

# **Ursa Operating Company, LLC**

**Rockies Region**

**Speakman A**

**BAT 34A-24-07-96**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**15 June, 2013**



# Payzone Directional

## Planning Report



<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BAT 34A-24-07-96
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	BAT 34A-24-07-96 @ 5197.9ft (Original Well Elev)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	BAT 34A-24-07-96 @ 5197.9ft (Original Well Elev)
<b>Site:</b>	Speakman A	<b>North Reference:</b>	True
<b>Well:</b>	BAT 34A-24-07-96	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Rockies Region		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 34A-24-07-96, SHL LAT: 39.420840997 LONG: -108.060350232					
Well Position	+N/-S	-64.3 ft	Northing:	484,134.04 m	Latitude:	39° 25' 15.027 N
	+E/-W	59.3 ft	Easting:	693,967.64 m	Longitude:	108° 3' 37.261 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,197.9 ft	Ground Level:	5,182.5 ft

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

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	110.46

<b>Plan Sections</b>										
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	
963.9	26.74	110.46	936.5	-61.2	164.0	3.50	3.50	0.00	110.46	
3,308.6	26.74	110.46	3,030.5	-429.8	1,152.4	0.00	0.00	0.00	0.00	
4,072.6	0.00	0.00	3,767.0	-491.0	1,316.4	3.50	-3.50	0.00	180.00	BAT 34A-24-07-96 TC
6,177.6	0.00	0.00	5,872.0	-491.0	1,316.4	0.00	0.00	0.00	0.00	BAT 34A-24-07-96 Bf

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	BAT 34A-24-07-96 @ 5197.9ft (Original Well Elev)
<b>Site:</b>	Speakman A	<b>North Reference:</b>	True
<b>Well:</b>	BAT 34A-24-07-96	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
<b>Start Build 3.50</b>									
300.0	3.50	110.46	299.9	-1.1	2.9	3.1	3.50	3.50	0.00
400.0	7.00	110.46	399.5	-4.3	11.4	12.2	3.50	3.50	0.00
500.0	10.50	110.46	498.3	-9.6	25.7	27.4	3.50	3.50	0.00
600.0	14.00	110.46	596.0	-17.0	45.6	48.6	3.50	3.50	0.00
700.0	17.50	110.46	692.3	-26.5	71.0	75.8	3.50	3.50	0.00
800.0	21.00	110.46	786.7	-38.0	101.9	108.7	3.50	3.50	0.00
900.0	24.50	110.46	878.9	-51.5	138.1	147.4	3.50	3.50	0.00
963.9	26.74	110.46	936.5	-61.2	164.0	175.0	3.50	3.50	0.00
<b>Start 2344.7 hold at 963.9 MD</b>									
1,000.0	26.74	110.46	968.7	-66.8	179.2	191.3	0.00	0.00	0.00
1,100.0	26.74	110.46	1,058.0	-82.6	221.4	236.3	0.00	0.00	0.00
1,200.0	26.74	110.46	1,147.3	-98.3	263.5	281.2	0.00	0.00	0.00
1,300.0	26.74	110.46	1,236.6	-114.0	305.7	326.2	0.00	0.00	0.00
1,400.0	26.74	110.46	1,325.9	-129.7	347.8	371.2	0.00	0.00	0.00
1,500.0	26.74	110.46	1,415.3	-145.5	390.0	416.2	0.00	0.00	0.00
1,600.0	26.74	110.46	1,504.6	-161.2	432.1	461.2	0.00	0.00	0.00
1,700.0	26.74	110.46	1,593.9	-176.9	474.3	506.2	0.00	0.00	0.00
1,800.0	26.74	110.46	1,683.2	-192.6	516.4	551.2	0.00	0.00	0.00
1,900.0	26.74	110.46	1,772.5	-208.4	558.6	596.2	0.00	0.00	0.00
2,000.0	26.74	110.46	1,861.8	-224.1	600.7	641.2	0.00	0.00	0.00
2,100.0	26.74	110.46	1,951.1	-239.8	642.9	686.2	0.00	0.00	0.00
2,200.0	26.74	110.46	2,040.4	-255.5	685.1	731.2	0.00	0.00	0.00
2,300.0	26.74	110.46	2,129.7	-271.3	727.2	776.1	0.00	0.00	0.00
2,400.0	26.74	110.46	2,219.0	-287.0	769.4	821.1	0.00	0.00	0.00
2,500.0	26.74	110.46	2,308.3	-302.7	811.5	866.1	0.00	0.00	0.00
2,600.0	26.74	110.46	2,397.6	-318.4	853.7	911.1	0.00	0.00	0.00
2,700.0	26.74	110.46	2,486.9	-334.1	895.8	956.1	0.00	0.00	0.00
2,800.0	26.74	110.46	2,576.2	-349.9	938.0	1,001.1	0.00	0.00	0.00
2,900.0	26.74	110.46	2,665.6	-365.6	980.1	1,046.1	0.00	0.00	0.00
2,907.2	26.74	110.46	2,672.0	-366.7	983.2	1,049.3	0.00	0.00	0.00
<b>WF</b>									
3,000.0	26.74	110.46	2,754.9	-381.3	1,022.3	1,091.1	0.00	0.00	0.00
3,100.0	26.74	110.46	2,844.2	-397.0	1,064.4	1,136.1	0.00	0.00	0.00
3,200.0	26.74	110.46	2,933.5	-412.8	1,106.6	1,181.1	0.00	0.00	0.00
3,308.6	26.74	110.46	3,030.5	-429.8	1,152.4	1,229.9	0.00	0.00	0.00
<b>Start Drop -3.50</b>									
3,400.0	23.54	110.46	3,113.2	-443.4	1,188.7	1,268.8	3.50	-3.50	0.00
3,500.0	20.04	110.46	3,206.0	-456.4	1,223.5	1,305.9	3.50	-3.50	0.00
3,600.0	16.54	110.46	3,301.0	-467.3	1,252.9	1,337.2	3.50	-3.50	0.00
3,700.0	13.04	110.46	3,397.6	-476.3	1,276.8	1,362.8	3.50	-3.50	0.00
3,800.0	9.54	110.46	3,495.7	-483.1	1,295.2	1,382.3	3.50	-3.50	0.00
3,900.0	6.04	110.46	3,594.8	-487.8	1,307.9	1,395.9	3.50	-3.50	0.00
4,000.0	2.54	110.46	3,694.5	-490.5	1,314.9	1,403.4	3.50	-3.50	0.00
4,072.6	0.00	0.00	3,767.0	-491.0	1,316.4	1,405.0	3.50	-3.50	0.00
<b>Start 2105.0 hold at 4072.6 MD - Top of Perf</b>									
4,100.0	0.00	0.00	3,794.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,200.0	0.00	0.00	3,894.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	BAT 34A-24-07-96 @ 5197.9ft (Original Well Elev)
<b>Site:</b>	Speakman A	<b>North Reference:</b>	True
<b>Well:</b>	BAT 34A-24-07-96	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
4,300.0	0.00	0.00	3,994.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,094.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,194.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,294.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,394.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,494.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,594.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,000.0	0.00	0.00	4,694.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,100.0	0.00	0.00	4,794.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,200.0	0.00	0.00	4,894.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,300.0	0.00	0.00	4,994.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,356.6	0.00	0.00	5,051.0	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
<b>Cameo</b>									
5,400.0	0.00	0.00	5,094.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,194.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,294.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,394.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,494.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
5,877.6	0.00	0.00	5,572.0	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
<b>Rollins</b>									
5,900.0	0.00	0.00	5,594.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,694.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
6,100.0	0.00	0.00	5,794.4	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
6,177.6	0.00	0.00	5,872.0	-491.0	1,316.4	1,405.0	0.00	0.00	0.00
<b>TD at 6177.6</b>									

### Formations

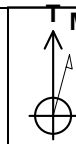
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,907.2	2,672.0	WF		0.00	
4,072.6	3,767.0	Top of Perf		0.00	
5,356.6	5,051.0	Cameo		0.00	
5,877.6	5,572.0	Rollins		0.00	

### 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
963.9	936.5	-61.2	164.0	Start 2344.7 hold at 963.9 MD
3,308.6	3,030.5	-429.8	1,152.4	Start Drop -3.50
4,072.6	3,767.0	-491.0	1,316.4	Start 2105.0 hold at 4072.6 MD
6,177.6	5,872.0	-491.0	1,316.4	TD at 6177.6



Well Name: BAT 34A-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 484134.04 693967.64 39° 25' 15.027 N 108° 3' 37.261 W  
Original Well Elev BAT 34A-24-07-96 @ 5197.9ft (Original Well Elev)



Azimuths to True North  
Magnetic North: 10.08°  
Magnetic Field  
Strength: 52046.7snT  
Dip Angle: 65.63°  
Date: 6/13/2013  
Model: IGRF200510

Speakman A  
BAT 34A-24-07-96  
Design #1  
18:31, June 15 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 34A-24-07-96 TGT	3767.0	-491.0	1316.4	483973.13	694364.50	39° 25' 10.174 N	108° 3' 20.486 W	Point
BAT 34A-24-07-96 BHL	5872.0	-491.0	1316.4	483973.13	694364.50	39° 25' 10.174 N	108° 3' 20.486 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	963.9	26.74	110.46	936.5	-61.2	164.0	3.50	110.46	175.0	
4	3308.6	26.74	110.46	3030.5	-429.8	1152.4	0.00	0.00	1229.9	
5	4072.6	0.00	0.00	3767.0	-491.0	1316.4	3.50	180.00	1405.0	BAT 34A-24-07-96 TGT
6	6177.6	0.00	0.00	5872.0	-491.0	1316.4	0.00	0.00	1405.0	BAT 34A-24-07-96 BHL

#### ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
936.5	963.9	Start 2344.7 hold at 963.9 MD
3030.5	3308.6	Start Drop -3.50
3767.0	4072.6	Start 2105.0 hold at 4072.6 MD
5872.0	6177.6	TD at 6177.6

#### FORMATION TOP DETAILS

TVDP	MDP	Path	Formation
2672.0	2907.2	WF	
3767.0	4072.6	Top of Perf	
5051.0	5356.6	Cameo	
5572.0	5877.6	Rollins	

