



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 31B-17-07-95

Wellbore #1

Design: Actual

End Of Well Report

11 October, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 31B-17-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 31B-17-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 31B-17-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 31B-17-07-95	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		Monument Ridge B			
Site Position:		Northing:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,596,716.56 usft		39.4445837	
		2,287,433.43 usft		-108.0235181	
		13-3/16 "		-1.59 °	

Well		Monument Ridge B 31B-17-07-95, SHL: 39.447503498 -108.012276365				
Well Position	+N/-S	0.0 usft	Northing:	1,597,691.66 usft	Latitude:	39.4475035
	+E/-W	0.0 usft	Easting:	2,290,636.36 usft	Longitude:	-108.0122764
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,718.8 usft	Ground Level:	5,701.8 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/1/2016	9.79	65.56	51,600

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	229.99

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Survey Program		Date 10/11/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
111.0	1,781.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,781.0	7,655.0	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	
111.0	1.22	238.50	111.0	1.2	-0.6	-1.0	1.10	1.10	0.00	
142.0	1.23	246.83	142.0	1.8	-0.9	-1.6	0.57	0.03	26.87	
172.0	1.19	260.41	172.0	2.4	-1.1	-2.2	0.96	-0.13	45.27	
202.0	1.27	257.25	202.0	3.0	-1.2	-2.8	0.35	0.27	-10.53	
231.0	1.23	251.62	231.0	3.5	-1.4	-3.4	0.45	-0.14	-19.41	
261.0	1.01	217.61	261.0	4.1	-1.7	-3.9	2.29	-0.73	-113.37	
292.0	1.19	207.06	292.0	4.7	-2.2	-4.2	0.87	0.58	-34.03	
322.0	1.36	193.66	321.9	5.2	-2.8	-4.4	1.14	0.57	-44.67	
353.0	1.36	187.15	352.9	5.8	-3.6	-4.6	0.50	0.00	-21.00	
383.0	1.47	174.14	382.9	6.3	-4.3	-4.6	1.13	0.37	-43.37	
414.0	1.32	178.72	413.9	6.7	-5.0	-4.5	0.60	-0.48	14.77	
445.0	1.10	185.35	444.9	7.1	-5.7	-4.6	0.84	-0.71	21.39	
475.0	1.14	195.81	474.9	7.6	-6.3	-4.7	0.69	0.13	34.87	
506.0	1.23	206.05	505.9	8.2	-6.9	-4.9	0.74	0.29	33.03	
537.0	1.41	225.96	536.9	8.8	-7.4	-5.3	1.58	0.58	64.23	
568.0	2.13	231.80	567.9	9.8	-8.1	-6.0	2.39	2.32	18.84	
599.0	2.68	234.31	598.8	11.1	-8.8	-7.1	1.81	1.77	8.10	
629.0	3.47	237.25	628.8	12.7	-9.7	-8.4	2.68	2.63	9.80	
660.0	4.53	239.89	659.7	14.8	-10.9	-10.3	3.47	3.42	8.52	
690.0	5.63	235.32	689.6	17.5	-12.3	-12.5	3.90	3.67	-15.23	

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Survey										
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720.0	6.68	232.72	719.4	20.7	-14.2	-15.1	3.62	3.50	-8.67	
750.0	7.91	231.45	749.2	24.5	-16.5	-18.1	4.13	4.10	-4.23	
781.0	9.32	229.12	779.8	29.1	-19.5	-21.7	4.68	4.55	-7.52	
812.0	10.50	228.15	810.4	34.5	-23.0	-25.7	3.84	3.81	-3.13	
842.0	11.51	230.40	839.8	40.2	-26.8	-30.0	3.66	3.37	7.50	
885.0	13.27	228.07	881.8	49.4	-32.8	-37.0	4.25	4.09	-5.42	
928.0	14.85	227.67	923.5	59.8	-39.8	-44.7	3.68	3.67	-0.93	
970.0	16.13	228.64	964.0	71.1	-47.3	-53.1	3.11	3.05	2.31	
1,012.0	17.31	227.50	1,004.2	83.1	-55.4	-62.1	2.92	2.81	-2.71	
1,055.0	18.59	228.55	1,045.1	96.4	-64.2	-71.9	3.07	2.98	2.44	
1,098.0	19.99	228.53	1,085.7	110.6	-73.6	-82.6	3.26	3.26	-0.05	
1,141.0	21.49	231.32	1,125.9	125.8	-83.4	-94.2	4.18	3.49	6.49	
1,184.0	23.38	232.33	1,165.7	142.2	-93.5	-107.1	4.49	4.40	2.35	
1,225.0	24.78	232.52	1,203.1	158.9	-103.7	-120.4	3.42	3.41	0.46	
1,268.0	26.32	231.10	1,241.9	177.4	-115.2	-135.0	3.85	3.58	-3.30	
1,311.0	27.59	229.86	1,280.2	196.9	-127.6	-150.0	3.23	2.95	-2.88	
1,354.0	28.65	230.26	1,318.2	217.2	-140.6	-165.5	2.50	2.47	0.93	
1,396.0	29.79	230.22	1,354.8	237.7	-153.7	-181.3	2.71	2.71	-0.10	
1,439.0	31.33	230.04	1,391.8	259.6	-167.8	-198.1	3.59	3.58	-0.42	
1,482.0	32.82	231.92	1,428.3	282.4	-182.1	-215.8	4.17	3.47	4.37	
1,525.0	34.76	230.66	1,464.0	306.3	-197.1	-234.5	4.80	4.51	-2.93	
1,568.0	36.47	230.62	1,499.0	331.3	-213.0	-253.8	3.98	3.98	-0.09	
1,610.0	38.20	230.21	1,532.4	356.8	-229.2	-273.5	4.16	4.12	-0.98	
1,653.0	39.59	231.67	1,565.8	383.8	-246.2	-294.4	3.87	3.23	3.40	
1,696.0	39.74	229.93	1,598.9	411.2	-263.6	-315.7	2.61	0.35	-4.05	
1,739.0	39.38	229.52	1,632.1	438.6	-281.3	-336.6	1.03	-0.84	-0.95	

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Survey										
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1,781.0	39.58	229.17	1,664.5	465.3	-298.7	-356.8	0.71	0.48	-0.83	
Last PZD Surface Survey										
1,870.0	38.19	228.90	1,733.8	521.2	-335.3	-399.0	1.57	-1.56	-0.30	
1,956.0	38.23	227.58	1,801.4	574.4	-370.7	-438.7	0.95	0.05	-1.53	
2,041.0	38.45	229.78	1,868.0	627.1	-405.5	-478.3	1.63	0.26	2.59	
2,127.0	38.50	229.25	1,935.4	680.6	-440.3	-519.0	0.39	0.06	-0.62	
2,212.0	39.42	229.30	2,001.4	734.0	-475.1	-559.5	1.08	1.08	0.06	
2,297.0	40.30	228.64	2,066.7	788.5	-510.9	-600.6	1.15	1.04	-0.78	
2,383.0	38.89	228.95	2,133.0	843.3	-547.0	-641.8	1.66	-1.64	0.36	
2,468.0	39.11	228.02	2,199.0	896.8	-582.4	-681.9	0.74	0.26	-1.09	
2,554.0	39.77	228.90	2,265.4	951.4	-618.7	-722.8	1.01	0.77	1.02	
2,639.0	40.30	227.76	2,330.5	1,006.0	-655.0	-763.6	1.06	0.62	-1.34	
2,724.0	38.67	228.11	2,396.1	1,060.0	-691.2	-803.7	1.94	-1.92	0.41	
2,810.0	38.10	227.93	2,463.5	1,113.4	-727.0	-843.4	0.68	-0.66	-0.21	
2,895.0	38.50	229.60	2,530.2	1,166.1	-761.7	-883.1	1.31	0.47	1.96	
2,980.0	38.63	230.48	2,596.7	1,219.1	-795.7	-923.7	0.66	0.15	1.04	
3,065.0	39.55	229.34	2,662.7	1,272.6	-830.2	-964.7	1.37	1.08	-1.34	
3,151.0	40.39	228.86	2,728.6	1,327.9	-866.4	-1,006.4	1.04	0.98	-0.56	
3,236.0	40.87	229.03	2,793.1	1,383.2	-902.8	-1,048.2	0.58	0.56	0.20	
3,322.0	40.96	229.56	2,858.1	1,439.5	-939.5	-1,090.9	0.42	0.10	0.62	
3,407.0	40.08	229.43	2,922.7	1,494.8	-975.4	-1,132.9	1.04	-1.04	-0.15	
3,492.0	38.63	228.51	2,988.4	1,548.7	-1,010.7	-1,173.5	1.84	-1.71	-1.08	
3,578.0	39.02	230.26	3,055.4	1,602.6	-1,045.8	-1,214.4	1.35	0.45	2.03	
3,663.0	39.46	229.82	3,121.2	1,656.3	-1,080.4	-1,255.7	0.61	0.52	-0.52	
3,748.0	39.16	228.73	3,187.0	1,710.2	-1,115.5	-1,296.5	0.89	-0.35	-1.28	
3,834.0	39.16	228.51	3,253.7	1,764.5	-1,151.4	-1,337.2	0.16	0.00	-0.26	
3,919.0	39.64	229.25	3,319.4	1,818.4	-1,186.9	-1,377.9	0.79	0.56	0.87	

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4,004.0	39.55	229.74	3,384.9	1,872.6	-1,222.1	-1,419.1	0.38	-0.11	0.58	
4,090.0	38.75	229.75	3,451.6	1,926.9	-1,257.1	-1,460.5	0.93	-0.93	0.01	
4,175.0	36.59	229.62	3,518.8	1,978.8	-1,290.7	-1,500.1	2.54	-2.54	-0.15	
4,261.0	34.10	227.55	3,589.0	2,028.5	-1,323.6	-1,537.4	3.21	-2.90	-2.41	
4,346.0	32.61	227.36	3,660.0	2,075.2	-1,355.2	-1,571.9	1.76	-1.75	-0.22	
4,431.0	30.06	227.41	3,732.6	2,119.4	-1,385.2	-1,604.4	3.00	-3.00	0.06	
4,517.0	27.29	227.85	3,808.0	2,160.6	-1,413.0	-1,634.9	3.23	-3.22	0.51	
4,602.0	24.65	229.08	3,884.4	2,197.8	-1,437.7	-1,662.7	3.17	-3.11	1.45	
4,687.0	21.93	229.21	3,962.5	2,231.4	-1,459.6	-1,688.1	3.20	-3.20	0.15	
4,773.0	18.87	229.59	4,043.1	2,261.4	-1,479.1	-1,710.9	3.56	-3.56	0.44	
4,858.0	16.44	228.77	4,124.1	2,287.2	-1,496.0	-1,730.4	2.87	-2.86	-0.96	
4,943.0	13.93	227.58	4,206.1	2,309.4	-1,510.8	-1,747.0	2.98	-2.95	-1.40	
5,029.0	11.29	229.43	4,290.0	2,328.2	-1,523.3	-1,761.0	3.11	-3.07	2.15	
5,114.0	10.30	229.35	4,373.5	2,344.1	-1,533.6	-1,773.1	1.16	-1.16	-0.09	
5,200.0	9.76	228.68	4,458.2	2,359.1	-1,543.5	-1,784.4	0.64	-0.63	-0.78	
5,285.0	7.89	228.32	4,542.2	2,372.1	-1,552.1	-1,794.2	2.20	-2.20	-0.42	
5,370.0	6.06	227.10	4,626.6	2,382.4	-1,559.0	-1,801.8	2.16	-2.15	-1.44	
5,438.2	4.60	229.05	4,694.5	2,388.8	-1,563.3	-1,806.5	2.16	-2.14	2.86	
Monument Ridge B-31B-17-07-95 TGT										
5,456.0	4.22	229.78	4,712.2	2,390.1	-1,564.2	-1,807.6	2.16	-2.13	4.10	
5,541.0	2.50	225.74	4,797.1	2,395.1	-1,567.5	-1,811.3	2.04	-2.02	-4.75	
5,626.0	2.37	229.69	4,882.0	2,398.7	-1,569.9	-1,814.0	0.25	-0.15	4.65	
5,711.0	2.50	224.73	4,966.9	2,402.3	-1,572.4	-1,816.6	0.29	0.15	-5.84	
5,797.0	2.29	233.30	5,052.9	2,405.9	-1,574.7	-1,819.3	0.48	-0.24	9.97	
5,882.0	2.29	237.29	5,137.8	2,409.3	-1,576.7	-1,822.1	0.19	0.00	4.69	
5,968.0	1.14	226.31	5,223.7	2,411.8	-1,578.2	-1,824.2	1.38	-1.34	-12.77	
6,053.0	0.44	8.08	5,308.7	2,412.4	-1,578.4	-1,824.7	1.78	-0.82	166.79	

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6,138.0	0.57	358.51	5,393.7	2,411.9	-1,577.7	-1,824.7	0.18	0.15	-11.26	
6,224.0	0.13	265.68	5,479.7	2,411.7	-1,577.3	-1,824.8	0.69	-0.51	-107.94	
6,309.0	0.74	202.31	5,564.7	2,412.3	-1,577.8	-1,825.1	0.81	0.72	-74.55	
6,394.0	0.53	83.71	5,649.7	2,412.5	-1,578.3	-1,824.9	1.29	-0.25	-139.53	
6,480.0	0.26	23.46	5,735.7	2,412.0	-1,578.0	-1,824.4	0.54	-0.31	-70.06	
6,565.0	0.09	323.03	5,820.7	2,411.8	-1,577.8	-1,824.4	0.27	-0.20	-71.09	
6,650.0	0.40	322.46	5,905.7	2,411.8	-1,577.5	-1,824.6	0.36	0.36	-0.67	
6,736.0	0.40	200.86	5,991.7	2,412.0	-1,577.6	-1,824.9	0.81	0.00	-141.40	
6,821.0	0.36	202.81	6,076.7	2,412.5	-1,578.1	-1,825.1	0.05	-0.05	2.29	
6,906.0	1.14	175.64	6,161.7	2,413.2	-1,579.2	-1,825.2	0.98	0.92	-31.96	
6,992.0	1.47	171.11	6,247.7	2,414.3	-1,581.1	-1,824.9	0.40	0.38	-5.27	
7,077.0	1.89	181.66	6,332.7	2,415.8	-1,583.6	-1,824.8	0.61	0.49	12.41	
7,162.0	1.27	175.68	6,417.6	2,417.3	-1,585.9	-1,824.8	0.75	-0.73	-7.04	
7,248.0	0.31	194.01	6,503.6	2,418.0	-1,587.1	-1,824.8	1.14	-1.12	21.31	
7,333.0	1.19	201.08	6,588.6	2,419.0	-1,588.2	-1,825.1	1.04	1.04	8.32	
7,419.0	1.32	185.00	6,674.6	2,420.5	-1,590.0	-1,825.5	0.43	0.15	-18.70	
7,504.0	1.32	186.58	6,759.6	2,421.9	-1,591.9	-1,825.7	0.04	0.00	1.86	
7,589.0	1.27	202.85	6,844.5	2,423.4	-1,593.8	-1,826.2	0.44	-0.06	19.14	
Last PZD Survey										
7,655.0	1.27	202.85	6,910.5	2,424.7	-1,595.1	-1,826.8	0.00	0.00	0.00	
Straightline Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,781.0	1,664.5	-298.7	-356.8	Last PZD Surface Survey	

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 31B-17-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 31B-17-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 31B-17-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 31B-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Checked By: _____	Approved By: _____	Date: _____
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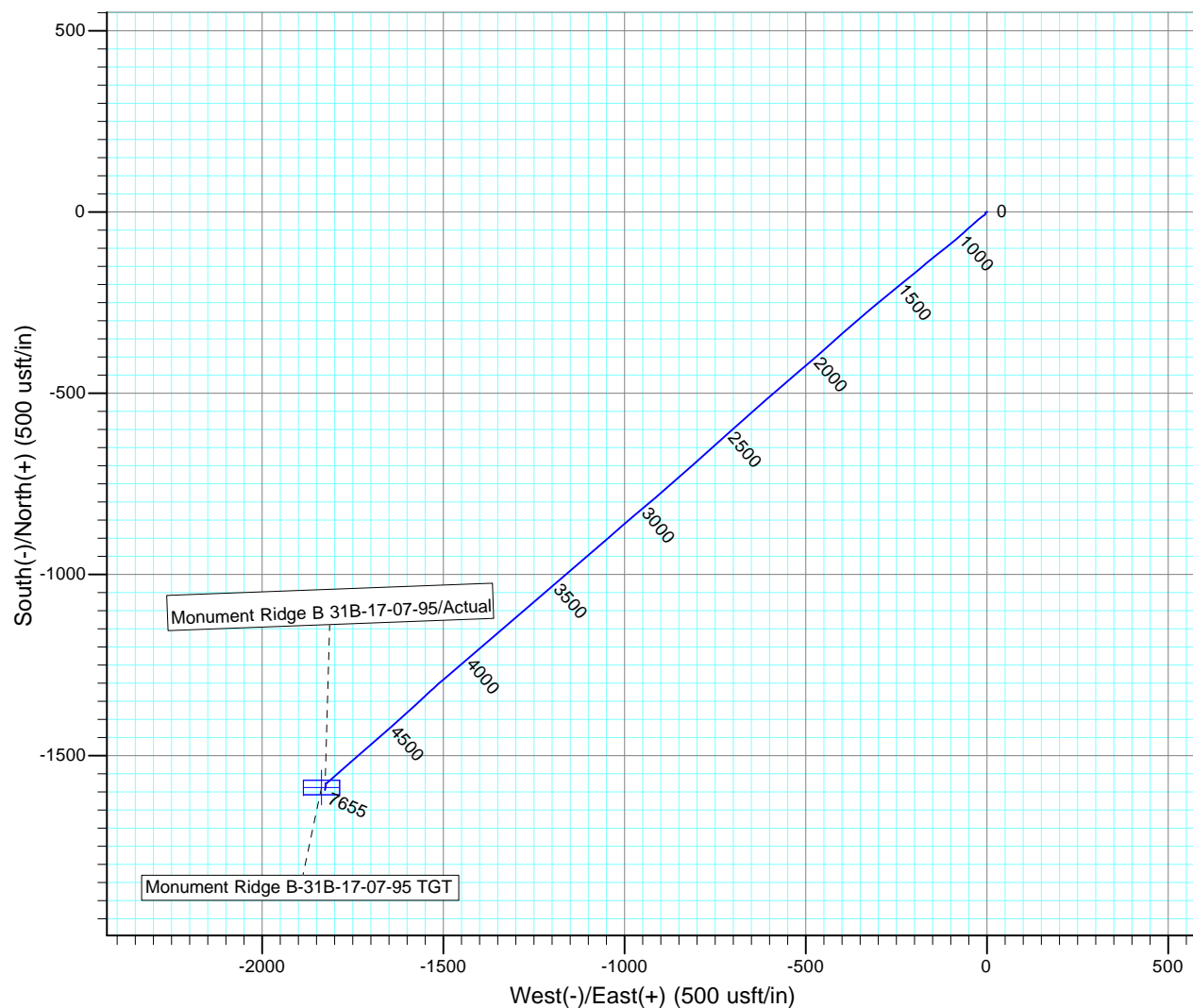
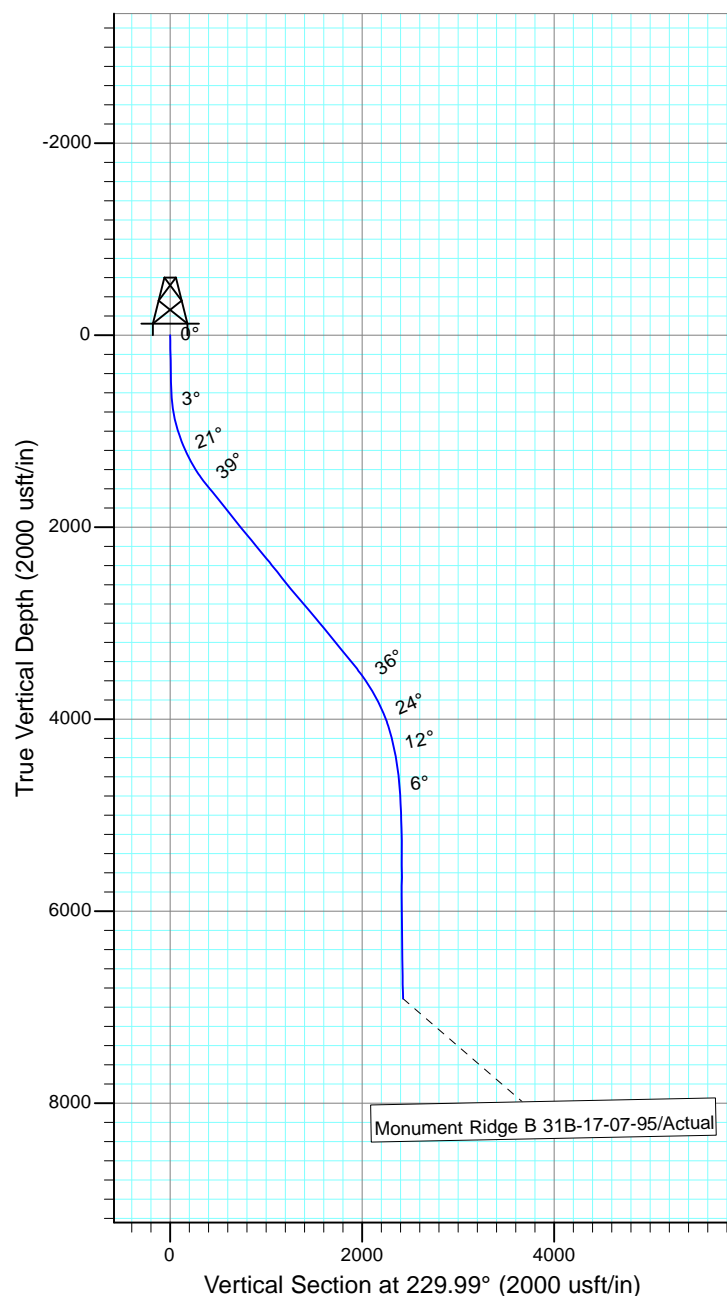
Project: Rockies Region
 Site: Monument Ridge B
 Well: Monument Ridge B 31B-17-07-95
 Wellbore: Wellbore #1
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.79°

Magnetic Field
 Strength: 51600.3snT
 Dip Angle: 65.56°
 Date: 8/1/2016
 Model: IGRF2015



Design: Actual (Monument Ridge B 31B-17-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 22:29, October 11 2016
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.