



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 34C-08-07-95

Wellbore #1

Design: Actual

End of Well Report

10 November, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 34C-08-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 34C-08-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 34C-08-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 34C-08-07-95	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		Using geodetic scale factor

Site	Monument Ridge B		
Site Position:		Northing:	1,596,716.56 usft
From:	Lat/Long	Easting:	2,287,433.43 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.444583700
		Longitude:	-108.023518100
		Grid Convergence:	-1.59 °

Well	Monument Ridge B 34C-08-07-95, SHL: 39.447695591 -108.012276381		
Well Position	+N/-S	0.0 usft	Northing: 1,597,761.61 usft
	+E/-W	0.0 usft	Easting: 2,290,638.29 usft
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	11/10/2016	9.76	65.56	51,570

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	252.07

Survey Program	Date	11/10/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	7,410.0	Actual (Wellbore #1)	MWD	MWD - Standard

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Well:	Monument Ridge B 34C-08-07-95	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
112.0	1.98	244.68	112.0	1.9	-0.8	-1.7	1.77	1.77	0.00	
143.0	1.76	233.30	143.0	2.9	-1.3	-2.6	1.39	-0.71	-36.71	
173.0	1.32	236.86	173.0	3.7	-1.8	-3.3	1.50	-1.47	11.87	
203.0	0.40	197.52	202.9	4.1	-2.1	-3.6	3.47	-3.07	-131.13	
232.0	0.44	136.18	231.9	4.1	-2.3	-3.5	1.48	0.14	-211.52	
262.0	0.53	104.49	261.9	3.9	-2.4	-3.3	0.93	0.30	-105.63	
293.0	0.88	88.94	292.9	3.6	-2.4	-3.0	1.28	1.13	-50.16	
324.0	0.69	72.80	323.9	3.1	-2.4	-2.5	0.93	-0.61	-52.06	
354.0	0.57	58.92	353.9	2.8	-2.2	-2.2	0.64	-0.40	-46.27	
385.0	0.69	37.56	384.9	2.5	-2.0	-2.0	0.84	0.39	-68.90	
415.0	0.66	31.50	414.9	2.2	-1.7	-1.8	0.26	-0.10	-20.20	
446.0	0.92	22.67	445.9	1.9	-1.3	-1.6	0.92	0.84	-28.48	
476.0	0.92	30.75	475.9	1.6	-0.9	-1.4	0.43	0.00	26.93	
507.0	1.03	28.91	506.9	1.2	-0.4	-1.1	0.37	0.35	-5.94	
538.0	0.88	25.13	537.9	0.8	0.0	-0.9	0.52	-0.48	-12.19	
568.0	1.14	30.49	567.9	0.5	0.5	-0.6	0.92	0.87	17.87	
599.0	1.19	27.85	598.9	0.0	1.0	-0.3	0.24	0.16	-8.52	
630.0	1.10	20.25	629.9	-0.4	1.6	-0.1	0.57	-0.29	-24.52	
660.0	0.97	354.28	659.9	-0.6	2.1	0.0	1.61	-0.43	-86.57	
690.0	1.00	281.84	689.9	-0.5	2.4	-0.3	3.88	0.10	-241.47	
720.0	1.89	251.88	719.9	0.3	2.3	-1.0	3.80	2.97	-99.87	
751.0	2.81	247.31	750.9	1.5	1.9	-2.2	3.03	2.97	-14.74	
782.0	3.65	244.37	781.8	3.3	1.2	-3.8	2.76	2.71	-9.48	
812.0	4.53	244.02	811.7	5.4	0.2	-5.7	2.93	2.93	-1.17	
842.0	5.36	245.91	841.6	7.9	-0.9	-8.1	2.82	2.77	6.30	
885.0	6.94	248.06	884.4	12.5	-2.7	-12.3	3.71	3.67	5.00	

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Well:	Monument Ridge B 34C-08-07-95	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)	
928.0	8.88	252.71	927.0	18.4	-4.6	-17.9	4.75	4.51	10.81	
970.0	10.54	254.02	968.4	25.5	-6.6	-24.7	3.99	3.95	3.12	
1,013.0	12.08	252.94	1,010.5	33.9	-9.0	-32.8	3.61	3.58	-2.51	
1,056.0	13.50	251.06	1,052.5	43.5	-12.0	-41.8	3.44	3.30	-4.37	
1,099.0	15.08	252.28	1,094.1	54.1	-15.3	-51.9	3.74	3.67	2.84	
1,141.0	16.04	252.94	1,134.6	65.3	-18.7	-62.6	2.32	2.29	1.57	
1,184.0	17.40	254.83	1,175.8	77.7	-22.1	-74.5	3.41	3.16	4.40	
1,227.0	18.63	254.17	1,216.7	91.0	-25.7	-87.3	2.90	2.86	-1.53	
1,270.0	20.04	254.39	1,257.2	105.2	-29.5	-101.0	3.28	3.28	0.51	
1,312.0	21.88	253.60	1,296.4	120.2	-33.7	-115.5	4.43	4.38	-1.88	
1,355.0	24.04	253.03	1,336.0	137.0	-38.5	-131.5	5.05	5.02	-1.33	
1,398.0	25.45	251.21	1,375.1	155.0	-44.0	-148.7	3.73	3.28	-4.23	
1,441.0	27.03	250.82	1,413.7	174.0	-50.2	-166.6	3.70	3.67	-0.91	
1,483.0	28.43	250.70	1,450.8	193.5	-56.7	-185.1	3.34	3.33	-0.29	
1,526.0	30.06	251.36	1,488.4	214.5	-63.5	-205.0	3.86	3.79	1.53	
1,569.0	31.38	251.31	1,525.3	236.5	-70.5	-225.8	3.07	3.07	-0.12	
1,612.0	32.21	251.75	1,561.9	259.2	-77.7	-247.3	2.00	1.93	1.02	
1,654.0	32.26	251.40	1,597.4	281.6	-84.8	-268.5	0.46	0.12	-0.83	
1,697.0	32.74	250.92	1,633.7	304.7	-92.2	-290.4	1.27	1.12	-1.12	
1,755.0	33.27	250.74	1,682.3	336.3	-102.6	-320.2	0.93	0.91	-0.31	
Last PZD Surface Survey										
1,866.0	33.25	248.95	1,775.1	397.1	-123.6	-377.4	0.88	-0.02	-1.61	
1,951.0	32.90	249.34	1,846.3	443.4	-140.1	-420.7	0.48	-0.41	0.46	
2,037.0	32.48	250.04	1,918.7	489.8	-156.2	-464.3	0.66	-0.49	0.81	
2,122.0	33.47	251.65	1,990.0	536.1	-171.4	-508.0	1.56	1.16	1.89	
2,207.0	32.70	251.18	2,061.2	582.5	-186.2	-552.0	0.95	-0.91	-0.55	
2,292.0	32.56	253.60	2,132.8	628.3	-200.0	-595.6	1.54	-0.16	2.85	

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Survey										
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2,378.0	32.48	253.77	2,205.3	674.5	-213.0	-640.0	0.14	-0.09	0.20	
2,463.0	32.21	251.36	2,277.2	720.0	-226.6	-683.4	1.55	-0.32	-2.84	
2,548.0	32.92	252.62	2,348.8	765.7	-240.8	-726.9	1.16	0.84	1.48	
2,634.0	32.21	251.67	2,421.3	812.0	-255.0	-771.0	1.02	-0.83	-1.10	
2,719.0	32.52	251.05	2,493.1	857.5	-269.5	-814.1	0.53	0.36	-0.73	
2,805.0	32.43	251.53	2,565.6	903.7	-284.3	-857.8	0.32	-0.10	0.56	
2,890.0	32.97	252.01	2,637.2	949.6	-298.7	-901.4	0.70	0.64	0.56	
2,975.0	32.12	250.96	2,708.8	995.3	-313.2	-944.8	1.20	-1.00	-1.24	
3,061.0	32.08	252.02	2,781.7	1,041.0	-327.7	-988.1	0.66	-0.05	1.23	
3,146.0	32.36	252.13	2,853.6	1,086.3	-341.7	-1,031.2	0.34	0.33	0.13	
3,231.0	31.33	252.46	2,925.8	1,131.2	-355.3	-1,074.0	1.23	-1.21	0.39	
3,317.0	31.51	252.28	2,999.2	1,176.0	-368.9	-1,116.7	0.24	0.21	-0.21	
3,402.0	31.77	252.06	3,071.5	1,220.6	-382.5	-1,159.1	0.33	0.31	-0.26	
3,488.0	31.55	252.41	3,144.7	1,265.7	-396.3	-1,202.1	0.33	-0.26	0.41	
3,573.0	32.12	252.28	3,216.9	1,310.6	-409.9	-1,244.8	0.68	0.67	-0.15	
3,658.0	32.21	252.32	3,288.9	1,355.8	-423.7	-1,287.9	0.11	0.11	0.05	
3,744.0	32.04	251.09	3,361.7	1,401.5	-438.0	-1,331.4	0.79	-0.20	-1.43	
3,829.0	31.99	251.88	3,433.8	1,446.6	-452.3	-1,374.1	0.50	-0.06	0.93	
3,914.0	32.12	251.75	3,505.8	1,491.7	-466.4	-1,417.0	0.17	0.15	-0.15	
4,000.0	32.74	251.71	3,578.4	1,537.8	-480.9	-1,460.7	0.72	0.72	-0.05	
4,085.0	32.51	251.35	3,650.0	1,583.7	-495.4	-1,504.2	0.35	-0.27	-0.42	
4,171.0	30.59	251.14	3,723.3	1,628.7	-509.8	-1,546.8	2.24	-2.23	-0.24	
4,256.0	28.92	249.60	3,797.1	1,670.8	-524.0	-1,586.6	2.16	-1.96	-1.81	
4,341.0	26.98	252.10	3,872.2	1,710.6	-537.1	-1,624.2	2.67	-2.28	2.94	
4,426.0	24.67	253.11	3,948.7	1,747.7	-548.2	-1,659.5	2.77	-2.72	1.19	
4,512.0	20.96	253.20	4,027.9	1,781.0	-557.8	-1,691.4	4.31	-4.31	0.10	
4,597.0	17.75	253.77	4,108.1	1,809.2	-565.9	-1,718.4	3.78	-3.78	0.67	

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Survey									
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4,683.0	14.46	253.12	4,190.7	1,833.0	-572.6	-1,741.3	3.83	-3.83	-0.76
4,768.0	12.61	255.84	4,273.4	1,852.9	-578.0	-1,760.4	2.30	-2.18	3.20
4,853.0	10.50	255.62	4,356.7	1,869.9	-582.2	-1,776.9	2.48	-2.48	-0.26
4,939.0	7.60	257.64	4,441.6	1,883.3	-585.4	-1,790.1	3.39	-3.37	2.35
5,024.0	6.23	256.74	4,526.0	1,893.5	-587.6	-1,800.1	1.62	-1.61	-1.06
5,110.0	4.31	249.25	4,611.6	1,901.4	-589.8	-1,807.6	2.37	-2.23	-8.71
5,195.0	3.78	240.85	4,696.4	1,907.4	-592.3	-1,813.1	0.93	-0.62	-9.88
5,219.1	3.32	242.16	4,720.4	1,908.8	-593.0	-1,814.4	1.94	-1.91	5.46
Monument Ridge B 34C-08-07-95 TGT									
5,281.0	2.15	248.11	4,782.3	1,911.7	-594.3	-1,817.0	1.94	-1.89	9.60
5,366.0	2.07	240.03	4,867.2	1,914.8	-595.7	-1,819.8	0.36	-0.09	-9.51
5,451.0	1.77	235.10	4,952.2	1,917.6	-597.2	-1,822.2	0.40	-0.35	-5.80
5,537.0	1.89	231.36	5,038.1	1,920.2	-598.8	-1,824.4	0.20	0.14	-4.35
5,622.0	1.93	223.98	5,123.1	1,922.8	-600.7	-1,826.5	0.29	0.05	-8.68
5,708.0	1.19	233.30	5,209.0	1,924.9	-602.3	-1,828.3	0.91	-0.86	10.84
5,793.0	1.10	297.63	5,294.0	1,926.3	-602.5	-1,829.7	1.44	-0.11	75.68
5,878.0	1.34	312.19	5,379.0	1,927.4	-601.4	-1,831.1	0.46	0.28	17.13
5,964.0	1.05	304.79	5,465.0	1,928.3	-600.3	-1,832.5	0.38	-0.34	-8.60
6,049.0	0.88	273.90	5,550.0	1,929.4	-599.8	-1,833.8	0.63	-0.20	-36.34
6,134.0	0.92	257.64	5,635.0	1,930.7	-599.9	-1,835.1	0.30	0.05	-19.13
6,220.0	0.83	263.49	5,720.9	1,932.0	-600.1	-1,836.4	0.15	-0.10	6.80
6,305.0	1.01	259.36	5,805.9	1,933.3	-600.3	-1,837.8	0.23	0.21	-4.86
6,390.0	1.54	254.26	5,890.9	1,935.2	-600.8	-1,839.6	0.64	0.62	-6.00
6,476.0	1.46	245.50	5,976.9	1,937.5	-601.5	-1,841.7	0.28	-0.09	-10.19
6,561.0	0.75	284.54	6,061.9	1,939.0	-601.9	-1,843.3	1.17	-0.84	45.93
6,646.0	0.92	309.85	6,146.9	1,939.8	-601.3	-1,844.3	0.47	0.20	29.78
6,732.0	1.19	276.97	6,232.8	1,941.0	-600.7	-1,845.7	0.76	0.31	-38.23

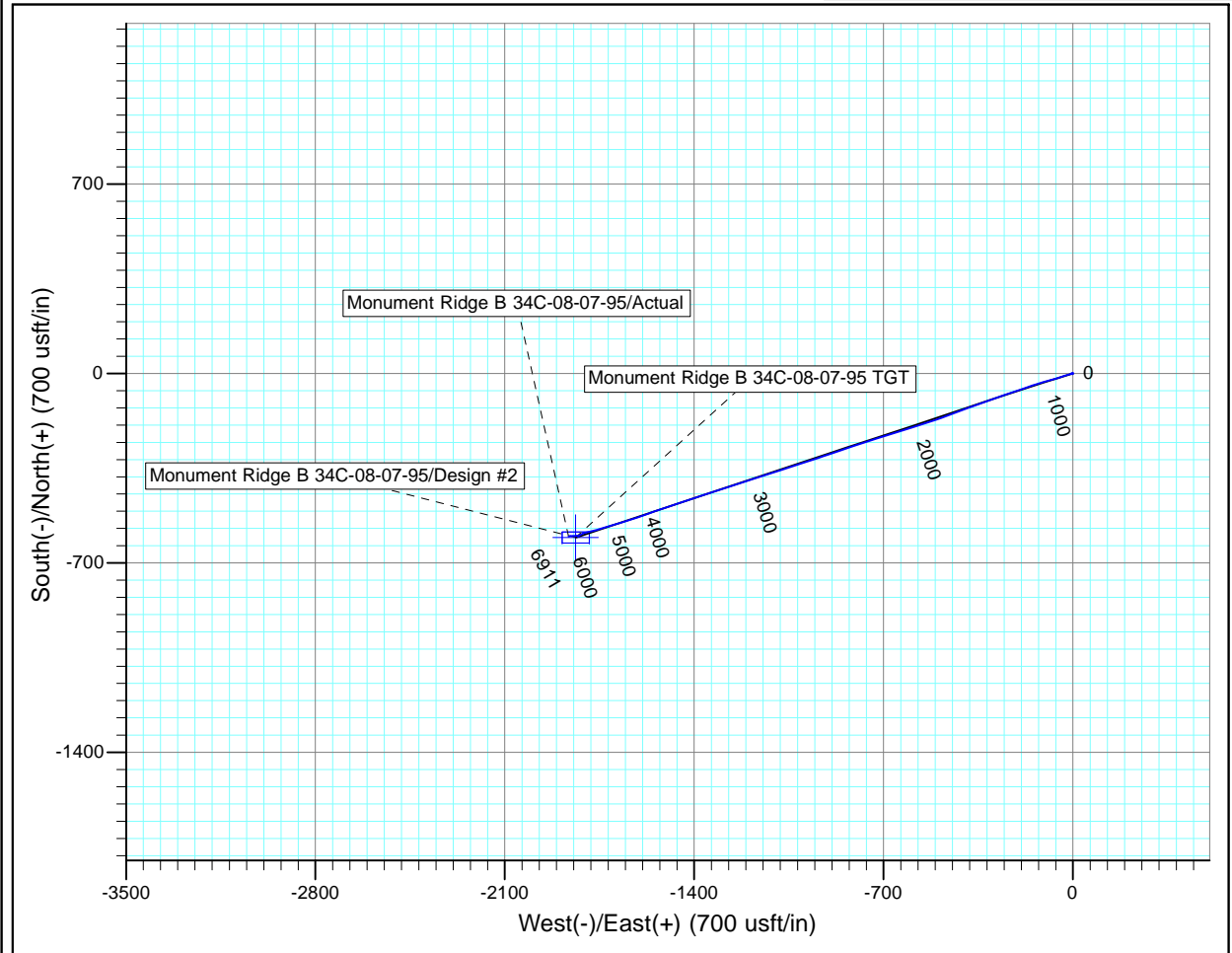
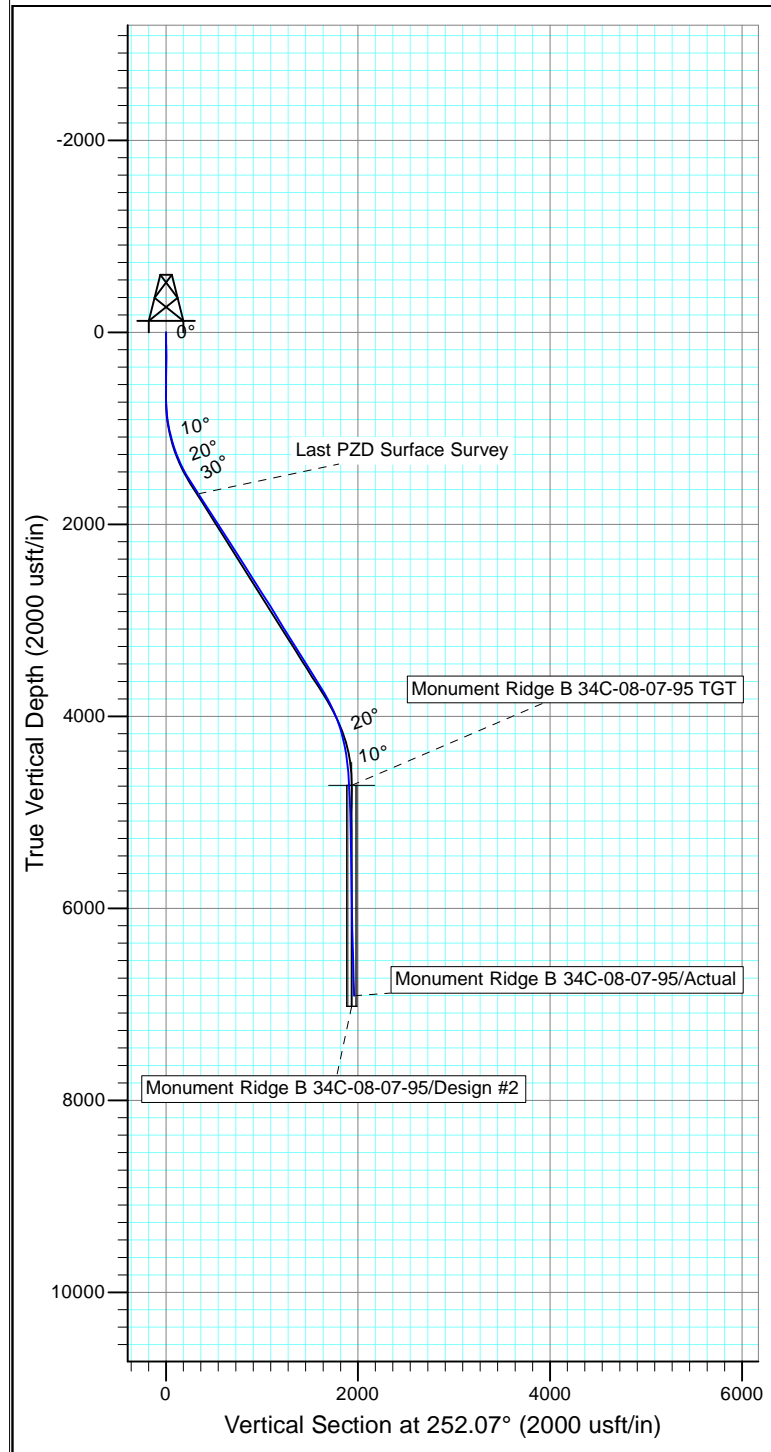
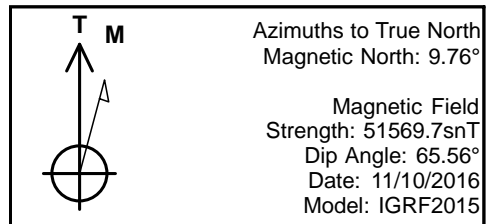
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6,817.0	1.54	268.72	6,317.8	1,942.9	-600.6	-1,847.8	0.47	0.41	-9.71	
6,903.0	1.89	265.77	6,403.8	1,945.4	-600.8	-1,850.3	0.42	0.41	-3.43	
6,988.0	1.85	266.69	6,488.7	1,948.1	-601.0	-1,853.1	0.06	-0.05	1.08	
7,073.0	1.76	277.50	6,573.7	1,950.6	-600.9	-1,855.8	0.41	-0.11	12.72	
7,159.0	1.59	271.05	6,659.7	1,952.9	-600.7	-1,858.3	0.29	-0.20	-7.50	
7,244.0	1.45	249.64	6,744.6	1,955.1	-601.0	-1,860.4	0.68	-0.16	-25.19	
7,329.0	1.63	239.98	6,829.6	1,957.4	-602.0	-1,862.5	0.37	0.21	-11.36	
Last PZD Survey										
7,410.0	1.63	239.98	6,910.6	1,959.6	-603.2	-1,864.5	0.00	0.00	0.00	
Staightline Projection to TD/Monument Ridge B 34C-08-07-95/Actual										

Checked By: _____ Approved By: _____ Date: _____



Project: Rockies Region
Site: Monument Ridge B
Well: Monument Ridge B 34C-08-07-95
Wellbore: Wellbore #1
Design: Actual



Design: Actual (Monument Ridge B 34C-08-07-95/Wellbore #1)

Created By: Derek Stephens Date: 11:02, November 10 2016

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