



Ursa Operating Company, LLC

Rockies Region

Tompkins

Tompkins 21B-08-07-95

Wellbore #1

Design: Actual

End Of Well Report

26 July, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	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		Tompkins			
Site Position:		Northing:		1,602,267.16	usft
From:	Lat/Long	Easting:		2,290,225.27	usft
Position Uncertainty:	0.0	Slot Radius:		13-3/16	"
		Grid Convergence:		-1.59	°

Well		Tompkins 21B-08-07-95, SHL: 39.460031077 -108.014268356				
Well Position	+N/-S	0.0 usft	Northing:	1,602,268.45 usft	Latitude:	39° 27' 36.112 N
	+E/-W	0.0 usft	Easting:	2,290,200.32 usft	Longitude:	108° 0' 51.366 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,549.0 usft	Ground Level:	5,532.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/8/2016	9.81	65.57	51,625

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	252.63

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Survey Program		Date 7/26/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
139.0	1,815.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,913.0	7,645.0	Production (Wellbore #1)	MWD	MWD - Standard

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	0.00
139.0	0.53	243.64	139.0	0.6	-0.3	-0.6	0.38	0.38	0.00	0.00
170.0	0.30	222.55	170.0	0.8	-0.4	-0.8	0.88	-0.74	-68.03	-68.03
201.0	0.40	197.94	201.0	1.0	-0.6	-0.8	0.58	0.32	-79.39	-79.39
230.0	0.35	205.10	230.0	1.1	-0.7	-0.9	0.24	-0.17	24.69	24.69
261.0	0.57	234.15	261.0	1.3	-0.9	-1.1	1.01	0.71	93.71	93.71
291.0	0.75	252.43	291.0	1.6	-1.1	-1.4	0.92	0.60	60.93	60.93
322.0	1.19	250.45	322.0	2.2	-1.2	-1.9	1.42	1.42	-6.39	-6.39
353.0	1.45	254.19	353.0	2.9	-1.5	-2.6	0.88	0.84	12.06	12.06
383.0	2.15	261.22	383.0	3.8	-1.6	-3.5	2.44	2.33	23.43	23.43
414.0	2.35	263.33	413.9	5.0	-1.8	-4.7	0.70	0.65	6.81	6.81
444.0	2.81	259.07	443.9	6.4	-2.0	-6.0	1.66	1.53	-14.20	-14.20
475.0	3.12	250.72	474.9	8.0	-2.4	-7.6	1.71	1.00	-26.94	-26.94
505.0	3.43	253.66	504.8	9.7	-3.0	-9.2	1.17	1.03	9.80	9.80
536.0	4.00	255.77	535.8	11.7	-3.5	-11.1	1.89	1.84	6.81	6.81
567.0	4.55	250.01	566.7	14.0	-4.2	-13.3	2.25	1.77	-18.58	-18.58
597.0	5.49	251.20	596.6	16.6	-5.0	-15.8	3.15	3.13	3.97	3.97
627.0	6.59	249.53	626.4	19.8	-6.1	-18.8	3.71	3.67	-5.57	-5.57
657.0	7.51	255.55	656.2	23.4	-7.2	-22.3	3.93	3.07	20.07	20.07
925.0	17.67	250.23	917.4	81.7	-25.4	-77.7	3.81	3.79	-1.99	-1.99
968.0	19.03	252.17	958.2	95.2	-29.7	-90.5	3.47	3.16	4.51	4.51

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	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)	
1,011.0	20.48	253.07	998.7	109.8	-34.1	-104.4	3.45	3.37	2.09	
1,054.0	22.19	255.33	1,038.7	125.4	-38.3	-119.4	4.41	3.98	5.26	
1,096.0	23.33	254.67	1,077.4	141.7	-42.5	-135.1	2.78	2.71	-1.57	
1,139.0	24.57	253.31	1,116.7	159.1	-47.3	-151.9	3.16	2.88	-3.16	
1,182.0	25.84	253.09	1,155.6	177.4	-52.6	-169.4	2.96	2.95	-0.51	
1,224.0	27.20	253.62	1,193.2	196.2	-58.0	-187.4	3.29	3.24	1.26	
1,267.0	28.39	253.27	1,231.3	216.2	-63.7	-206.6	2.79	2.77	-0.81	
1,310.0	29.54	253.29	1,268.9	237.0	-69.7	-226.6	2.67	2.67	0.05	
1,353.0	30.98	254.01	1,306.0	258.7	-75.8	-247.3	3.45	3.35	1.67	
1,395.0	32.87	255.11	1,341.7	280.9	-81.7	-268.8	4.71	4.50	2.62	
1,438.0	35.07	253.71	1,377.3	304.9	-88.2	-291.9	5.43	5.12	-3.26	
1,481.0	36.87	254.59	1,412.1	330.2	-95.1	-316.2	4.36	4.19	2.05	
1,523.0	37.35	254.41	1,445.6	355.5	-101.8	-340.6	1.17	1.14	-0.43	
1,566.0	37.40	253.31	1,479.8	381.6	-109.1	-365.7	1.56	0.12	-2.56	
1,609.0	37.09	251.64	1,514.0	407.6	-116.9	-390.5	2.46	-0.72	-3.88	
1,652.0	37.40	252.08	1,548.3	433.6	-125.0	-415.2	0.95	0.72	1.02	
1,694.0	37.00	250.32	1,581.7	459.0	-133.2	-439.3	2.71	-0.95	-4.19	
1,737.0	37.18	249.53	1,616.0	484.9	-142.1	-463.6	1.18	0.42	-1.84	
1,780.0	36.91	250.45	1,650.3	510.8	-151.0	-488.0	1.43	-0.63	2.14	
1,815.0	36.83	251.16	1,678.3	531.8	-157.9	-507.8	1.24	-0.23	2.03	
Last PZD Surface Survey										
1,913.0	35.24	246.76	1,757.6	589.3	-178.5	-561.6	3.10	-1.62	-4.49	
1,998.0	34.67	250.06	1,827.3	637.8	-196.5	-606.8	2.32	-0.67	3.88	
2,084.0	35.86	253.66	1,897.5	687.5	-211.9	-654.0	2.78	1.38	4.19	
2,169.0	36.32	253.20	1,966.2	737.5	-226.2	-702.0	0.63	0.54	-0.54	
2,254.0	37.18	255.16	2,034.3	788.3	-240.0	-750.9	1.71	1.01	2.31	
2,340.0	38.76	255.82	2,102.1	841.2	-253.3	-802.2	1.90	1.84	0.77	

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	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)	
2,425.0	40.39	256.56	2,167.6	895.2	-266.2	-854.7	2.00	1.92	0.87	
2,511.0	39.73	256.56	2,233.4	950.5	-279.1	-908.6	0.77	-0.77	0.00	
2,596.0	39.29	255.11	2,299.0	1,004.4	-292.3	-961.0	1.20	-0.52	-1.71	
2,681.0	39.51	254.72	2,364.7	1,058.4	-306.3	-1,013.1	0.39	0.26	-0.46	
2,767.0	39.73	254.63	2,430.9	1,113.2	-320.8	-1,066.0	0.26	0.26	-0.10	
2,852.0	38.64	253.51	2,496.8	1,166.8	-335.6	-1,117.6	1.53	-1.28	-1.32	
2,938.0	39.16	255.20	2,563.7	1,220.8	-350.1	-1,169.6	1.37	0.60	1.97	
3,023.0	38.72	254.89	2,629.9	1,274.2	-363.9	-1,221.2	0.57	-0.52	-0.36	
3,108.0	38.14	254.89	2,696.4	1,327.0	-377.7	-1,272.3	0.68	-0.68	0.00	
3,194.0	38.01	253.14	2,764.1	1,380.0	-392.3	-1,323.2	1.26	-0.15	-2.03	
3,279.0	37.05	254.32	2,831.5	1,431.8	-406.8	-1,372.9	1.41	-1.13	1.39	
3,364.0	37.05	252.17	2,899.4	1,483.0	-421.5	-1,422.0	1.52	0.00	-2.53	
3,450.0	37.18	253.09	2,968.0	1,534.9	-437.0	-1,471.5	0.66	0.15	1.07	
3,535.0	37.84	254.28	3,035.4	1,586.6	-451.6	-1,521.2	1.15	0.78	1.40	
3,620.0	37.75	253.93	3,102.6	1,638.7	-465.8	-1,571.3	0.27	-0.11	-0.41	
3,705.0	37.53	252.70	3,169.9	1,690.6	-480.7	-1,621.0	0.92	-0.26	-1.45	
3,791.0	38.06	253.84	3,237.8	1,743.3	-495.9	-1,671.5	1.02	0.62	1.33	
3,876.0	37.97	253.00	3,304.8	1,795.6	-510.8	-1,721.6	0.62	-0.11	-0.99	
3,962.0	38.23	252.39	3,372.5	1,848.7	-526.6	-1,772.3	0.53	0.30	-0.71	
4,047.0	38.47	251.02	3,439.1	1,901.4	-543.2	-1,822.4	1.04	0.28	-1.61	
4,133.0	37.47	251.46	3,506.9	1,954.3	-560.2	-1,872.5	1.20	-1.16	0.51	
4,218.0	36.74	252.61	3,574.7	2,005.6	-576.0	-1,921.2	1.18	-0.86	1.35	
4,303.0	36.09	252.70	3,643.1	2,056.1	-591.1	-1,969.4	0.77	-0.76	0.11	
4,389.0	36.04	252.96	3,712.6	2,106.7	-606.0	-2,017.8	0.19	-0.06	0.30	
4,474.0	36.96	254.01	3,781.0	2,157.2	-620.4	-2,066.2	1.31	1.08	1.24	
4,560.0	37.79	254.37	3,849.3	2,209.4	-634.6	-2,116.5	1.00	0.97	0.42	
4,645.0	38.14	252.04	3,916.3	2,261.7	-649.7	-2,166.5	1.74	0.41	-2.74	

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	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)
4,730.0	37.44	252.48	3,983.5	2,313.8	-665.6	-2,216.1	0.88	-0.82	0.52
4,816.0	35.11	251.86	4,052.8	2,364.7	-681.2	-2,264.6	2.74	-2.71	-0.72
4,901.0	32.65	250.34	4,123.4	2,412.0	-696.5	-2,309.4	3.06	-2.89	-1.79
4,986.0	30.41	250.72	4,195.8	2,456.4	-711.3	-2,351.3	2.65	-2.64	0.45
5,072.0	28.88	252.58	4,270.6	2,499.0	-724.7	-2,391.7	2.08	-1.78	2.16
5,158.0	25.58	253.14	4,347.0	2,538.3	-736.3	-2,429.3	3.85	-3.84	0.65
5,242.0	22.51	251.83	4,423.7	2,572.5	-746.6	-2,461.9	3.71	-3.65	-1.56
5,328.0	20.30	254.09	4,503.8	2,603.9	-755.8	-2,491.9	2.74	-2.57	2.63
5,413.0	18.41	252.52	4,584.0	2,632.1	-763.9	-2,518.9	2.31	-2.22	-1.85
5,499.0	17.23	252.39	4,665.9	2,658.4	-771.8	-2,544.0	1.37	-1.37	-0.15
5,584.0	14.46	253.00	4,747.6	2,681.6	-778.7	-2,566.1	3.26	-3.26	0.72
5,670.0	12.64	251.88	4,831.2	2,701.7	-784.8	-2,585.3	2.14	-2.12	-1.30
5,755.0	10.81	255.64	4,914.5	2,719.0	-789.7	-2,601.9	2.33	-2.15	4.42
5,840.0	8.48	259.02	4,998.3	2,733.2	-792.8	-2,615.8	2.82	-2.74	3.98
5,926.0	6.33	257.49	5,083.5	2,744.2	-795.1	-2,626.6	2.51	-2.50	-1.78
6,011.0	4.70	260.56	5,168.1	2,752.3	-796.7	-2,634.6	1.95	-1.92	3.61
6,097.0	3.03	251.90	5,253.9	2,758.1	-797.9	-2,640.3	2.05	-1.94	-10.07
6,182.0	0.92	235.16	5,338.9	2,761.0	-799.0	-2,643.0	2.55	-2.48	-19.69
6,267.0	0.40	220.48	5,423.9	2,761.9	-799.7	-2,643.7	0.64	-0.61	-17.27
6,353.0	0.48	170.47	5,509.9	2,762.2	-800.2	-2,643.9	0.44	0.09	-58.15
6,438.0	0.57	156.63	5,594.9	2,762.2	-801.0	-2,643.6	0.18	0.11	-16.28
6,523.0	0.53	180.45	5,679.9	2,762.3	-801.8	-2,643.5	0.27	-0.05	28.02
6,609.0	0.57	150.44	5,765.9	2,762.3	-802.5	-2,643.3	0.33	0.05	-34.90
6,694.0	0.88	142.13	5,850.9	2,762.0	-803.4	-2,642.7	0.38	0.36	-9.78
6,780.0	0.04	147.75	5,936.9	2,761.8	-804.0	-2,642.2	0.98	-0.98	6.53
6,865.0	0.35	285.39	6,021.9	2,762.0	-803.9	-2,642.5	0.45	0.36	161.93
6,950.0	0.88	331.67	6,106.9	2,762.3	-803.3	-2,643.0	0.81	0.62	54.45

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Tompkins 21B-08-07-95
Project:	Rockies Region	TVD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Site:	Tompkins	MD Reference:	Tompkins 21B-08-07-95 @ 5549.0usft (Capstar 321)
Well:	Tompkins 21B-08-07-95	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)
7,036.0	0.48	357.99	6,192.8	2,762.3	-802.3	-2,643.4	0.58	-0.47	30.60
7,121.0	0.75	42.24	6,277.8	2,761.8	-801.6	-2,643.0	0.62	0.32	52.06
7,207.0	1.10	49.80	6,363.8	2,760.5	-800.6	-2,642.0	0.43	0.41	8.79
7,292.0	0.70	54.11	6,448.8	2,759.3	-799.8	-2,640.9	0.48	-0.47	5.07
7,377.0	0.70	46.15	6,533.8	2,758.3	-799.1	-2,640.1	0.11	0.00	-9.36
7,463.0	0.48	30.99	6,619.8	2,757.6	-798.4	-2,639.6	0.31	-0.26	-17.63
7,548.0	0.25	17.85	6,704.8	2,757.2	-798.0	-2,639.3	0.29	-0.27	-15.46
7,590.0	0.04	82.01	6,746.8	2,757.1	-797.9	-2,639.3	0.56	-0.50	152.76
Last PZD Survey									
7,645.0	0.04	82.01	6,801.8	2,757.1	-797.9	-2,639.3	0.00	0.00	0.00
Straight Line Projection to TD									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,815.0	1,678.3	-157.9	-507.8	Last PZD Surface Survey	

Checked By: _____ Approved By: _____ Date: _____

