



Ursa Operating Company, LLC

Rockies Region

B&V

B&V 14C-07-07-95

Wellbore #1

Plan: Design #1

Ursa Operating Company LLC Planning Report

05 August, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14C-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Site:	B&V	MD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Well:	B&V 14C-07-07-95	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		B&V			
Site Position:		Northing:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,598,935.06 usft		39° 27' 0.591 N	
		2,280,801.73 usft		108° 2' 49.963 W	
		13-3/16 "		-1.61 °	

Well		B&V 14C-07-07-95, SHL LAT: 39.450249858 LONG: -108.047073743				
Well Position	+N/-S	0.0 usft	Northing:	1,598,965.17 usft	Latitude:	39° 27' 0.899 N
	+E/-W	0.0 usft	Easting:	2,280,841.61 usft	Longitude:	108° 2' 49.465 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,097.0 usft	Ground Level:	5,084.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/4/2014	9.97	65.61	51,909

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	178.40

Survey Tool Program		Date	8/4/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,585.3	Design #1 (Wellbore #1)	MWD	MWD - Standard	

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14C-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Site:	B&V	MD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Well:	B&V 14C-07-07-95	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)
0.0	0.00	0.00	0.0	-5,097.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
100.0	0.00	0.00	100.0	-4,997.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
200.0	0.00	0.00	200.0	-4,897.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
300.0	0.00	0.00	300.0	-4,797.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
400.0	0.00	0.00	400.0	-4,697.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
500.0	0.00	0.00	500.0	-4,597.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
600.0	0.00	0.00	600.0	-4,497.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
700.0	0.00	0.00	700.0	-4,397.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
800.0	0.00	0.00	800.0	-4,297.0	0.0	0.0	0.0	0.00	1,598,965.17	2,280,841.61
Start Build 3.00										
900.0	3.00	178.40	900.0	-4,197.0	-2.6	0.1	2.6	3.00	1,598,962.55	2,280,841.61
1,000.0	6.00	178.40	999.6	-4,097.4	-10.5	0.3	10.5	3.00	1,598,954.71	2,280,841.61
1,100.0	9.00	178.40	1,098.8	-3,998.2	-23.5	0.7	23.5	3.00	1,598,941.65	2,280,841.61
1,200.0	12.00	178.40	1,197.1	-3,899.9	-41.7	1.2	41.7	3.00	1,598,923.43	2,280,841.60
1,300.0	15.00	178.40	1,294.3	-3,802.7	-65.1	1.8	65.1	3.00	1,598,900.09	2,280,841.60
1,400.0	18.00	178.40	1,390.2	-3,706.8	-93.4	2.6	93.5	3.00	1,598,871.69	2,280,841.60
1,500.0	21.00	178.40	1,484.4	-3,612.6	-126.8	3.5	126.9	3.00	1,598,838.32	2,280,841.60
1,600.0	24.00	178.40	1,576.8	-3,520.2	-165.1	4.6	165.1	3.00	1,598,800.05	2,280,841.59
1,700.0	27.00	178.40	1,667.1	-3,429.9	-208.1	5.8	208.2	3.00	1,598,757.01	2,280,841.59
1,800.0	30.00	178.40	1,754.9	-3,342.1	-255.8	7.1	255.9	3.00	1,598,709.29	2,280,841.58
1,841.3	31.24	178.40	1,790.5	-3,306.5	-276.8	7.7	276.9	3.00	1,598,688.25	2,280,841.58
Start 1473.7 hold at 1841.3 MD										
1,900.0	31.24	178.40	1,840.7	-3,256.3	-307.2	8.6	307.4	0.00	1,598,657.82	2,280,841.58
2,000.0	31.24	178.40	1,926.2	-3,170.8	-359.1	10.0	359.2	0.00	1,598,605.96	2,280,841.57
2,100.0	31.24	178.40	2,011.7	-3,085.3	-410.9	11.5	411.1	0.00	1,598,554.09	2,280,841.57
2,200.0	31.24	178.40	2,097.2	-2,999.8	-462.8	12.9	462.9	0.00	1,598,502.23	2,280,841.56
2,300.0	31.24	178.40	2,182.7	-2,914.3	-514.6	14.4	514.8	0.00	1,598,450.37	2,280,841.56

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14C-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Site:	B&V	MD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Well:	B&V 14C-07-07-95	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)
2,400.0	31.24	178.40	2,268.2	-2,828.8	-566.4	15.8	566.7	0.00	1,598,398.51	2,280,841.55
2,500.0	31.24	178.40	2,353.7	-2,743.3	-618.3	17.3	618.5	0.00	1,598,346.65	2,280,841.55
2,600.0	31.24	178.40	2,439.2	-2,657.8	-670.1	18.7	670.4	0.00	1,598,294.79	2,280,841.54
2,700.0	31.24	178.40	2,524.7	-2,572.3	-722.0	20.2	722.2	0.00	1,598,242.92	2,280,841.54
2,800.0	31.24	178.40	2,610.2	-2,486.8	-773.8	21.6	774.1	0.00	1,598,191.06	2,280,841.53
2,900.0	31.24	178.40	2,695.7	-2,401.3	-825.6	23.1	826.0	0.00	1,598,139.20	2,280,841.53
3,000.0	31.24	178.40	2,781.2	-2,315.8	-877.5	24.5	877.8	0.00	1,598,087.34	2,280,841.52
3,100.0	31.24	178.40	2,866.7	-2,230.3	-929.3	26.0	929.7	0.00	1,598,035.48	2,280,841.51
3,200.0	31.24	178.40	2,952.2	-2,144.8	-981.2	27.4	981.6	0.00	1,597,983.61	2,280,841.51
3,231.4	31.24	178.40	2,979.0	-2,118.0	-997.4	27.9	997.8	0.00	1,597,967.34	2,280,841.51
Williams Fork										
3,300.0	31.24	178.40	3,037.7	-2,059.3	-1,033.0	28.9	1,033.4	0.00	1,597,931.75	2,280,841.50
3,315.0	31.24	178.40	3,050.5	-2,046.5	-1,040.8	29.1	1,041.2	0.00	1,597,923.96	2,280,841.50
Start Drop -3.00										
3,400.0	28.69	178.40	3,124.1	-1,972.9	-1,083.2	30.3	1,083.6	3.00	1,597,881.52	2,280,841.50
3,500.0	25.69	178.40	3,213.1	-1,883.9	-1,128.9	31.5	1,129.3	3.00	1,597,835.83	2,280,841.49
3,600.0	22.69	178.40	3,304.3	-1,792.7	-1,169.9	32.7	1,170.3	3.00	1,597,794.86	2,280,841.49
3,700.0	19.69	178.40	3,397.5	-1,699.5	-1,206.0	33.7	1,206.4	3.00	1,597,758.72	2,280,841.49
3,800.0	16.69	178.40	3,492.5	-1,604.5	-1,237.2	34.6	1,237.7	3.00	1,597,727.50	2,280,841.48
3,900.0	13.69	178.40	3,589.0	-1,508.0	-1,263.4	35.3	1,263.9	3.00	1,597,701.30	2,280,841.48
4,000.0	10.69	178.40	3,686.7	-1,410.3	-1,284.5	35.9	1,285.0	3.00	1,597,680.19	2,280,841.48
4,100.0	7.69	178.40	3,785.4	-1,311.6	-1,300.4	36.3	1,300.9	3.00	1,597,664.22	2,280,841.48
4,200.0	4.69	178.40	3,884.8	-1,212.2	-1,311.2	36.6	1,311.7	3.00	1,597,653.44	2,280,841.48
4,300.0	1.69	178.40	3,984.7	-1,112.3	-1,316.8	36.8	1,317.3	3.00	1,597,647.88	2,280,841.48
4,356.3	0.00	0.00	4,041.0	-1,056.0	-1,317.6	36.8	1,318.1	3.00	1,597,647.04	2,280,841.48
Back to Vertical - Start 2229.0 hold at 4356.3 MD - Top of Gas - B&V 14C-07-07-95 TGT										
4,400.0	0.00	0.00	4,084.7	-1,012.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
4,500.0	0.00	0.00	4,184.7	-912.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14C-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Site:	B&V	MD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Well:	B&V 14C-07-07-95	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)
4,600.0	0.00	0.00	4,284.7	-812.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
4,700.0	0.00	0.00	4,384.7	-712.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
4,800.0	0.00	0.00	4,484.7	-612.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
4,900.0	0.00	0.00	4,584.7	-512.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,000.0	0.00	0.00	4,684.7	-412.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,100.0	0.00	0.00	4,784.7	-312.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,200.0	0.00	0.00	4,884.7	-212.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,300.0	0.00	0.00	4,984.7	-112.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,400.0	0.00	0.00	5,084.7	-12.3	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,500.0	0.00	0.00	5,184.7	87.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,600.0	0.00	0.00	5,284.7	187.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,700.0	0.00	0.00	5,384.7	287.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,761.3	0.00	0.00	5,446.0	349.0	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
Cameo										
5,800.0	0.00	0.00	5,484.7	387.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
5,900.0	0.00	0.00	5,584.7	487.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,000.0	0.00	0.00	5,684.7	587.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,100.0	0.00	0.00	5,784.7	687.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,200.0	0.00	0.00	5,884.7	787.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,285.3	0.00	0.00	5,970.0	873.0	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
Rollins										
6,300.0	0.00	0.00	5,984.7	887.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,400.0	0.00	0.00	6,084.7	987.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,500.0	0.00	0.00	6,184.7	1,087.7	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
6,585.3	0.00	0.00	6,270.0	1,173.0	-1,317.6	36.8	1,318.1	0.00	1,597,647.04	2,280,841.48
TD at 6585.3										

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14C-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Site:	B&V	MD Reference:	B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)
Well:	B&V 14C-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,285.3	5,970.0	Rollins		0.00		
4,356.3	4,041.0	Top of Gas		0.00		
5,761.3	5,446.0	Cameo		0.00		
3,231.4	2,979.0	Williams Fork		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
800.0	800.0	0.0	0.0	Start Build 3.00	
1,841.3	1,790.5	-276.8	7.7	Start 1473.7 hold at 1841.3 MD	
3,315.0	3,050.5	-1,040.8	29.1	Start Drop -3.00	
4,356.3	4,041.0	-1,317.6	36.8	Back to Vertical	
4,356.3	4,041.0	-1,317.6	36.8	Start 2229.0 hold at 4356.3 MD	
6,585.3	6,270.0	-1,317.6	36.8	TD at 6585.3	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



Well Name: B&V 14C-07-07-95
Surface Location: B&V
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5084.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1598965.17 2280841.61 39° 27' 0.899 N 108° 2' 49.465 W
EST Pad KB B&V 14C-07-07-95 @ 5097.0usft (EST Pad KB)



Azimuths to True North
Magnetic North: 9.97°
Magnetic Field
Strength: 51909.4snT
Dip Angle: 65.61°
Date: 8/4/2014
Model: IGRF2010

B&V
B&V 14C-07-07-95
Design #1
13:47, August 05 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
B&V 14C-07-07-95 TGT	6270.0	-1317.6	36.8	1597647.04	2280841.48	39° 26' 47.876 N	108° 2' 48.996 W	Rectangle (Sides: L40.0 W100.0)

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	Start Build 3.00
1790.5	1841.3	Start 1473.7 hold at 1841.3 MD
3050.5	3315.0	Start Drop -3.00
4041.0	4356.3	Back to Vertical
4041.0	4356.3	Start 2229.0 hold at 4356.3 MD
6270.0	6585.3	TD at 6585.3

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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1841.3	31.24	178.40	1790.5	-276.8	7.7	3.00	178.40	276.9	
4	3315.0	31.24	178.40	3050.5	-1040.8	29.1	0.00	0.00	1041.2	
5	4356.3	0.00	0.00	4041.0	-1317.6	36.8	3.00	180.00	1318.1	B&V 14C-07-07-95 TGT
6	6585.3	0.00	0.00	6270.0	-1317.6	36.8	0.00	0.00	1318.1	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
2979.0	3231.4	Williams Fork	0.00	
4041.0	4356.3	Top of Gas	0.00	
5446.0	5761.3	Cameo	0.00	
5970.0	6285.3	Rollins	0.00	

