

Station KWRB, Bisbee, Arizona (Facility ID No. 73754)

License Modification Application To Correct Coordinates

World Radio Network, Inc. (“WRN”), through this license modification application, seeks to correct the antenna site coordinates of Noncommercial Educational Station KWRB (FM), Bisbee, Arizona (Facility ID No. 73754). Pursuant to Section 73.1690(c)(11) of the Commission’s Rules, a correction of 3 seconds or less of latitude and/or longitude may be made through the filing of a license modification application.

The current licensed coordinates of Station KWRB, as converted from NAD 27 to NAD 83, are 31-28-58.3 N, 109-57-31.2 W. The actual NAD 83 antenna site coordinates, as determined by review of a satellite photograph, are 31-28-55.0 N, 109-57-33.3, a difference with rounding of 3 degrees of latitude and 2 degrees of longitude. Accordingly, the correction of the KWRB coordinates is eligible to be made through a license modification application.

However, the software used with the FCC’s LMS filing platform does not recognize rounding with respect to this particular matter. Because the exact difference between KWRB’s licensed latitude and its actual latitude is 3.3 seconds, the LMS license modification form will not accommodate the filing of station’s license modification application if the precise latitude is used.

Counsel for WRN has conferred informally with Audio Division staff regarding this problem and received an indication that it would be acceptable to insert on the license modification form a latitude reflecting a 3.0 second correction, but noting in an exhibit the actual corrected coordinates.

Accordingly, please be advised that the precise NAD 83 coordinates of KWRB are 31-28-55.0 N, 109-57-33.3. The attached Consolidated Engineering Statement is based on those precise coordinates, which are the coordinates that should be specified in the station’s modified license.

Consolidated Engineering Statement

Modification to a license

World Radio Network

KWRB 215C2

AZ Bisbee

FacId 73754

Antique license BLED20050923ADZ coordinate correction

Robert Moore
8/11/2022

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Abstract

This application proposes correcting the coordinates by 3 arc seconds x 2 arc seconds (~250 feet) to match the actual location of the facility. The original coordinates were generated from a topographic map before construction of the tower. The corrected coordinates are generated from NAD83 referenced the included aerial photos of the actual tower. There is no change in channel, tower height, antenna, or class, and no site visit will be needed since the actual facility is not being changed at all. The antenna remains an ERI P300G-1AE 0/95 gain coax HJ5-50 101 ft long. The tower passes NADCON, so does not need FAA or ASR processing.

Defective authorization

Application

File Number:	BLD-20050923ADZ	Domestic Status:	
Record Type:	FM	Elevation:	2147 meters
NAD83 Coordinates:	31 28' 58.3" N 109 57' 31.2" W	Effective Radiated Power:	
Channel:	215		
Class:	C2		

FM Antenna

SITE 1

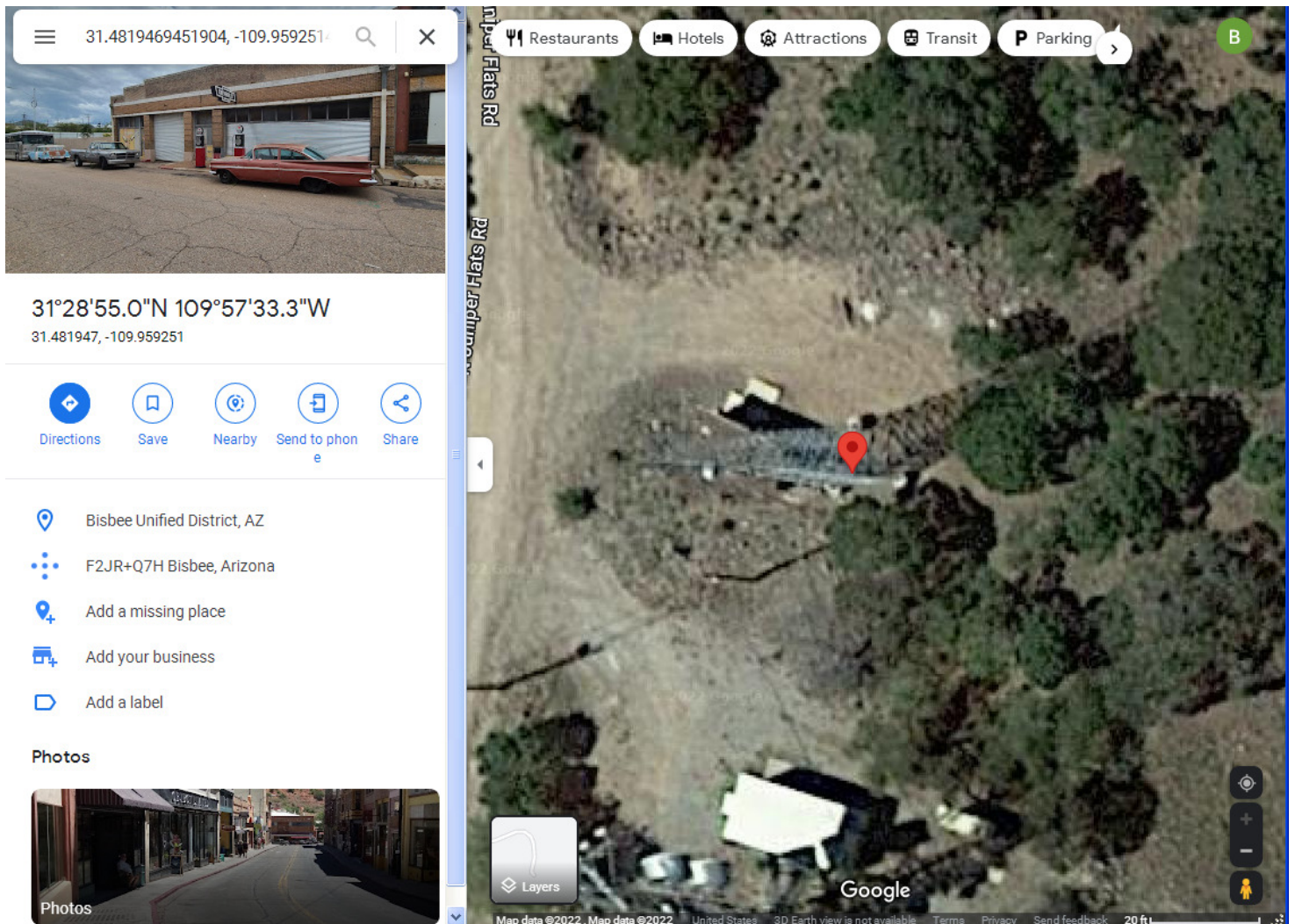
Site 1

Antenna Type:	Non-Directional	<u>RCAMSL:</u>	2147 meters
Number of Sections:	1	<u>HAAT:</u>	
Wavelength Spacing:	0.0	Overall antenna height above ground:	30 meters

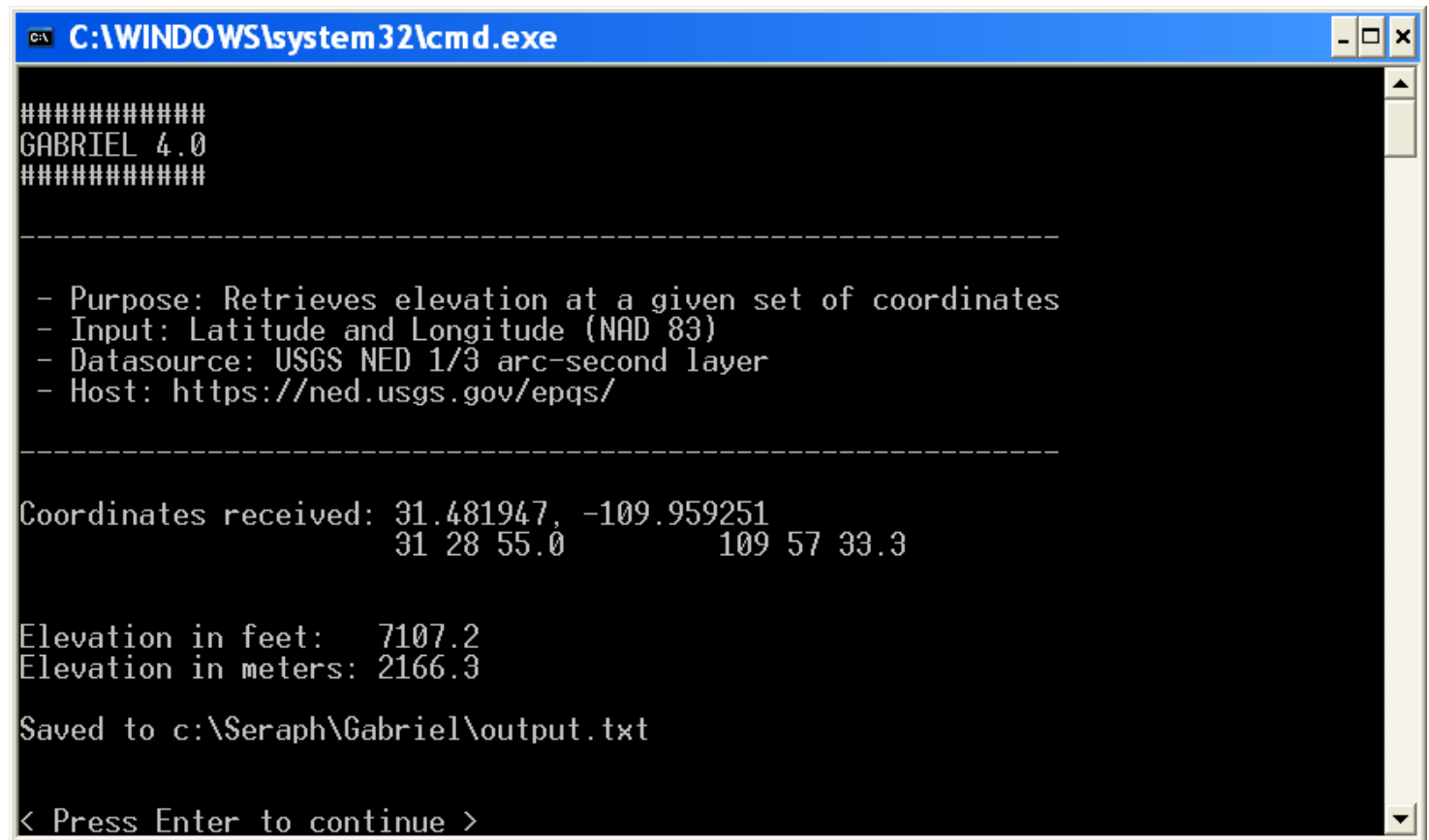
Note that the site elevation AMSL is shown as the same as the COR AMSL. This is an obvious error, since the antenna is not at ground level. The ERP is not given here either!

Establishing the site:

The red pin is midway between the three concrete base anchors for the tower.



Establishing Site Elevation



```
C:\WINDOWS\system32\cmd.exe

#####
GABRIEL 4.0
#####

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- Purpose: Retrieves elevation at a given set of coordinates
- Input: Latitude and Longitude (NAD 83)
- Datasource: USGS NED 1/3 arc-second layer
- Host: https://ned.usgs.gov/epqs/

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Coordinates received: 31.481947, -109.959251
                     31 28 55.0      109 57 33.3

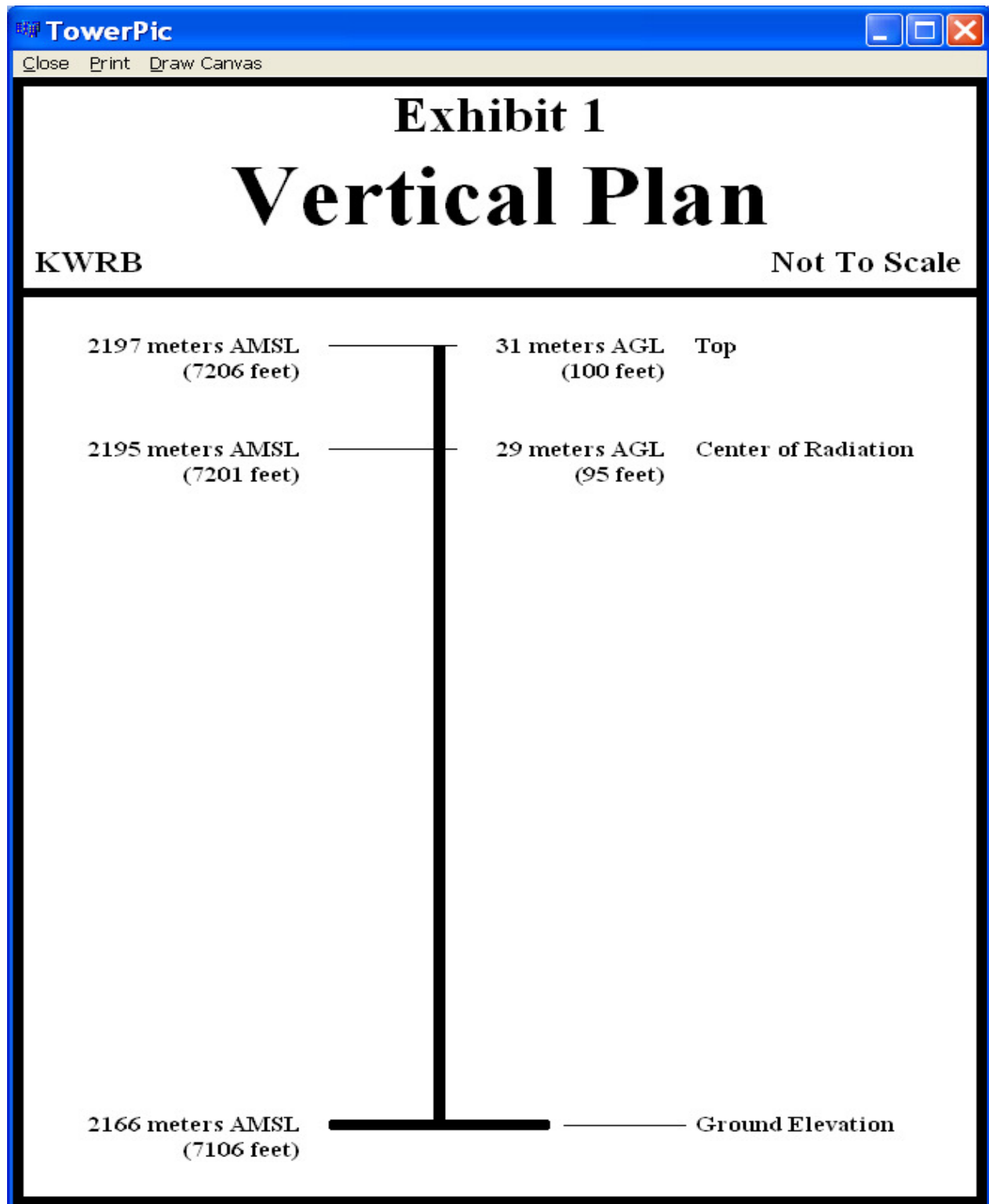
Elevation in feet:   7107.2
Elevation in meters: 2166.3

Saved to c:\Seraph\Gabriel\output.txt

< Press Enter to continue >
```

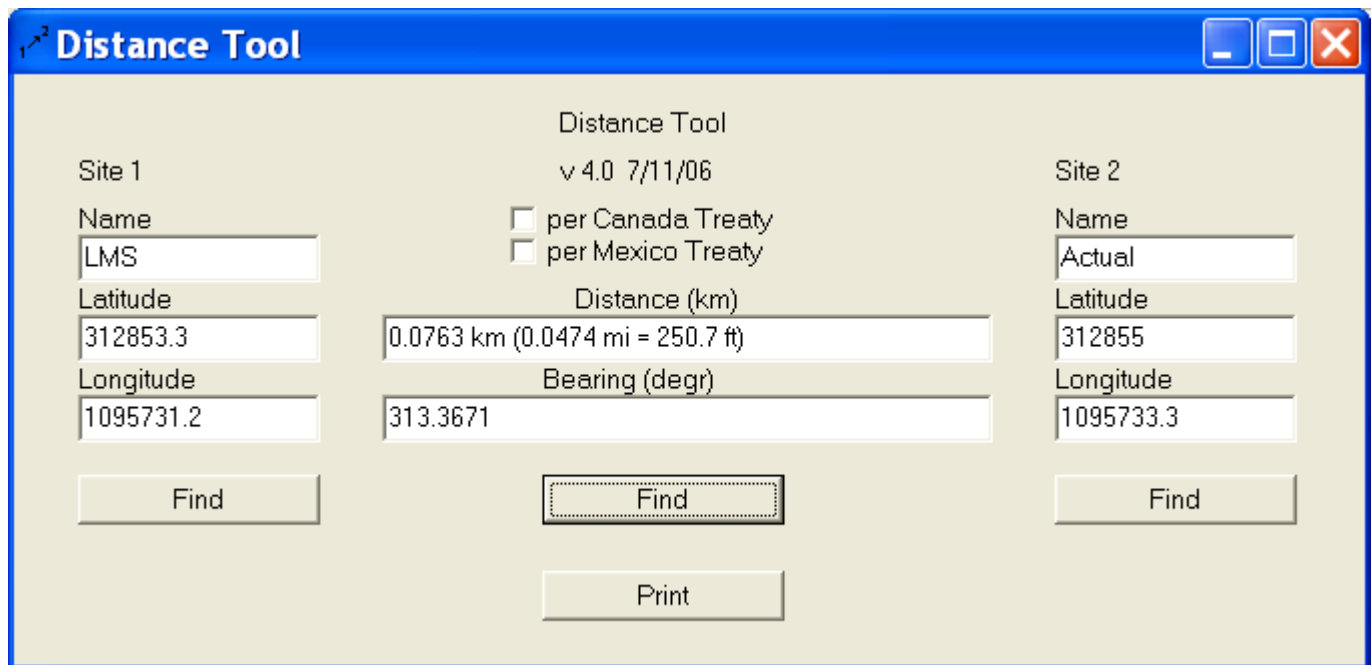
Establishing Tower Height and Antenna Height and ERP

These are taken from the original handwritten documentation for the build, 3/27/2002 by Jim Heck. I could find no documentation on the internet for that build. The V-Soft and ComStudy databases both give the authorized ERP as 990 Watts.



Magnitude of Correction

Latitude 3.3 seconds of arc; longitude 2.2 seconds of arc.



The image shows a software window titled "Distance Tool" with a version number "v 4.0 7/11/06". The window is divided into three main sections: Site 1, Site 2, and a central calculation area. Site 1 has input fields for Name (LMS), Latitude (312853.3), and Longitude (1095731.2), with a "Find" button below. Site 2 has input fields for Name (Actual), Latitude (312855), and Longitude (1095733.3), also with a "Find" button below. The central area contains checkboxes for "per Canada Treaty" and "per Mexico Treaty", and displays the calculated Distance (0.0763 km (0.0474 mi = 250.7 ft)) and Bearing (313.3671). A "Print" button is located at the bottom center.

Site 1	Distance Tool v 4.0 7/11/06	Site 2
Name LMS	<input type="checkbox"/> per Canada Treaty <input type="checkbox"/> per Mexico Treaty	Name Actual
Latitude 312853.3	Distance (km) 0.0763 km (0.0474 mi = 250.7 ft)	Latitude 312855
Longitude 1095731.2	Bearing (degr) 313.3671	Longitude 1095733.3
Find	Find	Find
Print		

Radiation hazard

Radiation Hazard Worksheet

AZ Bisbee 215C2

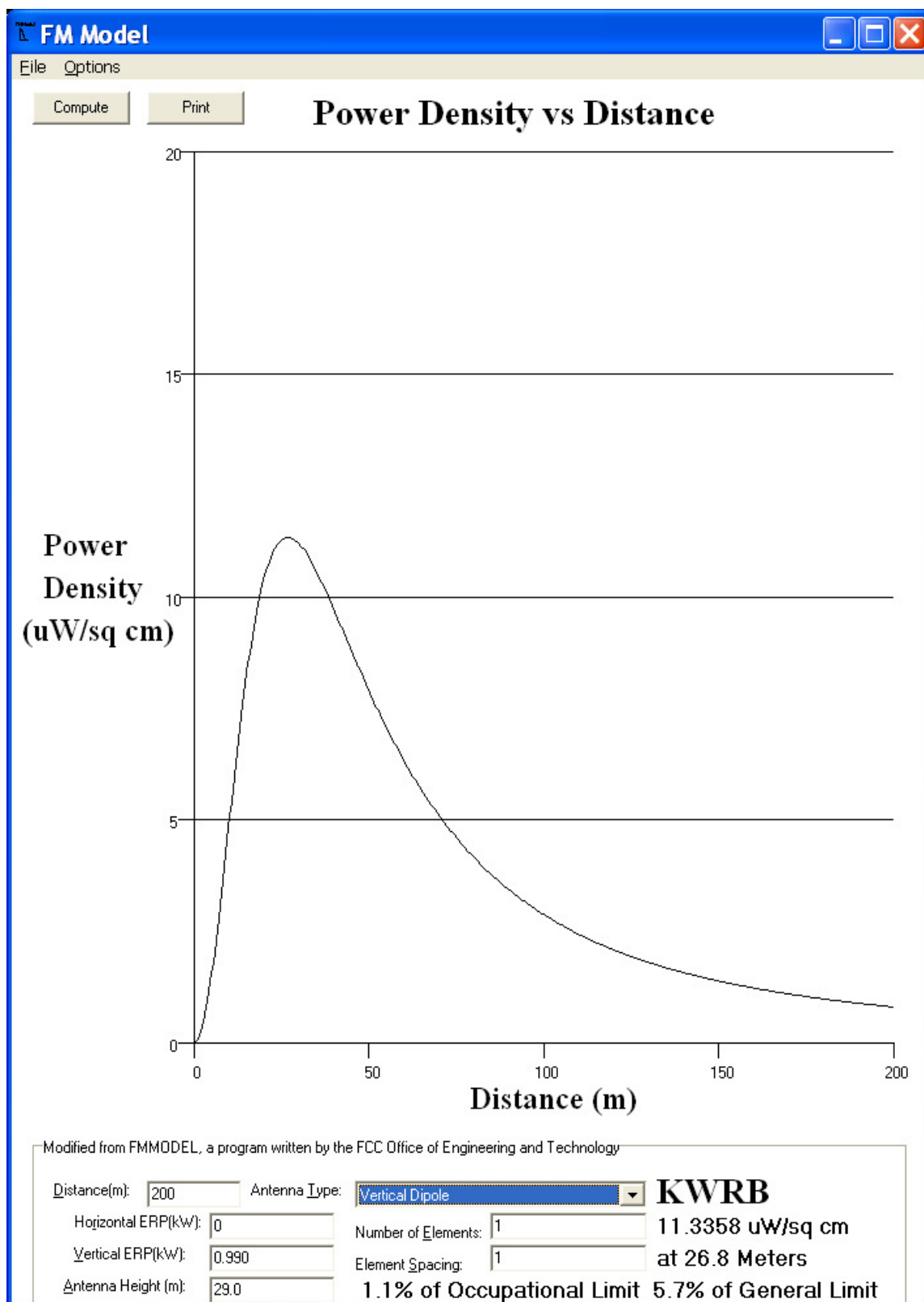
From FCC 301/340 Worksheet

COR above ground:
29.0 m

ERP:
V 0.990 kW
H 0 kW

Results
4.5% of Controlled Limit
22.6% of Uncontrolled Limit

But viewing this as a 1 bay ERI P300G-1AE:



which is clearly de minimus, and no other facilities in the area need be evaluated.

FAA TowAir determination

Note this tower is already in existence and has been for decades.

TOWAIR Determination Results

 [HELP](#)

 [New Search](#)  [Printable Page](#)

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	31-28-55.0 north
Longitude	109-57-33.3 west
Measurements (Meters)	
Overall Structure Height (AGL)	30
Support Structure Height (AGL)	0
Site Elevation (AMSL)	2186
Structure Type	
LTOWER - Lattice Tower	

TPO Calculation

CALCULATION NUMBER 2

Transmitter Output:	1.1573 KW
Arrester -.1 dB	-26.343 Watts
Transmission Line:	Andrew LDF5-50A, 7/8 Inch
Length Of Line:	101 Feet
Loss in dB/100 Ft. At 90.9 mHz:	.352 dB
Line Efficiency At 90.9 mHz:	92.14%
Max. Average Power Rating of Line:	5.64 KW
Power Dissipated In Line:	88.852 Watts
Power At Input To Antenna:	1.0421 KW
Antenna Make/Model:	ERI P300G-1AE
Number of Bays:	One
Max. Antenna Input Power Rating:	10 KW
Antenna Power Gain:	.95
System E. R. P.:	990 Watts