



Ursa Operating Company, LLC

Rockies Region

Speakman A

BAT 33A-24-07-96

Wellbore #1

Design: Actual

End of Well Report

22 January, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well BAT 33A-24-07-96
Project:	Rockies Region	TVD Reference:	BAT 33A-24-07-96 @ 5197.9usft (Original Well Elev)
Site:	Speakman A	MD Reference:	BAT 33A-24-07-96 @ 5197.9usft (Original Well Elev)
Well:	BAT 33A-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:	0.0 usft	Slot Radius:		13-3/16 "	
				Latitude:	39° 25' 15.663 N
				Longitude:	108° 3' 38.016 W
				Grid Convergence:	-1.61 °

Well		BAT 33A-24-07-96, SHL LAT: 39.420983726 LONG: -108.060411612				
Well Position	+N-S	0.0 usft	Northing:	1,588,415.56 usft	Latitude:	39° 25' 15.541 N
	+E-W	0.0 usft	Easting:	2,276,776.30 usft	Longitude:	108° 3' 37.482 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	61.65

Survey Program		Date	1/22/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
123.0	6,098.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
123.0	0.59	3.68	123.0	0.3	0.6	0.0	0.48	0.48	0.00	
151.0	0.27	36.22	151.0	0.5	0.8	0.1	1.39	-1.14	116.21	
176.0	0.34	339.47	176.0	0.5	0.9	0.1	1.19	0.28	-227.00	
205.0	0.94	60.04	205.0	0.8	1.1	0.3	3.26	2.07	277.83	
235.0	1.41	67.98	235.0	1.4	1.4	0.8	1.65	1.57	26.47	
265.0	3.15	59.77	265.0	2.6	2.0	1.9	5.89	5.80	-27.37	
295.0	4.39	72.90	294.9	4.5	2.7	3.7	5.01	4.13	43.77	
325.0	5.67	68.42	324.8	7.1	3.6	6.2	4.46	4.27	-14.93	
355.0	6.49	73.85	354.6	10.3	4.6	9.2	3.34	2.73	18.10	
385.0	7.95	67.19	384.4	14.0	5.9	12.7	5.60	4.87	-22.20	
415.0	8.88	67.23	414.1	18.4	7.6	16.8	3.10	3.10	0.13	
445.0	10.24	65.48	443.6	23.3	9.6	21.3	4.64	4.53	-5.83	
475.0	10.99	63.54	473.1	28.8	12.0	26.3	2.77	2.50	-6.47	
505.0	12.04	66.13	502.5	34.8	14.5	31.7	3.90	3.50	8.63	
535.0	12.70	66.48	531.8	41.2	17.1	37.6	2.21	2.20	1.17	
565.0	13.18	64.82	561.1	47.9	19.9	43.7	2.02	1.60	-5.53	
595.0	13.67	64.51	590.2	54.9	22.8	50.0	1.65	1.63	-1.03	
625.0	14.41	62.57	619.3	62.2	26.1	56.5	2.92	2.47	-6.47	
655.0	15.03	62.00	648.4	69.8	29.6	63.3	2.12	2.07	-1.90	
685.0	15.78	63.23	677.3	77.7	33.3	70.4	2.73	2.50	4.10	
715.0	16.44	62.66	706.1	86.1	37.1	77.8	2.26	2.20	-1.90	
745.0	17.09	61.52	734.8	94.7	41.1	85.4	2.43	2.17	-3.80	
775.0	16.96	61.52	763.5	103.5	45.3	93.1	0.43	-0.43	0.00	
805.0	17.45	59.59	792.2	112.4	49.7	100.9	2.51	1.63	-6.43	
835.0	17.86	61.63	820.8	121.5	54.2	108.8	2.47	1.37	6.80	
865.0	18.19	61.21	849.3	130.8	58.6	117.0	1.18	1.10	-1.40	

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Well:	BAT 33A-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)	
895.0	18.98	60.55	877.7	140.3	63.2	125.3	2.73	2.63	-2.20	
925.0	19.78	61.78	906.0	150.3	68.0	134.0	2.99	2.67	4.10	
955.0	20.50	60.40	934.2	160.6	73.0	143.1	2.88	2.40	-4.60	
985.0	21.70	60.40	962.2	171.4	78.4	152.5	4.00	4.00	0.00	
1,015.0	22.50	61.30	990.0	182.7	83.9	162.3	2.90	2.67	3.00	
1,045.0	23.60	61.50	1,017.6	194.4	89.5	172.6	3.68	3.67	0.67	
1,075.0	24.20	61.30	1,045.0	206.6	95.3	183.3	2.02	2.00	-0.67	
1,105.0	25.50	60.70	1,072.2	219.2	101.4	194.3	4.41	4.33	-2.00	
1,135.0	26.50	60.70	1,099.2	232.3	107.9	205.8	3.33	3.33	0.00	
1,165.0	27.10	62.10	1,126.0	245.9	114.3	217.7	2.90	2.00	4.67	
1,195.0	28.00	61.80	1,152.6	259.7	120.9	229.9	3.04	3.00	-1.00	
1,225.0	29.00	62.30	1,178.9	274.0	127.6	242.6	3.43	3.33	1.67	
1,255.0	29.80	63.20	1,205.1	288.8	134.3	255.7	3.05	2.67	3.00	
1,285.0	30.40	63.30	1,231.0	303.8	141.1	269.1	2.01	2.00	0.33	
1,315.0	30.80	63.20	1,256.8	319.1	148.0	282.7	1.34	1.33	-0.33	
1,345.0	31.10	62.60	1,282.6	334.5	155.0	296.5	1.43	1.00	-2.00	
1,375.0	30.80	62.30	1,308.3	349.9	162.1	310.1	1.12	-1.00	-1.00	
1,405.0	31.30	61.50	1,334.0	365.4	169.4	323.8	2.16	1.67	-2.67	
1,435.0	31.10	61.30	1,359.7	380.9	176.9	337.4	0.75	-0.67	-0.67	
1,465.0	31.30	61.00	1,385.3	396.5	184.3	351.0	0.84	0.67	-1.00	
1,495.0	31.30	61.40	1,411.0	412.1	191.9	364.7	0.69	0.00	1.33	
1,525.0	30.70	62.80	1,436.7	427.5	199.1	378.4	3.13	-2.00	4.67	
1,555.0	30.70	61.80	1,462.5	442.8	206.2	391.9	1.70	0.00	-3.33	
1,585.0	30.40	61.50	1,488.3	458.1	213.4	405.3	1.12	-1.00	-1.00	
1,615.0	30.30	61.60	1,514.2	473.2	220.7	418.7	0.37	-0.33	0.33	
1,645.0	29.80	62.40	1,540.2	488.3	227.7	431.9	2.14	-1.67	2.67	
1,675.0	30.60	62.20	1,566.1	503.3	234.7	445.3	2.69	2.67	-0.67	

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1,705.0	30.80	63.30	1,591.9	518.7	241.8	458.9	1.99	0.67	3.67	
1,735.0	31.40	62.40	1,617.6	534.2	248.8	472.7	2.53	2.00	-3.00	
1,869.0	31.60	61.70	1,731.8	604.2	281.6	534.5	0.31	0.15	-0.52	
1,954.0	32.40	62.70	1,803.9	649.2	302.6	574.4	1.13	0.94	1.18	
2,039.0	33.40	61.50	1,875.3	695.4	324.3	615.2	1.40	1.18	-1.41	
2,125.0	32.80	61.50	1,947.3	742.3	346.7	656.5	0.70	-0.70	0.00	
2,210.0	32.30	60.30	2,019.0	788.1	368.9	696.4	0.96	-0.59	-1.41	
2,295.0	31.40	62.30	2,091.2	832.9	390.4	735.7	1.63	-1.06	2.35	
2,380.0	32.30	62.10	2,163.4	877.8	411.4	775.4	1.07	1.06	-0.24	
2,465.0	31.50	61.90	2,235.5	922.7	432.5	815.1	0.95	-0.94	-0.24	
2,551.0	32.30	63.50	2,308.5	968.1	453.3	855.5	1.35	0.93	1.86	
2,636.0	32.50	62.60	2,380.3	1,013.6	473.9	896.1	0.61	0.24	-1.06	
2,717.0	32.90	63.80	2,448.5	1,057.4	493.7	935.1	0.94	0.49	1.48	
2,806.0	32.00	62.90	2,523.6	1,105.1	515.1	977.8	1.15	-1.01	-1.01	
2,891.0	31.20	63.10	2,596.0	1,149.6	535.3	1,017.5	0.95	-0.94	0.24	
2,977.0	29.10	62.50	2,670.3	1,192.8	555.0	1,055.9	2.47	-2.44	-0.70	
3,062.0	26.60	60.20	2,745.5	1,232.5	574.0	1,090.8	3.20	-2.94	-2.71	
3,147.0	24.50	62.30	2,822.2	1,269.2	591.7	1,122.9	2.69	-2.47	2.47	
3,232.0	22.40	61.50	2,900.1	1,303.0	607.6	1,152.7	2.50	-2.47	-0.94	
3,317.0	20.30	61.30	2,979.3	1,333.9	622.4	1,179.9	2.47	-2.47	-0.24	
3,403.0	18.60	60.60	3,060.4	1,362.6	636.3	1,204.9	2.00	-1.98	-0.81	
3,488.0	16.00	62.70	3,141.5	1,387.8	648.3	1,227.2	3.15	-3.06	2.47	
3,573.0	13.50	64.40	3,223.7	1,409.5	658.0	1,246.5	2.98	-2.94	2.00	
3,658.0	11.70	61.30	3,306.7	1,428.0	666.4	1,263.0	2.26	-2.12	-3.65	
3,743.0	9.80	57.70	3,390.2	1,443.8	674.4	1,276.7	2.37	-2.24	-4.24	
3,829.0	8.10	57.00	3,475.1	1,457.2	681.6	1,288.0	1.98	-1.98	-0.81	
3,914.0	6.40	53.60	3,559.5	1,467.8	687.7	1,296.8	2.06	-2.00	-4.00	

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3,999.0	4.50	49.30	3,644.1	1,475.8	692.7	1,303.1	2.28	-2.24	-5.06	
4,084.0	2.30	47.20	3,728.9	1,480.7	696.0	1,306.9	2.59	-2.59	-2.47	
4,170.0	2.00	50.10	3,814.9	1,483.8	698.2	1,309.3	0.37	-0.35	3.37	
4,255.0	1.70	42.70	3,899.8	1,486.5	700.1	1,311.3	0.45	-0.35	-8.71	
4,340.0	1.40	43.70	3,984.8	1,488.7	701.7	1,312.9	0.35	-0.35	1.18	
4,425.0	1.20	43.60	4,069.8	1,490.5	703.1	1,314.2	0.24	-0.24	-0.12	
4,510.0	0.80	23.20	4,154.8	1,491.8	704.3	1,315.1	0.62	-0.47	-24.00	
4,595.0	0.30	19.50	4,239.7	1,492.4	705.1	1,315.4	0.59	-0.59	-4.35	
4,680.0	0.40	329.30	4,324.7	1,492.6	705.5	1,315.3	0.37	0.12	-59.06	
4,766.0	0.40	275.80	4,410.7	1,492.3	705.8	1,314.9	0.42	0.00	-62.21	
4,851.0	0.40	252.90	4,495.7	1,491.8	705.8	1,314.3	0.19	0.00	-26.94	
4,936.0	0.70	222.00	4,580.7	1,491.0	705.3	1,313.7	0.48	0.35	-36.35	
5,021.0	1.00	237.90	4,665.7	1,489.8	704.5	1,312.7	0.45	0.35	18.71	
5,106.0	1.20	238.00	4,750.7	1,488.2	703.6	1,311.3	0.24	0.24	0.12	
5,192.0	1.50	242.20	4,836.7	1,486.1	702.6	1,309.5	0.37	0.35	4.88	
5,277.0	1.50	246.30	4,921.7	1,483.9	701.7	1,307.5	0.13	0.00	4.82	
5,362.0	1.80	239.50	5,006.6	1,481.5	700.6	1,305.4	0.42	0.35	-8.00	
5,447.0	2.50	245.30	5,091.6	1,478.3	699.1	1,302.5	0.86	0.82	6.82	
5,533.0	2.80	241.30	5,177.5	1,474.3	697.3	1,299.0	0.41	0.35	-4.65	
5,618.0	2.90	234.10	5,262.4	1,470.1	695.1	1,295.4	0.44	0.12	-8.47	
5,703.0	3.30	234.00	5,347.2	1,465.5	692.4	1,291.7	0.47	0.47	-0.12	
5,788.0	1.90	248.00	5,432.2	1,461.7	690.4	1,288.4	1.80	-1.65	16.47	
5,873.0	1.50	275.00	5,517.1	1,459.4	690.0	1,286.0	1.04	-0.47	31.76	
5,959.0	1.30	282.70	5,603.1	1,457.7	690.3	1,283.9	0.32	-0.23	8.95	
6,046.0	1.40	283.40	5,690.1	1,456.2	690.7	1,281.9	0.12	0.11	0.80	
6,098.0	1.40	283.40	5,742.1	1,455.2	691.0	1,280.7	0.00	0.00	0.00	

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Project: Rockies Region
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Well: BAT 33A-24-07-96
Wellbore: Wellbore #1
Design: Actual

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TVD Reference: BAT 33A-24-07-96 @ 5197.9usft (Original Well Elev)
MD Reference: BAT 33A-24-07-96 @ 5197.9usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

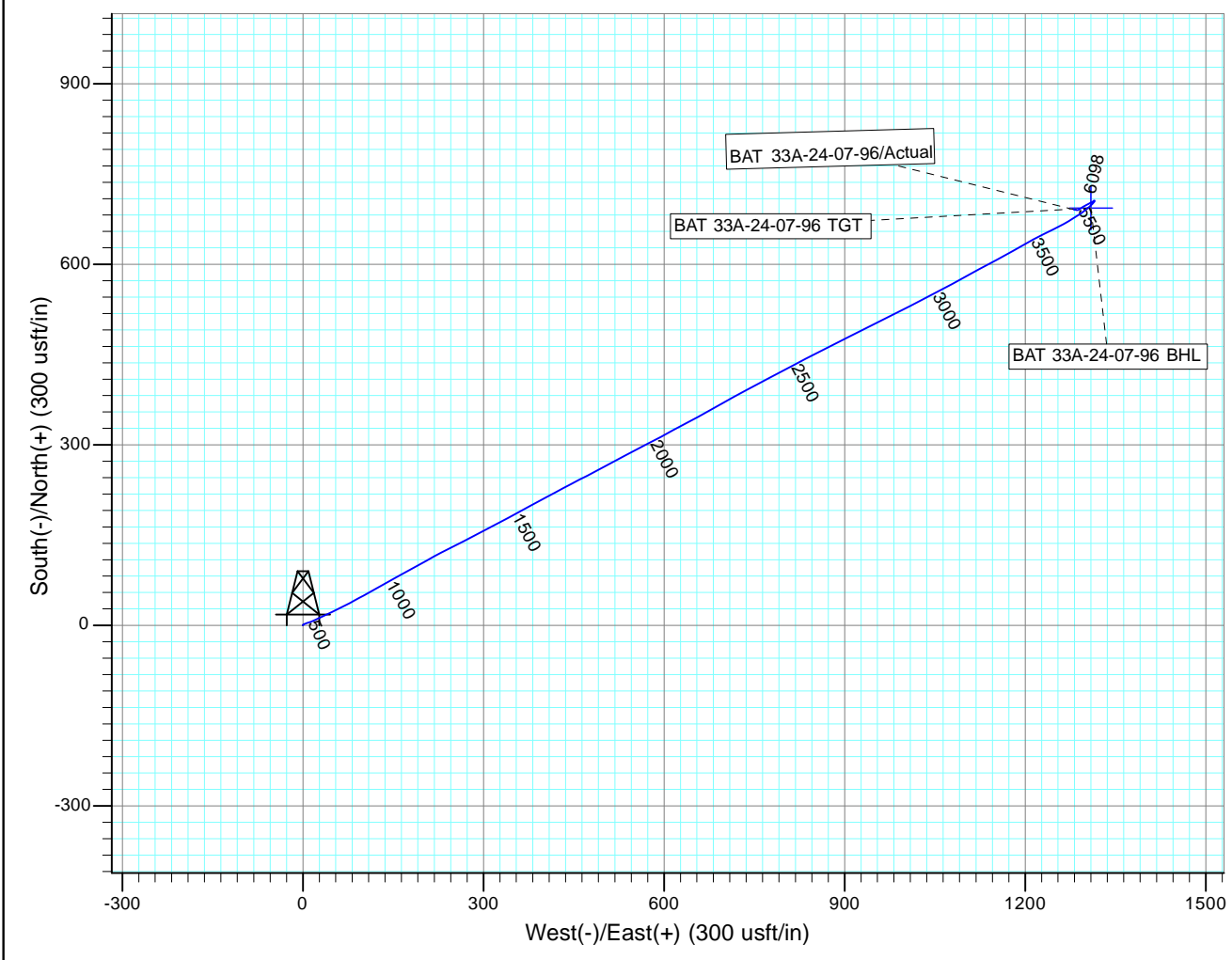
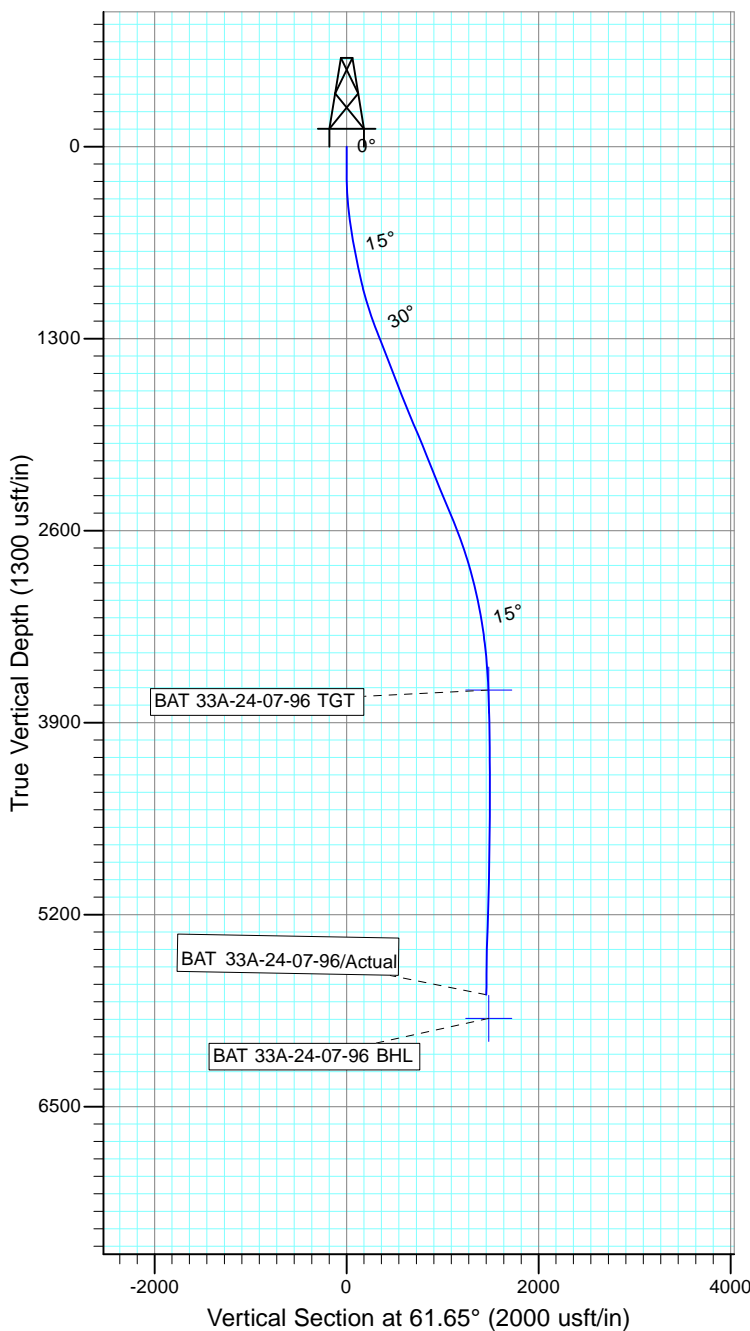
Checked By: _____ Approved By: _____ Date: _____



Project: Rockies Region
 Site: Speakman A
 Well: BAT 33A-24-07-96
 Wellbore: Wellbore #1
 Design: Actual

Azimuths to True North
 Magnetic North: 10.09°

Magnetic Field
 Strength: 52046.8snT
 Dip Angle: 65.63°
 Date: 6/13/2013
 Model: IGRF200510



Design: Actual (BAT 33A-24-07-96/Wellbore #1)

Created By: *Matthew Linton* Date: 8:07, January 22 201

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