



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 44D-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 44D-08-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 44D-08-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 44D-08-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 44D-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:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,596,716.56	usft	39.444583700	
		2,287,433.43	usft	-108.023518100	
		13-3/16	"	-1.59	°

Well		Monument Ridge B 44D-08-07-95, SHL: 39.447668149 -108.012276378				
Well Position	+N/-S	0.0 usft	Northing:	1,597,751.61 usft	Latitude:	39.447668149
	+E/-W	0.0 usft	Easting:	2,290,638.01 usft	Longitude:	-108.012276378
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	215.30

Survey Program		Date	11/10/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
83.0	6,977.0	Actual (Wellbore #1)	MWD	MWD - Standard	

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Well:	Monument Ridge B 44D-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	
83.0	0.48	256.32	83.0	0.3	-0.1	-0.3	0.58	0.58	0.00	
112.0	0.88	271.53	112.0	0.5	-0.1	-0.7	1.50	1.38	52.45	
143.0	1.19	242.70	143.0	0.9	-0.2	-1.2	1.92	1.00	-93.00	
173.0	1.65	261.40	173.0	1.5	-0.5	-1.9	2.16	1.53	62.33	
203.0	1.10	268.80	203.0	1.9	-0.5	-2.6	1.92	-1.83	24.67	
232.0	0.57	291.44	232.0	2.1	-0.5	-3.0	2.12	-1.83	78.07	
262.0	0.72	341.40	262.0	2.1	-0.2	-3.2	1.87	0.50	166.53	
293.0	0.79	356.87	293.0	1.8	0.2	-3.3	0.69	0.23	49.90	
324.0	0.75	352.74	324.0	1.5	0.6	-3.3	0.22	-0.13	-13.32	
354.0	0.78	3.51	354.0	1.2	1.0	-3.4	0.49	0.10	35.90	
385.0	0.48	2.23	385.0	0.9	1.3	-3.3	0.97	-0.97	-4.13	
415.0	0.18	283.88	415.0	0.8	1.4	-3.4	1.59	-1.00	-261.17	
446.0	0.62	223.80	446.0	1.0	1.3	-3.5	1.78	1.42	-193.81	
476.0	1.29	216.21	476.0	1.5	0.9	-3.9	2.27	2.23	-25.30	
507.0	2.00	208.72	506.9	2.3	0.2	-4.3	2.39	2.29	-24.16	
538.0	2.72	208.16	537.9	3.6	-0.9	-4.9	2.32	2.32	-1.81	
568.0	3.52	210.84	567.9	5.2	-2.4	-5.7	2.71	2.67	8.93	
599.0	4.44	209.48	598.8	7.4	-4.2	-6.8	2.98	2.97	-4.39	
630.0	5.63	208.29	629.7	10.1	-6.6	-8.1	3.85	3.84	-3.84	
660.0	7.12	210.40	659.5	13.4	-9.5	-9.8	5.03	4.97	7.03	
690.0	8.52	211.15	689.2	17.5	-13.0	-11.9	4.68	4.67	2.50	
720.0	9.80	213.39	718.8	22.2	-17.0	-14.4	4.43	4.27	7.47	
751.0	10.81	220.33	749.3	27.8	-21.5	-17.7	5.16	3.26	22.39	
782.0	11.78	213.52	779.7	33.8	-26.3	-21.4	5.31	3.13	-21.97	
812.0	12.41	217.44	809.1	40.1	-31.4	-25.0	3.45	2.10	13.07	
842.0	12.81	217.61	838.3	46.6	-36.6	-29.0	1.34	1.33	0.57	

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Site:	Monument Ridge B	MD Reference:	Monument Ridge B 44D-08-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 44D-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)	
885.0	13.10	216.03	880.2	56.3	-44.3	-34.8	1.06	0.67	-3.67	
928.0	13.32	215.19	922.1	66.1	-52.3	-40.5	0.68	0.51	-1.95	
970.0	13.43	214.79	963.0	75.8	-60.3	-46.1	0.34	0.26	-0.95	
1,013.0	13.62	213.74	1,004.8	85.9	-68.6	-51.7	0.72	0.44	-2.44	
1,056.0	13.82	213.07	1,046.5	96.1	-77.1	-57.4	0.59	0.47	-1.56	
1,099.0	14.06	213.78	1,088.3	106.4	-85.8	-63.1	0.69	0.56	1.65	
1,141.0	13.54	215.19	1,129.1	116.4	-94.0	-68.7	1.47	-1.24	3.36	
1,184.0	13.58	215.45	1,170.9	126.5	-102.2	-74.6	0.17	0.09	0.60	
1,227.0	13.93	215.81	1,212.6	136.7	-110.5	-80.5	0.84	0.81	0.84	
1,270.0	13.99	214.86	1,254.4	147.1	-119.0	-86.5	0.55	0.14	-2.21	
1,312.0	13.89	214.58	1,295.1	157.2	-127.3	-92.3	0.29	-0.24	-0.67	
1,355.0	12.79	214.05	1,337.0	167.2	-135.5	-97.9	2.57	-2.56	-1.23	
1,398.0	12.66	214.49	1,378.9	176.6	-143.3	-103.2	0.38	-0.30	1.02	
1,441.0	12.52	213.83	1,420.9	186.0	-151.1	-108.5	0.47	-0.33	-1.53	
1,483.0	12.52	214.88	1,461.9	195.1	-158.6	-113.6	0.54	0.00	2.50	
1,526.0	12.30	216.42	1,503.9	204.3	-166.1	-119.0	0.92	-0.51	3.58	
1,569.0	12.23	215.90	1,545.9	213.5	-173.5	-124.4	0.30	-0.16	-1.21	
1,612.0	12.35	215.06	1,587.9	222.6	-181.0	-129.7	0.50	0.28	-1.95	
1,654.0	12.35	213.48	1,628.9	231.6	-188.4	-134.8	0.80	0.00	-3.76	
1,697.0	12.91	212.79	1,670.9	241.0	-196.3	-139.9	1.35	1.30	-1.60	
1,710.0	13.01	212.38	1,683.6	243.9	-198.7	-141.5	1.04	0.77	-3.15	
Last PZD Surface Survey										
1,781.0	13.53	211.10	1,752.7	260.2	-212.6	-150.0	0.84	0.73	-1.80	
1,867.0	12.84	209.18	1,836.4	279.7	-229.5	-159.9	0.95	-0.80	-2.23	
1,952.0	12.48	212.42	1,919.3	298.3	-245.5	-169.4	0.94	-0.42	3.81	
2,037.0	13.08	215.87	2,002.2	317.1	-261.1	-180.0	1.14	0.71	4.06	
2,122.0	13.10	217.91	2,085.0	336.3	-276.5	-191.5	0.54	0.02	2.40	

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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)	
2,208.0	13.49	219.01	2,168.7	356.1	-292.0	-203.8	0.54	0.45	1.28	
2,293.0	12.96	219.72	2,251.5	375.5	-307.0	-216.2	0.65	-0.62	0.84	
2,379.0	13.40	219.10	2,335.2	395.0	-322.1	-228.6	0.54	0.51	-0.72	
2,464.0	12.96	212.77	2,418.0	414.4	-337.8	-240.0	1.77	-0.52	-7.45	
2,549.0	12.26	215.23	2,500.9	432.9	-353.2	-250.3	1.04	-0.82	2.89	
2,635.0	11.79	214.46	2,585.0	450.8	-367.9	-260.6	0.58	-0.55	-0.90	
2,720.0	12.46	217.64	2,668.1	468.7	-382.3	-271.1	1.11	0.79	3.74	
2,805.0	13.91	216.68	2,750.9	488.1	-397.8	-282.8	1.73	1.71	-1.13	
2,891.0	13.45	215.28	2,834.4	508.4	-414.2	-294.8	0.66	-0.53	-1.63	
2,976.0	12.57	214.00	2,917.3	527.5	-430.0	-305.6	1.09	-1.04	-1.51	
3,061.0	13.27	216.73	3,000.1	546.5	-445.4	-316.6	1.09	0.82	3.21	
3,147.0	12.79	216.25	3,083.9	565.9	-461.0	-328.2	0.57	-0.56	-0.56	
3,232.0	13.75	214.88	3,166.6	585.4	-476.9	-339.5	1.19	1.13	-1.61	
3,318.0	13.43	213.55	3,250.2	605.6	-493.6	-350.9	0.52	-0.37	-1.55	
3,403.0	12.88	212.86	3,333.0	624.9	-509.8	-361.5	0.67	-0.65	-0.81	
3,489.0	13.40	216.24	3,416.7	644.5	-525.9	-372.6	1.08	0.60	3.93	
3,574.0	12.48	215.23	3,499.6	663.5	-541.3	-383.7	1.11	-1.08	-1.19	
3,659.0	11.69	213.04	3,582.7	681.3	-556.1	-393.7	1.07	-0.93	-2.58	
3,745.0	12.49	216.68	3,666.8	699.3	-570.8	-404.0	1.28	0.93	4.23	
3,830.0	12.96	217.39	3,749.7	718.0	-585.8	-415.3	0.58	0.55	0.84	
3,915.0	13.01	216.11	3,832.5	737.1	-601.1	-426.7	0.34	0.06	-1.51	
4,001.0	13.40	215.41	3,916.3	756.8	-617.0	-438.2	0.49	0.45	-0.81	
4,086.0	13.32	218.40	3,999.0	776.4	-632.7	-450.0	0.82	-0.09	3.52	
4,171.0	12.30	217.78	4,081.8	795.2	-647.5	-461.6	1.21	-1.20	-0.73	
4,256.0	10.94	216.16	4,165.1	812.3	-661.2	-471.9	1.65	-1.60	-1.91	
4,342.0	9.71	214.31	4,249.7	827.7	-673.8	-480.8	1.48	-1.43	-2.15	
4,427.0	8.39	212.20	4,333.6	841.1	-685.0	-488.1	1.60	-1.55	-2.48	

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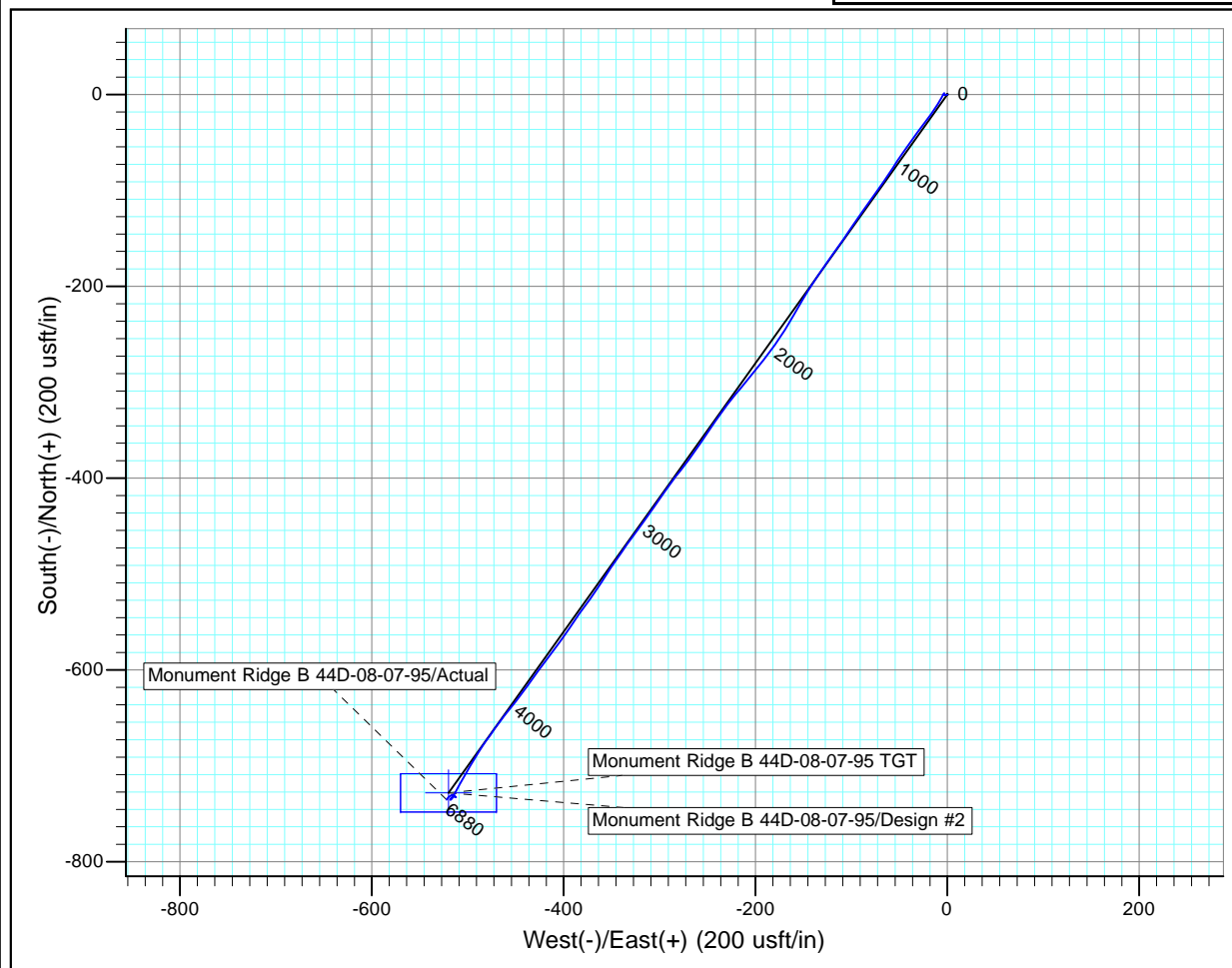
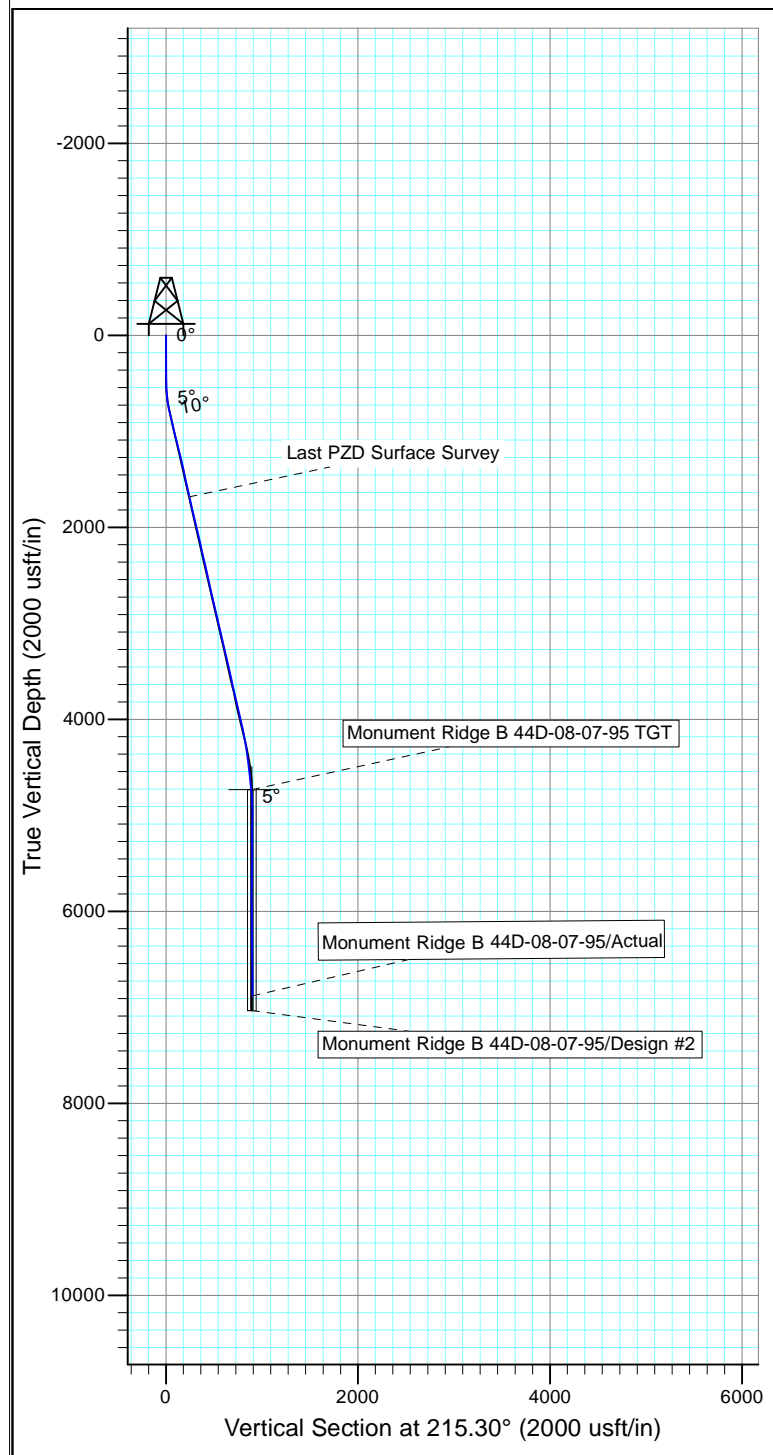
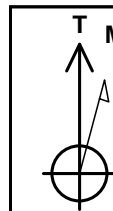
Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
4,512.0	7.51	211.98	4,417.8	852.8	-694.9	-494.4	1.04	-1.04	-0.26	
4,598.0	6.64	210.36	4,503.2	863.4	-704.0	-499.9	1.04	-1.01	-1.88	
4,683.0	6.06	208.25	4,587.6	872.7	-712.2	-504.5	0.74	-0.68	-2.48	
4,768.0	5.89	208.86	4,672.2	881.5	-719.9	-508.7	0.21	-0.20	0.72	
4,828.8	5.52	207.93	4,732.6	887.5	-725.2	-511.6	0.64	-0.62	-1.54	
Monument Ridge B 44D-08-07-95 TGT										
4,854.0	5.36	207.50	4,757.8	889.9	-727.4	-512.7	0.64	-0.61	-1.69	
4,939.0	3.47	212.42	4,842.5	896.4	-733.1	-515.9	2.27	-2.22	5.79	
5,025.0	1.01	246.08	4,928.4	899.7	-735.6	-518.0	3.13	-2.86	39.14	
5,110.0	0.79	18.93	5,013.4	899.7	-735.3	-518.5	1.94	-0.26	156.29	
5,195.0	0.81	39.36	5,098.4	898.6	-734.3	-517.9	0.33	0.02	24.04	
5,281.0	0.44	48.95	5,184.4	897.6	-733.6	-517.3	0.45	-0.43	11.15	
5,366.0	0.40	55.41	5,269.4	897.0	-733.2	-516.8	0.07	-0.05	7.60	
5,451.0	0.09	229.30	5,354.4	896.8	-733.1	-516.6	0.58	-0.36	204.58	
5,537.0	0.31	207.50	5,440.4	897.1	-733.3	-516.8	0.27	0.26	-25.35	
5,622.0	1.05	58.00	5,525.4	896.6	-733.1	-516.2	1.56	0.87	-175.88	
5,708.0	0.79	58.57	5,611.4	895.4	-732.4	-515.0	0.30	-0.30	0.66	
5,793.0	0.75	90.34	5,696.4	894.5	-732.1	-514.0	0.50	-0.05	37.38	
5,879.0	0.78	109.81	5,782.4	894.0	-732.3	-512.9	0.30	0.03	22.64	
5,964.0	0.33	153.53	5,867.4	894.0	-732.7	-512.2	0.69	-0.53	51.44	
6,049.0	0.75	318.20	5,952.4	894.0	-732.5	-512.5	1.26	0.49	193.73	
6,135.0	0.62	303.67	6,038.4	893.9	-731.9	-513.2	0.25	-0.15	-16.90	
6,220.0	1.17	310.33	6,123.4	893.8	-731.0	-514.3	0.66	0.65	7.84	
6,305.0	1.27	273.51	6,208.4	894.2	-730.4	-515.9	0.91	0.12	-43.32	
6,391.0	1.71	234.66	6,294.3	895.9	-731.1	-517.9	1.25	0.51	-45.17	
6,476.0	1.58	229.07	6,379.3	898.3	-732.6	-519.8	0.24	-0.15	-6.58	
6,561.0	0.19	18.45	6,464.3	899.3	-733.2	-520.6	2.05	-1.64	175.74	

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Site:	Monument Ridge B	MD Reference:	Monument Ridge B 44D-08-07-95 @ 5718.8usft (PLAN
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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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6,647.0	0.22	204.78	6,550.3	899.3	-733.3	-520.7	0.48	0.03	-201.94
6,732.0	0.44	214.44	6,635.3	899.8	-733.7	-520.9	0.27	0.26	11.36
6,818.0	0.48	215.94	6,721.3	900.5	-734.2	-521.3	0.05	0.05	1.74
6,903.0	0.44	216.90	6,806.3	901.2	-734.8	-521.7	0.05	-0.05	1.13
Last PZD Survey									
6,977.0	0.44	216.90	6,880.3	901.7	-735.2	-522.1	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)		
1,710.0	1,683.6	-198.7	-141.5	Last PZD Surface Survey	
6,903.0	6,806.3	-734.8	-521.7	Last PZD Survey	
6,977.0	6,880.3	-735.2	-522.1	Straightline Projection to TD	

Checked By: _____ Approved By: _____ Date: _____



Design: Actual (Monument Ridge B 44D-08-07-95/Wellbore #1)

Created By: Derek Stephens Date: 14:51, November 10 2016

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