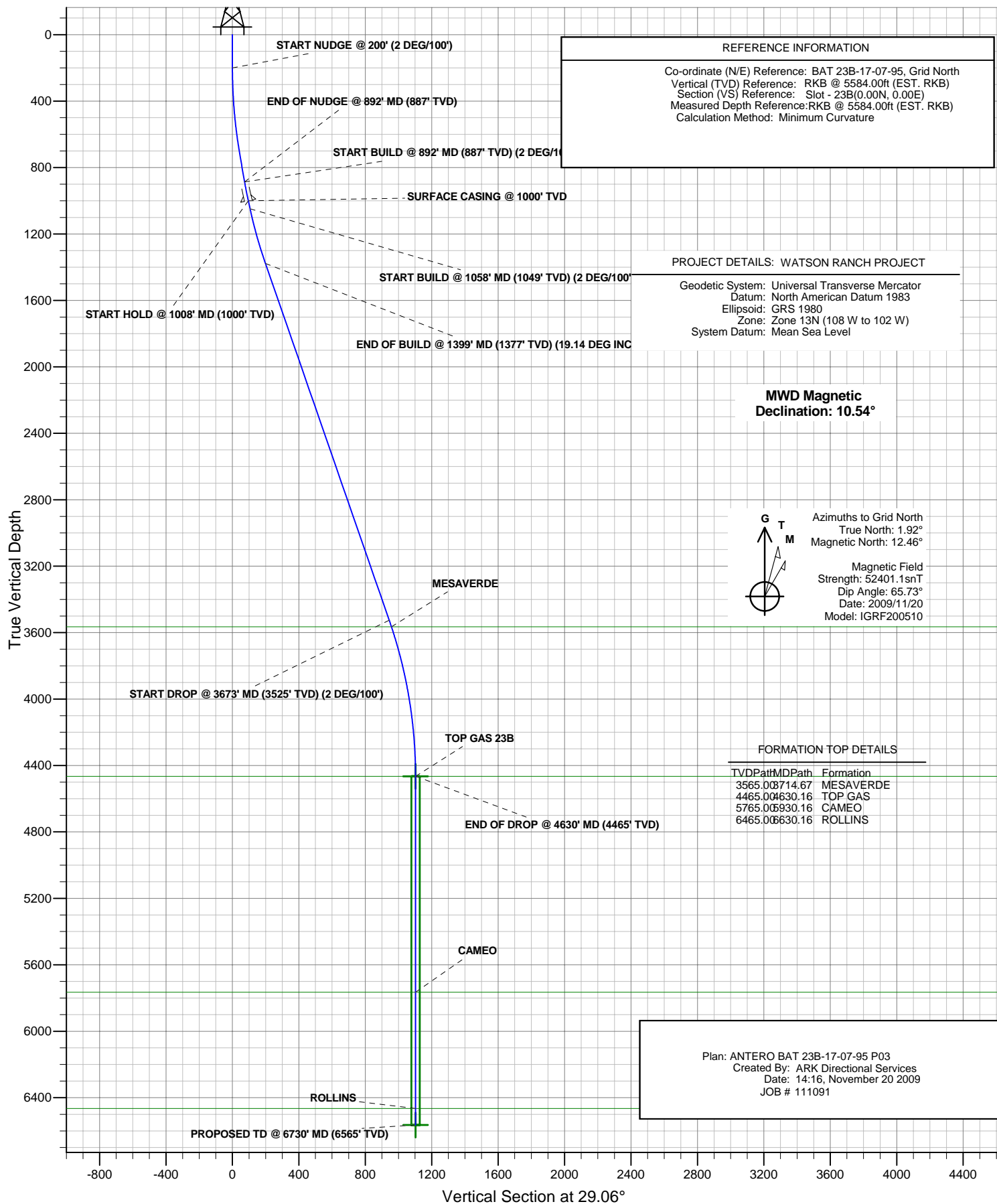




ANTERO RESOURCES

BAT 23B-17-07-95



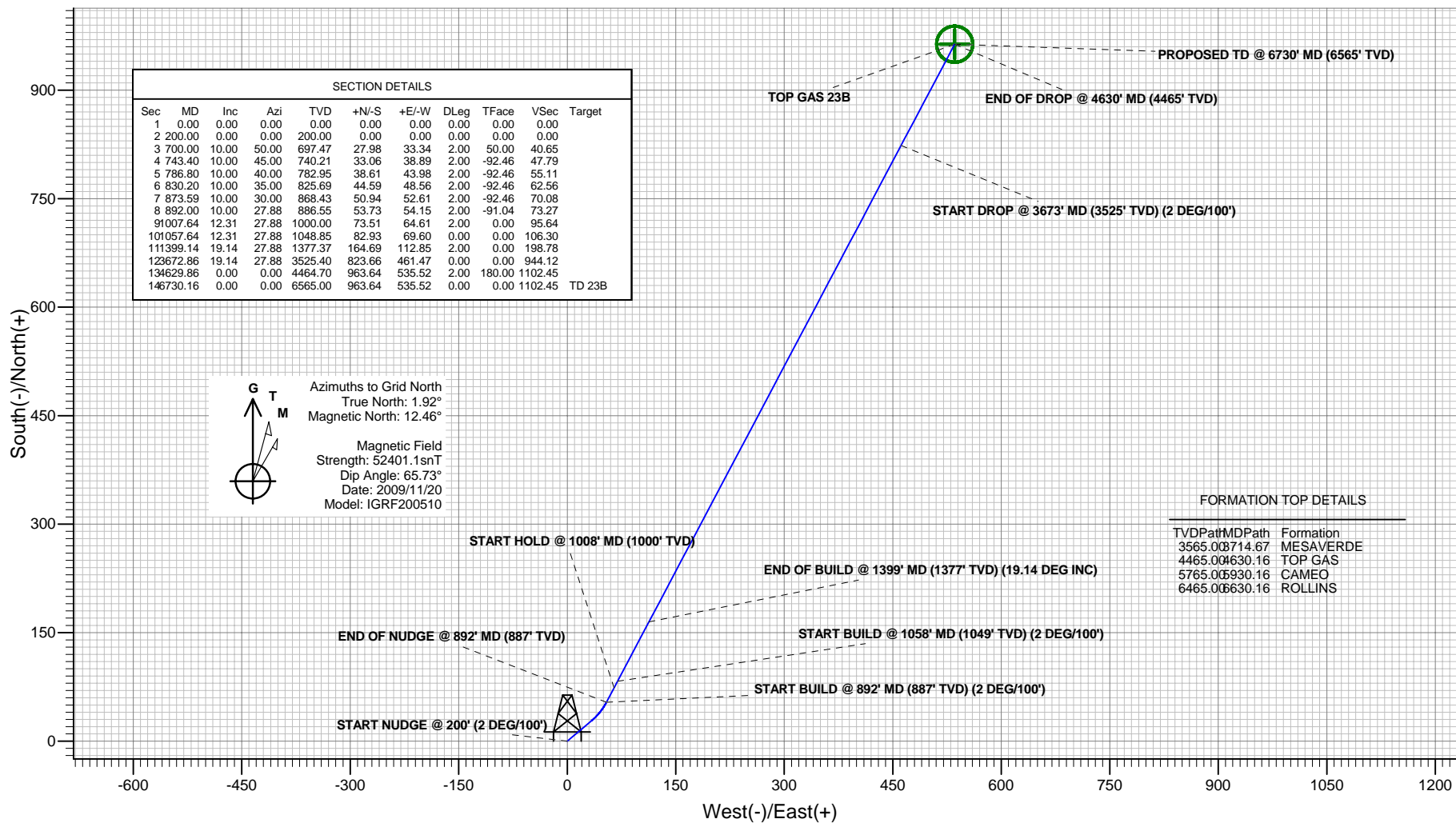


ANTERO RESOURCES

Project: WATSON RANCH PROJECT
Site: FRONTIER 12
Well: BAT 23B-17-07-95 (111091)
Wellbore: BAT 23B-17-07-95
Design: ANTERO BAT 23B-17-07-95 P03
JOB # 111091



PLAN VIEW



Plan: ANTERO BAT 23B-17-07-95 P03
Created By: ARK Directional Services
Date: 14:17, November 20 2009

PROJECT DETAILS: WATSON RANCH 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: BAT 23B-17-07-95, Grid North
Vertical (TVD) Reference: RKB @ 5584.00ft (EST. RKB)
Section (VS) Reference: Slot - 23B(0.00N, 0.00E)
Measured Depth Reference: RKB @ 5584.00ft (EST. RKB)
Calculation Method: Minimum Curvature

ANTERO RESOURCES

**WATSON RANCH PROJECT
FRONTIER 12**

Plan: ANTERO BAT 23B-17-07-95 P03

Standard Planning Report - Geographic

20 November, 2009

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23B-17-07-95 (111091) - Slot 23B
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23B-17-07-95 (111091)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23B-17-07-95		
Design:	ANTERO BAT 23B-17-07-95 P03		

Project	WATSON RANCH 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:	14,334,677.52 ft	Latitude:	39° 25' 59.496 N
From:	Map	Easting:	786,189.76 ft	Longitude:	108° 1' 30.416 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.92 °

Well	BAT 23B-17-07-95 (111091) - Slot 23B					
Well Position	+N/-S	-28.24 ft	Northing:	14,334,649.28 ft	Latitude:	39° 25' 59.214 N
	+E/-W	-10.18 ft	Easting:	786,179.58 ft	Longitude:	108° 1' 30.534 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,560.00 ft

Wellbore	BAT 23B-17-07-95				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/11/20	10.54	65.73	52,401

Design	ANTERO BAT 23B-17-07-95 P03			
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	29.06

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	
700.00	10.00	50.00	697.47	27.98	33.34	2.00	2.00	0.00	50.00	
743.40	10.00	45.00	740.21	33.06	38.89	2.00	0.00	-11.52	-92.46	
786.80	10.00	40.00	782.95	38.61	43.98	2.00	0.00	-11.52	-92.46	
830.20	10.00	35.00	825.69	44.59	48.56	2.00	0.00	-11.52	-92.46	
873.59	10.00	30.00	868.43	50.94	52.61	2.00	0.00	-11.52	-92.46	
892.00	10.00	27.88	886.55	53.73	54.15	2.00	0.00	-11.52	-91.04	
1,007.64	12.31	27.88	1,000.00	73.51	64.61	2.00	2.00	0.00	0.00	
1,057.64	12.31	27.88	1,048.85	82.93	69.60	0.00	0.00	0.00	0.00	
1,399.14	19.14	27.88	1,377.37	164.69	112.85	2.00	2.00	0.00	0.00	
3,672.86	19.14	27.88	3,525.40	823.66	461.47	0.00	0.00	0.00	0.00	
4,629.86	0.00	0.00	4,464.70	963.64	535.52	2.00	-2.00	0.00	180.00	
6,730.16	0.00	0.00	6,565.00	963.64	535.52	0.00	0.00	0.00	0.00	TD 23B

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23B-17-07-95 (111091) - Slot 23B
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23B-17-07-95 (111091)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23B-17-07-95		
Design:	ANTERO BAT 23B-17-07-95 P03		

Planned Survey										
Measured			Vertical			Map	Map			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
0.00	0.00	0.00	0.00	0.00	0.00	14,334,649.28	786,179.58	39° 25' 59.214 N	108° 1' 30.534 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,334,649.28	786,179.58	39° 25' 59.214 N	108° 1' 30.534 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,334,649.28	786,179.58	39° 25' 59.214 N	108° 1' 30.534 W	
START NUDGE @ 200' (2 DEG/100')										
300.00	2.00	50.00	299.98	1.12	1.34	14,334,650.40	786,180.92	39° 25' 59.225 N	108° 1' 30.517 W	
400.00	4.00	50.00	399.84	4.49	5.35	14,334,653.77	786,184.93	39° 25' 59.260 N	108° 1' 30.468 W	
500.00	6.00	50.00	499.45	10.09	12.02	14,334,659.37	786,191.60	39° 25' 59.317 N	108° 1' 30.385 W	
600.00	8.00	50.00	598.70	17.92	21.36	14,334,667.20	786,200.94	39° 25' 59.398 N	108° 1' 30.269 W	
700.00	10.00	50.00	697.47	27.98	33.34	14,334,677.26	786,212.92	39° 25' 59.501 N	108° 1' 30.121 W	
743.40	10.00	45.00	740.21	33.06	38.89	14,334,682.34	786,218.47	39° 25' 59.553 N	108° 1' 30.053 W	
786.80	10.00	40.00	782.95	38.61	43.98	14,334,687.89	786,223.56	39° 25' 59.610 N	108° 1' 29.990 W	
800.00	9.99	38.48	795.95	40.39	45.43	14,334,689.67	786,225.01	39° 25' 59.628 N	108° 1' 29.973 W	
830.20	10.00	35.00	825.69	44.59	48.56	14,334,693.87	786,228.14	39° 25' 59.670 N	108° 1' 29.934 W	
873.59	10.00	30.00	868.43	50.94	52.61	14,334,700.22	786,232.19	39° 25' 59.734 N	108° 1' 29.886 W	
892.00	10.00	27.88	886.55	53.73	54.15	14,334,703.01	786,233.73	39° 25' 59.762 N	108° 1' 29.867 W	
END OF NUDGE @ 892' MD (887' TVD) - START BUILD @ 892' MD (887' TVD) (2 DEG/100')										
900.00	10.16	27.88	894.43	54.97	54.81	14,334,704.25	786,234.39	39° 25' 59.775 N	108° 1' 29.859 W	
1,007.64	12.31	27.88	1,000.00	73.51	64.61	14,334,722.79	786,244.19	39° 25' 59.961 N	108° 1' 29.742 W	
START HOLD @ 1008' MD (1000' TVD) - SURFACE CASING @ 1000' TVD										
1,057.64	12.31	27.88	1,048.85	82.93	69.60	14,334,732.21	786,249.18	39° 26' 0.056 N	108° 1' 29.683 W	
START BUILD @ 1058' MD (1049' TVD) (2 DEG/100')										
1,100.00	13.16	27.88	1,090.17	91.18	73.96	14,334,740.46	786,253.54	39° 26' 0.139 N	108° 1' 29.631 W	
1,200.00	15.16	27.88	1,187.13	112.80	85.40	14,334,762.08	786,264.98	39° 26' 0.356 N	108° 1' 29.495 W	
1,300.00	17.16	27.88	1,283.17	137.40	98.41	14,334,786.68	786,277.99	39° 26' 0.603 N	108° 1' 29.339 W	
1,399.14	19.14	27.88	1,377.37	164.69	112.85	14,334,813.97	786,292.43	39° 26' 0.877 N	108° 1' 29.167 W	
END OF BUILD @ 1399' MD (1377' TVD) (19.14 DEG INC)										
1,500.00	19.14	27.88	1,472.66	193.92	128.32	14,334,843.20	786,307.90	39° 26' 1.171 N	108° 1' 28.983 W	
1,600.00	19.14	27.88	1,567.13	222.90	143.65	14,334,872.18	786,323.23	39° 26' 1.462 N	108° 1' 28.800 W	
1,700.00	19.14	27.88	1,661.60	251.89	158.98	14,334,901.17	786,338.56	39° 26' 1.753 N	108° 1' 28.617 W	
1,800.00	19.14	27.88	1,756.07	280.87	174.32	14,334,930.15	786,353.89	39° 26' 2.045 N	108° 1' 28.434 W	
1,900.00	19.14	27.88	1,850.55	309.85	189.65	14,334,959.13	786,369.23	39° 26' 2.336 N	108° 1' 28.251 W	
2,000.00	19.14	27.88	1,945.02	338.83	204.98	14,334,988.11	786,384.56	39° 26' 2.627 N	108° 1' 28.069 W	
2,100.00	19.14	27.88	2,039.49	367.81	220.31	14,335,017.09	786,399.89	39° 26' 2.918 N	108° 1' 27.886 W	
2,200.00	19.14	27.88	2,133.96	396.80	235.64	14,335,046.08	786,415.22	39° 26' 3.210 N	108° 1' 27.703 W	
2,300.00	19.14	27.88	2,228.43	425.78	250.98	14,335,075.06	786,430.56	39° 26' 3.501 N	108° 1' 27.520 W	
2,400.00	19.14	27.88	2,322.91	454.76	266.31	14,335,104.04	786,445.89	39° 26' 3.792 N	108° 1' 27.337 W	
2,500.00	19.14	27.88	2,417.38	483.74	281.64	14,335,133.02	786,461.22	39° 26' 4.083 N	108° 1' 27.154 W	
2,600.00	19.14	27.88	2,511.85	512.72	296.97	14,335,162.00	786,476.55	39° 26' 4.374 N	108° 1' 26.972 W	
2,700.00	19.14	27.88	2,606.32	541.71	312.31	14,335,190.99	786,491.89	39° 26' 4.666 N	108° 1' 26.789 W	
2,800.00	19.14	27.88	2,700.79	570.69	327.64	14,335,219.97	786,507.22	39° 26' 4.957 N	108° 1' 26.606 W	
2,900.00	19.14	27.88	2,795.27	599.67	342.97	14,335,248.95	786,522.55	39° 26' 5.248 N	108° 1' 26.423 W	
3,000.00	19.14	27.88	2,889.74	628.65	358.30	14,335,277.93	786,537.88	39° 26' 5.539 N	108° 1' 26.240 W	
3,100.00	19.14	27.88	2,984.21	657.63	373.64	14,335,306.91	786,553.22	39° 26' 5.831 N	108° 1' 26.057 W	
3,200.00	19.14	27.88	3,078.68	686.62	388.97	14,335,335.89	786,568.55	39° 26' 6.122 N	108° 1' 25.875 W	
3,300.00	19.14	27.88	3,173.16	715.60	404.30	14,335,364.88	786,583.88	39° 26' 6.413 N	108° 1' 25.692 W	
3,400.00	19.14	27.88	3,267.63	744.58	419.63	14,335,393.86	786,599.21	39° 26' 6.704 N	108° 1' 25.509 W	
3,500.00	19.14	27.88	3,362.10	773.56	434.97	14,335,422.84	786,614.55	39° 26' 6.996 N	108° 1' 25.326 W	
3,600.00	19.14	27.88	3,456.57	802.54	450.30	14,335,451.82	786,629.88	39° 26' 7.287 N	108° 1' 25.143 W	
3,672.86	19.14	27.88	3,525.40	823.66	461.47	14,335,472.94	786,641.05	39° 26' 7.499 N	108° 1' 25.010 W	
START DROP @ 3673' MD (3525' TVD) (2 DEG/100')										
3,700.00	18.60	27.88	3,551.08	831.42	465.57	14,335,480.70	786,645.15	39° 26' 7.577 N	108° 1' 24.961 W	
3,714.67	18.30	27.88	3,565.00	835.52	467.75	14,335,484.80	786,647.32	39° 26' 7.618 N	108° 1' 24.935 W	
MESAVERDE										
3,800.00	16.60	27.88	3,646.40	858.14	479.71	14,335,507.42	786,659.29	39° 26' 7.845 N	108° 1' 24.793 W	

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23B-17-07-95 (111091) - Slot 23B
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23B-17-07-95 (111091)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23B-17-07-95		
Design:	ANTERO BAT 23B-17-07-95 P03		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
3,900.00	14.60	27.88	3,742.71	881.91	492.28	14,335,531.18	786,671.86	39° 26' 8.084 N	108° 1' 24.643 W
4,000.00	12.60	27.88	3,839.91	902.68	503.28	14,335,551.96	786,682.86	39° 26' 8.293 N	108° 1' 24.511 W
4,100.00	10.60	27.88	3,937.86	920.45	512.68	14,335,569.73	786,692.26	39° 26' 8.472 N	108° 1' 24.399 W
4,200.00	8.60	27.88	4,036.45	935.19	520.47	14,335,584.47	786,700.05	39° 26' 8.620 N	108° 1' 24.306 W
4,300.00	6.60	27.88	4,135.57	946.87	526.65	14,335,596.15	786,706.23	39° 26' 8.737 N	108° 1' 24.233 W
4,400.00	4.60	27.88	4,235.09	955.50	531.21	14,335,604.77	786,710.79	39° 26' 8.824 N	108° 1' 24.178 W
4,500.00	2.60	27.88	4,334.89	961.04	534.15	14,335,610.32	786,713.73	39° 26' 8.880 N	108° 1' 24.143 W
4,600.00	0.60	27.88	4,434.84	963.50	535.45	14,335,612.78	786,715.03	39° 26' 8.904 N	108° 1' 24.128 W
4,629.86	0.00	0.00	4,464.70	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
END OF DROP @ 4630' MD (4465' TVD)									
4,630.16	0.00	0.00	4,465.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
TOP GAS - TOP GAS 23B									
4,700.00	0.00	0.00	4,534.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
4,800.00	0.00	0.00	4,634.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
4,900.00	0.00	0.00	4,734.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,000.00	0.00	0.00	4,834.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,100.00	0.00	0.00	4,934.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,200.00	0.00	0.00	5,034.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,300.00	0.00	0.00	5,134.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,400.00	0.00	0.00	5,234.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,500.00	0.00	0.00	5,334.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,600.00	0.00	0.00	5,434.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,700.00	0.00	0.00	5,534.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,800.00	0.00	0.00	5,634.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,900.00	0.00	0.00	5,734.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
5,930.16	0.00	0.00	5,765.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
CAMEO									
6,000.00	0.00	0.00	5,834.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,100.00	0.00	0.00	5,934.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,200.00	0.00	0.00	6,034.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,300.00	0.00	0.00	6,134.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,400.00	0.00	0.00	6,234.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,500.00	0.00	0.00	6,334.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,600.00	0.00	0.00	6,434.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,630.16	0.00	0.00	6,465.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
ROLLINS									
6,700.00	0.00	0.00	6,534.84	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
6,730.14	0.00	0.00	6,564.98	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
PROPOSED TD @ 6730' MD (6565' TVD)									
6,730.16	0.00	0.00	6,565.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
TD 23B									

Planning Report - Geographic

Database:	EDMDB	Local Co-ordinate Reference:	Well BAT 23B-17-07-95 (111091) - Slot 23B
Company:	ANTERO RESOURCES	TVD Reference:	RKB @ 5584.00ft (EST. RKB)
Project:	WATSON RANCH PROJECT	MD Reference:	RKB @ 5584.00ft (EST. RKB)
Site:	FRONTIER 12	North Reference:	Grid
Well:	BAT 23B-17-07-95 (111091)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BAT 23B-17-07-95		
Design:	ANTERO BAT 23B-17-07-95 P03		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
TOP GAS 23B		360.00	4,465.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
- plan hits target									
- Circle (radius 25.00)									
TD 23B	0.00	360.00	6,565.00	963.64	535.52	14,335,612.92	786,715.10	39° 26' 8.906 N	108° 1' 24.127 W
- plan hits target									
- Circle (radius 25.00)									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,007.64	1,000.00	SURFACE CASING @ 1000' TVD	8.62	12.25

Formations				
Measured Depth	Vertical Depth	Name	Lithology	Dip
(ft)	(ft)			(°)
3,714.67	3,565.00	MESAVERDE		0.00
4,630.16	4,465.00	TOP GAS		0.00
5,930.16	5,765.00	CAMEO		0.00
6,630.16	6,465.00	ROLLINS		0.00

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	START NUDGE @ 200' (2 DEG/100')
892.00	886.55	53.73	54.15	END OF NUDGE @ 892' MD (887' TVD)
892.00	886.55	53.73	54.15	START BUILD @ 892' MD (887' TVD) (2 DEG/100')
1,007.64	1,000.00	73.51	64.61	START HOLD @ 1008' MD (1000' TVD)
1,057.64	1,048.85	82.93	69.60	START BUILD @ 1058' MD (1049' TVD) (2 DEG/100')
1,399.14	1,377.37	164.69	112.85	END OF BUILD @ 1399' MD (1377' TVD) (19.14 DEG INC)
3,672.86	3,525.40	823.66	461.47	START DROP @ 3673' MD (3525' TVD) (2 DEG/100')
4,629.86	4,464.70	963.64	535.52	END OF DROP @ 4630' MD (4465' TVD)
6,730.14	6,564.98	963.64	535.52	PROPOSED TD @ 6730' MD (6565' TVD)