



Ursa Operating Company, LLC

Rockies Region

CSF Q

CSF 34B-10-07-91

Wellbore #1

Plan: Design #1

Standard Planning Report

13 February, 2014



Database:	MasterDB	Local Co-ordinate Reference:	Well CSF 34B-10-07-91
Company:	Ursa Operating Company, LLC	TVD Reference:	CSF 34B-10-07-91 @ 7300.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	CSF 34B-10-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 34B-10-07-91	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	CSF Q				
Site Position:		Northing:	1,597,555.05 usft	Latitude:	39° 27' 22.939 N
From:	Lat/Long	Easting:	2,425,142.43 usft	Longitude:	107° 32' 9.881 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.28 °

Well	CSF 34B-10-07-91, SHL LAT: 39.45639862 LONG: -107.5361597					
Well Position	+N/-S	9.7 usft	Northing:	1,597,565.25 usft	Latitude:	39° 27' 23.035 N
	+E/-W	-23.0 usft	Easting:	2,425,119.62 usft	Longitude:	107° 32' 10.175 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	7,300.4 usft	Ground Level:	7,285.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/13/2014	9.79	65.72	52,008

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	303.98

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,324.5	4.36	303.98	1,324.4	2.6	-3.9	3.50	3.50	0.00	303.98	
6,056.4	4.36	303.98	6,042.6	203.7	-302.1	0.00	0.00	0.00	0.00	
6,180.9	0.00	0.00	6,167.0	206.3	-306.1	3.50	-3.50	0.00	180.00	CSF 34B-10-07-91 T
8,045.9	0.00	0.00	8,032.0	206.3	-306.1	0.00	0.00	0.00	0.00	

Database:	MasterDB	Local Co-ordinate Reference:	Well CSF 34B-10-07-91
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Project:	Rockies Region	MD Reference:	CSF 34B-10-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 34B-10-07-91	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
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Start Build 3.50										
1,300.0	3.50	303.98	1,299.9	1.7	-2.5	3.1	3.50	3.50	0.00	0.00
1,324.5	4.36	303.98	1,324.4	2.6	-3.9	4.7	3.50	3.50	0.00	0.00
Start 4731.8 hold at 1324.5 MD										
1,400.0	4.36	303.98	1,399.7	5.9	-8.7	10.5	0.00	0.00	0.00	0.00
1,500.0	4.36	303.98	1,499.4	10.1	-15.0	18.1	0.00	0.00	0.00	0.00
1,600.0	4.36	303.98	1,599.1	14.3	-21.3	25.7	0.00	0.00	0.00	0.00
1,700.0	4.36	303.98	1,698.8	18.6	-27.6	33.3	0.00	0.00	0.00	0.00
1,800.0	4.36	303.98	1,798.5	22.8	-33.9	40.9	0.00	0.00	0.00	0.00
1,900.0	4.36	303.98	1,898.2	27.1	-40.2	48.5	0.00	0.00	0.00	0.00
2,000.0	4.36	303.98	1,997.9	31.3	-46.5	56.1	0.00	0.00	0.00	0.00
2,100.0	4.36	303.98	2,097.6	35.6	-52.8	63.7	0.00	0.00	0.00	0.00
2,200.0	4.36	303.98	2,197.3	39.8	-59.1	71.3	0.00	0.00	0.00	0.00
2,300.0	4.36	303.98	2,297.1	44.1	-65.4	78.9	0.00	0.00	0.00	0.00
2,400.0	4.36	303.98	2,396.8	48.3	-71.7	86.5	0.00	0.00	0.00	0.00
2,500.0	4.36	303.98	2,496.5	52.6	-78.0	94.1	0.00	0.00	0.00	0.00
2,600.0	4.36	303.98	2,596.2	56.8	-84.3	101.7	0.00	0.00	0.00	0.00
2,700.0	4.36	303.98	2,695.9	61.1	-90.6	109.3	0.00	0.00	0.00	0.00
2,800.0	4.36	303.98	2,795.6	65.3	-96.9	116.9	0.00	0.00	0.00	0.00
2,900.0	4.36	303.98	2,895.3	69.6	-103.2	124.5	0.00	0.00	0.00	0.00
3,000.0	4.36	303.98	2,995.0	73.8	-109.5	132.1	0.00	0.00	0.00	0.00
3,100.0	4.36	303.98	3,094.7	78.1	-115.8	139.7	0.00	0.00	0.00	0.00
3,200.0	4.36	303.98	3,194.5	82.3	-122.1	147.3	0.00	0.00	0.00	0.00
3,300.0	4.36	303.98	3,294.2	86.6	-128.4	154.9	0.00	0.00	0.00	0.00
3,400.0	4.36	303.98	3,393.9	90.8	-134.7	162.5	0.00	0.00	0.00	0.00
3,500.0	4.36	303.98	3,493.6	95.1	-141.0	170.1	0.00	0.00	0.00	0.00
3,600.0	4.36	303.98	3,593.3	99.3	-147.3	177.7	0.00	0.00	0.00	0.00
3,700.0	4.36	303.98	3,693.0	103.6	-153.6	185.3	0.00	0.00	0.00	0.00
3,800.0	4.36	303.98	3,792.7	107.8	-159.9	192.9	0.00	0.00	0.00	0.00
3,848.4	4.36	303.98	3,841.0	109.9	-163.0	196.6	0.00	0.00	0.00	0.00
Williams Fork										
3,900.0	4.36	303.98	3,892.4	112.1	-166.2	200.5	0.00	0.00	0.00	0.00
4,000.0	4.36	303.98	3,992.1	116.3	-172.5	208.1	0.00	0.00	0.00	0.00
4,100.0	4.36	303.98	4,091.9	120.6	-178.8	215.7	0.00	0.00	0.00	0.00
4,200.0	4.36	303.98	4,191.6	124.8	-185.2	223.3	0.00	0.00	0.00	0.00
4,300.0	4.36	303.98	4,291.3	129.0	-191.5	230.9	0.00	0.00	0.00	0.00
4,400.0	4.36	303.98	4,391.0	133.3	-197.8	238.5	0.00	0.00	0.00	0.00
4,500.0	4.36	303.98	4,490.7	137.5	-204.1	246.1	0.00	0.00	0.00	0.00
4,600.0	4.36	303.98	4,590.4	141.8	-210.4	253.7	0.00	0.00	0.00	0.00

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Site:	CSF Q	North Reference:	True
Well:	CSF 34B-10-07-91	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)	
4,700.0	4.36	303.98	4,690.1	146.0	-216.7	261.3	0.00	0.00	0.00	
4,800.0	4.36	303.98	4,789.8	150.3	-223.0	268.9	0.00	0.00	0.00	
4,900.0	4.36	303.98	4,889.5	154.5	-229.3	276.5	0.00	0.00	0.00	
5,000.0	4.36	303.98	4,989.2	158.8	-235.6	284.1	0.00	0.00	0.00	
5,100.0	4.36	303.98	5,089.0	163.0	-241.9	291.7	0.00	0.00	0.00	
5,200.0	4.36	303.98	5,188.7	167.3	-248.2	299.3	0.00	0.00	0.00	
5,300.0	4.36	303.98	5,288.4	171.5	-254.5	306.9	0.00	0.00	0.00	
5,400.0	4.36	303.98	5,388.1	175.8	-260.8	314.5	0.00	0.00	0.00	
5,500.0	4.36	303.98	5,487.8	180.0	-267.1	322.1	0.00	0.00	0.00	
5,600.0	4.36	303.98	5,587.5	184.3	-273.4	329.7	0.00	0.00	0.00	
5,700.0	4.36	303.98	5,687.2	188.5	-279.7	337.3	0.00	0.00	0.00	
5,800.0	4.36	303.98	5,786.9	192.8	-286.0	344.9	0.00	0.00	0.00	
5,900.0	4.36	303.98	5,886.6	197.0	-292.3	352.5	0.00	0.00	0.00	
6,000.0	4.36	303.98	5,986.4	201.3	-298.6	360.1	0.00	0.00	0.00	
6,056.4	4.36	303.98	6,042.6	203.7	-302.1	364.4	0.00	0.00	0.00	
Start Drop -3.50										
6,100.0	2.83	303.98	6,086.1	205.2	-304.4	367.1	3.50	-3.50	0.00	
6,180.9	0.00	0.00	6,167.0	206.3	-306.1	369.1	3.50	-3.50	0.00	
Start 1865.0 hold at 6180.9 MD - Top of Gas - CSF 34B-10-07-91 TGT										
6,200.0	0.00	0.00	6,186.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,286.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,329.9	0.00	0.00	6,316.0	206.3	-306.1	369.1	0.00	0.00	0.00	
Cameo										
6,400.0	0.00	0.00	6,386.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,486.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,586.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,686.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,786.1	206.3	-306.1	369.1	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,886.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,986.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,086.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,186.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,286.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,386.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,486.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,586.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,686.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,745.9	0.00	0.00	7,732.0	206.3	-306.1	369.1	0.00	0.00	0.00	
Rollins										
7,800.0	0.00	0.00	7,786.1	206.3	-306.1	369.1	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,886.1	206.3	-306.1	369.1	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,986.1	206.3	-306.1	369.1	0.00	0.00	0.00	
8,045.9	0.00	0.00	8,032.0	206.3	-306.1	369.1	0.00	0.00	0.00	
TD at 8045.9										

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Project:	Rockies Region	MD Reference:	CSF 34B-10-07-91 @ 7300.4usft (PAD Est KB)
Site:	CSF Q	North Reference:	True
Well:	CSF 34B-10-07-91	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									
CSF 34B-10-07-91 TGT	0.00	0.00	6,167.0	206.3	-306.1	1,597,778.36	2,424,818.24	39° 27' 25.074 N	107° 32' 14.077 W
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D1,865.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
3,848.4	3,841.0	Williams Fork		0.00		
6,180.9	6,167.0	Top of Gas		0.00		
6,329.9	6,316.0	Cameo		0.00		
7,745.9	7,732.0	Rollins		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
1,200.0	1,200.0	0.0	0.0	Start Build 3.50	
1,324.5	1,324.4	2.6	-3.9	Start 4731.8 hold at 1324.5 MD	
6,056.4	6,042.6	203.7	-302.1	Start Drop -3.50	
6,180.9	6,167.0	206.3	-306.1	Start 1865.0 hold at 6180.9 MD	
8,045.9	8,032.0	206.3	-306.1	TD at 8045.9	



Well Name: CSF 34B-10-07-91
 Surface Location: CSF Q
 North American Datum 1983, US State Plane 1983, Colorado Central Zone
 Ground Elevation: 7285.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1597565.25 2425119.61 39° 27' 23.035 N 107° 32' 10.175 W
 PAD Est KB CSF 34B-10-07-91 @ 7300.4usft (PAD Est KB)



Azimuths to True North
 Magnetic North: 9.79°
 Magnetic Field
 Strength: 52007.6snT
 Dip Angle: 65.72°
 Date: 2/13/2014
 Model: IGRF2010

CSF Q
 CSF 34B-10-07-91
 Design #1
 11:49, February 13 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
CSF 34B-10-07-91	6167.0	206.3	-306.1	1597778.37	2424818.24	39° 27' 25.074 N	107° 32' 14.077 W	Rectangle (Sides: L40.0 W100.0)

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	Start Build 3.50
1324.4	1324.5	Start 4731.8 hold at 1324.5 MD
6042.6	6056.4	Start Drop -3.50
6167.0	6180.9	Start 1865.0 hold at 6180.9 MD
8032.0	8045.9	TD at 8045.9

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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1324.5	4.36	303.98	1324.4	2.6	-3.9	3.50	303.98	4.7	
4	6056.4	4.36	303.98	6042.6	203.7	-302.1	0.00	0.00	364.4	
5	6180.9	0.00	0.00	6167.0	206.3	-306.1	3.50	180.00	369.1	CSF 34B-10-07-91 TGT
6	8045.9	0.00	0.00	8032.0	206.3	-306.1	0.00	0.00	369.1	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3841.0	3848.4	Williams Fork	0.00	
6167.0	6180.9	Top of Gas	0.00	
6316.0	6329.9	Cameo	0.00	
7732.0	7745.9	Rollins	0.00	

