



Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 32A-24-07-96

Wellbore #1

Design: Actual

End of Well Report

28 April, 2015



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well BAT 32A-24-07-96
Project:	Rockies Region	TVD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Site:	Speakman A	MD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Well:	BAT 32A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

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	"
				0.0	usft

Well		BAT 32A-24-07-96, SHL LAT: 39.420711356 LONG: -108.060087863				
Well Position	+N-S	0.0 usft	Northing:	1,588,313.81 usft	Latitude:	39° 25' 14.561 N
	+E-W	0.0 usft	Easting:	2,276,864.93 usft	Longitude:	108° 3' 36.316 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,199.5 usft	Ground Level:	5,182.5 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/15/2013	10.08	65.63	52,046

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	30.47

Survey Program		Date	4/28/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
156.0	6,529.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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Site:	Speakman A	MD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Well:	BAT 32A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

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	
156.0	0.35	214.47	156.0	-0.5	-0.4	-0.3	0.22	0.22	0.00	
186.0	0.44	216.93	186.0	-0.7	-0.6	-0.4	0.31	0.30	8.20	
214.0	0.44	51.92	214.0	-0.7	-0.6	-0.4	3.12	0.00	-589.32	
246.0	1.10	51.21	246.0	-0.3	-0.3	0.0	2.06	2.06	-2.22	
276.0	1.67	41.85	276.0	0.4	0.2	0.5	2.04	1.90	-31.20	
306.0	2.64	37.28	306.0	1.5	1.1	1.2	3.28	3.23	-15.23	
336.0	3.34	32.27	335.9	3.1	2.4	2.1	2.49	2.33	-16.70	
366.0	4.13	32.36	365.9	5.0	4.0	3.1	2.63	2.63	0.30	
396.0	5.01	34.03	395.8	7.4	6.0	4.4	2.97	2.93	5.57	
426.0	6.11	36.49	425.6	10.3	8.4	6.1	3.75	3.67	8.20	
456.0	7.12	35.04	455.4	13.8	11.2	8.1	3.41	3.37	-4.83	
486.0	8.48	29.77	485.2	17.8	14.6	10.3	5.12	4.53	-17.57	
516.0	9.80	27.09	514.8	22.6	18.8	12.6	4.62	4.40	-8.93	
546.0	10.99	27.66	544.3	28.0	23.6	15.0	3.98	3.97	1.90	
576.0	12.35	29.27	573.7	34.1	29.0	17.9	4.66	4.53	5.37	
606.0	13.71	30.34	602.9	40.8	34.8	21.3	4.60	4.53	3.57	
636.0	15.03	30.87	631.9	48.3	41.2	25.1	4.42	4.40	1.77	
666.0	16.66	29.77	660.8	56.5	48.3	29.2	5.52	5.43	-3.67	
696.0	18.03	29.93	689.4	65.4	56.1	33.7	4.57	4.57	0.53	
726.0	19.64	30.08	717.8	75.1	64.4	38.5	5.37	5.37	0.50	
756.0	20.65	31.22	746.0	85.4	73.3	43.8	3.61	3.37	3.80	
786.0	21.93	31.13	774.0	96.3	82.7	49.4	4.27	4.27	-0.30	
816.0	22.98	31.57	801.7	107.8	92.4	55.4	3.54	3.50	1.47	
846.0	24.21	31.70	829.2	119.8	102.7	61.7	4.10	4.10	0.43	
876.0	24.96	31.53	856.4	132.2	113.3	68.2	2.51	2.50	-0.57	
906.0	25.66	30.95	883.6	145.1	124.3	74.9	2.48	2.33	-1.93	

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Site:	Speakman A	MD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Well:	BAT 32A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
936.0	26.94	30.56	910.5	158.4	135.7	81.7	4.31	4.27	-1.30	
966.0	28.34	29.37	937.0	172.3	147.7	88.6	5.02	4.67	-3.97	
996.0	29.53	30.47	963.3	186.8	160.3	95.9	4.35	3.97	3.67	
1,026.0	31.07	30.29	989.2	201.9	173.4	103.5	5.14	5.13	-0.60	
1,056.0	32.08	31.09	1,014.8	217.6	186.9	111.5	3.64	3.37	2.67	
1,086.0	32.96	29.77	1,040.0	233.8	200.8	119.7	3.77	2.93	-4.40	
1,116.0	33.93	28.80	1,065.1	250.3	215.2	127.8	3.69	3.23	-3.23	
1,146.0	34.76	29.02	1,089.8	267.2	230.0	136.0	2.80	2.77	0.73	
1,176.0	35.64	29.15	1,114.4	284.5	245.1	144.4	2.94	2.93	0.43	
1,206.0	36.25	30.03	1,138.7	302.1	260.4	153.1	2.66	2.03	2.93	
1,236.0	37.57	29.46	1,162.6	320.1	276.1	162.0	4.55	4.40	-1.90	
1,266.0	38.67	29.94	1,186.2	338.6	292.2	171.2	3.80	3.67	1.60	
1,296.0	38.99	30.56	1,209.6	357.4	308.4	180.7	1.68	1.07	2.07	
1,326.0	39.24	31.00	1,232.9	376.4	324.7	190.4	1.25	0.83	1.47	
1,356.0	39.33	31.17	1,256.1	395.4	341.0	200.2	0.47	0.30	0.57	
1,386.0	39.16	30.95	1,279.3	414.3	357.2	210.0	0.73	-0.57	-0.73	
1,416.0	38.80	31.04	1,302.7	433.2	373.4	219.7	1.21	-1.20	0.30	
1,446.0	39.16	31.35	1,326.0	452.1	389.5	229.5	1.36	1.20	1.03	
1,476.0	38.80	31.13	1,349.3	471.0	405.7	239.2	1.29	-1.20	-0.73	
1,506.0	39.02	30.51	1,372.6	489.8	421.8	248.9	1.49	0.73	-2.07	
1,536.0	39.11	30.78	1,395.9	508.7	438.1	258.5	0.64	0.30	0.90	
1,566.0	39.29	30.47	1,419.2	527.7	454.4	268.2	0.89	0.60	-1.03	
1,596.0	38.80	31.13	1,442.5	546.6	470.7	277.9	2.14	-1.63	2.20	
1,626.0	38.89	30.95	1,465.9	565.4	486.8	287.6	0.48	0.30	-0.60	
1,656.0	38.10	31.53	1,489.3	584.1	502.8	297.3	2.90	-2.63	1.93	
1,686.0	38.14	30.87	1,512.9	602.6	518.6	306.8	1.36	0.13	-2.20	
1,716.0	38.12	30.44	1,536.5	621.1	534.5	316.3	0.89	-0.07	-1.43	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,746.0	37.71	30.78	1,560.2	639.5	550.4	325.7	1.53	-1.37	1.13	
1,776.0	37.92	30.38	1,583.9	657.9	566.2	335.0	1.08	0.70	-1.33	
1,806.0	37.75	31.04	1,607.6	676.3	582.0	344.4	1.46	-0.57	2.20	
1,836.0	37.88	31.04	1,631.3	694.7	597.8	353.9	0.43	0.43	0.00	
1,866.0	38.06	30.51	1,654.9	713.2	613.7	363.4	1.24	0.60	-1.77	
1,896.0	37.97	30.91	1,678.6	731.6	629.6	372.8	0.87	-0.30	1.33	
1,926.0	38.25	30.74	1,702.2	750.2	645.5	382.3	1.00	0.93	-0.57	
1,976.0	38.41	30.87	1,741.4	781.2	672.1	398.2	0.36	0.32	0.26	
2,061.0	38.19	30.43	1,808.1	833.8	717.4	425.0	0.41	-0.26	-0.52	
2,147.0	37.70	30.04	1,875.9	886.7	763.1	451.6	0.63	-0.57	-0.45	
2,232.0	37.34	29.93	1,943.3	938.5	807.9	477.5	0.43	-0.42	-0.13	
2,318.0	37.09	29.77	2,011.8	990.5	853.0	503.4	0.31	-0.29	-0.19	
2,403.0	36.65	30.29	2,079.8	1,041.5	897.2	528.9	0.63	-0.52	0.61	
2,489.0	36.91	31.96	2,148.7	1,093.0	941.3	555.5	1.20	0.30	1.94	
2,574.0	38.41	31.92	2,216.0	1,144.9	985.3	583.0	1.76	1.76	-0.05	
2,659.0	37.90	31.32	2,282.8	1,197.4	1,030.1	610.6	0.74	-0.60	-0.71	
2,745.0	37.00	31.17	2,351.1	1,249.7	1,074.8	637.7	1.05	-1.05	-0.17	
2,830.0	38.23	32.01	2,418.4	1,301.6	1,118.9	664.9	1.57	1.45	0.99	
2,915.0	37.53	31.83	2,485.5	1,353.7	1,163.2	692.5	0.83	-0.82	-0.21	
3,001.0	36.47	31.83	2,554.2	1,405.5	1,207.2	719.7	1.23	-1.23	0.00	
3,086.0	37.66	30.82	2,622.0	1,456.7	1,251.0	746.4	1.57	1.40	-1.19	
3,171.0	36.61	31.04	2,689.8	1,508.0	1,295.0	772.7	1.25	-1.24	0.26	
3,256.0	37.97	29.72	2,757.4	1,559.5	1,339.4	798.8	1.86	1.60	-1.55	
3,342.0	37.02	29.10	2,825.7	1,611.8	1,385.0	824.5	1.19	-1.10	-0.72	
3,427.0	38.89	28.76	2,892.7	1,664.1	1,430.8	849.8	2.21	2.20	-0.40	
3,513.0	38.50	28.62	2,959.8	1,717.8	1,477.9	875.6	0.46	-0.45	-0.16	
3,598.0	37.88	29.55	3,026.6	1,770.4	1,523.9	901.1	0.99	-0.73	1.09	

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Site:	Speakman A	MD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
3,683.0	36.39	28.76	3,094.4	1,821.7	1,568.7	926.1	1.84	-1.75	-0.93	
3,769.0	36.25	31.13	3,163.7	1,872.6	1,612.8	951.6	1.64	-0.16	2.76	
3,854.0	36.56	31.31	3,232.1	1,923.0	1,656.0	977.7	0.39	0.36	0.21	
3,939.0	37.49	30.69	3,299.9	1,974.2	1,699.8	1,004.1	1.18	1.09	-0.73	
4,025.0	34.89	29.02	3,369.3	2,025.0	1,743.8	1,029.4	3.23	-3.02	-1.94	
4,110.0	30.89	28.76	3,440.7	2,071.1	1,784.2	1,051.7	4.71	-4.71	-0.31	
4,196.0	28.04	29.20	3,515.6	2,113.4	1,821.3	1,072.1	3.32	-3.31	0.51	
4,281.0	24.48	30.25	3,591.8	2,151.0	1,853.9	1,090.8	4.22	-4.19	1.24	
4,366.0	22.54	30.21	3,669.7	2,184.9	1,883.2	1,107.8	2.28	-2.28	-0.05	
4,451.0	19.64	32.54	3,749.0	2,215.5	1,909.3	1,123.7	3.55	-3.41	2.74	
4,536.0	17.53	32.45	3,829.6	2,242.5	1,932.2	1,138.3	2.48	-2.48	-0.11	
4,622.0	15.07	31.26	3,912.1	2,266.7	1,952.7	1,151.0	2.89	-2.86	-1.38	
4,707.0	12.35	33.59	3,994.7	2,286.8	1,969.7	1,161.8	3.26	-3.20	2.74	
4,793.0	9.23	33.37	4,079.2	2,302.9	1,983.1	1,170.7	3.63	-3.63	-0.26	
4,878.0	6.20	35.88	4,163.4	2,314.3	1,992.5	1,177.1	3.59	-3.56	2.95	
4,963.0	2.72	40.01	4,248.1	2,320.8	1,997.8	1,181.1	4.11	-4.09	4.86	
5,049.0	1.89	42.56	4,334.0	2,324.2	2,000.4	1,183.4	0.97	-0.97	2.97	
5,134.0	1.30	34.62	4,419.0	2,326.6	2,002.2	1,184.9	0.74	-0.69	-9.34	
5,219.0	0.83	18.47	4,504.0	2,328.1	2,003.6	1,185.6	0.65	-0.55	-19.00	
5,305.0	0.48	17.33	4,590.0	2,329.1	2,004.5	1,185.9	0.41	-0.41	-1.33	
5,390.0	0.57	352.99	4,675.0	2,329.8	2,005.3	1,186.0	0.28	0.11	-28.64	
5,476.0	0.62	295.15	4,761.0	2,330.1	2,005.9	1,185.5	0.67	0.06	-67.26	
5,561.0	0.83	293.92	4,846.0	2,329.9	2,006.4	1,184.5	0.25	0.25	-1.45	
5,646.0	1.23	278.45	4,931.0	2,329.5	2,006.8	1,183.1	0.57	0.47	-18.20	
5,732.0	1.24	34.17	5,017.0	2,330.1	2,007.7	1,182.7	2.43	0.01	134.56	
5,817.0	1.35	48.80	5,101.9	2,332.0	2,009.1	1,183.9	0.41	0.13	17.21	
5,903.0	0.92	55.39	5,187.9	2,333.6	2,010.1	1,185.3	0.52	-0.50	7.66	

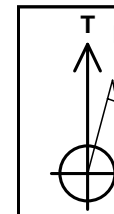
Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well BAT 32A-24-07-96
Project:	Rockies Region	TVD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Site:	Speakman A	MD Reference:	BAT 32A-24-07-96 @ 5199.5usft (Capstar 321)
Well:	BAT 32A-24-07-96	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
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5,988.0	0.57	29.33	5,272.9	2,334.6	2,010.9	1,186.0	0.56	-0.41	-30.66	
6,073.0	0.13	23.44	5,357.9	2,335.1	2,011.4	1,186.3	0.52	-0.52	-6.93	
6,159.0	0.12	292.44	5,443.9	2,335.2	2,011.5	1,186.2	0.21	-0.01	-105.81	
6,244.0	0.62	241.28	5,528.9	2,334.8	2,011.3	1,185.8	0.65	0.59	-60.19	
6,329.0	1.32	233.06	5,613.9	2,333.5	2,010.5	1,184.6	0.84	0.82	-9.67	
6,415.0	1.41	223.35	5,699.9	2,331.6	2,009.1	1,183.0	0.29	0.10	-11.29	
6,472.0	1.82	225.34	5,756.8	2,330.0	2,008.0	1,181.9	0.73	0.72	3.49	
6,529.0	1.82	225.34	5,813.8	2,328.3	2,006.7	1,180.6	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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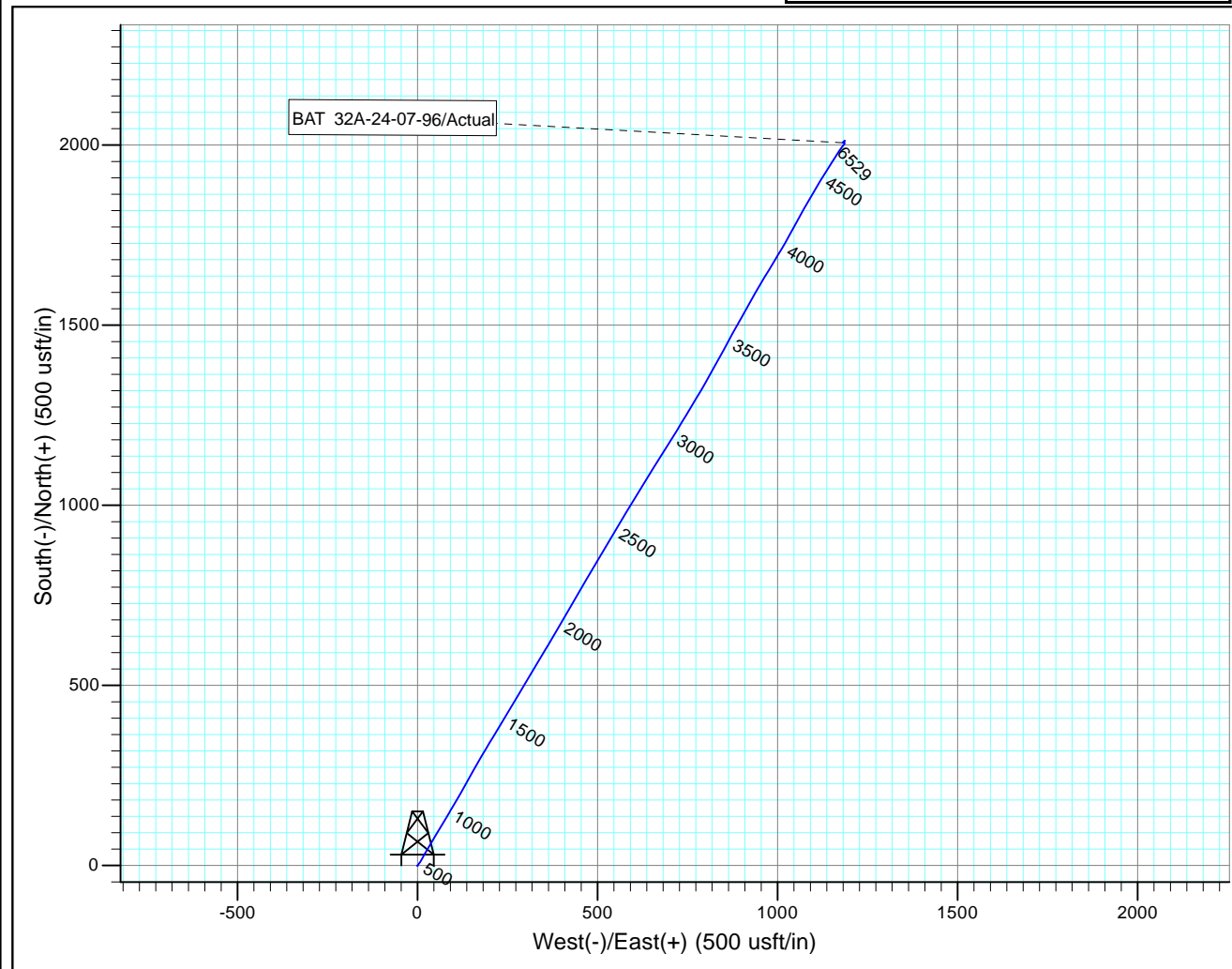
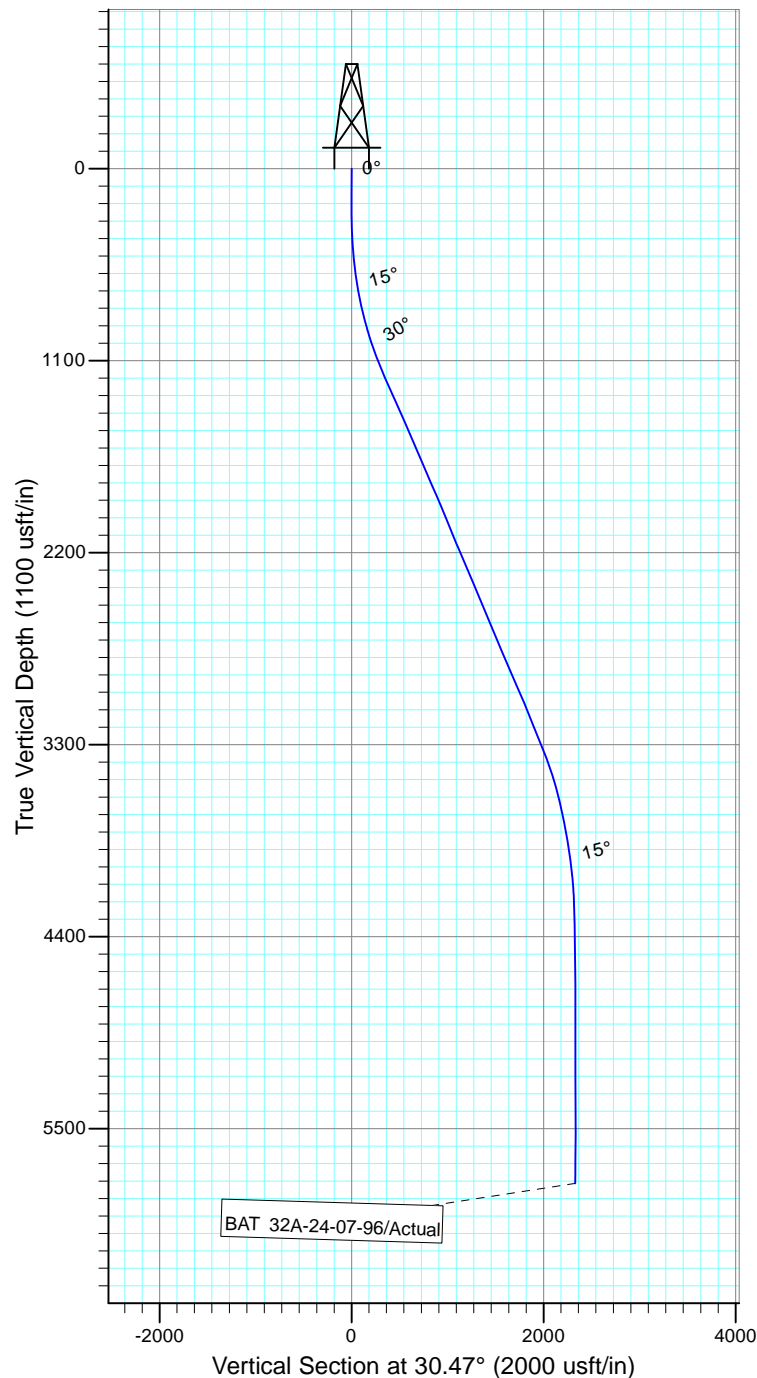


Project: Rockies Region
Site: Speakman A
Well: BAT 32A-24-07-96
Wellbore: Wellbore #1
Design: Actual



Azimuths to True North
Magnetic North: 10.08°

Magnetic Field
Strength: 52046.1nT
Dip Angle: 65.63°
Date: 6/15/2013
Model: IGRF200510



Design: Actual (BAT 32A-24-07-96/Wellbore #1)

Created By: *Matthew Linton* Date: 17:15, April 28 2015

THIS SURVEY IS CORRECT TO THE BEST OF
MY KNOWLEDGE AND IS SUPPORTED
BY ACTUAL FIELD DATA