

TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
RADIO STATION WXDX-FM
PITTSBURGH, PENNSYLVANIA

June 5, 2007

CH 290B 15.5 KW 272 M

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Technical Statement

This Technical Exhibit was prepared on behalf of radio station WDX-FM, Pittsburgh, Pennsylvania in support of an application for construction permit to relocate its transmitting antenna site. WDX-FM is licensed for operation on Channel 290B (105.9 MHz) with a non-directional effective radiated power (ERP) of 72 kW and an antenna height above average terrain (HAAT) of 131 m.* By means of this application, WDX-FM proposes to relocate its transmitter to an existing tower located 3.2 km west of its present location. The transmitting antenna radiation center HAAT will be increased to 272 m. To meet the protection requirements of FCC Rule Sections 73.207 and 73.213; and the maximum ERP requirements of FCC Rule Section 73.211, the nominal ERP is specified at 15.5 kW.

Proposed Facilities

The proposed transmitting antenna is an ERI model SHPX-4AC (full-wave spaced). The antenna will be side-mounted at a height of 161 m above ground level, with a height above mean sea level of 577 m. The antenna HAAT was calculated to be 272 m based on an 8-radial calculation.

The FCC antenna structure registration number is 1025971. The site elevation is 416 m above mean sea level; and the overall tower height is 209 m above

*See FCC File No. BLH-5106. WDX-FM is grandfathered with 72 kW ERP At 131 m HAAT.

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ground level. There will be no change in the overall height of the structure as a result of the instant proposal.

The proposed facility is located 207 km from the border with Canada and it is in the Canadian treaty border zone. However, the proposal complies with the separation requirements of the *Working Arrangement for the Allotment and Assignment of FM Broadcasting Channels under the Agreement between the Government of Canada and the Government of the United States of America relating to the FM Broadcast Service* (1991, amended 1997).

The proposed WDX-FM facility is well removed, by over 138 km, from the radio astronomy quiet zone around Green Bank, West Virginia. The facility is located approximately 311 km from the FCC Monitoring Station at Laurel, Maryland.

The proposed site is located 1.9 km from AM directional broadcast station WBGG, Pittsburgh, PA (970 kHz, 5 kW, U, DA-2). However, because there is no change in the height of the existing tower, the proposed facility is believed to be exempt from the AM pattern protection procedures outlined in Section 73.1692 of the FCC Rules.

Environmental Considerations

With respect to radio frequency (RF) exposure issues, the proposed facility meets the requirements of Section 1.1306(b)(3) concerning human exposure to RF energy.

A worst-case analysis of the RF exposure situation was conducted using the procedures outlined in FCC OET Bulletin No. 65. The following facilities were considered in the RF exposure evaluation:

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Call Sign	Channel	Total ERP (kW)	Antenna Radiation Center Height Above Ground (m)	Type of Transmitting antenna	Comment
WXDX-FM	290	31	161	ERI, SHPX-4AC	See Appendix 1.

A detailed analysis of the maximum RF exposure level from the WXDX-FM facilities was conducted at 2-m above ground level using an estimate of the transmitting antenna vertical plane radiation pattern. The following table summarizes the results of the RF exposure analysis:

Call Sign	Channel	Total ERP [†] (kW)	Antenna Radiation Center Height Above Ground (m)	Relative Field Factor [‡]	FCC Limit [§] (uW/cm ²)	Percentage of Limit ^{**}
WXDX-FM	290	31	161	0.40	200	3.3

As indicated, the RF exposure at 2-m above ground level will not exceed 3.3% of the FCC limit for uncontrolled environments. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation at all locations on the ground in the vicinity of the proposed facility.^{††}

The base of the tower shall be restricted from access. The applicant shall reduce power or cease operation as necessary to protect persons having access to the tower from RF energy in excess of the FCC guidelines.

[†] In the case of FM stations, the total horizontally and vertically polarized ERP.

[‡] This is a conservative estimate of the relative field factor in the downward direction.

[§] for uncontrolled environments

^{**} Calculations were made at 2-m AGL according to the procedures outlined in FCC OET Bulletin No. 65.

^{††} See Sections 1.1307 and 1.1310 of the FCC Rules.

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Predicted Coverage Contours

All predicted coverage and interfering contours were calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the U.S.G.S. 3-second linearly interpolated terrain database. In all cases, distances to the predicted contours were determined using the average elevations of 3-16-km radials spaced every 5-degree of azimuth. The antenna radiation center HAAT in each radial direction and the ERP were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours. Figure 1 is a map showing the predicted coverage contours for WDX-FM.

As indicated in Figure 1, the proposed predicted 70 dBu contour encompasses the entire community of Pittsburgh in compliance with Section 73.315 of the FCC Rules. The city limits of Pittsburgh were obtained from the 2000 Census TIGER data files.

Allocation Considerations

As outlined in Figure 2, the proposed facility meets the separation requirements of Section 73.207 of the FCC Rules with respect to all pertinent allotments and assignments with the exception of four stations. The circumstances related to each of these stations are described in further detail below.

WJOW, Philipsburg, PA, Channel 290A – WJOW is short-spaced to WDX-FM under the contour protection provisions of Section 73.215 of the FCC Rules. As indicated in Figure 2, the WDX-FM proposal will improve the separation with respect to WJOW. Therefore, the proposal will meet the requirements of the FCC Rules with respect to WJOW.

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WKGO, Cumberland, MD, Channel 291B - As indicated in Figure 2, WKGO is grandfathered short-spaced to WDX-FM under Section 73.213(a) of the FCC Rules as a pre-1964 short-spacing. The proposal complies with the requirements of Section 73.213(a) concerning modification and relocation of co-channel and first-adjacent channel pre-1964 grandfathered short-spaced facilities.

The instant proposal will not result in any new interference caused to WKGO where interference is not currently caused. Therefore, the service requirement of Section 73.213(a)(3) of the FCC Rules is not applicable to WDX-FM.

Pursuant to Section 73.213(a)(2) of the FCC Rules, the proposal is demonstrated to be in the public interest because it creates no new area of predicted interference to WKGO; it results in a net decrease in overall predicted interference caused and received; and the areas predicted to receive new interference are served by no less than 16 other fulltime aural services.

Figure 3 is a summary of the predicted interference caused and received. Figure 4 is a map showing the predicted interference caused and received with respect to WKGO considering both the licensed and proposed WDX-FM proposal. The proposal will result in a reduction in net interference of 11,897 people (154 sq. km) with respect to interference caused to WKGO. The proposal will result in a net reduction of interference of 914 people (19 sq. km) with respect to interference received by WDX-FM. Therefore, the net interference result is a reduction in predicted interference of 12,811 people (173 sq. km). The WDX-FM 54 dBu contour population will change from 2,511,893 people to 2,543,185 people as a result of the instant proposal, an increase of 31,292 people. Therefore, the proposal will have a clear net service and public interest benefit.

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Figure 5 demonstrates that there are no areas within either the licensed or proposed WDX-FM predicted interference area that has fewer than five other aural services available. The stations considered in this analysis are listed in Figure 6. It is noted that only licensed FM stations were considered, as this was sufficient to determine that there are no less than five other fulltime aural services available.

WBBG, Niles, OH, Channel 291A - WBBG is short-spaced to WDX-FM under the former 3-kW Class A provisions of Section 73.213(c) of the FCC Rules. As indicated in Figure 2, the WDX-FM proposal will meet the 105-km separation requirement of Section 73.213(c)(1) of the FCC Rules with respect to WBBG.

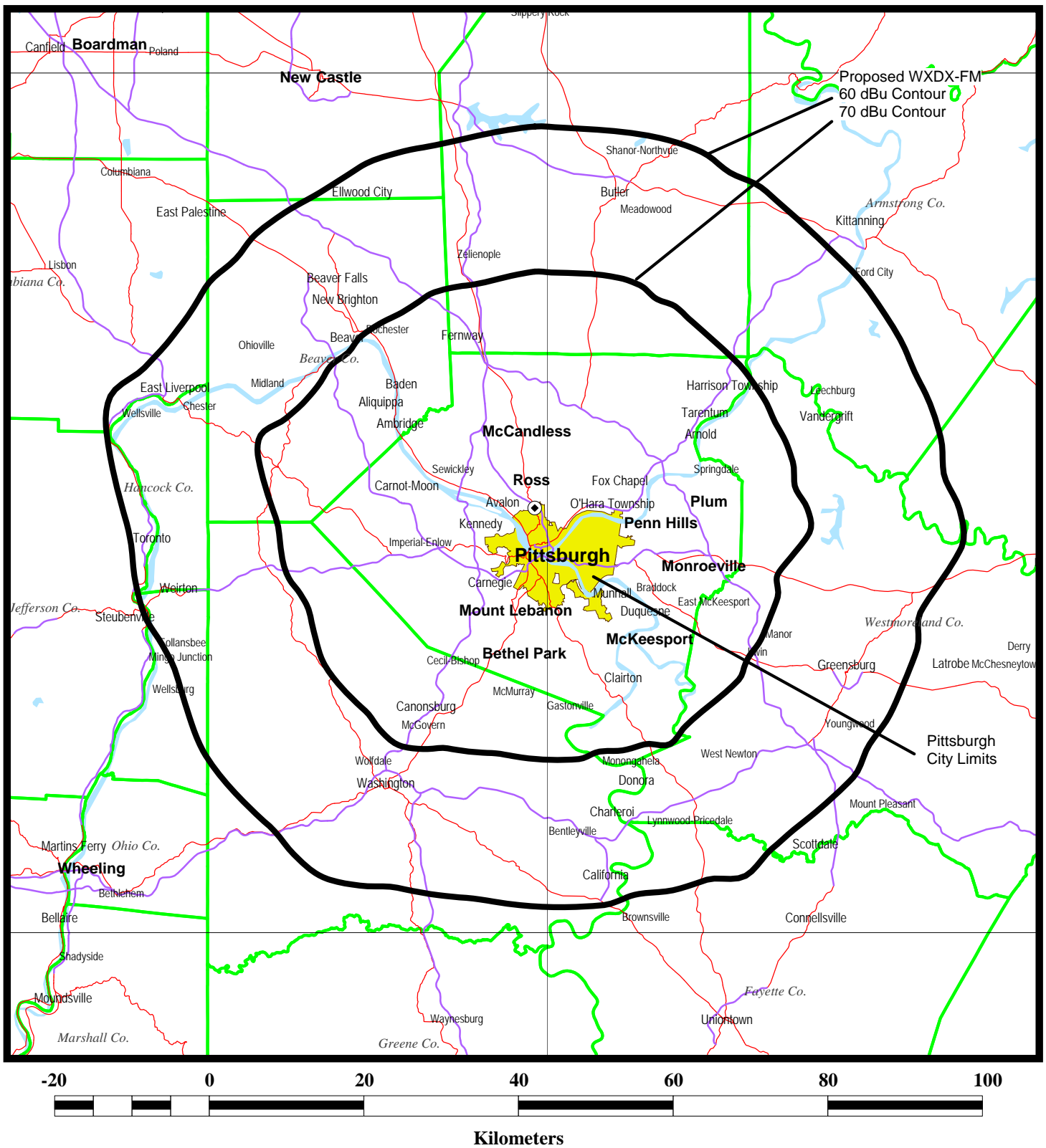
WLCY, Blairsville, PA, Channel 292A - WLCY is short-spaced to WDX-FM under the post-1964 grandfathered provisions of Section 73.213(a) of the FCC Rules. As indicated in Figure 2, the WDX-FM proposal will improve the separation with respect to WLCY. Therefore, the proposal will meet the requirements of the FCC Rules with respect to WLCY.



Louis Robert du Treil, Jr.

du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237

June 5, 2007



PREDICTED COVERAGE CONTOURS

duTreil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2

TECHNICAL EXHIBIT
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Allocation Study

Channel: 290 **Coordinates:** 040-29-38 080-01-09
Class: B **Buffer Distance:** 10 km

Callsign	Status	Chan.	Serv.	Freq.	City		State	Latitude	Dist.(km)	Sep.(km)	Spacing(km)	
Fac. ID	ARN			Class	DA	Ant. ID	ERP(kW)	HAAT(m)	Longitude	Bear.(deg)	73.215	Comment
WUKL	LIC	288	FM	105.5	BETHLEHEM							
4996	BLH 19940502KA			B1	N		13.5	95	040-03-17	76.18	71	5.18
									080-42-26	230.31	65	CLOSE
WLKJ	LIC	289	FM	105.7	PORTAGE							
25733	BMLD 20060201AWR			A	N		3	98	040-22-59	116.09	113	3.09
									078-39-31	95.67	96	CLOSE
WMJI	LIC	289	FM	105.7	CLEVELAND							
73268	BLH 19940823KS			B	N		16	344	041-23-02	172.34	169	3.34
									081-41-44	305.65	145	CLOSE
WXDX-FM	LIC	290	FM	105.9	PITTSBURGH							
60153	BLH 5106			B			72	131	040-29-27	2.33		
<i>(Applicant's licensed facility.)</i>												
WJOW	LIC	290	FM	105.9	PHILIPSBURG							
43880	BLH 19991020AAD			A	D	15627	0.71	290	040-47-34	159.51	178	-18.49
									078-10-29	77.35	143	SHORT
<i>(The WJOW facility is short-spaced to WXDX-FM under Section 73.215. The separation to WJOW from the WXDX-FM licensed transmitter site is 156.51 km. Therefore, the separation is improved by 3.0 km.)</i>												
WKGO	LIC	291	FM	106.1	CUMBERLAND							
74083	BLH 19980109KD			B	N		5.4	430	039-34-54	139.23	169	-29.74
									078-53-58	136.42	145	SHORT
<i>(The WKGO facility is a grandfathered as a pre-1964 short-spaced station to WXDX-FM under Section 73.213(a). Accordingly, as demonstrated herein, the interference requirements and public interest provisions of Section 73.213(a) are met.)</i>												
WBBG	LIC	291	FM	106.1	NILES							
73309	BLH 19880708KD			A			3	100	041-15-52	105.92	113	-7.08
									080-45-35	324.24	96	SHORT
<i>(WBBG is short-spaced to WXDX-FM under Section 73.213(c)(1) of the FCC Rules. Accordingly, the minimum distance separation requirement of 105 km is met with respect to WBBG.)</i>												
NEW	CP	291	FM	106.1	FARMINGTON TOWNSHIP							
165957	BNPH 20060309ADZ			A	D	71978	4.12	118	041-29-48	121.86	69	8.86
									079-25-52	23.68	63	CLOSE
WLCY	LIC	292	FM	106.3	BLAIRSVILLE							
38376	BLH 19860502KB			A			2.4	111	040-31-10	67.47	69	-1.53
									079-13-26	87.32	63	SHORT
<i>(WLCY is short-spaced to WXDX-FM under Section 73.213(c) of the FCC Rules. The separation to WLCY from the WXDX-FM licensed transmitter site is 64.33 km. Therefore, the separation is improved by 3.1 km.)</i>												
WCDK	LIC	292	FM	106.3	CADIZ							
40874	BLH 19910107KC			A	N		2.7	151	040-15-14	74.87	69	5.87
									080-50-35	249.34	63	CLOSE

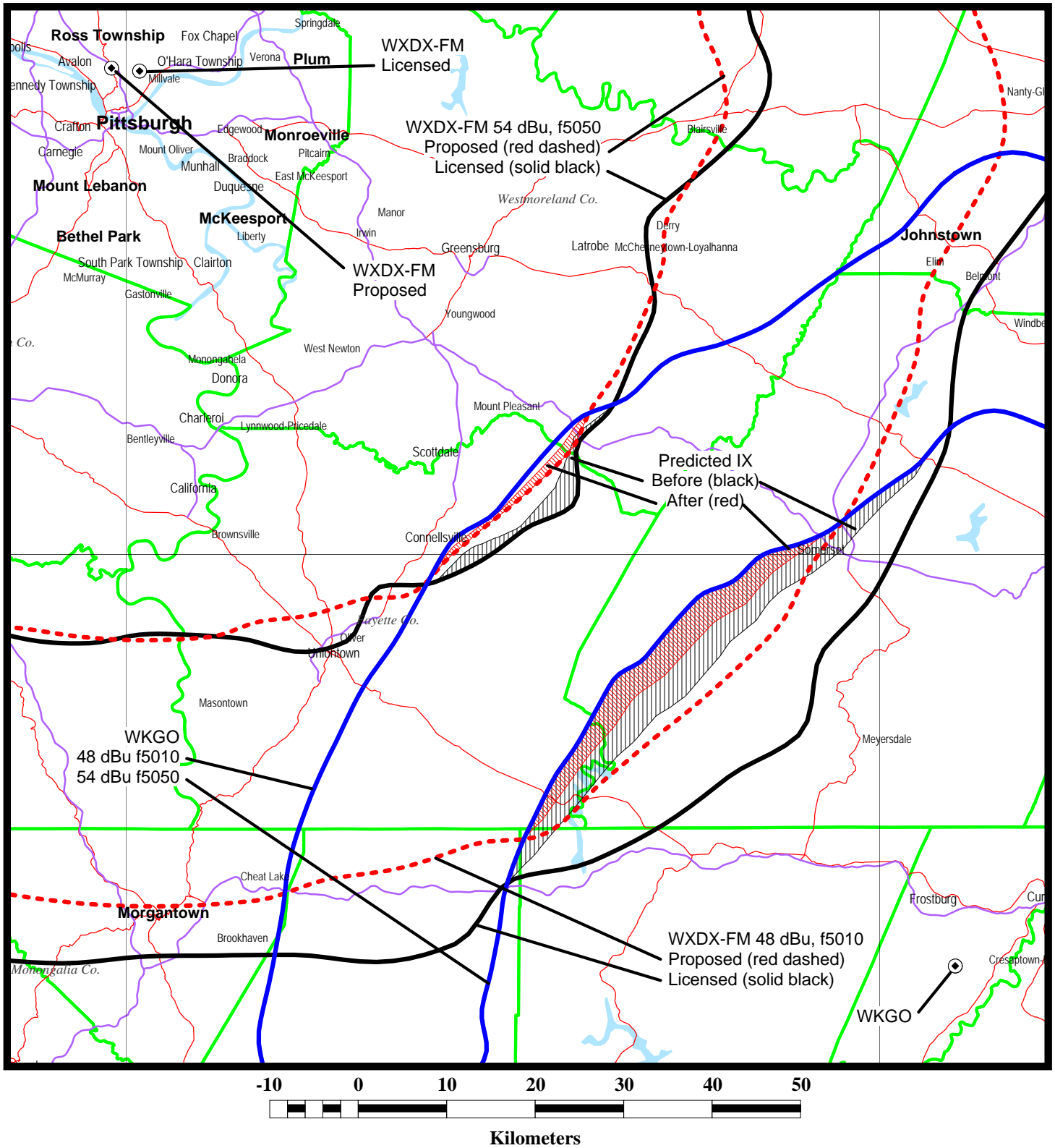
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Summary of Section 73.213 Interference Analysis

WDX Facility			WKGO
Interference Caused	License	Population	14,320
		Area (sq. km)	264
	Application	Population	2,423
		Area (sq. km)	110
Interference Received	License	Population	1,359
		Area (sq. km)	36
	Application	Population	445
		Area (sq. km)	17

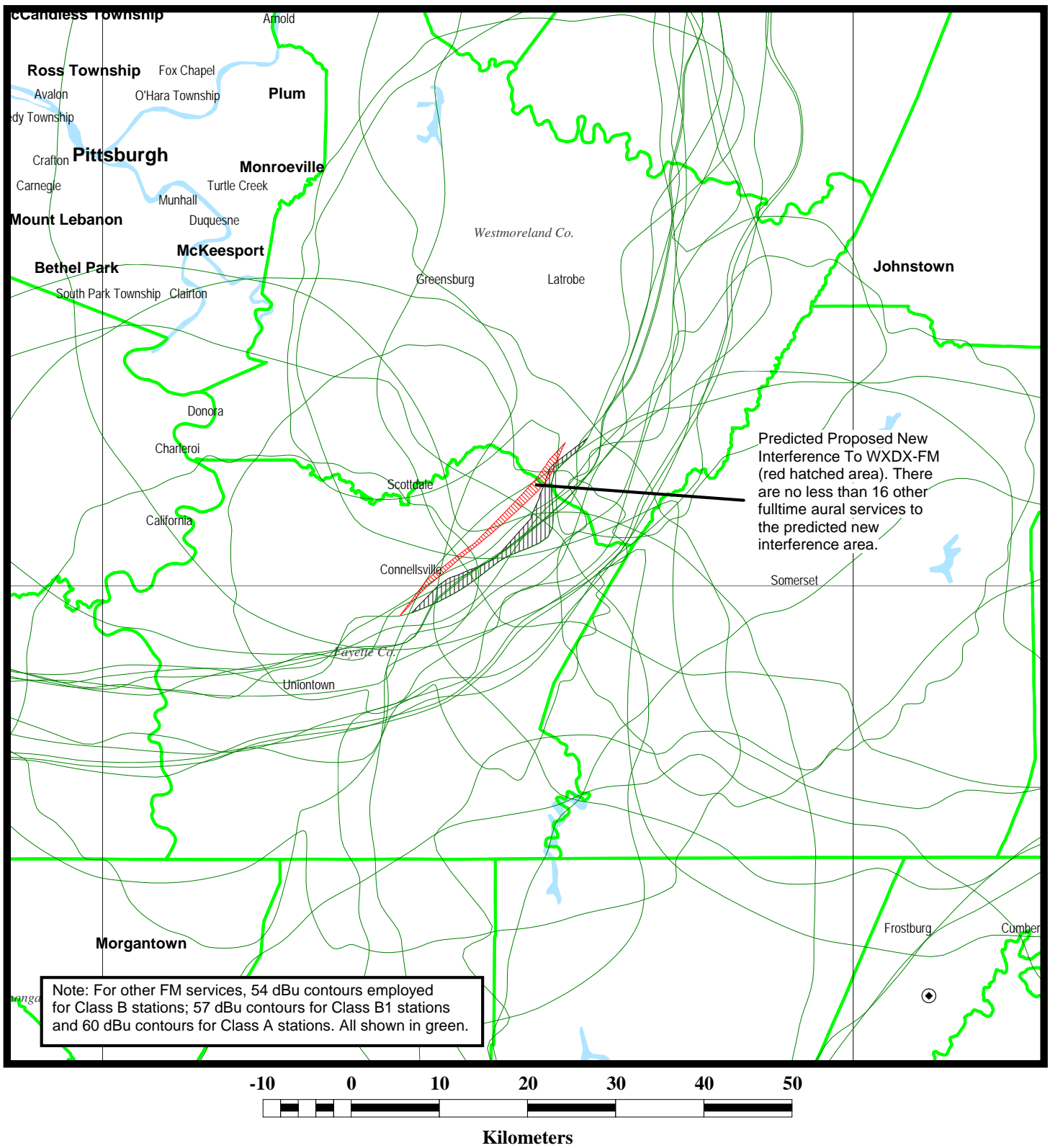
Note: Population based on 2000 Census block data.

Figure 4



PREDICTED INTERFERENCE TO WKGO(FM)

duTreil, Lundin & Rackley, Inc. Sarasota, Florida



OTHER SERVICES ANALYSIS

duTreil, Lundin & Rackley, Inc. Sarasota, Florida

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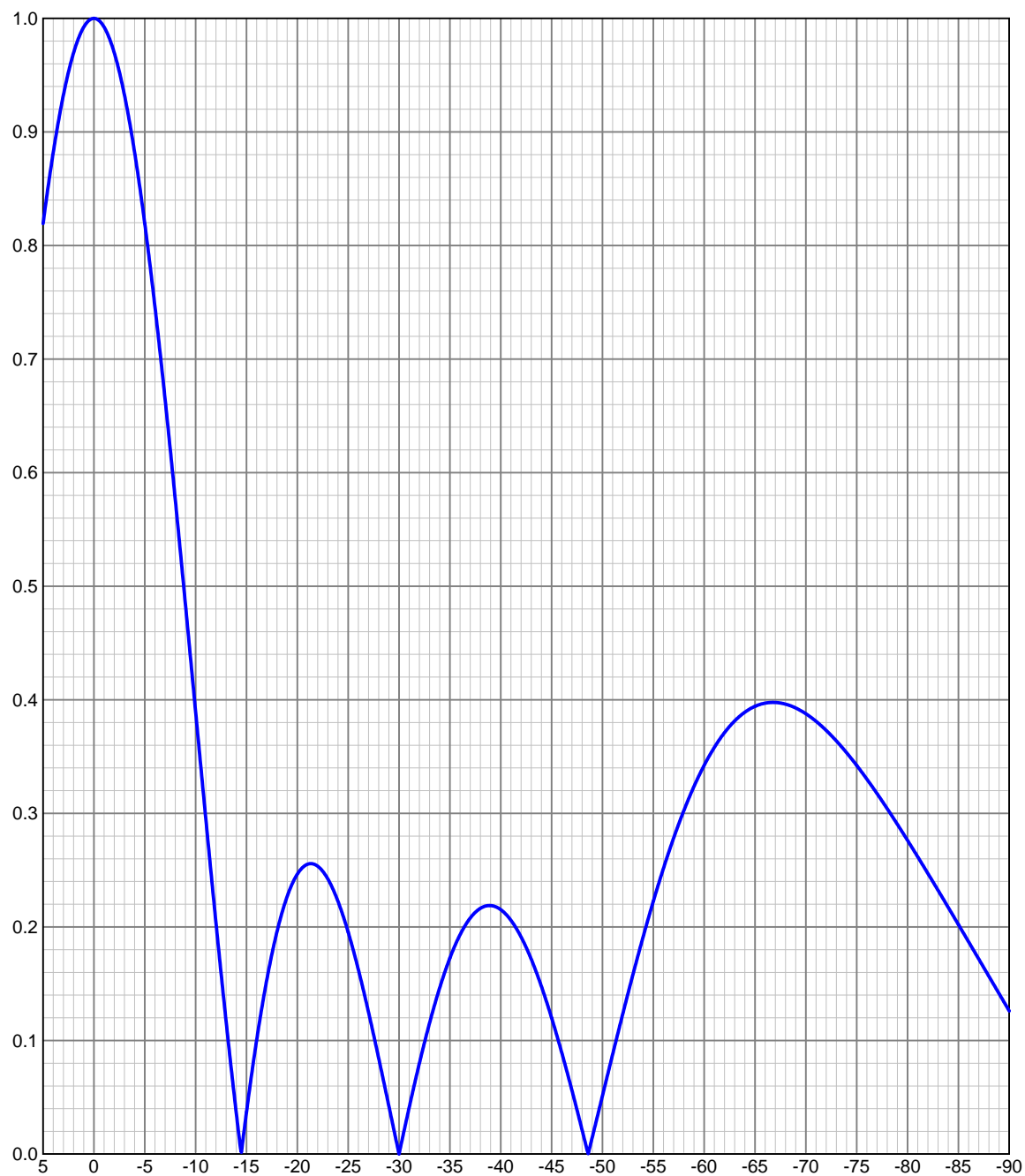
Tabulation of Stations Considered in Other Services Analysis

WVEP, MARTINSBURG, Ch. 205	WZPT, NEW KENSINGTON, Ch. 264
WQED-FM, PITTSBURGH, Ch. 207	WORD-FM, PITTSBURGH, Ch. 268
WAUA, PETERSBURG, Ch. 208	WVAQ, MORGANTOWN, Ch. 270
WQEJ, JOHNSTOWN, Ch. 209	WDVE, PITTSBURGH, Ch. 273
WAIJ, GRANTSVILLE, Ch. 212	WROG, CUMBERLAND, Ch. 275
WVPM, MORGANTOWN, Ch. 215	WLSW, SCOTTDAL, Ch. 280
WTRM, WINCHESTER, Ch. 217	WFRB-FM, FROSTBURG, Ch. 287
WLTJ, PITTSBURGH, Ch. 225	WDX-FM, PITTSBURGH, Ch. 290
WTZN-FM, PITTSBURGH, Ch. 229	WGSM, GREENSBURG, Ch. 296
WQZK-FM, KEYSER, Ch. 231	WDSY-FM, PITTSBURGH, Ch. 300
WWSW-FM, PITTSBURGH, Ch. 233	
WOGG, OLIVER, Ch. 235	
WFGI-FM, JOHNSTOWN, Ch. 238	
WKST-FM, PITTSBURGH, Ch. 241	
WKYE, JOHNSTOWN, Ch. 243	
WRRK, BRADDOCK, Ch. 245	
WLKH, SOMERSET, Ch. 249	
WRKW, EBENSBURG, Ch. 256	
WPKL, UNIONTOWN, Ch. 257	
WSHH, PITTSBURGH, Ch. 259	

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Vertical Plane Radiation Pattern for Proposed Transmitting Antenna

(see following sheet)

ELEVATION PATTERN**Type:****SHPX4F****Channel:****290****Directivity:****Numeric****dBd****Location:****Main Lobe:****2.13****3.29****Beam Tilt:****0.00****Horizontal:****2.13****3.29****Polarization:****Circular****Relative Field**

TABULATED DATA FOR ELEVATION PATTERN

Type: SHPX4F

Polarization: Circular

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.819	-1.73	-6.75	0.685	-3.28	-27.00	0.125	-18.07	-50.50
4.75	0.836	-1.56	-7.00	0.664	-3.55	-27.50	0.105	-19.58	-51.00
4.50	0.852	-1.39	-7.25	0.643	-3.84	-28.00	0.084	-21.47	-51.50
4.25	0.867	-1.24	-7.50	0.621	-4.14	-28.50	0.063	-23.95	-52.00
4.00	0.882	-1.09	-7.75	0.599	-4.46	-29.00	0.042	-27.48	-52.50
3.75	0.896	-0.96	-8.00	0.576	-4.79	-29.50	0.021	-33.52	-53.00
3.50	0.909	-0.83	-8.25	0.553	-5.14	-30.00	0.000	-373.34	-53.50
3.25	0.921	-0.71	-8.50	0.530	-5.51	-30.50	0.021	-33.64	-54.00
3.00	0.933	-0.61	-8.75	0.507	-5.90	-31.00	0.041	-27.71	-54.50
2.75	0.943	-0.51	-9.00	0.484	-6.31	-31.50	0.061	-24.31	-55.00
2.50	0.953	-0.42	-9.25	0.460	-6.74	-32.00	0.080	-21.94	-55.50
2.25	0.962	-0.34	-9.50	0.437	-7.20	-32.50	0.098	-20.16	-56.00
2.00	0.970	-0.27	-9.75	0.413	-7.68	-33.00	0.115	-18.76	-56.50
1.75	0.977	-0.20	-10.00	0.389	-8.19	-33.50	0.132	-17.62	-57.00
1.50	0.983	-0.15	-10.50	0.342	-9.32	-34.00	0.147	-16.68	-57.50
1.25	0.988	-0.10	-11.00	0.295	-10.60	-34.50	0.160	-15.90	-58.00
1.00	0.992	-0.07	-11.50	0.249	-12.08	-35.00	0.173	-15.26	-58.50
0.75	0.996	-0.04	-12.00	0.204	-13.82	-35.50	0.184	-14.72	-59.00
0.50	0.998	-0.02	-12.50	0.159	-15.95	-36.00	0.193	-14.28	-59.50
0.25	1.000	0.00	-13.00	0.117	-18.67	-36.50	0.201	-13.92	-60.00
0.00	1.000	0.00	-13.50	0.075	-22.47	-37.00	0.208	-13.64	-60.50
-0.25	1.000	0.00	-14.00	0.036	-28.92	-37.50	0.213	-13.44	-61.00
-0.50	0.998	-0.02	-14.50	0.002	-55.71	-38.00	0.216	-13.29	-61.50
-0.75	0.996	-0.04	-15.00	0.037	-28.65	-38.50	0.218	-13.22	-62.00
-1.00	0.992	-0.07	-15.50	0.070	-23.11	-39.00	0.219	-13.20	-62.50
-1.25	0.988	-0.10	-16.00	0.100	-19.97	-39.50	0.218	-13.24	-63.00
-1.50	0.983	-0.15	-16.50	0.128	-17.83	-40.00	0.215	-13.34	-63.50
-1.75	0.977	-0.20	-17.00	0.154	-16.27	-40.50	0.211	-13.50	-64.00
-2.00	0.970	-0.27	-17.50	0.176	-15.08	-41.00	0.206	-13.73	-64.50
-2.25	0.962	-0.34	-18.00	0.196	-14.16	-41.50	0.199	-14.02	-65.00
-2.50	0.953	-0.42	-18.50	0.213	-13.44	-42.00	0.191	-14.37	-65.50
-2.75	0.943	-0.51	-19.00	0.227	-12.89	-42.50	0.182	-14.80	-66.00
-3.00	0.933	-0.61	-19.50	0.238	-12.47	-43.00	0.172	-15.31	-66.50
-3.25	0.921	-0.71	-20.00	0.247	-12.16	-43.50	0.160	-15.91	-67.00
-3.50	0.909	-0.83	-20.50	0.252	-11.96	-44.00	0.148	-16.62	-67.50
-3.75	0.896	-0.96	-21.00	0.255	-11.86	-44.50	0.134	-17.44	-68.00
-4.00	0.882	-1.09	-21.50	0.256	-11.85	-45.00	0.120	-18.42	-68.50
-4.25	0.867	-1.24	-22.00	0.254	-11.92	-45.50	0.105	-19.58	-69.00
-4.50	0.852	-1.39	-22.50	0.249	-12.08	-46.00	0.089	-20.99	-69.50
-4.75	0.836	-1.56	-23.00	0.242	-12.32	-46.50	0.073	-22.74	-70.00
-5.00	0.819	-1.73	-23.50	0.233	-12.64	-47.00	0.056	-25.02	-70.50
-5.25	0.802	-1.92	-24.00	0.222	-13.06	-47.50	0.039	-28.22	-71.00
-5.50	0.784	-2.12	-24.50	0.210	-13.57	-48.00	0.021	-33.48	-71.50
-5.75	0.765	-2.32	-25.00	0.195	-14.18	-48.50	0.003	-49.73	-72.00
-6.00	0.746	-2.54	-25.50	0.180	-14.92	-49.00	0.015	-36.57	-72.50
-6.25	0.726	-2.78	-26.00	0.162	-15.79	-49.50	0.033	-29.61	-73.00
-6.50	0.706	-3.02	-26.50	0.144	-16.83	-50.00	0.051	-25.79	-73.50