



Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 34A-24-07-96

Wellbore #1

Design: Actual

End Of Well Report

27 June, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well BAT 34A-24-07-96
Project:	Rockies Region	TVD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Well:	BAT 34A-24-07-96	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		Speakman A			
Site Position:		Northing:		1,588,429.06 usft	
From:	Lat/Long	Easting:		2,276,734.73 usft	
Position Uncertainty:		Slot Radius:		13-3/16 "	
				Latitude: 39° 25' 15.663 N	
				Longitude: 108° 3' 38.016 W	
				Grid Convergence: -1.61 °	

Well		BAT 34A-24-07-96, SHL LAT: 39.420840997 LONG: -108.060350232				
Well Position	+N/-S	0.0 usft	Northing:	1,588,363.10 usft	Latitude:	39° 25' 15.027 N
	+E/-W	0.0 usft	Easting:	2,276,792.17 usft	Longitude:	108° 3' 37.261 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,197.9 usft	Ground Level:	5,182.5 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/13/2013	10.08	65.63	52,047

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)		+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0		0.0	0.0	110.34

Survey Program		Date	6/27/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
152.4	6,019.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Well:	BAT 34A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
152.4	0.35	289.10	152.4	-0.5	0.2	-0.4	0.23	0.23	0.00	
179.4	0.31	238.17	179.4	-0.6	0.1	-0.6	1.06	-0.15	-188.63	
211.4	1.05	90.42	211.4	-0.4	0.1	-0.4	4.13	2.31	-461.72	
241.4	2.42	92.18	241.4	0.5	0.1	0.5	4.57	4.57	5.87	
271.4	3.78	101.23	271.3	2.1	-0.1	2.2	4.80	4.53	30.17	
301.4	5.23	102.02	301.2	4.4	-0.6	4.5	4.84	4.83	2.63	
331.4	6.37	108.70	331.1	7.4	-1.4	7.4	4.41	3.80	22.27	
361.4	7.16	112.53	360.9	10.9	-2.7	10.7	3.03	2.63	12.77	
391.4	7.95	112.17	390.6	14.9	-4.2	14.3	2.64	2.63	-1.20	
421.4	9.05	109.54	420.3	19.3	-5.8	18.5	3.89	3.67	-8.77	
451.4	10.33	108.40	449.9	24.4	-7.4	23.2	4.31	4.27	-3.80	
481.4	11.56	109.14	479.3	30.1	-9.2	28.6	4.13	4.10	2.47	
511.4	12.52	111.08	508.7	36.3	-11.4	34.5	3.47	3.20	6.47	
541.4	13.61	112.76	537.9	43.1	-13.9	40.8	3.85	3.63	5.60	
571.4	14.50	112.57	567.0	50.4	-16.7	47.5	2.97	2.97	-0.63	
601.4	15.51	113.58	596.0	58.1	-19.8	54.7	3.48	3.37	3.37	
631.4	16.35	113.93	624.8	66.4	-23.1	62.2	2.82	2.80	1.17	
661.4	17.23	113.71	653.5	75.0	-26.6	70.1	2.94	2.93	-0.73	
691.4	17.67	112.75	682.1	84.0	-30.1	78.4	1.75	1.47	-3.20	
721.4	17.97	111.47	710.7	93.2	-33.6	86.9	1.64	1.00	-4.27	
751.4	18.98	110.64	739.2	102.7	-37.0	95.8	3.48	3.37	-2.77	
781.4	20.08	109.71	767.4	112.7	-40.5	105.2	3.81	3.67	-3.10	
811.4	21.35	110.04	795.5	123.3	-44.1	115.2	4.25	4.23	1.10	
841.4	22.24	110.59	823.3	134.4	-47.9	125.6	3.04	2.97	1.83	
871.4	22.94	110.33	851.0	146.0	-52.0	136.4	2.36	2.33	-0.87	
901.4	23.73	109.14	878.6	157.9	-56.0	147.6	3.07	2.63	-3.97	

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Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Well:	BAT 34A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
931.4	24.43	109.54	906.0	170.1	-60.0	159.1	2.40	2.33	1.33
961.4	25.31	109.85	933.2	182.7	-64.3	171.0	2.97	2.93	1.03
991.4	26.06	110.15	960.2	195.7	-68.7	183.2	2.54	2.50	1.00
1,021.4	26.02	110.29	987.2	208.9	-73.3	195.6	0.24	-0.13	0.47
1,051.4	26.25	110.58	1,014.1	222.1	-77.9	208.0	0.88	0.77	0.97
1,081.4	25.71	110.37	1,041.1	235.2	-82.5	220.3	1.83	-1.80	-0.70
1,111.4	25.80	109.80	1,068.1	248.3	-87.0	232.5	0.88	0.30	-1.90
1,141.4	26.19	109.80	1,095.1	261.4	-91.4	244.9	1.30	1.30	0.00
1,171.4	26.50	109.19	1,122.0	274.7	-95.9	257.5	1.37	1.03	-2.03
1,201.4	27.53	108.04	1,148.7	288.4	-100.2	270.4	3.85	3.43	-3.83
1,231.4	27.55	108.57	1,175.3	302.2	-104.6	283.5	0.82	0.07	1.77
1,261.4	27.51	109.14	1,201.9	316.1	-109.1	296.7	0.89	-0.13	1.90
1,291.4	27.99	109.67	1,228.4	330.0	-113.7	309.8	1.80	1.60	1.77
1,321.4	28.54	110.19	1,254.9	344.2	-118.5	323.2	2.01	1.83	1.73
1,351.4	28.96	110.51	1,281.2	358.7	-123.6	336.7	1.49	1.40	1.07
1,381.4	29.31	110.99	1,307.4	373.3	-128.7	350.4	1.40	1.17	1.60
1,411.4	29.27	110.68	1,333.5	388.0	-134.0	364.1	0.52	-0.13	-1.03
1,441.4	29.27	110.86	1,359.7	402.6	-139.2	377.8	0.29	0.00	0.60
1,471.4	29.18	111.03	1,385.9	417.3	-144.4	391.5	0.41	-0.30	0.57
1,501.4	29.53	111.03	1,412.0	432.0	-149.7	405.2	1.17	1.17	0.00
1,531.4	29.59	111.10	1,438.1	446.8	-155.0	419.0	0.23	0.20	0.23
1,561.4	29.27	111.08	1,464.3	461.5	-160.3	432.8	1.07	-1.07	-0.07
1,591.4	28.87	110.68	1,490.5	476.1	-165.5	446.4	1.48	-1.33	-1.33
1,621.4	28.74	110.33	1,516.8	490.5	-170.6	459.9	0.71	-0.43	-1.17
1,651.4	28.39	110.37	1,543.1	504.9	-175.5	473.4	1.17	-1.17	0.13
1,681.4	28.26	110.20	1,569.5	519.1	-180.5	486.7	0.51	-0.43	-0.57
1,711.4	28.30	110.15	1,595.9	533.3	-185.4	500.1	0.15	0.13	-0.17

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Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Well:	BAT 34A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,741.4	28.43	110.20	1,622.3	547.6	-190.3	513.5	0.44	0.43	0.17	
1,832.0	27.88	108.87	1,702.2	590.3	-204.6	553.7	0.92	-0.61	-1.47	
1,917.0	27.25	108.25	1,777.6	629.6	-217.1	591.0	0.81	-0.74	-0.73	
2,002.0	26.94	110.19	1,853.2	668.4	-229.9	627.6	1.10	-0.36	2.28	
2,087.0	26.85	109.66	1,929.0	706.8	-243.0	663.7	0.30	-0.11	-0.62	
2,172.0	27.03	111.37	2,004.8	745.3	-256.5	699.8	0.94	0.21	2.01	
2,257.0	26.37	111.29	2,080.8	783.5	-270.4	735.4	0.78	-0.78	-0.09	
2,342.0	27.03	111.73	2,156.7	821.7	-284.4	770.9	0.81	0.78	0.52	
2,427.0	28.04	111.73	2,232.1	861.0	-298.9	807.4	1.19	1.19	0.00	
2,512.0	27.33	112.43	2,307.3	900.4	-313.7	844.0	0.92	-0.84	0.82	
2,598.0	28.61	110.28	2,383.3	940.8	-328.4	881.6	1.89	1.49	-2.50	
2,683.0	27.77	110.50	2,458.2	980.9	-342.4	919.2	1.00	-0.99	0.26	
2,769.0	26.37	110.10	2,534.8	1,020.0	-356.0	955.9	1.64	-1.63	-0.47	
2,854.0	26.54	108.74	2,610.9	1,057.9	-368.6	991.6	0.74	0.20	-1.60	
2,939.0	26.54	109.13	2,686.9	1,095.9	-380.9	1,027.5	0.21	0.00	0.46	
3,024.0	27.55	110.36	2,762.6	1,134.5	-394.0	1,063.9	1.36	1.19	1.45	
3,109.0	26.85	111.07	2,838.2	1,173.4	-407.7	1,100.3	0.91	-0.82	0.84	
3,195.0	25.49	111.07	2,915.4	1,211.3	-421.3	1,135.7	1.58	-1.58	0.00	
3,280.0	22.85	109.75	2,993.0	1,246.1	-433.5	1,168.3	3.17	-3.11	-1.55	
3,365.0	20.17	107.11	3,072.0	1,277.2	-443.4	1,197.8	3.35	-3.15	-3.11	
3,450.0	16.17	108.39	3,152.8	1,303.7	-451.4	1,223.0	4.73	-4.71	1.51	
3,535.0	14.07	109.68	3,234.8	1,325.9	-458.6	1,244.0	2.50	-2.47	1.52	
3,620.0	12.04	107.99	3,317.6	1,345.1	-464.9	1,262.2	2.43	-2.39	-1.99	
3,705.0	10.28	105.49	3,401.0	1,361.5	-469.6	1,277.9	2.15	-2.07	-2.94	
3,790.0	8.09	104.87	3,484.9	1,375.0	-473.2	1,291.0	2.58	-2.58	-0.73	
3,875.0	6.33	106.63	3,569.3	1,385.6	-476.1	1,301.3	2.09	-2.07	2.07	
3,960.0	3.78	113.75	3,653.9	1,393.1	-478.5	1,308.3	3.08	-3.00	8.38	

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Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
Well:	BAT 34A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
3,985.9	3.72	115.72	3,679.7	1,394.8	-479.2	1,309.9	0.55	-0.23	7.64	
BAT 34A-24-07-96 TGT										
4,045.0	3.60	120.47	3,738.7	1,398.5	-481.0	1,313.2	0.55	-0.20	8.02	
4,130.0	3.47	127.33	3,823.6	1,403.6	-483.9	1,317.5	0.52	-0.15	8.07	
4,216.0	2.46	134.49	3,909.5	1,407.8	-486.8	1,320.9	1.25	-1.17	8.33	
4,301.0	2.77	141.43	3,994.4	1,411.2	-489.7	1,323.5	0.52	0.36	8.16	
4,386.0	1.19	107.86	4,079.3	1,413.8	-491.6	1,325.6	2.23	-1.86	-39.49	
4,471.0	0.88	136.29	4,164.3	1,415.3	-492.3	1,326.9	0.69	-0.36	33.45	
4,557.0	0.75	163.62	4,250.3	1,416.2	-493.3	1,327.5	0.47	-0.15	31.78	
4,642.0	0.26	208.58	4,335.3	1,416.5	-494.0	1,327.6	0.70	-0.58	52.89	
4,727.0	1.63	9.90	4,420.3	1,416.3	-493.0	1,327.7	2.21	1.61	189.79	
4,812.0	1.10	8.15	4,505.3	1,415.9	-491.0	1,328.0	0.63	-0.62	-2.06	
4,897.0	1.19	293.66	4,590.2	1,414.9	-489.8	1,327.4	1.63	0.11	-87.64	
4,982.0	0.83	351.18	4,675.2	1,413.7	-488.9	1,326.4	1.20	-0.42	67.67	
5,068.0	1.19	337.96	4,761.2	1,412.8	-487.4	1,326.0	0.50	0.42	-15.37	
5,154.0	2.02	352.55	4,847.2	1,411.5	-485.1	1,325.5	1.07	0.97	16.97	
5,239.0	1.54	337.87	4,932.2	1,410.0	-482.6	1,324.9	0.77	-0.56	-17.27	
5,324.0	1.80	293.62	5,017.1	1,407.9	-481.0	1,323.2	1.51	0.31	-52.06	
5,409.0	1.80	282.50	5,102.1	1,405.2	-480.1	1,320.7	0.41	0.00	-13.08	
5,494.0	1.45	258.06	5,187.0	1,403.0	-480.1	1,318.3	0.90	-0.41	-28.75	
5,580.0	1.85	244.26	5,273.0	1,401.1	-480.9	1,316.0	0.65	0.47	-16.05	
5,665.0	2.20	241.14	5,358.0	1,399.1	-482.3	1,313.3	0.43	0.41	-3.67	
5,750.0	2.37	235.17	5,442.9	1,397.0	-484.1	1,310.5	0.34	0.20	-7.02	
5,835.0	2.33	235.70	5,527.8	1,395.0	-486.1	1,307.6	0.05	-0.05	0.62	
5,920.0	2.46	244.18	5,612.7	1,392.8	-487.8	1,304.5	0.44	0.15	9.98	
5,963.0	2.68	239.56	5,655.7	1,391.5	-488.7	1,302.8	0.70	0.51	-10.74	

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Site:	Speakman A	MD Reference:	BAT 34A-24-07-96 @ 5197.9usft (Xtreme 15)
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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey									
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6,019.0	2.68	239.56	5,711.6	1,389.8	-490.1	1,300.6	0.00	0.00	0.00
BAT 34A-24-07-96 BHL									

Checked By: _____	Approved By: _____	Date: _____
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Ursa OPERATING
COMPANY

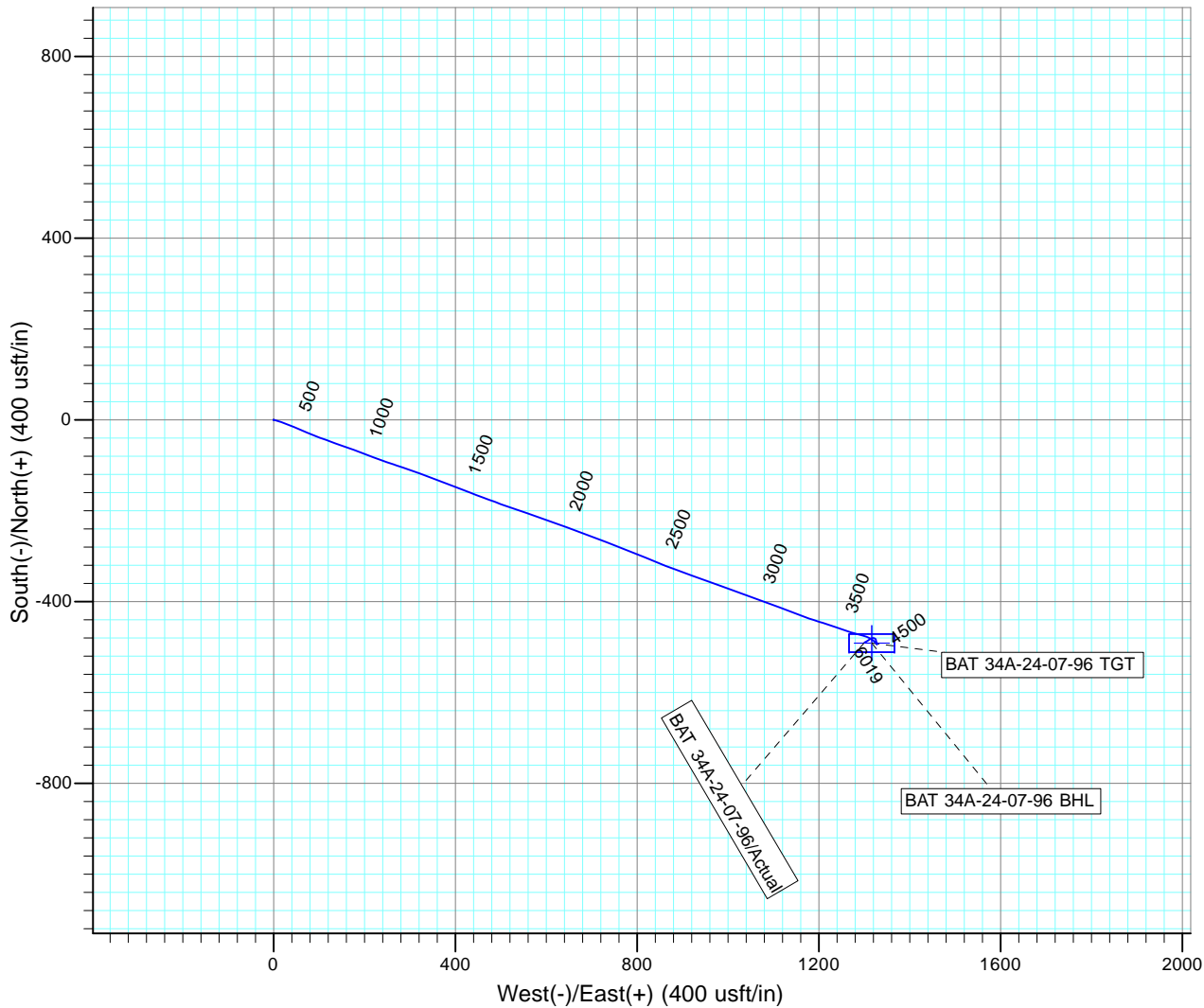
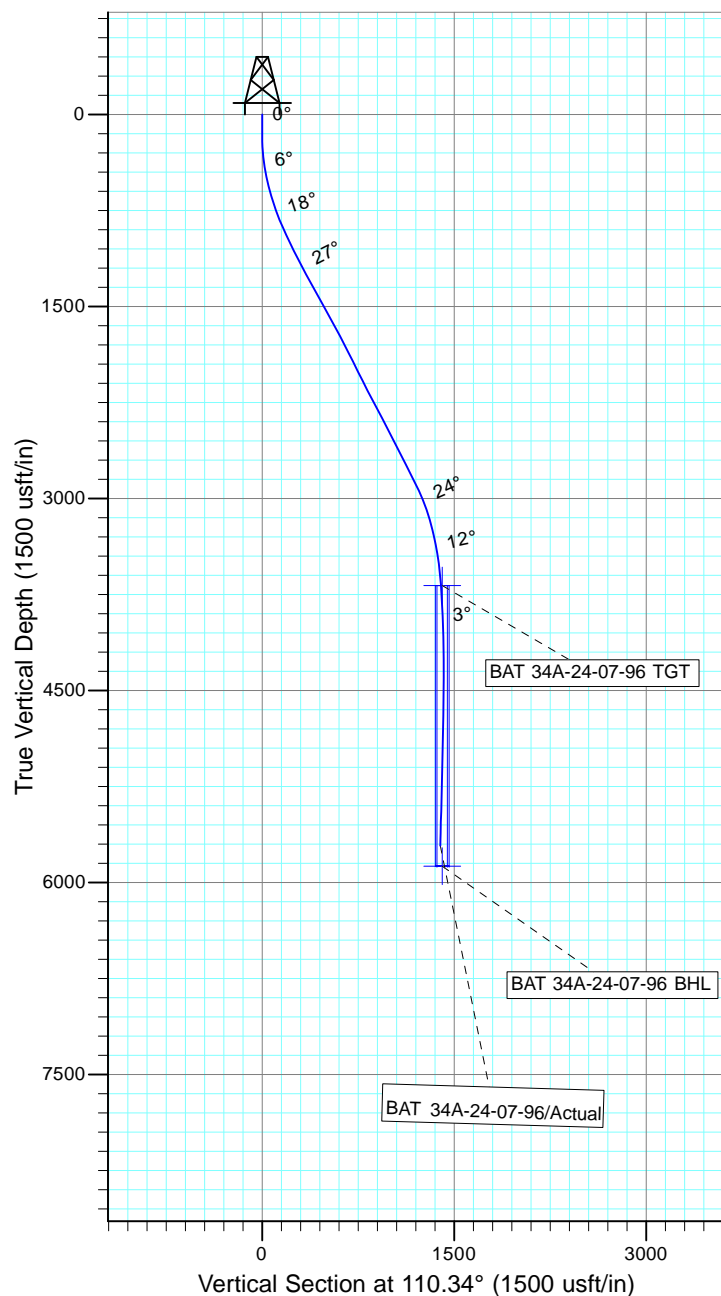
Project: Rockies Region
Site: Speakman A
Well: BAT 34A-24-07-96
Wellbore: Wellbore #
SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
Magnetic North: 10.09°

Magnetic Field
Strength: 52046.7snT
Dip Angle: 65.63°
Date: 6/13/2013
Model: IGRF200510



Design: Actual (BAT 34A-24-07-96/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 12:34, June 27 2014
THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
SUPPORTED BY ACTUAL FIELD DATA.