



End of Well Report

Prepared for



CSF 34D-10-07-91

October 13, 2010

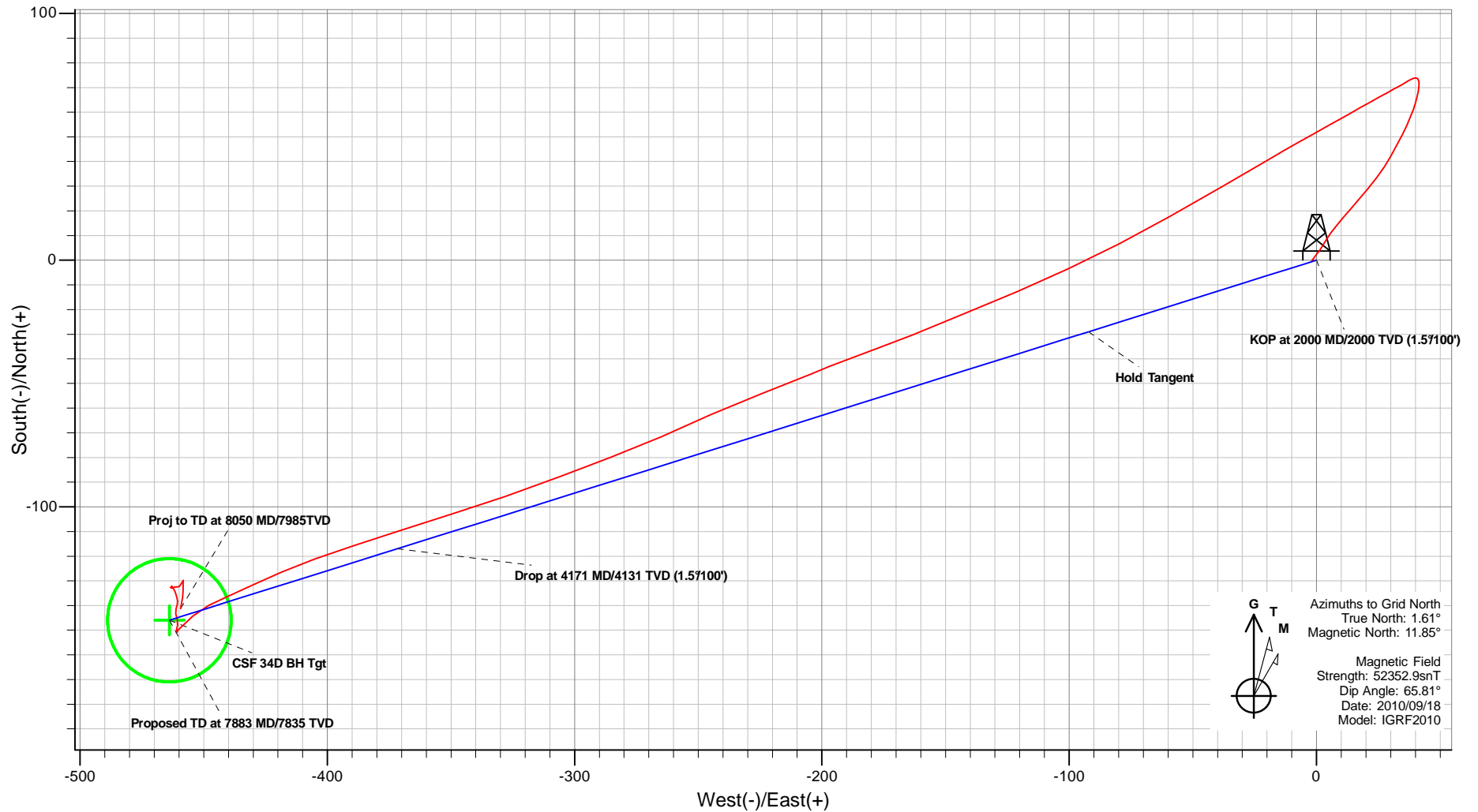
ARK Directional Services Inc
191 University Blvd, # 601
Denver, CO 80206



PLAN VIEW

Antero Resources

Project: Castle Springs Federal
 Site: CSF Q Pad
 Well: CSF 34D-10-07-91 (111172)
 Wellbore: CSF 34D
 Design: CSF 34D-10-07-91



G T M
 Azimuths to Grid North
 True North: 1.61°
 Magnetic North: 11.85°
 Magnetic Field
 Strength: 52352.9snT
 Dip Angle: 65.81°
 Date: 2010/09/18
 Model: IGRF2010

CSF 34D-10-07-91
 Created By: ARK Directional Services
 Date: 6:05, October 01 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

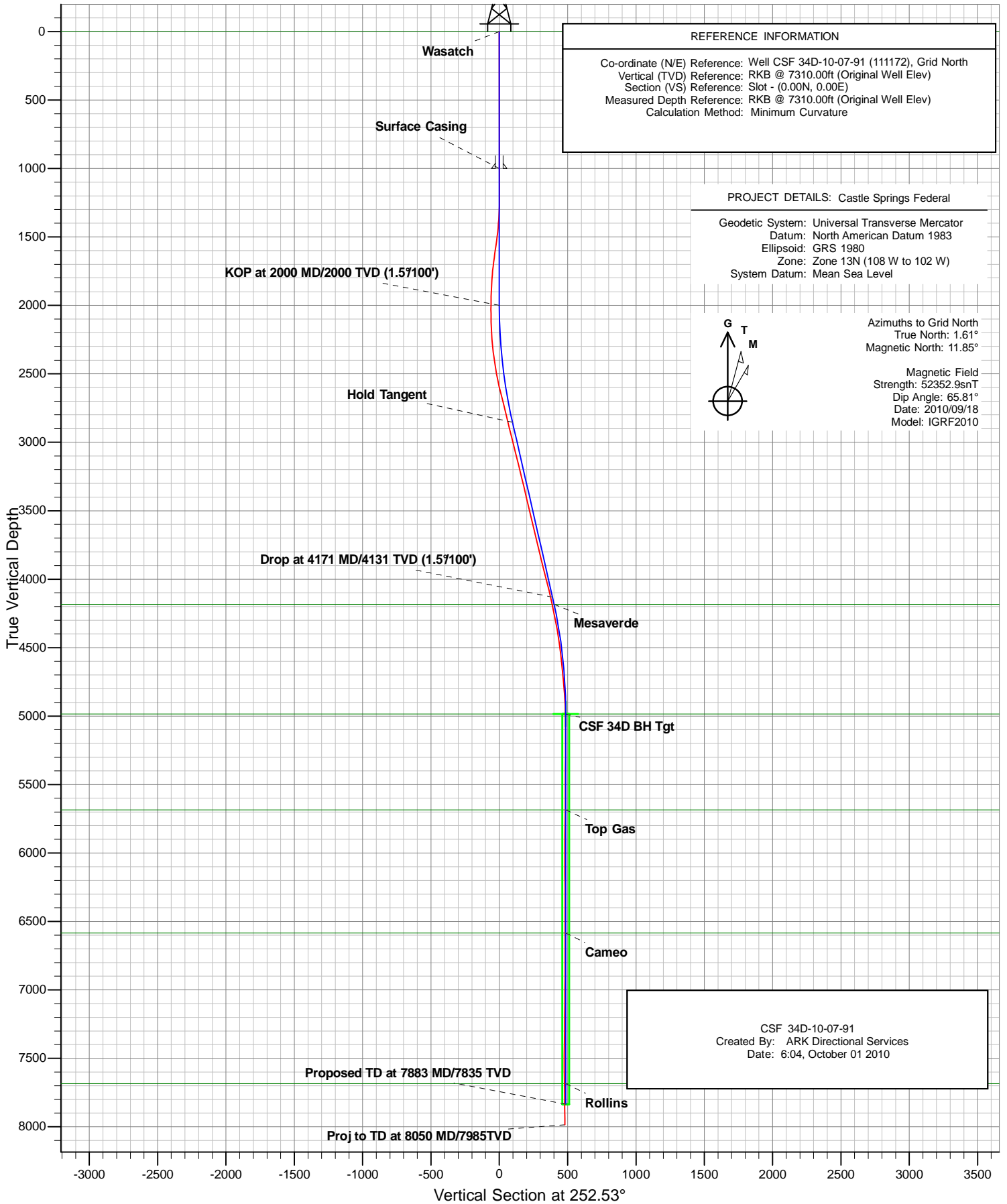
REFERENCE INFORMATION
 Co-ordinate (N/E) Reference: Well CSF 34D-10-07-91 (111172), Grid North
 Vertical (TVD) Reference: RKB @ 7310.00ft (Original Well Elev)
 Section (VS) Reference: Slot - (0.00N, 0.00E)
 Measured Depth Reference: RKB @ 7310.00ft (Original Well Elev)
 Calculation Method: Minimum Curvature



Antero Resources

CSF 34D

PLANNED VS ACTUAL



CSF 34D-10-07-91
 Created By: ARK Directional Services
 Date: 6:04, October 01 2010

Antero Resources

Castle Springs Federal

CSF Q Pad

CSF 34D-10-07-91 (111172)

CSF 34D

Survey: CSF 34D

Survey Report - Geographic

13 October, 2010

ARK Directional Services

Survey Report - Geographic

Company: Antero Resources	Local Co-ordinate Reference: Well CSF 34D-10-07-91 (111172)
Project: Castle Springs Federal	TVD Reference: RKB @ 7310.00ft (Original Well Elev)
Site: CSF Q Pad	MD Reference: RKB @ 7310.00ft (Original Well Elev)
Well: CSF 34D-10-07-91 (111172)	North Reference: Grid
Wellbore: CSF 34D	Survey Calculation Method: Minimum Curvature
Design: CSF 34D	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 Q Pad		
Site Position:	Northing: 14,338,814.560 usft	Latitude: 39.456256472°N
From: Lat/Long	Easting: 924,580.813 usft	Longitude: 107.535929791°W
Position Uncertainty: 0.00 ft	Slot Radius: 13.20 in	Grid Convergence: -1.61 °

Well CSF 34D-10-07-91 (111172)		
Well Position +N/-S 0.00 ft	Northing: 14,338,826.977 usft	Latitude: 39.456288438°N
+E/-W 0.00 ft	Easting: 924,553.564 usft	Longitude: 107.536027471°W
Position Uncertainty 0.00 ft	Wellhead Elevation: ft	Ground Level: 7,285.00 ft

Wellbore CSF 34D					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	2010/09/18	(°) 10.23	(°) 65.81	(nT) 52,353

Design CSF 34D					
Audit Notes:					
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00			
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	4,985.00	0.00	0.00	252.53	

Survey Program		Date 2010/10/13		
From	To	Survey (Wellbore)	Tool Name	Description
(ft) 1,121.00	(ft) 8,050.00	CSF 34D (CSF 34D)	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	
0.00	0.00	0.00	0.00	0.00	0.00	14,338,826.977	924,553.564	39.456288438°N	107.536027471°W	
1,121.00	0.18	264.87	1,121.00	-0.16	-1.75	14,338,826.819	924,551.810	39.456287870°N	107.536033663°W	
1,152.00	0.09	253.35	1,152.00	-0.17	-1.83	14,338,826.808	924,551.738	39.456287834°N	107.536033916°W	
1,184.00	0.18	17.89	1,184.00	-0.13	-1.83	14,338,826.849	924,551.730	39.456287945°N	107.536033950°W	
1,215.00	0.70	33.36	1,215.00	0.08	-1.72	14,338,827.053	924,551.849	39.456288515°N	107.536033549°W	
1,247.00	1.49	36.79	1,246.99	0.57	-1.36	14,338,827.550	924,552.206	39.456289905°N	107.536032336°W	
1,278.00	2.11	38.37	1,277.98	1.34	-0.76	14,338,828.320	924,552.801	39.456292064°N	107.536030305°W	
1,310.00	2.99	38.02	1,309.94	2.46	0.12	14,338,829.439	924,553.681	39.456295203°N	107.536027303°W	
1,341.00	3.87	35.12	1,340.89	3.96	1.22	14,338,830.932	924,554.781	39.456299383°N	107.536023559°W	
1,373.00	4.66	32.40	1,372.80	5.94	2.53	14,338,832.913	924,556.099	39.456304920°N	107.536019092°W	
1,404.00	5.54	31.69	1,403.68	8.27	4.00	14,338,835.249	924,557.559	39.456311444°N	107.536014154°W	
1,436.00	6.42	34.86	1,435.50	11.05	5.83	14,338,838.032	924,559.393	39.456319220°N	107.536007940°W	

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Project:	Castle Springs Federal	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	CSF Q Pad	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Well:	CSF 34D-10-07-91 (111172)	North Reference:	Grid
Wellbore:	CSF 34D	Survey Calculation Method:	Minimum Curvature
Design:	CSF 34D	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	
1,467.00	7.29	38.55	1,466.28	14.02	8.05	14,338,840.992	924,561.610	39.456327514°N	107.536000390°W	
1,499.00	8.09	40.57	1,497.99	17.31	10.78	14,338,844.290	924,564.340	39.456336774°N	107.535991057°W	
1,530.00	8.79	40.83	1,528.66	20.76	13.74	14,338,847.740	924,567.307	39.456346467°N	107.535980899°W	
1,563.00	9.67	40.92	1,561.23	24.76	17.21	14,338,851.742	924,570.771	39.456357715°N	107.535969037°W	
1,593.00	10.46	39.60	1,590.77	28.77	20.59	14,338,855.744	924,574.157	39.456368958°N	107.535957450°W	
1,625.00	10.63	37.23	1,622.23	33.36	24.23	14,338,860.332	924,577.794	39.456381828°N	107.535945034°W	
1,656.00	10.02	33.01	1,652.72	37.89	27.43	14,338,864.870	924,580.994	39.456394526°N	107.535934163°W	
1,688.00	9.49	28.62	1,684.26	42.54	30.21	14,338,869.521	924,583.774	39.456407500°N	107.535924786°W	
1,719.00	8.79	28.00	1,714.87	46.88	32.55	14,338,873.855	924,586.110	39.456419574°N	107.535916949°W	
1,751.00	7.73	27.31	1,746.54	50.95	34.68	14,338,877.926	924,588.245	39.456430909°N	107.535909797°W	
1,782.00	7.03	24.67	1,777.28	54.53	36.43	14,338,881.503	924,589.994	39.456440857°N	107.535903965°W	
1,814.00	6.42	22.56	1,809.06	57.96	37.93	14,338,884.934	924,591.497	39.456450389°N	107.535898985°W	
1,845.00	5.63	21.07	1,839.89	60.98	39.14	14,338,887.954	924,592.709	39.456458767°N	107.535894997°W	
1,877.00	5.01	15.71	1,871.75	63.79	40.09	14,338,890.764	924,593.652	39.456466549°N	107.535891941°W	
1,908.00	4.39	12.63	1,902.65	66.25	40.71	14,338,893.225	924,594.278	39.456473350°N	107.535889970°W	
1,939.00	3.78	8.32	1,933.57	68.42	41.12	14,338,895.393	924,594.685	39.456479332°N	107.535888745°W	
1,971.00	3.08	4.72	1,965.51	70.32	41.34	14,338,897.294	924,594.908	39.456484564°N	107.535888144°W	
2,002.00	2.29	358.92	1,996.47	71.77	41.40	14,338,898.743	924,594.965	39.456488544°N	107.535888087°W	
2,034.00	1.58	343.45	2,028.46	72.83	41.26	14,338,899.805	924,594.827	39.456491448°N	107.535888680°W	
2,065.00	1.14	315.77	2,059.45	73.46	40.93	14,338,900.436	924,594.491	39.456493152°N	107.535889935°W	
2,097.00	1.32	289.05	2,091.44	73.81	40.36	14,338,900.784	924,593.920	39.456494064°N	107.535891989°W	
2,128.00	1.76	260.22	2,122.43	73.84	39.55	14,338,900.820	924,593.113	39.456494100°N	107.535894847°W	
2,160.00	2.46	241.94	2,154.41	73.44	38.46	14,338,900.414	924,592.023	39.456492900°N	107.535898666°W	
2,191.00	3.34	238.77	2,185.37	72.66	37.10	14,338,899.632	924,590.664	39.456490652°N	107.535903399°W	
2,223.00	3.78	240.44	2,217.31	71.65	35.39	14,338,898.629	924,588.949	39.456487765°N	107.535909368°W	
2,254.00	4.31	240.71	2,248.23	70.58	33.48	14,338,897.555	924,587.044	39.456484672°N	107.535916003°W	
2,286.00	5.10	240.88	2,280.12	69.30	31.19	14,338,896.274	924,584.753	39.456480981°N	107.535923985°W	
2,317.00	6.24	241.50	2,310.97	67.82	28.50	14,338,894.800	924,582.069	39.456476728°N	107.535933339°W	
2,349.00	7.21	241.50	2,342.75	66.03	25.21	14,338,893.012	924,578.776	39.456471568°N	107.535944817°W	
2,380.00	8.00	240.71	2,373.48	64.05	21.62	14,338,891.028	924,575.185	39.456465848°N	107.535957329°W	
2,412.00	8.61	240.97	2,405.14	61.80	17.58	14,338,888.776	924,571.148	39.456459358°N	107.535971391°W	
2,443.00	9.14	240.27	2,435.77	59.45	13.42	14,338,886.429	924,566.981	39.456452597°N	107.535985906°W	
2,475.00	9.67	240.18	2,467.34	56.86	8.88	14,338,883.832	924,562.442	39.456445121°N	107.536001712°W	
2,506.00	10.81	240.62	2,497.84	54.13	4.09	14,338,881.111	924,557.650	39.456437285°N	107.536018402°W	
2,537.00	11.43	241.23	2,528.26	51.23	-1.14	14,338,878.207	924,552.424	39.456428912°N	107.536036608°W	
2,569.00	12.30	240.44	2,559.58	48.02	-6.88	14,338,874.999	924,546.680	39.456419667°N	107.536056620°W	
2,601.00	13.18	239.83	2,590.79	44.51	-13.00	14,338,871.484	924,540.561	39.456409550°N	107.536077927°W	
2,632.00	13.80	239.65	2,620.93	40.86	-19.25	14,338,867.840	924,534.315	39.456399069°N	107.536099671°W	
2,727.00	14.41	239.83	2,713.07	29.20	-39.25	14,338,856.174	924,514.318	39.456365516°N	107.536169286°W	
2,821.00	14.59	240.71	2,804.08	17.53	-59.68	14,338,844.504	924,493.880	39.456331917°N	107.536240460°W	
2,915.00	13.71	242.55	2,895.22	6.60	-79.90	14,338,833.576	924,473.669	39.456300374°N	107.536310907°W	
3,010.00	14.06	244.75	2,987.45	-3.51	-100.32	14,338,823.464	924,453.241	39.456271051°N	107.536382200°W	
3,104.00	13.89	247.21	3,078.67	-12.75	-121.05	14,338,814.223	924,432.512	39.456244095°N	107.536454647°W	
3,199.00	14.06	247.56	3,170.85	-21.58	-142.23	14,338,805.401	924,411.334	39.456218254°N	107.536528726°W	
3,293.00	13.89	247.56	3,262.07	-30.24	-163.21	14,338,796.736	924,390.352	39.456192858°N	107.536602125°W	
3,356.00	13.10	250.56	3,323.33	-35.50	-176.93	14,338,791.473	924,376.630	39.456177359°N	107.536650168°W	
3,451.00	13.36	247.74	3,415.81	-43.24	-197.24	14,338,783.732	924,356.320	39.456154551°N	107.536721281°W	
3,482.00	13.36	247.65	3,445.97	-45.96	-203.87	14,338,781.014	924,349.692	39.456146579°N	107.536744466°W	
3,577.00	13.80	249.06	3,538.32	-54.19	-224.61	14,338,772.791	924,328.959	39.456122415°N	107.536817030°W	
3,671.00	13.62	245.80	3,629.64	-62.73	-245.17	14,338,764.247	924,308.393	39.456097385°N	107.536888968°W	
3,765.00	13.18	246.07	3,721.08	-71.61	-265.06	14,338,755.363	924,288.503	39.456071473°N	107.536958482°W	
3,859.00	13.97	249.41	3,812.46	-79.95	-285.48	14,338,747.026	924,268.085	39.456047020°N	107.537029916°W	
3,953.00	13.62	249.14	3,903.74	-87.88	-306.44	14,338,739.094	924,247.121	39.456023639°N	107.537103324°W	
4,048.00	14.41	250.64	3,995.92	-95.78	-328.05	14,338,731.193	924,225.516	39.456000290°N	107.537179004°W	
4,142.00	13.80	252.92	4,087.08	-102.95	-349.80	14,338,724.022	924,203.764	39.455978936°N	107.537255277°W	

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Project:	Castle Springs Federal	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	CSF Q Pad	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Well:	CSF 34D-10-07-91 (111172)	North Reference:	Grid
Wellbore:	CSF 34D	Survey Calculation Method:	Minimum Curvature
Design:	CSF 34D	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	
4,237.00	12.39	251.87	4,179.61	-109.45	-370.32	14,338,717.523	924,183.247	39.455959517°N	107.537327247°W	
4,331.00	11.51	251.61	4,271.57	-115.55	-388.80	14,338,711.426	924,164.763	39.455941361°N	107.537392060°W	
4,426.00	9.58	250.73	4,364.96	-121.15	-405.26	14,338,705.826	924,148.305	39.455924725°N	107.537449751°W	
4,520.00	7.82	245.10	4,457.88	-126.43	-418.45	14,338,700.552	924,135.120	39.455909235°N	107.537495893°W	
4,615.00	7.29	246.16	4,552.05	-131.58	-429.82	14,338,695.395	924,123.745	39.455894205°N	107.537535640°W	
4,709.00	5.89	245.72	4,645.43	-135.98	-439.67	14,338,691.001	924,113.893	39.455881388°N	107.537570072°W	
4,804.00	5.10	243.17	4,739.99	-139.89	-447.88	14,338,687.091	924,105.681	39.455870025°N	107.537598745°W	
4,899.00	4.48	227.88	4,834.67	-144.28	-454.40	14,338,682.696	924,099.161	39.455857464°N	107.537621384°W	
4,993.00	2.81	225.41	4,928.47	-148.36	-458.77	14,338,678.616	924,094.797	39.455845932°N	107.537636424°W	
5,049.57	1.24	225.79	4,985.00	-149.76	-460.20	14,338,677.215	924,093.369	39.455841976°N	107.537641337°W	
CSF 34D BH Tgt										
5,088.00	0.18	229.81	5,023.43	-150.09	-460.54	14,338,676.885	924,093.024	39.455841044°N	107.537642525°W	
5,182.00	0.53	186.48	5,117.43	-150.62	-460.70	14,338,676.357	924,092.862	39.455839585°N	107.537643046°W	
5,276.00	0.26	277.27	5,211.43	-151.02	-460.96	14,338,675.952	924,092.602	39.455838454°N	107.537643928°W	
5,371.00	1.32	8.15	5,306.42	-149.91	-461.02	14,338,677.063	924,092.543	39.455841496°N	107.537644246°W	
5,464.00	1.14	17.73	5,399.40	-147.97	-460.59	14,338,679.005	924,092.977	39.455846857°N	107.537642905°W	
5,559.00	1.67	344.07	5,494.37	-145.74	-460.68	14,338,681.236	924,092.884	39.455852972°N	107.537643454°W	
5,654.00	1.23	344.15	5,589.34	-143.43	-461.34	14,338,683.548	924,092.226	39.455859265°N	107.537646015°W	
5,748.00	1.41	18.61	5,683.32	-141.36	-461.25	14,338,685.614	924,092.319	39.455864942°N	107.537645890°W	
5,842.00	0.88	14.65	5,777.30	-139.57	-460.69	14,338,687.409	924,092.871	39.455869908°N	107.537644116°W	
5,937.00	0.79	354.00	5,872.29	-138.21	-460.58	14,338,688.766	924,092.987	39.455873641°N	107.537643841°W	
6,031.00	1.23	343.54	5,966.27	-136.60	-460.93	14,338,690.378	924,092.634	39.455878037°N	107.537645253°W	
6,126.00	1.23	346.70	6,061.25	-134.63	-461.45	14,338,692.348	924,092.110	39.455883402°N	107.537647302°W	
6,220.00	0.62	310.32	6,155.24	-133.32	-462.07	14,338,693.659	924,091.490	39.455886951°N	107.537649627°W	
6,314.00	0.44	306.27	6,249.23	-132.78	-462.75	14,338,694.202	924,090.811	39.455888387°N	107.537652083°W	
6,409.00	0.53	237.46	6,344.23	-132.80	-463.42	14,338,694.181	924,090.147	39.455888279°N	107.537654433°W	
6,503.00	0.70	42.43	6,438.23	-132.61	-463.40	14,338,694.371	924,090.168	39.455888802°N	107.537654378°W	
6,598.00	0.18	80.13	6,533.23	-132.15	-462.86	14,338,694.825	924,090.706	39.455890089°N	107.537652517°W	
6,692.00	0.26	194.48	6,627.23	-132.33	-462.77	14,338,694.644	924,090.799	39.455889599°N	107.537652173°W	
6,787.00	0.09	231.04	6,722.23	-132.59	-462.88	14,338,694.388	924,090.687	39.455888889°N	107.537652543°W	
6,881.00	0.18	198.17	6,816.23	-132.78	-462.98	14,338,694.202	924,090.583	39.455888369°N	107.537652891°W	
6,976.00	0.53	79.25	6,911.22	-132.84	-462.60	14,338,694.142	924,090.968	39.455888234°N	107.537651522°W	
7,070.00	0.53	64.13	7,005.22	-132.56	-461.78	14,338,694.412	924,091.787	39.455889041°N	107.537648653°W	
7,165.00	0.70	102.72	7,100.22	-132.50	-460.82	14,338,694.476	924,092.748	39.455889290°N	107.537645256°W	
7,259.00	0.44	42.95	7,194.21	-132.36	-460.01	14,338,694.614	924,093.554	39.455889731°N	107.537642417°W	
7,354.00	0.62	40.58	7,289.21	-131.71	-459.43	14,338,695.272	924,094.137	39.455891579°N	107.537640419°W	
7,448.00	0.97	28.54	7,383.20	-130.62	-458.72	14,338,696.357	924,094.848	39.455894612°N	107.537638011°W	
7,543.00	0.18	36.54	7,478.19	-129.79	-458.24	14,338,697.183	924,095.321	39.455896916°N	107.537636419°W	
7,637.00	0.88	192.02	7,572.19	-130.38	-458.31	14,338,696.596	924,095.259	39.455895299°N	107.537636582°W	
7,731.00	0.97	172.68	7,666.18	-131.88	-458.36	14,338,695.100	924,095.210	39.455891193°N	107.537636606°W	
7,826.00	1.49	182.70	7,761.16	-133.91	-458.31	14,338,693.069	924,095.254	39.455885623°N	107.537636247°W	
7,920.00	1.93	187.80	7,855.11	-136.70	-458.58	14,338,690.280	924,094.982	39.455877949°N	107.537636933°W	
8,004.00	2.11	190.96	7,939.06	-139.62	-459.07	14,338,687.361	924,094.496	39.455869901°N	107.537638362°W	
8,050.00	2.11	190.96	7,985.03	-141.28	-459.39	14,338,685.698	924,094.174	39.455865314°N	107.537639336°W	
Proj to TD at 8050 MD/7985TVD										

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,050.00	7,985.03	-141.28	-459.39	Proj to TD at 8050 MD/7985TVD	

ARK Directional Services

Survey Report - Geographic

Company:	Antero Resources	Local Co-ordinate Reference:	Well CSF 34D-10-07-91 (111172)
Project:	Castle Springs Federal	TVD Reference:	RKB @ 7310.00ft (Original Well Elev)
Site:	CSF Q Pad	MD Reference:	RKB @ 7310.00ft (Original Well Elev)
Well:	CSF 34D-10-07-91 (111172)	North Reference:	Grid
Wellbore:	CSF 34D	Survey Calculation Method:	Minimum Curvature
Design:	CSF 34D	Database:	EDM SERVER DB

Checked By: _____	Approved By: _____	Date: _____
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