



Ursa Operating Company, LLC

Rockies Region

Valley Farms L

44B-11-06-92

Wellbore #1

Design: Actual

Ursa Operating Company LLC Planning Report

29 December, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well 44B-11-06-92
Project:	Rockies Region	TVD Reference:	44B-11-06-92 @ 5592.0usft (Capstar 321)
Site:	Valley Farms L	MD Reference:	44B-11-06-92 @ 5592.0usft (Capstar 321)
Well:	44B-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	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		Valley Farms L			
Site Position:		Northing:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,627,813.26 usft		39° 32' 16.142 N	
		2,399,633.86 usft		107° 37' 44.058 W	
		13-3/16 "		-1.34 °	

Well	44B-11-06-92, SHL LAT: 39.537750073 LONG: -107.629059743					
Well Position	+N/-S	0.0 usft	Northing:	1,627,789.83 usft	Latitude:	39° 32' 15.900 N
	+E/-W	0.0 usft	Easting:	2,399,589.69 usft	Longitude:	107° 37' 44.615 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,592.0 usft	Ground Level:	5,577.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/25/2013	9.84	65.79	52,116

Design	Actual				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	29.5
Vertical Section:	Depth From (TVD) (usft)		+N-S (usft)	+E-W (usft)	Direction (°)
	29.5		0.0	0.0	179.57

Survey Program		Date	12/29/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
152.0	7,288.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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Well:	44B-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

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	-5,592.0	0.0	0.0	0.0	0.00	1,627,789.83	2,399,589.69	
152.0	0.61	325.44	152.0	-5,440.0	0.7	-0.5	-0.7	0.40	1,627,790.51	2,399,589.25	
180.0	0.62	341.32	180.0	-5,412.0	0.9	-0.6	-0.9	0.61	1,627,790.78	2,399,589.12	
210.0	0.66	339.69	210.0	-5,382.0	1.2	-0.7	-1.3	0.15	1,627,791.09	2,399,589.02	
242.0	1.08	346.28	242.0	-5,350.0	1.7	-0.8	-1.7	1.35	1,627,791.56	2,399,588.90	
272.0	1.10	346.24	272.0	-5,320.0	2.3	-1.0	-2.3	0.07	1,627,792.12	2,399,588.77	
302.0	0.83	343.21	302.0	-5,290.0	2.8	-1.1	-2.8	0.92	1,627,792.61	2,399,588.65	
332.0	0.48	347.60	332.0	-5,260.0	3.1	-1.2	-3.1	1.18	1,627,792.94	2,399,588.57	
362.0	0.62	339.21	362.0	-5,230.0	3.4	-1.3	-3.4	0.54	1,627,793.22	2,399,588.49	
392.0	0.13	343.91	392.0	-5,200.0	3.5	-1.3	-3.6	1.64	1,627,793.41	2,399,588.43	
422.0	0.13	195.55	422.0	-5,170.0	3.5	-1.4	-3.6	0.83	1,627,793.41	2,399,588.41	
452.0	0.48	163.12	452.0	-5,140.0	3.4	-1.3	-3.4	1.26	1,627,793.25	2,399,588.44	
482.0	0.48	150.29	482.0	-5,110.0	3.2	-1.2	-3.2	0.36	1,627,793.02	2,399,588.53	
512.0	0.44	161.01	512.0	-5,080.0	2.9	-1.1	-3.0	0.32	1,627,792.80	2,399,588.62	
542.0	0.53	149.54	542.0	-5,050.0	2.7	-1.0	-2.7	0.44	1,627,792.57	2,399,588.73	
572.0	0.35	182.68	572.0	-5,020.0	2.5	-1.0	-2.5	1.02	1,627,792.36	2,399,588.79	
602.0	0.57	160.44	602.0	-4,990.0	2.3	-0.9	-2.3	0.93	1,627,792.12	2,399,588.83	
632.0	0.48	152.71	632.0	-4,960.0	2.0	-0.8	-2.0	0.38	1,627,791.87	2,399,588.93	
662.0	0.44	172.31	662.0	-4,930.0	1.8	-0.7	-1.8	0.54	1,627,791.64	2,399,589.00	
692.0	0.48	146.16	692.0	-4,900.0	1.6	-0.7	-1.6	0.71	1,627,791.42	2,399,589.08	
722.0	0.62	161.63	722.0	-4,870.0	1.3	-0.5	-1.3	0.68	1,627,791.16	2,399,589.19	
752.0	0.53	172.39	752.0	-4,840.0	1.0	-0.5	-1.0	0.47	1,627,790.87	2,399,589.25	
782.0	0.57	180.74	782.0	-4,810.0	0.7	-0.4	-0.7	0.30	1,627,790.58	2,399,589.26	
812.0	0.53	158.38	812.0	-4,780.0	0.5	-0.4	-0.5	0.72	1,627,790.30	2,399,589.31	
842.0	0.40	142.60	842.0	-4,750.0	0.2	-0.3	-0.3	0.60	1,627,790.09	2,399,589.42	
872.0	0.57	135.92	872.0	-4,720.0	0.1	-0.1	-0.1	0.60	1,627,789.89	2,399,589.58	
902.0	0.48	146.20	902.0	-4,690.0	-0.2	0.1	0.2	0.43	1,627,789.68	2,399,589.75	

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Well:	44B-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

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)	
932.0	0.57	174.81	932.0	-4,660.0	-0.4	0.1	0.4	0.91	1,627,789.42	2,399,589.83	
962.0	0.70	190.46	962.0	-4,630.0	-0.7	0.1	0.7	0.72	1,627,789.09	2,399,589.80	
1,082.0	0.86	159.72	1,081.9	-4,510.1	-2.3	0.3	2.3	0.37	1,627,787.52	2,399,589.94	
1,210.0	3.12	130.65	1,209.9	-4,382.1	-5.5	3.3	5.5	1.88	1,627,784.28	2,399,592.84	
1,296.0	5.41	139.22	1,295.6	-4,296.4	-10.1	7.7	10.1	2.76	1,627,779.59	2,399,597.16	
1,381.0	8.57	132.54	1,380.0	-4,212.0	-17.4	15.0	17.5	3.83	1,627,772.10	2,399,604.27	
1,467.0	10.59	134.47	1,464.8	-4,127.2	-27.3	25.3	27.4	2.38	1,627,761.99	2,399,614.40	
1,552.0	10.63	133.73	1,548.3	-4,043.7	-38.1	36.6	38.4	0.17	1,627,750.84	2,399,625.38	
1,637.0	11.87	139.83	1,631.7	-3,960.3	-50.2	47.9	50.6	2.02	1,627,738.48	2,399,636.40	
1,722.0	12.48	135.57	1,714.8	-3,877.2	-63.5	60.0	63.9	1.28	1,627,724.96	2,399,648.15	
1,808.0	12.40	134.44	1,798.8	-3,793.2	-76.6	73.1	77.1	0.30	1,627,711.56	2,399,660.94	
1,893.0	12.48	131.00	1,881.8	-3,710.2	-89.0	86.5	89.6	0.88	1,627,698.83	2,399,674.09	
1,978.0	12.52	131.88	1,964.8	-3,627.2	-101.2	100.3	101.9	0.23	1,627,686.33	2,399,687.59	
2,064.0	12.74	132.67	2,048.7	-3,543.3	-113.8	114.2	114.7	0.33	1,627,673.36	2,399,701.20	
2,149.0	12.59	131.15	2,131.6	-3,460.4	-126.3	128.1	127.2	0.43	1,627,660.59	2,399,714.78	
2,234.0	12.37	133.36	2,214.6	-3,377.4	-138.6	141.7	139.7	0.62	1,627,647.93	2,399,728.08	
2,320.0	12.00	132.93	2,298.7	-3,293.3	-151.0	154.9	152.2	0.44	1,627,635.21	2,399,741.03	
2,405.0	11.91	132.01	2,381.8	-3,210.2	-162.9	167.9	164.2	0.25	1,627,623.02	2,399,753.73	
2,490.0	11.70	132.53	2,465.0	-3,127.0	-174.6	180.8	176.0	0.28	1,627,611.02	2,399,766.32	
2,576.0	11.56	131.66	2,549.2	-3,042.8	-186.2	193.6	187.7	0.26	1,627,599.10	2,399,778.91	
2,661.0	11.34	135.48	2,632.6	-2,959.4	-197.9	205.9	199.4	0.93	1,627,587.20	2,399,790.86	
2,746.0	11.07	133.68	2,715.9	-2,876.1	-209.5	217.6	211.1	0.52	1,627,575.33	2,399,802.34	
2,832.0	10.99	131.30	2,800.3	-2,791.7	-220.6	229.7	222.3	0.54	1,627,563.94	2,399,814.21	
2,917.0	10.96	129.20	2,883.8	-2,708.2	-231.0	242.1	232.8	0.47	1,627,553.20	2,399,826.31	
3,003.0	10.42	132.36	2,968.3	-2,623.7	-241.4	254.2	243.3	0.93	1,627,542.51	2,399,838.14	
3,088.0	10.24	132.32	3,051.9	-2,540.1	-251.7	265.4	253.7	0.21	1,627,531.98	2,399,849.17	
3,174.0	10.81	127.57	3,136.5	-2,455.5	-261.8	277.5	263.8	1.21	1,627,521.64	2,399,860.97	

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Well:	44B-11-06-92	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

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)
3,259.0	10.75	131.72	3,220.0	-2,372.0	-271.9	289.7	274.0	0.92	1,627,511.22	2,399,872.97
3,344.0	11.60	132.84	3,303.4	-2,288.6	-283.0	301.9	285.2	1.03	1,627,499.85	2,399,884.89
3,430.0	10.94	131.74	3,387.7	-2,204.3	-294.3	314.3	296.6	0.81	1,627,488.25	2,399,897.05
3,515.0	11.16	134.60	3,471.1	-2,120.9	-305.4	326.2	307.9	0.69	1,627,476.83	2,399,908.66
3,600.0	10.72	132.10	3,554.6	-2,037.4	-316.5	337.9	319.0	0.76	1,627,465.48	2,399,920.12
3,686.0	11.29	134.69	3,639.0	-1,953.0	-327.8	349.9	330.4	0.88	1,627,453.92	2,399,931.77
3,771.0	10.74	133.51	3,722.4	-1,869.6	-339.1	361.5	341.8	0.70	1,627,442.35	2,399,943.16
3,856.0	10.02	131.30	3,806.1	-1,785.9	-349.4	372.8	352.2	0.97	1,627,431.75	2,399,954.22
3,942.0	9.36	128.23	3,890.8	-1,701.2	-358.7	383.9	361.5	0.97	1,627,422.23	2,399,965.11
4,028.0	7.91	132.89	3,975.8	-1,616.2	-367.1	393.8	370.0	1.87	1,627,413.65	2,399,974.74
4,113.0	6.50	131.52	4,060.2	-1,531.8	-374.2	401.6	377.2	1.67	1,627,406.29	2,399,982.46
4,198.0	5.89	137.19	4,144.7	-1,447.3	-380.6	408.2	383.6	1.02	1,627,399.75	2,399,988.87
4,284.0	5.84	132.78	4,230.2	-1,361.8	-386.8	414.4	389.9	0.53	1,627,393.40	2,399,994.94
4,369.0	5.15	137.36	4,314.8	-1,277.2	-392.6	420.2	395.7	0.96	1,627,387.52	2,400,000.56
4,454.0	4.97	132.32	4,399.5	-1,192.5	-397.9	425.5	401.0	0.56	1,627,382.11	2,400,005.74
4,540.0	3.56	131.74	4,485.3	-1,106.7	-402.1	430.2	405.3	1.64	1,627,377.72	2,400,010.39
4,545.0	3.49	132.93	4,490.3	-1,101.7	-402.3	430.5	405.5	2.10	1,627,377.51	2,400,010.61
44B-11-06-92 TGT										
4,625.0	2.59	160.26	4,570.1	-1,021.9	-405.7	432.9	408.9	2.10	1,627,374.09	2,400,012.92
4,711.0	1.89	190.15	4,656.1	-935.9	-408.9	433.3	412.1	1.56	1,627,370.86	2,400,013.25
4,796.0	1.05	238.22	4,741.1	-850.9	-410.7	432.3	413.9	1.67	1,627,369.09	2,400,012.30
4,882.0	0.57	226.89	4,827.1	-764.9	-411.4	431.4	414.6	0.59	1,627,368.41	2,400,011.30
4,967.0	0.55	206.92	4,912.0	-680.0	-412.1	430.9	415.3	0.23	1,627,367.77	2,400,010.79
5,053.0	0.13	129.77	4,998.0	-594.0	-412.5	430.8	415.7	0.62	1,627,367.34	2,400,010.67
5,138.0	0.44	79.19	5,083.0	-509.0	-412.5	431.2	415.7	0.44	1,627,367.33	2,400,011.06
5,224.0	0.62	310.51	5,169.0	-423.0	-412.1	431.1	415.3	1.11	1,627,367.69	2,400,011.04
5,309.0	0.75	299.75	5,254.0	-338.0	-411.6	430.3	414.8	0.21	1,627,368.29	2,400,010.22

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5,395.0	0.36	15.17	5,340.0	-252.0	-411.0	429.9	414.2	0.87	1,627,368.84	2,400,009.82	
5,480.0	0.48	43.50	5,425.0	-167.0	-410.5	430.2	413.7	0.28	1,627,369.35	2,400,010.15	
5,565.0	0.92	336.49	5,510.0	-82.0	-409.6	430.2	412.8	1.01	1,627,370.23	2,400,010.14	
5,651.0	1.19	300.85	5,596.0	4.0	-408.5	429.1	411.7	0.81	1,627,371.35	2,400,009.12	
5,736.0	0.81	315.26	5,681.0	89.0	-407.7	427.9	410.8	0.53	1,627,372.25	2,400,007.96	
5,822.0	0.75	331.45	5,767.0	175.0	-406.7	427.2	409.9	0.26	1,627,373.20	2,400,007.29	
5,907.0	0.75	18.28	5,852.0	260.0	-405.7	427.2	408.9	0.70	1,627,374.21	2,400,007.22	
5,992.0	0.62	26.80	5,937.0	345.0	-404.8	427.5	407.9	0.19	1,627,375.14	2,400,007.63	
6,078.0	0.99	36.83	6,023.0	431.0	-403.8	428.2	406.9	0.46	1,627,376.14	2,400,008.30	
6,163.0	1.23	42.67	6,108.0	516.0	-402.5	429.2	405.7	0.31	1,627,377.37	2,400,009.39	
6,249.0	0.41	74.04	6,193.9	601.9	-401.7	430.2	404.9	1.05	1,627,378.11	2,400,010.33	
6,334.0	0.92	192.48	6,278.9	686.9	-402.3	430.3	405.5	1.38	1,627,377.53	2,400,010.46	
6,419.0	0.57	136.18	6,363.9	771.9	-403.3	430.5	406.5	0.90	1,627,376.55	2,400,010.58	
6,505.0	1.49	101.20	6,449.9	857.9	-403.8	431.9	407.0	1.25	1,627,375.99	2,400,011.97	
6,590.0	0.62	287.57	6,534.9	942.9	-403.9	432.5	407.1	2.48	1,627,375.90	2,400,012.61	
6,676.0	1.10	298.74	6,620.9	1,028.9	-403.4	431.3	406.6	0.59	1,627,376.47	2,400,011.45	
6,761.0	0.53	308.54	6,705.9	1,113.9	-402.7	430.3	405.9	0.69	1,627,377.13	2,400,010.45	
6,846.0	1.32	35.42	6,790.9	1,198.9	-401.7	430.6	404.9	1.64	1,627,378.17	2,400,010.73	
6,932.0	2.37	35.42	6,876.8	1,284.8	-399.4	432.2	402.6	1.22	1,627,380.38	2,400,012.39	
7,017.0	2.50	31.15	6,961.8	1,369.8	-396.4	434.1	399.6	0.26	1,627,383.35	2,400,014.44	
7,103.0	2.72	31.99	7,047.7	1,455.7	-393.1	436.2	396.3	0.26	1,627,386.64	2,400,016.56	
7,188.0	2.85	30.61	7,132.6	1,540.6	-389.5	438.3	392.8	0.17	1,627,390.12	2,400,018.79	
7,231.0	2.81	32.25	7,175.5	1,583.5	-387.7	439.5	391.0	0.21	1,627,391.90	2,400,019.94	
7,288.0	2.81	32.25	7,232.5	1,640.5	-385.4	440.9	388.6	0.00	1,627,394.23	2,400,021.49	

Checked By: _____	Approved By: _____	Date: _____
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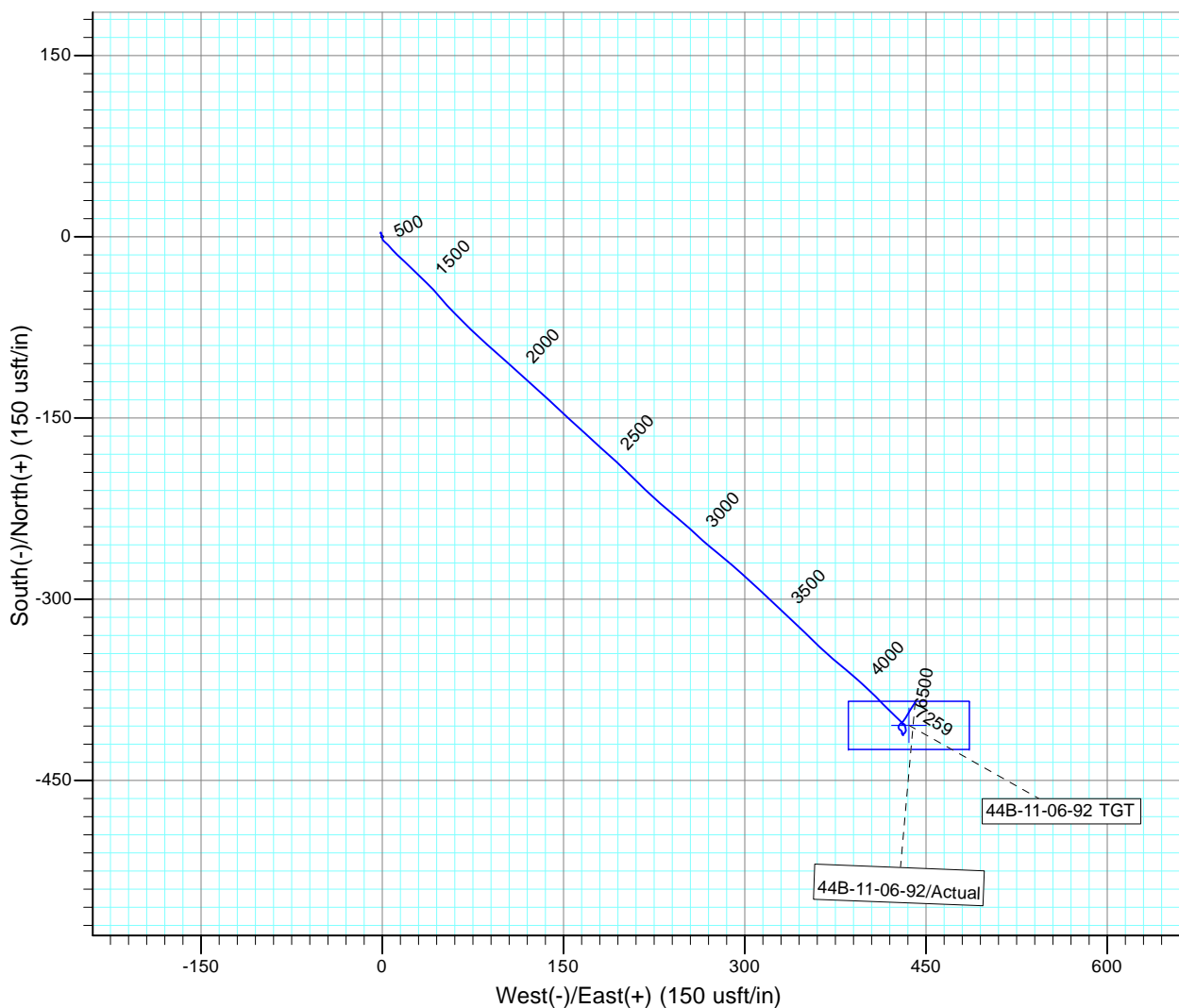
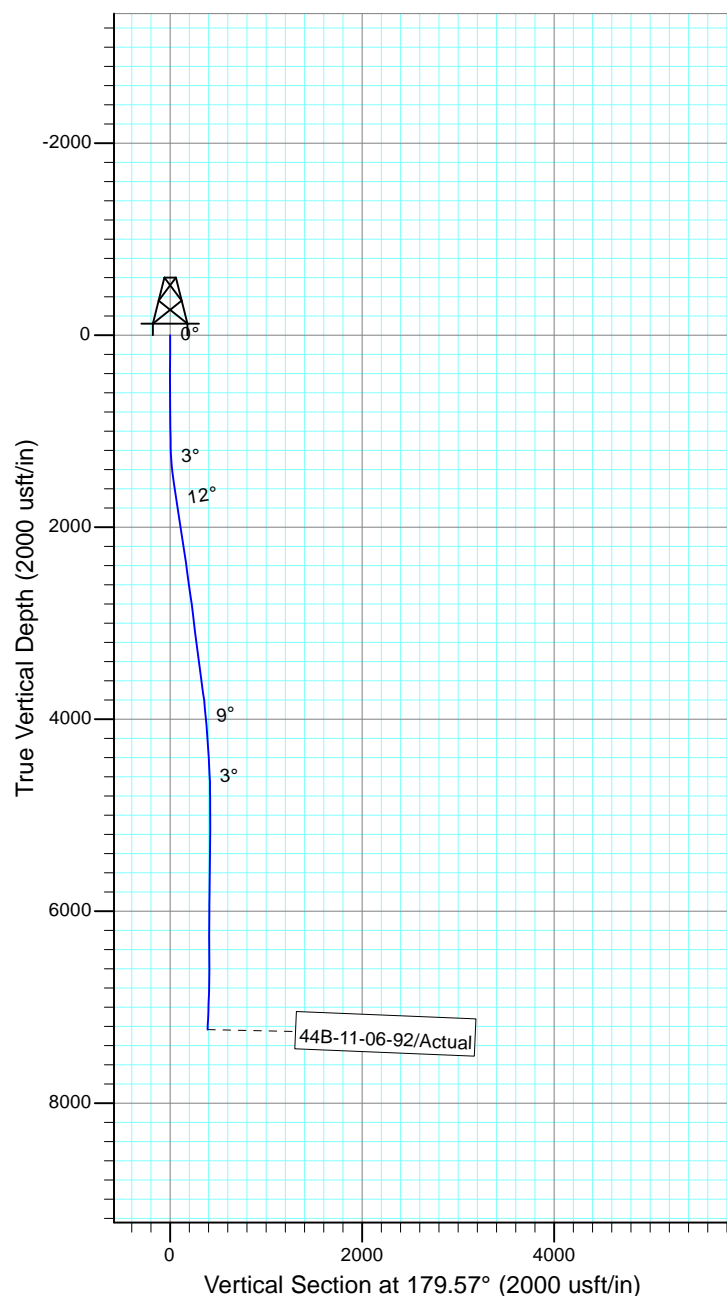
Project: Rockies Region
 Site: Valley Farms L
 Well: 44B-11-06-92
 Wellbore: Wellbore ;
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.84°

Magnetic Field
 Strength: 52116.5snT
 Dip Angle: 65.79°
 Date: 11/25/2013
 Model: IGRF200510



Design: Actual (44B-11-06-92/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 11:48, December 29 2014
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.