



# **Ursa Operating Company, LLC**

**Rockies Region**

**Tompkins**

**Tompkins 21C-08-07-95**

**Wellbore #1**

**Design: Actual**

## **End Of Well Report**

**28 July, 2016**



<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 21C-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 21C-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 21C-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 21C-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	Slot Radius:		13-3/16	"
		Grid Convergence:		-1.59	°

Well		Tompkins 21C-08-07-95, SHL: 39.460030237 -108.014224118				
Well Position	+N-S	0.0 usft	Northing:	1,602,267.79 usft	Latitude:	39° 27' 36.109 N
	+E-W	0.0 usft	Easting:	2,290,212.79 usft	Longitude:	108° 0' 51.207 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	247.30

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Survey Program		Date 7/28/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.0	1,815.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,914.0	7,690.0	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	
109.0	0.40	82.89	109.0	-0.4	0.0	0.4	0.37	0.37	0.00	
139.0	0.31	79.07	139.0	-0.5	0.1	0.6	0.31	-0.30	-12.73	
170.0	0.22	35.65	170.0	-0.7	0.1	0.7	0.69	-0.29	-140.06	
200.0	0.29	21.65	200.0	-0.8	0.3	0.7	0.31	0.23	-46.67	
230.0	0.35	338.04	230.0	-0.8	0.4	0.7	0.81	0.20	-145.37	
260.0	0.66	270.71	260.0	-0.7	0.5	0.5	2.05	1.03	-224.43	
291.0	1.54	275.99	291.0	-0.1	0.5	-0.1	2.85	2.84	17.03	
321.0	1.45	267.86	321.0	0.6	0.6	-0.8	0.77	-0.30	-27.10	
352.0	1.63	266.54	352.0	1.3	0.5	-1.7	0.59	0.58	-4.26	
383.0	1.71	268.29	383.0	2.2	0.5	-2.6	0.31	0.26	5.65	
413.0	2.20	264.52	412.9	3.2	0.4	-3.6	1.69	1.63	-12.57	
444.0	3.12	248.47	443.9	4.6	0.1	-5.0	3.79	2.97	-51.77	
474.0	3.82	241.27	473.9	6.4	-0.7	-6.6	2.74	2.33	-24.00	
505.0	4.57	241.40	504.8	8.6	-1.8	-8.6	2.42	2.42	0.42	
536.0	5.58	244.57	535.6	11.4	-3.0	-11.0	3.38	3.26	10.23	
566.0	6.30	246.06	565.5	14.5	-4.3	-13.9	2.45	2.40	4.97	
596.0	7.34	245.71	595.3	18.0	-5.8	-17.1	3.47	3.47	-1.17	
627.0	8.22	248.56	626.0	22.2	-7.4	-21.0	3.10	2.84	9.19	
657.0	9.36	247.64	655.6	26.8	-9.1	-25.2	3.83	3.80	-3.07	
687.0	10.81	248.78	685.2	32.1	-11.1	-30.1	4.88	4.83	3.80	

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<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	11.95	248.61	715.6	38.2	-13.3	-35.8	3.68	3.68	-0.55	
748.0	13.23	245.88	744.8	44.7	-15.8	-41.8	4.70	4.27	-9.10	
779.0	14.02	246.28	775.0	52.0	-18.8	-48.5	2.57	2.55	1.29	
809.0	14.81	244.83	804.0	59.5	-21.9	-55.3	2.90	2.63	-4.83	
839.0	15.91	246.38	832.9	67.4	-25.2	-62.6	3.91	3.67	5.17	
882.0	17.58	245.88	874.1	79.8	-30.2	-73.9	3.90	3.88	-1.16	
925.0	18.85	247.64	915.0	93.2	-35.5	-86.2	3.22	2.95	4.09	
968.0	20.43	247.43	955.5	107.7	-41.0	-99.6	3.68	3.67	-0.49	
1,010.0	21.67	245.58	994.7	122.8	-47.0	-113.4	3.35	2.95	-4.40	
1,053.0	22.76	246.28	1,034.5	139.0	-53.7	-128.3	2.61	2.53	1.63	
1,096.0	23.82	245.97	1,074.0	156.0	-60.5	-143.8	2.48	2.47	-0.72	
1,138.0	24.90	245.03	1,112.2	173.3	-67.7	-159.6	2.73	2.57	-2.24	
1,181.0	26.54	247.25	1,151.0	192.0	-75.3	-176.6	4.42	3.81	5.16	
1,224.0	27.71	247.02	1,189.2	211.6	-82.9	-194.7	2.73	2.72	-0.53	
1,267.0	28.74	247.16	1,227.1	231.9	-90.8	-213.4	2.40	2.40	0.33	
1,309.0	30.41	246.85	1,263.6	252.7	-98.9	-232.5	3.99	3.98	-0.74	
1,352.0	32.11	248.33	1,300.4	275.0	-107.4	-253.1	4.34	3.95	3.44	
1,394.0	33.88	249.49	1,335.6	297.8	-115.6	-274.5	4.47	4.21	2.76	
1,437.0	35.90	250.02	1,370.9	322.4	-124.1	-297.6	4.75	4.70	1.23	
1,480.0	36.96	248.83	1,405.5	347.9	-133.1	-321.5	2.96	2.47	-2.77	
1,523.0	38.19	249.62	1,439.6	374.1	-142.4	-346.0	3.07	2.86	1.84	
1,566.0	38.45	248.78	1,473.3	400.8	-151.9	-370.9	1.35	0.60	-1.95	
1,608.0	38.67	247.47	1,506.2	427.0	-161.6	-395.2	2.01	0.52	-3.12	
1,651.0	37.35	246.32	1,540.0	453.4	-172.0	-419.6	3.48	-3.07	-2.67	
1,694.0	37.93	246.61	1,574.1	479.7	-182.5	-443.6	1.41	1.35	0.67	
1,736.0	37.97	246.59	1,607.2	505.5	-192.8	-467.3	0.10	0.10	-0.05	
1,779.0	38.45	244.79	1,641.0	532.1	-203.7	-491.6	2.82	1.12	-4.19	

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Survey										
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1,815.0	38.76	245.75	1,669.1	554.6	-213.1	-512.0	1.87	0.86	2.67	
Last PZD Surface Survey										
1,914.0	39.33	244.70	1,746.0	616.9	-239.2	-568.6	0.88	0.58	-1.06	
2,000.0	38.89	247.20	1,812.7	671.1	-261.3	-618.1	1.90	-0.51	2.91	
2,085.0	39.46	247.51	1,878.6	724.8	-282.0	-667.7	0.71	0.67	0.36	
2,170.0	38.32	246.06	1,944.8	778.1	-303.0	-716.7	1.72	-1.34	-1.71	
2,256.0	38.94	247.03	2,012.0	831.8	-324.4	-766.0	1.01	0.72	1.13	
2,341.0	38.10	247.25	2,078.5	884.8	-345.0	-814.8	1.00	-0.99	0.26	
2,427.0	38.76	248.10	2,145.9	938.2	-365.3	-864.2	0.98	0.77	0.99	
2,512.0	37.44	247.51	2,212.7	990.7	-385.1	-912.8	1.61	-1.55	-0.69	
2,597.0	37.66	246.41	2,280.1	1,042.5	-405.4	-960.4	0.83	0.26	-1.29	
2,683.0	38.23	247.64	2,348.0	1,095.3	-426.0	-1,009.1	1.10	0.66	1.43	
2,768.0	37.57	247.73	2,415.0	1,147.6	-445.8	-1,057.4	0.78	-0.78	0.11	
2,853.0	37.88	247.38	2,482.3	1,199.6	-465.7	-1,105.5	0.44	0.36	-0.41	
2,939.0	38.50	248.30	2,549.9	1,252.7	-485.7	-1,154.7	0.98	0.72	1.07	
3,024.0	37.57	248.08	2,616.8	1,305.1	-505.2	-1,203.4	1.11	-1.09	-0.26	
3,109.0	38.10	248.78	2,683.9	1,357.2	-524.4	-1,251.8	0.80	0.62	0.82	
3,195.0	38.28	247.95	2,751.5	1,410.4	-544.0	-1,301.3	0.63	0.21	-0.97	
3,280.0	39.02	247.86	2,817.9	1,463.5	-563.9	-1,350.5	0.87	0.87	-0.11	
3,366.0	37.88	247.42	2,885.3	1,516.9	-584.3	-1,399.9	1.36	-1.33	-0.51	
3,451.0	38.10	248.52	2,952.2	1,569.3	-603.9	-1,448.4	0.84	0.26	1.29	
3,537.0	38.41	247.77	3,019.8	1,622.5	-623.7	-1,497.8	0.65	0.36	-0.87	
3,622.0	39.11	246.24	3,086.1	1,675.7	-644.5	-1,546.8	1.40	0.82	-1.80	
3,707.0	38.10	246.81	3,152.5	1,728.7	-665.6	-1,595.5	1.26	-1.19	0.67	
3,793.0	38.59	244.96	3,219.9	1,782.1	-687.4	-1,644.1	1.45	0.57	-2.15	
3,878.0	39.02	246.19	3,286.2	1,835.3	-709.5	-1,692.6	1.04	0.51	1.45	
3,963.0	38.23	246.89	3,352.6	1,888.4	-730.6	-1,741.3	1.06	-0.93	0.82	

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4,049.0	38.89	245.09	3,419.8	1,942.0	-752.4	-1,790.3	1.51	0.77	-2.09	
4,134.0	37.92	245.23	3,486.4	1,994.7	-774.6	-1,838.2	1.15	-1.14	0.16	
4,219.0	36.91	243.95	3,554.0	2,046.3	-796.7	-1,884.8	1.50	-1.19	-1.51	
4,305.0	37.22	246.54	3,622.6	2,098.1	-818.4	-1,931.9	1.85	0.36	3.01	
4,390.0	37.35	244.17	3,690.2	2,149.5	-839.9	-1,978.7	1.70	0.15	-2.79	
4,476.0	38.28	246.41	3,758.2	2,202.2	-861.9	-2,026.6	1.93	1.08	2.60	
4,561.0	38.50	245.66	3,824.8	2,255.0	-883.4	-2,074.8	0.61	0.26	-0.88	
4,646.0	37.20	245.07	3,891.9	2,307.1	-905.1	-2,122.2	1.59	-1.53	-0.69	
4,732.0	38.44	248.00	3,959.8	2,359.8	-926.1	-2,170.6	2.54	1.44	3.41	
4,817.0	36.30	246.19	4,027.4	2,411.4	-946.1	-2,218.1	2.83	-2.52	-2.13	
4,902.0	35.46	247.73	4,096.3	2,461.2	-965.6	-2,264.0	1.45	-0.99	1.81	
4,988.0	33.66	247.47	4,167.1	2,510.0	-984.2	-2,309.1	2.10	-2.09	-0.30	
5,073.0	31.64	248.48	4,238.6	2,555.9	-1,001.4	-2,351.6	2.46	-2.38	1.19	
5,159.0	30.10	246.63	4,312.5	2,600.0	-1,018.3	-2,392.4	2.10	-1.79	-2.15	
5,244.0	27.51	246.76	4,386.9	2,640.9	-1,034.5	-2,430.0	3.05	-3.05	0.15	
5,329.0	25.35	247.62	4,463.0	2,678.8	-1,049.1	-2,464.8	2.58	-2.54	1.01	
5,415.0	23.08	244.91	4,541.5	2,714.0	-1,063.3	-2,497.1	2.94	-2.64	-3.15	
5,500.0	21.75	246.35	4,620.1	2,746.4	-1,076.7	-2,526.6	1.69	-1.56	1.69	
5,586.0	19.42	248.96	4,700.6	2,776.7	-1,088.2	-2,554.6	2.91	-2.71	3.03	
5,671.0	15.73	247.73	4,781.6	2,802.3	-1,097.7	-2,578.4	4.36	-4.34	-1.45	
5,756.0	13.01	251.99	4,863.9	2,823.4	-1,105.0	-2,598.2	3.43	-3.20	5.01	
5,842.0	10.94	248.39	4,948.0	2,841.2	-1,111.0	-2,615.0	2.56	-2.41	-4.19	
5,927.0	7.75	244.85	5,031.9	2,855.0	-1,116.4	-2,627.7	3.81	-3.75	-4.16	
6,012.0	4.66	245.44	5,116.4	2,864.2	-1,120.3	-2,636.0	3.64	-3.64	0.69	
6,098.0	1.80	230.50	5,202.2	2,868.9	-1,122.6	-2,640.3	3.44	-3.33	-17.37	
6,183.0	1.54	229.50	5,287.2	2,871.3	-1,124.2	-2,642.1	0.31	-0.31	-1.18	
6,268.0	1.41	224.26	5,372.2	2,873.4	-1,125.7	-2,643.7	0.22	-0.15	-6.16	

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6,353.0	1.58	221.49	5,457.2	2,875.4	-1,127.3	-2,645.3	0.22	0.20	-3.26	
6,439.0	0.88	200.36	5,543.1	2,876.9	-1,128.8	-2,646.3	0.96	-0.81	-24.57	
6,524.0	1.05	183.04	5,628.1	2,877.7	-1,130.2	-2,646.5	0.39	0.20	-20.38	
6,609.0	0.88	153.12	5,713.1	2,878.0	-1,131.5	-2,646.3	0.62	-0.20	-35.20	
6,695.0	1.23	129.30	5,799.1	2,877.5	-1,132.7	-2,645.3	0.64	0.41	-27.70	
6,780.0	1.00	53.82	5,884.1	2,876.3	-1,132.9	-2,644.0	1.62	-0.27	-88.80	
6,866.0	0.83	42.99	5,970.1	2,875.0	-1,132.0	-2,642.9	0.28	-0.20	-12.59	
6,951.0	0.92	33.32	6,055.1	2,873.9	-1,130.9	-2,642.1	0.20	0.11	-11.38	
7,036.0	1.05	32.40	6,140.1	2,872.7	-1,129.7	-2,641.3	0.15	0.15	-1.08	
7,121.0	0.93	51.68	6,225.0	2,871.4	-1,128.6	-2,640.4	0.41	-0.14	22.68	
7,207.0	0.70	48.70	6,311.0	2,870.2	-1,127.8	-2,639.4	0.27	-0.27	-3.47	
7,292.0	0.31	359.22	6,396.0	2,869.7	-1,127.3	-2,639.1	0.65	-0.46	-58.21	
7,378.0	0.44	311.41	6,482.0	2,869.7	-1,126.8	-2,639.3	0.38	0.15	-55.59	
7,463.0	0.18	313.78	6,567.0	2,869.9	-1,126.5	-2,639.7	0.31	-0.31	2.79	
7,548.0	0.09	238.85	6,652.0	2,870.0	-1,126.5	-2,639.8	0.21	-0.11	-88.15	
7,634.0	0.22	151.62	6,738.0	2,870.1	-1,126.6	-2,639.8	0.27	0.15	-101.43	
Last PZD Survey										
7,690.0	0.22	151.62	6,794.0	2,870.1	-1,126.8	-2,639.7	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)		
7,634.0	6,738.0	-1,126.6	-2,639.8	Last PZD Survey	
7,690.0	6,794.0	-1,126.8	-2,639.7	Straight Line Projection to TD	

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Tompkins 21C-08-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Tompkins 21C-08-07-95 @ 5549.0usft (Capstar 321)
<b>Site:</b>	Tompkins	<b>MD Reference:</b>	Tompkins 21C-08-07-95 @ 5549.0usft (Capstar 321)
<b>Well:</b>	Tompkins 21C-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

Checked By: \_\_\_\_\_
 Approved By: \_\_\_\_\_
 Date: \_\_\_\_\_





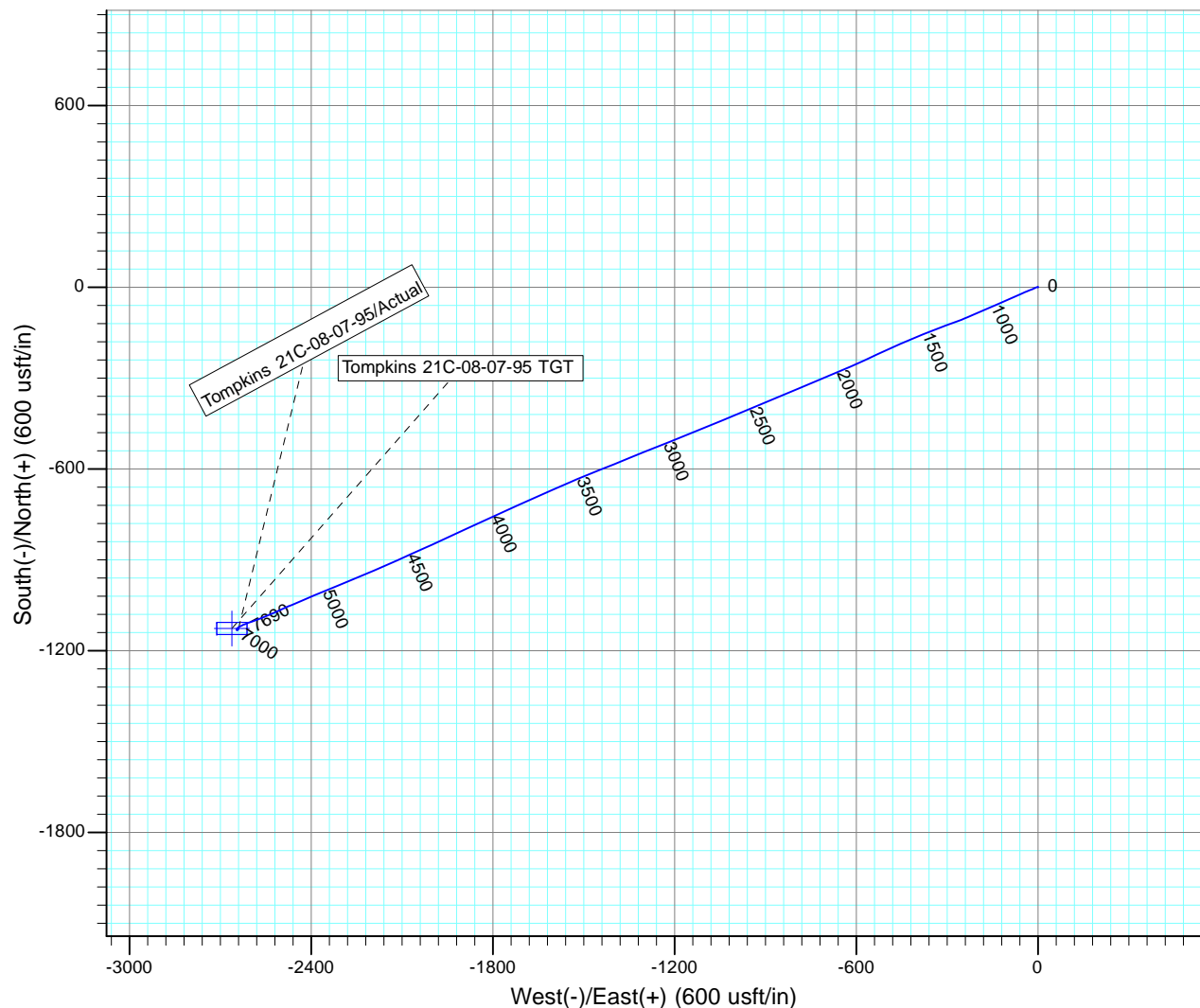
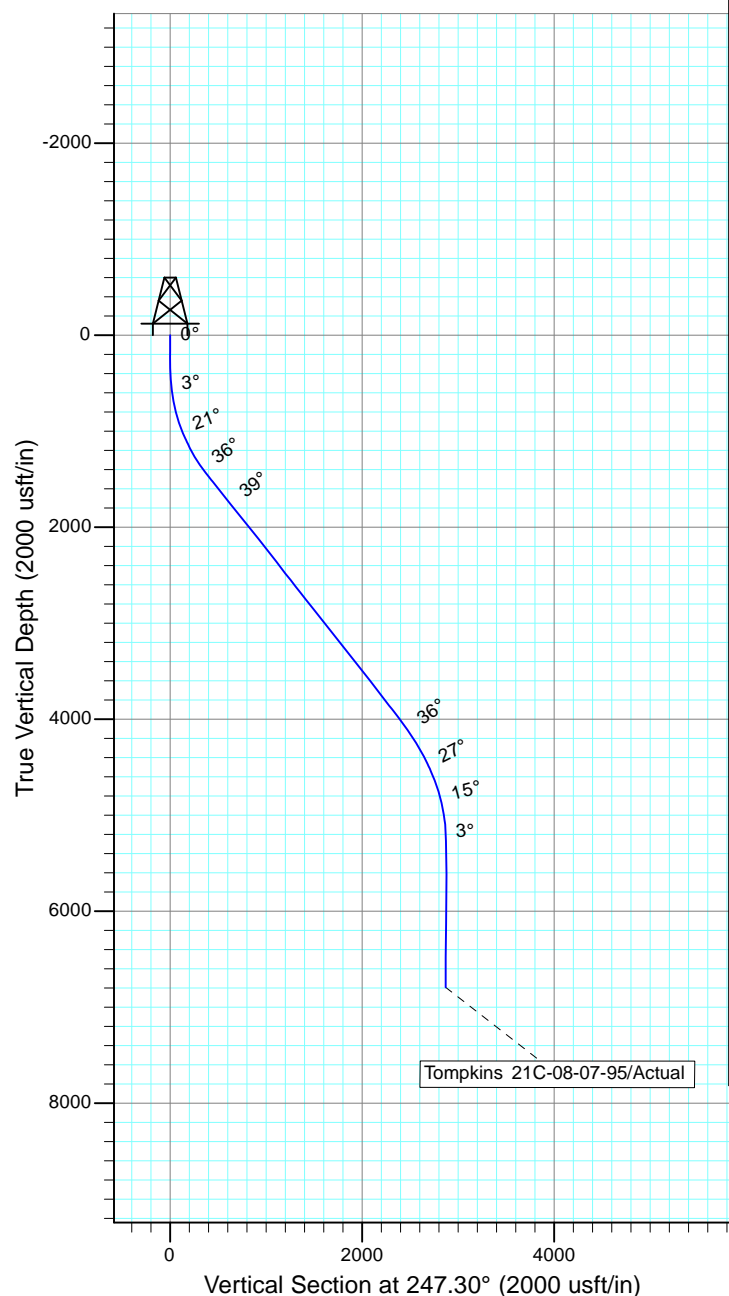
Project: Rockies Region  
 Site: Tompkins  
 Well: Tompkins 21C-08-07-95  
 Wellbore: Wellbore #1  
 SURVEY: Actual

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 21C-08-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 18:46, July 28 2016  
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS  
 SUPPORTED BY ACTUAL FIELD DATA.