



Ursa Operating Company, LLC

**Rockies Region
Valley Farms J
Valley Farms J2**

Wellbore #1

Plan: Design #1

Standard Planning Report

09 September, 2013



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Valley Farms J2
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J2	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 J				
Site Position:		Northing:	1,626,334.55 ft	Latitude:	39° 32' 2.073 N
From:	Lat/Long	Easting:	2,401,977.73 ft	Longitude:	107° 37' 13.708 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.34 °

Well	Valley Farms J2, SHL LAT: 39.533874800 LONG: -107.620473800					
Well Position	+N/-S	-12.5 ft	Northing:	1,626,322.05 ft	Latitude:	39° 32' 1.949 N
	+E/-W	0.2 ft	Easting:	2,401,977.61 ft	Longitude:	107° 37' 13.706 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,552.4 ft	Ground Level:	5,537.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/5/2013	9.87	65.79	52,137

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	34.96

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
2,001.5	27.04	34.96	1,968.4	171.2	119.6	3.00	3.00	0.00	34.96	
3,590.5	27.04	34.96	3,383.6	763.3	533.6	0.00	0.00	0.00	0.00	
4,491.9	0.00	0.00	4,252.0	934.5	653.2	3.00	-3.00	0.00	180.00	J2 TGT
7,275.9	0.00	0.00	7,036.0	934.5	653.2	0.00	0.00	0.00	0.00	

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Valley Farms J2
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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 3.00									
1,200.0	3.00	34.96	1,200.0	2.1	1.5	2.6	3.00	3.00	0.00
1,300.0	6.00	34.96	1,299.6	8.6	6.0	10.5	3.00	3.00	0.00
1,400.0	9.00	34.96	1,398.8	19.3	13.5	23.5	3.00	3.00	0.00
1,500.0	12.00	34.96	1,497.1	34.2	23.9	41.7	3.00	3.00	0.00
1,600.0	15.00	34.96	1,594.3	53.3	37.3	65.1	3.00	3.00	0.00
1,700.0	18.00	34.96	1,690.2	76.6	53.6	93.5	3.00	3.00	0.00
1,800.0	21.00	34.96	1,784.4	104.0	72.7	126.9	3.00	3.00	0.00
1,900.0	24.00	34.96	1,876.8	135.3	94.6	165.1	3.00	3.00	0.00
2,001.5	27.04	34.96	1,968.4	171.2	119.6	208.8	3.00	3.00	0.00
Start 1589.0 hold at 2001.5 MD									
2,100.0	27.04	34.96	2,056.1	207.9	145.3	253.6	0.00	0.00	0.00
2,200.0	27.04	34.96	2,145.2	245.1	171.4	299.1	0.00	0.00	0.00
2,300.0	27.04	34.96	2,234.3	282.4	197.4	344.6	0.00	0.00	0.00
2,400.0	27.04	34.96	2,323.3	319.7	223.5	390.0	0.00	0.00	0.00
2,500.0	27.04	34.96	2,412.4	356.9	249.5	435.5	0.00	0.00	0.00
2,600.0	27.04	34.96	2,501.5	394.2	275.6	481.0	0.00	0.00	0.00
2,700.0	27.04	34.96	2,590.5	431.5	301.6	526.4	0.00	0.00	0.00
2,800.0	27.04	34.96	2,679.6	468.7	327.7	571.9	0.00	0.00	0.00
2,900.0	27.04	34.96	2,768.7	506.0	353.7	617.4	0.00	0.00	0.00
3,000.0	27.04	34.96	2,857.7	543.3	379.8	662.8	0.00	0.00	0.00
3,100.0	27.04	34.96	2,946.8	580.5	405.8	708.3	0.00	0.00	0.00
3,200.0	27.04	34.96	3,035.8	617.8	431.9	753.8	0.00	0.00	0.00
3,296.1	27.04	34.96	3,121.4	653.6	456.9	797.4	0.00	0.00	0.00
WF									
3,300.0	27.04	34.96	3,124.9	655.0	457.9	799.2	0.00	0.00	0.00
3,400.0	27.04	34.96	3,214.0	692.3	484.0	844.7	0.00	0.00	0.00
3,500.0	27.04	34.96	3,303.0	729.6	510.0	890.2	0.00	0.00	0.00
3,590.5	27.04	34.96	3,383.6	763.3	533.6	931.3	0.00	0.00	0.00
Start Drop -3.00									
3,600.0	26.76	34.96	3,392.1	766.8	536.1	935.6	3.00	-3.00	0.00
3,700.0	23.76	34.96	3,482.6	801.8	560.5	978.3	3.00	-3.00	0.00
3,800.0	20.76	34.96	3,575.1	832.8	582.2	1,016.2	3.00	-3.00	0.00
3,900.0	17.76	34.96	3,669.5	859.9	601.1	1,049.1	3.00	-3.00	0.00
4,000.0	14.76	34.96	3,765.5	882.8	617.1	1,077.1	3.00	-3.00	0.00
4,100.0	11.76	34.96	3,862.8	901.6	630.3	1,100.1	3.00	-3.00	0.00
4,200.0	8.76	34.96	3,961.2	916.2	640.5	1,117.9	3.00	-3.00	0.00
4,300.0	5.76	34.96	4,060.4	926.6	647.7	1,130.5	3.00	-3.00	0.00
4,400.0	2.76	34.96	4,160.1	932.6	652.0	1,137.9	3.00	-3.00	0.00
4,491.9	0.00	0.00	4,252.0	934.5	653.2	1,140.1	3.00	-3.00	0.00
Start 2784.0 hold at 4491.9 MD									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Valley Farms J2
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,492.3	0.00	0.00	4,252.4	934.5	653.2	1,140.1	0.00	0.00	0.00
Top of Gas									
4,500.0	0.00	0.00	4,260.1	934.5	653.2	1,140.1	0.00	0.00	0.00
4,600.0	0.00	0.00	4,360.1	934.5	653.2	1,140.1	0.00	0.00	0.00
4,700.0	0.00	0.00	4,460.1	934.5	653.2	1,140.1	0.00	0.00	0.00
4,800.0	0.00	0.00	4,560.1	934.5	653.2	1,140.1	0.00	0.00	0.00
4,900.0	0.00	0.00	4,660.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,000.0	0.00	0.00	4,760.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,100.0	0.00	0.00	4,860.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,200.0	0.00	0.00	4,960.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,300.0	0.00	0.00	5,060.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,160.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,260.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,360.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,460.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,790.3	0.00	0.00	5,550.4	934.5	653.2	1,140.1	0.00	0.00	0.00
Cameo									
5,800.0	0.00	0.00	5,560.1	934.5	653.2	1,140.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,660.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,760.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,100.0	0.00	0.00	5,860.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,200.0	0.00	0.00	5,960.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,060.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,160.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,500.0	0.00	0.00	6,260.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,360.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,700.0	0.00	0.00	6,460.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,560.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,900.0	0.00	0.00	6,660.1	934.5	653.2	1,140.1	0.00	0.00	0.00
6,976.3	0.00	0.00	6,736.4	934.5	653.2	1,140.1	0.00	0.00	0.00
Rollins									
7,000.0	0.00	0.00	6,760.1	934.5	653.2	1,140.1	0.00	0.00	0.00
7,100.0	0.00	0.00	6,860.1	934.5	653.2	1,140.1	0.00	0.00	0.00
7,200.0	0.00	0.00	6,960.1	934.5	653.2	1,140.1	0.00	0.00	0.00
7,275.9	0.00	0.00	7,036.0	934.5	653.2	1,140.1	0.00	0.00	0.00
TD at 7275.9									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,296.1	3,121.4	WF		0.00		
4,492.3	4,252.4	Top of Gas		0.00		
5,790.3	5,550.4	Cameo		0.00		
6,976.3	6,736.4	Rollins		0.00		

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Valley Farms J2
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J2 @ 5552.4ft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.0	1,100.0	0.0	0.0	Start Build 3.00
2,001.5	1,968.4	171.2	119.6	Start 1589.0 hold at 2001.5 MD
3,590.5	3,383.6	763.3	533.6	Start Drop -3.00
4,491.9	4,252.0	934.5	653.2	Start 2784.0 hold at 4491.9 MD
7,275.9	7,036.0	934.5	653.2	TD at 7275.9



Well Name: Valley Farms J2
Surface Location: Valley Farms J
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5537.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1626322.05 2401977.61 39° 32' 1.949 N 107° 37' 13.706 W
PAD Est KB Valley Farms J2 @ 5552.4ft (PAD Est KB)



Azimuths to True North
Magnetic North: 9.87°
Magnetic Field
Strength: 52137.5snT
Dip Angle: 65.79°
Date: 9/5/2013
Model: IGRF200510

Valley Farms J
Valley Farms J2
Design #1
0:04, September 09 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
J2 TGT	4252.0	934.5	653.2	1627241.00	2402652.47	39° 32' 11.185 N	107° 37' 5.368 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	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	2001.5	27.04	34.96	1968.4	171.2	119.6	3.00	34.96	208.8	
4	3590.5	27.04	34.96	3383.6	763.3	533.6	0.00	0.00	931.3	
5	4491.9	0.00	0.00	4252.0	934.5	653.2	3.00	180.00	1140.1	J2 TGT
6	7275.9	0.00	0.00	7036.0	934.5	653.2	0.00	0.00	1140.1	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.00
1968.4	2001.5	Start 1589.0 hold at 2001.5 MD
3383.6	3590.5	Start Drop -3.00
4252.0	4491.9	Start 2784.0 hold at 4491.9 MD
7036.0	7275.9	TD at 7275.9

FORMATION TOP DETAILS

TVDP	MD	Path	Formation
3121.4	3296.1	WF	WF
4252.4	4492.3	Top of Gas	Top of Gas
5550.4	5790.3	Cameo	Cameo
6736.4	6976.3	Rollins	Rollins

