



Ursa Operating Company, LLC

Rockies Region

Yater

YATER 11D-17-07-95

Wellbore #1

Plan: Design #1

Ursa Operating Company LLC Planning Report

28 October, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well YATER 11D-17-07-95
Project:	Rockies Region	TVD Reference:	YATER 11D-17-07-95 @ 5532.0usft (EST KB)
Site:	Yater	MD Reference:	YATER 11D-17-07-95 @ 5532.0usft (EST KB)
Well:	YATER 11D-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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		Latitude:		39° 26' 7.071 N			
From:		Easting:		2,286,525.77 usft		Longitude:		108° 1' 35.041 W			
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		-1.59 °	

Well		YATER 11D-17-07-95, SHL LAT: 39.435228927 LONG: -108.026398163				
Well Position	+N/-S	0.0 usft	Northing:	1,593,333.14 usft	Latitude:	39° 26' 6.824 N
	+E/-W	0.0 usft	Easting:	2,286,525.65 usft	Longitude:	108° 1' 35.033 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	348.75

Survey Tool Program		Date	10/27/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,463.1	Design #1 (Wellbore #1)	MWD	MWD - Standard	

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Well:	YATER 11D-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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	1,593,333.14	2,286,525.65
100.0	0.00	0.00	100.0	-5,432.0	0.0	0.0	0.0	0.00	1,593,333.14	2,286,525.65
200.0	0.00	0.00	200.0	-5,332.0	0.0	0.0	0.0	0.00	1,593,333.14	2,286,525.65
300.0	0.00	0.00	300.0	-5,232.0	0.0	0.0	0.0	0.00	1,593,333.14	2,286,525.65
Start Build 3.50										
400.0	3.50	348.75	399.9	-5,132.1	3.0	-0.6	3.1	3.50	1,593,336.15	2,286,525.14
500.0	7.00	348.75	499.5	-5,032.5	12.0	-2.4	12.2	3.50	1,593,345.17	2,286,523.61
600.0	10.50	348.75	598.3	-4,933.7	26.9	-5.3	27.4	3.50	1,593,360.17	2,286,521.05
700.0	14.00	348.75	696.0	-4,836.0	47.7	-9.5	48.6	3.50	1,593,381.08	2,286,517.50
800.0	17.50	348.75	792.3	-4,739.7	74.3	-14.8	75.8	3.50	1,593,407.84	2,286,512.94
900.0	21.00	348.75	886.7	-4,645.3	106.6	-21.2	108.7	3.50	1,593,440.33	2,286,507.41
1,000.0	24.50	348.75	978.9	-4,553.1	144.6	-28.8	147.4	3.50	1,593,478.45	2,286,500.93
1,100.0	28.00	348.75	1,068.5	-4,463.5	187.9	-37.4	191.6	3.50	1,593,522.04	2,286,493.51
1,200.0	31.50	348.75	1,155.3	-4,376.7	236.6	-47.1	241.2	3.50	1,593,570.96	2,286,485.18
1,271.2	33.99	348.75	1,215.2	-4,316.8	274.3	-54.6	279.7	3.50	1,593,608.90	2,286,478.73
Start 3523.7 hold at 1271.2 MD										
1,300.0	33.99	348.75	1,239.1	-4,292.9	290.2	-57.7	295.8	0.00	1,593,624.79	2,286,476.02
1,400.0	33.99	348.75	1,322.0	-4,210.0	345.0	-68.6	351.7	0.00	1,593,679.91	2,286,466.64
1,500.0	33.99	348.75	1,404.9	-4,127.1	399.8	-79.5	407.7	0.00	1,593,735.02	2,286,457.27
1,600.0	33.99	348.75	1,487.8	-4,044.2	454.7	-90.4	463.6	0.00	1,593,790.13	2,286,447.89
1,700.0	33.99	348.75	1,570.8	-3,961.2	509.5	-101.4	519.5	0.00	1,593,845.25	2,286,438.51
1,800.0	33.99	348.75	1,653.7	-3,878.3	564.3	-112.3	575.4	0.00	1,593,900.36	2,286,429.13
1,855.9	33.99	348.75	1,700.0	-3,832.0	595.0	-118.4	606.6	0.00	1,593,931.16	2,286,423.89
Surface Casing										
1,900.0	33.99	348.75	1,736.6	-3,795.4	619.1	-123.2	631.3	0.00	1,593,955.47	2,286,419.75
2,000.0	33.99	348.75	1,819.5	-3,712.5	674.0	-134.1	687.2	0.00	1,594,010.59	2,286,410.37
2,100.0	33.99	348.75	1,902.4	-3,629.6	728.8	-145.0	743.1	0.00	1,594,065.70	2,286,400.99
2,200.0	33.99	348.75	1,985.3	-3,546.7	783.6	-155.9	799.0	0.00	1,594,120.82	2,286,391.62

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Site:	Yater	MD Reference:	YATER 11D-17-07-95 @ 5532.0usft (EST KB)
Well:	YATER 11D-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
2,300.0	33.99	348.75	2,068.2	-3,463.8	838.5	-166.8	854.9	0.00	1,594,175.93	2,286,382.24
2,400.0	33.99	348.75	2,151.1	-3,380.9	893.3	-177.7	910.8	0.00	1,594,231.04	2,286,372.86
2,500.0	33.99	348.75	2,234.1	-3,297.9	948.1	-188.6	966.7	0.00	1,594,286.16	2,286,363.48
2,600.0	33.99	348.75	2,317.0	-3,215.0	1,003.0	-199.5	1,022.6	0.00	1,594,341.27	2,286,354.10
2,700.0	33.99	348.75	2,399.9	-3,132.1	1,057.8	-210.4	1,078.5	0.00	1,594,396.38	2,286,344.72
2,800.0	33.99	348.75	2,482.8	-3,049.2	1,112.6	-221.3	1,134.4	0.00	1,594,451.50	2,286,335.34
2,900.0	33.99	348.75	2,565.7	-2,966.3	1,167.5	-232.2	1,190.3	0.00	1,594,506.61	2,286,325.96
3,000.0	33.99	348.75	2,648.6	-2,883.4	1,222.3	-243.1	1,246.2	0.00	1,594,561.73	2,286,316.59
3,100.0	33.99	348.75	2,731.5	-2,800.5	1,277.1	-254.1	1,302.2	0.00	1,594,616.84	2,286,307.21
3,200.0	33.99	348.75	2,814.4	-2,717.6	1,332.0	-265.0	1,358.1	0.00	1,594,671.95	2,286,297.83
3,300.0	33.99	348.75	2,897.4	-2,634.6	1,386.8	-275.9	1,414.0	0.00	1,594,727.07	2,286,288.45
3,400.0	33.99	348.75	2,980.3	-2,551.7	1,441.6	-286.8	1,469.9	0.00	1,594,782.18	2,286,279.07
3,500.0	33.99	348.75	3,063.2	-2,468.8	1,496.5	-297.7	1,525.8	0.00	1,594,837.29	2,286,269.69
3,600.0	33.99	348.75	3,146.1	-2,385.9	1,551.3	-308.6	1,581.7	0.00	1,594,892.41	2,286,260.31
3,700.0	33.99	348.75	3,229.0	-2,303.0	1,606.1	-319.5	1,637.6	0.00	1,594,947.52	2,286,250.93
3,800.0	33.99	348.75	3,311.9	-2,220.1	1,660.9	-330.4	1,693.5	0.00	1,595,002.63	2,286,241.56
3,900.0	33.99	348.75	3,394.8	-2,137.2	1,715.8	-341.3	1,749.4	0.00	1,595,057.75	2,286,232.18
4,000.0	33.99	348.75	3,477.7	-2,054.3	1,770.6	-352.2	1,805.3	0.00	1,595,112.86	2,286,222.80
4,034.1	33.99	348.75	3,506.0	-2,026.0	1,789.3	-355.9	1,824.4	0.00	1,595,131.64	2,286,219.60
Williams Fork										
4,100.0	33.99	348.75	3,560.7	-1,971.3	1,825.4	-363.1	1,861.2	0.00	1,595,167.98	2,286,213.42
4,200.0	33.99	348.75	3,643.6	-1,888.4	1,880.3	-374.0	1,917.1	0.00	1,595,223.09	2,286,204.04
4,300.0	33.99	348.75	3,726.5	-1,805.5	1,935.1	-384.9	1,973.0	0.00	1,595,278.20	2,286,194.66
4,400.0	33.99	348.75	3,809.4	-1,722.6	1,989.9	-395.9	2,028.9	0.00	1,595,333.32	2,286,185.28
4,500.0	33.99	348.75	3,892.3	-1,639.7	2,044.8	-406.8	2,084.8	0.00	1,595,388.43	2,286,175.91
4,600.0	33.99	348.75	3,975.2	-1,556.8	2,099.6	-417.7	2,140.7	0.00	1,595,443.54	2,286,166.53
4,700.0	33.99	348.75	4,058.1	-1,473.9	2,154.4	-428.6	2,196.6	0.00	1,595,498.66	2,286,157.15

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Site:	Yater	MD Reference:	YATER 11D-17-07-95 @ 5532.0usft (EST KB)
Well:	YATER 11D-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	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)
4,794.9	33.99	348.75	4,136.8	-1,395.2	2,206.5	-438.9	2,249.7	0.00	1,595,550.95	2,286,148.25
Start Drop -3.50										
4,800.0	33.81	348.75	4,141.1	-1,390.9	2,209.3	-439.5	2,252.5	3.50	1,595,553.77	2,286,147.77
4,900.0	30.31	348.75	4,225.8	-1,306.2	2,261.3	-449.8	2,305.6	3.50	1,595,606.09	2,286,138.87
5,000.0	26.81	348.75	4,313.6	-1,218.4	2,308.2	-459.2	2,353.4	3.50	1,595,653.21	2,286,130.85
5,100.0	23.31	348.75	4,404.2	-1,127.8	2,349.7	-467.4	2,395.8	3.50	1,595,694.97	2,286,123.74
5,193.4	20.04	348.75	4,491.0	-1,041.0	2,383.6	-474.2	2,430.3	3.50	1,595,728.99	2,286,117.95
Top of Gas										
5,200.0	19.81	348.75	4,497.2	-1,034.8	2,385.8	-474.6	2,432.5	3.50	1,595,731.19	2,286,117.58
5,224.2	18.97	348.75	4,520.0	-1,012.0	2,393.6	-476.2	2,440.6	3.50	1,595,739.11	2,286,116.23
11D-17-07-95 TGT										
5,300.0	16.31	348.75	4,592.2	-939.8	2,416.2	-480.6	2,463.5	3.50	1,595,761.75	2,286,112.38
5,400.0	12.81	348.75	4,689.0	-843.0	2,440.8	-485.6	2,488.7	3.50	1,595,786.53	2,286,108.16
5,500.0	9.31	348.75	4,787.1	-744.9	2,459.6	-489.3	2,507.8	3.50	1,595,805.45	2,286,104.94
5,600.0	5.81	348.75	4,886.2	-645.8	2,472.6	-491.9	2,521.0	3.50	1,595,818.42	2,286,102.73
5,700.0	2.31	348.75	4,986.0	-546.0	2,479.5	-493.2	2,528.1	3.50	1,595,825.40	2,286,101.55
5,766.1	0.00	0.00	5,052.0	-480.0	2,480.8	-493.5	2,529.4	3.50	1,595,826.71	2,286,101.32
Back to Vertical - Start 1697.0 hold at 5766.1 MD										
5,800.0	0.00	0.00	5,085.9	-446.1	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
5,900.0	0.00	0.00	5,185.9	-346.1	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,000.0	0.00	0.00	5,285.9	-246.1	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,100.0	0.00	0.00	5,385.9	-146.1	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,200.0	0.00	0.00	5,485.9	-46.1	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,300.0	0.00	0.00	5,585.9	53.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,400.0	0.00	0.00	5,685.9	153.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,500.0	0.00	0.00	5,785.9	253.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,600.0	0.00	0.00	5,885.9	353.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32

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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)
6,652.1	0.00		0.00	5,938.0	406.0	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
Cameo											
6,700.0	0.00		0.00	5,985.9	453.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,800.0	0.00		0.00	6,085.9	553.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
6,900.0	0.00		0.00	6,185.9	653.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,000.0	0.00		0.00	6,285.9	753.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,100.0	0.00		0.00	6,385.9	853.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,163.1	0.00		0.00	6,449.0	917.0	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
Rollins											
7,200.0	0.00		0.00	6,485.9	953.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,300.0	0.00		0.00	6,585.9	1,053.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,400.0	0.00		0.00	6,685.9	1,153.9	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
7,463.1	0.00		0.00	6,749.0	1,217.0	2,480.8	-493.5	2,529.4	0.00	1,595,826.71	2,286,101.32
TD at 7463.1											

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,034.1	3,506.0	Williams Fork		0.00		
7,163.1	6,449.0	Rollins		0.00		
5,193.4	4,491.0	Top of Gas		0.00		
6,652.1	5,938.0	Cameo		0.00		

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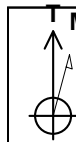
Plan Annotations

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
1,271.2	1,215.2	274.3	-54.6	Start 3523.7 hold at 1271.2 MD
1,855.9	1,700.0	595.0	-118.4	Surface Casing
4,794.9	4,136.8	2,206.5	-438.9	Start Drop -3.50
5,766.1	5,052.0	2,480.8	-493.5	Back to Vertical
5,766.1	5,052.0	2,480.8	-493.5	Start 1697.0 hold at 5766.1 MD
7,463.1	6,749.0	2,480.8	-493.5	TD at 7463.1

Checked By: _____ Approved By: _____ Date: _____



Well Name: YATER 11D-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 1593333.14 2286525.65 39° 26' 6.824 N 108° 1' 35.033 W
EST KB YATER 11D-17-07-95 @ 5532.0usft (EST KB)



Azimuths to True North
Magnetic North: 9.93°
Magnetic Field
Strength: 51878.4nT
Dip Angle: 65.59°
Date: 10/23/2014
Model: IGRF2010

Yater
YATER 11D-17-07-95
Design #1
8:53, October 28 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
11D-17-07-95	TGT4491.0	2480.8	-493.5	1595826.71	2286101.32	39° 26' 31.344 N	108° 1' 41.324 W	Rectangle (Sides: L40.0 W100.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	1271.2	33.99	348.75	1215.2	274.3	-54.6	3.50	348.75	279.7	
4	4794.9	33.99	348.75	4136.8	2206.5	-438.9	0.00	0.00	2249.7	
5	5766.1	0.00	0.00	5052.0	2480.8	-493.5	3.50	180.00	2529.4	
6	7463.1	0.00	0.00	6749.0	2480.8	-493.5	0.00	0.00	2529.4	

ANNOTATIONS

TVD	MD	Annotation
300.0	300.0	Start Build 3.50
1215.2	1271.2	Start 3523.7 hold at 1271.2 MD
1700.0	1855.9	Surface Casing
4136.8	4794.9	Start Drop -3.50
5052.0	5766.1	Back to Vertical
5052.0	5766.1	Start 1697.0 hold at 5766.1 MD
6749.0	7463.1	TD at 7463.1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3506.0	4034.1	Williams Fork	0.00	
4491.0	5193.4	Top of Gas	0.00	
5938.0	6652.1	Cameo	0.00	
6449.0	7163.1	Rollins	0.00	

