



# **Ursa Operating Company, LLC**

**Rockies Region**

**Valley Farms G**

**Valley Farms G 41D-14-06-92**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**10 May, 2015**



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Valley Farms G 41D-14-06-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	Valley Farms G 41D-14-06-92 @ 5640.0usft (PLAN KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Valley Farms G 41D-14-06-92 @ 5640.0usft (PLAN KB)
<b>Site:</b>	Valley Farms G	<b>North Reference:</b>	True
<b>Well:</b>	Valley Farms G 41D-14-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Rockies Region		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site	Valley Farms G				
Site Position:		Northing:	1,624,165.22 usft	Latitude:	39° 31' 39.977 N
From:	Lat/Long	Easting:	2,399,120.26 usft	Longitude:	107° 37' 49.521 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	Valley Farms G 41D-14-06-92, SHL: 39.527798925 -107.630422262					
Well Position	+N/-S	10.0 usft	Northing:	1,624,175.21 usft	Latitude:	39° 31' 40.076 N
	+E/-W	0.0 usft	Easting:	2,399,120.54 usft	Longitude:	107° 37' 49.520 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,640.0 usft	Ground Level:	5,623.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/3/2015	9.69	65.72	51,925

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	34.11	

<b>Plan Sections</b>										
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	
1,075.0	0.00	0.00	1,075.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,175.0	3.50	65.00	1,174.9	1.3	2.8	3.50	3.50	0.00	65.00	
1,850.5	26.57	33.62	1,823.4	137.7	106.6	3.50	3.41	-4.64	-35.49	
4,334.2	26.57	33.62	4,044.9	1,062.7	721.7	0.00	0.00	0.00	0.00	
5,219.7	0.00	0.00	4,899.0	1,230.6	833.3	3.00	-3.00	0.00	180.00	Valley Farms G 41D-1
7,704.7	0.00	0.00	7,384.0	1,230.6	833.3	0.00	0.00	0.00	0.00	

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<b>Well:</b>	Valley Farms G 41D-14-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
<b>Surface Casing</b>									
1,075.0	0.00	0.00	1,075.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 3.50</b>									
1,100.0	0.88	65.00	1,100.0	0.1	0.2	0.2	3.50	3.50	0.00
1,175.0	3.50	65.00	1,174.9	1.3	2.8	2.6	3.50	3.50	0.00
<b>Start DLS 3.50 TFO -35.49</b>									
1,200.0	4.24	58.12	1,199.9	2.1	4.2	4.1	3.50	2.97	-27.53
1,300.0	7.50	45.18	1,299.3	8.7	12.0	13.9	3.50	3.26	-12.94
1,400.0	10.91	40.16	1,398.0	20.5	22.8	29.7	3.50	3.41	-5.02
1,500.0	14.37	37.52	1,495.6	37.6	36.4	51.5	3.50	3.45	-2.64
1,600.0	17.84	35.88	1,591.7	59.8	53.0	79.2	3.50	3.47	-1.63
1,700.0	21.32	34.77	1,685.9	87.2	72.3	112.7	3.50	3.48	-1.11
1,800.0	24.80	33.96	1,777.9	119.5	94.4	151.9	3.50	3.49	-0.81
1,850.5	26.57	33.62	1,823.4	137.7	106.6	173.8	3.50	3.49	-0.66
<b>Start 2483.7 hold at 1850.5 MD</b>									
1,900.0	26.57	33.62	1,867.7	156.2	118.8	195.9	0.00	0.00	0.00
2,000.0	26.57	33.62	1,957.1	193.4	143.6	240.7	0.00	0.00	0.00
2,100.0	26.57	33.62	2,046.5	230.6	168.4	285.4	0.00	0.00	0.00
2,200.0	26.57	33.62	2,136.0	267.9	193.1	330.1	0.00	0.00	0.00
2,300.0	26.57	33.62	2,225.4	305.1	217.9	374.8	0.00	0.00	0.00
2,400.0	26.57	33.62	2,314.9	342.4	242.7	419.5	0.00	0.00	0.00
2,500.0	26.57	33.62	2,404.3	379.6	267.4	464.3	0.00	0.00	0.00
2,600.0	26.57	33.62	2,493.7	416.8	292.2	509.0	0.00	0.00	0.00
2,700.0	26.57	33.62	2,583.2	454.1	317.0	553.7	0.00	0.00	0.00
2,800.0	26.57	33.62	2,672.6	491.3	341.7	598.4	0.00	0.00	0.00
2,900.0	26.57	33.62	2,762.1	528.6	366.5	643.1	0.00	0.00	0.00
3,000.0	26.57	33.62	2,851.5	565.8	391.3	687.9	0.00	0.00	0.00
3,100.0	26.57	33.62	2,941.0	603.0	416.0	732.6	0.00	0.00	0.00
3,200.0	26.57	33.62	3,030.4	640.3	440.8	777.3	0.00	0.00	0.00
3,300.0	26.57	33.62	3,119.8	677.5	465.5	822.0	0.00	0.00	0.00
3,400.0	26.57	33.62	3,209.3	714.8	490.3	866.8	0.00	0.00	0.00
3,500.0	26.57	33.62	3,298.7	752.0	515.1	911.5	0.00	0.00	0.00
3,600.0	26.57	33.62	3,388.2	789.2	539.8	956.2	0.00	0.00	0.00
3,700.0	26.57	33.62	3,477.6	826.5	564.6	1,000.9	0.00	0.00	0.00
3,800.0	26.57	33.62	3,567.0	863.7	589.4	1,045.6	0.00	0.00	0.00
3,838.0	26.57	33.62	3,601.0	877.9	598.8	1,062.6	0.00	0.00	0.00
<b>Williams Fork</b>									
3,900.0	26.57	33.62	3,656.5	901.0	614.1	1,090.4	0.00	0.00	0.00
4,000.0	26.57	33.62	3,745.9	938.2	638.9	1,135.1	0.00	0.00	0.00
4,100.0	26.57	33.62	3,835.4	975.4	663.7	1,179.8	0.00	0.00	0.00

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<b>Well:</b>	Valley Farms G 41D-14-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
4,200.0	26.57	33.62	3,924.8	1,012.7	688.4	1,224.5	0.00	0.00	0.00
4,300.0	26.57	33.62	4,014.3	1,049.9	713.2	1,269.2	0.00	0.00	0.00
4,334.2	26.57	33.62	4,044.9	1,062.7	721.7	1,284.5	0.00	0.00	0.00
<b>Start Drop -3.00</b>									
4,400.0	24.59	33.62	4,104.2	1,086.3	737.4	1,312.9	3.00	-3.00	0.00
4,500.0	21.59	33.62	4,196.2	1,119.0	759.1	1,352.2	3.00	-3.00	0.00
4,600.0	18.59	33.62	4,290.1	1,147.6	778.1	1,386.5	3.00	-3.00	0.00
4,700.0	15.59	33.62	4,385.6	1,172.0	794.4	1,415.9	3.00	-3.00	0.00
4,800.0	12.59	33.62	4,482.6	1,192.3	807.9	1,440.2	3.00	-3.00	0.00
4,900.0	9.59	33.62	4,580.7	1,208.3	818.5	1,459.5	3.00	-3.00	0.00
5,000.0	6.59	33.62	4,679.7	1,220.0	826.3	1,473.6	3.00	-3.00	0.00
5,100.0	3.59	33.62	4,779.3	1,227.4	831.3	1,482.4	3.00	-3.00	0.00
5,200.0	0.59	33.62	4,879.3	1,230.5	833.3	1,486.1	3.00	-3.00	0.00
5,219.7	0.00	0.00	4,899.0	1,230.6	833.3	1,486.2	3.00	-3.00	0.00
<b>Start 2485.0 hold at 5219.7 MD - Back to Vertical - Top of Gas</b>									
5,300.0	0.00	0.00	4,979.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,079.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,179.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,279.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,379.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,479.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,579.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,679.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,100.0	0.00	0.00	5,779.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,200.0	0.00	0.00	5,879.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,300.0	0.00	0.00	5,979.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,079.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,408.7	0.00	0.00	6,088.0	1,230.6	833.3	1,486.2	0.00	0.00	0.00
<b>Cameo</b>									
6,500.0	0.00	0.00	6,179.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,279.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,700.0	0.00	0.00	6,379.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,479.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
6,900.0	0.00	0.00	6,579.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,679.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,100.0	0.00	0.00	6,779.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,200.0	0.00	0.00	6,879.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,300.0	0.00	0.00	6,979.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,400.0	0.00	0.00	7,079.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,404.7	0.00	0.00	7,084.0	1,230.6	833.3	1,486.2	0.00	0.00	0.00
<b>Rollins</b>									
7,500.0	0.00	0.00	7,179.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,279.3	1,230.6	833.3	1,486.2	0.00	0.00	0.00
7,704.6	0.00	0.00	7,383.9	1,230.6	833.3	1,486.2	0.00	0.00	0.00
<b>BHL: 39.5311773, -107.6274678</b>									
7,704.7	0.00	0.00	7,384.0	1,230.6	833.3	1,486.2	0.00	0.00	0.00
<b>TD at 7704.7</b>									

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<b>Well:</b>	Valley Farms G 41D-14-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
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## Design Targets

### Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
Valley Farms G 41D-14- - plan hits target center - Rectangle (sides W100.0 H40.0 D2,485.0)	0.00	0.00	4,899.0	1,230.6	833.3	1,625,385.90	2,399,982.50	39° 31' 52.238 N	107° 37' 38.884 W

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,838.0	3,601.0	Williams Fork		0.00	
5,219.7	4,899.0	Top of Gas		0.00	
6,408.7	6,088.0	Cameo		0.00	
7,404.7	7,084.0	Rollins		0.00	

## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.0	1,000.0	0.0	0.0	Surface Casing
1,075.0	1,075.0	0.0	0.0	Start Build 3.50
1,175.0	1,174.9	1.3	2.8	Start DLS 3.50 TFO -35.49
1,850.5	1,823.4	137.7	106.6	Start 2483.7 hold at 1850.5 MD
4,334.2	4,044.9	1,062.7	721.7	Start Drop -3.00
5,219.7	4,899.0	1,230.6	833.3	Start 2485.0 hold at 5219.7 MD
5,219.7	4,899.0	1,230.6	833.3	Back to Vertical
7,704.6	7,383.9	1,230.6	833.3	BHL: 39.5311773, -107.6274678
7,704.7	7,384.0	1,230.6	833.3	TD at 7704.7

