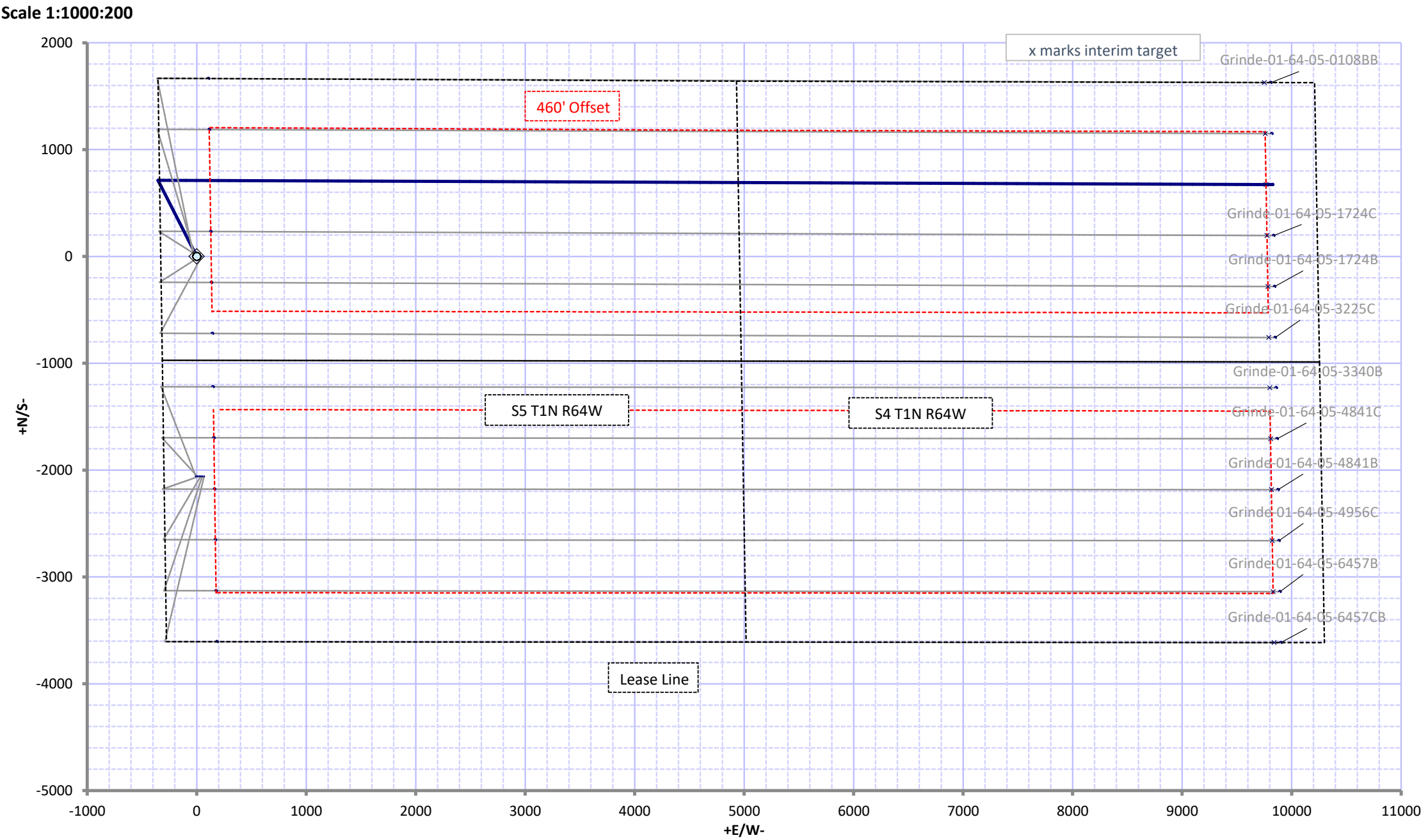
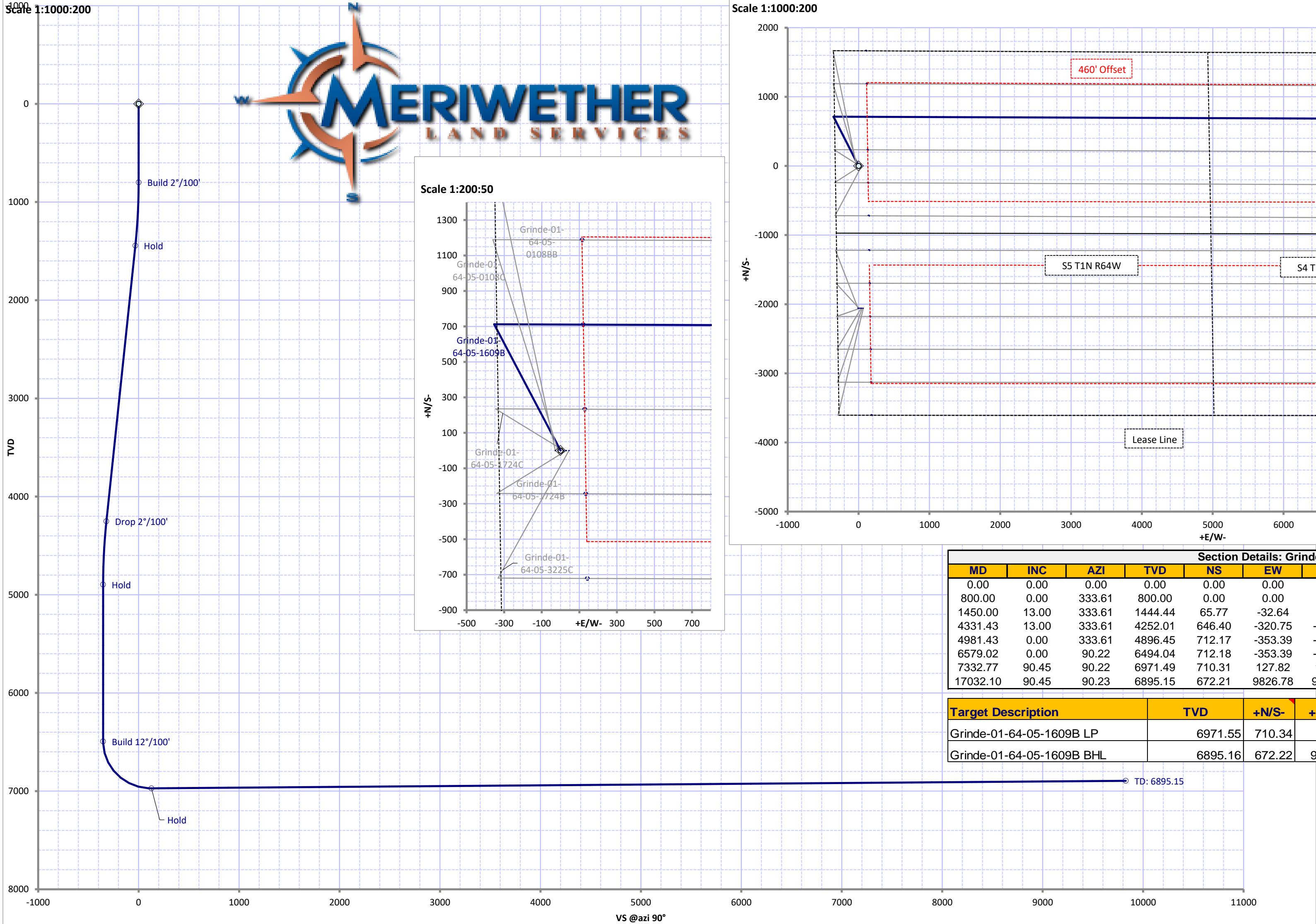


Well Grinde-01-64-05-1609B		Operating Company Bill Barrett Corporation			Rig TBD, est. KB of 20'	
Magnetics		Location			Other	
Curr. Datum BGGM2016 Mag Date 14-Mar-2017 Field Str, nT 52552.70		Decl., ° 8.15 Dip Angle, ° 67.05 Convergence, ° 0.5923816		Northing, ft 1,274,462.48 Easting, ft 3,256,529.88 Elevation, ft 5057.00		Meriwether Land Services, LLC
		Latitude 40.083150 Longitude 104.583190 TVD Ref GL 5037' + KB 20'		Map System St. Plane Map Datum NAD83 Map Zone 0501 - Colorado North		North Reference True North Vert. Sect, ° 90.00 December 12, 2017



Section Details: Grinde-01-64-05-1609B										
MD	INC	AZI	TVD	NS	EW	VS90	BR	TR	DLS	Comments
0.00	0.00	0.00	0.00	0.00	0.00	0.00				TIE-IN
800.00	0.00	333.61	800.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
1450.00	13.00	333.61	1444.44	65.77	-32.64	-32.64	2.00	0.00	2.00	Hold
4331.43	13.00	333.61	4252.01	646.40	-320.75	-320.75	0.00	0.00	0.00	Drop 2°/100'
4981.43	0.00	333.61	4896.45	712.17	-353.39	-353.39	-2.00	0.00	2.00	Hold
6579.02	0.00	90.22	6494.04	712.18	-353.39	-353.39	0.00	52.62	0.00	Build 12°/100'
7332.77	90.45	90.22	6971.49	710.31	127.82	127.82	12.00	0.00	12.00	Hold
17032.10	90.45	90.23	6895.15	672.21	9826.78	9826.78	0.00	0.00	0.00	TD: 6895.15

Target Description	TVD	+N/S-	+E/W-	Latitude	Longitude	Northing	Easting
Grinde-01-64-05-1609B LP	6971.55	710.34	120.32	40.08510	104.58276	1275174.03	3256642.84
Grinde-01-64-05-1609B BHL	6895.16	672.22	9826.73	40.08499	104.54807	1275236.26	3266349.14

Magnetics	
Mag North, °	8.15
True North, °	0.00
Grid North, °	0.59
Mag Dip, °	67.05
Mag Str, nT	52552.70



Survey Report: Grinde-01-64-05-1609B

Operator	Bill Barrett Corporation	Northing	1274462.479	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256529.880	System	2 - St. Plane
Well Name	Grinde-01-64-05-1609B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.083150	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583190	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592382

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
0	0	0	0	0	0	0	0	0	0
0: TIE-IN									
100	0	360	100	0	0	0	0	0	0
200	0	360	200	0	0	0	0	0	0
300	0	360	300	0	0	0	0	0	0
400	0	360	400	0	0	0	0	0	0
500	0	360	500	0	0	0	0	0	0
600	0	360	600	0	0	0	0	0	0
700	0	360	700	0	0	0	0	0	0
800	0	360	800	0	0	0	0	0	0
800	0	333.61	800	0	0	0	0	0	0
800: Build 2°/100'									
900	2	333.61	899.98	1.56	-0.78	-0.78	2	0	2
1000	4	333.61	999.84	6.25	-3.1	-3.1	2	0	2
1100	6	333.61	1099.45	14.06	-6.98	-6.98	2	0	2
1200	8	333.61	1198.7	24.98	-12.39	-12.39	2	0	2
1300	10	333.61	1297.47	38.99	-19.35	-19.35	2	0	2
1400	12	333.61	1395.62	56.08	-27.83	-27.83	2	0	2
1450	13	333.61	1444.44	65.77	-32.64	-32.64	2	0	2
1450: Hold									
1500	13	333.61	1493.16	75.85	-37.64	-37.64	0	0	0
1600	13	333.61	1590.59	96	-47.64	-47.64	0	0	0
1700	13	333.61	1688.03	116.15	-57.63	-57.63	0	0	0
1800	13	333.61	1785.47	136.3	-67.63	-67.63	0	0	0
1900	13	333.61	1882.9	156.45	-77.63	-77.63	0	0	0
2000	13	333.61	1980.34	176.6	-87.63	-87.63	0	0	0
2100	13	333.61	2077.78	196.75	-97.63	-97.63	0	0	0
2200	13	333.61	2175.21	216.9	-107.63	-107.63	0	0	0
2300	13	333.61	2272.65	237.05	-117.63	-117.63	0	0	0
2400	13	333.61	2370.09	257.21	-127.63	-127.63	0	0	0
2500	13	333.61	2467.53	277.36	-137.63	-137.63	0	0	0
2600	13	333.61	2564.96	297.51	-147.63	-147.63	0	0	0
2700	13	333.61	2662.4	317.66	-157.63	-157.63	0	0	0
2800	13	333.61	2759.84	337.81	-167.62	-167.62	0	0	0
2900	13	333.61	2857.27	357.96	-177.62	-177.62	0	0	0
3000	13	333.61	2954.71	378.11	-187.62	-187.62	0	0	0
3100	13	333.61	3052.15	398.26	-197.62	-197.62	0	0	0
3200	13	333.61	3149.58	418.41	-207.62	-207.62	0	0	0
3300	13	333.61	3247.02	438.56	-217.62	-217.62	0	0	0
3400	13	333.61	3344.46	458.71	-227.62	-227.62	0	0	0
3500	13	333.61	3441.9	478.86	-237.62	-237.62	0	0	0
3600	13	333.61	3539.33	499.01	-247.62	-247.62	0	0	0
3700	13	333.61	3636.77	519.17	-257.62	-257.62	0	0	0
3800	13	333.61	3734.21	539.32	-267.62	-267.62	0	0	0



Survey Report: Grinde-01-64-05-1609B

Operator	Bill Barrett Corporation	Northing	1274462.479	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256529.880	System	2 - St. Plane
Well Name	Grinde-01-64-05-1609B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.083150	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583190	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592382

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
3900	13	333.61	3831.64	559.47	-277.61	-277.61	0	0	0
4000	13	333.61	3929.08	579.62	-287.61	-287.61	0	0	0
4100	13	333.61	4026.52	599.77	-297.61	-297.61	0	0	0
4200	13	333.61	4123.95	619.92	-307.61	-307.61	0	0	0
4300	13	333.61	4221.39	640.07	-317.61	-317.61	0	0	0
4331.43	13	333.61	4252.01	646.4	-320.75	-320.75	0	0	0
4331.43: Drop 2°/100'									
4400	11.63	333.61	4319.01	659.5	-327.25	-327.25	-2	0	2
4500	9.63	333.61	4417.29	676.02	-335.45	-335.45	-2	0	2
4600	7.63	333.61	4516.15	689.46	-342.12	-342.12	-2	0	2
4700	5.63	333.61	4615.48	699.8	-347.25	-347.25	-2	0	2
4800	3.63	333.61	4715.14	707.03	-350.84	-350.84	-2	0	2
4900	1.63	333.61	4815.03	711.14	-352.88	-352.88	-2	0	2
4981.43	0	333.61	4896.45	712.17	-353.39	-353.39	-2	0	2
4981.43: Hold									
5000	0	333.61	4915.02	712.17	-353.39	-353.39	0	0	0
5100	0	333.61	5015.02	712.17	-353.39	-353.39	0	0	0
5200	0	333.61	5115.02	712.18	-353.39	-353.39	0	0	0
5300	0	333.61	5215.02	712.18	-353.39	-353.39	0	0	0
5400	0	333.61	5315.02	712.18	-353.39	-353.39	0	0	0
5500	0	333.61	5415.02	712.18	-353.39	-353.39	0	0	0
5600	0	333.61	5515.02	712.18	-353.39	-353.39	0	0	0
5700	0	333.61	5615.02	712.18	-353.39	-353.39	0	0	0
5800	0	333.61	5715.02	712.18	-353.39	-353.39	0	0	0
5900	0	333.61	5815.02	712.18	-353.39	-353.39	0	0	0
6000	0	333.61	5915.02	712.18	-353.39	-353.39	0	0	0
6100	0	333.61	6015.02	712.18	-353.39	-353.39	0	0	0
6200	0	333.61	6115.02	712.18	-353.39	-353.39	0	0	0
6300	0	333.61	6215.02	712.18	-353.39	-353.39	0	0	0
6400	0	338.07	6315.02	712.18	-353.39	-353.39	0	4.46	0
6500	0	48.64	6415.02	712.18	-353.39	-353.39	0	70.58	0
6579.02	0	90.22	6494.04	712.18	-353.39	-353.39	0	52.62	0
6579.02: Build 12°/100'									
6600	2.52	90.22	6515.02	712.17	-352.93	-352.93	12	0	12
6700	14.52	90.22	6613.73	712.12	-338.15	-338.15	12	0	12
6800	26.52	90.22	6707.22	711.98	-303.16	-303.16	12	0	12
6900	38.52	90.22	6791.39	711.77	-249.5	-249.5	12	0	12
7000	50.52	90.22	6862.56	711.5	-179.52	-179.52	12	0	12
7100	62.52	90.22	6917.63	711.18	-96.26	-96.26	12	0	12
7200	74.52	90.22	6954.18	710.82	-3.38	-3.38	12	0	12
7300	86.52	90.22	6970.62	710.44	95.07	95.07	12	0	12
7332.77	90.45	90.22	6971.49	710.31	127.82	127.82	12	0	12
7332.77: Hold									
7400	90.45	90.22	6970.96	710.05	195.05	195.05	0	0	0



Survey Report: Grinde-01-64-05-1609B

Operator	Bill Barrett Corporation	Northing	1274462.479	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256529.880	System	2 - St. Plane
Well Name	Grinde-01-64-05-1609B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.083150	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583190	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592382

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
7500	90.45	90.22	6970.18	709.66	295.05	295.05	0	0	0
7600	90.45	90.22	6969.39	709.28	395.04	395.04	0	0	0
7700	90.45	90.22	6968.61	708.89	495.04	495.04	0	0	0
7800	90.45	90.22	6967.82	708.5	595.03	595.03	0	0	0
7900	90.45	90.22	6967.04	708.11	695.03	695.03	0	0	0
8000	90.45	90.22	6966.25	707.73	795.03	795.03	0	0	0
8100	90.45	90.22	6965.46	707.34	895.02	895.02	0	0	0
8200	90.45	90.22	6964.68	706.95	995.02	995.02	0	0	0
8300	90.45	90.22	6963.89	706.56	1095.02	1095.02	0	0	0
8400	90.45	90.22	6963.11	706.17	1195.01	1195.01	0	0	0
8500	90.45	90.22	6962.32	705.78	1295.01	1295.01	0	0	0
8600	90.45	90.22	6961.54	705.39	1395	1395	0	0	0
8700	90.45	90.22	6960.75	705.01	1495	1495	0	0	0
8800	90.45	90.22	6959.96	704.62	1595	1595	0	0	0
8900	90.45	90.22	6959.18	704.23	1694.99	1694.99	0	0	0
9000	90.45	90.22	6958.39	703.84	1794.99	1794.99	0	0	0
9100	90.45	90.22	6957.61	703.45	1894.98	1894.98	0	0	0
9200	90.45	90.22	6956.82	703.06	1994.98	1994.98	0	0	0
9300	90.45	90.22	6956.03	702.67	2094.98	2094.98	0	0	0
9400	90.45	90.22	6955.25	702.28	2194.97	2194.97	0	0	0
9500	90.45	90.22	6954.46	701.89	2294.97	2294.97	0	0	0
9600	90.45	90.22	6953.68	701.5	2394.97	2394.97	0	0	0
9700	90.45	90.22	6952.89	701.11	2494.96	2494.96	0	0	0
9800	90.45	90.22	6952.1	700.72	2594.96	2594.96	0	0	0
9900	90.45	90.22	6951.32	700.33	2694.95	2694.95	0	0	0
10000	90.45	90.22	6950.53	699.94	2794.95	2794.95	0	0	0
10100	90.45	90.22	6949.74	699.55	2894.95	2894.95	0	0	0
10200	90.45	90.22	6948.96	699.16	2994.94	2994.94	0	0	0
10300	90.45	90.22	6948.17	698.77	3094.94	3094.94	0	0	0
10400	90.45	90.22	6947.38	698.38	3194.94	3194.94	0	0	0
10500	90.45	90.22	6946.6	697.99	3294.93	3294.93	0	0	0
10600	90.45	90.22	6945.81	697.6	3394.93	3394.93	0	0	0
10700	90.45	90.22	6945.03	697.21	3494.92	3494.92	0	0	0
10800	90.45	90.22	6944.24	696.81	3594.92	3594.92	0	0	0
10900	90.45	90.22	6943.45	696.42	3694.92	3694.92	0	0	0
11000	90.45	90.22	6942.67	696.03	3794.91	3794.91	0	0	0
11100	90.45	90.22	6941.88	695.64	3894.91	3894.91	0	0	0
11200	90.45	90.22	6941.09	695.25	3994.9	3994.9	0	0	0
11300	90.45	90.22	6940.31	694.86	4094.9	4094.9	0	0	0
11400	90.45	90.22	6939.52	694.46	4194.9	4194.9	0	0	0
11500	90.45	90.22	6938.73	694.07	4294.89	4294.89	0	0	0
11600	90.45	90.22	6937.94	693.68	4394.89	4394.89	0	0	0
11700	90.45	90.22	6937.16	693.29	4494.88	4494.88	0	0	0
11800	90.45	90.22	6936.37	692.9	4594.88	4594.88	0	0	0



Survey Report: Grinde-01-64-05-1609B

Operator	Bill Barrett Corporation	Northing	1274462.479	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256529.880	System	2 - St. Plane
Well Name	Grinde-01-64-05-1609B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.083150	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583190	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592382

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
11900	90.45	90.22	6935.58	692.5	4694.88	4694.88	0	0	0
12000	90.45	90.22	6934.8	692.11	4794.87	4794.87	0	0	0
12100	90.45	90.22	6934.01	691.72	4894.87	4894.87	0	0	0
12200	90.45	90.23	6933.22	691.33	4994.87	4994.87	0	0	0
12300	90.45	90.23	6932.44	690.93	5094.86	5094.86	0	0	0
12400	90.45	90.23	6931.65	690.54	5194.86	5194.86	0	0	0
12500	90.45	90.23	6930.86	690.15	5294.85	5294.85	0	0	0
12600	90.45	90.23	6930.07	689.75	5394.85	5394.85	0	0	0
12700	90.45	90.23	6929.29	689.36	5494.85	5494.85	0	0	0
12800	90.45	90.23	6928.5	688.97	5594.84	5594.84	0	0	0
12900	90.45	90.23	6927.71	688.57	5694.84	5694.84	0	0	0
13000	90.45	90.23	6926.93	688.18	5794.83	5794.83	0	0	0
13100	90.45	90.23	6926.14	687.79	5894.83	5894.83	0	0	0
13200	90.45	90.23	6925.35	687.39	5994.83	5994.83	0	0	0
13300	90.45	90.23	6924.56	687	6094.82	6094.82	0	0	0
13400	90.45	90.23	6923.78	686.6	6194.82	6194.82	0	0	0
13500	90.45	90.23	6922.99	686.21	6294.82	6294.82	0	0	0
13600	90.45	90.23	6922.2	685.82	6394.81	6394.81	0	0	0
13700	90.45	90.23	6921.41	685.42	6494.81	6494.81	0	0	0
13800	90.45	90.23	6920.63	685.03	6594.8	6594.8	0	0	0
13900	90.45	90.23	6919.84	684.63	6694.8	6694.8	0	0	0
14000	90.45	90.23	6919.05	684.24	6794.8	6794.8	0	0	0
14100	90.45	90.23	6918.26	683.84	6894.79	6894.79	0	0	0
14200	90.45	90.23	6917.47	683.45	6994.79	6994.79	0	0	0
14300	90.45	90.23	6916.69	683.05	7094.78	7094.78	0	0	0
14400	90.45	90.23	6915.9	682.66	7194.78	7194.78	0	0	0
14500	90.45	90.23	6915.11	682.26	7294.78	7294.78	0	0	0
14600	90.45	90.23	6914.32	681.87	7394.77	7394.77	0	0	0
14700	90.45	90.23	6913.54	681.47	7494.77	7494.77	0	0	0
14800	90.45	90.23	6912.75	681.07	7594.77	7594.77	0	0	0
14900	90.45	90.23	6911.96	680.68	7694.76	7694.76	0	0	0
15000	90.45	90.23	6911.17	680.28	7794.76	7794.76	0	0	0
15100	90.45	90.23	6910.38	679.89	7894.75	7894.75	0	0	0
15200	90.45	90.23	6909.6	679.49	7994.75	7994.75	0	0	0
15300	90.45	90.23	6908.81	679.09	8094.75	8094.75	0	0	0
15400	90.45	90.23	6908.02	678.7	8194.74	8194.74	0	0	0
15500	90.45	90.23	6907.23	678.3	8294.74	8294.74	0	0	0
15600	90.45	90.23	6906.44	677.91	8394.73	8394.73	0	0	0
15700	90.45	90.23	6905.65	677.51	8494.73	8494.73	0	0	0
15800	90.45	90.23	6904.87	677.11	8594.73	8594.73	0	0	0
15900	90.45	90.23	6904.08	676.72	8694.72	8694.72	0	0	0
16000	90.45	90.23	6903.29	676.32	8794.72	8794.72	0	0	0
16100	90.45	90.23	6902.5	675.92	8894.71	8894.71	0	0	0
16200	90.45	90.23	6901.71	675.52	8994.71	8994.71	0	0	0



Survey Report: Grinde-01-64-05-1609B

Operator	Bill Barrett Corporation	Northing	1274462.479	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256529.880	System	2 - St. Plane
Well Name	Grinde-01-64-05-1609B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.083150	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583190	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592382

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
16300	90.45	90.23	6900.92	675.13	9094.71	9094.71	0	0	0
16400	90.45	90.23	6900.14	674.73	9194.7	9194.7	0	0	0
16500	90.45	90.23	6899.35	674.33	9294.7	9294.7	0	0	0
16600	90.45	90.23	6898.56	673.93	9394.7	9394.7	0	0	0
16700	90.45	90.23	6897.77	673.54	9494.69	9494.69	0	0	0
16800	90.45	90.23	6896.98	673.14	9594.69	9594.69	0	0	0
16900	90.45	90.23	6896.19	672.74	9694.68	9694.68	0	0	0
17000	90.45	90.23	6895.4	672.34	9794.68	9794.68	0	0	0
17032.1	90.45	90.23	6895.15	672.21	9826.78	9826.78	0	0	0

17032.1: TD: 6895.15