

APPLICATION FOR MINOR
MODIFICATION TO A PERMITTED DTV
BROADCAST STATION
FCC FILE NO.: BPEDT-20080314ADA
TO MAXIMIZE AND OPERATE IN THE POST
DTV TRANSITION PERIOD
WMAE-DT MISSISSIPPI AUTHORITY FOR
EDUCATIONAL TELEVISION
BOONEVILLE, MISSISSIPPI

KESSLER & GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS

20080610

Prepared by Ryan Wilhour

KG&A

507 N.W. 60th Street, Suite C
Gainesville, Florida 32607

KESSLER AND GEHMAN ASSOCIATES, INC.

ENGINEERING STATEMENT OF RYAN WILLOUR OF THE FIRM KESSLER AND
GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS IN CONNECTION WITH
AN APPLICATION FOR MINOR MODIFICATION OF A PERMITTED DTV
BROADCAST STATION FCC FILE NUMBER BPEDT-20080314ADA TO MAXIMIZE
OPERATION IN THE POST DTV TRANSITION PERIOD
WMAE-DT
MISSISSIPPI AUTHORITY FOR EDUCATIONAL TELEVISION
BOONEVILLE, MS

This firm has been employed by Mississippi Authority for Educational Television “MAET” to prepare engineering studies and a minor modification application to FCC file number BPEDT-20080314ADA for post DTV transition maximization.

MAET, licensee of WMAE-DT, Channel 12 herein proposes to increase its ERP from 5.2kW to 31kW for its post DTV transition operation. No other changes are proposed.

ATTACHED FIGURES

In carrying out the engineering studies the following attached figures were prepared:

1. Engineering Specifications (Exhibit E1)
2. Elevation drawing of the antenna system (Exhibit E2)
3. Antenna Elevation Pattern (Exhibit E3)
4. USGS 7.5 minute topographic quadrangle showing the proposed transmitter location and the coordinate lines (Exhibit E4)
5. Map showing the predicted DTV coverage contour (Exhibit E5)
6. Allocation Analysis (Exhibit E6)
7. Environmental Impact/ RFR Hazard Analysis (Exhibit E7)

ALLOCATION ANALYSIS

It is herein proposed to modify the above referenced channel 12 digital facility to maximize its coverage area without causing impermissible interference to other post DTV transition facilities. Exhibit E6 demonstrates the interference considerations for the proposed facility and further illustrates complete compliance to the 0.5% interference threshold criteria.

ENVIRONMENTAL IMPACT/RFR HAZARD ANALYSIS

An analysis has been made of the human exposure to RFR using the calculation methodology described in OET Bulletin 65, Edition, 97-01. Exhibit E7 is a RFR study demonstrating compliance within 5% of the most restrictive permissible exposure at any location 2 meters above the ground. Exhibit E7 calculations were made using a frequency of 204 MHz, which is the lower edge of the proposed channel. To account for ground reflections, a coefficient of 1.6 was included in the calculations.

Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is well within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of WMAE-DT were not taken into account. The instant proposal complies with the FCC limits for human exposure to RF radiation and thus is excluded from further environmental processing.

DECLARATION OF ENGINEER

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on June 10, 2008.

The logo for Kessler and Gehman Associates, Inc. (KGA) features the letters 'KGA' in a stylized, serif font. The letters are white with a black outline and are positioned above a thick, solid black horizontal bar.

Ryan Wilhour

A handwritten signature in blue ink, reading 'Ryan Wilhour', is written over a white background.

Consulting Engineer

WMAE-DT

ENGINEERING SPECIFICATIONS

A. Transmitter Site:

Geographic coordinates (NAD 27):

North Latitude 34° 40' 00"

West Longitude 88° 45' 05"

Transmitter Site Location: **Located approximately 16.8 km west (273°) of Booneville, MS.**

B. Main Studio Site:

Street Address **3825 Ridgewood Road
Jackson, MS 39211-6463.**

C. Post-Transition Facility:

DTV Channel	Number	12
	Frequency	204 - 210 MHz

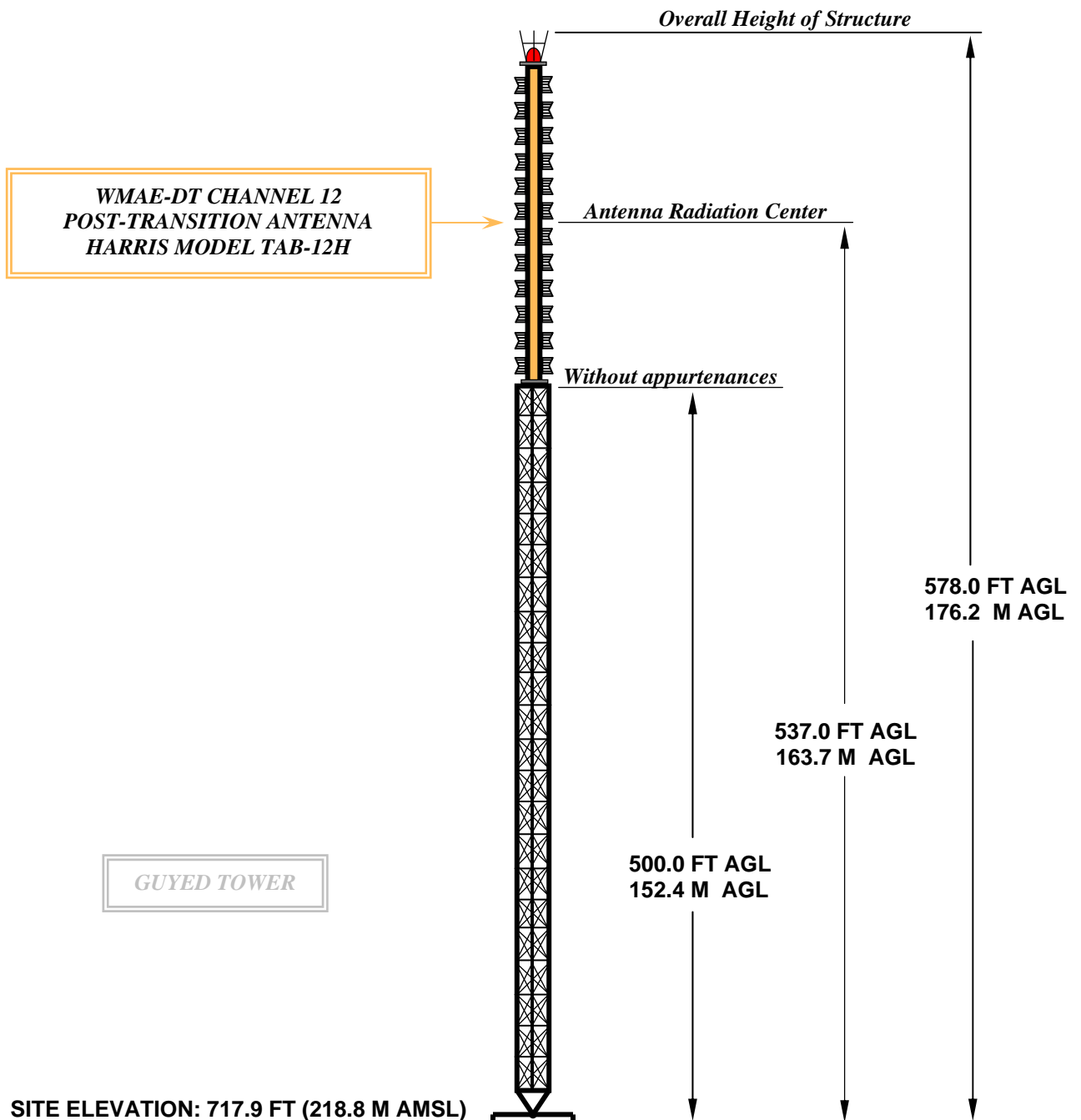
D. Antenna Height:

Height of Site Above Mean Sea Level (AMSL)	218.8 M
Overall Height of Structure Above Ground (including all appurtenances)	176.2 M
Overall Height of Structure Above Mean Sea Level (including all appurtenances)	395.0 M
Height of Site Above Average Terrain	59.3 M
Antenna Height Radiation Center (R/C) Above Ground	163.7 M
Antenna Height R/C Above Average Terrain	223.0 M
Antenna Height R/C Above Mean Sea Level	382.5 M
Average of All Non-Odd Radials	159.5 M

E. System Parameters – Horizontal Polarization:

Maximum Antenna Gain in Beam Maximum	10.79 dB
Maximum Antenna Gain in Horizontal Plane	10.59 dB
Maximum Effective Radiated Power	14.9 dBk
In Beam Maximum	31.0 kW
Maximum Effective Radiated Power	14.7 dBk
In Horizontal Plane	29.6 kW

WMAE-DT POST-TRANSITION ELEVATION VIEW



OVERALL HEIGHT AGL: 176.2 M
OVERALL HEIGHT AMSL: 395.0 M
RADIATION CENTER AGL: 163.7 M
RADIATION CENTER AMSL: 382.5 M
RADIATION CENTER HAAT: 223.0 M
AVG OF ALL NON-ODD RADIALS: 159.5 M
SITE HAAT: 59.3 M

COORDINATES (NAD 27):

N. LATITUDE 34° 40' 00"

W. LONGITUDE 88° 45' 05"

Antenna Structure Registration Number:
1041045

NOTE: NOT TO SCALE

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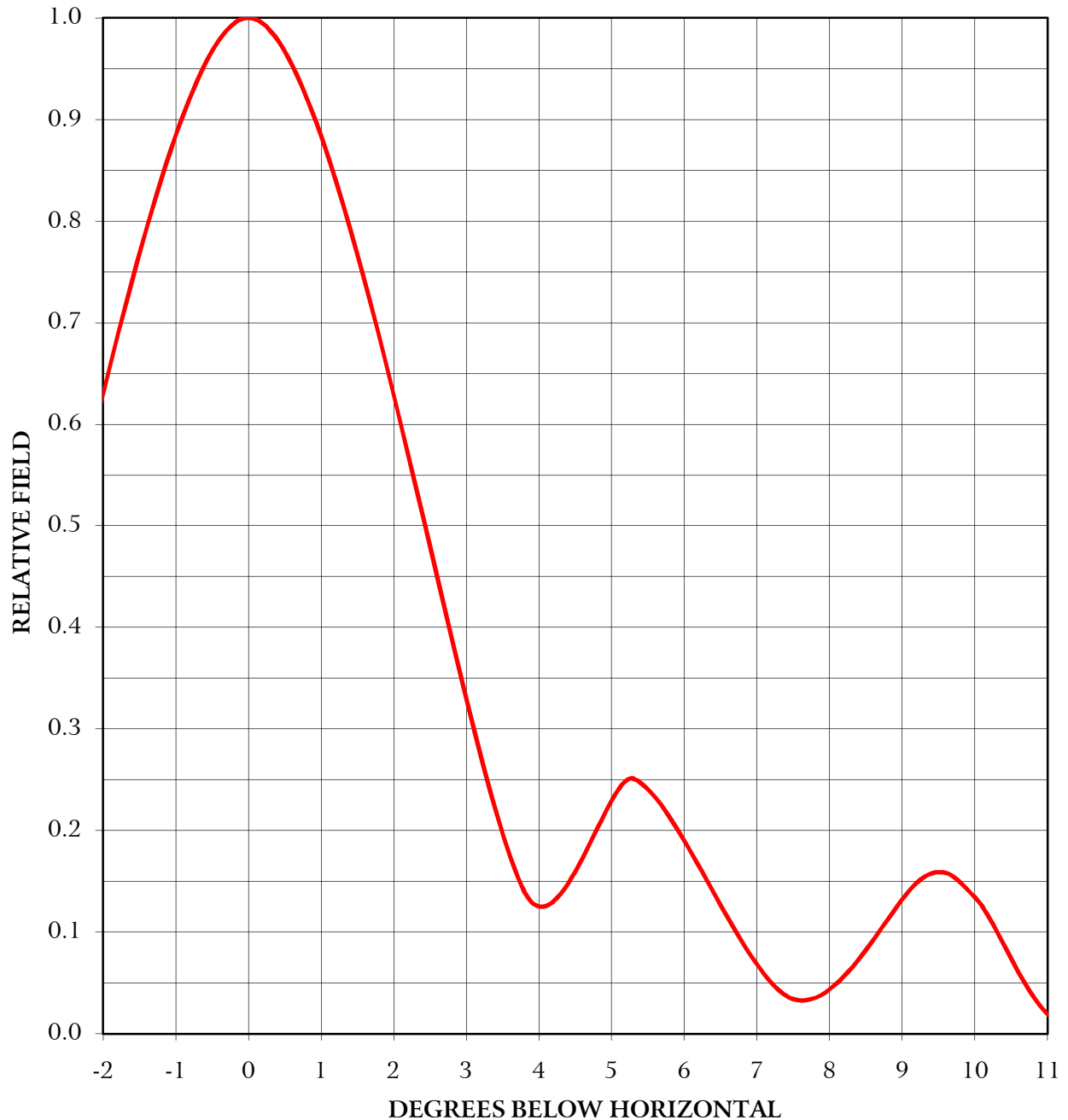
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EXHIBIT E2

CALCULATED ELEVATION PATTERN

HARRIS MODEL TAB-12H



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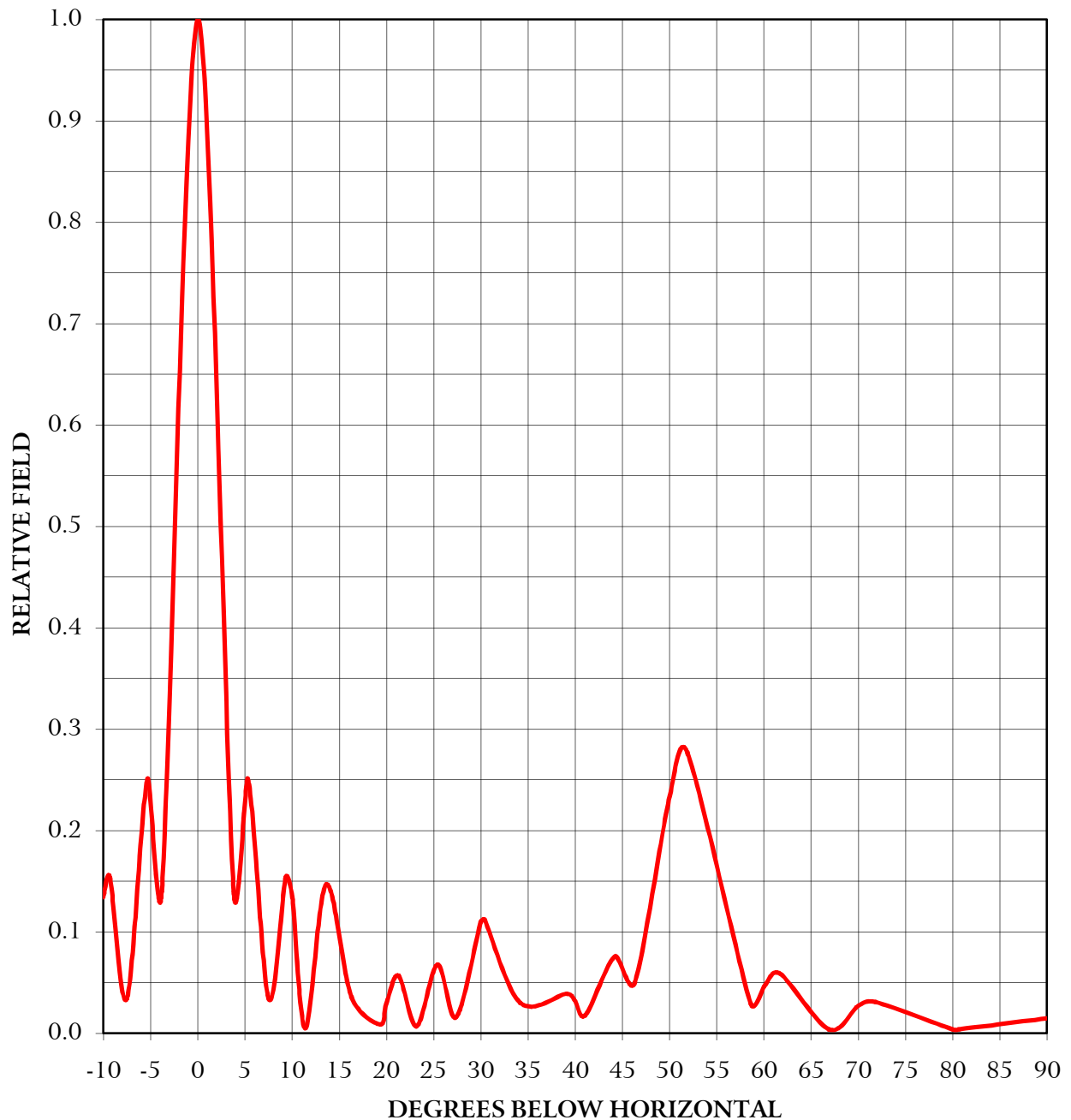
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EXHIBIT E3A

CALCULATED ELEVATION PATTERN

HARRIS MODEL TAB-12H

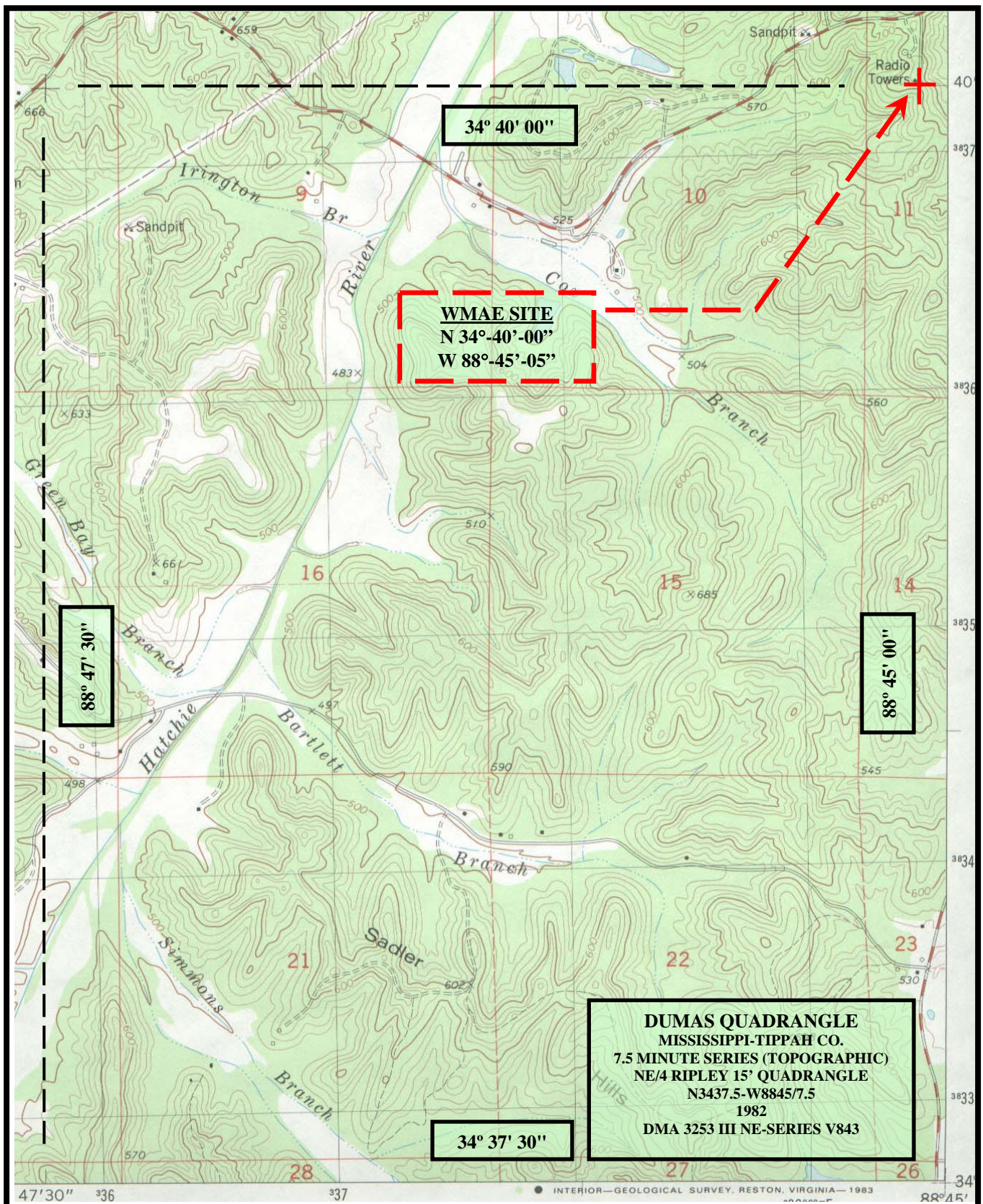


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EXHIBIT E3B



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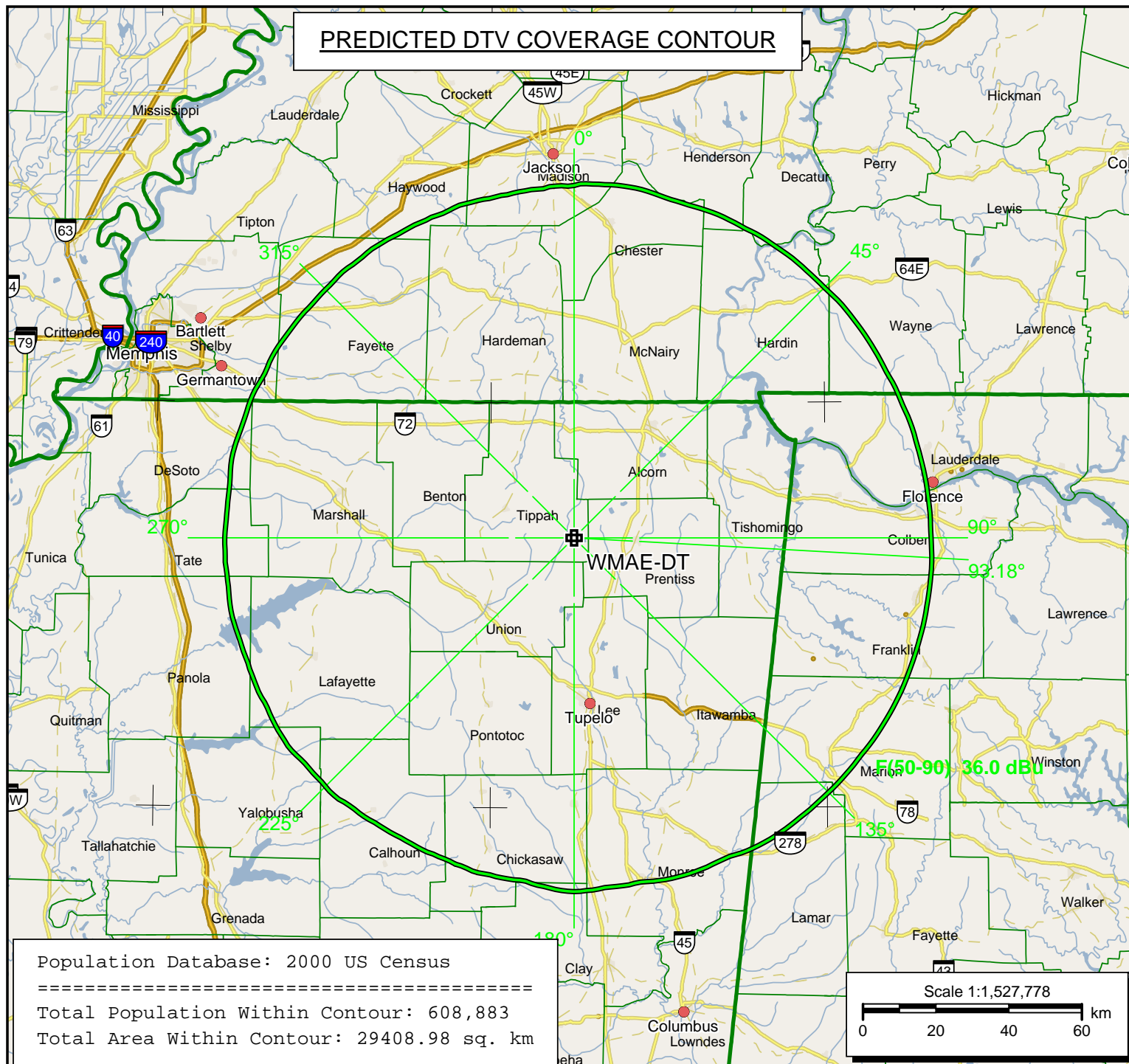
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EXHIBIT E4

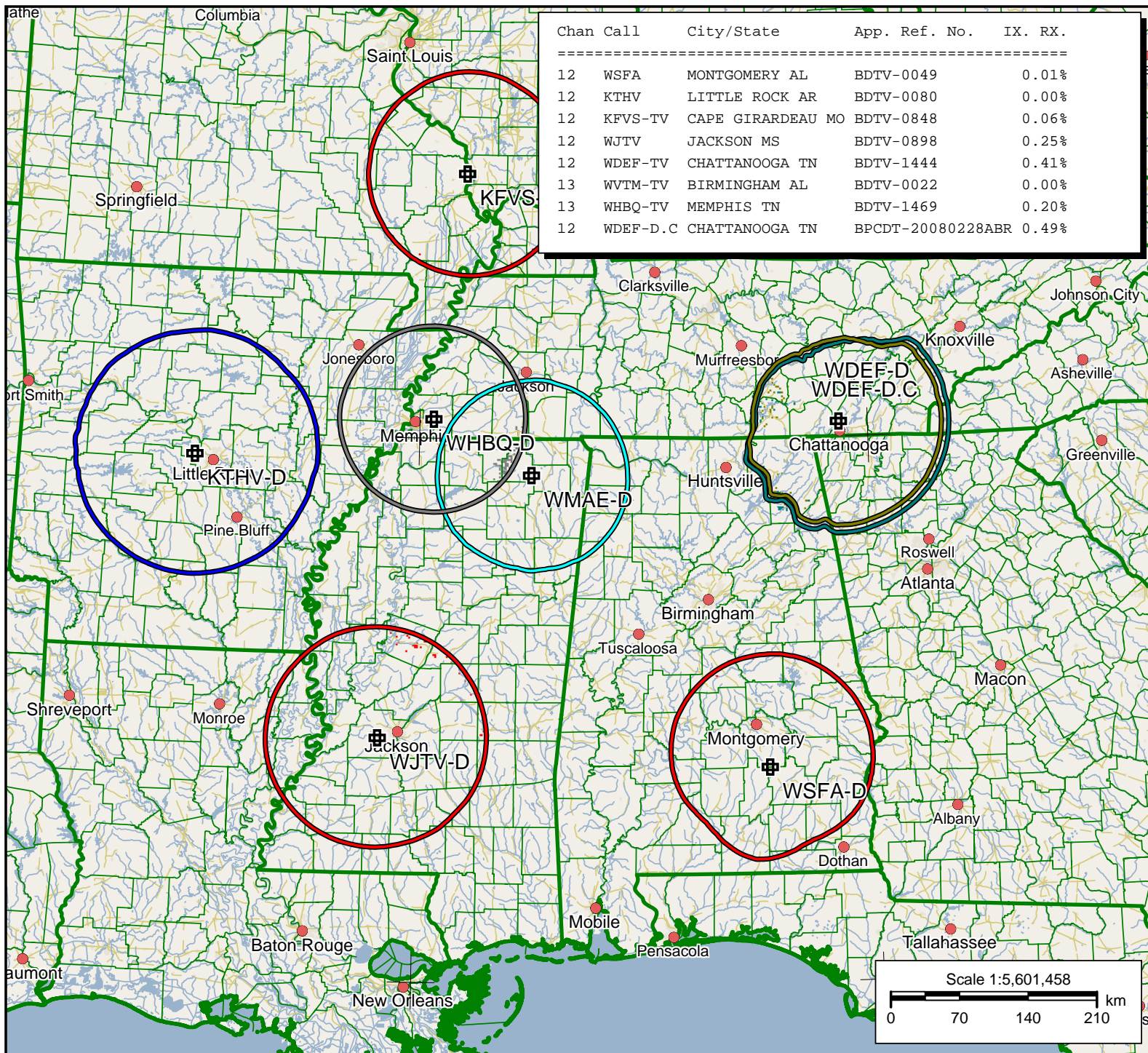
PREDICTED DTV COVERAGE CONTOUR

WMAE-DT
MAXIMIZED
 Latitude: 34-40-00 N
 Longitude: 088-45-05 W
 ERP: 31.00 kW
 Channel: 12
 Frequency: 207.0 MHz
 AMSL Height: 382.5 m
 Elevation: 212.52 m
 Horiz. Pattern: Omni
 Vert. Pattern: Yes
 Elec Tilt: 0.5
 Prop Model: None



Population Database: 2000 US Census
 =====
 Total Population Within Contour: 608,883
 Total Area Within Contour: 29408.98 sq. km

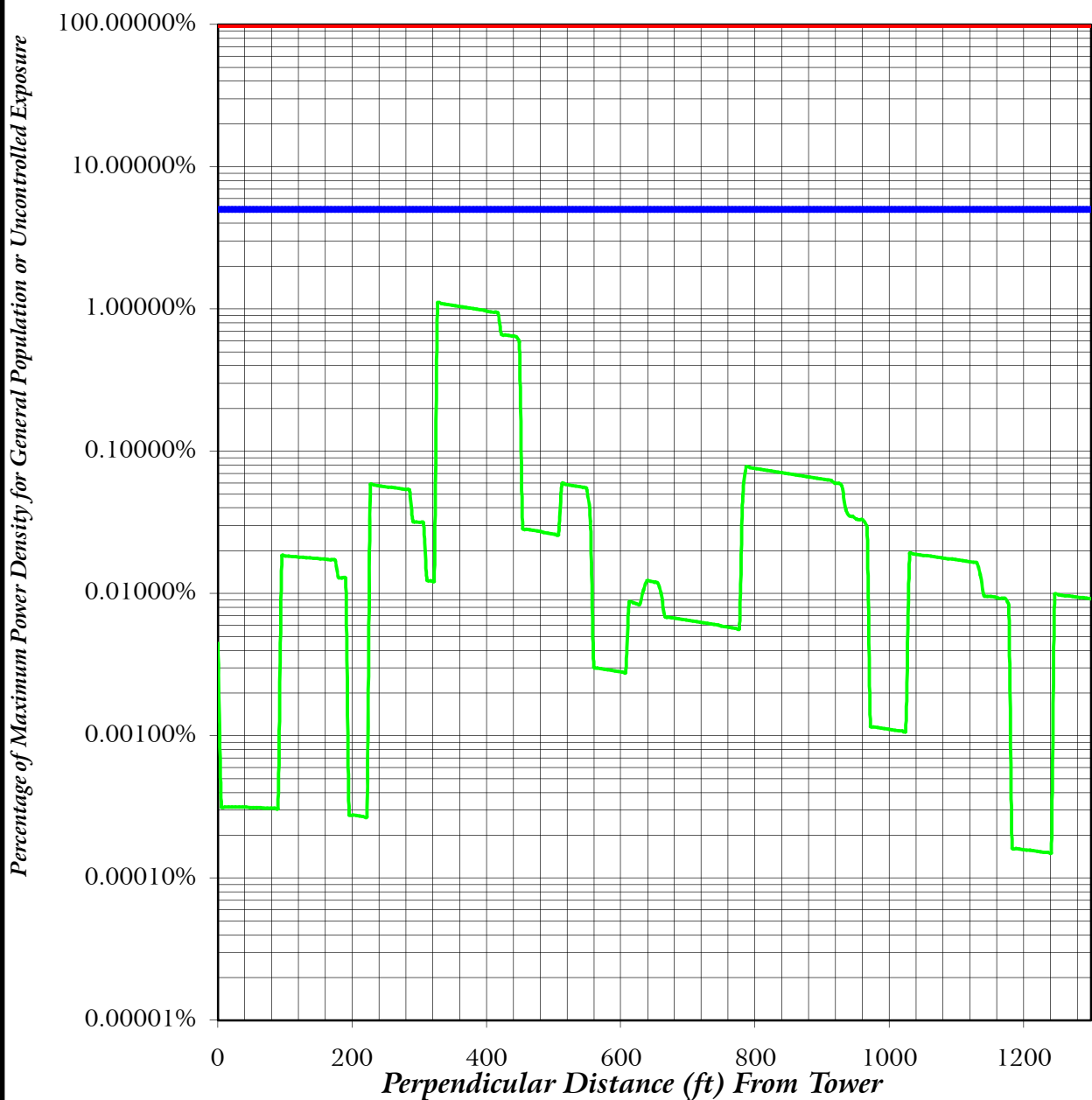
EXHIBIT E5



WMAE-D

Latitude: 34-40-00 N
Longitude: 088-45-05 W
ERP: 31.00 kW
Channel: 12
Frequency: 207.0 MHz
AMSL Height: 386.0 m
Elevation: 212.52 m
Horiz. Pattern: Omni
Vert. Pattern: Yes
Elec Tilt: 0.0
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 301.0
Receiver Ht AG: 10.0 m
Receiver Gain: 0 dB
Time Variability: 10.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

FAR FIELD EXPOSURE TO RF EMISSIONS



- Maximum Allowable General Population or Uncontrolled Exposure
- 5 % of Maximum General Population or Uncontrolled Exposure
- Percentage of Maximum General Population or Uncontrolled Exposure

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EXHIBIT E7



METHODOLOGY AND EXPLANATION OF
ENVIRONMENTAL IMPACT / RADIO FREQUENCY RADIATION
HAZARD ANALYSIS

A theoretical analysis has been conducted of the human exposure to radio frequency radiation ("RFR") using the calculation methodology described in *OET Bulletin 65, Edition 97-01*. The RFR analysis is conducted pursuant to the following methodology:

Terrain¹ extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

¹ Terrain extraction is based upon a 3 arc second point spacing terrain database.