



Ursa Operating Company, LLC

Rockies Region

Yater

YATER 22A-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 22A-17-07-95
Project:	Rockies Region	TVD Reference:	YATER 22A-17-07-95 @ 5532.0usft (EST KB)
Site:	Yater	MD Reference:	YATER 22A-17-07-95 @ 5532.0usft (EST KB)
Well:	YATER 22A-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	
From:	Lat/Long	Easting:		2,286,525.77 usft	
Position Uncertainty:	0.0 usft	Slot Radius:		13-3/16 "	
				Latitude:	39° 26' 7.071 N
				Longitude:	108° 1' 35.041 W
				Grid Convergence:	-1.59 °

Well	YATER 22A-17-07-95, SHL LAT: 39.435194634 LONG: -108.026397133					
Well Position	+N-S	0.0 usft	Northing:	1,593,320.65 usft	Latitude:	39° 26' 6.701 N
	+E-W	0.0 usft	Easting:	2,286,525.60 usft	Longitude:	108° 1' 35.030 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	22.23

Survey Tool Program		Date	10/27/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,372.1	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	1,593,320.65	2,286,525.60
100.0	0.00	0.00	100.0	-5,432.0	0.0	0.0	0.0	0.00	1,593,320.65	2,286,525.60
200.0	0.00	0.00	200.0	-5,332.0	0.0	0.0	0.0	0.00	1,593,320.65	2,286,525.60
300.0	0.00	0.00	300.0	-5,232.0	0.0	0.0	0.0	0.00	1,593,320.65	2,286,525.60
Start Build 3.50										
400.0	3.50	22.23	399.9	-5,132.1	2.8	1.2	3.1	3.50	1,593,323.44	2,286,526.83
500.0	7.00	22.23	499.5	-5,032.5	11.3	4.6	12.2	3.50	1,593,331.81	2,286,530.53
600.0	10.50	22.23	598.3	-4,933.7	25.4	10.4	27.4	3.50	1,593,345.72	2,286,536.67
700.0	14.00	22.23	696.0	-4,836.0	45.0	18.4	48.6	3.50	1,593,365.13	2,286,545.24
800.0	17.50	22.23	792.3	-4,739.7	70.1	28.7	75.8	3.50	1,593,389.96	2,286,556.20
900.0	21.00	22.23	886.7	-4,645.3	100.6	41.1	108.7	3.50	1,593,420.11	2,286,569.52
1,000.0	24.50	22.23	978.9	-4,553.1	136.4	55.8	147.4	3.50	1,593,455.48	2,286,585.14
1,100.0	28.00	22.23	1,068.5	-4,463.5	177.4	72.5	191.6	3.50	1,593,495.93	2,286,603.00
1,200.0	31.50	22.23	1,155.3	-4,376.7	223.3	91.3	241.2	3.50	1,593,541.32	2,286,623.05
1,256.5	33.48	22.23	1,203.0	-4,329.0	251.4	102.8	271.6	3.50	1,593,569.09	2,286,635.31
Start 2990.0 hold at 1256.5 MD										
1,300.0	33.48	22.23	1,239.3	-4,292.7	273.6	111.8	295.6	0.00	1,593,591.03	2,286,645.00
1,400.0	33.48	22.23	1,322.7	-4,209.3	324.7	132.7	350.7	0.00	1,593,641.49	2,286,667.28
1,500.0	33.48	22.23	1,406.1	-4,125.9	375.7	153.6	405.9	0.00	1,593,691.95	2,286,689.57
1,600.0	33.48	22.23	1,489.5	-4,042.5	426.8	174.5	461.1	0.00	1,593,742.41	2,286,711.85
1,700.0	33.48	22.23	1,572.9	-3,959.1	477.8	195.3	516.2	0.00	1,593,792.87	2,286,734.14
1,800.0	33.48	22.23	1,656.3	-3,875.7	528.9	216.2	571.4	0.00	1,593,843.34	2,286,756.42
1,852.4	33.48	22.23	1,700.0	-3,832.0	555.6	227.1	600.3	0.00	1,593,869.76	2,286,768.09
Surface Casing										
1,900.0	33.48	22.23	1,739.7	-3,792.3	580.0	237.1	626.5	0.00	1,593,893.80	2,286,778.70
2,000.0	33.48	22.23	1,823.1	-3,708.9	631.0	257.9	681.7	0.00	1,593,944.26	2,286,800.99
2,100.0	33.48	22.23	1,906.6	-3,625.4	682.1	278.8	736.9	0.00	1,593,994.72	2,286,823.27
2,200.0	33.48	22.23	1,990.0	-3,542.0	733.1	299.7	792.0	0.00	1,594,045.18	2,286,845.56

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Well:	YATER 22A-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	33.48	22.23	2,073.4	-3,458.6	784.2	320.6	847.2	0.00	1,594,095.64	2,286,867.84
2,400.0	33.48	22.23	2,156.8	-3,375.2	835.3	341.4	902.4	0.00	1,594,146.10	2,286,890.12
2,500.0	33.48	22.23	2,240.2	-3,291.8	886.3	362.3	957.5	0.00	1,594,196.56	2,286,912.41
2,600.0	33.48	22.23	2,323.6	-3,208.4	937.4	383.2	1,012.7	0.00	1,594,247.02	2,286,934.69
2,700.0	33.48	22.23	2,407.0	-3,125.0	988.5	404.0	1,067.8	0.00	1,594,297.48	2,286,956.98
2,800.0	33.48	22.23	2,490.4	-3,041.6	1,039.5	424.9	1,123.0	0.00	1,594,347.94	2,286,979.26
2,900.0	33.48	22.23	2,573.8	-2,958.2	1,090.6	445.8	1,178.2	0.00	1,594,398.41	2,287,001.54
3,000.0	33.48	22.23	2,657.2	-2,874.8	1,141.6	466.7	1,233.3	0.00	1,594,448.87	2,287,023.83
3,100.0	33.48	22.23	2,740.6	-2,791.4	1,192.7	487.5	1,288.5	0.00	1,594,499.33	2,287,046.11
3,200.0	33.48	22.23	2,824.1	-2,707.9	1,243.8	508.4	1,343.7	0.00	1,594,549.79	2,287,068.40
3,300.0	33.48	22.23	2,907.5	-2,624.5	1,294.8	529.3	1,398.8	0.00	1,594,600.25	2,287,090.68
3,400.0	33.48	22.23	2,990.9	-2,541.1	1,345.9	550.2	1,454.0	0.00	1,594,650.71	2,287,112.96
3,500.0	33.48	22.23	3,074.3	-2,457.7	1,396.9	571.0	1,509.1	0.00	1,594,701.17	2,287,135.25
3,600.0	33.48	22.23	3,157.7	-2,374.3	1,448.0	591.9	1,564.3	0.00	1,594,751.63	2,287,157.53
3,700.0	33.48	22.23	3,241.1	-2,290.9	1,499.1	612.8	1,619.5	0.00	1,594,802.09	2,287,179.82
3,800.0	33.48	22.23	3,324.5	-2,207.5	1,550.1	633.6	1,674.6	0.00	1,594,852.55	2,287,202.10
3,900.0	33.48	22.23	3,407.9	-2,124.1	1,601.2	654.5	1,729.8	0.00	1,594,903.01	2,287,224.38
4,000.0	33.48	22.23	3,491.3	-2,040.7	1,652.2	675.4	1,785.0	0.00	1,594,953.47	2,287,246.67
4,041.6	33.48	22.23	3,526.0	-2,006.0	1,673.5	684.1	1,807.9	0.00	1,594,974.45	2,287,255.93
Williams Fork										
4,100.0	33.48	22.23	3,574.7	-1,957.3	1,703.3	696.3	1,840.1	0.00	1,595,003.94	2,287,268.95
4,200.0	33.48	22.23	3,658.2	-1,873.8	1,754.4	717.1	1,895.3	0.00	1,595,054.40	2,287,291.23
4,246.6	33.48	22.23	3,697.0	-1,835.0	1,778.1	726.8	1,921.0	0.00	1,595,077.89	2,287,301.61
Start Drop -3.50										
4,300.0	31.61	22.23	3,742.0	-1,790.0	1,804.7	737.7	1,949.7	3.50	1,595,104.19	2,287,313.22
4,400.0	28.11	22.23	3,828.7	-1,703.3	1,850.8	756.6	1,999.5	3.50	1,595,149.72	2,287,333.33
4,500.0	24.61	22.23	3,918.3	-1,613.7	1,891.9	773.4	2,043.9	3.50	1,595,190.33	2,287,351.26

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Site:	Yater	MD Reference:	YATER 22A-17-07-95 @ 5532.0usft (EST KB)
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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)
4,600.0	21.11	22.23	4,010.5	-1,521.5	1,927.9	788.1	2,082.7	3.50	1,595,225.86	2,287,366.95
4,700.0	17.61	22.23	4,104.8	-1,427.2	1,958.5	800.6	2,115.9	3.50	1,595,256.17	2,287,380.34
4,800.0	14.11	22.23	4,201.0	-1,331.0	1,983.8	810.9	2,143.2	3.50	1,595,281.17	2,287,391.38
4,900.0	10.61	22.23	4,298.6	-1,233.4	2,003.6	819.0	2,164.6	3.50	1,595,300.74	2,287,400.02
5,000.0	7.11	22.23	4,397.4	-1,134.6	2,017.9	824.9	2,180.0	3.50	1,595,314.82	2,287,406.24
5,100.0	3.61	22.23	4,497.0	-1,035.0	2,026.5	828.4	2,189.3	3.50	1,595,323.36	2,287,410.01
5,114.0	3.12	22.23	4,511.0	-1,021.0	2,027.3	828.7	2,190.1	3.50	1,595,324.12	2,287,410.35
Top of Gas										
5,114.1	3.12	22.23	4,511.1	-1,020.9	2,027.3	828.7	2,190.1	0.00	1,595,324.12	2,287,410.35
22A-17-07-95 TGT										
5,203.1	0.00	0.00	4,600.0	-932.0	2,029.5	829.6	2,192.6	3.50	1,595,326.33	2,287,411.32
Back to Vertical - Start 2169.0 hold at 5203.1 MD										
5,300.0	0.00	0.00	4,696.9	-835.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,400.0	0.00	0.00	4,796.9	-735.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,500.0	0.00	0.00	4,896.9	-635.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,600.0	0.00	0.00	4,996.9	-535.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,700.0	0.00	0.00	5,096.9	-435.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,800.0	0.00	0.00	5,196.9	-335.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
5,900.0	0.00	0.00	5,296.9	-235.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,000.0	0.00	0.00	5,396.9	-135.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,100.0	0.00	0.00	5,496.9	-35.1	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,200.0	0.00	0.00	5,596.9	64.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,300.0	0.00	0.00	5,696.9	164.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,400.0	0.00	0.00	5,796.9	264.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,500.0	0.00	0.00	5,896.9	364.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
6,561.1	0.00	0.00	5,958.0	426.0	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32
Cameo										
6,600.0	0.00	0.00	5,996.9	464.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32

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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)	
6,700.0	0.00	0.00	6,096.9	564.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
6,800.0	0.00	0.00	6,196.9	664.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
6,900.0	0.00	0.00	6,296.9	764.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
7,000.0	0.00	0.00	6,396.9	864.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
7,072.1	0.00	0.00	6,469.0	937.0	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
Rollins											
7,100.0	0.00	0.00	6,496.9	964.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
7,200.0	0.00	0.00	6,596.9	1,064.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
7,300.0	0.00	0.00	6,696.9	1,164.9	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
7,372.1	0.00	0.00	6,769.0	1,237.0	2,029.5	829.6	2,192.6	0.00	1,595,326.33	2,287,411.32	
TD at 7372.1											

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,561.1	5,958.0	Cameo		0.00		
5,114.0	4,511.0	Top of Gas		0.00		
4,041.6	3,526.0	Williams Fork		0.00		
7,072.1	6,469.0	Rollins		0.00		

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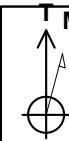
Plan Annotations

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
1,256.5	1,203.0	251.4	102.8	Start 2990.0 hold at 1256.5 MD
1,852.4	1,700.0	555.6	227.1	Surface Casing
4,246.6	3,697.0	1,778.1	726.8	Start Drop -3.50
5,203.1	4,600.0	2,029.5	829.6	Back to Vertical
5,203.1	4,600.0	2,029.5	829.6	Start 2169.0 hold at 5203.1 MD
7,372.1	6,769.0	2,029.5	829.6	TD at 7372.1

Checked By: _____
 Approved By: _____
 Date: _____



Well Name: YATER 22A-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 1593320.65 2286525.60 39° 26' 6.701 N 108° 1' 35.030 W
EST KB YATER 22A-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 22A-17-07-95
Design #1
10:48, October 28 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
22A-17-07-95 TGT4511.0		2029.5	829.6	1595326.33	2287411.32	39° 26' 26.760 N	108° 1' 24.455 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	1256.5	33.48	22.23	1203.0	251.4	102.8	3.50	22.23	271.6	
4	4246.6	33.48	22.23	3697.0	1778.1	726.8	0.00	0.00	1921.0	
5	5203.1	0.00	0.00	4600.0	2029.5	829.6	3.50	180.00	2192.6	
6	7372.1	0.00	0.00	6769.0	2029.5	829.6	0.00	0.00	2192.6	

ANNOTATIONS

TVD	MD	Annotation
300.0	300.0	Start Build 3.50
1203.0	1256.5	Start 2990.0 hold at 1256.5 MD
1700.0	1852.4	Surface Casing
3697.0	4246.6	Start Drop -3.50
4600.0	5203.1	Back to Vertical
4600.0	5203.1	Start 2169.0 hold at 5203.1 MD
6769.0	7372.1	TD at 7372.1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3526.0	4041.6	Williams Fork	0.00	
4511.0	5114.0	Top of Gas	0.00	
5958.0	6561.1	Cameo	0.00	
6469.0	7072.1	Rollins	0.00	

