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**Engineering Statement  
Minor Modification of WSFG-LD  
Channel 31 at Berry, AL  
June 2024**

**I. Background**

This Engineering Statement has been prepared on behalf of Center Point Broadcasting Company, LLC, licensee of low-power station WSFG-LD Berry. This material has been prepared in connection with an application for minor modification of the licensed facility.

**II. Interference Study**

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any authorized or pending proposed facilities. This study was performed using the Commission's TVStudy software.

This study was conducted using a study cell size of 1.0 km and a terrain extraction increment of 1.0 km.
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The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations, beyond the allowed values of 0.5% to full-power and Class A stations, and 2.0% to low-power stations. Based on the foregoing interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Study created: 2024.06.06 14:40:10

Study build station data: LMS TV 2024-05-23

Proposal: WSFG-LD D31 LD APP BERRY, AL  
File number: WSFG-1262907  
Facility ID: 168769  
Station data: User record  
Record ID: 1618  
Country: U.S.

Build options:  
Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WIAT	D30	DT	LIC	BIRMINGHAM, AL	BLANK0000198139	36.0 km
No	WG IQ	D30	DT	LIC	LOUISVILLE, AL	BLANK0000067031	265.4
No	W30EL-D	D30	LD	LIC	MONTGOMERY, AL	BLANK0000195920	157.4
No	W30EL-D	D30	LD	APP	MONTGOMERY, AL	BLANK0000215013	157.4
No	W30ES-D	D30	LD	LIC	COLUMBUS, MS	BLANK0000196017	114.8
No	W30ES-D	D30	LD	APP	COLUMBUS, MS	BLANK0000202365	114.8
No	WAXC-LD	D31	LD	LIC	ALEXANDER CITY, AL	BLDTL20110329ABN	135.4
No	WMBP-LD	D31	LD	LIC	MOBILE, AL	BLANK0000214594	330.4
No	WNCF	D31	DT	LIC	MONTGOMERY, AL	BLANK0000001319	166.4
No	W31EP-D	D31	LD	LIC	Destin, FL	BLANK0000214207	375.4
No	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000233371	262.0
No	W31EU-D	D31	LD	LIC	COLUMBUS, GA	BLANK0000177389	214.2
No	WSWG	D31	DT	LIC	VALDOSTA, GA	BLANK0000063722	447.8
No	WMUB-LD	D31	LD	LIC	WARNER ROBINS, GA	BLANK0000135124	348.2
No	WKMA-TV	D31	DT	LIC	MADISONVILLE, KY	BLANK0000087442	398.9
No	WTBL-LD	D31	LD	CP	BILOXI, MS	BLANK0000221026	368.7
No	WGBC	D31	DT	CP	MERIDIAN, MS	BLANK0000035926	201.7
No	WGBC	D31	DT	LIC	MERIDIAN, MS	BLCDT20071024AAK	201.7
No	W31DH-D	D31	LD	LIC	FRANKLIN, ETC, NC	BLANK0000143463	399.2
No	W31AN-D	D31	LD	LIC	MURPHY, NC	BLANK0000144221	332.0
No	WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	378.7
No	WLMT	D31	DT	CP	MEMPHIS, TN	BLANK0000217085	302.7
No	WLMT	D31	DT	LIC	MEMPHIS, TN	BLCDT20050427ABN	302.7
No	WWHL-LD	D31-	LD	LIC	Nashville, TN	BLANK0000144800	226.3
No	WWHL-LD	D31-	LD	CP	Nashville, TN	BLANK0000189309	272.4
No	WWHL-LD	D31-	LD	LIC	Nashville, TN	BLANK0000200283	272.4
No	WAXC-LD	D32	LD	CP	ALEXANDER CITY, AL	BDISDTL20120831ABQ	135.4
No	DW50BO	D32+	LD	APP	ASHVILLE, AL	BLANK0000054790	90.3
No	WBMA-LD	D32	LD	LIC	BIRMINGHAM, AL	BLANK0000120220	32.1
No	WTHV-LD	D32	LD	LIC	HUNTSVILLE, AL	BLANK0000199083	135.2
No	W32FJ-D	D32	LD	LIC	MONTGOMERY, AL	BLANK0000195923	157.4
No	W32EQ-D	D32	LD	LIC	TUSCALOOSA, AL	BLANK0000177226	103.0
No	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268	259.7
No	W32EV-D	D32	DC	LIC	ADAMSVILLE, TN	BLANK0000121663	210.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D31  
Mask: Full Service  
Latitude: 33 36 41.00 N (NAD83)  
Longitude: 87 9 48.00 W  
Height AMSL: 172.1 m (Adjusted based on actual ground elevation calculation)  
HAAT: 0.0 m  
Peak ERP: 0.225 kW  
Antenna: SCA-CL1469B 110.0 deg

Hatfield & Dawson Consulting Engineers

Elev Pattn: Generic  
Elec Tilt: 0

50.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	54.6 m	1.7 km
45.0	0.000	39.6	3.2
90.0	0.148	40.3	12.3
135.0	0.116	39.8	11.5
180.0	0.000	39.7	3.2
225.0	0.000	70.8	1.8
270.0	0.000	45.3	3.2
315.0	0.000	34.7	3.2

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m    Computed HAAT: 46 m

Distance to Canadian border: 979.1 km

Distance to Mexican border: 1266.4 km

Conditions at FCC monitoring station: Powder Springs GA  
Bearing: 82.3 degrees    Distance: 227.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 299.5 degrees    Distance: 1757.2 km

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

----- Below is IX received by proposal WSFG-1262907 -----

Proposal receives 40.69% interference from scenario 1  
Proposal receives 40.69% interference from scenario 2  
No IX check failures found.

### III. Antenna Structure

The antenna will be side-mounted on an existing tower with FCC Antenna Structure Registration Number 1262907.

### IV. Tower Construction or Modification Near AM Stations

This proposal complies with §1.30002 of the Commission's Rules in that there are no AM stations located within the applicable threshold distance.

## V. RF Exposure Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.4 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

*D* is the distance in meters from the center of radiation to the calculation point.

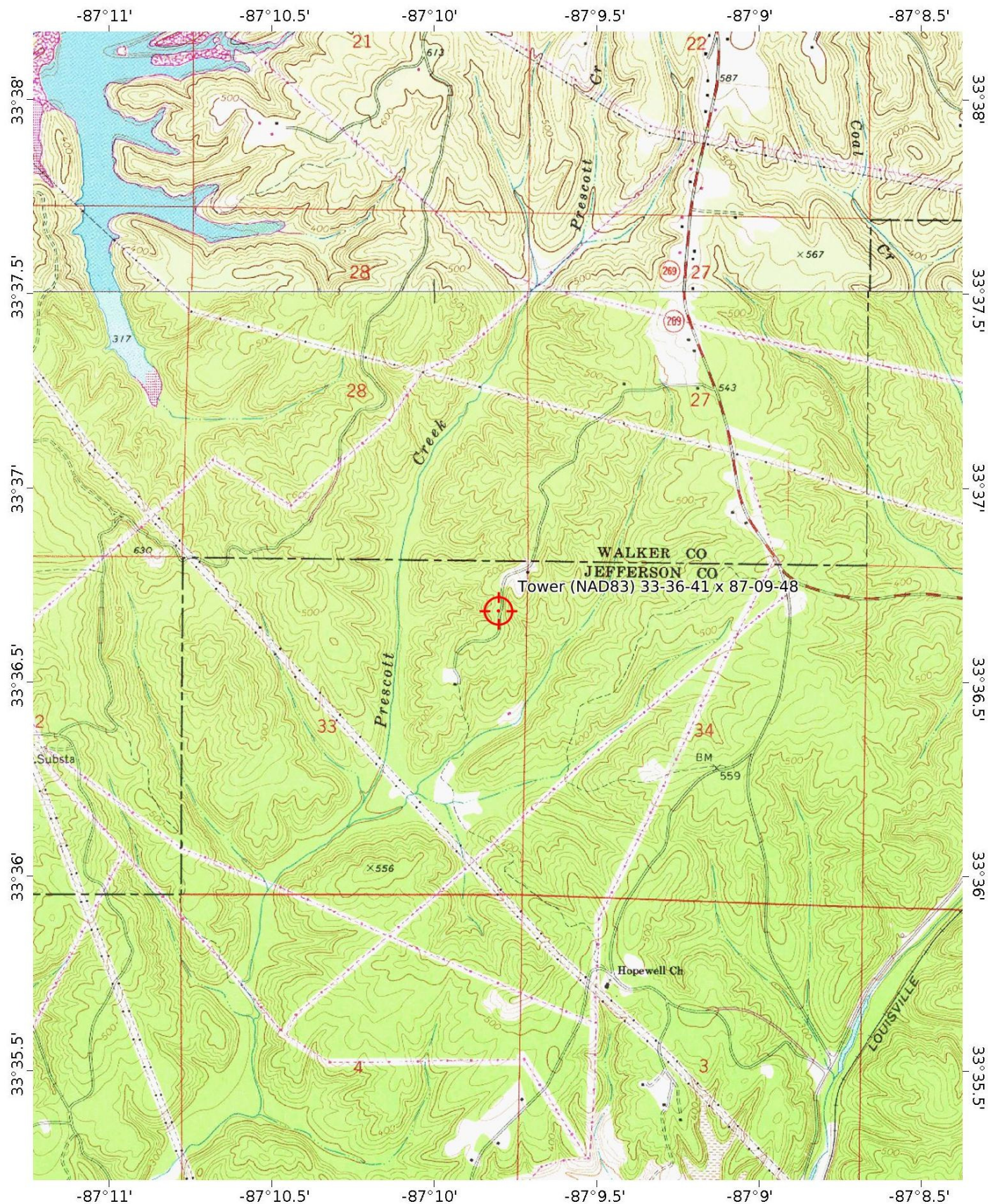
Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground, based on the manufacturer's vertical plane pattern for the elliptically-polarized Kathrein model CL-1469B antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at a point 6 meters from the base of the antenna support structure. At this point the power density is calculated to be 75.2  $\mu W/cm^2$ , which is 19.7% of 381  $\mu W/cm^2$  (the FCC maximum for uncontrolled environments at the Channel 31 frequency). There are no other broadcast users of this site.

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

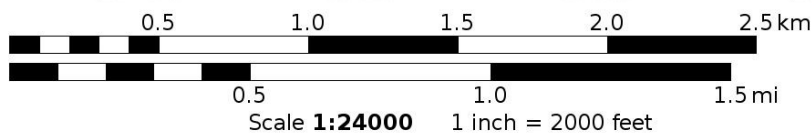
June 6, 2024

Erik C. Swanson, P.E.





Mercator Projection  
WGS84  
UTM Zone 16S  
 CALTOPO



Hatfield & Dawson Consulting Engineers



# WSFG-LD Ch31 Berry

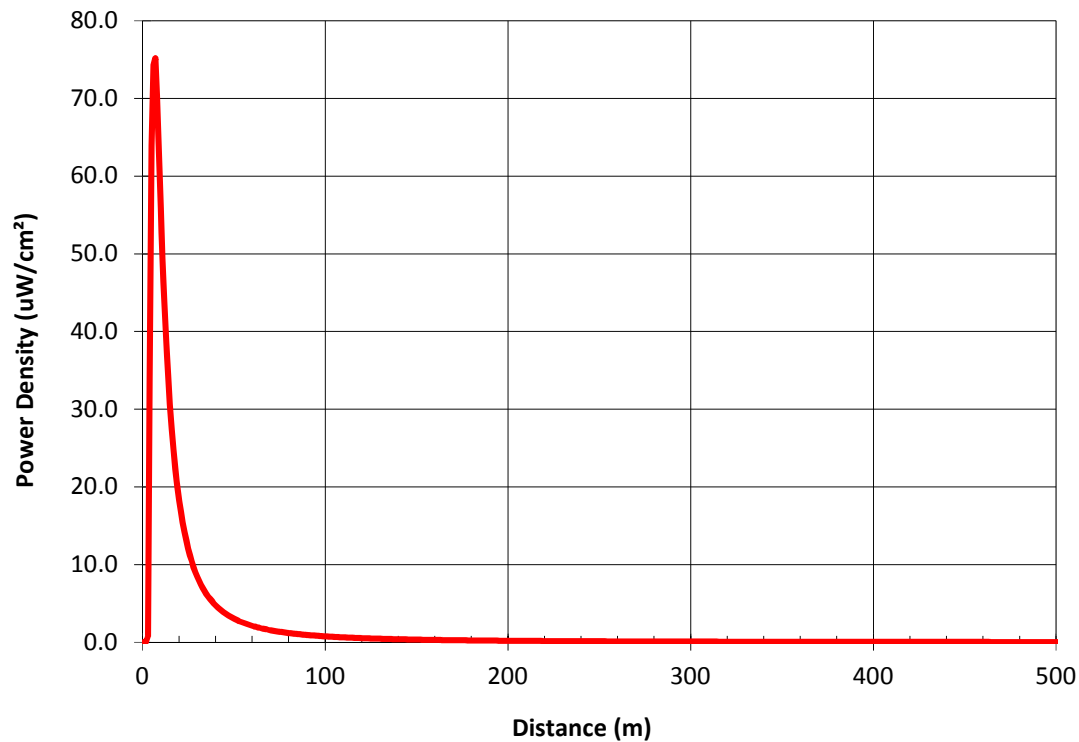
## Ground-Level Power Density Calculations

Using Manufacturer's Vertical Plane Pattern

Antenna	CL1469		
ERP	225	Watts H (avg)	
	-	Watts V (avg)	
Antenna AGL	6.1	meters less 2m is	4.1 meters above the reference plane
MBT	0	degrees	

Calculated  
Maximum is 75.2  $\mu\text{W}/\text{cm}^2$  at 6 meters from the tower

### Power Density vs Distance



**WSFG-LD Ch31 Berry**  
**Ground-Level Power Density Calculations**  
**Using Manufacturer's Vertical Plane Pattern**

Distance From Tower (meters)	Hypotenuse (meters)	Depression Angle (with MBT adjust) (degrees)	Interpolated Rel Field	Adjusted ERP (watts)	Power Density uW/cm <sup>2</sup>
0	4.10	90.00	0.010	0.0	0.04
1	4.22	76.29	0.010	0.0	0.04
2	4.56	64.00	0.047	0.5	0.80
3	5.08	53.81	0.341	26.2	33.88
4	5.73	45.71	0.528	62.7	63.89
5	6.47	39.35	0.643	92.9	74.26
6	7.27	34.35	0.727	118.8	75.19
7	8.11	30.36	0.785	138.5	70.32
8	8.99	27.14	0.823	152.6	63.07
9	9.89	24.49	0.853	163.6	55.88
10	10.81	22.29	0.876	172.6	49.36
11	11.74	20.44	0.895	180.4	43.73
12	12.68	18.86	0.909	186.0	38.63
13	13.63	17.50	0.921	190.8	34.31
14	14.59	16.32	0.931	195.1	30.63
15	15.55	15.29	0.940	198.7	27.45
16	16.52	14.37	0.947	201.6	24.69
17	17.49	13.56	0.952	204.1	22.30
18	18.46	12.83	0.957	206.1	20.20
19	19.44	12.18	0.961	207.6	18.36
20	20.42	11.59	0.965	209.5	16.79
21	21.40	11.05	0.969	211.3	15.42
22	22.38	10.56	0.972	212.5	14.18
23	23.36	10.11	0.974	213.6	13.08
24	24.35	9.69	0.976	214.3	12.08
25	25.33	9.31	0.977	214.9	11.19
26	26.32	8.96	0.978	215.4	10.39
27	27.31	8.63	0.979	215.7	9.66
28	28.30	8.33	0.980	216.0	9.01
29	29.29	8.05	0.981	216.3	8.43
30	30.28	7.78	0.981	216.7	7.90
31	31.27	7.53	0.982	217.1	7.42
32	32.26	7.30	0.983	217.4	6.98
33	33.25	7.08	0.984	217.7	6.58
34	34.25	6.88	0.984	218.0	6.21
35	35.24	6.68	0.985	218.3	5.87
36	36.23	6.50	0.986	218.6	5.56
37	37.23	6.32	0.986	218.9	5.28
38	38.22	6.16	0.987	219.1	5.01
39	39.21	6.00	0.987	219.4	4.77
40	40.21	5.85	0.988	219.5	4.54
41	41.20	5.71	0.988	219.7	4.32
42	42.20	5.58	0.988	219.8	4.12
43	43.20	5.45	0.989	219.9	3.94
44	44.19	5.32	0.989	220.1	3.76

45	45.19	5.21	0.989	220.2	3.60
46	46.18	5.09	0.989	220.3	3.45
47	47.18	4.99	0.990	220.4	3.31
48	48.17	4.88	0.990	220.5	3.17
49	49.17	4.78	0.990	220.6	3.05
50	50.17	4.69	0.990	220.7	2.93
51	51.16	4.60	0.991	220.8	2.82
52	52.16	4.51	0.991	220.9	2.71
53	53.16	4.42	0.991	221.0	2.61
54	54.16	4.34	0.991	221.1	2.52
55	55.15	4.26	0.991	221.1	2.43
56	56.15	4.19	0.992	221.2	2.34
57	57.15	4.11	0.992	221.3	2.26
58	58.14	4.04	0.992	221.4	2.19
59	59.14	3.98	0.992	221.4	2.11
60	60.14	3.91	0.992	221.5	2.05
61	61.14	3.85	0.992	221.6	1.98
62	62.14	3.78	0.992	221.6	1.92
63	63.13	3.72	0.993	221.7	1.86
64	64.13	3.67	0.993	221.7	1.80
65	65.13	3.61	0.993	221.8	1.75
66	66.13	3.55	0.993	221.9	1.70
67	67.13	3.50	0.993	221.9	1.65
68	68.12	3.45	0.993	222.0	1.60
69	69.12	3.40	0.993	222.0	1.55
70	70.12	3.35	0.993	222.1	1.51
71	71.12	3.30	0.994	222.1	1.47
72	72.12	3.26	0.994	222.2	1.43
73	73.12	3.21	0.994	222.2	1.39
74	74.11	3.17	0.994	222.2	1.35
75	75.11	3.13	0.994	222.3	1.32
76	76.11	3.09	0.994	222.3	1.28
77	77.11	3.05	0.994	222.4	1.25
78	78.11	3.01	0.994	222.4	1.22
79	79.11	2.97	0.994	222.5	1.19
80	80.10	2.93	0.994	222.5	1.16
81	81.10	2.90	0.994	222.5	1.13
82	82.10	2.86	0.995	222.6	1.10
83	83.10	2.83	0.995	222.6	1.08
84	84.10	2.79	0.995	222.6	1.05
85	85.10	2.76	0.995	222.7	1.03
86	86.10	2.73	0.995	222.7	1.00
87	87.10	2.70	0.995	222.7	0.98
88	88.10	2.67	0.995	222.8	0.96
89	89.09	2.64	0.995	222.8	0.94
90	90.09	2.61	0.995	222.8	0.92
91	91.09	2.58	0.995	222.9	0.90
92	92.09	2.55	0.995	222.9	0.88
93	93.09	2.52	0.995	222.9	0.86
94	94.09	2.50	0.995	222.9	0.84