



Directional Survey Report

Company: Catena Resources
 Well: Cable 19 35 09 #1H
 County: Lea County
 State: NM
 Field: Scharb; Wolfcamp
 API: 30-025-46140
 Rig: Ensign T225
 Service Co: Gordon Technologies, LLC
 Job #: GT190678
 Survey Calc: Minimum Curvature

Well Surface Location
 Latitude: 32.4058144
 Longitude: -103.281430
 Reference: NAD 1927
 Y (Northing): 613208.20
 X (Easting): 766534.10
 Field Engr: Devin Lukowski
 Kerry Miller

Report Date: Aug 08 2019
 Time: 15:08
 Mag Reference: Grid North
 Mag Correction: 6.25
 Vert Sect. Azi: 179.68
 Perm Datum: Mean Sea Level
 Depth Ref: Rotary Table
 RKB Height: 25
 GL Elev: 3871

Survey Tie In	MD	Inc	Azimuth	TVD	VS	Rectangular Offsets		Course Length	DLS	Temp	Closure		Source
						NS	EW				Distance	Azimuth	
1	148.00	0.35	111.96	148.00	0.17	-0.17	0.42	148.00	0.24	77.71	0.45	111.96	MWD Run 1
2	331.00	0.40	80.01	331.00	0.28	-0.27	1.57	183.00	0.12	84.86	1.59	99.68	MWD Run 1
3	513.00	0.28	103.48	512.99	0.28	-0.26	2.62	182.00	0.10	92.00	2.64	95.67	MWD Run 1
4	691.00	0.42	111.58	690.99	0.62	-0.60	3.65	178.00	0.08	92.00	3.70	99.35	MWD Run 1
5	879.00	0.17	175.73	878.99	1.16	-1.13	4.32	188.00	0.20	99.14	4.46	104.72	MWD Run 1
6	1062.00	0.14	330.98	1061.99	1.23	-1.21	4.23	183.00	0.17	99.14	4.40	105.96	MWD Run 1
7	1245.00	0.32	253.97	1244.99	1.17	-1.15	3.63	183.00	0.17	106.29	3.81	107.65	MWD Run 1
8	1425.00	0.28	188.28	1424.98	1.75	-1.73	3.08	180.00	0.18	99.14	3.53	119.29	MWD Run 1
9	1603.00	0.52	233.21	1602.98	2.66	-2.64	2.37	178.00	0.21	106.29	3.55	138.09	MWD Run 1
10	1781.00	0.54	227.19	1780.97	3.70	-3.70	1.11	178.00	0.03	106.29	3.86	163.29	MWD Run 1
11	1825.00	0.56	256.54	1824.97	3.89	-3.89	0.75	44.00	0.63	113.43	3.96	169.10	MWD Run 1
12	1968.00	0.16	257.18	1967.97	4.09	-4.09	-0.13	143.00	0.28	99.14	4.10	181.76	MWD Run 2
13	2147.00	0.11	231.56	2146.97	4.25	-4.26	-0.50	179.00	0.04	106.29	4.29	186.75	MWD Run 2
14	2325.00	0.06	260.76	2324.97	4.37	-4.38	-0.73	178.00	0.04	113.43	4.44	189.46	MWD Run 2
15	2504.00	0.16	49.37	2503.97	4.23	-4.23	-0.63	179.00	0.12	113.43	4.28	188.50	MWD Run 2
16	2682.00	0.20	53.36	2681.96	3.88	-3.88	-0.19	178.00	0.02	120.57	3.89	182.87	MWD Run 2
17	2860.00	0.65	75.26	2859.96	3.45	-3.44	1.03	178.00	0.26	120.57	3.59	163.32	MWD Run 2
18	3039.00	0.81	80.58	3038.94	2.99	-2.98	3.26	179.00	0.10	120.57	4.41	132.37	MWD Run 2
19	3218.00	1.03	75.53	3217.92	2.40	-2.37	6.07	179.00	0.13	120.57	6.51	111.30	MWD Run 2
20	3396.00	1.03	69.85	3395.89	1.47	-1.42	9.12	178.00	0.06	127.71	9.23	98.82	MWD Run 2
21	3575.00	0.90	57.87	3574.87	0.18	-0.11	11.82	179.00	0.13	127.71	11.82	90.55	MWD Run 2
22	3753.00	0.77	53.31	3752.85	-1.27	1.34	13.96	178.00	0.08	127.71	14.03	84.50	MWD Run 2
23	3908.00	0.75	47.69	3907.84	-2.56	2.65	15.55	155.00	0.05	127.71	15.77	80.33	MWD Run 2
24	4092.00	0.63	40.72	4091.82	-4.13	4.23	17.10	184.00	0.08	120.57	17.61	76.11	MWD Run 3
25	4271.00	0.68	40.65	4270.81	-5.68	5.78	18.43	179.00	0.03	127.71	19.32	72.59	MWD Run 3
26	4449.00	0.72	21.46	4448.80	-7.51	7.62	19.53	178.00	0.13	127.71	20.96	68.68	MWD Run 3
27	4627.00	2.03	350.29	4626.74	-11.66	11.77	19.41	178.00	0.82	127.71	22.70	58.76	MWD Run 3
28	4805.00	4.81	333.63	4804.41	-21.48	21.57	15.56	178.00	1.64	134.86	26.59	35.81	MWD Run 3
29	4984.00	4.96	333.19	4982.76	-35.15	35.20	8.74	179.00	0.09	134.86	36.26	13.94	MWD Run 3
30	5161.00	4.50	333.69	5159.16	-48.24	48.25	2.21	177.00	0.26	134.86	48.30	2.62	MWD Run 3
31	5339.00	4.23	334.57	5336.64	-60.46	60.44	-3.71	178.00	0.16	142.00	60.55	356.49	MWD Run 3
32	5518.00	4.00	335.08	5515.18	-72.11	72.06	-9.17	179.00	0.13	142.00	72.64	352.75	MWD Run 3
33	5696.00	3.91	335.22	5692.76	-83.28	83.20	-14.33	178.00	0.05	142.00	84.43	350.23	MWD Run 3
34	5873.00	3.97	335.54	5869.34	-94.37	94.26	-19.40	177.00	0.04	142.00	96.23	348.37	MWD Run 3
35	6052.00	4.20	337.21	6047.88	-106.08	105.94	-24.50	179.00	0.14	149.14	108.74	346.98	MWD Run 3
36	6230.00	4.03	337.98	6225.43	-117.91	117.75	-29.37	178.00	0.10	142.00	121.36	345.99	MWD Run 3
37	6408.00	3.91	337.78	6403.00	-129.35	129.17	-34.01	178.00	0.07	149.14	133.57	345.25	MWD Run 3
38	6586.00	3.72	343.01	6580.60	-140.52	140.31	-38.00	178.00	0.22	149.14	145.36	344.85	MWD Run 3
39	6764.00	3.76	343.90	6758.23	-151.67	151.44	-41.30	178.00	0.04	149.14	156.97	344.74	MWD Run 3
40	6943.00	1.31	347.48	6937.04	-159.31	159.07	-43.37	179.00	1.37	149.14	164.88	344.75	MWD Run 3
41	7121.00	1.01	342.43	7115.00	-162.80	162.56	-44.29	178.00	0.18	149.14	168.48	344.76	MWD Run 3
42	7299.00	0.68	336.05	7292.98	-165.27	165.02	-45.19	178.00	0.19	156.29	171.09	344.69	MWD Run 3
43	7477.00	0.68	301.81	7470.97	-166.80	166.54	-46.52	178.00	0.22	142.00	172.91	344.39	MWD Run 3

44	7655.00	0.62	261.65	7648.96	-167.22	166.96	-48.37	178.00	0.25	156.29	173.82	343.84	MWD Run 3
45	7833.00	1.03	281.23	7826.94	-167.41	167.13	-50.89	178.00	0.28	156.29	174.70	343.06	MWD Run 3
46	8011.00	2.46	296.85	8004.85	-169.47	169.16	-55.87	178.00	0.84	163.43	178.15	341.72	MWD Run 3
47	8190.00	3.45	305.10	8183.61	-174.35	174.00	-63.70	179.00	0.60	163.43	185.29	339.89	MWD Run 3
48	8368.00	2.70	299.89	8361.36	-179.56	179.17	-71.72	178.00	0.45	163.43	192.99	338.18	MWD Run 3
49	8546.00	1.41	189.05	8539.29	-179.51	179.09	-75.70	178.00	1.94	134.86	194.43	337.09	MWD Run 4
50	8724.00	1.75	162.56	8717.22	-174.75	174.34	-75.23	178.00	0.45	142.00	189.88	336.66	MWD Run 4
51	8902.00	1.62	149.83	8895.14	-169.97	169.57	-73.15	178.00	0.22	156.29	184.67	336.67	MWD Run 4
52	8991.00	1.32	141.93	8984.11	-168.07	167.67	-71.88	89.00	0.41	156.29	182.43	336.79	MWD Run 4
53	9081.00	1.07	151.35	9074.09	-166.51	166.12	-70.84	90.00	0.35	163.43	180.60	336.90	MWD Run 4
54	9170.00	0.61	127.82	9163.08	-165.49	165.10	-70.07	89.00	0.64	163.43	179.35	337.00	MWD Run 4
55	9259.00	0.91	120.00	9252.08	-164.84	164.46	-69.08	89.00	0.36	163.43	178.38	337.21	MWD Run 4
56	9348.00	0.75	108.33	9341.07	-164.30	163.92	-67.92	89.00	0.26	163.43	177.43	337.49	MWD Run 4
57	9437.00	0.09	132.84	9430.06	-164.06	163.69	-67.31	89.00	0.75	170.57	176.99	337.65	MWD Run 4
58	9527.00	0.51	125.73	9520.06	-163.78	163.41	-66.94	90.00	0.47	170.57	176.59	337.72	MWD Run 4
59	9616.00	0.03	280.48	9609.06	-163.55	163.18	-66.64	89.00	0.60	170.57	176.26	337.79	MWD Run 4
60	9705.00	0.35	336.78	9698.06	-163.80	163.43	-66.77	89.00	0.38	170.57	176.55	337.78	MWD Run 4
61	9794.00	0.25	98.18	9787.06	-164.03	163.66	-66.68	89.00	0.59	170.57	176.72	337.83	MWD Run 4
62	9883.00	1.00	132.03	9876.06	-163.47	163.11	-65.91	89.00	0.90	170.57	175.92	338.00	MWD Run 4
63	9972.00	1.39	132.15	9965.04	-162.22	161.86	-64.54	89.00	0.44	170.57	174.26	338.26	MWD Run 4
64	10062.00	1.63	126.59	10055.00	-160.72	160.37	-62.70	90.00	0.31	170.57	172.19	338.65	MWD Run 4
65	10129.00	1.76	126.32	10121.97	-159.53	159.19	-61.11	67.00	0.19	170.57	170.52	339.00	MWD Run 4
66	10226.00	4.49	156.96	10218.83	-155.14	154.81	-58.42	97.00	3.20	142.00	165.47	339.33	MWD Run 5
67	10315.00	14.49	170.32	10306.51	-140.90	140.60	-55.18	89.00	11.43	142.00	151.03	338.57	MWD Run 5
68	10404.00	21.62	176.14	10391.08	-113.51	113.22	-52.20	89.00	8.25	142.00	124.67	335.25	MWD Run 5
69	10493.00	24.05	178.06	10473.09	-79.01	78.73	-50.48	89.00	2.86	149.14	93.53	327.34	MWD Run 5
70	10582.00	33.67	184.53	10550.97	-36.19	35.90	-51.82	89.00	11.35	142.00	63.04	304.72	MWD Run 6
71	10671.00	40.99	185.45	10621.69	17.50	-17.82	-56.54	89.00	8.25	142.00	59.28	252.51	MWD Run 6
72	10761.00	50.89	186.87	10684.20	81.68	-82.03	-63.54	90.00	11.06	142.00	103.76	217.76	MWD Run 6
73	10850.00	62.60	188.96	10732.92	155.19	-155.60	-73.86	89.00	13.30	142.00	172.24	205.39	MWD Run 6
74	10939.00	69.97	188.53	10768.69	235.60	-236.08	-86.23	89.00	8.29	142.00	251.34	200.07	MWD Run 6
75	11028.00	74.75	180.68	10795.69	320.00	-320.53	-92.96	89.00	9.97	142.00	333.74	196.17	MWD Run 6
76	11117.00	87.06	179.57	10809.74	407.71	-408.24	-93.13	89.00	13.89	142.00	418.73	192.85	MWD Run 6
77	11206.00	90.39	180.35	10811.72	496.68	-497.20	-93.07	89.00	3.84	149.14	505.84	190.60	MWD Run 6
78	11221.00	90.48	180.53	10811.60	511.67	-512.20	-93.19	15.00	1.34	146.71	520.61	190.31	MWD Run 7
79	11313.00	88.49	178.41	10812.43	603.66	-604.19	-92.34	92.00	3.16	150.24	611.20	188.69	MWD Run 7
80	11404.00	86.97	178.16	10816.03	694.56	-695.07	-89.61	91.00	1.69	152.00	700.82	187.35	MWD Run 7
81	11496.00	87.68	178.61	10820.33	786.43	-786.93	-87.02	92.00	0.91	153.76	791.73	186.31	MWD Run 7
82	11588.00	88.63	178.56	10823.29	878.37	-878.86	-84.75	92.00	1.03	155.53	882.93	185.51	MWD Run 7
83	11680.00	89.80	178.68	10824.55	970.34	-970.82	-82.54	92.00	1.28	157.29	974.32	184.86	MWD Run 7
84	11769.00	89.05	177.94	10825.44	1059.31	-1059.77	-79.91	89.00	1.18	157.29	1062.78	184.31	MWD Run 7
85	11858.00	87.48	177.52	10828.14	1148.22	-1148.66	-76.39	89.00	1.83	157.29	1151.20	183.80	MWD Run 7
86	11948.00	87.50	177.22	10832.08	1238.06	-1238.48	-72.27	90.00	0.33	159.06	1240.59	183.34	MWD Run 7
87	12037.00	88.04	177.04	10835.54	1326.90	-1327.30	-67.81	89.00	0.64	160.82	1329.03	182.92	MWD Run 7
88	12126.00	88.88	177.67	10837.93	1415.79	-1416.17	-63.71	89.00	1.18	160.82	1417.60	182.58	MWD Run 7
89	12215.00	87.22	177.89	10840.96	1504.69	-1505.05	-60.26	89.00	1.88	162.59	1506.26	182.29	MWD Run 7
90	12304.00	87.06	177.57	10845.40	1593.53	-1593.87	-56.74	89.00	0.40	162.59	1594.88	182.04	MWD Run 7
91	12394.00	87.45	178.61	10849.71	1683.39	-1683.72	-53.74	90.00	1.23	153.76	1684.57	181.83	MWD Run 7
92	12483.00	88.15	178.55	10853.13	1772.31	-1772.62	-51.54	89.00	0.79	159.06	1773.37	181.67	MWD Run 7
93	12572.00	88.93	178.99	10855.40	1861.27	-1861.57	-49.63	89.00	1.01	160.82	1862.23	181.53	MWD Run 7
94	12661.00	87.59	178.96	10858.10	1950.22	-1950.51	-48.04	89.00	1.51	162.59	1951.11	181.41	MWD Run 7
95	12750.00	87.82	179.01	10861.66	2039.14	-2039.43	-46.46	89.00	0.26	164.35	2039.96	181.31	MWD Run 7
96	12840.00	88.77	178.62	10864.34	2129.09	-2129.37	-44.60	90.00	1.14	164.35	2129.84	181.20	MWD Run 7
97	12929.00	88.79	178.70	10866.24	2218.05	-2218.32	-42.52	89.00	0.09	166.12	2218.73	181.10	MWD Run 7
98	13018.00	89.05	178.79	10867.91	2307.02	-2307.29	-40.57	89.00	0.31	166.12	2307.64	181.01	MWD Run 7
99	13107.00	90.17	179.16	10868.52	2396.01	-2396.27	-38.98	89.00	1.33	167.88	2396.59	180.93	MWD Run 7
100	13196.00	88.09	179.64	10869.87	2485.00	-2485.25	-38.05	89.00	2.40	166.12	2485.54	180.88	MWD Run 7
101	13286.00	88.57	179.79	10872.49	2574.96	-2575.21	-37.60	90.00	0.56	167.88	2575.48	180.84	MWD Run 7
102	13375.00	88.85	179.90	10874.50	2663.94	-2664.19	-37.36	89.00	0.34	169.65	2664.45	180.80	MWD Run 7
103	13464.00	87.33	178.46	10877.46	2752.88	-2753.12	-36.09	89.00	2.35	169.65	2753.36	180.75	MWD Run 7
104	13553.00	87.50	178.36	10881.48	2841.77	-2842.00	-33.62	89.00	0.22	169.65	2842.20	180.68	MWD Run 7
105	13642.00	88.15	178.62	10884.86	2930.68	-2930.90	-31.28	89.00	0.79	171.41	2931.07	180.61	MWD Run 7
106	13731.00	88.77	179.07	10887.25	3019.64	-3019.85	-29.49	89.00	0.86	171.41	3020.00	180.56	MWD Run 7

107	13820.00	87.53	179.63	10890.12	3108.59	-3108.80	-28.48	89.00	1.53	171.41	3108.93	180.52	MWD Run 7
108	13909.00	87.70	179.79	10893.82	3197.51	-3197.72	-28.03	89.00	0.26	171.41	3197.84	180.50	MWD Run 7
109	13998.00	88.71	179.46	10896.61	3286.47	-3286.67	-27.44	89.00	1.19	173.18	3286.79	180.48	MWD Run 7
110	14088.00	87.31	179.32	10899.74	3376.41	-3376.61	-26.49	90.00	1.56	171.41	3376.71	180.45	MWD Run 7
111	14177.00	87.03	179.20	10904.13	3465.30	-3465.49	-25.34	89.00	0.34	169.65	3465.59	180.42	MWD Run 7
112	14266.00	87.59	179.67	10908.31	3554.20	-3554.39	-24.46	89.00	0.82	171.41	3554.48	180.39	MWD Run 7
113	14355.00	88.49	179.46	10911.35	3643.15	-3643.34	-23.79	89.00	1.04	173.18	3643.41	180.37	MWD Run 7
114	14444.00	90.08	179.64	10912.46	3732.14	-3732.32	-23.09	89.00	1.80	173.18	3732.39	180.35	MWD Run 7
115	14533.00	88.38	179.69	10913.66	3821.12	-3821.31	-22.57	89.00	1.91	173.18	3821.38	180.34	MWD Run 7
116	14622.00	89.22	179.72	10915.52	3910.10	-3910.29	-22.11	89.00	0.94	173.18	3910.35	180.32	MWD Run 7
117	14711.00	90.48	179.95	10915.76	3999.10	-3999.29	-21.85	89.00	1.44	176.71	3999.35	180.31	MWD Run 7
118	14801.00	89.30	178.46	10915.93	4089.09	-4089.27	-20.60	90.00	2.11	176.71	4089.33	180.29	MWD Run 7
119	14890.00	87.06	179.02	10918.76	4178.03	-4178.20	-18.65	89.00	2.59	176.71	4178.24	180.26	MWD Run 7
120	14979.00	87.48	179.79	10922.99	4266.93	-4267.09	-17.72	89.00	0.98	178.47	4267.13	180.24	MWD Run 7
121	15063.00	87.58	179.93	10926.61	4350.85	-4351.02	-17.52	84.00	0.20	157.29	4351.05	180.23	MWD Run 8
122	15152.00	87.87	179.96	10930.15	4439.78	-4439.95	-17.43	89.00	0.33	162.59	4439.98	180.22	MWD Run 8
123	15241.00	88.37	180.26	10933.07	4528.73	-4528.90	-17.61	89.00	0.66	164.35	4528.93	180.22	MWD Run 8
124	15331.00	88.35	181.38	10935.64	4618.67	-4618.85	-18.89	90.00	1.24	166.12	4618.89	180.23	MWD Run 8
125	15420.00	88.49	181.55	10938.10	4707.60	-4707.79	-21.17	89.00	0.25	169.65	4707.83	180.26	MWD Run 8
126	15509.00	88.96	181.97	10940.08	4796.51	-4796.72	-23.90	89.00	0.71	169.65	4796.78	180.29	MWD Run 8
127	15598.00	89.50	179.01	10941.27	4885.49	-4885.70	-24.66	89.00	3.38	171.41	4885.76	180.29	MWD Run 8
128	15687.00	87.00	176.78	10943.99	4974.39	-4974.59	-21.40	89.00	3.76	171.41	4974.63	180.25	MWD Run 8
129	15776.00	86.19	177.10	10949.28	5063.13	-5063.30	-16.65	89.00	0.98	173.18	5063.33	180.19	MWD Run 8
130	15865.00	86.49	177.53	10954.96	5151.87	-5152.02	-12.49	89.00	0.59	174.94	5152.04	180.14	MWD Run 8
131	15954.00	87.81	177.70	10959.38	5240.70	-5240.83	-8.79	89.00	1.50	176.71	5240.84	180.10	MWD Run 8
132	16043.00	89.02	178.16	10961.85	5329.63	-5329.74	-5.58	89.00	1.45	178.47	5329.74	180.06	MWD Run 8
133	16133.00	89.75	178.05	10962.81	5419.59	-5419.68	-2.60	90.00	0.82	180.24	5419.69	180.03	MWD Run 8
134	16222.00	89.78	177.79	10963.18	5508.54	-5508.63	0.63	89.00	0.29	178.47	5508.63	179.99	MWD Run 8
135	16311.00	85.65	177.55	10966.72	5597.40	-5597.46	4.24	89.00	4.65	178.47	5597.46	179.96	MWD Run 8
136	16400.00	86.97	178.22	10972.45	5686.17	-5686.21	7.52	89.00	1.66	180.24	5686.22	179.92	MWD Run 8
137	16490.00	87.84	178.44	10976.53	5776.05	-5776.08	10.14	90.00	1.00	182.00	5776.09	179.90	MWD Run 8
138	16579.00	87.70	177.99	10979.99	5864.95	-5864.97	12.91	89.00	0.53	182.00	5864.99	179.87	MWD Run 8
139	16668.00	87.34	177.74	10983.84	5953.82	-5953.83	16.22	89.00	0.49	183.76	5953.85	179.84	MWD Run 8
140	16757.00	87.28	177.19	10988.02	6042.66	-6042.64	20.15	89.00	0.62	183.76	6042.67	179.81	MWD Run 8
141	16846.00	88.51	177.95	10991.29	6131.54	-6131.50	23.92	89.00	1.62	183.76	6131.55	179.78	MWD Run 8
142	16936.00	87.28	179.25	10994.59	6221.46	-6221.41	26.12	90.00	1.99	183.76	6221.46	179.76	MWD Run 8
143	17025.00	87.14	179.87	10998.93	6310.35	-6310.30	26.80	89.00	0.71	185.53	6310.36	179.76	MWD Run 8
144	17114.00	89.58	180.15	11001.47	6399.31	-6399.26	26.79	89.00	2.76	182.00	6399.31	179.76	MWD Run 8
145	17203.00	87.11	179.36	11004.04	6488.26	-6488.21	27.17	89.00	2.91	183.76	6488.27	179.76	MWD Run 8
146	17292.00	86.80	178.81	11008.77	6577.13	-6577.07	28.59	89.00	0.71	185.53	6577.13	179.75	MWD Run 8
147	17382.00	86.81	178.90	11013.79	6666.98	-6666.91	30.38	90.00	0.10	187.29	6666.98	179.74	MWD Run 8
148	17471.00	87.56	179.11	11018.16	6755.87	-6755.79	31.93	89.00	0.88	187.29	6755.87	179.73	MWD Run 8
149	17560.00	89.66	179.64	11020.32	6844.83	-6844.76	32.90	89.00	2.43	187.29	6844.84	179.72	MWD Run 8
150	17649.00	88.94	179.93	11021.40	6933.83	-6933.75	33.23	89.00	0.87	187.29	6933.83	179.73	MWD Run 8
151	17738.00	89.19	179.89	11022.86	7022.81	-7022.74	33.37	89.00	0.28	189.06	7022.82	179.73	MWD Run 8
152	17828.00	88.51	179.17	11024.66	7112.79	-7112.71	34.11	90.00	1.10	187.29	7112.80	179.73	MWD Run 8
153	17917.00	88.07	179.67	11027.32	7201.75	-7201.67	35.01	89.00	0.75	189.06	7201.75	179.72	MWD Run 8
154	18006.00	88.57	179.73	11029.93	7290.71	-7290.63	35.48	89.00	0.57	189.06	7290.72	179.72	MWD Run 8
155	18095.00	88.37	178.12	11032.30	7379.67	-7379.58	37.14	89.00	1.82	190.82	7379.67	179.71	MWD Run 8
156	18184.00	89.94	178.37	11033.62	7468.63	-7468.53	39.87	89.00	1.79	190.82	7468.63	179.69	MWD Run 8
157	18273.00	88.49	178.27	11034.84	7557.60	-7557.48	42.48	89.00	1.63	189.06	7557.60	179.68	MWD Run 8
158	18362.00	88.07	177.15	11037.51	7646.50	-7646.36	46.03	89.00	1.34	190.82	7646.50	179.66	MWD Run 8
159	18451.00	88.46	178.31	11040.20	7735.41	-7735.25	49.56	89.00	1.37	189.06	7735.41	179.63	MWD Run 8
160	18541.00	87.67	180.90	11043.24	7825.35	-7825.19	50.18	90.00	3.01	189.06	7825.35	179.63	MWD Run 8
161	18630.00	87.20	181.37	11047.22	7914.23	-7914.08	48.42	89.00	0.75	189.06	7914.23	179.65	MWD Run 8
162	18719.00	86.44	181.46	11052.16	8003.05	-8002.92	46.22	89.00	0.86	192.59	8003.05	179.67	MWD Run 8
163	18808.00	86.86	180.94	11057.36	8091.87	-8091.75	44.36	89.00	0.75	194.35	8091.87	179.69	MWD Run 8
164	18898.00	88.63	181.54	11060.90	8181.76	-8181.65	42.41	90.00	2.08	194.35	8181.76	179.70	MWD Run 8
165	18987.00	90.22	181.52	11061.80	8270.71	-8270.61	40.04	89.00	1.79	196.12	8270.71	179.72	MWD Run 8
166	19076.00	91.20	179.03	11060.69	8359.69	-8359.60	39.61	89.00	3.01	194.35	8359.69	179.73	MWD Run 8
167	19166.00	88.68	178.12	11060.79	8449.66	-8449.56	41.85	90.00	2.98	176.71	8449.66	179.72	MWD Run 9
168	19255.00	89.30	177.19	11062.36	8538.59	-8538.47	45.49	89.00	1.26	180.24	8538.59	179.69	MWD Run 9
169	19344.00	90.84	176.99	11062.25	8627.50	-8627.35	50.01	89.00	1.74	180.24	8627.50	179.67	MWD Run 9

170	19434.00	89.61	178.10	11061.89	8717.43	-8717.27	53.86	90.00	1.84	182.00	8717.43	179.65	MWD Run 9
171	19523.00	87.12	179.49	11064.43	8806.37	-8806.20	55.73	89.00	3.20	182.00	8806.38	179.64	MWD Run 9
172	19612.00	86.74	179.37	11069.20	8895.25	-8895.07	56.62	89.00	0.45	183.76	8895.25	179.64	MWD Run 9
173	19701.00	87.48	178.69	11073.69	8984.13	-8983.94	58.12	89.00	1.13	185.53	8984.13	179.63	MWD Run 9
174	19790.00	90.45	179.30	11075.29	9073.09	-9072.90	59.68	89.00	3.41	187.29	9073.10	179.62	MWD Run 9
175	19879.00	89.69	180.03	11075.19	9162.09	-9161.90	60.20	89.00	1.18	187.29	9162.10	179.62	MWD Run 9
176	19968.00	88.82	179.78	11076.34	9251.08	-9250.89	60.35	89.00	1.02	187.29	9251.09	179.63	MWD Run 9
177	20057.00	88.91	179.88	11078.11	9340.07	-9339.87	60.62	89.00	0.15	189.06	9340.07	179.63	MWD Run 9
178	20146.00	89.97	179.43	11078.98	9429.06	-9428.87	61.15	89.00	1.29	190.82	9429.06	179.63	MWD Run 9
179	20235.00	88.40	180.01	11080.24	9518.05	-9517.85	61.59	89.00	1.88	219.06	9518.05	179.63	MWD Run 9
180	20324.00	88.32	179.55	11082.79	9607.01	-9606.82	61.93	89.00	0.52	190.82	9607.02	179.63	MWD Run 9
181	20413.00	89.94	179.14	11084.14	9696.00	-9695.80	62.95	89.00	1.88	192.59	9696.00	179.63	MWD Run 9
182	20502.00	87.59	179.61	11086.06	9784.97	-9784.76	63.92	89.00	2.69	190.82	9784.97	179.63	MWD Run 9
183	20591.00	87.45	180.11	11089.91	9873.88	-9873.68	64.13	89.00	0.58	192.59	9873.89	179.63	MWD Run 9
184	20680.00	88.01	179.72	11093.43	9962.81	-9962.61	64.27	89.00	0.77	307.29	9962.82	179.63	MWD Run 9
185	20770.00	89.69	179.46	11095.24	10052.79	-10052.59	64.91	90.00	1.89	194.35	10052.80	179.63	MWD Run 9
186	20859.00	91.79	179.15	11094.09	10141.78	-10141.57	65.99	89.00	2.39	196.12	10141.78	179.63	MWD Run 9
187	20948.00	90.42	178.46	11092.38	10230.75	-10230.53	67.84	89.00	1.72	196.12	10230.75	179.62	MWD Run 9
188	21037.00	90.17	177.63	11091.92	10319.71	-10319.47	70.88	89.00	0.97	196.12	10319.72	179.61	MWD Run 9
189	21126.00	92.13	177.30	11090.13	10408.62	-10408.36	74.82	89.00	2.23	197.88	10408.63	179.59	MWD Run 9
190	21216.00	93.87	176.95	11085.42	10498.40	-10498.12	79.32	90.00	1.97	196.12	10498.42	179.57	MWD Run 9
191	21305.00	96.06	176.96	11077.72	10586.96	-10586.66	84.03	89.00	2.46	196.12	10586.99	179.55	MWD Run 9
192	21362.00	96.06	176.96	11071.70	10643.58	-10643.26	87.04	57.00	0.00	0.00	10643.62	179.53	MWD Run 9