



Ursa Operating Company, LLC

Rockies Region

Yater

YATER 41D-18-07-95

Wellbore #1

Plan: Design #1

Standard Planning Report

14 January, 2015



Database:	MasterDB	Local Co-ordinate Reference:	Well YATER 41D-18-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	YATER 41D-18-07-95 @ 5532.0usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	YATER 41D-18-07-95 @ 5532.0usft (PAD Est KB)
Site:	Yater	North Reference:	True
Well:	YATER 41D-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	Yater				
Site Position:		Northing:	1,593,358.13 usft	Latitude:	39° 26' 7.071 N
From:	Lat/Long	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 41D-18-07-95, SHL LAT: 39.435468977 LONG: -108.026405373					
Well Position	+N/-S	62.4 usft	Northing:	1,593,420.60 usft	Latitude:	39° 26' 7.688 N
	+E/-W	-1.5 usft	Easting:	2,286,526.05 usft	Longitude:	108° 1' 35.059 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	1/14/2015	9.90	65.59	51,856

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	321.19

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,420.6	39.22	321.19	1,335.1	287.4	-231.1	3.50	3.50	0.00	321.19	
4,820.3	39.22	321.19	3,968.9	1,962.4	-1,578.5	0.00	0.00	0.00	0.00	
5,940.9	0.00	0.00	5,004.0	2,249.8	-1,809.6	3.50	-3.50	0.00	180.00	
7,638.9	0.00	0.00	6,702.0	2,249.8	-1,809.6	0.00	0.00	0.00	0.00	

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Project:	Rockies Region	MD Reference:	YATER 41D-18-07-95 @ 5532.0usft (PAD Est KB)
Site:	Yater	North Reference:	True
Well:	YATER 41D-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	0.00
100.0	0.00	0.00	100.0	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	0.0	0.00	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	0.00
Start Build 3.50										
400.0	3.50	321.19	399.9	2.4	-1.9	3.1	3.50	3.50	0.00	0.00
500.0	7.00	321.19	499.5	9.5	-7.6	12.2	3.50	3.50	0.00	0.00
600.0	10.50	321.19	598.3	21.4	-17.2	27.4	3.50	3.50	0.00	0.00
700.0	14.00	321.19	696.0	37.9	-30.5	48.6	3.50	3.50	0.00	0.00
800.0	17.50	321.19	792.3	59.0	-47.5	75.8	3.50	3.50	0.00	0.00
900.0	21.00	321.19	886.7	84.7	-68.1	108.7	3.50	3.50	0.00	0.00
1,000.0	24.50	321.19	978.9	114.9	-92.4	147.4	3.50	3.50	0.00	0.00
1,100.0	28.00	321.19	1,068.5	149.3	-120.1	191.6	3.50	3.50	0.00	0.00
1,200.0	31.50	321.19	1,155.3	188.0	-151.2	241.2	3.50	3.50	0.00	0.00
1,300.0	35.00	321.19	1,239.0	230.7	-185.6	296.1	3.50	3.50	0.00	0.00
1,400.0	38.50	321.19	1,319.1	277.3	-223.1	355.9	3.50	3.50	0.00	0.00
1,420.6	39.22	321.19	1,335.1	287.4	-231.1	368.8	3.50	3.50	0.00	0.00
Start 3399.7 hold at 1420.6 MD										
1,500.0	39.22	321.19	1,396.6	326.5	-262.6	419.0	0.00	0.00	0.00	0.00
1,600.0	39.22	321.19	1,474.1	375.8	-302.2	482.2	0.00	0.00	0.00	0.00
1,700.0	39.22	321.19	1,551.6	425.0	-341.9	545.5	0.00	0.00	0.00	0.00
1,800.0	39.22	321.19	1,629.0	474.3	-381.5	608.7	0.00	0.00	0.00	0.00
1,891.6	39.22	321.19	1,700.0	519.4	-417.8	666.6	0.00	0.00	0.00	0.00
Surface Casing										
1,900.0	39.22	321.19	1,706.5	523.6	-421.1	671.9	0.00	0.00	0.00	0.00
2,000.0	39.22	321.19	1,784.0	572.8	-460.8	735.2	0.00	0.00	0.00	0.00
2,100.0	39.22	321.19	1,861.5	622.1	-500.4	798.4	0.00	0.00	0.00	0.00
2,200.0	39.22	321.19	1,938.9	671.4	-540.0	861.6	0.00	0.00	0.00	0.00
2,300.0	39.22	321.19	2,016.4	720.7	-579.7	924.9	0.00	0.00	0.00	0.00
2,400.0	39.22	321.19	2,093.9	769.9	-619.3	988.1	0.00	0.00	0.00	0.00
2,500.0	39.22	321.19	2,171.3	819.2	-658.9	1,051.3	0.00	0.00	0.00	0.00
2,600.0	39.22	321.19	2,248.8	868.5	-698.6	1,114.5	0.00	0.00	0.00	0.00
2,700.0	39.22	321.19	2,326.3	917.7	-738.2	1,177.8	0.00	0.00	0.00	0.00
2,800.0	39.22	321.19	2,403.8	967.0	-777.8	1,241.0	0.00	0.00	0.00	0.00
2,900.0	39.22	321.19	2,481.2	1,016.3	-817.5	1,304.2	0.00	0.00	0.00	0.00
3,000.0	39.22	321.19	2,558.7	1,065.5	-857.1	1,367.5	0.00	0.00	0.00	0.00
3,100.0	39.22	321.19	2,636.2	1,114.8	-896.7	1,430.7	0.00	0.00	0.00	0.00
3,200.0	39.22	321.19	2,713.6	1,164.1	-936.3	1,493.9	0.00	0.00	0.00	0.00
3,300.0	39.22	321.19	2,791.1	1,213.4	-976.0	1,557.2	0.00	0.00	0.00	0.00
3,400.0	39.22	321.19	2,868.6	1,262.6	-1,015.6	1,620.4	0.00	0.00	0.00	0.00
3,500.0	39.22	321.19	2,946.1	1,311.9	-1,055.2	1,683.6	0.00	0.00	0.00	0.00
3,600.0	39.22	321.19	3,023.5	1,361.2	-1,094.9	1,746.9	0.00	0.00	0.00	0.00
3,700.0	39.22	321.19	3,101.0	1,410.4	-1,134.5	1,810.1	0.00	0.00	0.00	0.00
3,800.0	39.22	321.19	3,178.5	1,459.7	-1,174.1	1,873.3	0.00	0.00	0.00	0.00
3,900.0	39.22	321.19	3,255.9	1,509.0	-1,213.8	1,936.6	0.00	0.00	0.00	0.00
4,000.0	39.22	321.19	3,333.4	1,558.2	-1,253.4	1,999.8	0.00	0.00	0.00	0.00
4,100.0	39.22	321.19	3,410.9	1,607.5	-1,293.0	2,063.0	0.00	0.00	0.00	0.00
4,162.1	39.22	321.19	3,459.0	1,638.1	-1,317.6	2,102.3	0.00	0.00	0.00	0.00
Williams Fork										
4,200.0	39.22	321.19	3,488.4	1,656.8	-1,332.7	2,126.2	0.00	0.00	0.00	0.00
4,300.0	39.22	321.19	3,565.8	1,706.1	-1,372.3	2,189.5	0.00	0.00	0.00	0.00
4,400.0	39.22	321.19	3,643.3	1,755.3	-1,411.9	2,252.7	0.00	0.00	0.00	0.00

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Site:	Yater	North Reference:	True
Well:	YATER 41D-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)	
4,500.0	39.22	321.19	3,720.8	1,804.6	-1,451.6	2,315.9	0.00	0.00	0.00	
4,600.0	39.22	321.19	3,798.2	1,853.9	-1,491.2	2,379.2	0.00	0.00	0.00	
4,700.0	39.22	321.19	3,875.7	1,903.1	-1,530.8	2,442.4	0.00	0.00	0.00	
4,800.0	39.22	321.19	3,953.2	1,952.4	-1,570.4	2,505.6	0.00	0.00	0.00	
4,820.3	39.22	321.19	3,968.9	1,962.4	-1,578.5	2,518.5	0.00	0.00	0.00	
Start Drop -3.50										
4,900.0	36.43	321.19	4,031.9	2,000.5	-1,609.1	2,567.3	3.50	-3.50	0.00	
5,000.0	32.93	321.19	4,114.1	2,044.8	-1,644.8	2,624.2	3.50	-3.50	0.00	
5,100.0	29.43	321.19	4,199.6	2,085.2	-1,677.2	2,676.0	3.50	-3.50	0.00	
5,200.0	25.93	321.19	4,288.2	2,121.4	-1,706.3	2,722.4	3.50	-3.50	0.00	
5,300.0	22.43	321.19	4,379.4	2,153.3	-1,732.0	2,763.4	3.50	-3.50	0.00	
5,369.3	20.00	321.19	4,444.0	2,172.8	-1,747.7	2,788.5	3.50	-3.50	0.00	
Top of Gas										
5,400.0	18.93	321.19	4,472.9	2,180.8	-1,754.1	2,798.7	3.50	-3.50	0.00	
5,500.0	15.43	321.19	4,568.4	2,203.8	-1,772.6	2,828.2	3.50	-3.50	0.00	
5,600.0	11.93	321.19	4,665.6	2,222.2	-1,787.5	2,851.9	3.50	-3.50	0.00	
5,700.0	8.43	321.19	4,764.0	2,236.0	-1,798.5	2,869.6	3.50	-3.50	0.00	
5,800.0	4.93	321.19	4,863.3	2,245.1	-1,805.8	2,881.2	3.50	-3.50	0.00	
5,900.0	1.43	321.19	4,963.1	2,249.4	-1,809.3	2,886.7	3.50	-3.50	0.00	
5,940.9	0.00	0.00	5,004.0	2,249.8	-1,809.6	2,887.3	3.50	-3.50	94.95	
Back to Vertical - Start 1698.0 hold at 5940.9 MD										
6,000.0	0.00	0.00	5,063.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,100.0	0.00	0.00	5,163.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,200.0	0.00	0.00	5,263.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,300.0	0.00	0.00	5,363.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,400.0	0.00	0.00	5,463.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,500.0	0.00	0.00	5,563.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,600.0	0.00	0.00	5,663.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,700.0	0.00	0.00	5,763.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,800.0	0.00	0.00	5,863.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
6,827.9	0.00	0.00	5,891.0	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
Cameo										
6,900.0	0.00	0.00	5,963.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,063.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,100.0	0.00	0.00	6,163.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,200.0	0.00	0.00	6,263.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,300.0	0.00	0.00	6,363.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,338.9	0.00	0.00	6,402.0	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
Rollins										
7,400.0	0.00	0.00	6,463.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,500.0	0.00	0.00	6,563.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,600.0	0.00	0.00	6,663.1	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
7,638.9	0.00	0.00	6,702.0	2,249.8	-1,809.6	2,887.3	0.00	0.00	0.00	
TD at 7638.9										

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Project:	Rockies Region	MD Reference:	YATER 41D-18-07-95 @ 5532.0usft (PAD Est KB)
Site:	Yater	North Reference:	True
Well:	YATER 41D-18-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
41D-18-07-95 TGT	0.00	0.00	4,444.0	2,249.8	-1,809.6	1,595,719.82	2,284,779.68	39° 26' 29.924 N	108° 1' 58.127 W
- plan misses target center by 93.1usft at 5400.0usft MD (4472.9 TVD, 2180.8 N, -1754.1 E)									
- Rectangle (sides W100.0 H40.0 D2,258.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,162.1	3,459.0	Williams Fork		0.00		
5,369.3	4,444.0	Top of Gas		0.00		
6,827.9	5,891.0	Cameo		0.00		
7,338.9	6,402.0	Rollins		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
300.0	300.0	0.0	0.0	Start Build 3.50	
1,420.6	1,335.1	287.4	-231.1	Start 3399.7 hold at 1420.6 MD	
1,891.6	1,700.0	519.4	-417.8	Surface Casing	
4,820.3	3,968.9	1,962.4	-1,578.5	Start Drop -3.50	
5,940.9	5,004.0	2,249.8	-1,809.6	Back to Vertical	
5,940.9	5,004.0	2,249.8	-1,809.6	Start 1698.0 hold at 5940.9 MD	
7,638.9	6,702.0	2,249.8	-1,809.6	TD at 7638.9	



Well Name: YATER 41D-18-07-95
 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 1593420.60 2286526.05 39° 26' 7.688 N 108° 1' 35.059 W
 PAD Est KB YATER 41D-18-07-95 @ 5532.0usft (PAD Est KB)



Azimuths to True North
 Magnetic North: 9.90°
 Magnetic Field
 Strength: 51855.6snT
 Dip Angle: 65.59°
 Date: 1/14/2015
 Model: IGRF2010

Yater
 YATER 41D-18-07-95
 Design #1
 10:54, January 14 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
41D-18-07-95 TGT4444.0		2249.8	-1809.6	1595719.82	2284779.67	39° 26' 29.924 N	108° 1' 58.127 W	Rectangle (Sides: L40.0 W100.0)

ANNOTATIONS

TVD	MD	Annotation
300.0	300.0	Start Build 3.50
1335.1	1420.6	Start 3399.7 hold at 1420.6 MD
1700.0	1891.6	Surface Casing
3968.9	4820.3	Start Drop -3.50
5004.0	5940.9	Back to Vertical
5004.0	5940.9	Start 1698.0 hold at 5940.9 MD
6702.0	7638.9	TD at 7638.9

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	1420.6	39.22	321.19	1335.1	287.4	-231.1	3.50	321.19	368.8	
4	4820.3	39.22	321.19	3968.9	1962.4	-1578.5	0.00	0.00	2518.5	
5	5940.9	0.00	0.00	5004.0	2249.8	-1809.6	3.50	180.00	2887.3	
6	7638.9	0.00	0.00	6702.0	2249.8	-1809.6	0.00	0.00	2887.3	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3459.0	4162.1	Williams Fork	0.00	
4444.0	5369.3	Top of Gas	0.00	
5891.0	6827.9	Cameo	0.00	
6402.0	7338.9	Rollins	0.00	

