Law Office of
DENNIS J. KELLY
Post Office Box 41177
Washington, DC 20018

MEMBER, DISTRICT OF COLUMBIA BAR ONLY;
PRACTICE LIMITED TO FEDERAL COURTS AND AGENCIES

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April 8, 2020

USPS EXPRESS MAIL

Federal Communications Commission
Media Bureau
P.O. Box 979089
St. Louis, MO 63197-9000

RE: Glenn Cherry
FRN 0026-1705-06
WPUL(AM), South Daytona, Florida
FCC Facility ID # 53704
Form 302-AM Application

Ladies and Gentlemen:

On behalf of our client Glenn Cherry, there is transmitted herewith in triplicate an application on FCC Form 302-AM for a license to cover the changes made to AM Broadcast Station WPUL, South Daytona, Florida which were authorized in File No. BP-20180907ADW.

An FCC Form 159 is attached to the original of this application; this form provides information for a credit card payment in the amount of $725.00 (fee code MMR).

Should additional information be desired in connection with the above matter, kindly communicate with this office.

Very truly yours,

Dennis J. Kelly

Federal Communications Commission
Washington, D. C. 20554

Approved by OMB
3060-0627
Expires 01/31/98

FOR FCC USE ONLY

FCC 302-AM
APPLICATION FOR AM BROADCAST STATION LICENSE

(Please read instructions before filling out form.

FOR COMMISSION USE ONLY
FILE NO.

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)

GLENN CHERRY

MAILING ADDRESS (Line 1) (Maximum 35 characters)
Post Office Box 48857

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
Tampa	FL	33646

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
877-352-4455	WPUL	53704

2. A. Is a fee submitted with this application? ☑ Yes ☐ No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

☐ Governmental Entity ☐ Noncommercial educational licensee ☐ Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A) FEE TYPE CODE	(B) FEE MULTIPLE	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
M M R	0 0 0 1	$ 725.00	

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)	(B)	(C)	FOR FCC USE ONLY
	0 0 0 1	$	

	TOTAL AMOUNT REMITTED WITH THIS APPLICATION	FOR FCC USE ONLY
ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.	$ 725.00	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT GLENN CHERRY		
MAILING ADDRESS POST OFFICE BOX 48857		
CITY TAMPA	STATE FL	ZIP CODE 33646

2. This application is for:

☑ Commercial ☐ Noncommercial

☐ AM Directional ☑ AM Non-Directional

Call letters	Community of License	Construction Permit File No.	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
WPUL	South Daytona, FL	BP-20180907ADW		11/06/2021

3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☑ Yes ☐ No

If No, explain in an Exhibit.

Exhibit No.

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☑ Yes ☐ No

If No, state exceptions in an Exhibit.

Exhibit No.

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☑ No

If Yes, explain in an Exhibit.

Exhibit No.

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☑ Yes ☐ No

☐ Does not apply

If No, explain in an Exhibit.

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☑ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☑ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☑ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name	Signature	
Glenn Cherry		
Title	Date	Telephone Number
Sole Proprietor	04/06/2020	877-352-4455

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
Glenn Cherry

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☑ Station License ☐ Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
WPUL	BP-20180907ADW	1590	Unlimited	0.047	1.0

2. Station location

State	City or Town
Florida	South Daytona

3. Transmitter location

State	County	City or Town	Street address (or other identification)
FL	Volusia	Daytona Beach	427 S. Dr. Martin Luther King Jr. Blvd.

4. Main studio location

State	County	City or Town	Street address (or other identification)
FL	Volusia	Daytona Beach	427 S. Dr. Martin Luther King Jr. Blvd.

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)

6. Has type-approved stereo generating equipment been installed? ☐ Yes ☑ No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? ☐ Yes ☐ No ☑ Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
1.46	6.74

Measured antenna or common point resistance (in ohms) at operating frequency		Measured antenna or common point reactance (in ohms) at operating frequency	
Night	Day	Night	Day
22.0	22.0	318.0	318.0

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day

Manufacturer and type of antenna monitor:

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Self Supporting Tower	22.0	22.0	22.0	Exhibit No. N/A

Excitation ☐ Series ☑ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	29	o	12	'	06	"	West Longitude	81	o	01	'	30	"

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits. Exhibit No. ENG.

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. ENG.

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

None

11. Give reasons for the change in antenna or common point resistance.

New Construction

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
Kurt Gorman	
Address (include ZIP Code) Phasetek Inc. 550 California Rd., Unit 11 Quakertown, PA 18951	Date March 30, 2020 Telephone No. (Include Area Code) 215-536-6648

☐ Technical Director ☐ Registered Professional Engineer

☐ Chief Operator ☑ Technical Consultant

☐ Other (specify)

ENGINEERING STATEMENT CONCERNING

APPLICATION FOR

STATION LICENSE

WPUL, 1590 KHZ

SOUTH DAYTONA, FLORIDA

MARCH, 2020

PHASETEK INC.

ENGINEERING STATEMENT CONCERNING
APPLICATION FOR
STATION LICENSE
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

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PHASETEK INC.

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

SUMMARY

Analysis of the field intensity measurements was performed for Radio Station WPUL, 1590 KHz, South Daytona, Florida, after installation of equipment at the Transmitter site. WPUL holds Construction Permit Number: BP-20180907ADW to change transmitter site location and antenna system. This report was prepared on behalf of Glenn Cherry, licensee of Radio Station WPUL.

SITE MODIFICATIONS

The WPUL Transmitter site is that as currently used for the studio. A type accepted transmitter and new matching equipment have been installed. An existing, base grounded, self supporting tower is fed with a three (3) wire skirt. A ground system has been installed at the base of the tower. A 302AM application for License has been done. Figure 1 describes the antenna system as constructed. A drawing of the WPUL tower is included as figure 10.

FIELD INTENSITY MEASUREMENTS

Field intensity measurements were performed on six (6) equally spaced radials to determine antenna efficiency. As many clear, unobstructed points were measured on each radial. Due to the site location relative to the Atlantic Ocean, Radials to the North and East are short in length and the number of measurement locations. Figures 3-8 provide an analysis of the measured data. Figure 9 shows the measured RMS of the pattern which is 234.365 mV/m @ 1kM. This meets the required minimum of 215.0 mV/m @ 1kM, as specified in special operating condition #4 of the CP ,73.189(b) (5).

PHASETEK INC.

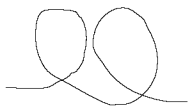
ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

MEASURING EQUIPMENT AND PERSONNEL

Tower Resistance and Reactance measurements were made with a Delta Electronics OIB-1, operating impedance bridge . Before use, tests of known impedances were made to verify operation. All Field Intensity Measurements were made with a Potomac Instruments Field Intensity Meter; FIM-41, Serial Number 375, calibrated June 3, 2003. The meter was calibrated by Potomac Instruments, Frederick, Maryland. The meter was compared to a Potomac Instruments PI 4100, and agreed. All measurements were taken by WPUL personnel supervised by Kurt Gorman of Phasetek Inc.

CONCLUSION

It is believed that the WPUL auxiliary Antenna System has been constructed and adjusted in accordance with all applicable Commission rules and regulations. The foregoing was prepared on behalf of Glenn Cherry, under the immediate supervision of Kurt Gorman, Phasetek Inc., Quakertown, Pennsylvania, whose qualifications are a matter of record with the Federal Communications Commission. The statements herein are true and correct of his knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.



Kurt Gorman, President
Phasetek Inc.
Quakertown, Pennsylvania

FIGURE 1

ANTENNA SYSTEM AS ADJUSTED

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

ANTENNA SYSTEM DESCRIPTION

1. The antenna system utilizes a base grounded, self supporting tower that stands 22.0M (42.0^{o}) above its Base. There is no lighting on the tower. The tower is fed with a (3) wire skirt that is symmetrical to the tower.

2. The WPUL Ground System consists of (120) buried copper Radials, 22M in length. Copper strap connects the Tower to the main Transmitter grounding point.

WPUL (1590 kHz) NON-DIRECTIONAL OPERATION (DAY)

Impedance = 22.0 +j 318.0 Ohms

Current = 6.74 Amperes

Power = 1,000 Watts

WPUL (1590 kHz) NON-DIRECTIONAL OPERATION (NIGHT)

Impedance = 22.0 +j 318.0 Ohms

Current = 1.46 Amperes

Power = 47 Watts

TABLE 1

FIELD INTENSITY MEASUREMENTS

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

Measurements for 0.0 degrees.

Point Number	Distance (km)	(mi)	Field (mV/m)	Notes	Date	Time
1	0.19	0.12	795.000		12/16/2019	1001
2	0.26	0.16	625.000		12/16/2019	1110
3	0.35	0.22	495.000		12/16/2019	1114
4	0.39	0.24	410.000		12/16/2019	1120
5	0.55	0.34	260.000		12/16/2019	1133
6	0.64	0.40	274.000		12/16/2019	1032
7	0.76	0.47	185.000		12/16/2019	1144
8	1.06	0.66	124.000		12/16/2019	1024
9	1.45	0.90	80.500		12/16/2019	1012
10	1.63	1.01	65.000		12/16/2019	1148
11	2.25	1.40	39.000		12/16/2019	1152
12	3.21	1.99	20.500		12/18/2019	1458
13	3.80	2.36	17.200		12/18/2019	1440
14	4.09	2.54	14.000		12/18/2019	1433
15	4.44	2.76	13.500		12/18/2019	1426

TABLE 2

FIELD INTENSITY MEASUREMENTS

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

Measurements for 60.0 degrees.

Point Number	Distance (km)	Distance (mi)	Field (mV/m)	Notes	Date	Time
1	0.20	0.12	805.000		12/16/2019	1239
2	0.25	0.16	700.000		12/16/2019	1231
3	0.32	0.20	495.000		12/16/2019	1221
4	0.44	0.27	342.000		12/16/2019	1039
5	0.50	0.31	310.000		12/16/2019	1216
6	0.56	0.35	280.000		12/16/2019	1210
7	0.73	0.45	184.000		12/16/2019	1048
8	1.30	0.81	92.000		12/16/2019	1055
9	1.43	0.89	86.000		12/18/2019	1330
10	1.73	1.07	75.000		12/18/2019	1319
11	1.87	1.16	62.000		12/18/2019	1312
12	1.99	1.24	66.000		12/18/2019	1308

TABLE 3

FIELD INTENSITY MEASUREMENTS

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

Measurements for 120.0 degrees.

Point Number	Distance (km)	Distance (mi)	Field (mV/m)	Notes	Date	Time
1	0.18	0.11	825.000		12/16/2019	1302
2	0.24	0.15	705.000		12/16/2019	1308
3	0.33	0.21	510.000		12/16/2019	1312
4	0.46	0.29	295.000		12/16/2019	1322
5	0.57	0.35	265.000		12/16/2019	1316
6	0.63	0.39	272.000		12/16/2019	1330
7	0.71	0.44	202.000		12/16/2019	1327
8	1.22	0.76	89.500		12/16/2019	1355
9	1.46	0.91	89.000		12/16/2019	1342
10	2.64	1.64	31.000		12/18/2019	1225
11	2.81	1.75	36.500		12/18/2019	1231
12	2.99	1.86	28.300		12/18/2019	1234
13	3.35	2.08	22.900		12/18/2019	1242

TABLE 4

FIELD INTENSITY MEASUREMENTS

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

Measurements for 180.0 degrees.

Point Number	Distance (km)	Distance (mi)	Field (mV/m)	Notes	Date	Time
1	0.19	0.12	800.000		12/16/2019	1459
2	0.22	0.14	815.000		12/16/2019	1425
3	0.33	0.21	495.000		12/16/2019	1432
4	0.40	0.25	390.000		12/16/2019	1439
5	0.51	0.32	392.000		12/16/2019	1445
6	0.64	0.40	230.000		12/16/2019	1450
7	1.03	0.64	125.000		12/16/2019	1415
8	1.38	0.86	127.000		12/16/2019	1409
9	2.77	1.72	28.500		12/18/2019	1006
10	4.22	2.62	13.600		12/18/2019	1012
11	5.41	3.36	6.950		12/18/2019	1019
12	7.08	4.40	4.620		12/18/2019	1029
13	8.02	4.98	4.100		12/18/2019	1037
14	9.66	6.00	2.650		12/18/2019	1105
15	11.46	7.12	1.720		12/18/2019	1119

TABLE 5

FIELD INTENSITY MEASUREMENTS

ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

Measurements for 240.0 degrees.

Point Number	Distance (km)	(mi)	Field (mV/m)	Notes	Date	Time
1	0.26	0.16	640.000		12/16/2019	1509
2	0.34	0.21	510.000		12/16/2019	1505
3	0.49	0.30	305.000		12/16/2019	1515
4	0.86	0.53	175.000		12/16/2019	1524
5	1.07	0.66	126.000		12/16/2019	1538
6	1.23	0.76	108.000		12/16/2019	1530
7	1.38	0.86	81.500		12/16/2019	1544
8	1.73	1.07	56.000		12/16/2019	1550
9	2.85	1.77	25.000		12/17/2019	1510
10	3.67	2.28	16.500		12/17/2019	1501
11	4.12	2.56	13.000		12/17/2019	1440
12	4.49	2.79	14.600		12/17/2019	1447
13	6.44	4.00	5.100		12/17/2019	1430
14	9.02	5.60	3.250		12/17/2019	1423
15	12.08	7.51	1.160		12/17/2019	1412
16	14.49	9.00	1.050		12/17/2019	1359

TABLE 6

FIELD INTENSITY MEASUREMENTS

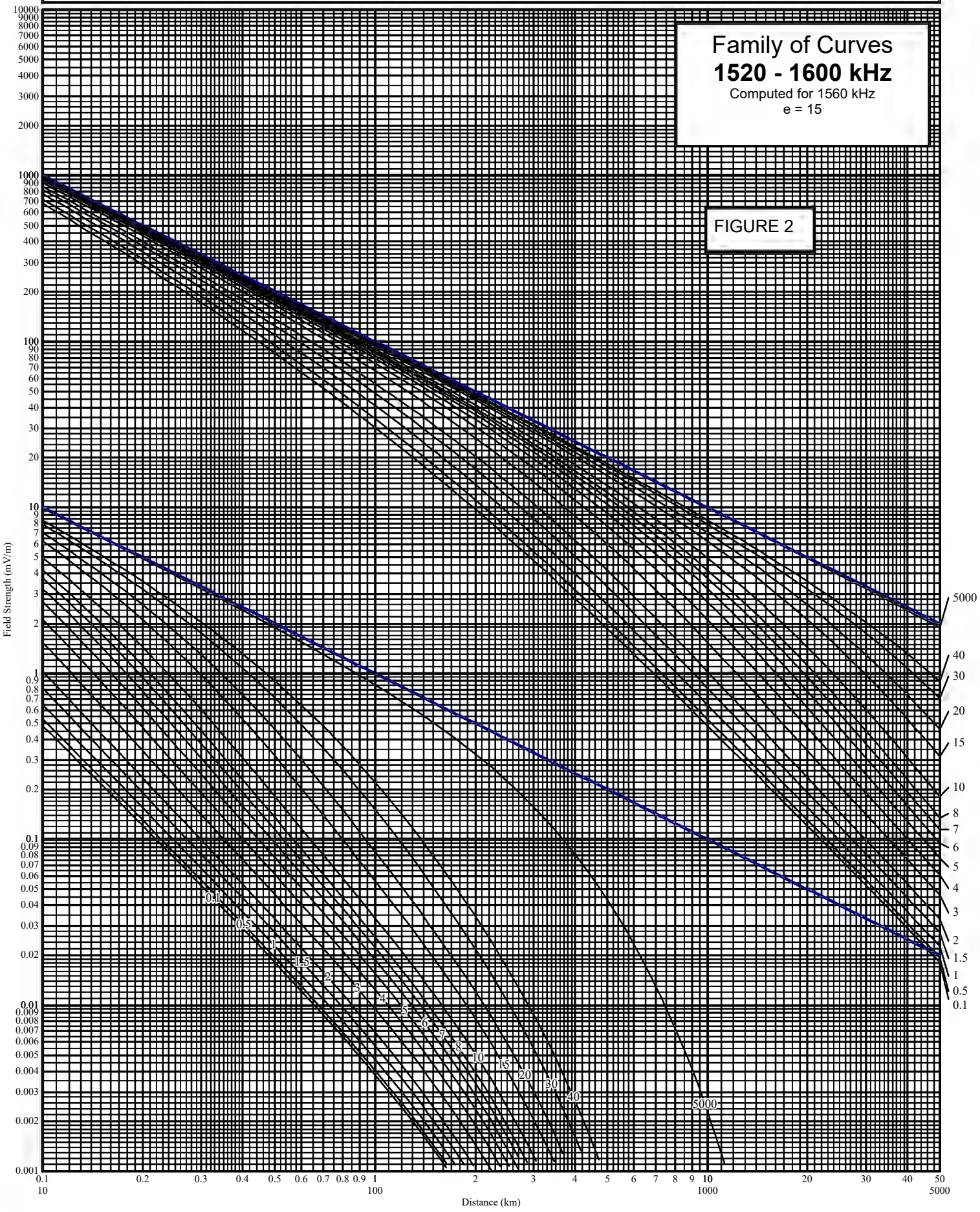
ENGINEERING STATEMENT CONCERNING
WPUL, 1590 KHZ
SOUTH DAYTONA, FLORIDA
MARCH, 2020

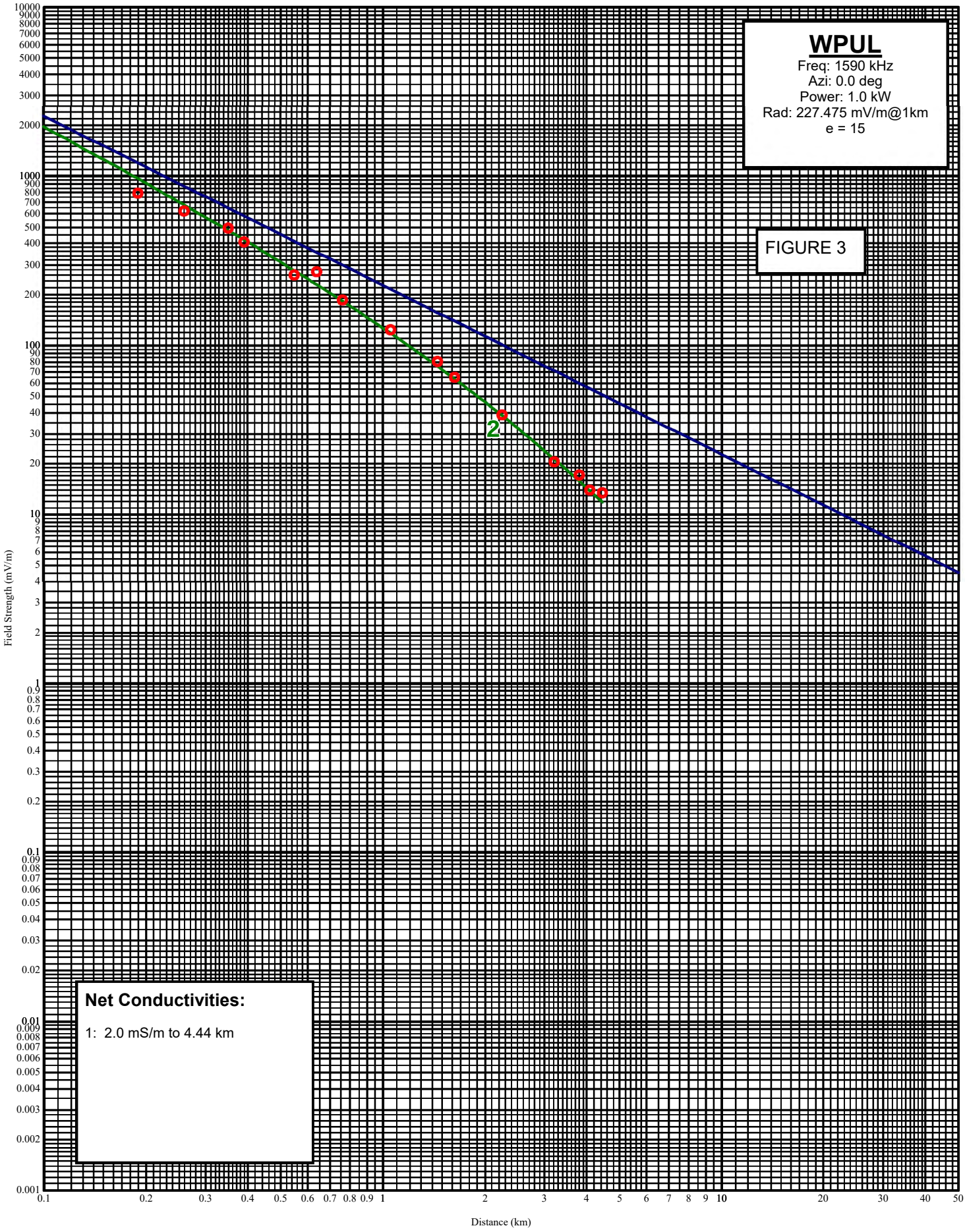
Measurements for 300.0 degrees.

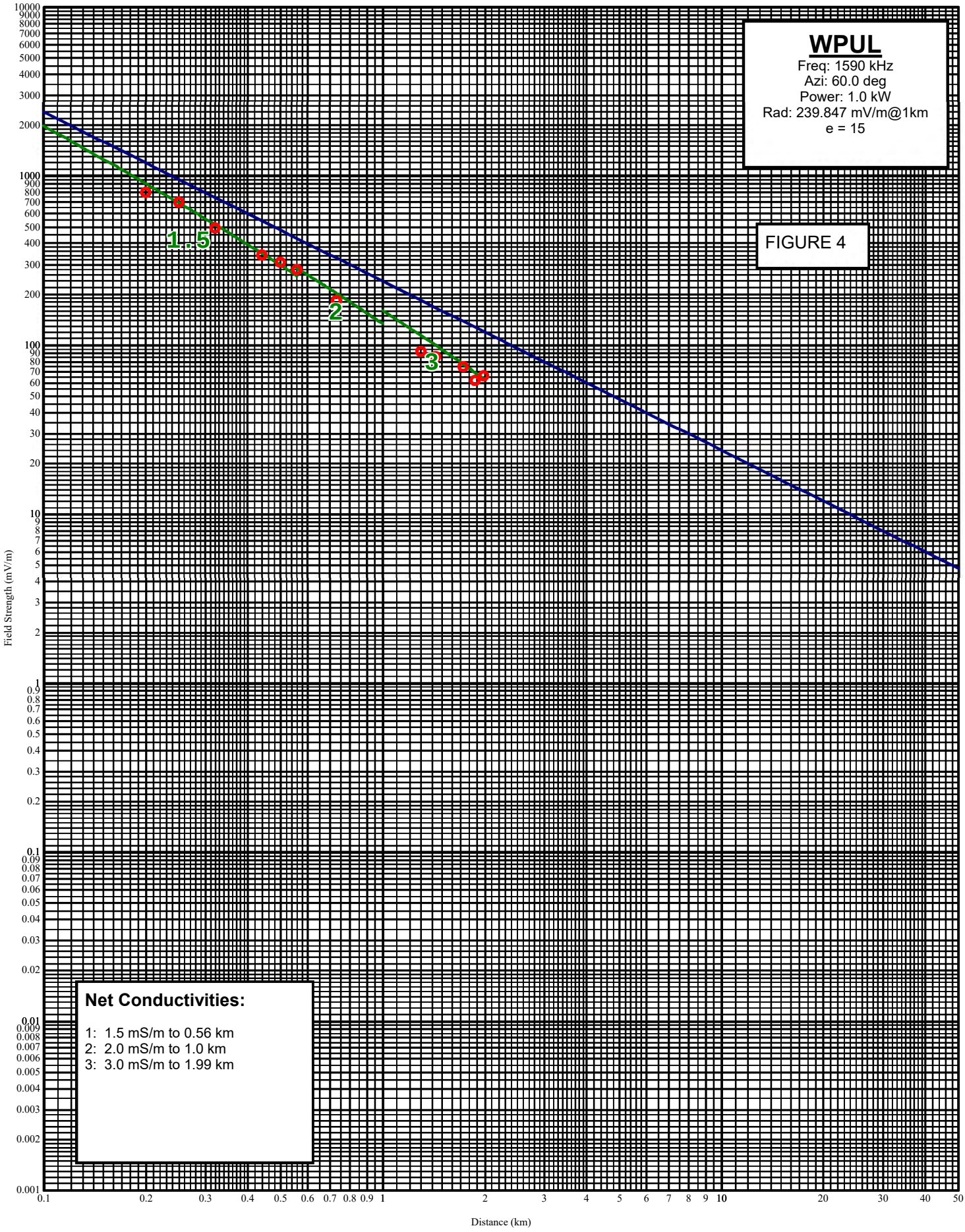
Point Number	Distance (km)	(mi)	Field (mV/m)	Notes	Date	Time
1	0.26	0.16	690.000		12/17/2019	1110
2	0.30	0.19	550.000		12/17/2019	1116
3	0.43	0.27	380.000		12/17/2019	1127
4	0.55	0.34	295.000		12/17/2019	1123
5	0.72	0.45	186.000		12/17/2019	1039
6	1.16	0.72	138.000		12/17/2019	1046
7	1.67	1.04	64.500		12/17/2019	1053
8	2.24	1.39	42.000		12/17/2019	1148
9	2.75	1.71	22.500		12/17/2019	1155
10	3.51	2.18	16.600		12/17/2019	1206
11	4.43	2.75	11.900		12/17/2019	1219
12	5.62	3.49	7.400		12/17/2019	1230
13	6.54	4.06	7.400		12/17/2019	1236
14	7.86	4.88	4.050		12/17/2019	1244
15	10.24	6.36	2.100		12/17/2019	1259
16	12.11	7.52	1.450		12/17/2019	1310

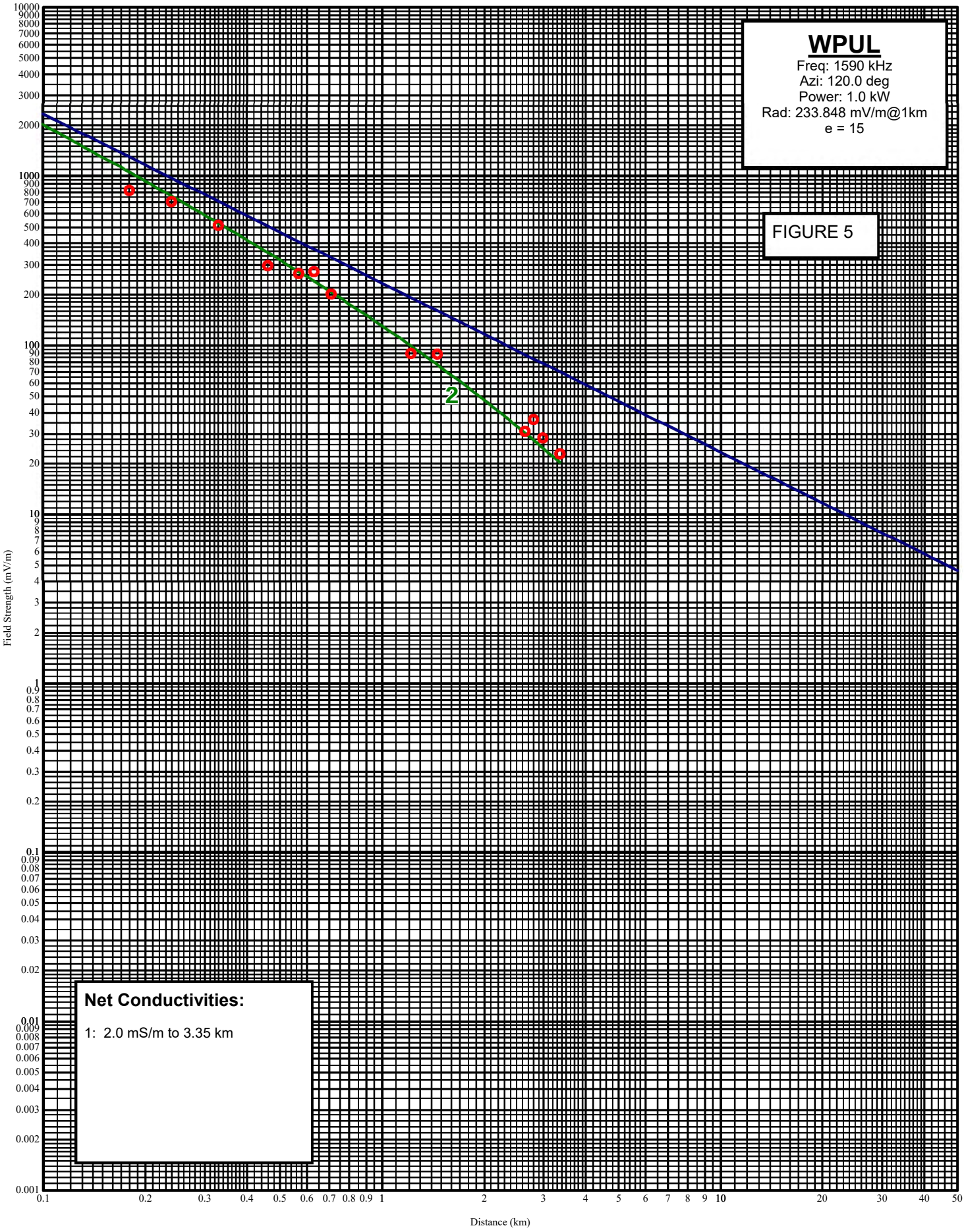
Groundwave Field Strength vs. Distance

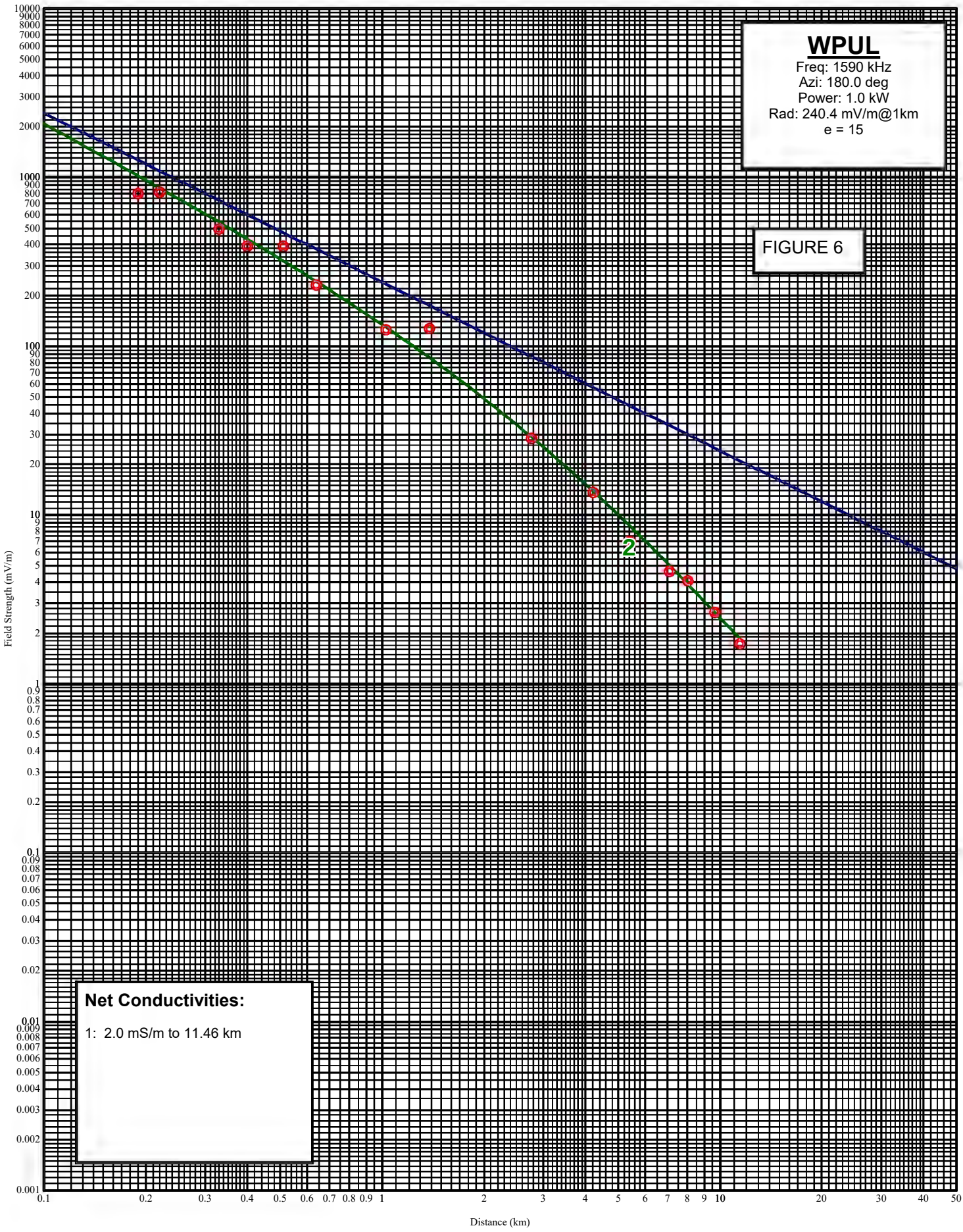
Inverse Distance Field: 100.0 mV/m@1km

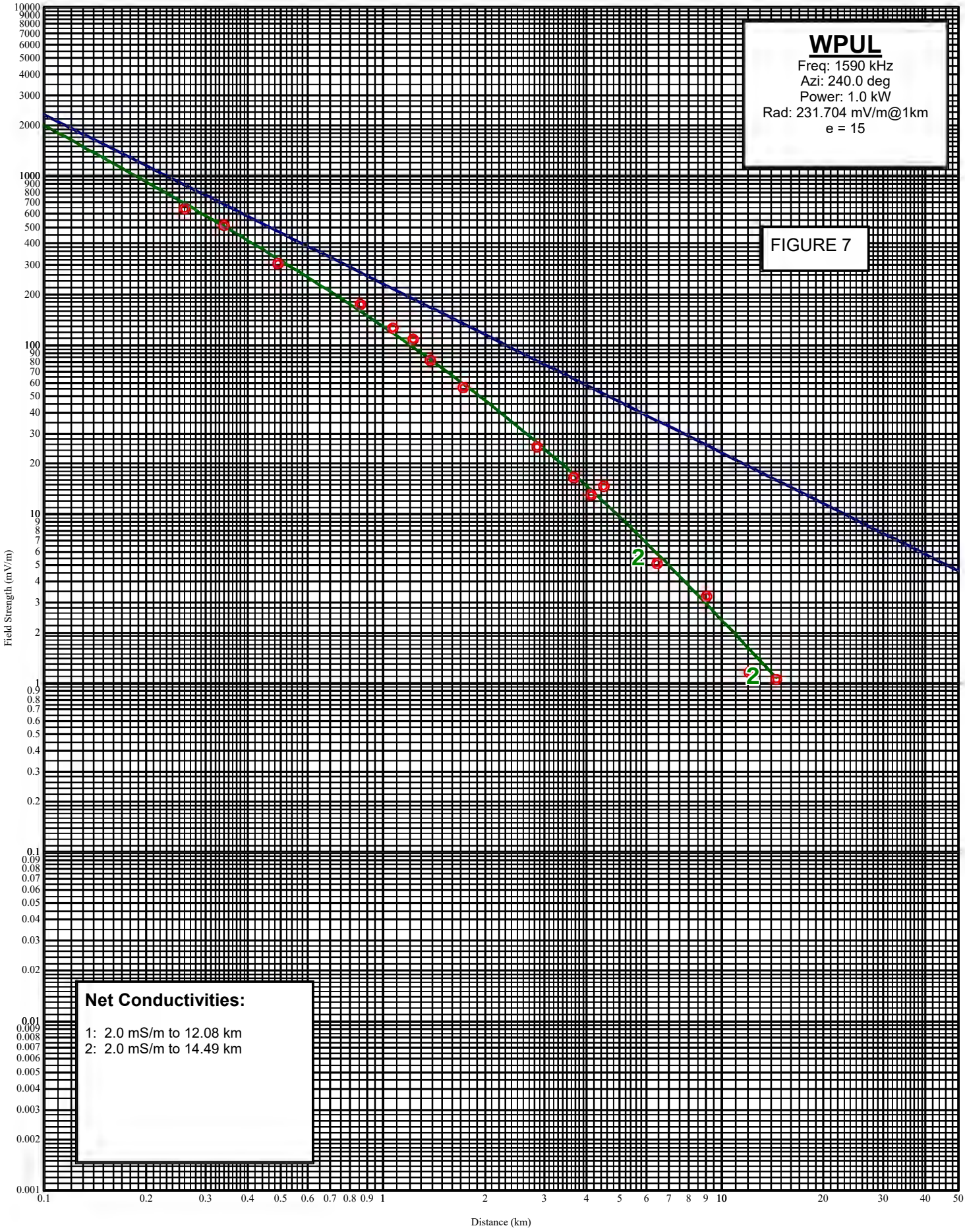



WPUL
Freq: 1590 kHz
Azi: 0.0 deg
Power: 1.0 kW
Rad: 227.475 mV/m@1km
e = 15
FIGURE 3
Net Conductivities:
1: 2.0 mS/m to 4.44 km
Field Strength (mV/m)
Distance (km)
2


WPUL
Freq: 1590 kHz
Azi: 60.0 deg
Power: 1.0 kW
Rad: 239.847 mV/m@1km
e = 15
FIGURE 4
1.5
2
3
Net Conductivities:
1: 1.5 mS/m to 0.56 km
2: 2.0 mS/m to 1.0 km
3: 3.0 mS/m to 1.99 km
Field Strength (mV/m)
Distance (km)


WPUL
Freq: 1590 kHz
Azi: 120.0 deg
Power: 1.0 kW
Rad: 233.848 mV/m@1km
e = 15
FIGURE 5
2
Net Conductivities:
1: 2.0 mS/m to 3.35 km
Field Strength (mV/m)
Distance (km)


WPUL
Freq: 1590 kHz
Azi: 180.0 deg
Power: 1.0 kW
Rad: 240.4 mV/m@1km
e = 15
FIGURE 6
Net Conductivities:
1: 2.0 mS/m to 11.46 km
Field Strength (mV/m)
Distance (km)
2


WPUL
Freq: 1590 kHz
Azi: 240.0 deg
Power: 1.0 kW
Rad: 231.704 mV/m@1km
e = 15
FIGURE 7
Net Conductivities:
1: 2.0 mS/m to 12.08 km
2: 2.0 mS/m to 14.49 km
Field Strength (mV/m)
Distance (km)

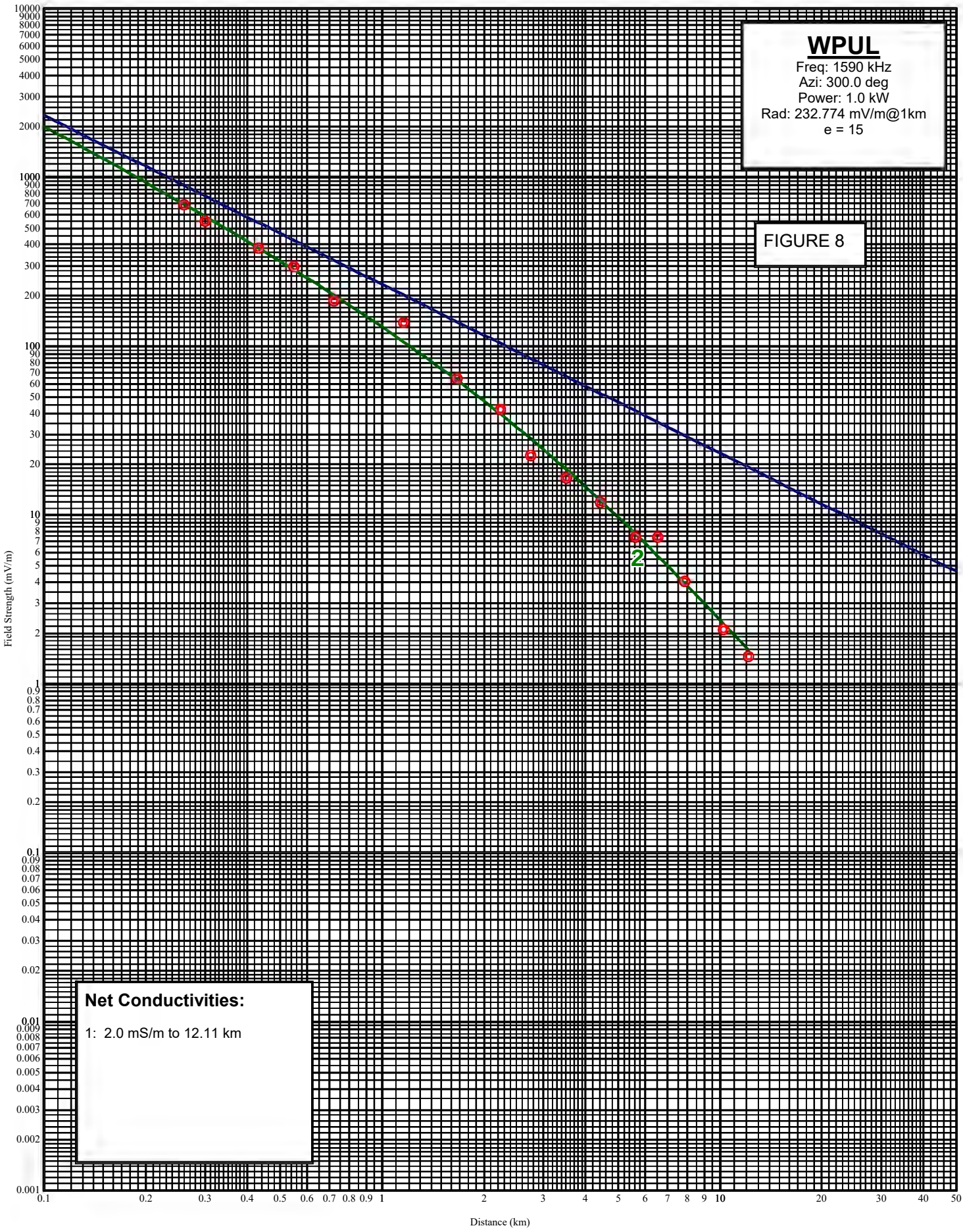
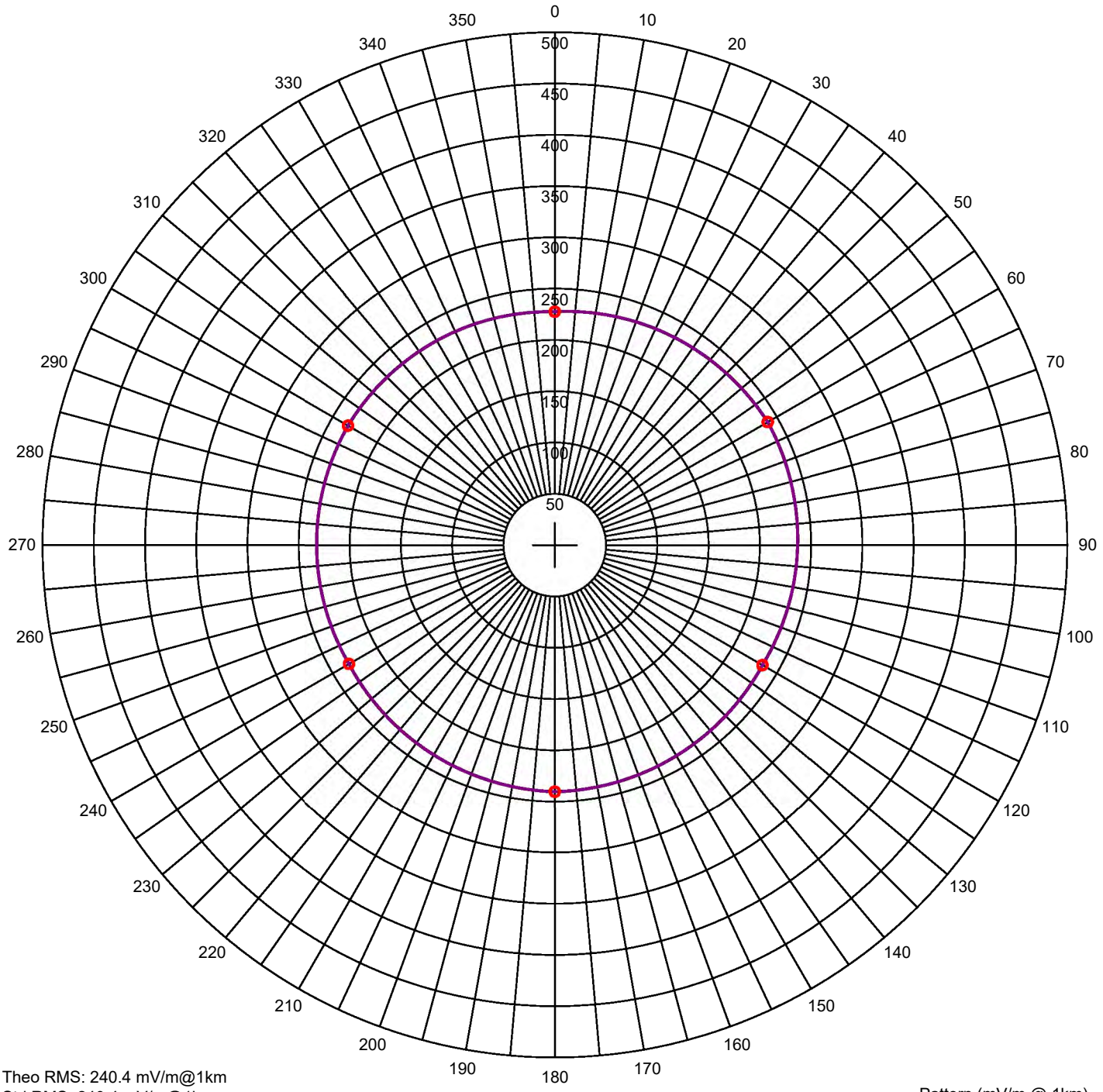

WPUL
Freq: 1590 kHz
Azi: 300.0 deg
Power: 1.0 kW
Rad: 232.774 mV/m@1km
e = 15
FIGURE 8
Net Conductivities:
1: 2.0 mS/m to 12.11 km
2
Field Strength (mV/m)
Distance (km)

FIGURE 9: MEASURED ND PATTERN



Theo RMS: 240.4 mV/m@1km
Std RMS: 240.4 mV/m@1km
Meas RMS: 234.365 mV/m@1km
Q: -1.0 mV/m@1km

Horizontal Plane Standard Pattern

Pattern (mV/m @ 1km)
Meas Pat (mV/m@1km)
Pattern X10
Meas Pat X10

#	Field Ratio	Phase (deg)	Spacing (deg)	Orient (deg)	Height (deg)	Ref Swtch	TL Swtch	A (deg)	B (deg)	C (deg)	D (deg)
1	1.000	0.0	0.0	0.0	42.0	0	0	0.0	0.0	0.0	0.0

```
Call: WPUL
Freq: 1590 kHz
SOUTH DAYTONA, FL, US
Lat: 29-12-06 N
Lng: 081-01-30 W
Power: 1.0 kW
Theo RMS: 240.40 mV/m @ 1km

PHASETEK INC.
MARCH  2020
```

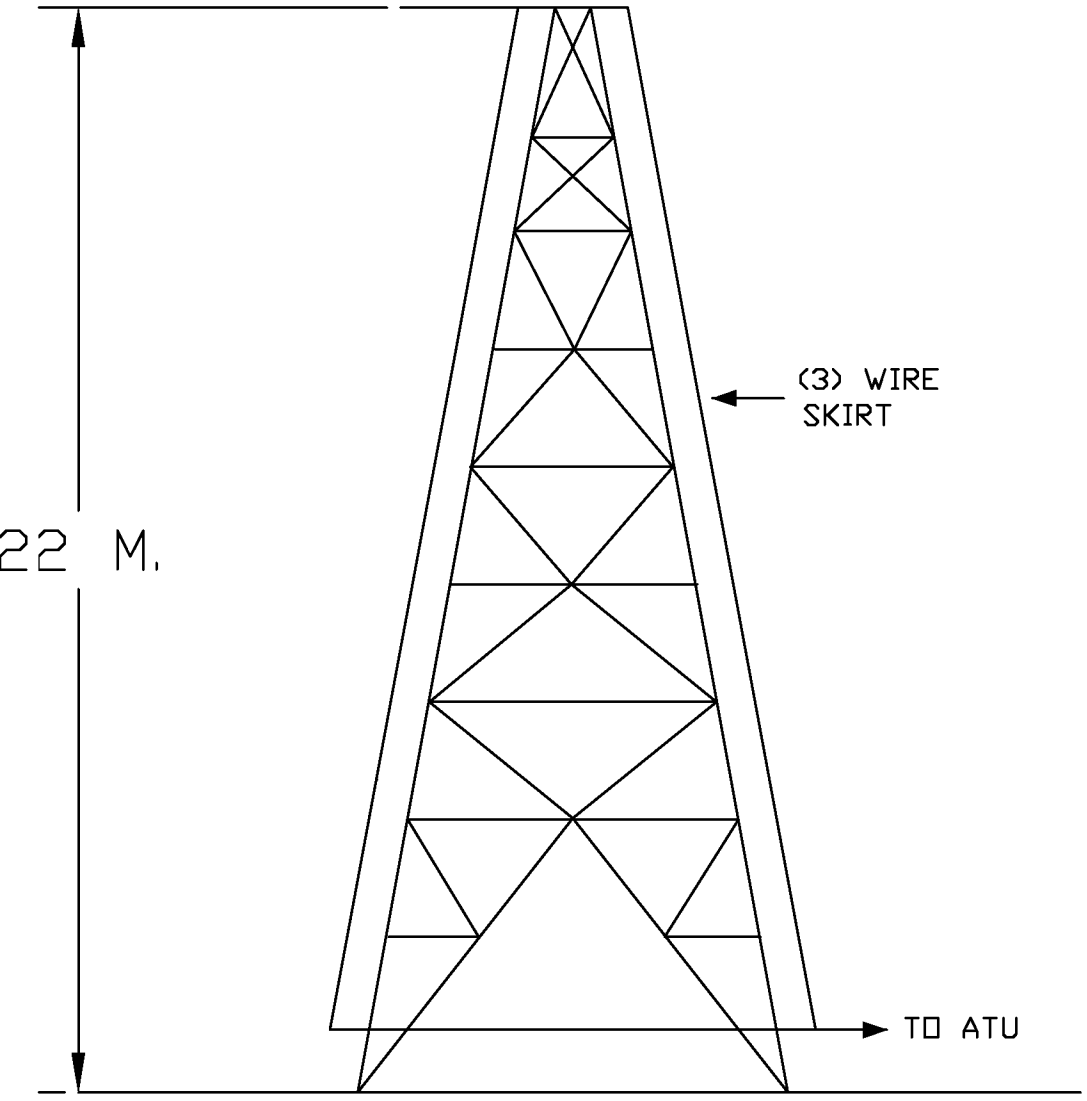


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FIGURE 10
TOWER ELEVATION
WPUL 1590 KHZ
MARCH, 2020