

# Minimum Radius of Curvature

**API: 42-283-37614**      **Well: Maltzberger 1916H**      **Wellhead Location**    **Lat : 28.283146**  
**Operator: Verdun Oil**      **Area: Eagleford**      **Long : -99.178282**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 4.03**  
**TD: 21,525'**      **Plane of Proposal: 353.00**

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			
144	0.57	7.63	144	144.0	0.69	0.71	0.10	0.72	7.63	0.40	0.40	5.30
239	0.48	0.25	95	239.0	1.55	1.58	0.16	1.58	5.78	0.12	-0.09	-7.77
333	0.44	14.05	94	333.0	2.27	2.32	0.25	2.33	6.12	0.12	-0.04	14.68
428	0.57	55.53	95	428.0	2.83	2.94	0.73	3.03	13.88	0.40	0.14	43.66
522	0.62	28.20	94	522.0	3.46	3.65	1.35	3.90	20.32	0.30	0.05	-29.07
617	0.35	52.46	95	617.0	4.03	4.28	1.83	4.66	23.08	0.35	-0.28	25.54
711	0.44	19.50	94	711.0	4.50	4.80	2.17	5.27	24.37	0.26	0.10	-35.06
806	0.57	0.43	95	806.0	5.29	5.62	2.30	6.07	22.27	0.22	0.14	-20.07
901	0.35	348.65	95	901.0	6.05	6.37	2.25	6.76	19.41	0.25	-0.23	366.55
995	0.22	354.89	94	995.0	6.52	6.83	2.17	7.17	17.64	0.14	-0.14	6.64
1089	2.29	188.42	94	1088.9	4.89	5.16	1.88	5.49	20.05	2.66	2.20	-177.10
1184	5.01	197.21	95	1183.7	-0.73	-0.69	0.38	0.78	151.23	2.91	2.86	9.25
1279	6.29	196.16	95	1278.3	-9.29	-9.65	-2.30	9.92	193.41	1.35	1.35	-1.11
1374	8.88	190.18	95	1372.4	-21.09	-21.86	-5.04	22.44	192.99	2.85	2.73	-6.29
1468	11.16	188.34	94	1465.0	-36.79	-38.01	-7.65	38.77	191.37	2.45	2.43	-1.96
1563	11.21	187.37	95	1558.2	-54.60	-56.26	-10.16	57.17	190.24	0.20	0.05	-1.02
1657	10.99	185.61	94	1650.4	-72.20	-74.24	-12.21	75.24	189.34	0.43	-0.23	-1.87
1751	10.42	185.44	94	1742.8	-89.24	-91.62	-13.89	92.67	188.62	0.61	-0.61	-0.18
1846	8.97	185.08	95	1836.4	-104.88	-107.55	-15.36	108.64	188.13	1.53	-1.53	-0.38
1940	6.51	180.69	94	1929.6	-117.33	-120.18	-16.08	121.25	187.62	2.69	-2.62	-4.67
2035	4.13	171.64	95	2024.2	-126.08	-128.95	-15.65	129.90	186.92	2.65	-2.51	-9.53
2130	1.89	158.10	95	2119.0	-131.02	-133.79	-14.56	134.58	186.21	2.46	-2.36	-14.25
2225	1.36	152.12	95	2214.0	-133.59	-136.24	-13.45	136.90	185.64	0.59	-0.56	-6.29
2319	1.01	162.67	94	2308.0	-135.44	-138.02	-12.68	138.60	185.25	0.44	-0.37	11.22
2414	0.75	145.53	95	2403.0	-136.82	-139.33	-12.08	139.85	184.96	0.39	-0.27	-18.04
2509	0.48	173.04	95	2498.0	-137.77	-140.24	-11.68	140.72	184.76	0.41	-0.28	28.96
2603	0.09	168.74	94	2592.0	-138.24	-140.70	-11.62	141.18	184.72	0.42	-0.41	-4.57
2698	0.04	289.15	95	2687.0	-138.30	-140.76	-11.64	141.24	184.73	0.12	-0.05	126.75
2793	0.18	19.23	95	2782.0	-138.15	-140.61	-11.62	141.09	184.72	0.19	0.15	-284.13
2888	0.13	45.34	95	2877.0	-137.95	-140.39	-11.49	140.86	184.68	0.09	-0.05	27.48
2982	0.22	310.68	94	2971.0	-137.75	-140.20	-11.55	140.68	184.71	0.28	0.10	282.28
3076	0.09	343.37	94	3065.0	-137.54	-140.01	-11.71	140.50	184.78	0.16	-0.14	34.78
3170	0.31	337.75	94	3159.0	-137.22	-139.71	-11.83	140.21	184.84	0.23	0.23	-5.98
3265	0.31	323.42	95	3254.0	-136.75	-139.26	-12.08	139.79	184.96	0.08	0.00	-15.08
3359	0.35	296.44	94	3348.0	-136.37	-138.93	-12.49	139.49	185.14	0.17	0.04	-28.70
3454	0.48	291.43	95	3442.9	-136.02	-138.66	-13.12	139.28	185.40	0.14	0.14	-5.27
3548	0.53	305.85	94	3536.9	-135.54	-138.26	-13.84	138.95	185.72	0.14	0.05	15.34
3643	0.40	298.55	95	3631.9	-135.05	-137.84	-14.48	138.60	186.00	0.15	-0.14	-7.68
3835	0.40	294.16	192	3823.9	-134.31	-137.25	-15.69	138.14	186.52	0.02	0.00	-2.29
4024	0.22	5.35	189	4012.9	-133.62	-136.62	-16.25	137.58	186.78	0.21	-0.10	-152.81
4118	0.22	36.72	94	4106.9	-133.31	-136.29	-16.13	137.24	186.75	0.13	0.00	33.37
4213	0.13	40.24	95	4201.9	-133.11	-136.06	-15.95	136.99	186.69	0.10	-0.09	3.71
4307	0.04	347.33	94	4295.9	-133.00	-135.95	-15.89	136.87	186.67	0.12	-0.10	326.69
4401	0.09	287.56	94	4389.9	-132.94	-135.90	-15.97	136.83	186.70	0.08	0.05	-63.59
4494	0.22	45.07	93	4482.9	-132.80	-135.75	-15.91	136.68	186.68	0.29	0.14	-260.74
4589	0.09	112.84	95	4577.9	-132.72	-135.65	-15.71	136.55	186.61	0.21	-0.14	71.34
4683	0.13	23.89	94	4671.9	-132.67	-135.58	-15.60	136.47	186.56	0.17	0.04	-94.63
4778	0.22	19.85	95	4766.9	-132.41	-135.31	-15.49	136.19	186.53	0.10	0.09	-4.25
4872	0.53	2.45	94	4860.9	-131.82	-134.70	-15.41	135.58	186.53	0.35	0.33	-18.51
4967	0.62	318.15	95	4955.9	-130.97	-133.88	-15.74	134.80	186.70	0.46	0.09	332.32
5061	0.88	290.55	94	5049.9	-130.22	-133.25	-16.75	134.30	187.17	0.47	0.28	-29.36
5156	0.92	293.89	95	5144.9	-129.49	-132.69	-18.13	133.92	187.78	0.07	0.04	3.52
5250	1.01	306.02	94	5238.9	-128.53	-131.89	-19.49	133.33	188.41	0.24	0.10	12.90
5344	1.23	306.72	94	5332.9	-127.27	-130.80	-20.97	132.47	189.11	0.23	0.23	0.74
5438	1.23	210.04	94	5426.9	-127.38	-131.07	-22.29	132.95	189.65	1.96	0.00	-102.85
5533	1.41	251.00	95	5521.8	-128.44	-132.34	-23.90	134.48	190.24	0.99	0.19	43.12
5627	1.71	267.61	94	5615.8	-128.56	-132.77	-26.40	135.37	191.24	0.57	0.32	17.67

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
5722	1.89	182.18	95	5710.8	-130.00	-134.40	-27.87	137.26	191.72	2.57	0.19	-89.93
5816	1.54	187.19	94	5804.7	-132.75	-137.20	-28.09	140.04	191.57	0.40	-0.37	5.33
5911	1.32	193.78	95	5899.7	-135.01	-139.53	-28.51	142.41	191.55	0.29	-0.23	6.94
6005	1.32	236.85	94	5993.7	-136.50	-141.17	-29.68	144.26	191.87	1.03	0.00	45.82
6100	1.80	261.11	95	6088.6	-137.03	-142.00	-32.07	145.57	192.72	0.85	0.51	25.54
6194	1.27	139.47	94	6182.6	-137.95	-143.02	-32.85	146.74	192.93	2.86	-0.56	-129.40
6289	1.32	146.59	95	6277.6	-139.81	-144.73	-31.56	148.13	192.30	0.18	0.05	7.49
6384	1.36	151.60	95	6372.6	-141.84	-146.64	-30.42	149.76	191.72	0.13	0.04	5.27
6478	1.10	156.26	94	6466.6	-143.74	-148.45	-29.53	151.35	191.25	0.30	-0.28	4.96
6571	0.79	173.31	93	6559.5	-145.24	-149.90	-29.09	152.70	190.98	0.45	-0.33	18.33
6666	0.66	186.23	95	6654.5	-146.42	-151.09	-29.08	153.87	190.89	0.22	-0.14	13.60
6760	0.62	200.55	94	6748.5	-147.40	-152.11	-29.31	154.91	190.91	0.17	-0.04	15.23
6855	0.70	222.79	95	6843.5	-148.23	-153.02	-29.89	155.91	191.05	0.28	0.08	23.41
6950	0.57	240.63	95	6938.5	-148.79	-153.67	-30.70	156.71	191.30	0.25	-0.14	18.78
7043	0.35	285.98	93	7031.5	-148.85	-153.82	-31.37	156.99	191.53	0.44	-0.24	48.76
7138	0.44	290.20	95	7126.5	-148.57	-153.62	-31.99	156.91	191.76	0.10	0.09	4.44
7232	0.44	302.95	94	7220.5	-148.17	-153.29	-32.63	156.73	192.02	0.10	0.00	13.56
7327	0.48	306.37	95	7315.5	-147.67	-152.86	-33.26	156.44	192.28	0.05	0.04	3.60
7421	0.70	304.53	94	7409.5	-147.02	-152.30	-34.05	156.06	192.60	0.23	0.23	-1.96
7515	0.70	305.32	94	7503.5	-146.25	-151.64	-34.99	155.63	192.99	0.01	0.00	0.84
7610	0.66	297.06	95	7598.5	-145.55	-151.06	-35.95	155.28	193.39	0.11	-0.04	-8.69
7704	0.57	285.01	94	7692.5	-145.07	-150.69	-36.89	155.14	193.75	0.17	-0.10	-12.82
7799	0.35	256.36	95	7787.5	-144.93	-150.64	-37.63	155.27	194.02	0.33	-0.23	-30.16
7893	0.35	251.97	94	7881.5	-145.02	-150.79	-38.18	155.55	194.21	0.03	0.00	-4.67
7988	0.31	278.42	95	7976.5	-145.01	-150.85	-38.71	155.73	194.39	0.16	-0.04	27.84
8083	0.40	288.97	95	8071.5	-144.79	-150.70	-39.28	155.74	194.61	0.12	0.09	11.11
8177	0.31	266.38	94	8165.5	-144.63	-150.61	-39.84	155.79	194.82	0.18	-0.10	-24.03
8271	0.26	252.50	94	8259.5	-144.66	-150.69	-40.30	155.99	194.97	0.09	-0.05	-14.77
8366	0.48	298.90	95	8354.5	-144.46	-150.56	-40.85	156.01	195.18	0.37	0.23	48.84
8459	0.70	308.92	93	8447.5	-143.83	-150.02	-41.63	155.69	195.51	0.26	0.24	10.77
8553	0.84	90.51	94	8541.5	-143.50	-149.66	-41.39	155.28	195.46	1.55	0.15	-232.35
8647	0.75	75.66	94	8635.5	-143.52	-149.52	-40.11	154.80	195.02	0.24	-0.10	-15.80
8742	0.57	66.78	95	8730.4	-143.30	-149.18	-39.07	154.21	194.68	0.22	-0.19	-9.35
8837	0.48	50.08	95	8825.4	-142.96	-148.74	-38.33	153.60	194.45	0.19	-0.09	-17.58
8931	0.26	36.20	94	8919.4	-142.59	-148.31	-37.90	153.08	194.34	0.25	-0.23	-14.77
9026	0.35	340.91	95	9014.4	-142.15	-147.86	-37.87	152.64	194.37	0.31	0.09	320.75
9121	0.79	321.84	95	9109.4	-141.30	-147.07	-38.37	152.00	194.62	0.50	0.46	-20.07
9215	1.05	318.50	94	9203.4	-140.04	-145.92	-39.34	151.13	195.09	0.28	0.28	-3.55
9310	1.23	315.43	95	9298.4	-138.51	-144.54	-40.63	150.14	195.70	0.20	0.19	-3.23
9403	1.45	309.62	93	9391.4	-136.86	-143.08	-42.24	149.18	196.45	0.28	0.24	-6.25
9492	8.10	3.06	89	9479.9	-129.88	-136.10	-42.77	142.66	197.45	8.25	7.48	-345.03
9516	10.07	4.87	24	9503.7	-126.13	-132.30	-42.50	138.96	197.81	8.24	8.16	7.49
9611	25.75	10.54	95	9593.9	-98.15	-103.55	-37.99	110.30	200.15	16.59	16.51	5.97
9705	32.28	8.03	94	9676.0	-54.39	-58.57	-30.74	66.15	207.69	7.07	6.95	-2.67
9799	41.14	4.42	94	9751.3	0.28	-2.77	-24.84	25.00	263.63	9.70	9.43	-3.84
9894	48.34	3.07	95	9818.7	65.94	63.91	-20.53	67.13	342.19	7.64	7.58	-1.42
9988	53.57	357.30	94	9878.0	138.30	136.83	-20.43	138.35	351.51	7.32	5.56	376.84
10082	59.39	354.68	94	9929.9	216.52	214.96	-25.97	216.52	353.11	6.61	6.19	-2.79
10177	65.06	353.43	95	9974.1	300.53	298.52	-34.69	300.53	353.37	6.08	5.97	-1.32
10271	74.93	352.02	94	10006.2	388.74	386.03	-45.90	388.75	353.22	10.59	10.50	-1.50
10346	79.23	352.59	75	10023.0	461.80	458.43	-55.68	461.80	353.08	5.78	5.73	0.76
10365	80.32	352.73	19	10026.4	480.52	477.00	-58.07	480.52	353.06	5.78	5.73	0.74
10459	83.90	353.73	94	10039.3	573.61	569.44	-69.04	573.61	353.09	3.95	3.81	1.06
10648	90.10	352.26	189	10049.2	762.26	756.68	-92.05	762.26	353.06	3.37	3.28	-0.78
10742	90.00	351.15	94	10049.1	856.23	849.69	-105.61	856.23	352.91	1.19	-0.11	-1.18
10837	91.15	353.47	95	10048.1	951.21	943.83	-118.32	951.21	352.85	2.73	1.21	2.44
10930	91.53	353.47	93	10045.9	1044.18	1036.20	-128.90	1044.18	352.91	0.41	0.41	0.00
11025	92.37	354.22	95	10042.7	1139.11	1130.59	-139.08	1139.11	352.99	1.19	0.88	0.79

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11119	92.79	353.08	94	10038.5	1233.01	1223.92	-149.46	1233.01	353.04	1.29	0.45	-1.21
11214	93.00	352.00	95	10033.7	1327.89	1317.99	-161.78	1327.89	353.00	1.16	0.22	-1.14
11308	93.00	353.54	94	10028.8	1421.75	1411.12	-173.59	1421.75	352.99	1.64	0.00	1.64
11401	92.88	356.04	93	10024.0	1514.58	1503.60	-182.03	1514.58	353.10	2.69	-0.13	2.69
11496	92.58	354.86	95	10019.5	1609.38	1598.19	-189.55	1609.40	353.24	1.28	-0.32	-1.24
11591	91.69	352.76	95	10015.9	1704.30	1692.57	-199.79	1704.32	353.27	2.40	-0.94	-2.21
11685	91.79	355.11	94	10013.1	1798.24	1785.99	-209.72	1798.26	353.30	2.50	0.11	2.50
11780	91.47	357.24	95	10010.4	1893.05	1880.74	-216.05	1893.11	353.45	2.27	-0.34	2.24
11874	90.77	354.90	94	10008.5	1986.89	1974.49	-222.49	1986.99	353.57	2.60	-0.74	-2.49
11967	92.41	359.19	93	10006.0	2079.60	2067.31	-227.29	2079.76	353.73	4.94	1.76	4.61
12061	93.50	0.28	94	10001.1	2172.82	2161.18	-227.72	2173.14	353.99	1.64	1.16	-381.82
12155	94.16	359.76	94	9994.8	2265.91	2254.97	-227.69	2266.43	354.23	0.89	0.70	382.43
12250	92.72	357.17	95	9989.1	2360.29	2349.75	-230.23	2361.00	354.40	3.12	-1.52	-2.73
12344	92.91	356.98	94	9984.5	2453.94	2443.51	-235.02	2454.79	354.51	0.29	0.20	-0.20
12439	91.82	354.61	95	9980.6	2548.74	2538.17	-241.98	2549.68	354.55	2.74	-1.15	-2.49
12533	89.97	351.71	94	9979.1	2642.71	2631.48	-253.17	2643.63	354.50	3.66	-1.97	-3.09
12628	89.76	351.37	95	9979.3	2737.68	2725.44	-267.15	2738.50	354.40	0.42	-0.22	-0.36
12722	89.86	350.54	94	9979.7	2831.62	2818.27	-281.93	2832.34	354.29	0.89	0.11	-0.88
12817	89.16	352.88	95	9980.5	2926.59	2912.27	-295.62	2927.23	354.20	2.57	-0.74	2.46
12911	90.10	355.48	94	9981.1	3020.56	3005.77	-305.15	3021.22	354.20	2.94	1.00	2.77
13006	91.05	357.18	95	9980.1	3115.39	3100.57	-311.23	3116.15	354.27	2.05	1.00	1.79
13101	91.20	357.96	95	9978.3	3210.07	3195.46	-315.26	3210.98	354.37	0.84	0.16	0.82
13195	90.76	357.48	94	9976.7	3303.73	3289.37	-319.00	3304.81	354.46	0.69	-0.47	-0.51
13290	90.99	357.47	95	9975.2	3398.43	3384.27	-323.18	3399.67	354.55	0.24	0.24	-0.01
13385	91.23	357.29	95	9973.4	3493.14	3479.15	-327.53	3494.54	354.62	0.32	0.25	-0.19
13479	92.81	359.66	94	9970.0	3586.64	3573.05	-330.03	3588.26	354.72	3.03	1.68	2.52
13573	92.48	354.86	94	9965.7	3680.25	3666.82	-334.51	3682.04	354.79	5.11	-0.35	-5.11
13668	90.97	352.34	95	9962.8	3775.19	3761.17	-345.10	3776.97	354.76	3.09	-1.59	-2.65
13762	91.06	352.11	94	9961.2	3869.17	3854.29	-357.81	3870.87	354.70	0.26	0.10	-0.24
13856	92.13	352.82	94	9958.6	3963.13	3947.44	-370.14	3964.76	354.64	1.37	1.14	0.76
13951	92.83	352.37	95	9954.5	4058.04	4041.56	-382.37	4059.61	354.60	0.88	0.74	-0.47
14045	93.26	351.16	94	9949.5	4151.88	4134.46	-395.81	4153.36	354.53	1.36	0.46	-1.29
14139	93.26	353.59	94	9944.1	4245.71	4227.47	-408.26	4247.14	354.48	2.58	0.00	2.59
14234	92.63	355.00	95	9939.2	4340.56	4321.87	-417.69	4342.01	354.48	1.62	-0.66	1.48
14328	92.09	355.49	94	9935.4	4434.41	4415.47	-425.48	4435.92	354.50	0.78	-0.57	0.52
14421	90.88	3.64	93	9932.9	4526.69	4508.36	-426.18	4528.45	354.60	8.86	-1.30	-378.33
14516	90.50	10.20	95	9931.8	4618.84	4602.60	-414.74	4621.25	354.85	6.92	-0.40	6.91
14610	91.41	15.67	94	9930.2	4707.16	4694.17	-393.71	4710.65	355.21	5.90	0.97	5.82
14705	92.37	23.06	95	9927.1	4792.18	4783.68	-362.25	4797.38	355.67	7.84	1.01	7.78
14800	91.79	30.63	95	9923.6	4870.97	4868.33	-319.41	4878.80	356.25	7.99	-0.61	7.97
14894	91.50	37.97	94	9920.9	4941.51	4945.90	-266.50	4953.07	356.92	7.81	-0.31	7.81
14988	90.73	46.86	94	9919.1	5002.59	5015.21	-203.17	5019.32	357.68	9.49	-0.82	9.46
15082	89.50	55.38	94	9918.9	5052.19	5074.16	-130.07	5075.82	358.53	9.16	-1.31	9.06
15176	90.57	61.42	94	9918.9	5091.30	5123.39	-50.04	5123.63	359.44	6.53	1.14	6.43
15271	91.62	66.39	95	9917.0	5122.36	5165.15	35.23	5165.28	0.39	5.35	1.11	5.23
15364	92.53	69.85	93	9913.7	5146.22	5199.79	121.46	5201.20	1.34	3.84	0.98	3.72
15459	91.23	76.33	95	9910.6	5162.55	5227.39	212.25	5231.69	2.33	6.95	-1.37	6.82
15554	90.57	83.58	95	9909.1	5167.60	5243.94	305.72	5252.85	3.34	7.66	-0.69	7.63
15648	89.93	90.87	94	9908.7	5160.68	5248.49	399.55	5263.68	4.35	7.79	-0.68	7.76
15743	88.51	100.85	95	9910.0	5139.56	5238.80	493.92	5262.04	5.39	10.61	-1.49	10.51
15837	88.95	108.40	94	9912.0	5104.95	5215.09	584.79	5247.78	6.40	8.04	0.47	8.03
15932	90.64	110.99	95	9912.4	5062.28	5183.08	674.22	5226.75	7.41	3.26	1.78	2.73
16026	90.41	113.27	94	9911.5	5016.53	5147.67	761.28	5203.66	8.41	2.44	-0.24	2.43
16121	87.78	127.81	95	9913.0	4958.81	5099.54	842.87	5168.73	9.39	15.55	-2.77	15.31
16216	90.78	135.61	95	9914.2	4887.50	5036.39	913.72	5118.61	10.28	8.80	3.16	8.21
16311	90.73	142.11	95	9913.0	4808.92	4964.89	976.18	5059.95	11.12	6.84	-0.05	6.84
16405	89.39	149.43	94	9912.9	4725.40	4887.23	1029.02	4994.39	11.89	7.92	-1.43	7.79
16500	90.04	154.27	95	9913.3	4636.82	4803.49	1073.83	4922.06	12.60	5.14	0.68	5.09

# Minimum Radius of Curvature

**API: 42-283-37614**      **Well: Maltzberger 1916H**      **Wellhead Location**    **Lat : 28.283146**  
**Operator: Verdun Oil**      **Area: Eagleford**      **Long : -99.178282**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 4.03**  
**TD: 21,525'**      **Plane of Proposal: 353.00**

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			
16594	87.99	158.52	94	9915.0	4546.78	4717.40	1111.45	4846.56	13.26	5.02	-2.18	4.52
16689	89.39	165.68	95	9917.1	4453.58	4627.08	1140.62	4765.59	13.85	7.68	1.47	7.54
16783	90.29	169.17	94	9917.4	4360.04	4535.35	1161.08	4681.61	14.36	3.83	0.96	3.71
16877	90.77	168.90	94	9916.5	4266.27	4443.07	1178.96	4596.83	14.86	0.59	0.51	-0.29
16972	88.99	173.17	95	9916.7	4171.35	4349.26	1193.76	4510.11	15.35	4.87	-1.87	4.49
17067	88.30	174.60	95	9919.0	4076.40	4254.83	1203.88	4421.86	15.80	1.67	-0.73	1.51
17160	87.60	173.57	93	9922.3	3983.47	4162.38	1213.46	4335.66	16.25	1.34	-0.75	-1.11
17255	89.43	177.50	95	9924.8	3888.62	4067.73	1220.85	4246.98	16.71	4.56	1.93	4.14
17349	89.91	179.82	94	9925.3	3795.09	3973.76	1223.04	4157.72	17.11	2.52	0.51	2.47
17442	90.35	179.59	93	9925.1	3702.72	3880.76	1223.52	4069.07	17.50	0.53	0.47	-0.25
17537	90.41	179.22	95	9924.5	3608.32	3785.77	1224.51	3978.88	17.92	0.39	0.06	-0.39
17631	90.29	178.11	94	9923.9	3514.78	3691.80	1226.70	3890.26	18.38	1.19	-0.13	-1.18
17725	90.52	176.98	94	9923.2	3421.08	3597.89	1230.73	3802.56	18.88	1.23	0.24	-1.20
17819	90.53	176.79	94	9922.4	3327.30	3504.03	1235.83	3715.58	19.43	0.20	0.01	-0.20
17913	89.99	179.69	94	9921.9	3233.71	3410.09	1238.72	3628.10	19.96	3.14	-0.57	3.09
18008	91.11	179.16	95	9921.0	3139.31	3315.10	1239.67	3539.30	20.50	1.30	1.18	-0.56
18103	91.64	178.07	95	9918.7	3044.79	3220.15	1241.97	3451.36	21.09	1.28	0.56	-1.15
18197	90.41	178.02	94	9917.1	2951.17	3126.23	1245.18	3365.08	21.72	1.31	-1.31	-0.05
18292	87.75	178.13	95	9918.6	2856.57	3031.30	1248.37	3278.29	22.38	2.80	-2.80	0.12
18386	88.22	177.45	94	9921.9	2762.95	2937.43	1251.99	3193.11	23.08	0.88	0.50	-0.72
18481	89.17	176.56	95	9924.1	2668.21	2842.59	1256.95	3108.09	23.85	1.37	1.00	-0.94
18575	86.42	177.90	94	9927.7	2574.55	2748.78	1261.49	3024.42	24.65	3.25	-2.93	1.43
18669	86.16	177.38	94	9933.8	2481.05	2655.05	1265.35	2941.16	25.48	0.62	-0.28	-0.55
18764	85.72	175.44	95	9940.5	2386.47	2560.48	1271.29	2858.71	26.40	2.09	-0.46	-2.04
18857	85.03	177.05	93	9948.0	2293.92	2467.99	1277.36	2778.96	27.36	1.88	-0.74	1.73
18951	84.43	178.73	94	9956.6	2200.66	2374.45	1280.80	2697.87	28.34	1.89	-0.64	1.79
19046	84.20	177.85	95	9966.0	2106.53	2279.96	1283.63	2616.47	29.38	0.95	-0.24	-0.93
19139	83.82	177.53	93	9975.7	2014.35	2187.55	1287.35	2538.23	30.48	0.53	-0.41	-0.34
19234	86.14	177.77	95	9984.0	1920.03	2093.00	1291.23	2459.25	31.67	2.46	2.44	0.25
19329	86.15	177.42	95	9990.4	1825.55	1998.29	1295.21	2381.33	32.95	0.37	0.01	-0.37
19423	86.20	177.52	94	9996.7	1732.05	1904.60	1299.35	2305.60	34.30	0.12	0.05	0.11
19517	85.99	176.98	94	10003.1	1638.52	1810.92	1303.85	2231.47	35.75	0.62	-0.22	-0.57
19612	86.08	176.67	95	10009.7	1543.96	1716.30	1309.10	2158.57	37.33	0.34	0.09	-0.33
19705	86.44	176.72	93	10015.7	1451.35	1623.65	1314.45	2089.02	38.99	0.39	0.39	0.05
19799	88.18	178.91	94	10020.1	1357.80	1529.83	1318.03	2019.30	40.75	2.97	1.85	2.33
19894	87.21	173.75	95	10024.0	1263.07	1435.13	1324.10	1952.65	42.70	5.52	-1.02	-5.43
19989	86.04	169.27	95	10029.6	1168.29	1341.36	1338.10	1894.66	44.93	4.87	-1.23	-4.72
20083	85.99	169.21	94	10036.1	1074.72	1249.24	1355.60	1843.44	47.34	0.08	-0.05	-0.06
20177	85.72	168.87	94	10042.9	981.19	1157.19	1373.43	1795.94	49.88	0.46	-0.29	-0.36
20271	88.07	168.79	94	10048.0	887.58	1065.12	1391.61	1752.44	52.57	2.50	2.50	-0.09
20365	89.65	173.22	94	10049.9	793.69	972.32	1406.30	1709.70	55.34	5.00	1.68	4.71
20459	89.13	168.36	94	10050.9	699.79	879.56	1421.34	1671.48	58.25	5.20	-0.55	-5.17
20553	88.16	163.83	94	10053.1	606.52	788.37	1443.91	1645.12	61.37	4.93	-1.03	-4.82
20648	88.61	164.25	95	10055.8	512.72	697.07	1470.02	1626.92	64.63	0.65	0.47	0.44
20743	86.74	163.11	95	10059.6	419.06	605.97	1496.70	1614.71	67.96	2.30	-1.97	-1.20
20837	86.56	163.01	94	10065.1	326.63	516.21	1524.04	1609.09	71.29	0.22	-0.19	-0.11
20932	87.66	164.69	95	10069.9	232.96	425.08	1550.43	1607.64	74.67	2.11	1.16	1.77
21026	87.06	164.09	94	10074.2	140.12	334.64	1575.69	1610.84	78.01	0.90	-0.64	-0.64
21121	87.32	163.98	95	10078.9	46.39	243.41	1601.79	1620.18	81.36	0.30	0.27	-0.12
21214	87.16	163.24	93	10083.4	-45.26	154.30	1628.00	1635.30	84.59	0.81	-0.17	-0.80
21309	89.38	163.55	95	10086.2	-138.88	63.31	1655.14	1656.35	87.81	2.36	2.34	0.33
21404	89.85	162.22	95	10086.9	-232.39	-27.48	1683.09	1683.32	90.94	1.48	0.49	-1.40
21462	90.26	161.94	58	10086.8	-289.34	-82.67	1700.94	1702.95	92.78	0.86	0.71	-0.48
21525	90.25	161.94	63	10086.5	-351.17	-142.56	1720.47	1726.37	94.74	0.02	-0.02	0.00