

Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 33A-24-07-96

Wellbore #1

Plan: Design #1

Standard Planning Report

13 June, 2013



Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 33A-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 33A-24-07-96 @ 5197.9ft (Original Well Elev)
Project:	Rockies Region	MD Reference:	BAT 33A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 33A-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Rockies Region		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Speakman A			
Site Position:		Northing:	484,154.15 m	Latitude:	39° 25' 15.663 N
From:	Lat/Long	Easting:	693,950.13 m	Longitude:	108° 3' 38.016 W
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.61 °

Well	BAT 33A-24-07-96, SHL LAT: 39.420983726 LONG: -108.060411612					
Well Position	+N/-S	-12.3 ft	Northing:	484,150.03 m	Latitude:	39° 25' 15.541 N
	+E/-W	41.9 ft	Easting:	693,962.81 m	Longitude:	108° 3' 37.482 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,197.9 ft	Ground Level:	5,182.5 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/13/2013	10.08	65.63	52,047

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	62.09

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,043.0	29.51	62.09	1,006.2	99.4	187.6	3.50	3.50	0.00	62.09	
3,188.8	29.51	62.09	2,873.8	594.0	1,121.5	0.00	0.00	0.00	0.00	
4,031.8	0.00	0.00	3,680.0	693.4	1,309.1	3.50	-3.50	0.00	180.00	BAT 33A-24-07-96 TC
6,253.8	0.00	0.00	5,902.0	693.4	1,309.1	0.00	0.00	0.00	0.00	BAT 33A-24-07-96 Bf

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Project:	Rockies Region	MD Reference:	BAT 33A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 33A-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.50									
300.0	3.50	62.09	299.9	1.4	2.7	3.1	3.50	3.50	0.00
400.0	7.00	62.09	399.5	5.7	10.8	12.2	3.50	3.50	0.00
500.0	10.50	62.09	498.3	12.8	24.2	27.4	3.50	3.50	0.00
600.0	14.00	62.09	596.0	22.8	43.0	48.6	3.50	3.50	0.00
700.0	17.50	62.09	692.3	35.5	67.0	75.8	3.50	3.50	0.00
800.0	21.00	62.09	786.7	50.9	96.1	108.7	3.50	3.50	0.00
900.0	24.50	62.09	878.9	69.0	130.3	147.4	3.50	3.50	0.00
1,000.0	28.00	62.09	968.5	89.7	169.3	191.6	3.50	3.50	0.00
1,043.0	29.51	62.09	1,006.2	99.4	187.6	212.3	3.50	3.50	0.00
Start 2145.8 hold at 1043.0 MD									
1,100.0	29.51	62.09	1,055.8	112.5	212.4	240.4	0.00	0.00	0.00
1,200.0	29.51	62.09	1,142.9	135.6	255.9	289.6	0.00	0.00	0.00
1,300.0	29.51	62.09	1,229.9	158.6	299.5	338.9	0.00	0.00	0.00
1,400.0	29.51	62.09	1,316.9	181.7	343.0	388.1	0.00	0.00	0.00
1,500.0	29.51	62.09	1,404.0	204.7	386.5	437.4	0.00	0.00	0.00
1,600.0	29.51	62.09	1,491.0	227.8	430.0	486.6	0.00	0.00	0.00
1,700.0	29.51	62.09	1,578.0	250.8	473.6	535.9	0.00	0.00	0.00
1,800.0	29.51	62.09	1,665.1	273.9	517.1	585.1	0.00	0.00	0.00
1,900.0	29.51	62.09	1,752.1	296.9	560.6	634.4	0.00	0.00	0.00
2,000.0	29.51	62.09	1,839.1	320.0	604.1	683.6	0.00	0.00	0.00
2,100.0	29.51	62.09	1,926.1	343.0	647.6	732.9	0.00	0.00	0.00
2,200.0	29.51	62.09	2,013.2	366.1	691.2	782.1	0.00	0.00	0.00
2,300.0	29.51	62.09	2,100.2	389.1	734.7	831.4	0.00	0.00	0.00
2,400.0	29.51	62.09	2,187.2	412.2	778.2	880.6	0.00	0.00	0.00
2,500.0	29.51	62.09	2,274.3	435.2	821.7	929.9	0.00	0.00	0.00
2,600.0	29.51	62.09	2,361.3	458.3	865.3	979.1	0.00	0.00	0.00
2,700.0	29.51	62.09	2,448.3	481.4	908.8	1,028.4	0.00	0.00	0.00
2,800.0	29.51	62.09	2,535.4	504.4	952.3	1,077.6	0.00	0.00	0.00
2,900.0	29.51	62.09	2,622.4	527.5	995.8	1,126.9	0.00	0.00	0.00
2,991.5	29.51	62.09	2,702.0	548.5	1,035.6	1,171.9	0.00	0.00	0.00
WF									
3,000.0	29.51	62.09	2,709.4	550.5	1,039.3	1,176.1	0.00	0.00	0.00
3,100.0	29.51	62.09	2,796.5	573.6	1,082.9	1,225.4	0.00	0.00	0.00
3,188.8	29.51	62.09	2,873.8	594.0	1,121.5	1,269.1	0.00	0.00	0.00
Start Drop -3.50									
3,200.0	29.11	62.09	2,883.5	596.6	1,126.4	1,274.6	3.50	-3.50	0.00
3,300.0	25.61	62.09	2,972.3	618.1	1,167.0	1,320.6	3.50	-3.50	0.00
3,400.0	22.11	62.09	3,063.7	637.0	1,202.7	1,361.0	3.50	-3.50	0.00
3,500.0	18.61	62.09	3,157.5	653.3	1,233.5	1,395.8	3.50	-3.50	0.00
3,600.0	15.11	62.09	3,253.2	666.9	1,259.1	1,424.8	3.50	-3.50	0.00
3,700.0	11.61	62.09	3,350.4	677.7	1,279.5	1,447.9	3.50	-3.50	0.00
3,800.0	8.11	62.09	3,448.9	685.7	1,294.7	1,465.0	3.50	-3.50	0.00
3,900.0	4.61	62.09	3,548.3	690.9	1,304.4	1,476.1	3.50	-3.50	0.00
4,000.0	1.11	62.09	3,648.2	693.3	1,308.9	1,481.1	3.50	-3.50	0.00
4,031.8	0.00	0.00	3,680.0	693.4	1,309.1	1,481.4	3.50	-3.50	0.00
Start 2222.0 hold at 4031.8 MD - Top of Gas									
4,100.0	0.00	0.00	3,748.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00

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Project:	Rockies Region	MD Reference:	BAT 33A-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 33A-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.0	0.00	0.00	3,848.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,300.0	0.00	0.00	3,948.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,400.0	0.00	0.00	4,048.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,500.0	0.00	0.00	4,148.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,600.0	0.00	0.00	4,248.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,700.0	0.00	0.00	4,348.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,800.0	0.00	0.00	4,448.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
4,900.0	0.00	0.00	4,548.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,000.0	0.00	0.00	4,648.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,100.0	0.00	0.00	4,748.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,200.0	0.00	0.00	4,848.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,300.0	0.00	0.00	4,948.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,048.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,432.8	0.00	0.00	5,081.0	693.4	1,309.1	1,481.4	0.00	0.00	0.00
Cameo									
5,500.0	0.00	0.00	5,148.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,248.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,348.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,448.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,548.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
5,953.8	0.00	0.00	5,602.0	693.4	1,309.1	1,481.4	0.00	0.00	0.00
Rollins									
6,000.0	0.00	0.00	5,648.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
6,100.0	0.00	0.00	5,748.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
6,200.0	0.00	0.00	5,848.2	693.4	1,309.1	1,481.4	0.00	0.00	0.00
6,253.8	0.00	0.00	5,902.0	693.4	1,309.1	1,481.4	0.00	0.00	0.00
TD at 6253.8									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,991.5	2,702.0	WF		0.00	
4,031.8	3,680.0	Top of Gas		0.00	
5,432.8	5,081.0	Cameo		0.00	
5,953.8	5,602.0	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	Start Build 3.50
1,043.0	1,006.2	99.4	187.6	Start 2145.8 hold at 1043.0 MD
3,188.8	2,873.8	594.0	1,121.5	Start Drop -3.50
4,031.8	3,680.0	693.4	1,309.1	Start 2222.0 hold at 4031.8 MD
6,253.8	5,902.0	693.4	1,309.1	TD at 6253.8



Well Name: BAT 33A-24-07-96
Surface Location: Speakman A
North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
Ground Elevation: 5182.5
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 484150.03 693962.81 39° 25' 15.541 N 108° 3' 37.482 W
Original Well Elev BAT 33A-24-07-96 @ 5197.9ft (Original Well Elev)



Azimuths to True North
Magnetic North: 10.08°
Magnetic Field
Strength: 52046.8snT
Dip Angle: 65.63°
Date: 6/13/2013
Model: IGRF200510

Speakman A
BAT 33A-24-07-96
Design #1
16:02, June 13 2013

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 33A-24-07-96 TGT	3680.0	693.4	1309.1	484350.06	694367.63	39° 25' 22.395 N	108° 3' 20.799 W	Point
BAT 33A-24-07-96 BHL	5902.0	693.4	1309.1	484350.06	694367.63	39° 25' 22.395 N	108° 3' 20.799 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1043.0	29.51	62.09	1006.2	99.4	187.6	3.50	62.09	212.3	
4	3188.8	29.51	62.09	2873.8	594.0	1121.5	0.00	0.00	1269.1	
5	4031.8	0.00	0.00	3680.0	693.4	1309.1	3.50	180.00	1481.4	BAT 33A-24-07-96 TGT
6	6253.8	0.00	0.00	5902.0	693.4	1309.1	0.00	0.00	1481.4	BAT 33A-24-07-96 BHL

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1006.2	1043.0	Start 2145.8 hold at 1043.0 MD
2873.8	3188.8	Start Drop -3.50
3680.0	4031.8	Start 2222.0 hold at 4031.8 MD
5902.0	6253.8	TD at 6253.8

FORMATION TOP DETAILS

TVDPathMDPath	Formation
2702.0 2991.5	WF
3680.0 4031.8	Top of Gas
5081.0 5432.8	Cameo
5602.0 5953.8	Rollins

