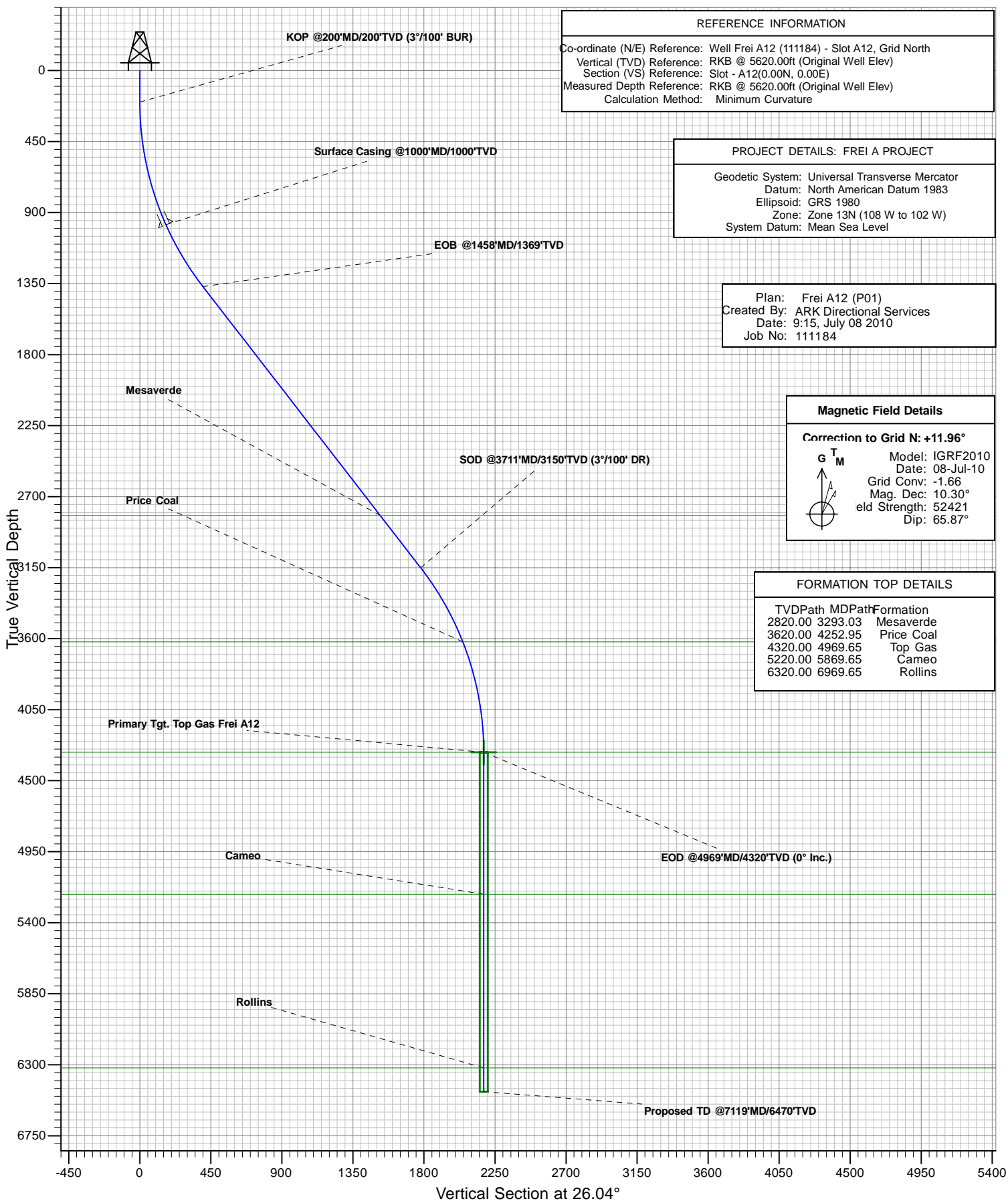




Antero Resources

Frei A12

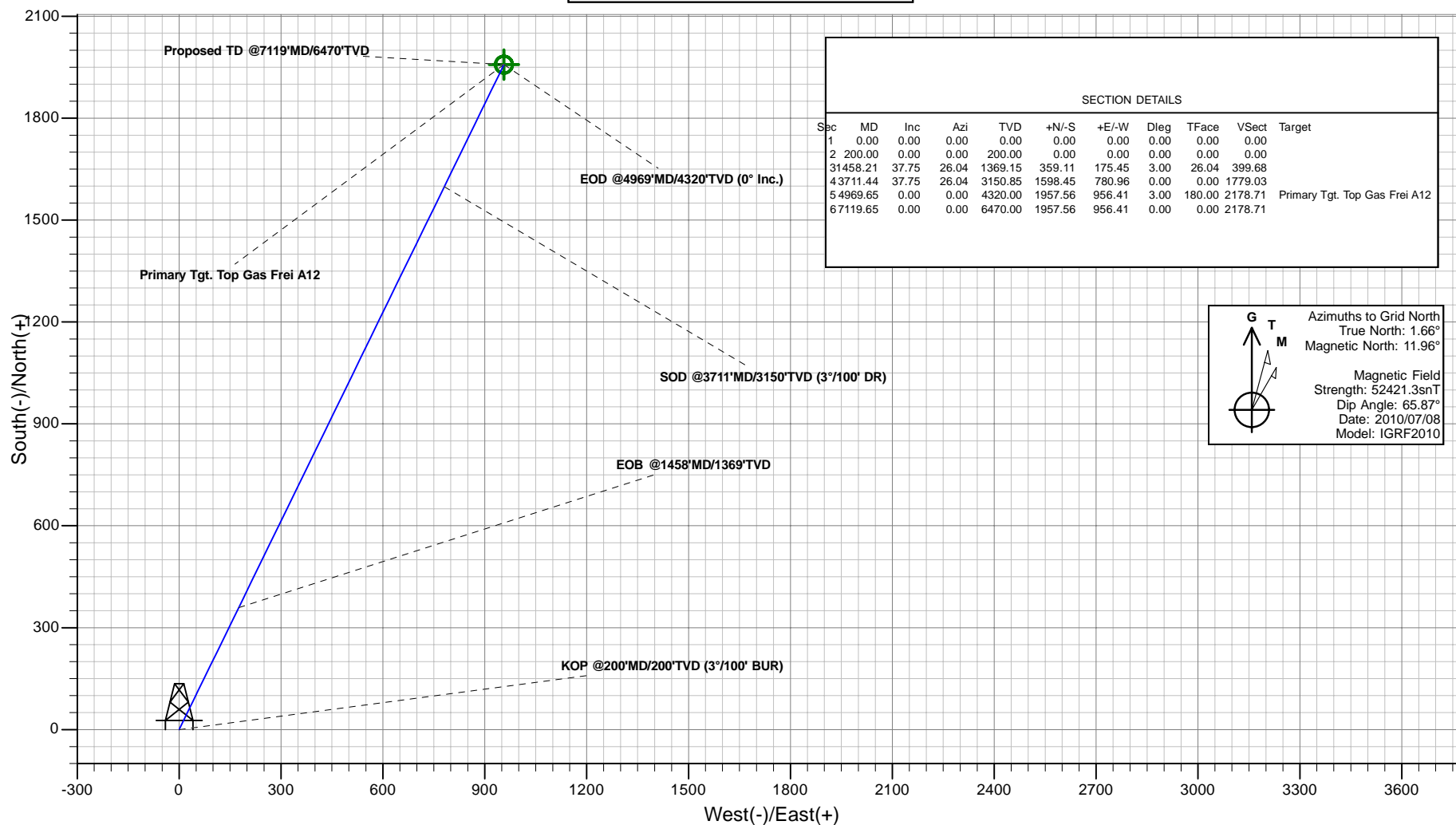




PLAN VIEW

Antero Resources

Project: FREI A PROJECT
Site: FRONTIER 12
Well: Frei A12 (111184)
Wellbore: Frei A12
Design: Frei A12 (P01)
JOB # 111184



Plan: Frei A12 (P01)
Created By: ARK Directional Services
Date: 9:18, July 08 2010

PROJECT DETAILS: FREI A PROJECT

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 Frei A12 (111184), Grid North
Vertical (TVD) Reference: RKB @ 5620.00ft (Original Well Elev)
Section (VS) Reference: Slot - A12(0.00N, 0.00E)
Measured Depth Reference: RKB @ 5620.00ft (Original Well Elev)
Calculation Method: Minimum Curvature

Antero Resources

**FREI A PROJECT
FRONTIER 12**

Plan: Frei A12 (P01)

Standard Planning Report - Geographic

08 July, 2010

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Frei A12 (111184) - Slot A12
Company:	Antero Resources	TVD Reference:	RKB @ 5620.00ft (Original Well Elev)
Project:	FREI A PROJECT	MD Reference:	RKB @ 5620.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	Frei A12 (111184)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Frei A12		
Design:	Frei A12 (P01)		

Project	FREI A PROJECT		
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		FRONTIER 12			
Site Position:		Northing:	14,368,390.50 usft	Latitude:	39.535980489°N
From:	Lat/Long	Easting:	906,417.64 usft	Longitude:	107.603240409°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	Frei A12 (111184) - Slot A12					
Well Position	+N/-S	0.00 ft	Northing:	14,368,439.72 usft	Latitude:	39.536116217°N
	+E/-W	0.00 ft	Easting:	906,426.46 usft	Longitude:	107.603214211°W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,596.00 ft

Wellbore	Frei A12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2010/07/08	10.30	65.87	52,421

Design	Frei A12 (P01)				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	26.04	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
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	
1,458.21	37.75	26.04	1,369.15	359.11	175.45	3.00	3.00	0.00	26.04	
3,711.44	37.75	26.04	3,150.85	1,598.45	780.96	0.00	0.00	0.00	0.00	
4,969.65	0.00	0.00	4,320.00	1,957.56	956.41	3.00	-3.00	0.00	180.00	Primary Tgt. Top Gas
7,119.65	0.00	0.00	6,470.00	1,957.56	956.41	0.00	0.00	0.00	0.00	

ARK Directional Services

Planning Report - Geographic

Database:	EDM SERVER DB	Local Co-ordinate Reference:	Well Frei A12 (111184) - Slot A12
Company:	Antero Resources	TVD Reference:	RKB @ 5620.00ft (Original Well Elev)
Project:	FREI A PROJECT	MD Reference:	RKB @ 5620.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	Frei A12 (111184)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Frei A12		
Design:	Frei A12 (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	14,368,439.72	906,426.46	39.536116217°N	107.603214211°W
200.00	0.00	0.00	200.00	0.00	0.00	14,368,439.72	906,426.46	39.536116217°N	107.603214211°W
KOP @200'MD/200'TVD (3°/100' BUR)									
1,000.00	24.00	26.04	976.81	148.36	72.48	14,368,588.07	906,498.94	39.536528998°N	107.602972602°W
Surface Casing @1000'MD/1000'TVD									
1,458.21	37.75	26.04	1,369.15	359.11	175.45	14,368,798.82	906,601.91	39.537115389°N	107.602629370°W
EOB @1458'MD/1369'TVD									
3,293.03	37.75	26.04	2,820.00	1,368.31	668.52	14,369,808.03	907,094.97	39.539923345°N	107.600985707°W
Mesaverde									
3,711.44	37.75	26.04	3,150.85	1,598.45	780.96	14,370,038.16	907,207.41	39.540563661°N	107.600610872°W
SOD @3711'MD/3150'TVD (3°/100' DR)									
4,252.95	21.50	26.04	3,620.00	1,838.15	898.06	14,370,277.86	907,324.52	39.541230570°N	107.600220463°W
Price Coal									
4,969.65	0.00	0.00	4,320.00	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W
EOD @4969'MD/4320'TVD (0° Inc.) - Top Gas - Primary Tgt. Top Gas Frei A12									
5,869.65	0.00	0.00	5,220.00	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W
Cameo									
6,969.65	0.00	0.00	6,320.00	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W
Rollins									
7,119.62	0.00	0.00	6,469.97	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W
Proposed TD @7119'MD/6470'TVD									
7,119.65	0.00	0.00	6,470.00	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Primary Tgt. Top Gas Fr	0.00	0.00	4,320.00	1,957.56	956.41	14,370,397.27	907,382.86	39.541562823°N	107.600025958°W
- plan hits target center									
- Circle (radius 25.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	976.81	Surface Casing @1000'MD/1000'TVD	5.50	6.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,293.03	2,820.00	Mesaverde		0.00		
4,252.95	3,620.00	Price Coal		0.00		
4,969.65	4,320.00	Top Gas		0.00		
5,869.65	5,220.00	Cameo		0.00		
6,969.65	6,320.00	Rollins		0.00		

ARK Directional Services

Planning Report - Geographic

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Project:	FREI A PROJECT	MD Reference:	RKB @ 5620.00ft (Original Well Elev)
Site:	FRONTIER 12	North Reference:	Grid
Well:	Frei A12 (111184)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Frei A12		
Design:	Frei A12 (P01)		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
200.00	200.00	0.00	0.00	KOP @200'MD/200'TVD (3°/100' BUR)	
1,458.21	1,369.15	359.11	175.45	EOB @1458'MD/1369'TVD	
3,711.44	3,150.85	1,598.45	780.96	SOD @3711'MD/3150'TVD (3°/100' DR)	
4,969.65	4,320.00	1,957.56	956.41	EOD @4969'MD/4320'TVD (0° Inc.)	
7,119.62	6,469.97	1,957.56	956.41	Proposed TD @7119'MD/6470'TVD	