

## EXHIBIT 15, Groundwave Interference Considerations

### PART A

#### Allocation Studies

##### Statement

The allocation studies carried out for this application show that for the proposed daytime operation of KRAE, the stations listed below represent all of the existing stations, construction permits and pending applications that require consideration with respect to the possibility of prohibited overlap of groundwave contours. Part A of this Exhibit provides information demonstrating that all the stations of interest would receive adequate protection from the proposed daytime operation of KRAE.

##### Co-channel stations (1480 kHz):

KAVA, Pueblo, Colorado

KHQN, Spanish Fork, Utah

Application for Julesburg, Colorado (File Number BNP-20040126AHL)

##### First adjacent channel stations (1470 kHz and 1490 kHz)

KEPL, Estes Park, Colorado (1470 kHz)

KKTY, Douglas, Wyoming (1470 kHz)

KCFC, Boulder, Colorado (1490 kHz)

KGOS, Torrington, Wyoming (1490 kHz)

##### Second adjacent channel stations (1460 kHz and 1500 kHz)

No stations

##### Third adjacent channel stations (1450 kHz and 1510 kHz)

No stations

The value of unattenuated field strength at one kilometer for the proposed daytime operation of KRAE was obtained from the Commission's Figure 8, Section 73.190 Analysis program. Values of unattenuated field strength at one kilometer for daytime operation of the pertinent stations and pending application were obtained or derived from data contained in the Commission's files. The facilities of the stations requiring consideration are listed in Table A of this Statement.

## EXHIBIT 15, PART A (continued)

### Allocation Studies

Except as noted in this Statement, ground conductivity values were obtained from a computerized version of FCC Figure M-3. Field strength measurements of KEPL were made for this application for the purpose of determining values of effective ground conductivity; the data and analysis for these measurements is contained in Part B of this Exhibit.

With respect to the KEPL field strength measurements, Table B of this Statement shows how the measurement data was applied in the allocation studies for this application. The information table lists the azimuths along which the field strength measurements were made; and for each such azimuth, the sector over which the field strength measurement data was assumed to prevail, and the values of measured effective ground conductivity and the corresponding distances. Measured values of effective ground conductivity were assumed to be applicable over an angular sector of plus and minus ten degrees from the azimuth along which the field strength measurements were made.

Contours were located by computerized methods utilizing the "equivalent distance" method of computation where more than one value of ground conductivity was encountered, employing effective ground conductivity values derived from available field strength measurement data. A uniform ground conductivity of 8 mS/m, derived from FCC Figure M-3, was assumed for the computations for the proposed KRAE daytime 1000 mV/m contour. Contours were calculated at azimuthal increments of one degree.

Figures 1A, 1B and 1C of Part A of this Exhibit show the relationship of the daytime contours to be considered with respect to co-channel interference, for the present and proposed operation of KRAE and for KAVA, KHQN, and the pending application for a new station at Julesburg, Colorado.

The relationship of the daytime contours to be considered with respect to first adjacent channel interference is shown in Figures 2A, 2B and 2C of Part A of this Exhibit for the present and the proposed operation of KRAE and for KEPL, KKTY, KCFC and KGOS.

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## EXHIBIT 15, PART A (continued)

## Allocation Studies

TABLE A

## Broadcast Station Facilities

Frequency	Call Letters, Location, Status	File Number or Other Source of Data	Geographical Coordinates	Daytime Power	Daytime Antenna
1480 kHz	Proposed KRAE, Cheyenne, WY	New Application	N 41° 07' 17" W 104° 50' 22"	1.0 kW	Nondirectional
	KRAE, Cheyenne, WY (License)	FCC Files	N 41° 07' 26" W 104° 49' 10"	1.0 kW	Nondirectional
1470 kHz	KEPL, Estes Park, CO (License)	BL-19801031AE	N 40° 20' 15" W 105° 31' 36"	1.0 kW	Nondirectional
	KKTY, Douglas, WY (License)	FCC Files	N 42° 45' 48" W 105° 23' 32"	1.0 kW	Nondirectional
1480 kHz	KAVA, Pueblo, CO (License)	FCC Files	N 38° 18' 56" W 104° 37' 03"	1.0 kW	Directional (augmented pattern)
	KHQN, Spanish Fork, UT (License)	FCC Files	N 40° 04' 30" W 111° 39' 42"	1.0 kW	Nondirectional
	Julesburg, CO (Application)	BNP-20040126AHL	N 40° 59' 18" W 102° 15' 50"	1.0 kW	Nondirectional
1490 kHz	KCFC, Boulder, CO (License)	BML-20010703ABL	N 40° 01' 42" W 105° 15' 06"	1.0 kW	Nondirectional
	KGOS, Torrington, WY (License)	BL-19860929AA	N 42° 04' 20" W 104° 13' 40"	1.0 kW	Nondirectional

EXHIBIT 15, PART A (continued)

Allocation Studies

TABLE B

Field Strength Measurement Data Used for KEPL

Radial (degrees True)	Azimuthal Sector (degrees)	Measured Effective Ground Conductivity Values	Source of Data
15	5 - 25	3 mS/m to 1.73 km 2 mS/m to 6.65 km 1 mS/m to 13.8 km	New
35	25 – 45	3 mS/m to 10.8 km 1 mS/m to 16.8 km	New
55	45 – 65	1 mS/m to 1.43 km 3 mS/m to 3.69 km 2 mS/m to 21.9 km	New

Measured values of effective ground conductivity shown in above table were utilized for KEPL study sector from 5° T. to 65° T.