



# **Ursa Operating Company, LLC**

**Rockies Region**

**Tompkins**

**Tompkins 31A-08-07-95**

**Wellbore #1**

**Design: Actual**

## **End Of Well Report**

**01 August, 2016**



<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	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	usft	Slot Radius:	
				13-3/16	"
				Grid Convergence:	
				-1.59 °	

Well		Tompkins 31A-08-07-95, SHL LAT: 39.460029400 LONG: -108.014179900				
Well Position	+N/-S	0.0 usft	Northing:	1,602,267.13 usft	Latitude:	39° 27' 36.106 N
	+E/-W	0.0 usft	Easting:	2,290,225.26 usft	Longitude:	108° 0' 51.048 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	254.11

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey Program		Date 8/1/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.0	1,718.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,718.0	7,085.0	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
109.0	0.40	291.63	109.0	0.3	0.1	-0.4	0.37	0.37	0.00	0.00
139.0	0.22	272.95	139.0	0.4	0.2	-0.5	0.68	-0.60	-62.27	-62.27
170.0	0.35	281.44	170.0	0.6	0.2	-0.7	0.44	0.42	27.39	27.39
200.0	0.44	249.09	200.0	0.8	0.2	-0.9	0.79	0.30	-107.83	-107.83
230.0	0.35	264.69	230.0	1.0	0.1	-1.1	0.46	-0.30	52.00	52.00
260.0	0.62	268.82	260.0	1.2	0.1	-1.3	0.91	0.90	13.77	13.77
291.0	0.57	254.23	291.0	1.5	0.1	-1.6	0.51	-0.16	-47.06	-47.06
321.0	0.70	268.12	321.0	1.9	0.0	-2.0	0.67	0.43	46.30	46.30
352.0	0.53	259.68	352.0	2.2	0.0	-2.3	0.62	-0.55	-27.23	-27.23
383.0	0.48	263.55	383.0	2.5	0.0	-2.6	0.20	-0.16	12.48	12.48
413.0	0.53	270.98	413.0	2.7	-0.1	-2.8	0.27	0.17	24.77	24.77
444.0	0.57	284.82	444.0	3.0	0.0	-3.1	0.45	0.13	44.65	44.65
474.0	0.48	274.14	474.0	3.2	0.0	-3.4	0.44	-0.30	-35.60	-35.60
505.0	0.57	267.42	505.0	3.5	0.0	-3.7	0.35	0.29	-21.68	-21.68
536.0	0.42	291.16	536.0	3.8	0.1	-3.9	0.81	-0.48	76.58	76.58
566.0	0.48	299.06	566.0	3.9	0.2	-4.1	0.29	0.20	26.33	26.33
596.0	0.57	284.42	596.0	4.1	0.3	-4.4	0.54	0.30	-48.80	-48.80
627.0	1.01	273.44	627.0	4.5	0.3	-4.8	1.49	1.42	-35.42	-35.42
657.0	1.90	254.86	657.0	5.3	0.2	-5.6	3.32	2.97	-61.93	-61.93
687.0	2.77	249.53	686.9	6.5	-0.2	-6.7	2.99	2.90	-17.77	-17.77

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
718.0	3.74	247.25	717.9	8.3	-0.8	-8.3	3.16	3.13	-7.35	
748.0	4.66	247.69	747.8	10.4	-1.7	-10.4	3.07	3.07	1.47	
779.0	5.54	252.34	778.7	13.2	-2.6	-13.0	3.13	2.84	15.00	
809.0	6.55	251.60	808.5	16.3	-3.6	-16.0	3.38	3.37	-2.47	
840.0	7.73	257.71	839.3	20.2	-4.6	-19.7	4.52	3.81	19.71	
882.0	9.18	260.03	880.8	26.3	-5.8	-25.7	3.55	3.45	5.52	
925.0	10.50	261.53	923.2	33.6	-6.9	-33.0	3.13	3.07	3.49	
968.0	11.95	260.83	965.4	41.9	-8.2	-41.3	3.39	3.37	-1.63	
1,010.0	13.49	259.16	1,006.3	51.1	-9.8	-50.4	3.77	3.67	-3.98	
1,053.0	15.32	255.95	1,048.0	61.8	-12.2	-60.8	4.64	4.26	-7.47	
1,096.0	16.96	253.31	1,089.3	73.8	-15.3	-72.3	4.18	3.81	-6.14	
1,138.0	18.46	254.89	1,129.3	86.5	-18.8	-84.6	3.75	3.57	3.76	
1,181.0	19.16	254.50	1,170.0	100.4	-22.5	-98.0	1.65	1.63	-0.91	
1,224.0	19.69	254.72	1,210.6	114.7	-26.3	-111.8	1.24	1.23	0.51	
1,267.0	21.01	256.74	1,250.9	129.7	-30.0	-126.3	3.48	3.07	4.70	
1,309.0	21.71	255.73	1,290.0	144.9	-33.6	-141.1	1.88	1.67	-2.40	
1,352.0	22.15	254.01	1,329.9	161.0	-37.8	-156.6	1.81	1.02	-4.00	
1,395.0	22.37	253.14	1,369.7	177.3	-42.4	-172.3	0.92	0.51	-2.02	
1,437.0	22.54	252.87	1,408.5	193.3	-47.1	-187.6	0.47	0.40	-0.64	
1,480.0	22.50	253.97	1,448.2	209.8	-51.8	-203.4	0.98	-0.09	2.56	
1,523.0	22.50	252.13	1,487.9	226.2	-56.6	-219.1	1.64	0.00	-4.28	
1,566.0	22.59	251.73	1,527.6	242.7	-61.7	-234.8	0.41	0.21	-0.93	
1,608.0	22.37	252.34	1,566.5	258.8	-66.7	-250.1	0.76	-0.52	1.45	
1,651.0	22.28	250.63	1,606.2	275.1	-71.8	-265.6	1.52	-0.21	-3.98	
1,694.0	22.32	251.29	1,646.0	291.4	-77.2	-281.0	0.59	0.09	1.53	
1,718.0	22.06	248.83	1,668.2	300.4	-80.3	-289.5	4.02	-1.08	-10.25	
Last PZD Surface Survey										

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,828.0	21.49	247.78	1,770.4	341.0	-95.3	-327.4	0.63	-0.52	-0.95	
1,914.0	21.20	251.42	1,850.5	372.2	-106.2	-356.7	1.58	-0.34	4.23	
1,999.0	21.49	256.30	1,929.7	403.1	-114.8	-386.4	2.12	0.34	5.74	
2,085.0	22.28	259.20	2,009.5	435.1	-121.6	-417.8	1.56	0.92	3.37	
2,170.0	23.25	257.88	2,087.8	467.9	-128.2	-450.0	1.29	1.14	-1.55	
2,256.0	22.37	258.58	2,167.1	501.1	-135.0	-482.6	1.07	-1.02	0.81	
2,341.0	21.62	256.30	2,245.9	532.9	-141.9	-513.7	1.34	-0.88	-2.68	
2,426.0	21.84	254.23	2,324.9	564.4	-149.9	-544.1	0.94	0.26	-2.44	
2,512.0	22.37	255.16	2,404.6	596.7	-158.4	-575.3	0.74	0.62	1.08	
2,597.0	23.25	256.12	2,482.9	629.7	-166.6	-607.3	1.12	1.04	1.13	
2,683.0	24.08	256.34	2,561.7	664.2	-174.8	-640.8	0.97	0.97	0.26	
2,768.0	23.60	255.20	2,639.4	698.5	-183.2	-674.1	0.78	-0.56	-1.34	
2,853.0	23.03	255.38	2,717.5	732.1	-191.8	-706.6	0.68	-0.67	0.21	
2,939.0	23.64	254.41	2,796.5	766.2	-200.7	-739.5	0.84	0.71	-1.13	
3,024.0	22.54	254.19	2,874.7	799.5	-209.7	-771.6	1.30	-1.29	-0.26	
3,109.0	23.03	253.14	2,953.0	832.4	-218.9	-803.2	0.75	0.58	-1.24	
3,195.0	22.94	255.38	3,032.2	866.0	-228.1	-835.5	1.02	-0.10	2.60	
3,280.0	23.20	255.90	3,110.4	899.3	-236.3	-867.8	0.39	0.31	0.61	
3,366.0	22.72	253.62	3,189.6	932.9	-245.1	-900.1	1.18	-0.56	-2.65	
3,451.0	22.19	253.22	3,268.1	965.3	-254.4	-931.3	0.65	-0.62	-0.47	
3,537.0	21.27	254.50	3,348.0	997.2	-263.2	-961.8	1.20	-1.07	1.49	
3,622.0	20.04	254.16	3,427.6	1,027.1	-271.3	-990.7	1.45	-1.45	-0.40	
3,708.0	19.73	254.23	3,508.4	1,056.4	-279.3	-1,018.9	0.36	-0.36	0.08	
3,793.0	19.61	255.04	3,588.5	1,085.0	-286.9	-1,046.4	0.35	-0.14	0.95	
3,878.0	17.93	254.89	3,669.0	1,112.3	-294.0	-1,072.9	1.98	-1.98	-0.18	
3,964.0	18.50	255.73	3,750.6	1,139.2	-300.8	-1,098.9	0.73	0.66	0.98	
4,049.0	18.37	255.51	3,831.3	1,166.1	-307.5	-1,124.9	0.17	-0.15	-0.26	

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
4,135.0	18.50	254.67	3,912.9	1,193.3	-314.5	-1,151.2	0.34	0.15	-0.98	
4,220.0	17.40	254.05	3,993.7	1,219.5	-321.5	-1,176.4	1.31	-1.29	-0.73	
4,306.0	15.69	253.62	4,076.2	1,244.0	-328.3	-1,199.9	1.99	-1.99	-0.50	
4,391.0	14.81	253.14	4,158.2	1,266.3	-334.7	-1,221.3	1.05	-1.04	-0.56	
4,477.0	13.18	251.13	4,241.6	1,287.1	-341.1	-1,241.1	1.98	-1.90	-2.34	
4,562.0	12.17	249.84	4,324.5	1,305.7	-347.3	-1,258.7	1.23	-1.19	-1.52	
4,647.0	9.58	251.16	4,408.0	1,321.7	-352.7	-1,273.8	3.06	-3.05	1.55	
4,733.0	6.90	254.50	4,493.1	1,334.0	-356.4	-1,285.6	3.16	-3.12	3.88	
4,818.0	4.70	253.49	4,577.7	1,342.6	-358.7	-1,293.8	2.59	-2.59	-1.19	
4,903.0	1.75	255.91	4,662.5	1,347.4	-360.0	-1,298.4	3.47	-3.47	2.85	
4,989.0	0.97	18.34	4,748.5	1,348.3	-359.7	-1,299.5	2.81	-0.91	142.36	
5,074.0	1.14	27.39	4,833.5	1,347.3	-358.2	-1,298.9	0.28	0.20	10.65	
5,159.0	0.97	19.87	4,918.5	1,346.3	-356.8	-1,298.2	0.26	-0.20	-8.85	
5,245.0	0.78	11.73	5,004.5	1,345.6	-355.6	-1,297.9	0.26	-0.22	-9.47	
5,330.0	0.54	352.49	5,089.5	1,345.3	-354.6	-1,297.8	0.38	-0.28	-22.64	
5,416.0	0.31	326.52	5,175.5	1,345.3	-354.0	-1,298.0	0.34	-0.27	-30.20	
5,501.0	0.44	272.65	5,260.5	1,345.7	-353.8	-1,298.4	0.42	0.15	-63.38	
5,586.0	0.26	257.71	5,345.5	1,346.2	-353.8	-1,299.0	0.24	-0.21	-17.58	
5,672.0	0.18	261.88	5,431.5	1,346.5	-353.9	-1,299.3	0.09	-0.09	4.85	
5,757.0	0.48	263.29	5,516.5	1,347.0	-353.9	-1,299.8	0.35	0.35	1.66	
5,842.0	0.36	262.79	5,601.5	1,347.6	-354.0	-1,300.4	0.14	-0.14	-0.59	
5,928.0	0.29	216.98	5,687.5	1,348.1	-354.2	-1,300.8	0.30	-0.08	-53.27	
6,013.0	0.31	167.62	5,772.5	1,348.2	-354.6	-1,300.9	0.30	0.02	-58.07	
6,099.0	0.79	165.82	5,858.5	1,348.3	-355.4	-1,300.7	0.56	0.56	-2.09	
6,184.0	1.01	161.99	5,943.5	1,348.3	-356.7	-1,300.3	0.27	0.26	-4.51	
6,269.0	1.10	163.53	6,028.4	1,348.2	-358.2	-1,299.8	0.11	0.11	1.81	
6,355.0	0.79	182.52	6,114.4	1,348.4	-359.6	-1,299.6	0.51	-0.36	22.08	

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 31A-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 31A-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 31A-08-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
6,440.0	1.07	205.01	6,199.4	1,349.1	-360.9	-1,300.0	0.54	0.33	26.46	
6,525.0	1.08	198.32	6,284.4	1,350.1	-362.4	-1,300.6	0.15	0.01	-7.87	
6,611.0	1.36	169.90	6,370.4	1,350.6	-364.1	-1,300.6	0.76	0.33	-33.05	
6,696.0	1.49	154.48	6,455.4	1,350.6	-366.1	-1,300.0	0.47	0.15	-18.14	
6,781.0	1.05	150.30	6,540.3	1,350.2	-367.8	-1,299.1	0.53	-0.52	-4.92	
6,867.0	1.32	157.77	6,626.3	1,349.9	-369.4	-1,298.4	0.36	0.31	8.69	
6,952.0	1.10	154.96	6,711.3	1,349.7	-371.0	-1,297.6	0.27	-0.26	-3.31	
7,030.0	0.92	146.83	6,789.3	1,349.3	-372.2	-1,297.0	0.29	-0.23	-10.42	
7,085.0	0.92	146.83	6,844.3	1,349.1	-373.0	-1,296.5	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,718.0	1,668.2	-80.3	-289.5	Last PZD Surface Survey	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



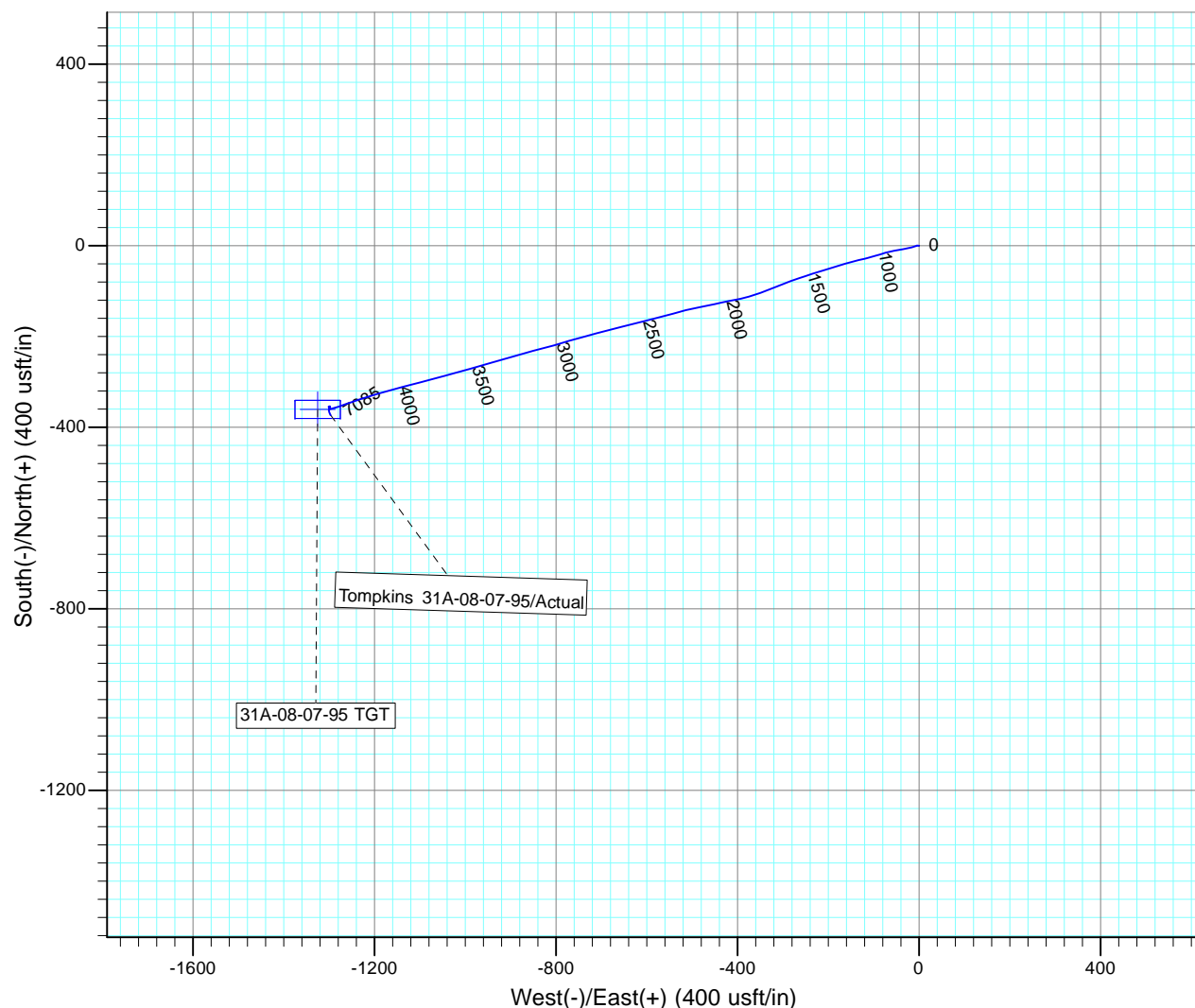
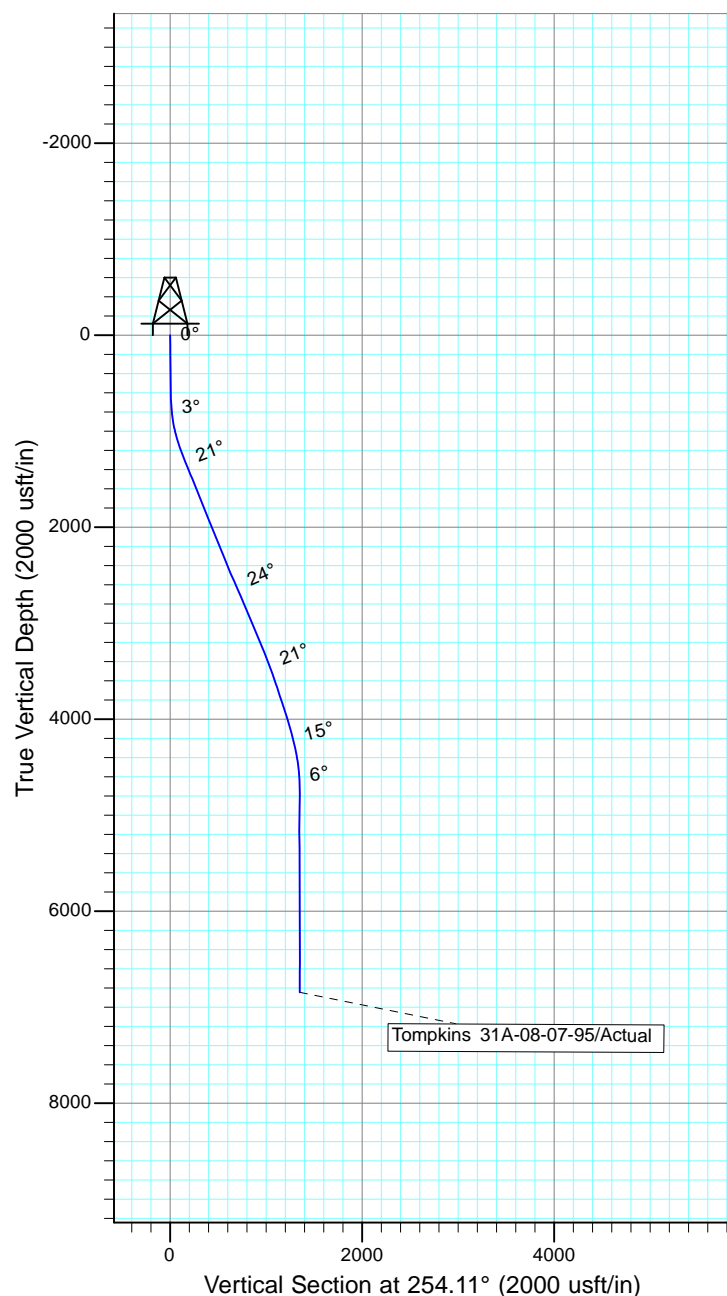
Project: Rockies Region  
 Site: Tompkins  
 Well: Tompkins 31A-08-07-95  
 Wellbore: Wellbore #1  
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North  
 Magnetic North: 9.81°

Magnetic Field  
 Strength: 51624.6snT  
 Dip Angle: 65.57°  
 Date: 6/8/2016  
 Model: IGRF2015



Design: Actual (Tompkins 31A-08-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 21:06, August 01 2016  
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS  
 SUPPORTED BY ACTUAL FIELD DATA.