

Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 32D-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 32D-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32D-24-07-96 @ 5197.9ft (Original Well Elev)
Project:	Rockies Region	MD Reference:	BAT 32D-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32D-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 32D-24-07-96, SHL LONG: 39.421034164 LONG: -108.060471566					
Well Position	+N/-S	6.0 ft	Northing:	484,155.77 m	Latitude:	39° 25' 15.723 N
	+E/-W	25.0 ft	Easting:	693,957.80 m	Longitude:	108° 3' 37.698 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	53.40

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	
1,144.4	33.05	53.40	1,092.9	157.9	212.7	3.50	3.50	0.00	53.40	
3,181.3	33.05	53.40	2,800.1	820.3	1,104.7	0.00	0.00	0.00	0.00	
4,125.7	0.00	0.00	3,693.0	978.2	1,317.4	3.50	-3.50	0.00	180.00	BAT 32D-24-07-96 T
6,347.7	0.00	0.00	5,915.0	978.2	1,317.4	0.00	0.00	0.00	0.00	BAT 32D-24-07-96 B

Payzone Directional Planning Report



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Project:	Rockies Region	MD Reference:	BAT 32D-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32D-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	53.40	299.9	1.8	2.5	3.1	3.50	3.50	0.00
400.0	7.00	53.40	399.5	7.3	9.8	12.2	3.50	3.50	0.00
500.0	10.50	53.40	498.3	16.3	22.0	27.4	3.50	3.50	0.00
600.0	14.00	53.40	596.0	29.0	39.0	48.6	3.50	3.50	0.00
700.0	17.50	53.40	692.3	45.2	60.8	75.8	3.50	3.50	0.00
800.0	21.00	53.40	786.7	64.8	87.3	108.7	3.50	3.50	0.00
900.0	24.50	53.40	878.9	87.9	118.3	147.4	3.50	3.50	0.00
1,000.0	28.00	53.40	968.5	114.2	153.8	191.6	3.50	3.50	0.00
1,100.0	31.50	53.40	1,055.3	143.8	193.7	241.2	3.50	3.50	0.00
1,144.4	33.05	53.40	1,092.9	157.9	212.7	264.9	3.50	3.50	0.00
Start 2036.9 hold at 1144.4 MD									
1,200.0	33.05	53.40	1,139.5	176.0	237.1	295.3	0.00	0.00	0.00
1,300.0	33.05	53.40	1,223.3	208.5	280.8	349.8	0.00	0.00	0.00
1,400.0	33.05	53.40	1,307.1	241.1	324.6	404.3	0.00	0.00	0.00
1,500.0	33.05	53.40	1,390.9	273.6	368.4	458.9	0.00	0.00	0.00
1,600.0	33.05	53.40	1,474.7	306.1	412.2	513.4	0.00	0.00	0.00
1,700.0	33.05	53.40	1,558.6	338.6	456.0	568.0	0.00	0.00	0.00
1,800.0	33.05	53.40	1,642.4	371.1	499.8	622.5	0.00	0.00	0.00
1,900.0	33.05	53.40	1,726.2	403.6	543.6	677.1	0.00	0.00	0.00
2,000.0	33.05	53.40	1,810.0	436.2	587.4	731.6	0.00	0.00	0.00
2,100.0	33.05	53.40	1,893.8	468.7	631.2	786.1	0.00	0.00	0.00
2,200.0	33.05	53.40	1,977.6	501.2	674.9	840.7	0.00	0.00	0.00
2,300.0	33.05	53.40	2,061.5	533.7	718.7	895.2	0.00	0.00	0.00
2,400.0	33.05	53.40	2,145.3	566.2	762.5	949.8	0.00	0.00	0.00
2,500.0	33.05	53.40	2,229.1	598.7	806.3	1,004.3	0.00	0.00	0.00
2,600.0	33.05	53.40	2,312.9	631.2	850.1	1,058.8	0.00	0.00	0.00
2,700.0	33.05	53.40	2,396.7	663.8	893.9	1,113.4	0.00	0.00	0.00
2,800.0	33.05	53.40	2,480.6	696.3	937.7	1,167.9	0.00	0.00	0.00
2,900.0	33.05	53.40	2,564.4	728.8	981.5	1,222.5	0.00	0.00	0.00
3,000.0	33.05	53.40	2,648.2	761.3	1,025.3	1,277.0	0.00	0.00	0.00
3,079.7	33.05	53.40	2,715.0	787.2	1,060.2	1,320.5	0.00	0.00	0.00
WF									
3,100.0	33.05	53.40	2,732.0	793.8	1,069.1	1,331.5	0.00	0.00	0.00
3,181.3	33.05	53.40	2,800.1	820.3	1,104.7	1,375.9	0.00	0.00	0.00
Start Drop -3.50									
3,200.0	32.40	53.40	2,815.9	826.3	1,112.8	1,386.0	3.50	-3.50	0.00
3,300.0	28.90	53.40	2,901.9	856.7	1,153.7	1,437.0	3.50	-3.50	0.00
3,400.0	25.40	53.40	2,990.9	883.9	1,190.3	1,482.6	3.50	-3.50	0.00
3,500.0	21.90	53.40	3,082.5	907.8	1,222.5	1,522.7	3.50	-3.50	0.00
3,600.0	18.40	53.40	3,176.3	928.3	1,250.2	1,557.1	3.50	-3.50	0.00
3,700.0	14.90	53.40	3,272.1	945.4	1,273.2	1,585.8	3.50	-3.50	0.00
3,800.0	11.40	53.40	3,369.5	958.9	1,291.4	1,608.5	3.50	-3.50	0.00
3,900.0	7.90	53.40	3,468.0	968.9	1,304.9	1,625.3	3.50	-3.50	0.00
4,000.0	4.40	53.40	3,567.5	975.3	1,313.5	1,636.0	3.50	-3.50	0.00
4,100.0	0.90	53.40	3,667.3	978.1	1,317.2	1,640.6	3.50	-3.50	0.00
4,125.7	0.00	0.00	3,693.0	978.2	1,317.4	1,640.8	3.50	-3.50	0.00
Start 2222.0 hold at 4125.7 MD - Top of Gas									

Payzone Directional

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Project:	Rockies Region	MD Reference:	BAT 32D-24-07-96 @ 5197.9ft (Original Well Elev)
Site:	Speakman A	North Reference:	True
Well:	BAT 32D-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	3,767.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,300.0	0.00	0.00	3,867.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,400.0	0.00	0.00	3,967.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,500.0	0.00	0.00	4,067.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,600.0	0.00	0.00	4,167.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,267.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,800.0	0.00	0.00	4,367.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,467.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,567.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,100.0	0.00	0.00	4,667.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,200.0	0.00	0.00	4,767.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,300.0	0.00	0.00	4,867.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,400.0	0.00	0.00	4,967.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,067.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,526.7	0.00	0.00	5,094.0	978.2	1,317.4	1,640.8	0.00	0.00	0.00
Cameo									
5,600.0	0.00	0.00	5,167.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,267.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,367.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,467.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,567.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
6,047.7	0.00	0.00	5,615.0	978.2	1,317.4	1,640.8	0.00	0.00	0.00
Rollins									
6,100.0	0.00	0.00	5,667.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
6,200.0	0.00	0.00	5,767.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
6,300.0	0.00	0.00	5,867.3	978.2	1,317.4	1,640.8	0.00	0.00	0.00
6,347.7	0.00	0.00	5,915.0	978.2	1,317.4	1,640.8	0.00	0.00	0.00
TD at 6347.7									

Formations

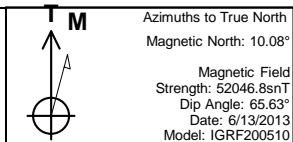
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,079.7	2,715.0	WF		0.00	
4,125.7	3,693.0	Top of Gas		0.00	
5,526.7	5,094.0	Cameo		0.00	
6,047.7	5,615.0	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	Start Build 3.50
1,144.4	1,092.9	157.9	212.7	Start 2036.9 hold at 1144.4 MD
3,181.3	2,800.1	820.3	1,104.7	Start Drop -3.50
4,125.7	3,693.0	978.2	1,317.4	Start 2222.0 hold at 4125.7 MD
6,347.7	5,915.0	978.2	1,317.4	TD at 6347.7



Well Name: BAT 32D-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 484155.77 693957.80 39° 25' 15.723 N 108° 3' 37.698 W
Original Well Elev BAT 32D-24-07-96 @ 5197.9ft (Original Well Elev)



Speakman A
BAT 32D-24-07-96
Design #1
15:37, June 13 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 32D-24-07-96 TGT	3693.0	978.2	1317.4	484442.49	694367.57	39° 25' 25.391 N	108° 3' 20.910 W	Point
BAT 32D-24-07-96 BHL	5915.0	978.2	1317.4	484442.49	694367.57	39° 25' 25.391 N	108° 3' 20.910 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	1144.4	33.05	53.40	1092.9	157.9	212.7	3.50	53.40	264.9	
4	3181.3	33.05	53.40	2800.1	820.3	1104.7	0.00	0.00	1375.9	
5	4125.7	0.00	0.00	3693.0	978.2	1317.4	3.50	180.00	1640.8	BAT 32D-24-07-96 TGT
6	6347.7	0.00	0.00	5915.0	978.2	1317.4	0.00	0.00	1640.8	BAT 32D-24-07-96 BHL

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1092.9	1144.4	Start 2036.9 hold at 1144.4 MD
2800.1	3181.3	Start Drop -3.50
3693.0	4125.7	Start 2222.0 hold at 4125.7 MD
5915.0	6347.7	TD at 6347.7

FORMATION TOP DETAILS

TVDPathMDPath	Formation
2715.0 3079.7	WF
3693.0 4125.7	Top of Gas
5094.0 5526.7	Cameo
5615.0 6047.7	Rollins

