

Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 32C-24-07-96

Wellbore #1

Plan: Design #1

Standard Planning Report

06 June, 2013



Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 32C-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Project:	Rockies Region	MD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32C-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 32C-24-07-96, SHL LAT: 39.420941876 LONG: -108.060470140					
Well Position	+N/-S	-27.6 ft	Northing:	484,145.53 m	Latitude:	39° 25' 15.391 N
	+E/-W	25.4 ft	Easting:	693,957.64 m	Longitude:	108° 3' 37.693 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	6/4/2013	10.09	65.63	52,049

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	44.89

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	
1,225.9	35.91	44.89	1,160.1	220.4	219.6	3.50	3.50	0.00	44.89	
3,322.1	35.91	44.89	2,857.9	1,091.4	1,087.2	0.00	0.00	0.00	0.00	
4,348.1	0.00	0.00	3,818.0	1,311.8	1,306.8	3.50	-3.50	0.00	180.00	BAT 32C-24-07-96 TC
6,453.1	0.00	0.00	5,923.0	1,311.8	1,306.8	0.00	0.00	0.00	0.00	BAT 32C-24-07-96 Bf

Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 32C-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Project:	Rockies Region	MD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32C-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	44.89	299.9	2.2	2.2	3.1	3.50	3.50	0.00
400.0	7.00	44.89	399.5	8.6	8.6	12.2	3.50	3.50	0.00
500.0	10.50	44.89	498.3	19.4	19.3	27.4	3.50	3.50	0.00
600.0	14.00	44.89	596.0	34.4	34.3	48.6	3.50	3.50	0.00
700.0	17.50	44.89	692.3	53.7	53.5	75.8	3.50	3.50	0.00
800.0	21.00	44.89	786.7	77.0	76.7	108.7	3.50	3.50	0.00
900.0	24.50	44.89	878.9	104.4	104.0	147.4	3.50	3.50	0.00
1,000.0	28.00	44.89	968.5	135.8	135.2	191.6	3.50	3.50	0.00
1,100.0	31.50	44.89	1,055.3	170.9	170.3	241.2	3.50	3.50	0.00
1,200.0	35.00	44.89	1,139.0	209.7	208.9	296.1	3.50	3.50	0.00
1,225.9	35.91	44.89	1,160.1	220.4	219.6	311.1	3.50	3.50	0.00
Start 2096.2 hold at 1225.9 MD									
1,300.0	35.91	44.89	1,220.1	251.2	250.2	354.5	0.00	0.00	0.00
1,400.0	35.91	44.89	1,301.1	292.7	291.6	413.2	0.00	0.00	0.00
1,500.0	35.91	44.89	1,382.1	334.3	333.0	471.8	0.00	0.00	0.00
1,600.0	35.91	44.89	1,463.1	375.8	374.4	530.5	0.00	0.00	0.00
1,700.0	35.91	44.89	1,544.1	417.4	415.8	589.1	0.00	0.00	0.00
1,800.0	35.91	44.89	1,625.1	458.9	457.2	647.8	0.00	0.00	0.00
1,900.0	35.91	44.89	1,706.0	500.5	498.6	706.4	0.00	0.00	0.00
2,000.0	35.91	44.89	1,787.0	542.0	540.0	765.1	0.00	0.00	0.00
2,100.0	35.91	44.89	1,868.0	583.6	581.3	823.7	0.00	0.00	0.00
2,200.0	35.91	44.89	1,949.0	625.1	622.7	882.4	0.00	0.00	0.00
2,300.0	35.91	44.89	2,030.0	666.7	664.1	941.0	0.00	0.00	0.00
2,400.0	35.91	44.89	2,111.0	708.2	705.5	999.7	0.00	0.00	0.00
2,500.0	35.91	44.89	2,192.0	749.8	746.9	1,058.3	0.00	0.00	0.00
2,600.0	35.91	44.89	2,273.0	791.3	788.3	1,117.0	0.00	0.00	0.00
2,700.0	35.91	44.89	2,354.0	832.9	829.7	1,175.6	0.00	0.00	0.00
2,800.0	35.91	44.89	2,435.0	874.4	871.1	1,234.3	0.00	0.00	0.00
2,900.0	35.91	44.89	2,516.0	916.0	912.5	1,292.9	0.00	0.00	0.00
3,000.0	35.91	44.89	2,597.0	957.5	953.9	1,351.6	0.00	0.00	0.00
3,100.0	35.91	44.89	2,678.0	999.1	995.3	1,410.2	0.00	0.00	0.00
3,155.6	35.91	44.89	2,723.0	1,022.1	1,018.3	1,442.8	0.00	0.00	0.00
WF									
3,200.0	35.91	44.89	2,759.0	1,040.6	1,036.7	1,468.9	0.00	0.00	0.00
3,300.0	35.91	44.89	2,840.0	1,082.2	1,078.0	1,527.5	0.00	0.00	0.00
3,322.1	35.91	44.89	2,857.9	1,091.4	1,087.2	1,540.5	0.00	0.00	0.00
Start Drop -3.50									
3,400.0	33.18	44.89	2,922.1	1,122.6	1,118.4	1,584.6	3.50	-3.50	0.00
3,500.0	29.68	44.89	3,007.4	1,159.6	1,155.2	1,636.8	3.50	-3.50	0.00
3,600.0	26.18	44.89	3,095.7	1,192.8	1,188.2	1,683.6	3.50	-3.50	0.00
3,700.0	22.68	44.89	3,186.7	1,222.1	1,217.4	1,725.0	3.50	-3.50	0.00
3,800.0	19.18	44.89	3,280.1	1,247.4	1,242.6	1,760.7	3.50	-3.50	0.00
3,900.0	15.68	44.89	3,375.5	1,268.6	1,263.8	1,790.6	3.50	-3.50	0.00
4,000.0	12.18	44.89	3,472.6	1,285.6	1,280.7	1,814.7	3.50	-3.50	0.00
4,100.0	8.68	44.89	3,570.9	1,298.5	1,293.5	1,832.8	3.50	-3.50	0.00
4,200.0	5.18	44.89	3,670.1	1,307.0	1,302.0	1,844.9	3.50	-3.50	0.00
4,300.0	1.68	44.89	3,769.9	1,311.3	1,306.3	1,850.9	3.50	-3.50	0.00
4,348.1	0.00	0.00	3,818.0	1,311.8	1,306.8	1,851.6	3.50	-3.50	0.00
Start 2105.0 hold at 4348.1 MD - Top Perf									

Payzone Directional

Planning Report



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well BAT 32C-24-07-96
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Project:	Rockies Region	MD Reference:	BAT 32C-24-07-96 @ 5197.9ft (EST KB)
Site:	Speakman A	North Reference:	True
Well:	BAT 32C-24-07-96	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

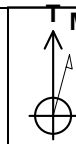
Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,400.0	0.00	0.00	3,869.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
4,500.0	0.00	0.00	3,969.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
4,600.0	0.00	0.00	4,069.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
4,700.0	0.00	0.00	4,169.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
4,800.0	0.00	0.00	4,269.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
4,900.0	0.00	0.00	4,369.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,000.0	0.00	0.00	4,469.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,100.0	0.00	0.00	4,569.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,200.0	0.00	0.00	4,669.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,300.0	0.00	0.00	4,769.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,400.0	0.00	0.00	4,869.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,500.0	0.00	0.00	4,969.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,069.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,632.1	0.00	0.00	5,102.0	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
Cameo									
5,700.0	0.00	0.00	5,169.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,269.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,369.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,469.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,100.0	0.00	0.00	5,569.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,153.1	0.00	0.00	5,623.0	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
Rollins									
6,200.0	0.00	0.00	5,669.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,300.0	0.00	0.00	5,769.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,400.0	0.00	0.00	5,869.9	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
6,453.1	0.00	0.00	5,923.0	1,311.8	1,306.8	1,851.6	0.00	0.00	0.00
TD at 6453.1									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,155.6	2,723.0	WF		0.00	
4,348.1	3,818.0	Top Perf		0.00	
5,632.1	5,102.0	Cameo		0.00	
6,153.1	5,623.0	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
1,225.9	1,160.1	220.4	219.6	Start 2096.2 hold at 1225.9 MD
3,322.1	2,857.9	1,091.4	1,087.2	Start Drop -3.50
4,348.1	3,818.0	1,311.8	1,306.8	Start 2105.0 hold at 4348.1 MD
6,453.1	5,923.0	1,311.8	1,306.8	TD at 6453.1



Well Name: BAT 32C-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 484145.53 693957.64 39° 25' 15.391 N 108° 3' 37.693 W
EST KB BAT 32C-24-07-96 @ 5197.9ft (EST KB)



Azimuths to True North
Magnetic North: 10.09°
Magnetic Field
Strength: 52049.2snT
Dip Angle: 65.63°
Date: 6/4/2013
Model: IGRF200510

Speakman A
BAT 32C-24-07-96
Design #1
16:34, June 06 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 32C-24-07-96 TGT	3818.0	1311.8	1306.8	484533.97	694367.05	39° 25' 28.355 N	108° 3' 21.039 W	Point
BAT 32C-24-07-96 BHL	5923.0	1311.8	1306.8	484533.97	694367.05	39° 25' 28.355 N	108° 3' 21.039 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	1225.9	35.91	44.89	1160.1	220.4	219.6	3.50	44.89	311.1	
4	3322.1	35.91	44.89	2857.9	1091.4	1087.2	0.00	0.00	1540.5	
5	4348.1	0.00	0.00	3818.0	1311.8	1306.8	3.50	180.00	1851.6	BAT 32C-24-07-96 TGT
6	6453.1	0.00	0.00	5923.0	1311.8	1306.8	0.00	0.00	1851.6	BAT 32C-24-07-96 BHL

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1160.1	1225.9	Start 2096.2 hold at 1225.9 MD
2857.9	3322.1	Start Drop -3.50
3818.0	4348.1	Start 2105.0 hold at 4348.1 MD
5923.0	6453.1	TD at 6453.1

FORMATION TOP DETAILS

TVDP	MDP	Path	Formation
2723.0	3155.6	WF	WF
3818.0	4348.1	Top Perf	Top Perf
5102.0	5632.1	Cameo	Cameo
5623.0	6153.1	Rollins	Rollins

