



Ursa Operating Company, LLC

**Rockies Region
Valley Farms O
24B-10-06-92**

Wellbore #1

Plan: Design #1

Standard Planning Report

13 October, 2013



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well 24B-10-06-92
Company:	Ursa Operating Company, LLC	TVD Reference:	24B-10-06-92 @ 5447.4ft (Original Well Elev)
Project:	Rockies Region	MD Reference:	24B-10-06-92 @ 5447.4ft (Original Well Elev)
Site:	Valley Farms O	North Reference:	True
Well:	24B-10-06-92	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 O				
Site Position:		Northing:	1,627,349.93 ft	Latitude:	39° 32' 9.673 N
From:	Lat/Long	Easting:	2,391,526.28 ft	Longitude:	107° 39' 27.378 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.36 °

Well	24B-10-06-92, SHL LAT: 39.536088992 LONG: -107.657607129					
Well Position	+N/-S	25.0 ft	Northing:	1,627,374.91 ft	Latitude:	39° 32' 9.920 N
	+E/-W	-0.6 ft	Easting:	2,391,526.26 ft	Longitude:	107° 39' 27.386 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,447.4 ft	Ground Level:	5,432.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/10/2013	9.87	65.79	52,126

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	78.47

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	
1,380.8	8.42	78.47	1,379.8	4.1	20.2	3.00	3.00	0.00	78.47	
5,080.1	8.42	78.47	5,039.2	112.4	551.2	0.00	0.00	0.00	0.00	
5,360.9	0.00	0.00	5,319.0	116.5	571.4	3.00	-3.00	0.00	180.00	24B-10-06-92 TGT
7,630.9	0.00	0.00	7,589.0	116.5	571.4	0.00	0.00	0.00	0.00	

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Site:	Valley Farms O	North Reference:	True
Well:	24B-10-06-92	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	78.47	1,200.0	0.5	2.6	2.6	3.00	3.00	0.00
1,300.0	6.00	78.47	1,299.6	2.1	10.3	10.5	3.00	3.00	0.00
1,380.8	8.42	78.47	1,379.8	4.1	20.2	20.6	3.00	3.00	0.00
Start 3699.3 hold at 1380.8 MD									
1,400.0	8.42	78.47	1,398.8	4.7	22.9	23.4	0.00	0.00	0.00
1,500.0	8.42	78.47	1,497.7	7.6	37.3	38.1	0.00	0.00	0.00
1,600.0	8.42	78.47	1,596.6	10.5	51.7	52.7	0.00	0.00	0.00
1,700.0	8.42	78.47	1,695.5	13.5	66.0	67.4	0.00	0.00	0.00
1,800.0	8.42	78.47	1,794.5	16.4	80.4	82.0	0.00	0.00	0.00
1,900.0	8.42	78.47	1,893.4	19.3	94.7	96.7	0.00	0.00	0.00
2,000.0	8.42	78.47	1,992.3	22.2	109.1	111.3	0.00	0.00	0.00
2,100.0	8.42	78.47	2,091.2	25.2	123.4	126.0	0.00	0.00	0.00
2,200.0	8.42	78.47	2,190.1	28.1	137.8	140.6	0.00	0.00	0.00
2,300.0	8.42	78.47	2,289.1	31.0	152.1	155.3	0.00	0.00	0.00
2,400.0	8.42	78.47	2,388.0	34.0	166.5	169.9	0.00	0.00	0.00
2,500.0	8.42	78.47	2,486.9	36.9	180.9	184.6	0.00	0.00	0.00
2,600.0	8.42	78.47	2,585.8	39.8	195.2	199.2	0.00	0.00	0.00
2,700.0	8.42	78.47	2,684.8	42.7	209.6	213.9	0.00	0.00	0.00
2,800.0	8.42	78.47	2,783.7	45.7	223.9	228.5	0.00	0.00	0.00
2,900.0	8.42	78.47	2,882.6	48.6	238.3	243.2	0.00	0.00	0.00
3,000.0	8.42	78.47	2,981.5	51.5	252.6	257.8	0.00	0.00	0.00
3,100.0	8.42	78.47	3,080.4	54.5	267.0	272.5	0.00	0.00	0.00
3,200.0	8.42	78.47	3,179.4	57.4	281.3	287.1	0.00	0.00	0.00
3,300.0	8.42	78.47	3,278.3	60.3	295.7	301.8	0.00	0.00	0.00
3,400.0	8.42	78.47	3,377.2	63.2	310.1	316.4	0.00	0.00	0.00
3,500.0	8.42	78.47	3,476.1	66.2	324.4	331.1	0.00	0.00	0.00
3,600.0	8.42	78.47	3,575.0	69.1	338.8	345.7	0.00	0.00	0.00
3,700.0	8.42	78.47	3,674.0	72.0	353.1	360.4	0.00	0.00	0.00
3,751.0	8.42	78.47	3,724.4	73.5	360.4	367.9	0.00	0.00	0.00
Williams Fork									
3,800.0	8.42	78.47	3,772.9	74.9	367.5	375.0	0.00	0.00	0.00
3,900.0	8.42	78.47	3,871.8	77.9	381.8	389.7	0.00	0.00	0.00
4,000.0	8.42	78.47	3,970.7	80.8	396.2	404.3	0.00	0.00	0.00
4,100.0	8.42	78.47	4,069.6	83.7	410.5	419.0	0.00	0.00	0.00
4,200.0	8.42	78.47	4,168.6	86.7	424.9	433.6	0.00	0.00	0.00
4,300.0	8.42	78.47	4,267.5	89.6	439.3	448.3	0.00	0.00	0.00
4,400.0	8.42	78.47	4,366.4	92.5	453.6	462.9	0.00	0.00	0.00
4,500.0	8.42	78.47	4,465.3	95.4	468.0	477.6	0.00	0.00	0.00
4,600.0	8.42	78.47	4,564.3	98.4	482.3	492.2	0.00	0.00	0.00
4,700.0	8.42	78.47	4,663.2	101.3	496.7	506.9	0.00	0.00	0.00

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Site:	Valley Farms O	North Reference:	True
Well:	24B-10-06-92	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)	
4,800.0	8.42	78.47	4,762.1	104.2	511.0	521.5	0.00	0.00	0.00	
4,900.0	8.42	78.47	4,861.0	107.2	525.4	536.2	0.00	0.00	0.00	
5,000.0	8.42	78.47	4,959.9	110.1	539.7	550.9	0.00	0.00	0.00	
5,080.1	8.42	78.47	5,039.2	112.4	551.2	562.6	0.00	0.00	0.00	
Start Drop -3.00										
5,100.0	7.83	78.47	5,058.9	113.0	554.0	565.4	3.00	-3.00	0.00	
5,200.0	4.83	78.47	5,158.3	115.2	564.8	576.4	3.00	-3.00	0.00	
5,300.0	1.83	78.47	5,258.1	116.4	570.5	582.2	3.00	-3.00	0.00	
5,360.9	0.00	0.00	5,319.0	116.5	571.4	583.2	3.00	-3.00	0.00	
Start 2270.0 hold at 5360.9 MD										
5,361.3	0.00	0.00	5,319.4	116.5	571.4	583.2	0.00	0.00	0.00	
Top of Gas										
5,400.0	0.00	0.00	5,358.1	116.5	571.4	583.2	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,458.1	116.5	571.4	583.2	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,558.1	116.5	571.4	583.2	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,658.1	116.5	571.4	583.2	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,758.1	116.5	571.4	583.2	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,858.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,958.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,058.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,158.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,258.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,333.3	0.00	0.00	6,291.4	116.5	571.4	583.2	0.00	0.00	0.00	
Cameo										
6,400.0	0.00	0.00	6,358.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,458.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,558.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,658.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,758.1	116.5	571.4	583.2	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,858.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,958.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,058.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,158.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,258.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,331.3	0.00	0.00	7,289.4	116.5	571.4	583.2	0.00	0.00	0.00	
Rollins										
7,400.0	0.00	0.00	7,358.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,458.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,558.1	116.5	571.4	583.2	0.00	0.00	0.00	
7,630.9	0.00	0.00	7,589.0	116.5	571.4	583.2	0.00	0.00	0.00	
TD at 7630.9										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,751.0	3,724.4	Williams Fork		0.00		
5,361.3	5,319.4	Top of Gas		0.00		
6,333.3	6,291.4	Cameo		0.00		
7,331.3	7,289.4	Rollins		0.00		

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Project:	Rockies Region	MD Reference:	24B-10-06-92 @ 5447.4ft (Original Well Elev)
Site:	Valley Farms O	North Reference:	True
Well:	24B-10-06-92	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
1,380.8	1,379.8	4.1	20.2	Start 3699.3 hold at 1380.8 MD
5,080.1	5,039.2	112.4	551.2	Start Drop -3.00
5,360.9	5,319.0	116.5	571.4	Start 2270.0 hold at 5360.9 MD
7,630.9	7,589.0	116.5	571.4	TD at 7630.9



Well Name: 24B-10-06-92
 Surface Location: Valley Farms O
 North American Datum 1983, US State Plane 1983, Colorado Central Zone
 Ground Elevation: 5432.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1627374.91 2391526.26 39° 32' 9.920 N 107° 39' 27.386 W
 Original Well Elev 24B-10-06-92 @ 5447.4ft (Original Well Elev)

Azimuths to True North
 Magnetic North: 9.87°
 Magnetic Field
 Strength: 52125.6snT
 Dip Angle: 65.79°
 Date: 10/10/2013
 Model: IGRF200510

Valley Farms O
 24B-10-06-92
 Design #1
 20:07, October 13 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
24B-10-06-92 TGT	5319.0	116.5	571.4	1627477.86	2392100.30	39° 32' 11.072 N	107° 39' 20.092 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	1380.8	8.42	78.47	1379.8	4.1	20.2	3.00	78.47	20.6	
4	5080.1	8.42	78.47	5039.2	112.4	551.2	0.00	0.00	562.6	
5	5360.9	0.00	0.00	5319.0	116.5	571.4	3.00	180.00	583.2	24B-10-06-92 TGT
6	7630.9	0.00	0.00	7589.0	116.5	571.4	0.00	0.00	583.2	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.00
1379.8	1380.8	Start 3699.3 hold at 1380.8 MD
5039.2	5080.1	Start Drop -3.00
5319.0	5360.9	Start 2270.0 hold at 5360.9 MD
7589.0	7630.9	TD at 7630.9

FORMATION TOP DETAILS

TVDPathMDPath	Formation
3724.4 3751.0	Williams Fork
5319.4 5361.3	Top of Gas
6291.4 6333.3	Cameo
7289.4 7331.3	Rollins

