

Non-Interference Compliance
WOLD-LP, Somerset, NJ FAC# 193220
August 20, 2023

Description of Exhibit Contents

This exhibit demonstrates that the proposed facility complies with interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 73.807.

Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this LP-FM in accordance with 47 C.F.R. § 73.807(e)(1)(ii).

Page 2 of this exhibit is an explanation of the method used to demonstrate non-interference compliance with 2nd adjacent stations with a population waiver based on 47 C.F.R. § 73.807(e)(1), which states:

[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern using V-Soft, Xfield.

Pages 4 through 6 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 7 of this exhibit contains the adjacent channel study prepared with ComStudy 2.2.

Note: The adjacent channel study indicates that there is a lack of clearance to WAEB-FM. This facility is an auxiliary license and does not require distance separation.

Page 8 of this exhibit is an aerial photo of the vicinity surrounding the proposed LP-FM's tower site with the plotted zone of predicted interference.

Compliance with 47 C.F.R. § 73.807(e)(1)

All authorized second adjacent stations with which the proposed LP-FM has contour overlap are tabulated below. Column three shows the station's signal level at the proposed LP-FM's tower site. The minimum second adjacent F(50,50) contour within the proposed LP-FM's standard interfering contour was used to calculate the proposed LP-FM's actual "worst-case" interfering contour.

File Number	Call Sign	Contour at Tower
BLH-20030604ACH	WKTU	60.9
BLH-19960426KA	WAXQ	60.9

Minimum F(50,50) Contour of Adjacent Station at LP-FM's proposed transmit site	60.9
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FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 73.807(e)(1) an applicant may use the undesired-to-desired signal ratio methodology...." The undesired-to-desired ratio for second adjacent stations required by § 73.807 is 40 dBμ. Since the minimum protected contour strength within the proposed translator's standard interference contour is **60.9 dBμ**, this makes the proposed LP-FM's worst-case interfering contour **100.9 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **289.3 m** from the transmit antenna.

As shown on the following page, the area of interference clears the tower ground level by **7.8 m** at the lowest point. The applicant has used aerial photography in identifying occupied buildings and major roads within the zone of predicted interference and determining the height of buildings within the zone.

Note: The tallest buildings within the zone of predicted interference are 20ft (6.1m). This application provides 7.8m (25.6ft) ground clearance so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 73.807(e)(1).

Antenna Manufacturer:	BEXT
Antenna Model:	TFC2K-2(.75)
CORAGL:	68 m
Maximum ERP:	0.0208 kW
Interfering Contour:	100.9 dBμ
Max Int. Contour Distance:	289.3 m
Min Ground Clearance:	7.8 m



WOLD-LP Woodbridge, NJ, Showing Protection to WAXQ, Channel: 282

Geographic Coordinates: N. 402845 W. 742829.9

74.1204(d) Study - Using FCC 30 SEC Terrain Database

Translator or LPFM Maximum Antenna ERP = 0.021 kW, Channel: 280

Translator or LPFM Antenna Height AG = 68 meters

WOLD-LP Antenna Azimuth Model = Reference Station Antenna (NAD 83), Vertical Model = TFC2K-2-

Protected Station's Contour = 60.87585 dBu

Translator's or LPFM's full Interference contour 100.87585

Review Azimuth = 100 Degrees True

Relative Field on the horizontal at Review Azimuth = 1.000

Translator/LPFM ERP on the horizontal at Review Azimuth = 0.021 kW

Distance between stations = 51.0 km

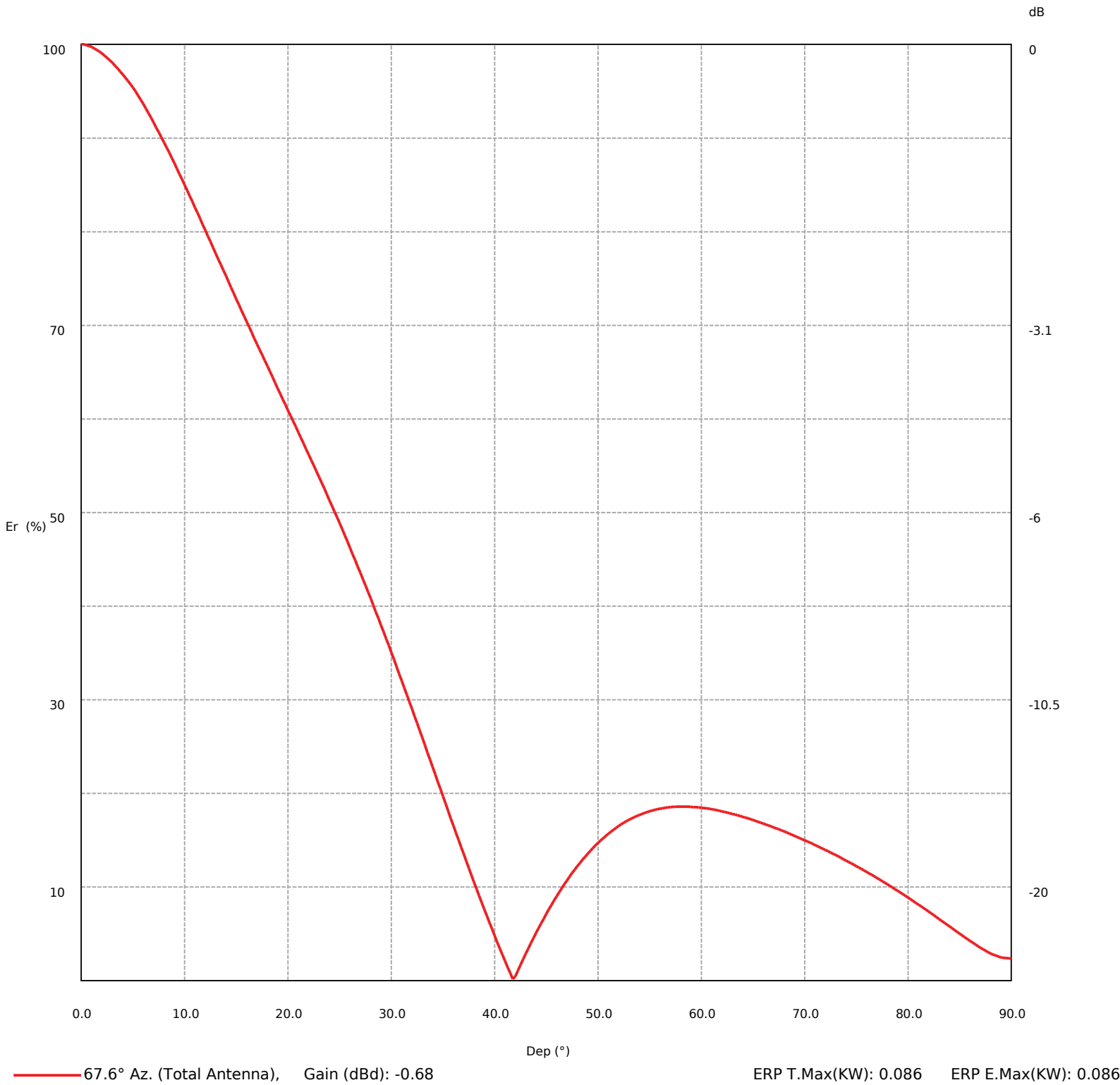
Protected Station=WAXQ, 6 kW, 429 M meters COR AMSL

Depression Angle From Horiz. (Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle (m)	Dist to IX Contour From Tower Base (m)	Height IX Above Ground (m)
00.0	1.0	1.0	0.0208	289.2272	289.2272	068.000
05.0	0.954	1.0	0.0189	275.9228	274.8728	043.952
10.0	0.850	1.0	0.0150	245.8431	242.1082	025.310
15.0	0.728	1.0	0.0110	210.5574	203.3828	013.504
20.0	0.609	1.0	0.0077	176.1394	165.5169	007.757
25.0	0.489	1.0	0.0050	141.4321	128.1810	008.228
30.0	0.351	1.0	0.0026	101.5188	087.9178	017.241
35.0	0.197	1.0	0.0008	056.9778	046.6735	035.319
40.0	0.048	1.0	0.0000	013.8829	010.6349	059.076
45.0	0.071	1.0	0.0001	020.5351	014.5205	053.479
50.0	0.147	1.0	0.0004	042.5164	027.3290	035.431
55.0	0.181	1.0	0.0007	052.3501	030.0268	025.117
60.0	0.185	1.0	0.0007	053.5070	026.7535	021.662
65.0	0.172	1.0	0.0006	049.7471	021.0240	022.914
70.0	0.150	1.0	0.0005	043.3841	014.8382	027.232
75.0	0.122	1.0	0.0003	035.2857	009.1326	033.917
80.0	0.089	1.0	0.0002	025.7412	004.4699	042.650
85.0	0.050	1.0	0.0001	014.4614	001.2604	053.594
90.0	0.050	1.0	0.0001	014.4614	000.0000	053.539

Frequency: 99.10 MHz

BEXT TFC2K-2(.75)

Vertical diagram at an azimuth of 67.6° degrees



Vertical diagram at an azimuth of 67.6° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.1	85.5	15.0	72.8	45.2	30.0	35.1	10.5
0.3	100.0	85.4	15.3	72.2	44.5	30.3	34.3	10.1
0.5	99.9	85.3	15.5	71.6	43.8	30.5	33.6	9.6
0.8	99.8	85.1	15.8	71.0	43.0	30.8	32.8	9.2
1.0	99.7	85.0	16.0	70.4	42.3	31.0	32.0	8.8
1.3	99.6	84.7	16.3	69.8	41.6	31.3	31.3	8.4
1.5	99.4	84.4	16.5	69.2	40.9	31.5	30.5	8.0
1.8	99.2	84.1	16.8	68.6	40.2	31.8	29.8	7.6
2.0	99.0	83.8	17.0	68.0	39.5	32.0	29.0	7.2
2.3	98.8	83.4	17.3	67.4	38.8	32.3	28.2	6.8
2.5	98.6	83.0	17.5	66.8	38.1	32.5	27.5	6.4
2.8	98.3	82.6	17.8	66.3	37.5	32.8	26.7	6.1
3.0	98.1	82.1	18.0	65.7	36.8	33.0	25.9	5.7
3.3	97.8	81.6	18.3	65.1	36.2	33.3	25.1	5.4
3.5	97.4	81.1	18.5	64.5	35.5	33.5	24.4	5.1
3.8	97.1	80.6	18.8	63.9	34.8	33.8	23.6	4.8
4.0	96.8	80.0	19.0	63.3	34.2	34.0	22.8	4.4
4.3	96.5	79.5	19.3	62.7	33.6	34.3	22.0	4.1
4.5	96.1	78.9	19.5	62.1	32.9	34.5	21.2	3.9
4.8	95.8	78.3	19.8	61.5	32.3	34.8	20.5	3.6
5.0	95.4	77.7	20.0	60.9	31.7	35.0	19.7	3.3
5.3	95.0	77.0	20.3	60.3	31.1	35.3	18.9	3.0
5.5	94.5	76.3	20.5	59.8	30.5	35.5	18.1	2.8
5.8	94.1	75.6	20.8	59.2	29.9	35.8	17.3	2.6
6.0	93.6	74.9	21.0	58.6	29.3	36.0	16.6	2.3
6.3	93.2	74.1	21.3	58.0	28.7	36.3	15.8	2.1
6.5	92.7	73.3	21.5	57.4	28.1	36.5	15.0	1.9
6.8	92.2	72.5	21.8	56.8	27.6	36.8	14.3	1.7
7.0	91.6	71.7	22.0	56.2	27.0	37.0	13.5	1.6
7.3	91.1	70.9	22.3	55.6	26.4	37.3	12.8	1.4
7.5	90.6	70.1	22.5	55.0	25.8	37.5	12.0	1.2
7.8	90.1	69.3	22.8	54.4	25.3	37.8	11.3	1.1
8.0	89.5	68.5	23.0	53.8	24.7	38.0	10.5	0.9
8.3	89.0	67.6	23.3	53.2	24.2	38.3	9.8	0.8
8.5	88.4	66.8	23.5	52.6	23.6	38.5	9.0	0.7
8.8	87.9	66.0	23.8	52.0	23.1	38.8	8.3	0.6
9.0	87.3	65.1	24.0	51.3	22.5	39.0	7.6	0.5
9.3	86.7	64.3	24.3	50.7	22.0	39.3	6.9	0.4
9.5	86.2	63.4	24.5	50.1	21.4	39.5	6.2	0.3
9.8	85.6	62.6	24.8	49.5	20.9	39.8	5.5	0.3
10.0	85.0	61.7	25.0	48.9	20.4	40.0	4.8	0.2
10.3	84.4	60.8	25.3	48.2	19.8	40.3	4.1	0.1
10.5	83.8	60.0	25.5	47.6	19.3	40.5	3.4	0.1
10.8	83.2	59.1	25.8	46.9	18.8	40.8	2.8	0.1
11.0	82.6	58.2	26.0	46.2	18.3	41.0	2.1	0.0
11.3	82.0	57.4	26.3	45.6	17.7	41.3	1.5	0.0
11.5	81.4	56.6	26.5	44.9	17.2	41.5	0.8	0.0
11.8	80.8	55.7	26.8	44.2	16.7	41.8	0.2	0.0
12.0	80.2	54.9	27.0	43.6	16.2	42.0	0.4	0.0
12.3	79.5	54.0	27.3	42.9	15.7	42.3	1.1	0.0
12.5	78.9	53.2	27.5	42.2	15.2	42.5	1.7	0.0
12.8	78.3	52.4	27.8	41.5	14.7	42.8	2.3	0.0
13.0	77.7	51.5	28.0	40.8	14.2	43.0	2.8	0.1
13.3	77.1	50.7	28.3	40.1	13.7	43.3	3.4	0.1
13.5	76.5	49.9	28.5	39.4	13.3	43.5	4.0	0.1
13.8	75.9	49.2	28.8	38.7	12.8	43.8	4.5	0.2
14.0	75.3	48.4	29.0	38.0	12.3	44.0	5.1	0.2
14.3	74.6	47.6	29.3	37.3	11.9	44.3	5.6	0.3
14.5	74.0	46.8	29.5	36.5	11.4	44.5	6.1	0.3
14.8	73.4	46.0	29.8	35.8	10.9	44.8	6.6	0.4

Vertical diagram at an azimuth of 67.6° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
45.0	7.1	0.4	60.0	18.5	2.9	75.0	12.2	1.3
45.3	7.6	0.5	60.3	18.4	2.9	75.3	12.1	1.2
45.5	8.1	0.6	60.5	18.4	2.9	75.5	11.9	1.2
45.8	8.6	0.6	60.8	18.4	2.9	75.8	11.8	1.2
46.0	9.0	0.7	61.0	18.3	2.9	76.0	11.6	1.2
46.3	9.5	0.8	61.3	18.3	2.8	76.3	11.5	1.1
46.5	9.9	0.8	61.5	18.2	2.8	76.5	11.3	1.1
46.8	10.3	0.9	61.8	18.1	2.8	76.8	11.1	1.1
47.0	10.7	1.0	62.0	18.1	2.8	77.0	11.0	1.0
47.3	11.1	1.1	62.3	18.0	2.8	77.3	10.8	1.0
47.5	11.5	1.1	62.5	18.0	2.8	77.5	10.6	1.0
47.8	11.9	1.2	62.8	17.9	2.7	77.8	10.5	0.9
48.0	12.2	1.3	63.0	17.8	2.7	78.0	10.3	0.9
48.3	12.6	1.3	63.3	17.7	2.7	78.3	10.1	0.9
48.5	12.9	1.4	63.5	17.7	2.7	78.5	9.9	0.8
48.8	13.2	1.5	63.8	17.6	2.6	78.8	9.8	0.8
49.0	13.5	1.6	64.0	17.5	2.6	79.0	9.6	0.8
49.3	13.9	1.6	64.3	17.4	2.6	79.3	9.4	0.8
49.5	14.1	1.7	64.5	17.3	2.6	79.5	9.2	0.7
49.8	14.4	1.8	64.8	17.2	2.5	79.8	9.1	0.7
50.0	14.7	1.8	65.0	17.2	2.5	80.0	8.9	0.7
50.3	15.0	1.9	65.3	17.1	2.5	80.3	8.7	0.6
50.5	15.2	2.0	65.5	17.0	2.5	80.5	8.5	0.6
50.8	15.4	2.0	65.8	16.9	2.4	80.8	8.3	0.6
51.0	15.7	2.1	66.0	16.8	2.4	81.0	8.1	0.6
51.3	15.9	2.2	66.3	16.7	2.4	81.3	7.9	0.5
51.5	16.1	2.2	66.5	16.6	2.3	81.5	7.8	0.5
51.8	16.3	2.3	66.8	16.5	2.3	81.8	7.6	0.5
52.0	16.5	2.3	67.0	16.4	2.3	82.0	7.4	0.5
52.3	16.7	2.4	67.3	16.3	2.3	82.3	7.2	0.4
52.5	16.9	2.4	67.5	16.2	2.2	82.5	7.0	0.4
52.8	17.0	2.5	67.8	16.1	2.2	82.8	6.8	0.4
53.0	17.2	2.5	68.0	15.9	2.2	83.0	6.6	0.4
53.3	17.3	2.6	68.3	15.8	2.1	83.3	6.4	0.3
53.5	17.5	2.6	68.5	15.7	2.1	83.5	6.2	0.3
53.8	17.6	2.6	68.8	15.6	2.1	83.8	6.0	0.3
54.0	17.7	2.7	69.0	15.5	2.0	84.0	5.8	0.3
54.3	17.8	2.7	69.3	15.4	2.0	84.3	5.6	0.3
54.5	17.9	2.7	69.5	15.2	2.0	84.5	5.4	0.2
54.8	18.0	2.8	69.8	15.1	1.9	84.8	5.2	0.2
55.0	18.1	2.8	70.0	15.0	1.9	85.0	5.0	0.2
55.3	18.2	2.8	70.3	14.9	1.9	85.3	4.8	0.2
55.5	18.2	2.8	70.5	14.7	1.9	85.5	4.6	0.2
55.8	18.3	2.9	70.8	14.6	1.8	85.8	4.4	0.2
56.0	18.4	2.9	71.0	14.5	1.8	86.0	4.2	0.2
56.3	18.4	2.9	71.3	14.4	1.8	86.3	4.1	0.1
56.5	18.5	2.9	71.5	14.2	1.7	86.5	3.9	0.1
56.8	18.5	2.9	71.8	14.1	1.7	86.8	3.7	0.1
57.0	18.5	2.9	72.0	14.0	1.7	87.0	3.5	0.1
57.3	18.5	2.9	72.3	13.8	1.6	87.3	3.4	0.1
57.5	18.6	2.9	72.5	13.7	1.6	87.5	3.2	0.1
57.8	18.6	2.9	72.8	13.5	1.6	87.8	3.0	0.1
58.0	18.6	2.9	73.0	13.4	1.5	88.0	2.9	0.1
58.3	18.6	2.9	73.3	13.3	1.5	88.3	2.8	0.1
58.5	18.6	2.9	73.5	13.1	1.5	88.5	2.7	0.1
58.8	18.6	2.9	73.8	13.0	1.4	88.8	2.6	0.1
59.0	18.6	2.9	74.0	12.8	1.4	89.0	2.5	0.1
59.3	18.5	2.9	74.3	12.7	1.4	89.3	2.4	0.1
59.5	18.5	2.9	74.5	12.5	1.3	89.5	2.4	0.0
59.8	18.5	2.9	74.8	12.4	1.3	89.8	2.4	0.0

Adjacent Channel Study
WOLD-LP, Somerset, NJ FAC# 193220
8/20/2023

Callsign	State	City	Channel	ERP (W)	Class	Status	Distance (km)	Separation (km)	Clr (km)
WKTU	NY	LAKE SUCCESS	278	17000	B	LIC	51.54	67	-15.5
WKTU	NY	LAKE SUCCESS	278	6000	B	LIC	51.07	67	-15.9
WAXQ	NY	NEW YORK	282	7100	B	LIC	51.06	67	-15.9
WAXQ	NY	NEW YORK	282	6000	B	LIC	51.07	67	-15.9
WKTU	NY	LAKE SUCCESS	278	7100	B	LIC	51.06	67	-15.9
WAXQ	NY	NEW YORK	282	17000	B	LIC	51.54	67	-15.5
WAXQ	NY	NEW YORK	282	13000	B	LIC	51.54	67	-15.5
WKTU	NY	LAKE SUCCESS	278	13000	B	LIC	51.54	67	-15.5
WKTU	NY	LAKE SUCCESS	278	1900	B	LIC	52.34	67	-14.7
WAEB-FM	PA	ALLENTOWN	281	19500	B	LIC	90.22	97	-6.8
WCNM	NJ	HAZLET	280	10	D	LIC	24.9	24	0.9
WVBN	NY	BRONXVILLE	280	1300	A	LIC	67.34	67	0.3
WVBN	NY	BRONXVILLE	280	1300	A	LIC	67.34	67	0.3
WNNJ	NJ	NEWTON	279	500	B1	LIC	73.98	74	0
WVBN	NY	BRONXVILLE	280	980	A	LIC	67.34	67	0.3
WAEB-FM	PA	ALLENTOWN	281	50000	B	LIC	98.53	97	1.5
WAEB-FM	PA	ALLENTOWN	281	2500	B	LIC	98.53	97	1.5
WNNJ	NJ	NEWTON	279	2300	B1	LIC	82.36	74	8.4
WPHI-FM	PA	JENKINTOWN	280	270	A	LIC	80.95	67	13.9
WPHI-FM	PA	JENKINTOWN	280	370	A	LIC	80.95	67	13.9
W281BI	NJ	TRENTON	281	250	D	LIC	37.3	21	16.3
WMGM	NJ	ATLANTIC CITY	279	50000	B	LIC	120.96	97	24
WMGM	NJ	ATLANTIC CITY	279	8000	B	LIC	120.96	97	24
WPAT-FM	NJ	PATERSON	226	4000	B	LIC	51.06	12	39.1
WPAT-FM	NJ	PATERSON	226	4800	B	LIC	51.06	12	39.1

Aerial Photo Zone of Predicted Interference
WOLD-LP, Somerset, NJ FAC# 193220
August 20, 2023

