



Ursa Operating Company, LLC

**Rockies Region
Monument Ridge
BAT 24D 18-07-95**

Wellbore #1

Plan: Design #1

Standard Planning Report

23 February, 2015



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Monument Ridge 24D 18-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Project:	Rockies Region	MD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Site:	Monument Ridge	North Reference:	True
Well:	Monument Ridge 24D 18-07-95	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		Monument Ridge			
Site Position:		Northing:	1,592,015.86 usft	Latitude:	39° 25' 53.266 N
From:	Lat/Long	Easting:	2,284,550.92 usft	Longitude:	108° 1' 59.725 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.60 °

Well	Monument Ridge 24D 18-07-95, SHL: 39° 25' 51.857 -108° 1' 59.671					
Well Position	+N/-S	-142.5 usft	Northing:	1,591,873.28 usft	Latitude:	39° 25' 51.857 N
	+E/-W	4.2 usft	Easting:	2,284,551.18 usft	Longitude:	108° 1' 59.671 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,458.2 usft	Ground Level:	5,441.2 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/21/2015	9.89	65.58	51,842

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	269.40	

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,180.8	34.33	269.40	1,123.2	-3.0	-285.1	3.50	3.50	0.00	269.40	
4,505.6	34.33	269.40	3,868.8	-22.8	-2,159.9	0.00	0.00	0.00	0.00	
5,486.4	0.00	0.00	4,792.0	-25.8	-2,445.0	3.50	-3.50	0.00	180.00	Monument 24D 18-07
7,104.6	0.00	0.00	6,410.2	-25.8	-2,445.0	0.00	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Monument Ridge 24D 18-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Project:	Rockies Region	MD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Site:	Monument Ridge	North Reference:	True
Well:	Monument Ridge 24D 18-07-95	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	
Start Build 3.50										
300.0	3.50	269.40	299.9	0.0	-3.1	3.1	3.50	3.50	0.00	
400.0	7.00	269.40	399.5	-0.1	-12.2	12.2	3.50	3.50	0.00	
500.0	10.50	269.40	498.3	-0.3	-27.4	27.4	3.50	3.50	0.00	
600.0	14.00	269.40	596.0	-0.5	-48.6	48.6	3.50	3.50	0.00	
700.0	17.50	269.40	692.3	-0.8	-75.8	75.8	3.50	3.50	0.00	
800.0	21.00	269.40	786.7	-1.1	-108.7	108.7	3.50	3.50	0.00	
900.0	24.50	269.40	878.9	-1.6	-147.4	147.4	3.50	3.50	0.00	
1,000.0	28.00	269.40	968.5	-2.0	-191.6	191.6	3.50	3.50	0.00	
1,100.0	31.50	269.40	1,055.3	-2.5	-241.2	241.2	3.50	3.50	0.00	
1,180.8	34.33	269.40	1,123.2	-3.0	-285.1	285.1	3.50	3.50	0.00	
Start 3324.8 hold at 1180.8 MD										
1,200.0	34.33	269.40	1,139.0	-3.1	-295.9	296.0	0.00	0.00	0.00	
1,300.0	34.33	269.40	1,221.6	-3.7	-352.3	352.4	0.00	0.00	0.00	
1,400.0	34.33	269.40	1,304.2	-4.3	-408.7	408.7	0.00	0.00	0.00	
1,500.0	34.33	269.40	1,386.8	-4.9	-465.1	465.1	0.00	0.00	0.00	
1,600.0	34.33	269.40	1,469.4	-5.5	-521.5	521.5	0.00	0.00	0.00	
1,700.0	34.33	269.40	1,551.9	-6.1	-577.9	577.9	0.00	0.00	0.00	
1,800.0	34.33	269.40	1,634.5	-6.7	-634.3	634.3	0.00	0.00	0.00	
1,879.3	34.33	269.40	1,700.0	-7.2	-679.0	679.0	0.00	0.00	0.00	
Surface Casing										
1,900.0	34.33	269.40	1,717.1	-7.3	-690.7	690.7	0.00	0.00	0.00	
2,000.0	34.33	269.40	1,799.7	-7.9	-747.1	747.1	0.00	0.00	0.00	
2,100.0	34.33	269.40	1,882.3	-8.5	-803.4	803.5	0.00	0.00	0.00	
2,200.0	34.33	269.40	1,964.8	-9.1	-859.8	859.9	0.00	0.00	0.00	
2,300.0	34.33	269.40	2,047.4	-9.7	-916.2	916.3	0.00	0.00	0.00	
2,400.0	34.33	269.40	2,130.0	-10.3	-972.6	972.7	0.00	0.00	0.00	
2,500.0	34.33	269.40	2,212.6	-10.9	-1,029.0	1,029.1	0.00	0.00	0.00	
2,600.0	34.33	269.40	2,295.2	-11.5	-1,085.4	1,085.5	0.00	0.00	0.00	
2,700.0	34.33	269.40	2,377.8	-12.1	-1,141.8	1,141.8	0.00	0.00	0.00	
2,800.0	34.33	269.40	2,460.3	-12.6	-1,198.2	1,198.2	0.00	0.00	0.00	
2,900.0	34.33	269.40	2,542.9	-13.2	-1,254.6	1,254.6	0.00	0.00	0.00	
3,000.0	34.33	269.40	2,625.5	-13.8	-1,311.0	1,311.0	0.00	0.00	0.00	
3,100.0	34.33	269.40	2,708.1	-14.4	-1,367.3	1,367.4	0.00	0.00	0.00	
3,200.0	34.33	269.40	2,790.7	-15.0	-1,423.7	1,423.8	0.00	0.00	0.00	
3,300.0	34.33	269.40	2,873.3	-15.6	-1,480.1	1,480.2	0.00	0.00	0.00	
3,400.0	34.33	269.40	2,955.8	-16.2	-1,536.5	1,536.6	0.00	0.00	0.00	
3,500.0	34.33	269.40	3,038.4	-16.8	-1,592.9	1,593.0	0.00	0.00	0.00	
3,600.0	34.33	269.40	3,121.0	-17.4	-1,649.3	1,649.4	0.00	0.00	0.00	
3,700.0	34.33	269.40	3,203.6	-18.0	-1,705.7	1,705.8	0.00	0.00	0.00	
3,722.5	34.33	269.40	3,222.2	-18.1	-1,718.4	1,718.5	0.00	0.00	0.00	
Williams Fork										
3,800.0	34.33	269.40	3,286.2	-18.6	-1,762.1	1,762.2	0.00	0.00	0.00	
3,900.0	34.33	269.40	3,368.8	-19.2	-1,818.5	1,818.6	0.00	0.00	0.00	
4,000.0	34.33	269.40	3,451.3	-19.8	-1,874.8	1,874.9	0.00	0.00	0.00	
4,100.0	34.33	269.40	3,533.9	-20.4	-1,931.2	1,931.3	0.00	0.00	0.00	
4,200.0	34.33	269.40	3,616.5	-21.0	-1,987.6	1,987.7	0.00	0.00	0.00	
4,300.0	34.33	269.40	3,699.1	-21.6	-2,044.0	2,044.1	0.00	0.00	0.00	
4,400.0	34.33	269.40	3,781.7	-22.2	-2,100.4	2,100.5	0.00	0.00	0.00	

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Project:	Rockies Region	MD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Site:	Monument Ridge	North Reference:	True
Well:	Monument Ridge 24D 18-07-95	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)
4,505.6	34.33	269.40	3,868.8	-22.8	-2,159.9	2,160.1	0.00	0.00	0.00
Start Drop -3.50									
4,600.0	31.02	269.40	3,948.3	-23.3	-2,210.9	2,211.0	3.50	-3.50	0.00
4,700.0	27.52	269.40	4,035.5	-23.9	-2,259.8	2,259.9	3.50	-3.50	0.00
4,800.0	24.02	269.40	4,125.6	-24.3	-2,303.3	2,303.4	3.50	-3.50	0.00
4,899.0	20.56	269.40	4,217.2	-24.7	-2,340.8	2,340.9	3.50	-3.50	0.00
Top of Gas									
4,900.0	20.52	269.40	4,218.1	-24.7	-2,341.2	2,341.3	3.50	-3.50	0.00
5,000.0	17.02	269.40	4,312.8	-25.1	-2,373.3	2,373.5	3.50	-3.50	0.00
5,100.0	13.52	269.40	4,409.2	-25.3	-2,399.7	2,399.8	3.50	-3.50	0.00
5,200.0	10.02	269.40	4,507.1	-25.5	-2,420.1	2,420.2	3.50	-3.50	0.00
5,300.0	6.52	269.40	4,606.0	-25.7	-2,434.4	2,434.6	3.50	-3.50	0.00
5,400.0	3.02	269.40	4,705.7	-25.8	-2,442.8	2,442.9	3.50	-3.50	0.00
5,486.4	0.00	0.00	4,792.0	-25.8	-2,445.0	2,445.2	3.50	-3.50	104.92
Start 1618.0 hold at 5486.4 MD - Back to Vertical									
5,500.0	0.00	0.00	4,805.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
5,600.0	0.00	0.00	4,905.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,005.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,105.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,205.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,305.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,100.0	0.00	0.00	5,405.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,200.0	0.00	0.00	5,505.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,283.6	0.00	0.00	5,589.2	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
Cameo									
6,300.0	0.00	0.00	5,605.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,400.0	0.00	0.00	5,705.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,500.0	0.00	0.00	5,805.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,600.0	0.00	0.00	5,905.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,700.0	0.00	0.00	6,005.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,105.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
6,804.6	0.00	0.00	6,110.2	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
Rollins									
6,900.0	0.00	0.00	6,205.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,305.6	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
7,104.6	0.00	0.00	6,410.2	-25.8	-2,445.0	2,445.2	0.00	0.00	0.00
TD at 7104.4 - TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Monument 24D 18-07-95	0.00	0.00	4,792.0	-25.8	-2,445.0	1,591,915.65	2,282,106.37	39° 25' 51.601 N	108° 2' 30.834 W
- plan hits target center									
- Point									
Monument 24D 18-07-95	0.00	0.00	6,410.2	-25.8	-2,445.0	1,591,915.65	2,282,106.37	39° 25' 51.601 N	108° 2' 30.834 W
- plan hits target center									
- Rectangle (sides W80.0 H40.0 D2,193.0)									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Monument Ridge 24D 18-07-95
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Project:	Rockies Region	MD Reference:	Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)
Site:	Monument Ridge	North Reference:	True
Well:	Monument Ridge 24D 18-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,879.3	1,700.0	Surface Casing		0.00		
3,722.5	3,222.2	Williams Fork		0.00		
4,899.0	4,217.2	Top of Gas		0.00		
5,486.4	4,792.0	Back to Vertical		0.00		
6,283.6	5,589.2	Cameo		0.00		
6,804.6	6,110.2	Rollins		0.00		
7,104.6	6,410.2	TD		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.0	200.0	0.0	0.0	Start Build 3.50	
1,180.8	1,123.2	-3.0	-285.1	Start 3324.8 hold at 1180.8 MD	
4,505.6	3,868.8	-22.8	-2,159.9	Start Drop -3.50	
5,486.4	4,792.0	-25.8	-2,445.0	Start 1618.0 hold at 5486.4 MD	
7,104.6	6,410.2	-25.8	-2,445.0	TD at 7104.4	



Well Name: Monument Ridge 24D 18-07-95
Surface Location: Monument Ridge
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5441.2
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1591873.28 2284551.18 39° 25' 51.857 N 108° 1' 59.671 W
Capstar 321 Monument Ridge 24D 18-07-95 @ 5458.2usft (Capstar 321)



Azimuths to True North
Magnetic North: 9.89°
Magnetic Field
Strength: 51842.4snT
Dip Angle: 65.58°
Date: 2/21/2015
Model: IGRF2010

Monument Ridge
Monument Ridge 24D 18-07-95
Design #1
13:04, February 23 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Monument 24D 18-07-95 TGT 4792.0	-25.8	-2445.0	1591915.65	2282106.379	25° 51' 51.857 N	108° 2' 30.834 W	Point	
Monument 24D 18-07-95 BHL 6410.2	-25.8	-2445.0	1591915.65	2282106.379	25° 51' 51.857 N	108° 2' 30.834 W	Rectangle (Sides: L40.0 W80.0)	

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1180.8	34.33	269.40	1123.2	-3.0	-285.1	3.50	269.40	285.1	
4	4505.6	34.33	269.40	3868.8	-22.8	-2159.9	0.00	0.00	2160.1	
5	5486.4	0.00	0.00	4792.0	-25.8	-2445.0	3.50	180.00	2445.2	Monument 24D 18-07-95 TGT_
6	7104.6	0.00	0.00	6410.2	-25.8	-2445.0	0.00	0.00	2445.2	

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1123.2	1180.8	Start 3324.8 hold at 1180.8 MD
3868.8	4505.6	Start Drop -3.50
4792.0	5486.4	Start 1618.0 hold at 5486.4 MD
6410.2	7104.6	TD at 7104.4

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1700.0	1879.3	Surface Casing	0.00	
3222.2	3722.5	Williams Fork	0.00	
4217.2	4899.0	Top of Gas	0.00	
4792.0	5486.4	Back to Vertical	0.00	
5589.2	6283.6	Cameo	0.00	
6110.2	6804.6	Rollins	0.00	
6410.2	7104.6	TD	0.00	

