

## **Non-Interference Compliance using Longley Rice Contours**

Regarding Facility id 151525

Channel 258

### **Description of Exhibit 12A Contents**

The purpose of this exhibit is to request a terrain waiver based on Longley Rice contours and to demonstrate that this proposal will not cause interference to application BMJPFT-20030310AYO for Rifle, CO (FIN: 12377).

Page 2 of this exhibit (Exhibit 2A) consists of a shaded elevation map showing the protected contours of K244AN and the interfering contours of proposed K258BP. The proposed transmit site of K258BP is 98km from the transmit site for K244AN. There are mountains in excess of 3,000m separating these two sites. This map is a visual demonstration that the signal of K244AN does not reach Grand Junction and that the signal from K258BP will not interfere with K244AN.

Page 3 of this exhibit (Exhibit 2B) is a plot of the 60dBμ F(50,50) and 40dBμ F(50,10) contours of proposed K258BP and K244AN. Note that there is prohibitive overlap on radials 56° through 61° from the transmit site of K258BP. The 40dBμ Longley Rice contour for K258BP is also plotted on this map. Note that the Longley Rice contour does not intersect the protected 60dBμ F(50,50) contour of K244AN; therefore, this application is in full compliance with the provisions of 74 C.F.R § 74.1204(d) which states *"...an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain..."*.

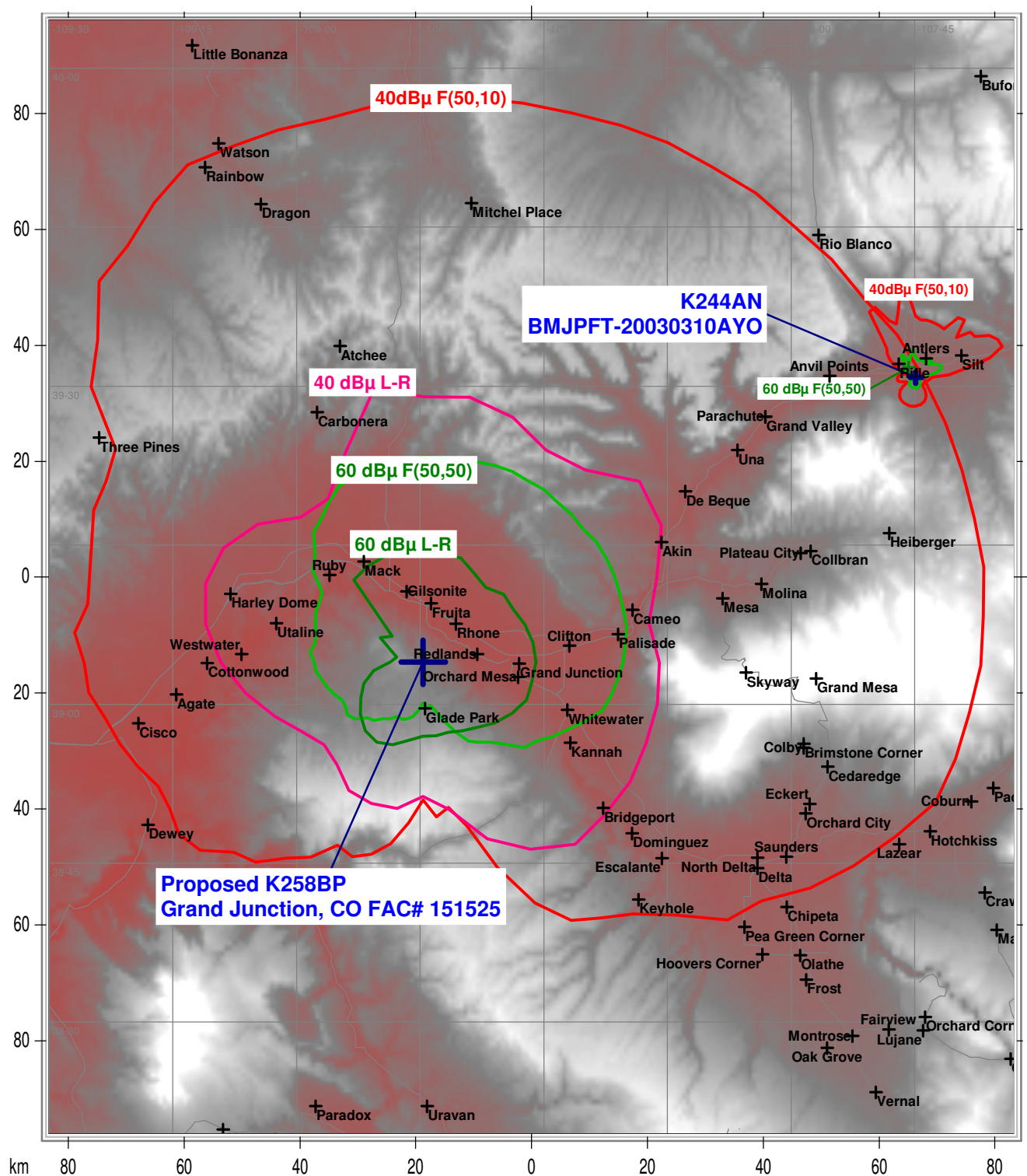
Page 4 of this exhibit (Table 1) consists of tabular data showing the ERP, HAAT, ΔH, and the distance from the transmit site of K258BP to the 40 dBμ Longley Rice contour. Table 1 has been included in this exhibit to tabulate the ΔH values, as calculated by ComStudy Version 2.2, on 36 radials emanating from the proposed transmit site. According to the OET guidelines, "Where the ΔH is used as the sole determinant that the terrain along a radial widely departs from the 50 meter standard, a ΔH of 20m or less, or 100m or more" must be demonstrated. Of the 36 ΔH values calculated and tabulated in Table 1, 36 or 100% of the total are 100m or more, indicating that the terrain surrounding the transmit site "departs widely" from the 50m standard. The bearing from the transmit site to the prohibited overlap with K244AN lie over an arc between 56° and 61°. Radial 60° has a ΔH value of 550m. This ΔH value indicates that the terrain in the direction of this overlap "departs widely" from the 50m standard and therefore the use of Longley Rice contours is justified.

The 1997 OET guidelines were developed to quantitatively determine when Longley Rice contours could be used to substitute for the standard FCC contours. Applicant acknowledges that these guidelines were primarily developed for full service broadcast facilities, but these principles apply to translators as well.

Page 5 of this exhibit consists of a table listing all ComStudy 2.2 settings used to generate the Longley Rice 40dBμ contours.

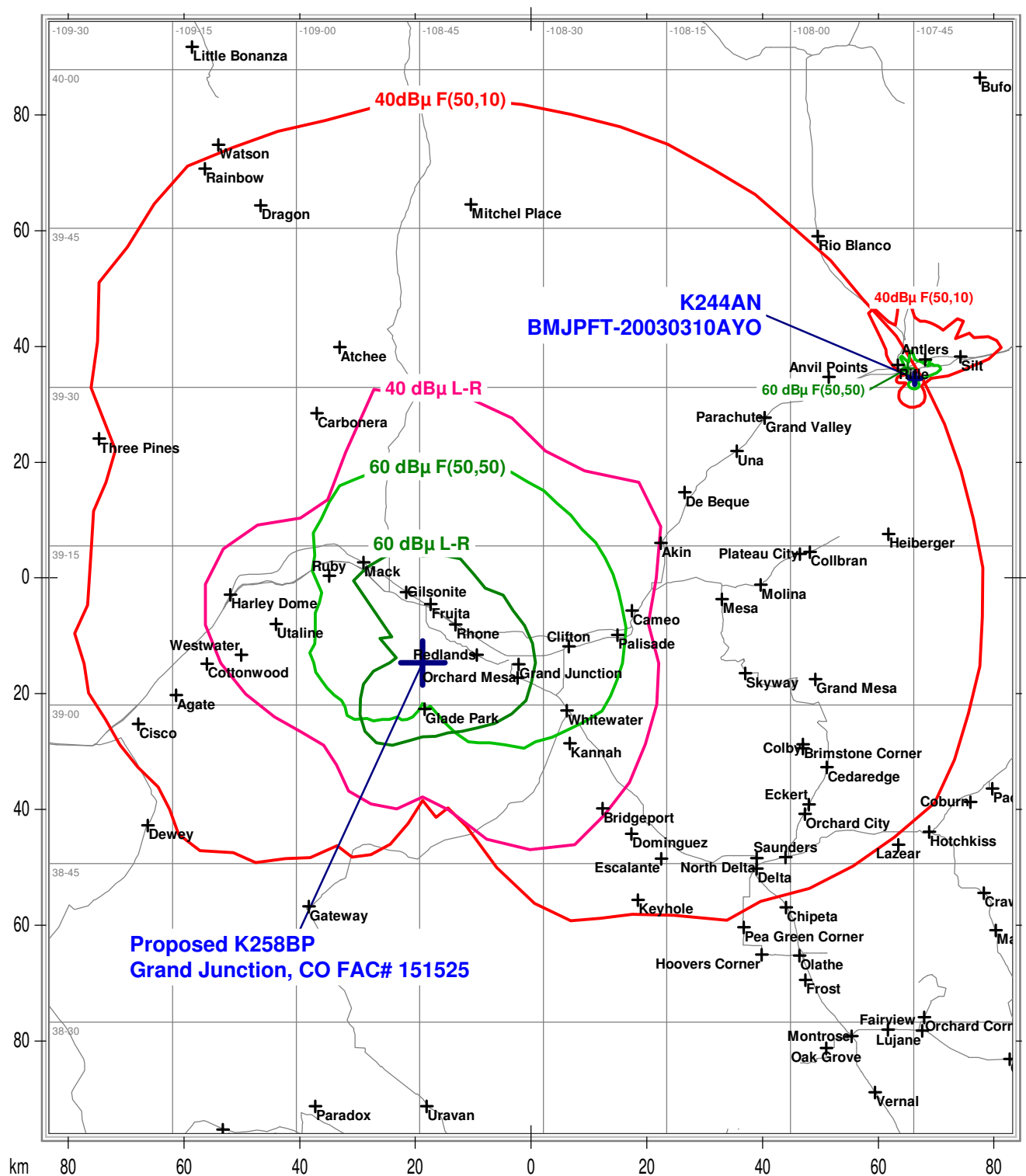
**This application clearly demonstrates that the proposed K258BP will not cause any interference to K244AN. The use of Longley Rice 40dBμ contours has been justified by the ΔH values. All values and assumptions used to generate these Longley Rice contours have been demonstrated. This application clearly demonstrates that this proposal will not cause any interference to K244AN due to intervening terrain, and is therefore in compliance with 47 C.F.R § 74.1204(d).**

## Exhibit 12A Elevation Map Proposed K258BP and K244AN



ASR# 1226999, 33m, 250W, 6812b-2, Fill-in KLFV(FM)

## Exhibit 12B Longley-Rice Contour Protection Map



ASR# 1226999, 33m, 250W, 6812B-2, Fill-in KLFV(FM)

**Table 1. Longley Rice Data, Distance to LR-40 dBμ**  
**Proposed K258BP, Grand Junction, CO FAC# 151525**  
**9/30/2009**

**Site: ASR# 1226999**

**Coordinates: 39-03-59.0 N, 108-44-41.0 \**

**Freq: 99.5 MHz**

**ERP: 250 W**

<b>Bearing</b>	<b>ERP W</b>	<b>HAAT</b>	<b>DH</b>	<b>Distance</b>	<b>Lat</b>	<b>Lon</b>
0	250	723	690	46.33	39-28-59.0 N	108-44-41.0 W
10	250	730	820	46.99	39-28-57.2 N	108-38-58.6 W
20	250	745	1040	45.56	39-27-04.8 N	108-33-47.5 W
30	250	748	920	42.85	39-23-59.7 N	108-29-43.1 W
40	250	743	690	43.91	39-22-06.3 N	108-24-58.9 W
50	250	738	610	49.19	39-20-59.9 N	108-18-23.0 W
60	250	753	550	47.91	39-16-51.1 N	108-15-45.2 W
70	250	741	540	43.44	39-11-56.6 N	108-16-15.4 W
80	250	730	730	40.01	39-07-40.7 N	108-17-16.4 W
90	250	691	1510	41.26	39-03-55.4 N	108-16-00.2 W
100	250	637	1060	41.57	39-00-01.8 N	108-16-15.2 W
110	250	533	610	41.49	38-56-16.3 N	108-17-37.8 W
120	250	411	270	41.83	38-52-39.1 N	108-19-34.4 W
130	250	319	350	41.54	38-49-32.3 N	108-22-38.3 W
140	250	194	210	41.59	38-46-45.8 N	108-26-10.5 W
150	250	152	360	37.81	38-46-17.9 N	108-31-35.8 W
160	250	74	370	32.87	38-47-18.5 N	108-36-53.9 W
170	250	36	490	26.14	38-50-05.4 N	108-41-32.3 W
180	250	31	640	23.55	38-51-16.3 N	108-44-41.0 W
190	250	54	800	25.98	38-50-10.6 N	108-47-48.5 W
200	250	67	1120	26.34	38-50-37.3 N	108-50-55.5 W
210	250	79	1230	25.91	38-51-51.9 N	108-53-39.8 W
220	250	107	1050	23.37	38-54-18.7 N	108-55-06.1 W
230	250	144	920	22.54	38-56-09.1 N	108-56-39.8 W
240	250	145	670	24.33	38-57-24.2 N	108-59-18.3 W
250	250	159	620	27.58	38-58-52.1 N	109-02-40.6 W
260	250	185	550	31.39	39-01-00.5 N	109-06-09.2 W
270	250	210	550	35.26	39-03-56.4 N	109-09-11.5 W
280	250	212	470	38.46	39-07-32.2 N	109-11-01.9 W
290	250	231	360	40.28	39-11-22.1 N	109-11-02.2 W
300	250	253	330	40.03	39-14-44.6 N	109-08-50.4 W
310	250	374	290	37.48	39-16-57.3 N	109-04-42.0 W
320	250	519	430	33.12	39-17-39.4 N	108-59-31.5 W
330	250	604	370	32.99	39-19-23.5 N	108-56-11.4 W
340	250	664	640	39.12	39-23-49.0 N	108-54-01.6 W
350	250	672	690	48.59	39-29-48.4 N	108-50-35.0 W

**Table 2.**  
**ComStudy Settings Used to Generate 40 dB $\mu$  Longley- Rice Contour**  
**Proposed K258BP, Grand Junction, CO FAC# 151525**  
**10/1/2009**

**Field Strength Site Matrix Setup**

Propagation Model:	Longley-Rice
Confidence:	50%
Resolution:	15" ~ 500 m
Receiver height:	2.0 m
Mobile Tx Power:	10.0 w
Mobile Tx Gain:	0.0 dB
Terrain Spacing:	.20 km
Radio Earth Curvature k	1.333
Land use attenuation:	Yes
Talk out matrix:	Yes
Time:	50%
Location:	50%
Conductivity (S/m):	.0050
Dielectric Constant:	15.000
Climate Zone:	Continental Temperate
Service Application:	Broadcast

**Contour Setup**

Contour:	Matrix Based 40 dB $\mu$
Matrix Type:	Talk Out
Contour Type:	Median
Radials:	36 @ 10°
Interpolation:	None