date: 7:37, September 20 2010

PROJECT DETAILS: Castle Springs Federal

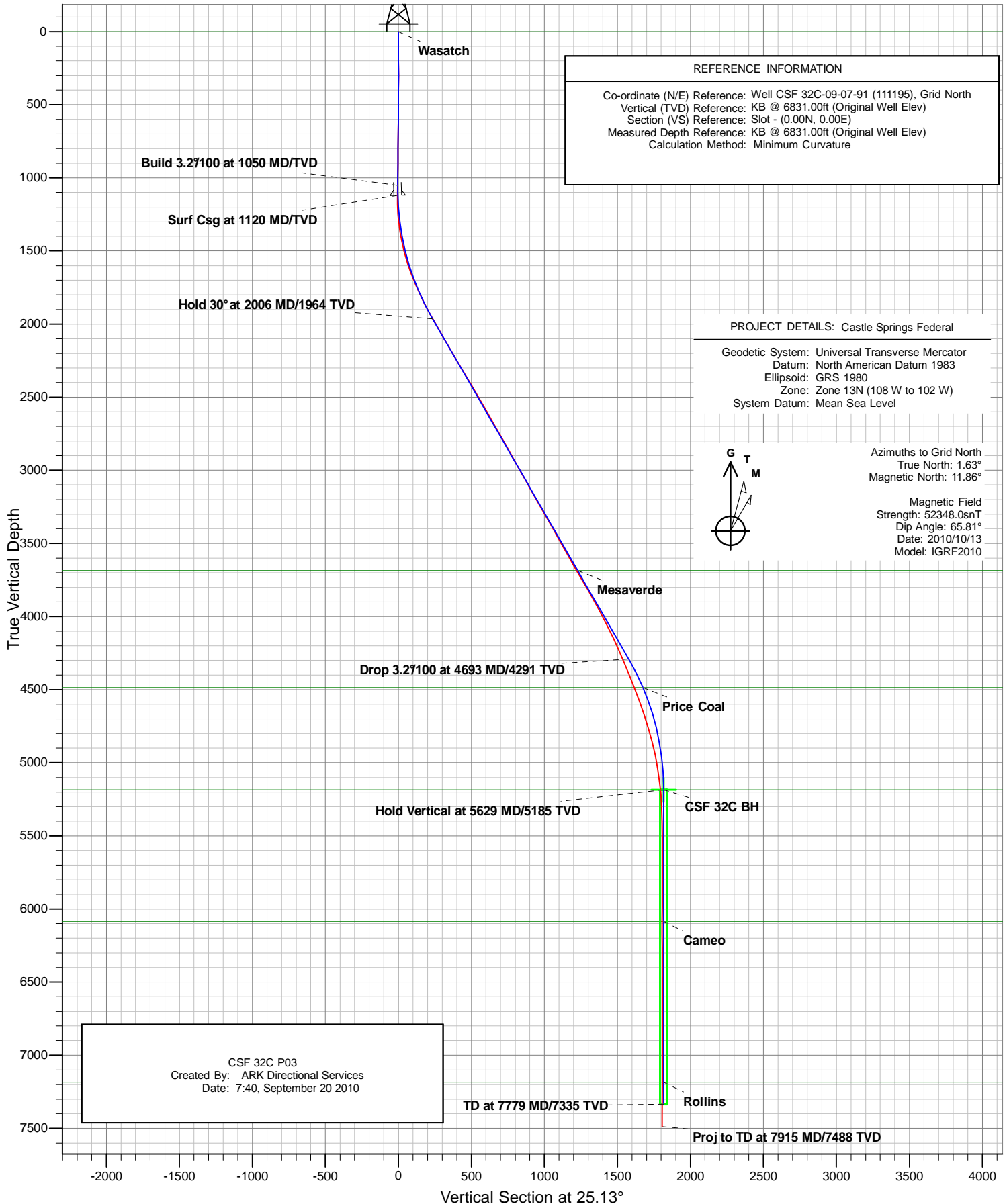
Geodetic System: Universal Transverse Mercator
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CSF 32C-09-07-91 (111195), Grid North
Vertical (TVD) Reference: KB @ 6831.00ft (Original Well Elev)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: KB @ 6831.00ft (Original Well Elev)
Calculation Method: Minimum Curvature



Antero Resources
CSF 32C
PLANNED VS ACTUAL



Antero Resources

Castle Springs Federal

CSF E Pad

CSF 32C-09-07-91 (111195)

CSF 32C

Survey: CSF 32C

Survey Report - Geographic

23 September, 2010

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 32C-09-07-91 (111195)
Project:	Castle Springs Federal	TVD Reference:	KB @ 6831.00ft (Original Well Elev)
Site:	CSF E Pad	MD Reference:	KB @ 6831.00ft (Original Well Elev)
Well:	CSF 32C-09-07-91 (111195)	North Reference:	Grid
Wellbore:	CSF 32C	Survey Calculation Method:	Minimum Curvature
Design:	CSF 32C	Database:	EDM SERVER DB

Project	Castle Springs Federal		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	CSF E Pad		
Site Position:		Northing:	14,339,810.145 usft
From:	Lat/Long	Easting:	918,106.326 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in
		Latitude:	39.458485824°N
		Longitude:	107.558945127°W
		Grid Convergence:	-1.63 °

Well	CSF 32C-09-07-91 (111195)		
Well Position	+N/-S	0.00 ft	Northing: 14,339,819.763 usft
	+E/-W	0.00 ft	Easting: 918,117.953 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	39.458513118°N
		Longitude:	107.558904939°W
		Ground Level:	6,807.00 ft

Wellbore	CSF 32C		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	2010/10/13	10.24
			Dip Angle (°)
			65.81
			Field Strength (nT)
			52,348

Design	CSF 32C		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	5,185.00	0.00	0.00
			Direction (°)
			25.13

Survey Program	Date	2010/09/23		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	1,000.00	CSF 32C Surface (CSF 32C)	NS-GYRO-MS	North sensing gyrocompassing m/s
1,121.00	7,915.00	CSF 32C (CSF 32C)	MWD	MWD - Standard

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,000.00	0.67	219.95	999.97	-4.81	-0.29	14,339,814.952	918,117.666	39.458499896°N	107.558905471°W	
1,121.00	0.62	233.34	1,120.96	-5.74	-1.27	14,339,814.019	918,116.687	39.458497259°N	107.558908844°W	
1,152.00	0.53	305.59	1,151.96	-5.76	-1.52	14,339,814.002	918,116.436	39.458497194°N	107.558909731°W	
1,184.00	1.32	12.83	1,183.96	-5.32	-1.56	14,339,814.447	918,116.397	39.458498413°N	107.558909912°W	
1,215.00	2.90	18.19	1,214.94	-4.22	-1.23	14,339,815.541	918,116.721	39.458501438°N	107.558908875°W	
1,247.00	4.13	22.32	1,246.88	-2.39	-0.54	14,339,817.376	918,117.412	39.458506526°N	107.558906616°W	
1,278.00	5.54	21.44	1,277.77	0.04	0.43	14,339,819.801	918,118.383	39.458513257°N	107.558903423°W	
1,310.00	6.59	23.73	1,309.59	3.16	1.73	14,339,822.920	918,119.686	39.458521916°N	107.558899123°W	
1,341.00	7.82	24.52	1,340.34	6.70	3.32	14,339,826.468	918,121.277	39.458531773°N	107.558893848°W	
1,372.00	9.14	26.10	1,371.00	10.83	5.28	14,339,830.598	918,123.236	39.458543257°N	107.558887331°W	
1,404.00	10.37	26.80	1,402.54	15.69	7.70	14,339,835.451	918,125.653	39.458556761°N	107.558879265°W	

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 32C-09-07-91 (111195)
Project:	Castle Springs Federal	TVD Reference:	KB @ 6831.00ft (Original Well Elev)
Site:	CSF E Pad	MD Reference:	KB @ 6831.00ft (Original Well Elev)
Well:	CSF 32C-09-07-91 (111195)	North Reference:	Grid
Wellbore:	CSF 32C	Survey Calculation Method:	Minimum Curvature
Design:	CSF 32C	Database:	EDM SERVER DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,435.00	11.69	26.80	1,432.96	20.98	10.37	14,339,840.745	918,128.327	39.458571494°N	107.558870332°W
1,467.00	12.92	26.98	1,464.23	27.06	13.46	14,339,846.827	918,131.412	39.458588422°N	107.558860025°W
1,499.00	14.24	26.89	1,495.33	33.76	16.86	14,339,853.525	918,134.815	39.458607066°N	107.558848653°W
1,530.00	15.56	26.63	1,525.29	40.88	20.45	14,339,860.643	918,138.403	39.458626874°N	107.558836669°W
1,561.00	16.70	23.99	1,555.07	48.67	24.12	14,339,868.429	918,142.078	39.458648524°N	107.558824445°W
1,593.00	17.93	23.64	1,585.62	57.38	27.97	14,339,877.142	918,145.923	39.458672730°N	107.558811713°W
1,624.00	19.16	23.90	1,615.01	66.40	31.94	14,339,886.165	918,149.897	39.458697795°N	107.558798552°W
1,656.00	20.13	25.04	1,645.15	76.19	36.40	14,339,895.955	918,154.355	39.458725004°N	107.558783757°W
1,687.00	21.18	25.66	1,674.15	86.07	41.08	14,339,905.836	918,159.038	39.458752480°N	107.558768175°W
1,719.00	22.24	26.45	1,703.88	96.71	46.29	14,339,916.469	918,164.239	39.458782059°N	107.558750836°W
1,750.00	23.12	26.80	1,732.49	107.39	51.64	14,339,927.154	918,169.596	39.458811793°N	107.558732949°W
1,782.00	23.73	26.80	1,761.85	118.75	57.38	14,339,938.509	918,175.332	39.458843395°N	107.558713788°W
1,876.00	26.63	25.04	1,846.91	154.72	74.83	14,339,974.487	918,192.780	39.458943465°N	107.558655648°W
1,971.00	29.62	25.04	1,930.68	195.29	93.78	14,340,015.056	918,211.733	39.459056251°N	107.558592646°W
2,065.00	29.53	25.13	2,012.43	237.31	113.45	14,340,057.074	918,231.402	39.459173071°N	107.558527250°W
2,159.00	29.62	25.04	2,094.19	279.33	133.12	14,340,099.093	918,251.072	39.459289891°N	107.558461854°W
2,254.00	30.67	25.66	2,176.34	322.44	153.55	14,340,142.204	918,271.501	39.459409767°N	107.558393879°W
2,348.00	30.23	24.16	2,257.37	365.64	173.61	14,340,185.406	918,291.568	39.459529862°N	107.558327195°W
2,443.00	31.03	25.75	2,339.12	409.52	194.04	14,340,229.281	918,311.994	39.459651836°N	107.558259306°W
2,538.00	30.67	25.75	2,420.68	453.40	215.21	14,340,273.159	918,333.158	39.459773872°N	107.558188806°W
2,632.00	30.32	25.40	2,501.68	496.42	235.80	14,340,316.186	918,353.751	39.459893530°N	107.558120243°W
2,727.00	30.06	25.22	2,583.79	539.61	256.22	14,340,359.372	918,374.175	39.460013612°N	107.558052293°W
2,821.00	29.62	23.99	2,665.33	582.13	275.70	14,340,401.894	918,393.651	39.460131797°N	107.557987631°W
2,916.00	29.71	25.13	2,747.88	624.90	295.24	14,340,444.657	918,413.194	39.460250646°N	107.557922757°W
3,010.00	29.44	25.04	2,829.63	666.91	314.91	14,340,486.675	918,432.864	39.460367465°N	107.557857358°W
3,105.00	28.74	26.80	2,912.65	708.45	335.09	14,340,528.215	918,453.044	39.460483011°N	107.557790105°W
3,199.00	29.09	27.56	2,994.93	748.88	355.85	14,340,568.645	918,473.806	39.460595555°N	107.557720680°W
3,294.00	29.18	24.69	3,077.91	790.40	376.21	14,340,610.162	918,494.165	39.460711051°N	107.557652789°W
3,388.00	29.88	26.45	3,159.70	832.19	396.21	14,340,651.947	918,514.167	39.460827255°N	107.557586191°W
3,483.00	29.62	25.22	3,242.18	874.61	416.76	14,340,694.373	918,534.711	39.460945260°N	107.557517739°W
3,577.00	30.23	25.83	3,323.65	916.93	436.97	14,340,736.688	918,554.919	39.461062933°N	107.557450463°W
3,672.00	29.71	25.66	3,405.95	959.67	457.58	14,340,779.433	918,575.533	39.461181820°N	107.557381793°W
3,766.00	29.27	24.25	3,487.77	1,001.62	477.11	14,340,821.382	918,595.058	39.461298437°N	107.557316897°W
3,861.00	28.39	24.52	3,570.99	1,043.35	496.02	14,340,863.106	918,613.970	39.461414387°N	107.557254150°W
3,955.00	30.06	25.40	3,653.03	1,084.95	515.39	14,340,904.707	918,633.344	39.461530038°N	107.557189754°W
4,049.00	31.20	25.92	3,733.91	1,128.11	536.13	14,340,947.874	918,654.086	39.461650090°N	107.557120675°W
4,144.00	29.27	25.66	3,815.98	1,171.18	556.95	14,340,990.942	918,674.900	39.461769878°N	107.557051328°W
4,237.00	29.27	26.19	3,897.11	1,212.08	576.83	14,341,031.836	918,694.779	39.461883627°N	107.556985073°W
4,332.00	28.13	26.19	3,980.44	1,253.01	596.96	14,341,072.773	918,714.914	39.461997514°N	107.556917917°W
4,427.00	26.54	25.40	4,064.83	1,292.28	615.95	14,341,112.044	918,733.903	39.462106740°N	107.556854649°W
4,521.00	25.31	24.87	4,149.37	1,329.49	633.41	14,341,149.246	918,751.362	39.462210171°N	107.556796588°W
4,616.00	23.91	22.93	4,235.74	1,365.64	649.45	14,341,185.403	918,767.404	39.462310624°N	107.556743438°W
4,710.00	22.68	24.34	4,322.07	1,399.70	664.34	14,341,219.460	918,782.295	39.462405226°N	107.556694149°W
4,805.00	21.36	24.34	4,410.14	1,432.15	679.02	14,341,251.911	918,796.975	39.462495407°N	107.556645448°W
4,899.00	21.53	25.13	4,497.63	1,463.36	693.40	14,341,283.124	918,811.355	39.462582166°N	107.556597682°W
4,994.00	20.48	25.22	4,586.32	1,494.18	707.89	14,341,313.942	918,825.840	39.462667849°N	107.556549508°W
5,089.00	17.84	24.69	4,676.05	1,522.44	721.05	14,341,342.204	918,839.002	39.462746416°N	107.556505757°W
5,183.00	16.79	24.16	4,765.79	1,547.92	732.62	14,341,367.675	918,850.574	39.462817201°N	107.556467356°W
5,277.00	14.77	24.87	4,856.24	1,571.18	743.22	14,341,390.935	918,861.171	39.462881847°N	107.556432183°W
5,372.00	11.10	31.00	4,948.82	1,590.01	753.03	14,341,409.768	918,870.977	39.462934281°N	107.556399363°W
5,466.00	8.96	30.32	5,041.38	1,604.08	761.38	14,341,423.844	918,879.334	39.462973554°N	107.556371197°W
5,561.00	7.21	29.17	5,135.43	1,615.68	768.02	14,341,435.437	918,885.975	39.463005877°N	107.556348855°W
5,613.29	5.67	28.28	5,187.39	1,620.82	770.85	14,341,440.579	918,888.799	39.463020206°N	107.556339375°W
CSF 32C BH									
5,624.00	5.36	28.03	5,198.05	1,621.73	771.33	14,341,441.487	918,889.285	39.463022734°N	107.556337747°W

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 32C-09-07-91 (111195)
Project:	Castle Springs Federal	TVD Reference:	KB @ 6831.00ft (Original Well Elev)
Site:	CSF E Pad	MD Reference:	KB @ 6831.00ft (Original Well Elev)
Well:	CSF 32C-09-07-91 (111195)	North Reference:	Grid
Wellbore:	CSF 32C	Survey Calculation Method:	Minimum Curvature
Design:	CSF 32C	Database:	EDM SERVER DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,655.00	4.57	25.40	5,228.93	1,624.12	772.54	14,341,443.881	918,890.495	39.463029396°N	107.556333704°W
5,750.00	2.37	22.93	5,323.75	1,629.35	774.93	14,341,449.109	918,892.884	39.463043927°N	107.556325773°W
5,844.00	1.41	334.86	5,417.70	1,632.19	775.20	14,341,451.946	918,893.150	39.463051732°N	107.556325117°W
5,939.00	1.32	318.69	5,512.68	1,634.07	773.98	14,341,453.826	918,891.931	39.463056796°N	107.556329620°W
6,033.00	1.41	279.49	5,606.65	1,635.07	772.12	14,341,454.830	918,890.076	39.463059406°N	107.556336288°W
6,128.00	0.53	296.89	5,701.64	1,635.46	770.58	14,341,455.222	918,888.531	39.463060360°N	107.556341795°W
6,222.00	0.53	313.50	5,795.63	1,635.96	769.88	14,341,455.717	918,887.828	39.463061665°N	107.556344334°W
6,317.00	0.26	248.46	5,890.63	1,636.18	769.36	14,341,455.941	918,887.309	39.463062238°N	107.556346194°W
6,411.00	0.44	169.89	5,984.63	1,635.75	769.22	14,341,455.507	918,887.173	39.463061037°N	107.556346629°W
6,505.00	0.44	237.39	6,078.63	1,635.20	768.98	14,341,454.957	918,886.933	39.463059510°N	107.556347425°W
6,600.00	0.44	81.47	6,173.63	1,635.06	769.03	14,341,454.815	918,886.986	39.463059123°N	107.556347222°W
6,694.00	0.70	8.52	6,267.62	1,635.68	769.48	14,341,455.436	918,887.428	39.463060863°N	107.556345720°W
6,789.00	0.26	55.28	6,362.62	1,636.37	769.74	14,341,456.133	918,887.691	39.463062795°N	107.556344858°W
6,883.00	0.18	86.92	6,456.62	1,636.50	770.06	14,341,456.262	918,888.014	39.463063175°N	107.556343729°W
6,978.00	1.14	2.72	6,551.61	1,637.45	770.26	14,341,457.214	918,888.208	39.463065802°N	107.556343138°W
7,072.00	0.88	340.92	6,645.60	1,639.07	770.06	14,341,458.831	918,888.016	39.463070221°N	107.556343979°W
7,167.00	0.62	272.90	6,740.59	1,639.79	769.31	14,341,459.546	918,887.265	39.463072126°N	107.556346712°W
7,261.00	1.41	328.09	6,834.58	1,640.79	768.19	14,341,460.554	918,886.145	39.463074803°N	107.556350775°W
7,356.00	1.58	282.65	6,929.55	1,642.07	766.30	14,341,461.833	918,884.250	39.463078165°N	107.556357614°W
7,450.00	1.49	264.90	7,023.52	1,642.25	763.82	14,341,462.008	918,881.768	39.463078452°N	107.556366416°W
7,545.00	1.67	235.19	7,118.48	1,641.35	761.45	14,341,461.108	918,879.401	39.463075798°N	107.556374703°W
7,639.00	1.14	168.66	7,212.46	1,639.65	760.51	14,341,459.409	918,878.460	39.463071064°N	107.556377863°W
7,829.00	1.23	97.99	7,402.43	1,637.51	762.90	14,341,457.272	918,880.851	39.463065388°N	107.556369184°W
7,869.00	1.23	97.99	7,442.42	1,637.39	763.75	14,341,457.153	918,881.702	39.463065126°N	107.556366162°W
7,915.00	1.23	97.99	7,488.41	1,637.26	764.73	14,341,457.016	918,882.680	39.463064826°N	107.556362687°W
Proj to TD at 7915 MD/7488 TVD									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,915.00	7,488.41	1,637.26	764.73	Proj to TD at 7915 MD/7488 TVD

Checked By: _____ Approved By: _____ Date: _____