

Minimum Radius of Curvature

API: 42-329-46806 **Well: Casselman 16 2H** **Wellhead Location** **Lat: 32.038629**
Operator: Callon Petroleum **Area: Midland** **Long: -102.228677**
Rig: Nabors X02 **Type: U Lateral** **Magnetic Declination: 6.75**
TD: 20,474' **Plane of Proposal: 165.69**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
0.00	0.00	0.00		0.0	0.00	0.00	0.00	0.00	0.00			
191	0.44	323.51	191	191.0	-0.68	0.59	-0.44	0.73	323.51	0.23	0.23	169.38
311	0.25	305.71	120	311.0	-1.31	1.11	-0.92	1.45	320.34	0.18	-0.16	-14.83
400	0.43	334.05	89	400.0	-1.78	1.53	-1.23	1.96	321.22	0.27	0.20	31.84
498	0.79	29.28	98	498.0	-2.63	2.45	-1.06	2.67	336.63	0.66	0.37	-310.99
687	3.69	37.17	189	686.8	-7.36	8.43	3.26	9.04	21.12	1.54	1.53	4.17
781	3.40	33.52	94	780.6	-11.12	13.16	6.62	14.74	26.70	0.39	-0.31	-3.88
876	3.93	31.09	95	875.5	-15.30	18.30	9.86	20.79	28.31	0.58	0.56	-2.56
971	4.51	29.04	95	970.2	-20.30	24.35	13.35	27.78	28.74	0.63	0.61	-2.16
1065	4.41	32.05	94	1063.9	-25.48	30.65	17.07	35.08	29.11	0.27	-0.11	3.20
1160	4.18	24.07	95	1158.6	-30.71	36.91	20.42	42.18	28.95	0.67	-0.24	-8.40
1254	4.07	27.33	94	1252.4	-35.89	43.00	23.34	48.93	28.50	0.28	-0.12	3.47
1349	4.47	27.85	95	1347.1	-41.16	49.27	26.62	56.00	28.39	0.42	0.42	0.55
1444	3.85	27.74	95	1441.9	-46.27	55.36	29.84	62.89	28.32	0.65	-0.65	-0.12
1608	4.26	29.12	164	1605.5	-54.78	65.56	35.36	74.49	28.34	0.26	0.25	0.84
1727	3.13	34.68	119	1724.2	-60.12	72.09	39.36	82.14	28.64	1.00	-0.95	4.67
1822	4.97	38.95	95	1819.0	-64.29	77.42	43.43	88.77	29.29	1.96	1.94	4.49
1916	6.58	37.48	94	1912.5	-70.05	84.86	49.26	98.13	30.13	1.72	1.71	-1.56
2011	9.46	40.23	95	2006.6	-77.95	95.15	57.62	111.23	31.20	3.06	3.03	2.89
2106	11.59	38.38	95	2100.0	-88.27	108.59	68.59	128.44	32.28	2.27	2.24	-1.95
2201	11.69	38.17	95	2193.0	-99.91	123.64	80.46	147.51	33.06	0.11	0.11	-0.22
2296	11.39	37.80	95	2286.1	-111.54	138.61	92.16	166.45	33.62	0.33	-0.32	-0.39
2391	11.16	38.27	95	2379.3	-122.88	153.24	103.60	184.98	34.06	0.26	-0.24	0.49
2485	10.92	38.91	94	2471.5	-133.74	167.31	114.83	202.93	34.46	0.29	-0.26	0.68
2580	10.66	38.58	95	2564.8	-144.43	181.19	125.96	220.67	34.81	0.28	-0.27	-0.35
2674	10.31	38.63	94	2657.3	-154.75	194.55	136.63	237.74	35.08	0.37	-0.37	0.05
2864	9.88	37.54	190	2844.3	-175.06	220.76	157.18	271.00	35.45	0.25	-0.23	-0.57
2959	10.60	36.54	95	2937.8	-185.61	234.24	167.35	287.88	35.54	0.78	0.76	-1.05
3053	10.83	36.65	94	3030.2	-196.63	248.28	177.77	305.35	35.60	0.25	0.24	0.12
3148	10.25	35.90	95	3123.6	-207.66	262.28	188.05	322.73	35.64	0.63	-0.61	-0.79
3243	9.86	35.09	95	3217.1	-218.37	275.79	197.68	339.32	35.63	0.44	-0.41	-0.85
3338	9.41	34.22	95	3310.8	-228.80	288.86	206.73	355.21	35.59	0.50	-0.47	-0.92
3433	10.21	32.60	95	3404.4	-239.70	302.38	215.63	371.39	35.49	0.89	0.84	-1.71
3527	10.77	31.76	94	3496.8	-251.48	316.86	224.74	388.47	35.35	0.62	0.60	-0.89
3624	10.32	31.04	97	3592.2	-263.88	332.01	233.99	406.18	35.17	0.48	-0.46	-0.74
3720	10.35	31.88	96	3686.6	-275.89	346.70	242.98	423.37	35.02	0.16	0.03	0.88
3816	10.45	32.92	96	3781.0	-287.77	361.34	252.27	440.68	34.92	0.22	0.10	1.08
3913	10.09	33.80	97	3876.5	-299.42	375.78	261.77	457.97	34.86	0.40	-0.37	0.91
4007	10.93	32.26	94	3968.9	-311.04	390.16	271.11	475.11	34.79	0.94	0.89	-1.64
4102	11.05	32.83	95	4062.2	-323.43	405.43	280.85	493.20	34.71	0.17	0.13	0.60
4196	11.68	33.80	94	4154.3	-335.91	420.90	291.03	511.72	34.66	0.70	0.67	1.03
4291	11.88	33.43	95	4247.3	-348.91	437.05	301.77	531.11	34.62	0.23	0.21	-0.39
4385	11.05	33.16	94	4339.4	-361.50	452.67	312.03	549.79	34.58	0.88	-0.88	-0.29
4480	11.40	32.86	95	4432.6	-374.04	468.18	322.10	568.28	34.53	0.37	0.37	-0.32
4575	12.14	38.10	95	4525.6	-386.52	483.93	333.36	587.63	34.56	1.37	0.78	5.52
4670	11.73	42.11	95	4618.6	-397.95	498.95	346.00	607.18	34.74	0.97	-0.43	4.22
4764	11.10	48.19	94	4710.7	-407.41	512.07	359.15	625.47	35.04	1.44	-0.67	6.47
4859	10.29	47.46	95	4804.1	-415.65	523.91	372.22	642.67	35.39	0.86	-0.85	-0.77
4953	10.09	47.36	94	4896.6	-423.53	535.16	384.46	658.94	35.69	0.21	-0.21	-0.11
5048	9.80	47.96	95	4990.2	-431.24	546.21	396.59	675.00	35.98	0.32	-0.31	0.63
5143	9.62	49.44	95	5083.8	-438.51	556.79	408.62	690.64	36.27	0.32	-0.19	1.56
5237	9.37	49.39	94	5176.5	-445.38	566.88	420.40	705.75	36.56	0.27	-0.27	-0.05
5332	9.24	50.35	95	5270.3	-452.07	576.78	432.14	720.71	36.84	0.21	-0.14	1.01
5427	9.05	39.02	95	5364.1	-459.80	587.45	442.72	735.59	37.00	1.90	-0.20	-11.93
5521	8.70	39.65	94	5456.9	-468.39	598.67	451.91	750.08	37.05	0.39	-0.37	0.67
5616	8.40	39.40	95	5550.9	-476.73	609.56	460.90	764.19	37.09	0.32	-0.32	-0.26
5711	8.14	39.21	95	5644.9	-484.83	620.13	469.56	777.85	37.13	0.28	-0.27	-0.20
5806	7.69	39.51	95	5739.0	-492.58	630.25	477.85	790.92	37.17	0.48	-0.47	0.32

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5900	6.95	38.95	94	5832.2	-499.70	639.52	485.43	802.89	37.20	0.79	-0.79	-0.60
5994	5.95	38.81	94	5925.6	-506.02	647.74	492.06	813.44	37.22	1.06	-1.06	-0.15
6089	5.03	39.57	95	6020.2	-511.44	654.79	497.80	822.53	37.24	0.97	-0.97	0.80
6184	4.87	40.14	95	6114.8	-516.23	661.08	503.05	830.72	37.27	0.18	-0.17	0.60
6279	4.78	41.59	95	6209.5	-520.80	667.13	508.28	838.69	37.30	0.16	-0.09	1.53
6373	4.16	42.36	94	6303.2	-524.87	672.58	513.17	845.99	37.34	0.66	-0.66	0.82
6468	3.94	42.34	95	6398.0	-528.56	677.53	517.69	852.68	37.38	0.23	-0.23	-0.02
6563	3.83	47.52	95	6492.7	-531.85	682.09	522.23	859.05	37.44	0.39	-0.12	5.45
6658	3.09	49.94	95	6587.6	-534.46	685.88	526.53	864.68	37.51	0.79	-0.78	2.55
6752	2.61	49.20	94	6681.5	-536.51	688.91	530.09	869.25	37.58	0.51	-0.51	-0.79
6847	2.02	55.17	95	6776.4	-538.06	691.28	533.10	872.96	37.64	0.67	-0.62	6.28
6942	1.69	59.43	95	6871.3	-539.04	692.95	535.68	875.86	37.71	0.38	-0.35	4.48
7036	1.69	62.84	94	6965.3	-539.74	694.29	538.11	878.40	37.78	0.11	0.00	3.63
7131	1.13	89.28	95	7060.3	-539.83	694.94	540.29	880.26	37.86	0.89	-0.59	27.83
7225	1.22	93.05	94	7154.2	-539.32	694.90	542.22	881.41	37.96	0.13	0.10	4.01
7320	1.19	92.02	95	7249.2	-538.74	694.81	544.21	882.57	38.07	0.04	-0.03	-1.08
7415	1.16	92.84	95	7344.2	-538.18	694.72	546.16	883.70	38.17	0.04	-0.03	0.86
7509	0.41	200.08	94	7438.2	-537.62	694.36	547.00	883.93	38.23	1.43	-0.80	114.09
7604	0.39	203.65	95	7533.2	-537.08	693.75	546.75	883.30	38.24	0.03	-0.02	3.76
7699	0.35	339.80	95	7628.2	-537.12	693.72	546.52	883.14	38.23	0.72	-0.04	143.32
7793	1.25	325.04	94	7722.2	-538.36	694.83	545.83	883.59	38.15	0.97	0.96	-15.70
7888	2.33	303.21	95	7817.1	-540.75	696.74	543.62	883.73	37.96	1.32	1.14	-22.98
7983	2.30	304.59	95	7912.1	-543.61	698.88	540.44	883.46	37.71	0.07	-0.03	1.45
8077	1.62	314.26	94	8006.0	-546.17	700.88	537.93	883.52	37.51	0.80	-0.72	10.29
8172	1.41	317.91	95	8101.0	-548.35	702.68	536.19	883.89	37.35	0.24	-0.22	3.84
8266	1.19	314.40	94	8194.9	-550.21	704.22	534.72	884.22	37.21	0.25	-0.23	-3.73
8361	0.91	306.67	95	8289.9	-551.64	705.36	533.41	884.34	37.10	0.33	-0.29	-8.14
8455	0.57	271.15	94	8383.9	-552.34	705.82	532.34	884.06	37.02	0.59	-0.36	-37.79
8550	0.52	269.50	95	8478.9	-552.57	705.82	531.44	883.52	36.98	0.06	-0.05	-1.74
8645	0.56	278.17	95	8573.9	-552.85	705.89	530.55	883.04	36.93	0.10	0.04	9.13
8739	0.61	279.76	94	8667.9	-553.23	706.04	529.60	882.59	36.87	0.06	0.05	1.69
8834	0.68	280.85	95	8762.9	-553.68	706.23	528.55	882.11	36.81	0.07	0.07	1.15
8928	0.55	285.12	94	8856.9	-554.13	706.45	527.56	881.70	36.75	0.15	-0.14	4.54
9023	0.43	286.46	95	8951.9	-554.54	706.67	526.78	881.41	36.70	0.13	-0.13	1.41
9082	0.45	278.28	59	9010.9	-554.74	706.77	526.34	881.22	36.68	0.11	0.03	-13.86
9272	0.41	193.06	190	9200.9	-554.43	706.21	525.45	880.24	36.65	0.31	-0.02	-44.85
9321	3.26	154.95	49	9249.9	-552.90	704.78	526.00	879.42	36.74	6.02	5.82	-77.78
9364	7.75	151.70	43	9292.6	-548.88	701.12	527.89	877.63	36.98	10.46	10.44	-7.56
9458	15.86	152.39	94	9384.6	-530.20	684.13	536.86	869.63	38.12	8.63	8.63	0.73
9553	25.58	153.10	95	9473.3	-497.48	654.26	552.19	856.14	40.16	10.23	10.23	0.75
9647	35.25	156.04	94	9554.3	-450.82	611.27	572.44	837.46	43.12	10.41	10.29	3.13
9742	42.78	163.86	95	9628.1	-391.42	555.11	592.58	811.98	46.87	9.46	7.93	8.23
9836	46.87	172.00	94	9694.8	-325.34	490.40	606.25	779.76	51.03	7.49	4.35	8.66
9931	52.79	175.16	95	9756.1	-253.50	418.30	614.27	743.17	55.75	6.73	6.23	3.33
10014	59.76	171.57	83	9802.1	-185.13	349.80	622.33	713.90	60.66	9.13	8.40	-4.33
10108	75.33	159.39	94	9838.1	-98.74	266.30	644.49	697.34	67.55	20.40	16.56	-12.96
10203	93.39	157.08	95	9847.4	-5.40	178.88	679.43	702.58	75.25	19.16	19.01	-2.43
10297	90.95	162.25	94	9843.8	87.98	90.84	712.06	717.83	82.73	6.08	-2.60	5.50
10392	89.07	164.05	95	9843.8	182.88	-0.08	739.59	739.59	90.01	2.74	-1.98	1.89
10487	88.71	167.37	95	9845.6	277.85	-92.11	763.03	768.57	96.88	3.51	-0.38	3.49
10581	88.91	166.50	94	9847.6	371.80	-183.65	784.28	805.49	103.18	0.95	0.21	-0.93
10676	90.22	167.77	95	9848.3	466.77	-276.26	805.43	851.49	108.93	1.92	1.38	1.34
10770	90.78	167.76	94	9847.5	560.70	-368.12	825.35	903.72	114.04	0.60	0.60	-0.01
10865	90.98	166.52	95	9846.0	655.66	-460.73	846.49	963.75	118.56	1.32	0.21	-1.31
10960	90.17	165.71	95	9845.1	750.65	-552.95	869.28	1030.24	122.46	1.21	-0.85	-0.85
11055	90.76	169.57	95	9844.3	845.57	-645.72	889.61	1099.26	125.97	4.11	0.62	4.06
11150	91.18	169.95	95	9842.7	940.32	-739.20	906.50	1169.68	129.20	0.60	0.44	0.40
11244	92.72	169.20	94	9839.5	1034.04	-831.59	923.50	1242.73	132.00	1.82	1.64	-0.80

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11339	94.32	168.80	95	9833.7	1128.70	-924.66	941.59	1319.69	134.48	1.74	1.68	-0.42
11434	94.06	168.96	95	9826.7	1223.30	-1017.63	959.86	1398.90	136.67	0.32	-0.27	0.17
11528	89.94	167.89	94	9823.4	1317.12	-1109.64	978.71	1479.59	138.59	4.53	-4.38	-1.14
11622	88.96	167.31	94	9824.3	1411.06	-1201.44	998.89	1562.45	140.26	1.21	-1.04	-0.62
11717	87.82	165.76	95	9827.0	1506.01	-1293.79	1021.00	1648.13	141.72	2.02	-1.20	-1.63
11812	89.44	167.50	95	9829.3	1600.96	-1386.18	1042.96	1734.73	143.04	2.50	1.71	1.83
11907	91.35	168.19	95	9828.6	1695.89	-1479.05	1062.97	1821.39	144.30	2.14	2.01	0.73
12001	92.83	167.83	94	9825.2	1789.74	-1570.93	1082.48	1907.77	145.43	1.62	1.57	-0.38
12096	88.71	165.79	95	9823.9	1884.69	-1663.39	1104.15	1996.50	146.42	4.84	-4.34	-2.15
12190	88.32	164.73	94	9826.3	1978.66	-1754.27	1128.06	2085.66	147.26	1.20	-0.41	-1.13
12284	88.49	163.69	94	9829.0	2072.59	-1844.68	1153.63	2175.71	147.98	1.12	0.18	-1.11
12379	87.67	165.34	95	9832.1	2167.51	-1936.18	1178.97	2266.89	148.66	1.94	-0.86	1.74
12473	87.28	166.71	94	9836.3	2261.41	-2027.31	1201.65	2356.68	149.34	1.51	-0.41	1.46
12567	87.87	164.36	94	9840.3	2355.32	-2118.24	1225.11	2447.00	149.96	2.58	0.63	-2.50
12662	87.95	163.92	95	9843.7	2450.22	-2209.56	1251.06	2539.15	150.48	0.47	0.08	-0.46
12756	89.97	164.28	94	9845.4	2544.17	-2299.94	1276.80	2630.58	150.96	2.18	2.15	0.38
12850	92.10	165.67	94	9843.7	2638.14	-2390.71	1301.17	2721.86	151.44	2.71	2.27	1.48
12944	93.28	165.68	94	9839.3	2732.03	-2481.68	1324.40	2812.97	151.91	1.26	1.26	0.01
13039	88.04	166.60	95	9838.2	2826.99	-2573.88	1347.14	2905.11	152.37	5.60	-5.52	0.97
13133	90.17	167.72	94	9839.7	2920.94	-2665.51	1368.03	2996.07	152.83	2.56	2.27	1.19
13227	90.98	166.97	94	9838.8	3014.89	-2757.22	1388.62	3087.16	153.27	1.17	0.86	-0.80
13321	93.22	166.31	94	9835.3	3108.81	-2848.61	1410.33	3178.61	153.66	2.48	2.38	-0.70
13426	94.54	167.86	105	9828.2	3213.53	-2950.71	1433.74	3280.60	154.09	1.94	1.26	1.48
13521	92.74	169.86	95	9822.2	3308.19	-3043.73	1452.05	3372.35	154.50	2.83	-1.89	2.11
13616	94.01	168.33	95	9816.6	3402.85	-3136.84	1469.99	3464.20	154.89	2.09	1.34	-1.61
13710	94.00	166.11	94	9810.0	3496.58	-3228.29	1490.73	3555.86	155.21	2.36	-0.01	-2.36
13803	90.05	165.54	93	9806.7	3589.51	-3318.38	1513.49	3647.23	155.48	4.29	-4.25	-0.61
13898	89.93	165.14	95	9806.8	3684.50	-3410.29	1537.53	3740.86	155.73	0.44	-0.13	-0.42
13993	89.97	157.10	95	9806.8	3779.12	-3500.10	1568.25	3835.38	155.86	8.46	0.04	-8.46
14087	91.64	145.56	94	9805.5	3870.02	-3582.43	1613.26	3928.92	155.76	12.40	1.78	-12.28
14182	89.88	135.15	95	9804.2	3955.75	-3655.47	1673.79	4020.45	155.40	11.11	-1.85	-10.96
14276	89.74	130.62	94	9804.6	4034.74	-3719.42	1742.64	4107.42	154.90	4.82	-0.15	-4.82
14371	90.81	120.47	95	9804.1	4107.26	-3774.57	1819.84	4190.37	154.26	10.74	1.13	-10.68
14465	91.48	110.70	94	9802.2	4167.47	-3815.11	1904.50	4264.06	153.47	10.42	0.71	-10.39
14560	91.42	104.33	95	9799.8	4217.52	-3843.68	1995.02	4330.59	152.57	6.70	-0.06	-6.71
14654	94.20	103.39	94	9795.2	4261.84	-3866.17	2086.16	4393.10	151.65	3.12	2.96	-1.00
14749	94.40	99.00	95	9788.1	4302.62	-3884.56	2179.07	4454.00	150.71	4.61	0.21	-4.62
14843	89.32	91.67	94	9785.0	4334.17	-3893.27	2272.52	4507.98	149.73	9.48	-5.40	-7.80
14938	86.66	89.96	95	9788.4	4358.94	-3894.62	2367.44	4557.73	148.71	3.33	-2.80	-1.80
15033	85.00	86.42	95	9795.3	4379.45	-3891.64	2462.12	4605.09	147.68	4.11	-1.75	-3.73
15128	89.60	81.83	95	9799.7	4393.35	-3881.92	2556.47	4648.10	146.63	6.84	4.84	-4.83
15222	89.88	69.84	94	9800.2	4393.59	-3858.96	2647.44	4679.80	145.55	12.76	0.30	-12.76
15316	91.14	57.06	94	9799.3	4373.70	-3817.03	2731.35	4693.62	144.41	13.66	1.34	-13.60
15411	91.81	48.96	95	9796.9	4337.12	-3759.94	2807.14	4692.25	143.26	8.55	0.71	-8.53
15506	90.13	43.09	95	9795.3	4290.13	-3694.02	2875.47	4681.25	142.10	6.43	-1.77	-6.18
15601	87.19	40.85	95	9797.5	4237.41	-3623.42	2938.97	4665.48	140.95	3.89	-3.09	-2.36
15695	87.95	34.16	94	9801.5	4179.39	-3548.96	2996.11	4644.55	139.83	7.16	0.81	-7.12
15790	91.03	25.10	95	9802.3	4111.06	-3466.48	3043.02	4612.64	138.72	10.07	3.24	-9.54
15884	95.49	15.21	94	9797.0	4033.81	-3378.52	3075.33	4568.59	137.69	11.52	4.74	-10.52
15979	92.15	9.75	95	9790.6	3949.24	-3286.01	3095.79	4514.62	136.71	6.73	-3.52	-5.75
16073	89.09	5.22	94	9789.6	3862.00	-3192.86	3108.03	4455.80	135.77	5.81	-3.26	-4.82
16168	86.74	2.14	95	9793.1	3771.72	-3098.13	3114.12	4392.74	134.85	4.08	-2.47	-3.24
16263	84.49	2.00	95	9800.3	3680.85	-3003.48	3117.55	4328.97	133.93	2.37	-2.37	-0.15
16358	85.17	359.23	95	9808.9	3589.43	-2908.88	3118.56	4264.62	133.01	2.99	0.72	376.03
16453	87.11	350.18	95	9815.3	3495.92	-2814.60	3109.81	4194.39	132.15	9.72	2.04	-9.53
16547	93.92	342.24	94	9814.5	3402.06	-2723.44	3087.44	4116.97	131.42	11.12	7.24	-8.45
16642	96.25	342.62	95	9806.0	3307.59	-2633.24	3058.88	4036.17	130.72	2.48	2.45	0.40
16737	89.66	348.33	95	9801.1	3212.81	-2541.48	3035.12	3958.67	129.94	9.17	-6.94	6.01

Minimum Radius of Curvature

API: 42-329-46806 **Well: Casselman 16 2H** **Wellhead Location Lat: 32.038629**
Operator: Callon Petroleum **Area: Midland** **Long: -102.228677**
Rig: Nabors X02 **Type: U Lateral** **Magnetic Declination: 6.75**
TD: 20,474' **Plane of Proposal: 165.69**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
16831	88.01	353.05	94	9803.1	3119.22	-2448.77	3019.92	3887.98	129.04	5.32	-1.76	5.02
16925	85.88	349.09	94	9808.1	3025.79	-2356.06	3005.36	3818.80	128.09	4.78	-2.27	-4.21
17020	90.05	345.24	95	9811.4	2930.92	-2263.54	2984.27	3745.59	127.18	5.97	4.39	-4.05
17115	88.79	346.29	95	9812.4	2835.93	-2171.46	2960.91	3671.82	126.26	1.73	-1.33	1.11
17209	89.30	348.07	94	9814.0	2741.98	-2079.82	2940.06	3601.33	125.28	1.97	0.54	1.89
17304	87.14	345.62	95	9816.9	2647.06	-1987.37	2918.45	3530.87	124.25	3.44	-2.27	-2.58
17398	89.16	345.15	94	9820.0	2553.11	-1896.46	2894.75	3460.66	123.23	2.21	2.15	-0.50
17493	89.10	346.93	95	9821.4	2458.13	-1804.28	2871.83	3391.59	122.14	1.87	-0.06	1.87
17588	94.82	352.23	95	9818.2	2363.47	-1710.98	2854.67	3328.15	120.94	8.20	6.02	5.58
17682	89.19	345.93	94	9814.9	2269.78	-1618.82	2836.88	3266.26	119.71	8.98	-5.99	-6.70
17777	90.98	346.04	95	9814.7	2174.79	-1526.65	2813.87	3201.34	118.48	1.89	1.88	0.12
17871	92.46	348.14	94	9811.9	2080.86	-1435.08	2792.88	3140.01	117.20	2.73	1.57	2.23
17966	87.84	344.62	95	9811.6	1985.91	-1342.79	2770.52	3078.78	115.86	6.11	-4.86	-3.71
18061	89.04	344.31	95	9814.2	1890.97	-1251.30	2745.09	3016.83	114.50	1.30	1.26	-0.33
18155	88.51	346.41	94	9816.2	1797.00	-1160.38	2721.34	2958.40	113.09	2.30	-0.56	2.23
18250	89.69	344.83	95	9817.7	1702.02	-1068.37	2697.75	2901.59	111.60	2.08	1.24	-1.66
18344	89.71	345.72	94	9818.2	1608.02	-977.46	2673.85	2846.91	110.08	0.95	0.02	0.95
18439	88.51	344.80	95	9819.7	1513.04	-885.60	2649.69	2793.77	108.48	1.59	-1.26	-0.97
18533	90.30	343.74	94	9820.7	1419.08	-795.13	2624.21	2742.02	106.86	2.21	1.90	-1.13
18628	89.99	345.06	95	9820.4	1324.10	-703.63	2598.66	2692.23	105.15	1.43	-0.33	1.39
18723	92.10	345.56	95	9818.7	1229.13	-611.76	2574.57	2646.26	103.37	2.28	2.22	0.53
18817	92.40	344.58	94	9815.0	1135.21	-521.00	2550.37	2603.05	101.55	1.09	0.32	-1.04
18912	91.31	345.10	95	9811.9	1040.27	-429.36	2525.54	2561.78	99.65	1.27	-1.15	0.55
19007	90.72	347.52	95	9810.3	945.30	-337.08	2503.07	2525.66	97.67	2.62	-0.62	2.55
19101	88.14	346.69	94	9811.2	851.34	-245.46	2482.09	2494.20	95.65	2.88	-2.74	-0.88
19196	88.96	345.40	95	9813.6	756.37	-153.30	2459.19	2463.96	93.57	1.61	0.86	-1.36
19289	90.13	345.95	93	9814.3	663.38	-63.19	2436.18	2437.00	91.49	1.39	1.26	0.59
19385	89.95	345.06	96	9814.3	567.38	29.75	2412.15	2412.34	89.29	0.95	-0.19	-0.93
19480	88.97	345.20	95	9815.2	472.39	121.56	2387.77	2390.87	87.09	1.04	-1.03	0.15
19574	89.70	345.20	94	9816.3	378.40	212.44	2363.76	2373.29	84.86	0.78	0.78	0.00
19669	90.12	347.92	95	9816.4	283.42	304.83	2341.69	2361.44	82.58	2.90	0.44	2.86
19763	88.36	347.23	94	9817.7	189.48	396.61	2321.46	2355.10	80.30	2.01	-1.87	-0.73
19858	89.96	346.15	95	9819.0	94.51	489.05	2299.60	2351.02	77.99	2.03	1.68	-1.14
19953	91.36	347.28	95	9818.0	-0.46	581.50	2277.77	2350.82	75.68	1.89	1.47	1.19
20048	88.61	346.34	95	9818.0	-95.43	673.98	2256.09	2354.61	73.37	3.06	-2.89	-0.99
20142	91.19	345.68	94	9818.1	-189.42	765.18	2233.37	2360.81	71.09	2.83	2.74	-0.70
20237	91.47	347.78	95	9815.9	-284.38	857.62	2211.57	2372.03	68.80	2.23	0.29	2.21
20331	86.62	345.86	94	9817.5	-378.31	949.10	2190.15	2386.95	66.57	5.55	-5.16	-2.04
20399	87.26	344.79	68	9821.1	-446.21	1014.78	2172.95	2398.22	64.97	1.83	0.94	-1.57
20474	87.26	344.79	75	9824.7	-521.12	1087.07	2153.29	2412.14	63.21	0.00	0.00	0.00