



Ursa Operating Company, LLC

Rockies Region

Tompkins

BAT 31D-08-07-95

Wellbore #1

Plan: Design #1

Standard Planning Report

20 May, 2014



Database:	MasterDB	Local Co-ordinate Reference:	Well BAT 31D-08-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Project:	Rockies Region	MD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Site:	Tompkins	North Reference:	True
Well:	BAT 31D-08-07-95	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		Tompkins			
Site Position:		Northing:	1,602,267.15 usft	Latitude:	39° 27' 36.106 N
From:	Lat/Long	Easting:	2,290,225.27 usft	Longitude:	108° 0' 51.048 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.59 °

Well	BAT 31D-08-07-95, SHL LAT: 39.460026900 LONG: -108.014047200					
Well Position	+N/-S	-0.9 usft	Northing:	1,602,265.20 usft	Latitude:	39° 27' 36.097 N
	+E/-W	37.5 usft	Easting:	2,290,262.69 usft	Longitude:	108° 0' 50.570 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,547.4 usft	Ground Level:	5,532.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/19/2014	9.98	65.63	51,937

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	226.39

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,354.6	29.91	226.39	1,316.3	-150.4	-157.9	3.50	3.50	0.00	226.39	
4,229.3	29.91	226.39	3,808.1	-1,139.1	-1,195.7	0.00	0.00	0.00	0.00	
5,083.8	0.00	0.00	4,624.4	-1,289.5	-1,353.6	3.50	-3.50	0.00	180.00	BAT 31D-08-07-95 TC
7,398.4	0.00	0.00	6,939.0	-1,289.5	-1,353.6	0.00	0.00	0.00	0.00	

Database:	MasterDB	Local Co-ordinate Reference:	Well BAT 31D-08-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Project:	Rockies Region	MD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Site:	Tompkins	North Reference:	True
Well:	BAT 31D-08-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.50									
600.0	3.50	226.39	599.9	-2.1	-2.2	3.1	3.50	3.50	0.00
700.0	7.00	226.39	699.5	-8.4	-8.8	12.2	3.50	3.50	0.00
800.0	10.50	226.39	798.3	-18.9	-19.8	27.4	3.50	3.50	0.00
900.0	14.00	226.39	896.0	-33.5	-35.2	48.6	3.50	3.50	0.00
1,000.0	17.50	226.39	992.3	-52.3	-54.9	75.8	3.50	3.50	0.00
1,100.0	21.00	226.39	1,086.7	-75.0	-78.7	108.7	3.50	3.50	0.00
1,200.0	24.50	226.39	1,178.9	-101.7	-106.7	147.4	3.50	3.50	0.00
1,300.0	28.00	226.39	1,268.5	-132.2	-138.7	191.6	3.50	3.50	0.00
1,354.6	29.91	226.39	1,316.3	-150.4	-157.9	218.0	3.50	3.50	0.00
Start 2874.7 hold at 1354.6 MD									
1,400.0	29.91	226.39	1,355.7	-166.0	-174.3	240.7	0.00	0.00	0.00
1,500.0	29.91	226.39	1,442.3	-200.4	-210.4	290.6	0.00	0.00	0.00
1,600.0	29.91	226.39	1,529.0	-234.8	-246.5	340.4	0.00	0.00	0.00
1,700.0	29.91	226.39	1,615.7	-269.2	-282.6	390.3	0.00	0.00	0.00
1,797.2	29.91	226.39	1,700.0	-302.6	-317.7	438.8	0.00	0.00	0.00
Surface Casing									
1,800.0	29.91	226.39	1,702.4	-303.6	-318.7	440.1	0.00	0.00	0.00
1,900.0	29.91	226.39	1,789.1	-338.0	-354.8	490.0	0.00	0.00	0.00
2,000.0	29.91	226.39	1,875.8	-372.4	-390.9	539.9	0.00	0.00	0.00
2,100.0	29.91	226.39	1,962.4	-406.8	-427.0	589.7	0.00	0.00	0.00
2,200.0	29.91	226.39	2,049.1	-441.2	-463.1	639.6	0.00	0.00	0.00
2,300.0	29.91	226.39	2,135.8	-475.5	-499.2	689.5	0.00	0.00	0.00
2,400.0	29.91	226.39	2,222.5	-509.9	-535.3	739.3	0.00	0.00	0.00
2,500.0	29.91	226.39	2,309.2	-544.3	-571.4	789.2	0.00	0.00	0.00
2,600.0	29.91	226.39	2,395.8	-578.7	-607.5	839.0	0.00	0.00	0.00
2,700.0	29.91	226.39	2,482.5	-613.1	-643.6	888.9	0.00	0.00	0.00
2,800.0	29.91	226.39	2,569.2	-647.5	-679.7	938.8	0.00	0.00	0.00
2,900.0	29.91	226.39	2,655.9	-681.9	-715.8	988.6	0.00	0.00	0.00
3,000.0	29.91	226.39	2,742.6	-716.3	-751.9	1,038.5	0.00	0.00	0.00
3,100.0	29.91	226.39	2,829.2	-750.7	-788.0	1,088.4	0.00	0.00	0.00
3,200.0	29.91	226.39	2,915.9	-785.1	-824.1	1,138.2	0.00	0.00	0.00
3,300.0	29.91	226.39	3,002.6	-819.5	-860.2	1,188.1	0.00	0.00	0.00
3,400.0	29.91	226.39	3,089.3	-853.9	-896.3	1,237.9	0.00	0.00	0.00
3,500.0	29.91	226.39	3,176.0	-888.3	-932.4	1,287.8	0.00	0.00	0.00
3,600.0	29.91	226.39	3,262.7	-922.6	-968.5	1,337.7	0.00	0.00	0.00
3,700.0	29.91	226.39	3,349.3	-957.0	-1,004.6	1,387.5	0.00	0.00	0.00
3,800.0	29.91	226.39	3,436.0	-991.4	-1,040.8	1,437.4	0.00	0.00	0.00
3,900.0	29.91	226.39	3,522.7	-1,025.8	-1,076.9	1,487.3	0.00	0.00	0.00
3,981.6	29.91	226.39	3,593.4	-1,053.9	-1,106.3	1,527.9	0.00	0.00	0.00
Williams Fork									
4,000.0	29.91	226.39	3,609.4	-1,060.2	-1,113.0	1,537.1	0.00	0.00	0.00
4,100.0	29.91	226.39	3,696.1	-1,094.6	-1,149.1	1,587.0	0.00	0.00	0.00
4,200.0	29.91	226.39	3,782.7	-1,129.0	-1,185.2	1,636.8	0.00	0.00	0.00
4,229.3	29.91	226.39	3,808.1	-1,139.1	-1,195.7	1,651.5	0.00	0.00	0.00
Start Drop -3.50									
4,300.0	27.43	226.39	3,870.2	-1,162.5	-1,220.3	1,685.4	3.50	-3.50	0.00
4,400.0	23.93	226.39	3,960.3	-1,192.4	-1,251.7	1,728.7	3.50	-3.50	0.00

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Site:	Tompkins	North Reference:	True
Well:	BAT 31D-08-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	20.43	226.39	4,052.9	-1,218.4	-1,279.0	1,766.5	3.50	-3.50	0.00
4,600.0	16.93	226.39	4,147.6	-1,240.5	-1,302.2	1,798.5	3.50	-3.50	0.00
4,700.0	13.43	226.39	4,244.1	-1,258.6	-1,321.2	1,824.7	3.50	-3.50	0.00
4,800.0	9.93	226.39	4,342.0	-1,272.5	-1,335.8	1,844.9	3.50	-3.50	0.00
4,900.0	6.43	226.39	4,440.9	-1,282.3	-1,346.1	1,859.2	3.50	-3.50	0.00
5,000.0	2.93	226.39	4,540.6	-1,288.0	-1,352.0	1,867.3	3.50	-3.50	0.00
5,083.8	0.00	0.00	4,624.4	-1,289.5	-1,353.6	1,869.5	3.50	-3.50	159.36
Back to Vertical - Start 2314.6 hold at 5083.8 MD - Top of Gas - BAT 31D-08-07-95 TGT									
5,100.0	0.00	0.00	4,640.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,200.0	0.00	0.00	4,740.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,300.0	0.00	0.00	4,840.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,400.0	0.00	0.00	4,940.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,040.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,140.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,240.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,340.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
5,900.0	0.00	0.00	5,440.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,540.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,100.0	0.00	0.00	5,640.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,200.0	0.00	0.00	5,740.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,300.0	0.00	0.00	5,840.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,400.0	0.00	0.00	5,940.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,040.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,140.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,600.8	0.00	0.00	6,141.4	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
Cameo									
6,700.0	0.00	0.00	6,240.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,340.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
6,900.0	0.00	0.00	6,440.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,540.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
7,098.8	0.00	0.00	6,639.4	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
Rollins									
7,100.0	0.00	0.00	6,640.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
7,200.0	0.00	0.00	6,740.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
7,300.0	0.00	0.00	6,840.6	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
7,398.4	0.00	0.00	6,939.0	-1,289.5	-1,353.6	1,869.5	0.00	0.00	0.00
TD at 7398.4									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BAT 31D-08-07-95 TGT	0.00	0.00	4,624.4	-1,289.5	-1,353.6	1,601,013.69	2,288,873.93	39° 27' 23.352 N	108° 1' 7.828 W
- hit/miss target									
- Shape									
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D2,315.0)									

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Company:	Ursa Operating Company, LLC	TVD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Project:	Rockies Region	MD Reference:	BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)
Site:	Tompkins	North Reference:	True
Well:	BAT 31D-08-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,981.6	3,593.4	Williams Fork		0.00	
5,083.8	4,624.4	Top of Gas		0.00	
6,600.8	6,141.4	Cameo		0.00	
7,098.8	6,639.4	Rollins		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	Start Build 3.50
1,354.6	1,316.3	-150.4	-157.9	Start 2874.7 hold at 1354.6 MD
1,797.2	1,700.0	-302.6	-317.7	Surface Casing
4,229.3	3,808.1	-1,139.1	-1,195.7	Start Drop -3.50
5,083.8	4,624.4	-1,289.5	-1,353.6	Back to Vertical
5,083.8	4,624.4	-1,289.5	-1,353.6	Start 2314.6 hold at 5083.8 MD
7,398.4	6,939.0	-1,289.5	-1,353.6	TD at 7398.4



Well Name: BAT 31D-08-07-95
Surface Location: Tompkins
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5532.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1602265.20 2290262.69 39° 27' 36.097 N 108° 0' 50.570 W
Xtreme 15 BAT 31D-08-07-95 @ 5547.4usft (Xtreme 15)



Azimuths to True North
Magnetic North: 9.98°
Magnetic Field
Strength: 51936.6snT
Dip Angle: 65.63°
Date: 5/19/2014
Model: IGRF2010

Tompkins
BAT 31D-08-07-95
Design #1
21:13, May 20 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BAT 31D-08-07-95	4624.4	-1289.5	-1353.6	1601013.69	2288873.93	39° 27' 23.352 N	108° 1' 7.828 W	Rectangle (Sides: L40.0 W100.0)

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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1354.6	29.91	226.39	1316.3	-150.4	-157.9	3.50	226.39	218.0	
4	4229.3	29.91	226.39	3808.1	-1139.1	-1195.7	0.00	0.00	1651.5	
5	5083.8	0.00	0.00	4624.4	-1289.5	-1353.6	3.50	180.00	1869.5	BAT 31D-08-07-95 TGT
6	7398.4	0.00	0.00	6939.0	-1289.5	-1353.6	0.00	0.00	1869.5	

ANNOTATIONS

TVD	MD	Annotation
500.0	500.0	Start Build 3.50
1316.3	1354.6	Start 2874.7 hold at 1354.6 MD
1700.0	1797.2	Surface Casing
3808.1	4229.3	Start Drop -3.50
4624.4	5083.8	Back to Vertical
4624.4	5083.8	Start 2314.6 hold at 5083.8 MD
6939.0	7398.4	TD at 7398.4

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3593.4	3981.6	Williams Fork	0.00	
4624.4	5083.8	Top of Gas	0.00	
6141.4	6600.8	Cameo	0.00	
6639.4	7098.8	Rollins	0.00	

