



Ursa Operating Company, LLC

**Rockies Region
Valley Farms L
34B-11-6-92**

Wellbore #1

Plan: Design #1

Standard Planning Report

16 April, 2014



Database:	MasterDB	Local Co-ordinate Reference:	Well 34B-11-6-92
Company:	Ursa Operating Company, LLC	TVD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Project:	Rockies Region	MD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Site:	Valley Farms L	North Reference:	True
Well:	34B-11-6-92	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		Valley Farms L			
Site Position:		Northing:	1,627,813.25 usft	Latitude:	39° 32' 16.142 N
From:	Lat/Long	Easting:	2,399,633.87 usft	Longitude:	107° 37' 44.058 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	34B-11-6-92, SHL LAT: 39.537766842 LONG: -107.629021087					
Well Position	+N/-S	-18.3 usft	Northing:	1,627,795.69 usft	Latitude:	39° 32' 15.961 N
	+E/-W	-32.7 usft	Easting:	2,399,600.74 usft	Longitude:	107° 37' 44.476 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,564.4 usft	Ground Level:	5,549.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2014	9.83	65.76	52,039

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	248.45

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	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	3.00	200.00	1,299.9	-4.9	-1.8	1.50	1.50	0.00	200.00	
1,906.2	20.00	249.41	1,892.4	-56.7	-105.1	3.00	2.80	8.15	56.33	
4,038.1	20.00	249.41	3,895.7	-313.1	-787.8	0.00	0.00	0.00	0.00	
4,704.9	0.00	0.00	4,549.0	-353.6	-895.6	3.00	-3.00	0.00	180.00	34B-11-6-92 TGT
7,488.9	0.00	0.00	7,333.0	-353.6	-895.6	0.00	0.00	0.00	0.00	

Database:	MasterDB	Local Co-ordinate Reference:	Well 34B-11-6-92
Company:	Ursa Operating Company, LLC	TVD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Project:	Rockies Region	MD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Site:	Valley Farms L	North Reference:	True
Well:	34B-11-6-92	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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	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
700.0	0.00	0.00	700.0	0.0	0.0	0.0	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
900.0	0.00	0.00	900.0	0.0	0.0	0.0	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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.50									
1,200.0	1.50	200.00	1,200.0	-1.2	-0.4	0.9	1.50	1.50	0.00
1,300.0	3.00	200.00	1,299.9	-4.9	-1.8	3.5	1.50	1.50	0.00
Start DLS 3.00 TFO 56.33									
1,400.0	5.29	228.20	1,399.6	-10.5	-6.1	9.5	3.00	2.29	28.20
1,500.0	8.06	238.36	1,499.0	-17.2	-15.5	20.8	3.00	2.77	10.16
1,600.0	10.95	243.27	1,597.6	-25.2	-30.0	37.1	3.00	2.89	4.91
1,700.0	13.89	246.14	1,695.2	-34.3	-49.4	58.6	3.00	2.94	2.87
1,800.0	16.85	248.01	1,791.7	-44.6	-73.9	85.1	3.00	2.96	1.88
1,906.2	20.00	249.41	1,892.4	-56.7	-105.1	118.6	3.00	2.97	1.32
Start 2131.9 hold at 1906.2 MD									
2,000.0	20.00	249.41	1,980.5	-68.0	-135.2	150.7	0.00	0.00	0.00
2,100.0	20.00	249.41	2,074.5	-80.0	-167.2	184.9	0.00	0.00	0.00
2,200.0	20.00	249.41	2,168.5	-92.0	-199.2	219.1	0.00	0.00	0.00
2,300.0	20.00	249.41	2,262.4	-104.1	-231.2	253.3	0.00	0.00	0.00
2,400.0	20.00	249.41	2,356.4	-116.1	-263.3	287.5	0.00	0.00	0.00
2,500.0	20.00	249.41	2,450.4	-128.1	-295.3	321.7	0.00	0.00	0.00
2,600.0	20.00	249.41	2,544.3	-140.2	-327.3	355.9	0.00	0.00	0.00
2,700.0	20.00	249.41	2,638.3	-152.2	-359.3	390.1	0.00	0.00	0.00
2,800.0	20.00	249.41	2,732.3	-164.2	-391.3	424.3	0.00	0.00	0.00
2,900.0	20.00	249.41	2,826.3	-176.2	-423.4	458.5	0.00	0.00	0.00
3,000.0	20.00	249.41	2,920.2	-188.3	-455.4	492.7	0.00	0.00	0.00
3,100.0	20.00	249.41	3,014.2	-200.3	-487.4	526.9	0.00	0.00	0.00
3,200.0	20.00	249.41	3,108.2	-212.3	-519.4	561.1	0.00	0.00	0.00
3,300.0	20.00	249.41	3,202.1	-224.3	-551.4	595.3	0.00	0.00	0.00
3,400.0	20.00	249.41	3,296.1	-236.4	-583.5	629.5	0.00	0.00	0.00
3,500.0	20.00	249.41	3,390.1	-248.4	-615.5	663.7	0.00	0.00	0.00
3,530.2	20.00	249.41	3,418.4	-252.0	-625.1	674.0	0.00	0.00	0.00
Williams Fork									
3,600.0	20.00	249.41	3,484.0	-260.4	-647.5	697.9	0.00	0.00	0.00
3,700.0	20.00	249.41	3,578.0	-272.4	-679.5	732.1	0.00	0.00	0.00
3,800.0	20.00	249.41	3,672.0	-284.5	-711.5	766.3	0.00	0.00	0.00
3,900.0	20.00	249.41	3,765.9	-296.5	-743.6	800.5	0.00	0.00	0.00
4,000.0	20.00	249.41	3,859.9	-308.5	-775.6	834.7	0.00	0.00	0.00
4,038.1	20.00	249.41	3,895.7	-313.1	-787.8	847.7	0.00	0.00	0.00
Start Drop -3.00									
4,100.0	18.15	249.41	3,954.2	-320.2	-806.7	867.9	3.00	-3.00	0.00
4,200.0	15.15	249.41	4,050.0	-330.3	-833.5	896.6	3.00	-3.00	0.00
4,300.0	12.15	249.41	4,147.2	-338.6	-855.6	920.2	3.00	-3.00	0.00
4,400.0	9.15	249.41	4,245.4	-345.1	-872.9	938.6	3.00	-3.00	0.00
4,500.0	6.15	249.41	4,344.5	-349.8	-885.4	951.9	3.00	-3.00	0.00
4,600.0	3.15	249.41	4,444.2	-352.6	-892.9	960.0	3.00	-3.00	0.00

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Site:	Valley Farms L	North Reference:	True
Well:	34B-11-6-92	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)	
4,704.9	0.00	0.00	4,549.0	-353.6	-895.6	962.9	3.00	-3.00	0.00	
Start 2784.0 hold at 4704.9 MD - 34B-11-6-92 TGT										
4,705.3	0.00	0.00	4,549.4	-353.6	-895.6	962.9	0.00	0.00	0.00	
Top of Gas										
4,800.0	0.00	0.00	4,644.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,744.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,000.0	0.00	0.00	4,844.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,100.0	0.00	0.00	4,944.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,044.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,144.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,244.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,344.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,444.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,544.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,644.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,744.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,844.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,100.0	0.00	0.00	5,944.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,194.3	0.00	0.00	6,038.4	-353.6	-895.6	962.9	0.00	0.00	0.00	
Cameo										
6,200.0	0.00	0.00	6,044.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,144.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,244.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,344.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,444.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,544.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,644.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,744.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,844.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,100.0	0.00	0.00	6,944.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,189.3	0.00	0.00	7,033.4	-353.6	-895.6	962.9	0.00	0.00	0.00	
Rollins										
7,200.0	0.00	0.00	7,044.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,144.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,244.1	-353.6	-895.6	962.9	0.00	0.00	0.00	
7,488.9	0.00	0.00	7,333.0	-353.6	-895.6	962.9	0.00	0.00	0.00	
TD at 7488.9										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
34B-11-6-92 TGT	0.00	0.00	4,549.0	-353.6	-895.6	1,627,463.16	2,398,697.06	39° 32' 12.465 N	107° 37' 55.908 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Rectangle (sides W100.0 H40.0 D2,784.0)										

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Company:	Ursa Operating Company, LLC	TVD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Project:	Rockies Region	MD Reference:	34B-11-6-92 @ 5564.4usft (EST Pad KB)
Site:	Valley Farms L	North Reference:	True
Well:	34B-11-6-92	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,530.2	3,418.4	Williams Fork		0.00	
4,705.3	4,549.4	Top of Gas		0.00	
6,194.3	6,038.4	Cameo		0.00	
7,189.3	7,033.4	Rollins		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,100.0	1,100.0	0.0	0.0	Start Build 1.50
1,300.0	1,299.9	-4.9	-1.8	Start DLS 3.00 TFO 56.33
1,906.2	1,892.4	-56.7	-105.1	Start 2131.9 hold at 1906.2 MD
4,038.1	3,895.7	-313.1	-787.8	Start Drop -3.00
4,704.9	4,549.0	-353.6	-895.6	Start 2784.0 hold at 4704.9 MD
7,488.9	7,333.0	-353.6	-895.6	TD at 7488.9



Well Name: 34B-11-6-92
Surface Location: Valley Farms L
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5549.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1627795.70 2399600.74 39° 32' 15.961 N 107° 37' 44.476 W
EST Pad KB 34B-11-6-92 @ 5564.4usft (EST Pad KB)



Azimuths to True North
Magnetic North: 9.83°
Magnetic Field
Strength: 52039.2snT
Dip Angle: 65.76°
Date: 4/7/2014
Model: IGRF2010

Valley Farms L
34B-11-6-92
Design #1
8:37, April 16 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
34B-11-6-92 TGT	4549.0	-353.6	-895.6	1627463.16	2398697.06	39° 32' 12.465 N	107° 37' 55.908 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	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	1300.0	3.00	200.00	1299.9	-4.9	-1.8	1.50	200.00	3.5	
4	1906.2	20.00	249.41	1892.4	-56.7	-105.1	3.00	56.33	118.6	
5	4038.1	20.00	249.41	3895.7	-313.1	-787.8	0.00	0.00	847.7	
6	4704.9	0.00	0.00	4549.0	-353.6	-895.6	3.00	180.00	962.9	34B-11-6-92 TGT
7	7488.9	0.00	0.00	7333.0	-353.6	-895.6	0.00	0.00	962.9	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 1.50
1299.9	1300.0	Start DLS 3.00 TFO 56.33
1892.4	1906.2	Start 2131.9 hold at 1906.2 MD
3895.7	4038.1	Start Drop -3.00
4549.0	4704.9	Start 2784.0 hold at 4704.9 MD
7333.0	7488.9	TD at 7488.9

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3418.4	3530.2	Williams Fork	0.00	
4549.4	4705.3	Top of Gas	0.00	
6038.4	6194.3	Cameo	0.00	
7033.4	7189.3	Rollins	0.00	

