

**EXHIBIT #1**  
**ENGINEERING STATEMENT**

Concerning the Application of  
The University of Wyoming  
To Construct a New FM Translator  
To Serve Worland, Wyoming  
Long Form – BNPFT20030314ASM

August 2003

**Channel 227D**

**0.05 kW ERP Omni**

This engineering statement supports the application filed by the University of Wyoming to construct a new FM translator to serve Worland, Wyoming on Channel 227.

Under the instant proposal, the off-air audio signal of primary station KUWT, channel 217, Thermopolis, will be delivered to a type-approved transmitter. This unit will deliver 0.0397 kW to the input of a 1 bay Scala FMVMP. The antenna has a power gain of 1.26 resulting in an effective radiated power of 0.05 kW, polarized vertically. Information about the directional antenna pattern can be found on Page #3.

A total of 12 evenly spaced radials were used to determine the antenna height above average terrain. The highest radial of the 12 was used to determine the maximum effective radiated power. The USGS 30 arc-second terrain elevation database was employed to determine the elevations along the radials that were averaged using the required four-point interpolation method. The resulting averaged radial antenna heights were employed using the Commission's own TVFMINT algorithm to project the distances to signal contours. A tabular listing of the distance to the 1 mV/m contour can be found on page #4 of this exhibit. A coverage map can be found on page #5.

**Exhibit #12** is an Allocation Study showing that no interference will be caused any existing licenses, construction permits or allocations. The first page is a computer channel study of all stations having a frequency and distance relationship. The exhibit gives current operating powers, HAAT's bearings and distances. (All distances were computed according to the method described under Section 73.208 of the Commission's Rules.) Page #2 of this exhibit is an explanation of the methods used.

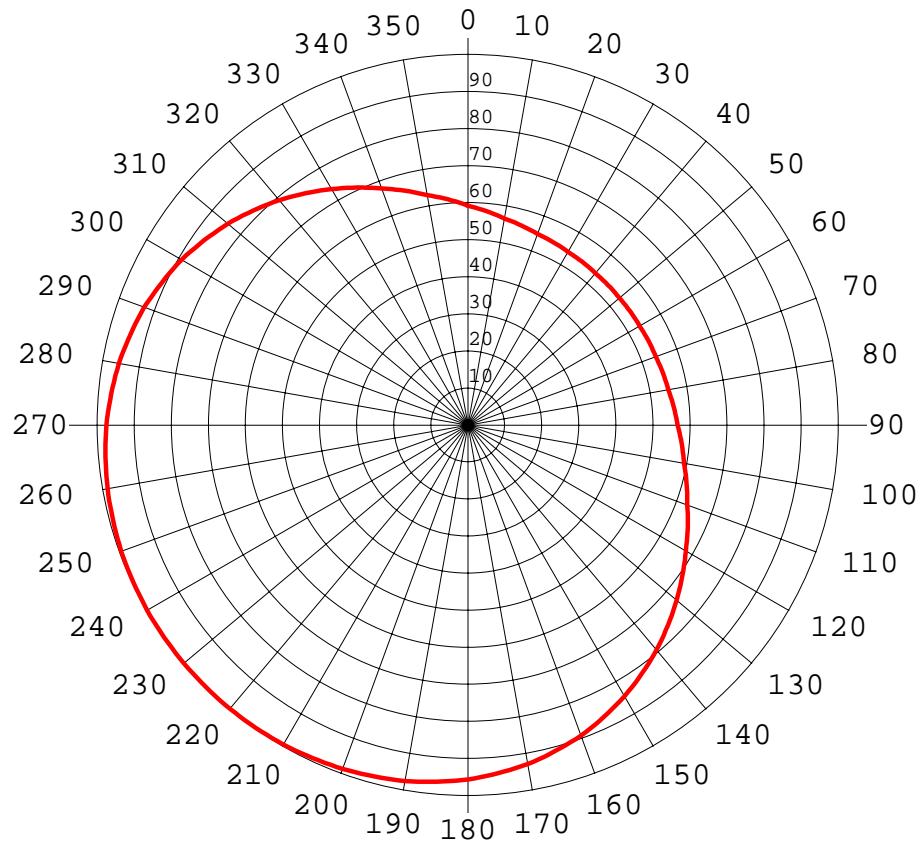
The proposed station is not within 320 kilometers of the US border with Canada or Mexico. The proposed facility is okay with respect to AM stations, FCC monitoring stations, Table Mountain and the West Virginia Quiet Zone.

Exhibit #16 is an RF hazard compliance statement.

Page #5 of Exhibit #E1 is a statement of the qualifications of the preparer.

Kate Michler

## Proposed Directional Pattern



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	1.000	-13.01	0.050	0.00	180	0.534	-18.46	0.014	-5.45
10	0.999	-13.02	0.050	-0.01	190	0.535	-18.44	0.014	-5.43
20	0.995	-13.05	0.050	-0.04	200	0.540	-18.36	0.015	-5.35
30	0.987	-13.12	0.049	-0.11	210	0.549	-18.22	0.015	-5.21
40	0.975	-13.23	0.048	-0.22	220	0.566	-17.95	0.016	-4.94
50	0.956	-13.40	0.046	-0.39	230	0.592	-17.56	0.018	-4.55
60	0.929	-13.65	0.043	-0.64	240	0.630	-17.02	0.020	-4.01
70	0.892	-14.00	0.040	-0.99	250	0.679	-16.37	0.023	-3.36
80	0.845	-14.47	0.036	-1.46	260	0.735	-15.68	0.027	-2.67
90	0.792	-15.04	0.031	-2.03	270	0.792	-15.04	0.031	-2.03
100	0.735	-15.68	0.027	-2.67	280	0.845	-14.47	0.036	-1.46
110	0.679	-16.37	0.023	-3.36	290	0.892	-14.00	0.040	-0.99
120	0.630	-17.02	0.020	-4.01	300	0.929	-13.65	0.043	-0.64
130	0.592	-17.56	0.018	-4.55	310	0.956	-13.40	0.046	-0.39
140	0.566	-17.95	0.016	-4.94	320	0.975	-13.23	0.048	-0.22
150	0.549	-18.22	0.015	-5.21	330	0.987	-13.12	0.049	-0.11
160	0.540	-18.36	0.015	-5.35	340	0.995	-13.05	0.050	-0.04
170	0.535	-18.44	0.014	-5.43	350	0.999	-13.02	0.050	-0.01

Rotation Angle = 230

Scala FMVMP @ 230°

Doug Vernier Telecommunications Consultants  
 N. Lat. = 44 04 00 W. Lng. = 107 51 50  
 HAAT and Distance to Contour - FCC Method - 30 Arc Sec.

AP227 , University Of Wyoming, BNPFT20030314ASM

Azi .	AV EL	HAAT	ERP kW	dBk	Fi el d	60-F5
000	1314.7	138.3	0.0175	-17.56	0.592	7.82
030	1319.0	134.0	0.0146	-18.36	0.540	7.36
060	1348.9	104.1	0.0143	-18.44	0.535	6.51
090	1371.5	81.5	0.0160	-17.95	0.566	5.90
120	1379.2	73.8	0.0231	-16.37	0.679	6.12
150	1382.7	70.3	0.0357	-14.47	0.845	6.64
180	1315.0	138.0	0.0457	-13.40	0.956	9.95
210	1273.9	179.1	0.0495	-13.05	0.995	11.65
240	1252.9	200.1	0.0499	-13.02	0.999	12.29
270	1276.4	176.6	0.0475	-13.23	0.975	11.46
300	1275.0	178.0	0.0398	-14.00	0.892	11.02
330	1234.1	218.9	0.0270	-15.68	0.735	11.08

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 Addi ti onal Radi al s Maxi mas & Mi ni mas (Not Consi dered i n Average):

230	1243.1	209.9	0.0500	-13.01	1.000	12.57
050	1345.5	107.5	0.0143	-18.46	0.534	6.62

Ave EI = 1311.95 M HAAT= 141.05 M AMSL= 1453 M

# Proposed Translator Coverage

**AP227**

BNPFT20030314ASM

Latitude: 44-04-00 N

Longitude: 107-51-50 W

ERP: 0.05 kW

Channel: 227

Frequency: 93.3 MHz

AMSL Height: 1453.0 m

Elevation: 1423.0 m

Horiz. Pattern: Directional

Vert. Pattern: No

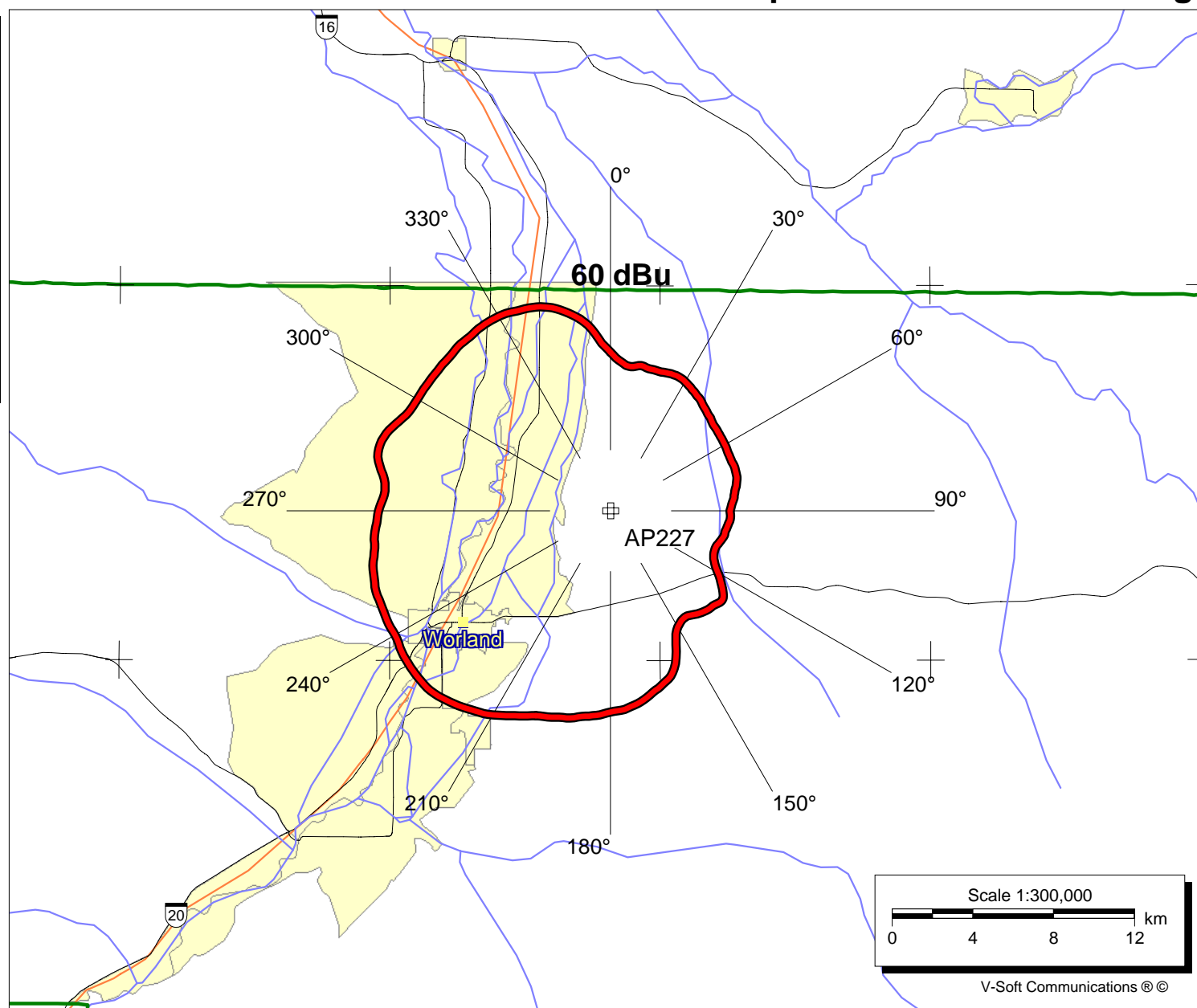
Prop Model: FCC Contour

Pop = 6,740

Area = 277.9 sq km

**August 16, 2003**

**V**  
Doug Vernier  
721 West 1st Street, Suite A  
Cedar Falls, Iowa 50613  
Telecommunications Consultants



**Declaration:**

I, Katherine A. Michler, have received a Bachelor of Science degree from the University of Northern Iowa, and;

That, I declare that I have received training as a technical consultant as a member of the staff of Doug Vernier Telecommunications Consultants, and;

That, I have apprenticed under Douglas Vernier for over five years, and;

That, he has been active in broadcast consulting for over 25 years, and;

That, his qualifications are a matter of record with the Federal Communications Commission, and;

That, I am an Associate Member (#20792) of the Society of Broadcast Engineers, Indianapolis, Indiana, and;

That, the consulting firm of Doug Vernier Telecommunications Consultants has been retained by the University of Wyoming;

That, I have personally prepared these engineering showings, the technical information contained in same and the facts stated within are true to my knowledge, and;

That, under penalty of perjury, I declare that the foregoing is correct.

Katherine A. Michler Katherine A. Michler

Executed on August 16, 2003