WPTTO
MINOR CHANGE Low Power FM
KPEA-LP SAN FRANCISCO CA

Parameters

Coordinates: 37 52 17.8 N 122 32 03.0 W NAD 27

37 52 17.5 N 122 32 06.9 W NAD 83

CH: 241

Frequency: 96.1 MHz

Power: 0.017 kW

Type: LPFM

Ground: 131 M

COR: 138.6 M

HAAT: 71.1 M

AGL: 7.6 M

FCC 60 dBu F(50,50)

Spacing

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                   World Peace Through Technology Organization
REFERENCE                                                    DISPLAY DATES
37 52 17.8 N.                          CLASS = L1            DATA    11-14-17
122 32 03.0 W.            Current  Spacings to 2nd Adj.      SEARCH  11-19-17
 ------------------------- Channel 241 - 96.1 MHz ---------------------------

Call            Channel   Location                    Azi      Dist    FCC   Margin
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*KOIT    LIC    243B   San Francisco       CA        150.7    14.81    66.5   -51.7
*KGMZ    LIC    239B   San Francisco       CA        157.0    21.93    66.5   -44.6
KPEA-LP  LIC    241L1  San Francisco       CA        102.4     3.44    23.5   -20.1
KEXU-LP  LIC    241L1  Oakland             CA        110.4    28.06    23.5     4.6
KACR-LP  LIC    241L1  Alameda             CA        115.1    28.29    23.5     4.8
KJTZ-LP  LIC    241L1  Alameda             CA        115.1    28.29    23.5     4.8
1594241  APP    241L1  Millbrae            CA        157.4    32.35    23.5     8.9
KYMX     LIC    241B   Sacramento          CA         44.9   120.70   111.5     9.2
KQEM-LP  LIC    241L1  Millbrae            CA        159.1    36.77    23.5    13.3
KSQQ     LIC    241A   Morgan Hill         CA        139.6   100.06    66.5    33.6
KRSH     LIC    240A   Healdsburg          CA        344.2    99.76    55.5    44.3
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     All separation margins include rounding
     *Second Adj - See Waiver
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Spacing Map

N. Lat = 37 52 17.8
W. Lng = 122 32 03.0

(KPEA LICENSED)
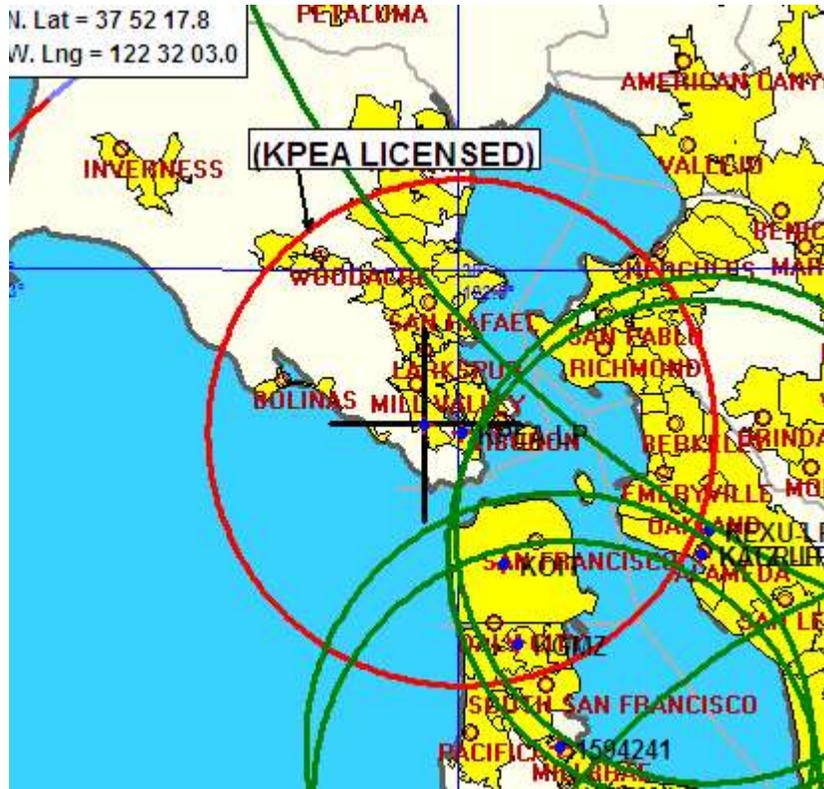
Red Circles: KFFD-LP Licensed, and KFFD-LP Current CP

TOWAIR Determination (PASS)

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	37-52-17.5 north
Longitude	122-32-06.9 west

Measurements (Meters)

Overall Structure Height (AGL)	11
Support Structure Height (AGL)	0
Site Elevation (AMSL)	131

Structure Type

POLE - Any type of Pole

Second Adjacent Channel Waiver Request

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by used Free Space methodology of calculation.

Using U/D methodology, at the proposed KPEA-LP transmitter location KOIT has a signal strength of 90.15 dBu and KGMZ has a signal strength of 76.7 dBu. Interference will occur when the lesser signal strength (KGMZ) interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 116.7 dBu contour.
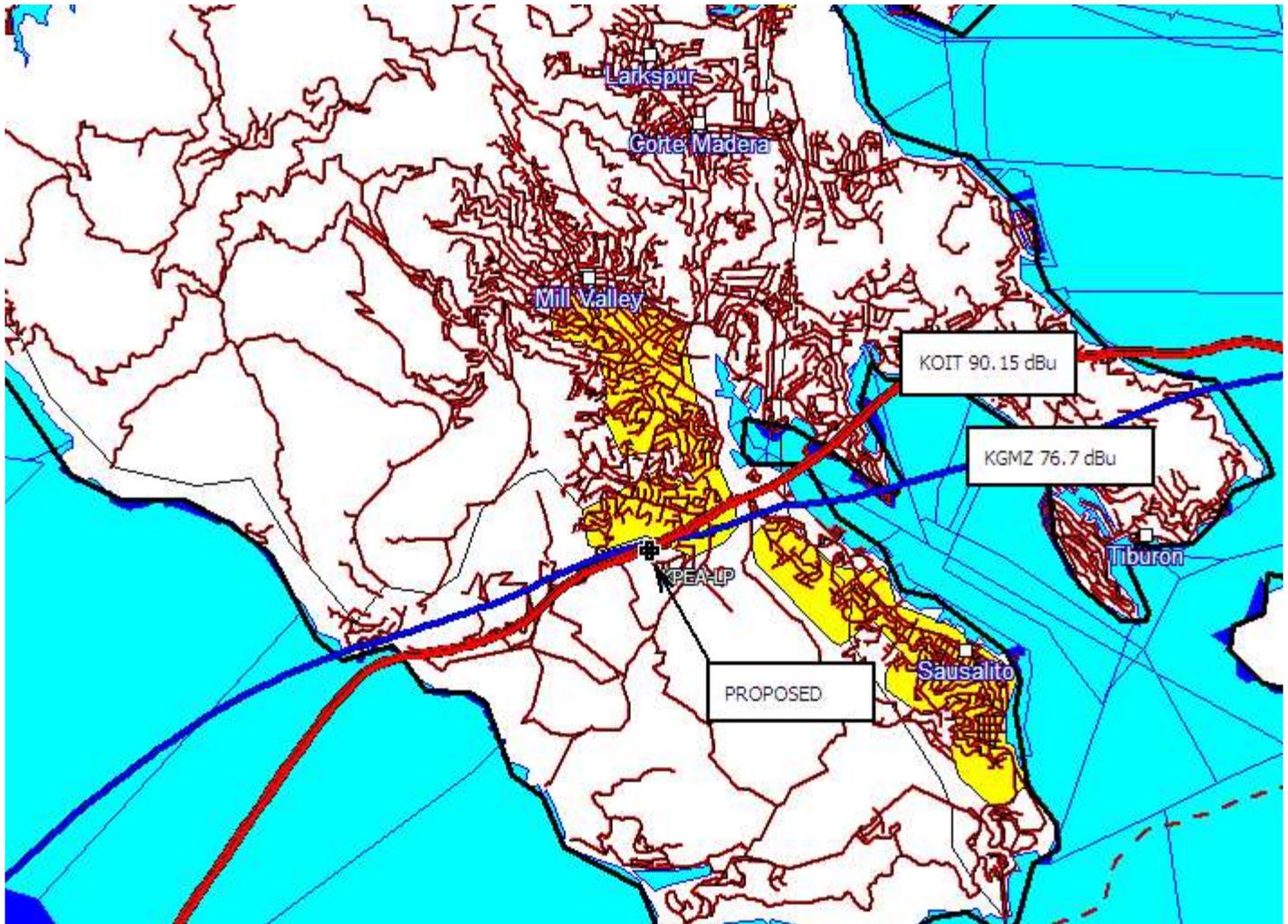
The distance to this contour, using free space method:

$D = (7.01*P1/2)/E$, where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

P = 17 w, E = 116.7 dBu
D = 42.2 meters

However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Nicom (4 bay 0.85 spaced BKG77 antenna) for a 0.85 wave spaced antenna, the distance to the 116.7 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 116.7 dBu is 4.7 meters below the center of radiation of the antenna system, or 2.5 meters above the ground. Therefore, this is sufficient clearance, and the interference area encompasses zero population. The table below show that the lowest elevation point of the 116.7 dBu

F(50,10) interfering contour is 2.5 meters above the ground. Site is on top of hill on private property.

Due to zero population within this radiation radius, this meets the "Living way" Critera to qualify for a Waiver of 47 C.F.R. Section 73.807.

Thus, the applicant requests second adjacent waiver based upon evidence no interference is proposed.

A MAX ERP
B DEPRESSION ANGLE BELOW HORIZON
C RELATIVE FIELD
D dB FROM RELATIVE
E ERP
F ANGULAR DISTANCE TO 116.7 dBu CONTOUR
G VERTICAL DISTANCE (below antenna)
H HORIZONTAL DISTANCE TO 116.7 dBu CONTOUR
I CLEARENCE OF CONTOUR ABOVE GROUND

A	B	C	D	E	F	G	H	I
17	0	1	0.000	17.00	42.2	0	42.2	7.6
17	0.5	0.998	-0.017	16.93	42.1	0.3	42	7.3
17	1	0.994	-0.052	16.80	42	0.7	41.9	6.9
17	1.5	0.987	-0.114	16.56	41.7	1	41.6	6.6
17	2	0.977	-0.202	16.23	41.2	1.4	41.1	6.2
17	2.5	0.964	-0.318	15.80	40.7	1.7	40.6	5.9
17	3	0.949	-0.455	15.31	40.1	2	40	5.6
17	3.5	0.931	-0.621	14.73	39.3	2.3	39.2	5.3
17	4	0.911	-0.810	14.11	38.5	2.6	38.4	5
17	4.5	0.888	-1.032	13.41	37.5	2.9	37.3	4.7
17	5	0.863	-1.280	12.66	36.4	3.1	36.2	4.5
17	5.5	0.836	-1.556	11.88	35.3	3.3	35.1	4.3
17	6	0.806	-1.873	11.04	34	3.5	33.8	4.1
17	6.5	0.775	-2.214	10.21	32.7	3.6	32.4	4
17	7	0.742	-2.592	9.36	31.3	3.8	31	3.8
17	7.5	0.707	-3.012	8.50	29.8	3.8	29.5	3.8
17	8	0.671	-3.466	7.65	28.3	3.9	28	3.7
17	8.5	0.634	-3.958	6.83	26.7	3.9	26.4	3.7
17	9	0.596	-4.495	6.04	25.1	3.9	24.7	3.7
17	9.5	0.557	-5.083	5.27	23.5	3.8	23.1	3.8
17	10	0.517	-5.730	4.54	21.8	3.7	21.4	3.9
17	10.5	0.476	-6.448	3.85	20.1	3.6	19.7	4
17	11	0.434	-7.250	3.20	18.3	3.4	17.9	4.2
17	11.5	0.393	-8.112	2.63	16.6	3.3	16.2	4.3
17	12	0.352	-9.069	2.11	14.8	3	14.4	4.6
17	12.5	0.311	-10.145	1.64	13.1	2.8	12.7	4.8
17	13	0.271	-11.341	1.25	11.4	2.5	11.1	5.1
17	13.5	0.231	-12.728	0.91	9.7	2.2	9.4	5.4
17	14	0.193	-14.289	0.63	8.1	1.9	7.8	5.7
17	14.5	0.155	-16.193	0.41	6.5	1.6	6.2	6
17	15	0.118	-18.562	0.24	4.9	1.2	4.7	6.4
17	15.5	0.083	-21.618	0.12	3.5	0.9	3.3	6.7
17	16	0.049	-26.196	0.04	2	0.5	1.9	7.1

17	16.5	0.017	-35.391	0.00	0.7	0.1	0.6	7.5
17	17	0.014	-37.077	0.00	0.5	0.1	0.4	7.5
17	17.5	0.043	-27.331	0.03	1.8	0.5	1.7	7.1
17	18	0.071	-22.975	0.09	3	0.9	2.8	6.7
17	18.5	0.096	-20.355	0.16	4	1.2	3.7	6.4
17	19	0.119	-18.489	0.24	5	1.6	4.7	6
17	19.5	0.141	-17.016	0.34	5.9	1.9	5.5	5.7
17	20	0.161	-15.863	0.44	6.8	2.3	6.3	5.3
17	20.5	0.178	-14.992	0.54	7.5	2.6	7	5
17	21	0.193	-14.289	0.63	8.1	2.9	7.5	4.7
17	21.5	0.206	-13.723	0.72	8.7	3.1	8	4.5
17	22	0.217	-13.271	0.80	9.1	3.4	8.4	4.2
17	22.5	0.226	-12.918	0.87	9.5	3.6	8.7	4
17	23	0.233	-12.653	0.92	9.8	3.8	9	3.8
17	23.5	0.239	-12.432	0.97	10.1	4	9.2	3.6
17	24	0.242	-12.324	1.00	10.2	4.1	9.3	3.5
17	24.5	0.243	-12.288	1.00	10.2	4.2	9.2	3.4
17	25	0.243	-12.288	1.00	10.2	4.3	9.2	3.3
17	25.5	0.241	-12.360	0.99	10.1	4.3	9.1	3.3
17	26	0.237	-12.505	0.95	10	4.3	8.9	3.3
17	26.5	0.232	-12.690	0.92	9.8	4.3	8.7	3.3
17	27	0.225	-12.956	0.86	9.5	4.3	8.4	3.3
17	27.5	0.217	-13.271	0.80	9.1	4.1	8	3.5
17	28	0.208	-13.639	0.74	8.7	4	7.6	3.6
17	28.5	0.198	-14.067	0.67	8.3	3.9	7.2	3.7
17	29	0.186	-14.610	0.59	7.8	3.7	6.8	3.9
17	29.5	0.174	-15.189	0.51	7.3	3.5	6.3	4.1
17	30	0.161	-15.863	0.44	6.8	3.3	5.8	4.3
17	30.5	0.147	-16.654	0.37	6.2	3.1	5.3	4.5
17	31	0.132	-17.589	0.30	5.5	2.8	4.7	4.8
17	31.5	0.117	-18.636	0.23	4.9	2.5	4.1	5.1
17	32	0.102	-19.828	0.18	4.3	2.2	3.6	5.4
17	32.5	0.086	-21.310	0.13	3.6	1.9	3	5.7
17	33	0.07	-23.098	0.08	2.9	1.5	2.4	6.1
17	33.5	0.054	-25.352	0.05	2.2	1.2	1.8	6.4
17	34	0.038	-28.404	0.02	1.6	0.8	1.3	6.8
17	34.5	0.023	-32.765	0.01	0.9	0.5	0.7	7.1
17	35	0.007	-43.098	0.00	0.2	0.1	0.1	7.5
17	35.5	0.008	-41.938	0.00	0.3	0.1	0.2	7.5
17	36	0.023	-32.765	0.01	0.9	0.5	0.7	7.1
17	36.5	0.037	-28.636	0.02	1.5	0.8	1.2	6.8
17	37	0.051	-25.849	0.04	2.1	1.2	1.6	6.4
17	37.5	0.064	-23.876	0.07	2.7	1.6	2.1	6
17	38	0.077	-22.270	0.10	3.2	1.9	2.5	5.7
17	38.5	0.089	-21.012	0.13	3.7	2.3	2.8	5.3
17	39	0.1	-20.000	0.17	4.2	2.6	3.2	5
17	39.5	0.111	-19.094	0.21	4.6	2.9	3.5	4.7
17	40	0.12	-18.416	0.24	5	3.2	3.8	4.4
17	40.5	0.129	-17.788	0.28	5.4	3.5	4.1	4.1
17	41	0.137	-17.266	0.32	5.7	3.7	4.3	3.9
17	41.5	0.144	-16.833	0.35	6	3.9	4.4	3.7
17	42	0.15	-16.478	0.38	6.3	4.2	4.6	3.4
17	42.5	0.156	-16.138	0.41	6.5	4.3	4.7	3.3
17	43	0.16	-15.918	0.44	6.7	4.5	4.9	3.1
17	43.5	0.164	-15.703	0.46	6.9	4.7	5	2.9
17	44	0.167	-15.546	0.47	7	4.8	5	2.8
17	44.5	0.169	-15.442	0.49	7.1	4.9	5	2.7

17	45	0.17	-15.391	0.49	7.1	5	5	2.6
17	45.5	0.17	-15.391	0.49	7.1	5	4.9	2.6
17	46	0.17	-15.391	0.49	7.1	5.1	4.9	2.5
17	46.5	0.169	-15.442	0.49	7.1	5.1	4.8	2.5
17	47	0.167	-15.546	0.47	7	5.1	4.7	2.5
17	47.5	0.165	-15.650	0.46	6.9	5	4.6	2.6
17	48	0.162	-15.810	0.45	6.8	5	4.5	2.6
17	48.5	0.158	-16.027	0.42	6.6	4.9	4.3	2.7
17	49	0.154	-16.250	0.40	6.5	4.9	4.2	2.7
17	49.5	0.149	-16.536	0.38	6.2	4.7	4	2.9
17	50	0.144	-16.833	0.35	6	4.5	3.8	3.1
17	50.5	0.138	-17.202	0.32	5.8	4.4	3.6	3.2
17	51	0.133	-17.523	0.30	5.6	4.3	3.5	3.3
17	51.5	0.126	-17.993	0.27	5.3	4.1	3.3	3.5
17	52	0.12	-18.416	0.24	5	3.9	3	3.7
17	52.5	0.113	-18.938	0.22	4.7	3.7	2.8	3.9
17	53	0.106	-19.494	0.19	4.4	3.5	2.6	4.1
17	53.5	0.098	-20.175	0.16	4.1	3.2	2.4	4.4
17	54	0.091	-20.819	0.14	3.8	3	2.2	4.6
17	54.5	0.083	-21.618	0.12	3.5	2.8	2	4.8
17	55	0.075	-22.499	0.10	3.1	2.5	1.7	5.1
17	55.5	0.067	-23.479	0.08	2.8	2.3	1.5	5.3
17	56	0.06	-24.437	0.06	2.5	2	1.3	5.6
17	56.5	0.052	-25.680	0.05	2.1	1.7	1.1	5.9
17	57	0.044	-27.131	0.03	1.8	1.5	0.9	6.1
17	57.5	0.036	-28.874	0.02	1.5	1.2	0.8	6.4
17	58	0.028	-31.057	0.01	1.1	0.9	0.5	6.7
17	58.5	0.021	-33.556	0.01	0.8	0.6	0.4	7
17	59	0.013	-37.721	0.00	0.5	0.4	0.2	7.2
17	59.5	0.006	-44.437	0.00	0.2	0.1	0.1	7.5
17	60	0.001	-60.000	0.00	0	0	0	7.6
17	60.5	0.008	-41.938	0.00	0.3	0.2	0.1	7.4
17	61	0.015	-36.478	0.00	0.6	0.5	0.2	7.1
17	61.5	0.021	-33.556	0.01	0.8	0.7	0.3	6.9
17	62	0.027	-31.373	0.01	1.1	0.9	0.5	6.7
17	62.5	0.033	-29.630	0.02	1.3	1.1	0.6	6.5
17	63	0.039	-28.179	0.03	1.6	1.4	0.7	6.2
17	63.5	0.045	-26.936	0.03	1.9	1.6	0.8	6
17	64	0.05	-26.021	0.04	2.1	1.8	0.9	5.8
17	64.5	0.055	-25.193	0.05	2.3	2	0.9	5.6
17	65	0.059	-24.583	0.06	2.4	2.1	1	5.5
17	65.5	0.064	-23.876	0.07	2.7	2.4	1.1	5.2
17	66	0.068	-23.350	0.08	2.8	2.5	1.1	5.1
17	66.5	0.071	-22.975	0.09	3	2.7	1.1	4.9
17	67	0.075	-22.499	0.10	3.1	2.8	1.2	4.8
17	67.5	0.078	-22.158	0.10	3.2	2.9	1.2	4.7
17	68	0.081	-21.830	0.11	3.4	3.1	1.2	4.5
17	68.5	0.083	-21.618	0.12	3.5	3.2	1.2	4.4
17	69	0.086	-21.310	0.13	3.6	3.3	1.2	4.3
17	69.5	0.088	-21.110	0.13	3.7	3.4	1.2	4.2
17	70	0.089	-21.012	0.13	3.7	3.4	1.2	4.2
17	70.5	0.091	-20.819	0.14	3.8	3.5	1.2	4.1
17	71	0.093	-20.630	0.15	3.9	3.6	1.2	4
17	71.5	0.094	-20.537	0.15	3.9	3.6	1.2	4
17	72	0.095	-20.446	0.15	4	3.8	1.2	3.8
17	72.5	0.095	-20.446	0.15	4	3.8	1.2	3.8
17	73	0.096	-20.355	0.16	4	3.8	1.1	3.8

17	73.5	0.096	-20.355	0.16	4	3.8	1.1	3.8
17	74	0.096	-20.355	0.16	4	3.8	1.1	3.8
17	74.5	0.096	-20.355	0.16	4	3.8	1	3.8
17	75	0.096	-20.355	0.16	4	3.8	1	3.8
17	75.5	0.096	-20.355	0.16	4	3.8	1	3.8
17	76	0.095	-20.446	0.15	4	3.8	0.9	3.8
17	76.5	0.095	-20.446	0.15	4	3.8	0.9	3.8
17	77	0.094	-20.537	0.15	3.9	3.7	0.8	3.9
17	77.5	0.093	-20.630	0.15	3.9	3.8	0.8	3.8
17	78	0.092	-20.724	0.14	3.8	3.7	0.7	3.9
17	78.5	0.09	-20.915	0.14	3.8	3.7	0.7	3.9
17	79	0.089	-21.012	0.13	3.7	3.6	0.7	4
17	79.5	0.088	-21.110	0.13	3.7	3.6	0.6	4
17	80	0.086	-21.310	0.13	3.6	3.5	0.6	4.1
17	80.5	0.085	-21.412	0.12	3.5	3.4	0.5	4.2
17	81	0.085	-21.412	0.12	3.5	3.4	0.5	4.2
17	81.5	0.084	-21.514	0.12	3.5	3.4	0.5	4.2
17	82	0.083	-21.618	0.12	3.5	3.4	0.4	4.2
17	82.5	0.082	-21.724	0.11	3.4	3.3	0.4	4.3
17	83	0.081	-21.830	0.11	3.4	3.3	0.4	4.3
17	83.5	0.08	-21.938	0.11	3.3	3.2	0.3	4.4
17	84	0.078	-22.158	0.10	3.2	3.1	0.3	4.5
17	84.5	0.077	-22.270	0.10	3.2	3.1	0.3	4.5
17	85	0.076	-22.384	0.10	3.2	3.1	0.2	4.5
17	85.5	0.076	-22.384	0.10	3.2	3.1	0.2	4.5
17	86	0.076	-22.384	0.10	3.2	3.1	0.2	4.5
17	86.5	0.075	-22.499	0.10	3.1	3	0.1	4.6
17	87	0.075	-22.499	0.10	3.1	3	0.1	4.6
17	87.5	0.075	-22.499	0.10	3.1	3	0.1	4.6
17	88	0.075	-22.499	0.10	3.1	3	0.1	4.6
17	88.5	0.009	-40.915	0.00	0.3	0.2	0	7.4
17	89	0.009	-40.915	0.00	0.3	0.2	0	7.4
17	89.5	0.009	-40.915	0.00	0.3	0.2	0	7.4