

Minimum Radius of Curvature

API: 37-115-23093
 Operator: Coterra Energy
 Rig: X36
 TD: 19,628'

Well: Millard K 13
 Area: Marcellus
 Type: U-Lateral

Wellhead Location Lat :
 Long :
 Magnetic Declination:
 Plane of Proposal:

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'
						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		
125	0.08	45.13	125	125.0	-0.05	0.06	0.06	0.09	45.13	0.06	0.06
216	0.06	55.66	91	216.0	-0.11	0.13	0.15	0.20	47.65	0.03	-0.02
392	0.33	200.02	176	392.0	0.30	-0.29	0.05	0.30	170.48	0.22	0.15
481	0.97	201.09	89	481.0	1.17	-1.23	-0.31	1.27	194.10	0.72	0.72
572	1.08	196.37	91	572.0	2.61	-2.78	-0.83	2.90	196.62	0.15	0.12
690	1.08	199.68	118	690.0	4.58	-4.89	-1.52	5.12	197.23	0.05	0.00
786	0.94	212.47	96	785.9	5.96	-6.41	-2.24	6.79	199.31	0.28	-0.15
831	0.76	227.80	45	830.9	6.40	-6.92	-2.66	7.41	201.06	0.64	-0.40
919	1.05	313.22	88	918.9	6.08	-6.76	-3.68	7.70	208.59	1.42	0.33
1007	1.03	316.91	88	1006.9	4.78	-5.63	-4.81	7.40	220.52	0.08	-0.02
1096	0.97	310.60	89	1095.9	3.54	-4.55	-5.93	7.48	232.48	0.14	-0.07
1185	0.77	302.01	89	1184.9	2.57	-3.75	-7.01	7.95	241.87	0.27	-0.22
1273	0.52	285.12	88	1272.9	2.02	-3.33	-7.90	8.57	247.14	0.35	-0.28
1362	1.56	111.99	89	1361.9	2.48	-3.68	-7.16	8.05	242.82	2.33	1.17
1450	2.12	112.10	88	1449.8	3.95	-4.74	-4.54	6.56	223.80	0.64	0.64
1539	2.74	114.30	89	1538.8	5.98	-6.23	-1.08	6.33	189.82	0.70	0.70
1628	3.20	114.79	89	1627.6	8.54	-8.15	3.11	8.72	159.09	0.52	0.52
1716	2.92	108.82	88	1715.5	10.97	-9.90	7.47	12.40	142.99	0.48	-0.32
1804	2.86	103.06	88	1803.4	12.86	-11.12	11.73	16.16	133.49	0.34	-0.07
1893	2.69	99.52	89	1892.3	14.38	-11.97	15.95	19.94	126.89	0.27	-0.19
1981	2.43	93.82	88	1980.2	15.46	-12.44	19.85	23.42	122.07	0.41	-0.30
2064	2.04	90.27	83	2063.1	16.11	-12.56	23.08	26.28	118.55	0.50	-0.47
2180	1.52	90.21	116	2179.1	16.70	-12.57	26.68	29.50	115.23	0.45	-0.45
2269	1.07	139.39	89	2268.1	17.60	-13.21	28.40	31.33	114.94	1.30	-0.51
2353	2.47	200.26	84	2352.0	19.85	-15.50	28.29	32.26	118.73	2.57	1.67
2445	4.67	204.84	92	2443.8	24.68	-20.76	26.03	33.29	128.58	2.41	2.39
2534	6.62	192.81	89	2532.4	32.43	-29.05	23.37	37.29	141.19	2.55	2.19
2622	6.02	177.36	88	2619.9	41.72	-38.61	22.46	44.67	149.82	2.04	-0.68
2710	4.50	158.29	88	2707.5	49.67	-46.43	23.95	52.24	152.72	2.61	-1.73
2798	2.99	142.02	88	2795.3	55.06	-51.45	26.64	57.93	152.63	2.08	-1.72
2887	1.49	133.94	89	2884.3	58.02	-54.08	28.90	61.31	151.88	1.72	-1.69
2975	0.21	171.03	88	2972.2	59.10	-55.03	29.75	62.56	151.61	1.51	-1.45
3063	0.69	270.40	88	3060.2	59.17	-55.19	29.24	62.46	152.08	0.86	0.55
3152	1.54	249.85	89	3149.2	59.31	-55.60	27.58	62.06	153.61	1.04	0.96
3241	2.17	237.49	89	3238.2	60.20	-56.91	25.04	62.18	156.25	0.83	0.71
3330	1.65	239.05	89	3327.1	61.34	-58.48	22.52	62.66	158.94	0.59	-0.58
3418	0.96	295.38	88	3415.1	61.39	-58.81	20.77	62.37	160.55	1.56	-0.78
3507	0.93	347.66	89	3504.1	60.24	-57.79	19.94	61.13	160.96	0.94	-0.03
3595	1.01	9.28	88	3592.1	58.79	-56.32	19.91	59.74	160.53	0.42	0.09
3684	1.17	334.56	89	3681.1	57.18	-54.73	19.65	58.15	160.25	0.75	0.18
3772	1.43	289.37	88	3769.0	55.79	-53.55	18.23	56.57	161.21	1.17	0.30
3861	0.62	267.07	89	3858.0	55.20	-53.21	16.70	55.77	162.58	1.00	-0.91
3949	0.44	122.78	88	3946.0	55.38	-53.42	16.51	55.91	162.83	1.15	-0.20
4038	1.00	85.89	89	4035.0	55.68	-53.55	17.57	56.36	161.84	0.79	0.63
4126	1.37	55.62	88	4123.0	55.30	-52.90	19.20	56.28	160.05	0.81	0.42
4215	1.56	13.94	89	4212.0	53.73	-51.12	20.37	55.03	158.27	1.19	0.21
4304	1.97	340.40	89	4300.9	51.11	-48.51	20.15	52.52	157.44	1.23	0.46
4392	2.19	312.28	88	4388.9	48.31	-45.95	18.40	49.50	158.18	1.17	0.25
4481	1.65	264.17	89	4477.8	46.90	-44.93	15.87	47.65	160.55	1.84	-0.61
4569	1.99	185.19	88	4565.8	48.31	-46.59	14.47	48.78	162.75	2.65	0.39
4658	2.25	158.16	89	4654.7	51.51	-49.75	14.98	51.95	163.24	1.15	0.29
4746	2.50	134.04	88	4742.7	54.73	-52.68	17.00	55.36	162.12	1.16	0.28
4835	2.37	113.32	89	4831.6	57.28	-54.76	20.08	58.33	159.86	0.99	-0.15
4923	2.09	90.25	88	4919.5	58.52	-55.49	23.36	60.21	157.17	1.06	-0.32
4971	2.03	77.81	48	4967.5	58.62	-55.31	25.07	60.73	155.62	0.94	-0.13
5059	7.37	238.72	88	5055.3	60.66	-57.92	21.76	61.87	159.41	10.58	6.07
5148	12.93	239.83	89	5142.9	66.37	-65.89	8.26	66.41	172.85	6.25	6.25

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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'
						N-S Ft	E-W Ft	Distance FT	Direction Deg		
5236	18.92	241.31	88	5227.5	74.64	-77.70	-12.79	78.75	189.34	6.82	6.81
5325	23.29	243.02	89	5310.5	84.80	-92.62	-41.14	101.34	203.95	4.96	4.91
5413	27.91	249.70	88	5389.8	94.06	-107.67	-75.98	131.78	215.21	6.18	5.25
5502	37.28	256.46	89	5464.8	100.08	-121.24	-121.84	171.89	225.14	11.28	10.53
5591	44.82	257.51	89	5531.8	103.87	-134.35	-178.75	223.62	233.07	8.51	8.47
5679	54.07	256.96	88	5589.0	107.99	-149.13	-243.89	285.87	238.55	10.52	10.51
5767	57.12	257.48	88	5638.7	112.45	-165.19	-314.69	355.41	242.30	3.50	3.47
5856	54.67	250.52	89	5688.6	121.04	-185.41	-385.47	427.74	244.31	7.03	-2.75
5945	54.82	248.88	89	5740.0	134.97	-210.63	-453.62	500.14	245.09	1.51	0.17
6033	55.27	249.30	88	5790.4	149.55	-236.37	-521.00	572.11	245.60	0.64	0.51
6122	54.32	247.68	89	5841.7	164.98	-263.03	-588.65	644.74	245.92	1.83	-1.07
6210	54.57	246.57	88	5892.9	181.85	-290.86	-654.61	716.32	246.04	1.06	0.28
6299	53.08	248.48	89	5945.4	198.29	-318.33	-720.99	788.13	246.18	2.41	-1.67
6387	51.83	247.93	88	5999.1	213.45	-344.23	-785.77	857.86	246.34	1.50	-1.42
6476	56.16	250.52	89	6051.4	227.78	-369.72	-853.08	929.75	246.57	5.40	4.87
6565	56.07	246.51	89	6101.0	243.43	-396.77	-921.81	1003.57	246.71	3.74	-0.10
6653	56.74	239.18	88	6149.8	265.96	-430.20	-986.95	1076.63	246.45	6.98	0.76
6742	56.67	229.58	89	6198.7	298.94	-473.44	-1047.31	1149.35	245.67	9.01	-0.08
6830	59.02	219.00	88	6245.6	343.18	-526.71	-1099.15	1218.83	244.40	10.52	2.67
6919	60.28	209.53	89	6290.7	398.81	-590.10	-1142.28	1285.70	242.68	9.29	1.42
7008	63.54	202.01	89	6332.6	463.08	-660.76	-1176.31	1349.18	240.68	8.30	3.66
7096	67.45	196.08	88	6369.1	533.56	-736.41	-1202.35	1409.95	238.51	7.57	4.44
7185	71.56	190.62	89	6400.3	610.49	-817.48	-1221.54	1469.84	236.21	7.37	4.62
7273	75.77	183.46	88	6425.1	691.49	-901.21	-1231.82	1526.29	233.81	9.15	4.78
7362	80.57	174.73	89	6443.4	777.57	-988.20	-1230.39	1578.10	231.23	11.01	5.39
7451	81.89	171.78	89	6456.9	865.43	-1075.53	-1220.06	1626.44	228.60	3.60	1.48
7516	82.69	172.01	65	6465.6	929.83	-1139.30	-1210.98	1662.67	226.75	1.28	1.23
7605	83.61	172.16	89	6476.3	1018.17	-1226.82	-1198.81	1715.29	224.34	1.05	1.03
7693	83.60	172.55	88	6486.1	1105.59	-1313.50	-1187.17	1770.50	222.11	0.44	-0.01
7782	83.78	170.83	89	6495.8	1194.03	-1401.03	-1174.39	1828.13	219.97	1.93	0.20
7871	83.54	170.48	89	6505.7	1282.49	-1488.31	-1160.03	1886.99	217.93	0.47	-0.27
7959	83.61	170.04	88	6515.5	1369.93	-1574.50	-1145.23	1946.94	216.03	0.50	0.08
8047	83.57	170.51	88	6525.3	1457.38	-1660.69	-1130.46	2008.94	214.24	0.53	-0.05
8136	83.53	170.56	89	6535.3	1545.82	-1747.92	-1115.92	2073.76	212.56	0.07	-0.04
8225	83.47	170.51	89	6545.4	1634.24	-1835.14	-1101.37	2140.28	210.97	0.09	-0.07
8313	83.93	171.07	88	6555.1	1721.71	-1921.49	-1087.38	2207.82	209.51	0.82	0.52
8402	85.32	171.31	89	6563.4	1810.32	-2009.05	-1073.80	2278.01	208.12	1.58	1.56
8490	87.78	171.88	88	6568.7	1898.14	-2095.94	-1060.97	2349.17	206.85	2.87	2.80
8579	88.59	170.29	89	6571.5	1987.09	-2183.81	-1047.18	2421.91	205.62	2.00	0.91
8667	88.52	170.40	88	6573.7	2075.06	-2270.54	-1032.43	2494.24	204.45	0.15	-0.08
8756	88.49	170.24	89	6576.1	2164.03	-2358.24	-1017.47	2568.37	203.34	0.18	-0.03
8844	88.65	170.53	88	6578.3	2252.00	-2444.98	-1002.77	2642.63	202.30	0.38	0.18
8933	88.59	170.05	89	6580.4	2340.97	-2532.68	-987.77	2718.48	201.31	0.54	-0.07
9021	89.19	170.13	88	6582.1	2428.95	-2619.35	-972.63	2794.10	200.37	0.69	0.68
9109	89.53	170.08	88	6583.1	2516.93	-2706.03	-957.50	2870.44	199.49	0.39	0.39
9198	90.36	170.14	89	6583.2	2605.93	-2793.71	-942.22	2948.32	198.64	0.94	0.93
9286	90.26	170.34	88	6582.7	2693.92	-2880.44	-927.30	3026.02	197.84	0.25	-0.11
9375	90.47	170.77	89	6582.1	2782.92	-2968.23	-912.70	3105.38	197.09	0.54	0.24
9463	90.26	170.88	88	6581.6	2870.92	-3055.10	-898.66	3184.53	196.39	0.27	-0.24
9552	91.03	170.61	89	6580.6	2959.91	-3142.93	-884.35	3264.98	195.72	0.92	0.87
9641	92.28	170.61	89	6578.0	3048.87	-3230.70	-869.84	3345.75	195.07	1.40	1.40
9729	92.31	170.48	88	6574.5	3136.80	-3317.44	-855.39	3425.94	194.46	0.15	0.03
9818	92.42	170.75	89	6570.8	3225.73	-3405.17	-840.89	3507.46	193.87	0.33	0.12
9906	92.25	170.08	88	6567.2	3313.65	-3491.87	-826.25	3588.29	193.31	0.78	-0.19
9995	92.25	170.18	89	6563.7	3402.58	-3579.49	-811.01	3670.21	192.77	0.11	0.00
10083	92.21	170.59	88	6560.3	3490.51	-3666.18	-796.32	3751.67	192.25	0.47	-0.05
10182	91.77	170.37	99	6556.9	3589.45	-3763.76	-779.96	3843.73	191.71	0.50	-0.44
10277	91.85	170.43	95	6553.9	3684.40	-3857.38	-764.12	3932.34	191.20	0.11	0.08

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10372	91.81	170.57	95	6550.8	3779.35	-3951.03	-748.45	4021.30	190.73	0.15	-0.04
10467	91.74	170.42	95	6547.9	3874.30	-4044.68	-732.77	4110.53	190.27	0.17	-0.07
10562	92.51	170.62	95	6544.4	3969.23	-4138.32	-717.13	4200.00	189.83	0.84	0.81
10657	93.69	170.90	95	6539.2	4064.09	-4231.95	-701.90	4289.76	189.42	1.28	1.24
10752	94.34	170.68	95	6532.6	4158.86	-4325.50	-686.73	4379.67	189.02	0.72	0.68
10847	94.29	170.57	95	6525.4	4253.59	-4418.96	-671.30	4469.66	188.64	0.13	-0.05
10942	94.46	170.38	95	6518.2	4348.31	-4512.38	-655.63	4559.76	188.27	0.27	0.18
11037	94.23	169.81	95	6511.0	4443.03	-4605.69	-639.33	4649.85	187.90	0.65	-0.24
11132	94.30	169.88	95	6503.9	4537.76	-4698.94	-622.63	4740.02	187.55	0.10	0.07
11227	94.23	169.82	95	6496.9	4632.48	-4792.20	-605.94	4830.36	187.21	0.10	-0.07
11322	94.30	170.43	95	6489.8	4727.21	-4885.53	-589.69	4920.99	186.88	0.64	0.07
11417	94.26	170.18	95	6482.7	4821.95	-4978.91	-573.73	5011.86	186.57	0.27	-0.04
11512	94.33	169.90	95	6475.6	4916.67	-5072.22	-557.35	5102.75	186.27	0.30	0.07
11607	95.17	166.58	95	6467.7	5011.24	-5164.89	-538.06	5192.84	185.95	3.59	0.88
11702	95.81	162.76	95	6458.6	5105.26	-5256.07	-513.06	5281.06	185.58	4.06	0.67
11797	95.44	159.21	95	6449.3	5198.41	-5345.44	-482.27	5367.15	185.16	3.74	-0.39
11889	92.32	150.62	92	6443.1	5286.62	-5428.48	-443.38	5446.56	184.67	9.91	-3.39
11984	91.92	142.22	95	6439.6	5373.05	-5507.50	-390.92	5521.36	184.06	8.85	-0.42
12079	93.26	130.85	95	6435.2	5451.40	-5576.27	-325.75	5585.78	183.34	12.04	1.41
12174	93.77	131.49	95	6429.4	5524.48	-5638.69	-254.37	5644.42	182.58	0.86	0.54
12269	94.07	131.43	95	6422.9	5597.83	-5701.44	-183.34	5704.39	181.84	0.32	0.32
12317	94.17	131.84	48	6419.5	5634.98	-5733.25	-147.56	5735.15	181.47	0.88	0.21
12364	93.85	129.48	47	6416.2	5670.84	-5763.80	-111.99	5764.88	181.11	5.06	-0.68
12459	90.76	117.42	95	6412.4	5735.08	-5816.01	-32.94	5816.10	180.32	13.09	-3.25
12554	90.05	105.14	95	6411.7	5783.25	-5850.42	55.41	5850.68	179.46	12.95	-0.75
12649	90.22	99.24	95	6411.5	5817.96	-5870.47	148.22	5872.34	178.55	6.21	0.18
12744	88.34	98.57	95	6412.7	5847.55	-5885.17	242.07	5890.15	177.64	2.10	-1.98
12839	88.48	91.84	95	6415.3	5871.24	-5893.78	336.58	5903.38	176.73	7.08	0.15
12934	88.41	84.71	95	6417.9	5883.67	-5890.92	431.44	5906.70	175.81	7.50	-0.07
13029	88.41	79.94	95	6420.5	5886.28	-5878.24	525.53	5901.69	174.89	5.02	0.00
13124	88.28	74.92	95	6423.3	5880.78	-5857.59	618.18	5890.12	173.98	5.28	-0.14
13219	88.24	66.66	95	6426.1	5864.37	-5826.37	707.78	5869.20	173.07	8.69	-0.04
13314	89.62	65.55	95	6427.9	5840.36	-5787.90	794.61	5842.19	172.18	1.86	1.45
13409	89.99	66.06	95	6428.2	5815.86	-5748.96	881.27	5816.11	171.28	0.66	0.39
13504	90.19	62.88	95	6428.1	5789.23	-5708.02	966.98	5789.35	170.38	3.35	0.21
13599	89.89	57.11	95	6428.0	5755.58	-5660.54	1049.21	5756.95	169.50	6.08	-0.32
13694	88.75	50.30	95	6429.2	5712.42	-5604.34	1125.73	5716.28	168.64	7.27	-1.20
13789	88.71	45.66	95	6431.3	5661.02	-5540.78	1196.27	5668.45	167.82	4.88	-0.04
13884	87.20	40.00	95	6434.7	5602.70	-5471.19	1260.79	5614.58	167.02	6.16	-1.59
13980	86.33	33.66	96	6440.1	5536.26	-5394.51	1318.21	5553.24	166.27	6.66	-0.91
14074	87.00	26.07	94	6445.6	5463.50	-5313.19	1364.91	5485.71	165.59	8.09	0.71
14169	88.07	19.31	95	6449.6	5383.00	-5225.68	1401.49	5410.35	164.99	7.20	1.13
14264	87.81	19.80	95	6453.1	5299.81	-5136.21	1433.27	5332.44	164.41	0.58	-0.27
14359	87.84	13.17	95	6456.7	5214.34	-5045.24	1460.19	5252.29	163.86	6.97	0.03
14454	87.84	9.43	95	6460.3	5125.47	-4952.16	1478.79	5168.24	163.37	3.93	0.00
14549	86.30	1.02	95	6465.1	5033.69	-4857.77	1487.43	5080.39	162.98	8.99	-1.62
14644	86.30	1.11	95	6471.2	4940.42	-4762.98	1489.19	4990.36	162.64	0.09	0.00
14739	86.27	359.59	95	6477.4	4846.95	-4668.19	1489.77	4900.14	162.30	1.60	-0.03
14834	85.62	1.06	95	6484.1	4753.51	-4573.43	1490.31	4810.12	161.95	1.69	-0.68
14929	85.49	359.54	95	6491.5	4660.11	-4478.72	1490.80	4720.32	161.59	1.60	-0.14
15024	84.65	0.67	95	6499.6	4566.73	-4384.07	1490.98	4630.67	161.22	1.48	-0.88
15119	84.21	0.92	95	6508.9	4473.62	-4289.53	1492.29	4541.69	160.82	0.53	-0.46
15214	84.31	0.73	95	6518.4	4380.56	-4195.02	1493.65	4452.99	160.40	0.23	0.11
15309	86.83	0.62	95	6525.7	4287.27	-4100.31	1494.76	4364.27	159.97	2.66	2.65
15404	85.83	356.49	95	6531.8	4193.36	-4005.56	1492.38	4274.54	159.57	4.46	-1.05
15499	85.86	349.31	95	6538.7	4098.74	-3911.60	1480.67	4182.46	159.27	7.54	0.03
15594	85.93	349.15	95	6545.5	4004.02	-3818.51	1462.97	4089.17	159.04	0.18	0.07
15689	86.83	349.08	95	6551.5	3909.25	-3725.41	1445.06	3995.86	158.80	0.95	0.95

Minimum Radius of Curvature

API: 37-115-23093
 Operator: Coterra Energy
 Rig: X36
 TD: 19,628'

Well: Millard K 13
 Area: Marcellus
 Type: U-Lateral

Wellhead Location Lat :
 Long :
 Magnetic Declination:
 Plane of Proposal:

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'
						N-S Ft	E-W Ft	Distance FT	Direction Deg		
15784	86.77	349.18	95	6556.8	3814.43	-3632.26	1427.17	3902.58	158.55	0.12	-0.06
15879	86.93	349.07	95	6562.0	3719.62	-3539.11	1409.28	3809.37	158.29	0.20	0.17
15974	88.71	349.55	95	6565.6	3624.72	-3445.83	1391.67	3716.24	158.01	1.94	1.87
16069	90.19	347.31	95	6566.5	3529.81	-3352.77	1372.62	3622.86	157.74	2.83	1.56
16164	90.29	345.95	95	6566.1	3435.06	-3260.35	1350.65	3529.04	157.50	1.44	0.11
16259	90.19	346.16	95	6565.7	3340.38	-3168.15	1327.76	3435.13	157.26	0.24	-0.11
16354	90.39	346.83	95	6565.3	3245.64	-3075.78	1305.57	3341.39	157.00	0.74	0.21
16449	90.36	346.94	95	6564.6	3150.86	-2983.26	1284.02	3247.85	156.71	0.12	-0.03
16544	90.36	348.04	95	6564.0	3056.02	-2890.51	1263.44	3154.58	156.39	1.16	0.00
16639	90.36	347.86	95	6563.4	2961.13	-2797.61	1243.61	3061.56	156.03	0.19	0.00
16734	92.84	348.41	95	6560.8	2866.27	-2704.68	1224.08	2968.79	155.65	2.67	2.61
16829	93.44	348.16	95	6555.6	2771.51	-2611.80	1204.82	2876.30	155.24	0.68	0.63
16923	93.78	348.19	94	6549.7	2677.79	-2519.98	1185.60	2784.95	154.80	0.36	0.36
17018	94.25	348.09	95	6543.0	2583.12	-2427.24	1166.12	2692.83	154.34	0.51	0.49
17113	94.32	347.88	95	6535.9	2488.49	-2334.58	1146.40	2600.86	153.85	0.23	0.07
17208	94.28	347.98	95	6528.8	2393.88	-2241.94	1126.59	2509.08	153.32	0.11	-0.04
17303	94.28	347.91	95	6521.7	2299.26	-2149.29	1106.81	2417.54	152.75	0.07	0.00
17398	94.28	348.10	95	6514.6	2204.63	-2056.63	1087.12	2326.27	152.14	0.20	0.00
17493	94.25	348.14	95	6507.5	2109.99	-1963.92	1067.62	2235.35	151.47	0.05	-0.03
17588	95.43	348.11	95	6499.5	2015.43	-1871.28	1048.14	2144.83	150.75	1.24	1.24
17683	95.29	347.75	95	6490.7	1920.96	-1778.79	1028.36	2054.66	149.97	0.41	-0.15
17778	95.23	348.14	95	6481.9	1826.48	-1686.28	1008.60	1964.89	149.12	0.41	-0.06
17873	95.23	347.99	95	6473.3	1731.97	-1593.72	989.04	1875.67	148.18	0.16	0.00
17968	95.33	348.32	95	6464.5	1637.48	-1501.14	969.62	1787.06	147.14	0.36	0.11
18063	95.36	347.60	95	6455.7	1543.00	-1408.63	949.89	1698.98	146.01	0.76	0.03
18158	95.26	347.80	95	6446.9	1448.54	-1316.21	929.74	1611.47	144.76	0.23	-0.11
18253	96.34	347.70	95	6437.3	1354.16	-1223.85	909.69	1524.91	143.38	1.14	1.14
18348	96.20	347.45	95	6426.9	1259.87	-1131.63	889.37	1439.29	141.84	0.30	-0.15
18443	96.17	347.61	95	6416.7	1165.58	-1039.41	868.97	1354.80	140.10	0.17	-0.03
18538	96.34	347.72	95	6406.3	1071.28	-947.16	848.80	1271.84	138.13	0.21	0.18
18633	96.44	347.35	95	6395.8	977.02	-854.97	828.42	1190.49	135.90	0.40	0.11
18728	94.21	347.48	95	6387.0	882.59	-762.66	807.81	1110.95	133.35	2.35	-2.35
18823	92.07	347.50	95	6381.7	787.89	-670.06	787.27	1033.81	130.40	2.25	-2.25
18918	90.69	348.08	95	6379.5	693.05	-577.24	767.18	960.09	126.96	1.58	-1.45
19013	90.49	347.69	95	6378.5	598.18	-484.36	747.25	890.49	122.95	0.46	-0.21
19108	90.49	347.14	95	6377.7	503.34	-391.65	726.55	825.38	118.33	0.58	0.00
19203	90.22	347.66	95	6377.1	408.50	-298.94	705.82	766.52	112.95	0.62	-0.28
19298	90.32	347.53	95	6376.6	313.65	-206.16	685.42	715.75	106.74	0.17	0.11
19393	90.22	347.92	95	6376.2	218.78	-113.33	665.22	674.80	99.67	0.42	-0.11
19488	90.12	347.15	95	6375.9	123.93	-20.57	644.71	645.04	91.83	0.82	-0.11
19583	90.49	347.63	95	6375.4	29.10	72.14	623.98	628.13	83.41	0.64	0.39
19595	90.36	347.54	12	6375.3	17.12	83.86	621.40	627.03	82.31	1.32	-1.08
19628	90.36	347.54	33	6375.1	-15.83	116.08	614.28	625.15	79.30	0.00	0.00