



# **Ursa Operating Company, LLC**

**Rockies Region**

**Yater**

**YATER 12A-17-07-95**

**Wellbore #1**

**Plan: Design #1**

## **Ursa Operating Company LLC Planning Report**

**28 October, 2014**



<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well YATER 12A-17-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	YATER 12A-17-07-95 @ 5532.0usft (EST KB)
<b>Site:</b>	Yater	<b>MD Reference:</b>	YATER 12A-17-07-95 @ 5532.0usft (EST KB)
<b>Well:</b>	YATER 12A-17-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	MasterDB

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		Yater			
Site Position:		Northing:		1,593,358.14 usft	
From:	Lat/Long	Easting:		2,286,525.77 usft	
Position Uncertainty:		Slot Radius:		13-3/16 "	
0.0 usft				Latitude: 39° 26' 7.071 N	
				Longitude: 108° 1' 35.041 W	
				Grid Convergence: -1.59 °	

Well	YATER 12A-17-07-95, SHL LAT: 39.435160341 LONG: -108.026396104					
Well Position	+N/-S	0.0 usft	Northing:	1,593,308.15 usft	Latitude:	39° 26' 6.577 N
	+E/-W	0.0 usft	Easting:	2,286,525.54 usft	Longitude:	108° 1' 35.026 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,532.0 usft	Ground Level:	5,519.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/23/2014	9.93	65.59	51,878

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	347.28

Survey Tool Program		Date	10/27/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,332.8	Design #1 (Wellbore #1)	MWD	MWD - Standard	

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## Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-5,532.0	0.0	0.0	0.0	0.00	1,593,308.15	2,286,525.54
100.0	0.00	0.00	100.0	-5,432.0	0.0	0.0	0.0	0.00	1,593,308.15	2,286,525.54
200.0	0.00	0.00	200.0	-5,332.0	0.0	0.0	0.0	0.00	1,593,308.15	2,286,525.54
300.0	0.00	0.00	300.0	-5,232.0	0.0	0.0	0.0	0.00	1,593,308.15	2,286,525.54
<b>Start Build 3.50</b>										
400.0	3.50	347.28	399.9	-5,132.1	3.0	-0.7	3.1	3.50	1,593,311.15	2,286,524.95
500.0	7.00	347.28	499.5	-5,032.5	11.9	-2.7	12.2	3.50	1,593,320.13	2,286,523.19
600.0	10.50	347.28	598.3	-4,933.7	26.7	-6.0	27.4	3.50	1,593,335.05	2,286,520.25
700.0	14.00	347.28	696.0	-4,836.0	47.4	-10.7	48.6	3.50	1,593,355.87	2,286,516.15
800.0	17.50	347.28	792.3	-4,739.7	73.9	-16.7	75.8	3.50	1,593,382.50	2,286,510.92
900.0	21.00	347.28	886.7	-4,645.3	106.1	-23.9	108.7	3.50	1,593,414.84	2,286,504.55
1,000.0	24.50	347.28	978.9	-4,553.1	143.8	-32.5	147.4	3.50	1,593,452.78	2,286,497.09
1,100.0	28.00	347.28	1,068.5	-4,463.5	186.9	-42.2	191.6	3.50	1,593,496.17	2,286,488.56
1,200.0	31.50	347.28	1,155.3	-4,376.7	235.3	-53.1	241.2	3.50	1,593,544.85	2,286,478.98
1,223.3	32.32	347.28	1,175.1	-4,356.9	247.3	-55.8	253.6	3.50	1,593,556.95	2,286,476.60
<b>Start 3224.1 hold at 1223.3 MD</b>										
1,300.0	32.32	347.28	1,239.9	-4,292.1	287.3	-64.9	294.6	0.00	1,593,597.17	2,286,468.69
1,400.0	32.32	347.28	1,324.5	-4,207.5	339.5	-76.6	348.0	0.00	1,593,649.62	2,286,458.37
1,500.0	32.32	347.28	1,409.0	-4,123.0	391.6	-88.4	401.5	0.00	1,593,702.08	2,286,448.05
1,600.0	32.32	347.28	1,493.5	-4,038.5	443.8	-100.2	454.9	0.00	1,593,754.53	2,286,437.73
1,700.0	32.32	347.28	1,578.0	-3,954.0	495.9	-112.0	508.4	0.00	1,593,806.98	2,286,427.42
1,800.0	32.32	347.28	1,662.5	-3,869.5	548.1	-123.7	561.8	0.00	1,593,859.44	2,286,417.10
1,844.4	32.32	347.28	1,700.0	-3,832.0	571.2	-129.0	585.6	0.00	1,593,882.72	2,286,412.52
<b>Surface Casing</b>										
1,900.0	32.32	347.28	1,747.0	-3,785.0	600.2	-135.5	615.3	0.00	1,593,911.89	2,286,406.78
2,000.0	32.32	347.28	1,831.5	-3,700.5	652.4	-147.3	668.8	0.00	1,593,964.35	2,286,396.46
2,100.0	32.32	347.28	1,916.0	-3,616.0	704.5	-159.0	722.2	0.00	1,594,016.80	2,286,386.14
2,200.0	32.32	347.28	2,000.5	-3,531.5	756.6	-170.8	775.7	0.00	1,594,069.26	2,286,375.83

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## Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,300.0	32.32	347.28	2,085.0	-3,447.0	808.8	-182.6	829.1	0.00	1,594,121.71	2,286,365.51
2,400.0	32.32	347.28	2,169.6	-3,362.4	860.9	-194.4	882.6	0.00	1,594,174.17	2,286,355.19
2,500.0	32.32	347.28	2,254.1	-3,277.9	913.1	-206.1	936.1	0.00	1,594,226.62	2,286,344.87
2,600.0	32.32	347.28	2,338.6	-3,193.4	965.2	-217.9	989.5	0.00	1,594,279.08	2,286,334.55
2,700.0	32.32	347.28	2,423.1	-3,108.9	1,017.4	-229.7	1,043.0	0.00	1,594,331.53	2,286,324.23
2,800.0	32.32	347.28	2,507.6	-3,024.4	1,069.5	-241.5	1,096.4	0.00	1,594,383.98	2,286,313.92
2,900.0	32.32	347.28	2,592.1	-2,939.9	1,121.7	-253.2	1,149.9	0.00	1,594,436.44	2,286,303.60
3,000.0	32.32	347.28	2,676.6	-2,855.4	1,173.8	-265.0	1,203.4	0.00	1,594,488.89	2,286,293.28
3,100.0	32.32	347.28	2,761.1	-2,770.9	1,226.0	-276.8	1,256.8	0.00	1,594,541.35	2,286,282.96
3,200.0	32.32	347.28	2,845.6	-2,686.4	1,278.1	-288.5	1,310.3	0.00	1,594,593.80	2,286,272.64
3,300.0	32.32	347.28	2,930.2	-2,601.8	1,330.3	-300.3	1,363.7	0.00	1,594,646.26	2,286,262.33
3,400.0	32.32	347.28	3,014.7	-2,517.3	1,382.4	-312.1	1,417.2	0.00	1,594,698.71	2,286,252.01
3,500.0	32.32	347.28	3,099.2	-2,432.8	1,434.6	-323.9	1,470.7	0.00	1,594,751.17	2,286,241.69
3,600.0	32.32	347.28	3,183.7	-2,348.3	1,486.7	-335.6	1,524.1	0.00	1,594,803.62	2,286,231.37
3,700.0	32.32	347.28	3,268.2	-2,263.8	1,538.9	-347.4	1,577.6	0.00	1,594,856.08	2,286,221.05
3,800.0	32.32	347.28	3,352.7	-2,179.3	1,591.0	-359.2	1,631.0	0.00	1,594,908.53	2,286,210.73
3,900.0	32.32	347.28	3,437.2	-2,094.8	1,643.2	-371.0	1,684.5	0.00	1,594,960.99	2,286,200.42
3,967.2	32.32	347.28	3,494.0	-2,038.0	1,678.2	-378.9	1,720.4	0.00	1,594,996.23	2,286,193.48
<b>Williams Fork</b>										
4,000.0	32.32	347.28	3,521.7	-2,010.3	1,695.3	-382.7	1,738.0	0.00	1,595,013.44	2,286,190.10
4,100.0	32.32	347.28	3,606.2	-1,925.8	1,747.4	-394.5	1,791.4	0.00	1,595,065.89	2,286,179.78
4,200.0	32.32	347.28	3,690.8	-1,841.2	1,799.6	-406.3	1,844.9	0.00	1,595,118.35	2,286,169.46
4,300.0	32.32	347.28	3,775.3	-1,756.7	1,851.7	-418.0	1,898.3	0.00	1,595,170.80	2,286,159.14
4,400.0	32.32	347.28	3,859.8	-1,672.2	1,903.9	-429.8	1,951.8	0.00	1,595,223.26	2,286,148.83
4,447.4	32.32	347.28	3,899.9	-1,632.1	1,928.6	-435.4	1,977.2	0.00	1,595,248.14	2,286,143.93
<b>Start Drop -3.50</b>										
4,500.0	30.48	347.28	3,944.7	-1,587.3	1,955.3	-441.4	2,004.5	3.50	1,595,275.01	2,286,138.65

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<b>Site:</b>	Yater	<b>MD Reference:</b>	YATER 12A-17-07-95 @ 5532.0usft (EST KB)
<b>Well:</b>	YATER 12A-17-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	MasterDB

## Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,600.0	26.98	347.28	4,032.4	-1,499.6	2,002.2	-452.0	2,052.6	3.50	1,595,322.16	2,286,129.37
4,700.0	23.48	347.28	4,122.9	-1,409.1	2,043.8	-461.4	2,095.2	3.50	1,595,363.97	2,286,121.15
4,800.0	19.98	347.28	4,215.7	-1,316.3	2,079.9	-469.6	2,132.2	3.50	1,595,400.29	2,286,114.00
4,900.0	16.48	347.28	4,310.7	-1,221.3	2,110.4	-476.4	2,163.5	3.50	1,595,430.97	2,286,107.97
5,000.0	12.98	347.28	4,407.4	-1,124.6	2,135.2	-482.0	2,188.9	3.50	1,595,455.91	2,286,103.06
5,073.1	10.42	347.28	4,479.0	-1,053.0	2,149.6	-485.3	2,203.7	3.50	1,595,470.46	2,286,100.20
<b>Top of Gas</b>										
5,077.8	10.25	347.28	4,483.6	-1,048.4	2,150.5	-485.5	2,204.6	3.50	1,595,471.28	2,286,100.04
<b>12A-17-07-95 TGT</b>										
5,100.0	9.48	347.28	4,505.5	-1,026.5	2,154.2	-486.3	2,208.4	3.50	1,595,475.01	2,286,099.30
5,200.0	5.98	347.28	4,604.6	-927.4	2,167.3	-489.3	2,221.8	3.50	1,595,488.20	2,286,096.71
5,300.0	2.48	347.28	4,704.3	-827.7	2,174.5	-490.9	2,229.2	3.50	1,595,495.43	2,286,095.29
5,370.8	0.00	0.00	4,775.0	-757.0	2,176.0	-491.2	2,230.7	3.50	1,595,496.93	2,286,094.99
<b>Back to Vertical - Start 1962.0 hold at 5370.8 MD</b>										
5,400.0	0.00	0.00	4,804.2	-727.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
5,500.0	0.00	0.00	4,904.2	-627.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
5,600.0	0.00	0.00	5,004.2	-527.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
5,700.0	0.00	0.00	5,104.2	-427.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
5,800.0	0.00	0.00	5,204.2	-327.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
5,900.0	0.00	0.00	5,304.2	-227.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,000.0	0.00	0.00	5,404.2	-127.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,100.0	0.00	0.00	5,504.2	-27.8	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,200.0	0.00	0.00	5,604.2	72.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,300.0	0.00	0.00	5,704.2	172.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,400.0	0.00	0.00	5,804.2	272.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,500.0	0.00	0.00	5,904.2	372.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,521.8	0.00	0.00	5,926.0	394.0	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
<b>Cameo</b>										

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6,600.0	0.00	0.00	6,004.2	472.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,700.0	0.00	0.00	6,104.2	572.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,800.0	0.00	0.00	6,204.2	672.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
6,900.0	0.00	0.00	6,304.2	772.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
7,000.0	0.00	0.00	6,404.2	872.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
7,032.8	0.00	0.00	6,437.0	905.0	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
Rollins										
7,100.0	0.00	0.00	6,504.2	972.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
7,200.0	0.00	0.00	6,604.2	1,072.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
7,300.0	0.00	0.00	6,704.2	1,172.2	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
7,332.8	0.00	0.00	6,737.0	1,205.0	2,176.0	-491.2	2,230.7	0.00	1,595,496.93	2,286,094.99
TD at 7332.8										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,967.2	3,494.0	Williams Fork		0.00		
7,032.8	6,437.0	Rollins		0.00		
6,521.8	5,926.0	Cameo		0.00		
5,073.1	4,479.0	Top of Gas		0.00		

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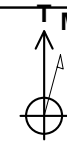
## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.0	300.0	0.0	0.0	Start Build 3.50
1,223.3	1,175.1	247.3	-55.8	Start 3224.1 hold at 1223.3 MD
1,844.4	1,700.0	571.2	-129.0	Surface Casing
4,447.4	3,899.9	1,928.6	-435.4	Start Drop -3.50
5,370.8	4,775.0	2,176.0	-491.2	Back to Vertical
5,370.8	4,775.0	2,176.0	-491.2	Start 1962.0 hold at 5370.8 MD
7,332.8	6,737.0	2,176.0	-491.2	TD at 7332.8

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



Well Name: YATER 12A-17-07-95  
Surface Location: Yater  
North American Datum 1983, US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5519.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1593308.15 2286525.54 39° 26' 6.577 N 108° 1' 35.026 W  
EST KB YATER 12A-17-07-95 @ 5532.0usft (EST KB)



Azimuths to True North  
Magnetic North: 9.93°  
Magnetic Field  
Strength: 51878.3snT  
Dip Angle: 65.59°  
Date: 10/23/2014  
Model: IGRF2010

Yater  
YATER 12A-17-07-95  
Design #1  
9:01, October 28 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
12A-17-07-95 TGT	4479.0	2176.0	-491.2	1595496.93	2286094.99	39° 26' 28.084 N	108° 1' 41.288 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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1223.3	32.32	347.28	1175.1	247.3	-55.8	3.50	347.28	253.6	
4	4447.4	32.32	347.28	3899.9	1928.6	-435.4	0.00	0.00	1977.2	
5	5370.8	0.00	0.00	4775.0	2176.0	-491.2	3.50	180.00	2230.7	
6	7332.8	0.00	0.00	6737.0	2176.0	-491.2	0.00	0.00	2230.7	

#### ANNOTATIONS

TVD	MD	Annotation
300.0	300.0	Start Build 3.50
1175.1	1223.3	Start 3224.1 hold at 1223.3 MD
1700.0	1844.4	Surface Casing
3899.9	4447.4	Start Drop -3.50
4775.0	5370.8	Back to Vertical
4775.0	5370.8	Start 1962.0 hold at 5370.8 MD
6737.0	7332.8	TD at 7332.8

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3494.0	3967.2	Williams Fork	0.00	
4479.0	5073.1	Top of Gas	0.00	
5926.0	6521.8	Cameo	0.00	
6437.0	7032.8	Rollins	0.00	

