

TECHNICAL EXHIBIT
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
LONG COMMUNICATIONS, L.L.C.
RADIO STATION WHKY
HICKORY, NORTH CAROLINA

September 3, 2002

1290 KHZ 50 KW-D 1 KW-N U DA-2

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Technical Narrative

The technical exhibit of which this narrative is part has been prepared on behalf of Long Communications, L.L.C., licensee of AM broadcast station WHKY at Hickory, North Carolina. WHKY is licensed for full time operation on 1290 kilohertz with daytime power of 5.0 kilowatts and nighttime power of 1.0 kilowatts, operating with a non-directional antenna during daytime and a directional antenna during nighttime hours. Station WHKY has been issued a construction permit for an increase in daytime power to 25 kilowatts, File No. BP-20000515ABL. By means of this present application, the licensee proposes to modify the construction permit by increasing daytime power to 50 kilowatts with a directional antenna pattern. There will be no change to the existing nighttime operation.

The proposal is classified as a minor change according to 47 CFR 73.3571(a)(2). As a Class B station operating on one of the channels listed in 73.26(a), the

proposal satisfies 47 CFR 73.21(a)(2) which permits operation with a nominal power of not less than 0.25 kilowatt nor more than 50 kilowatts at any time. The proposal is acceptable for filing under the criteria set forth in 47 CFR 73.37.

The proposed facility will not have a significant environmental impact as defined by 47 CFR 1.1307. The Federal Aviation Administration will not be notified of the proposal as the new tower is less than 200 feet and is located within the confines of the existing four nighttime towers, and is shorter than those towers.

Proposed Transmitter Location

The location of the proposed WHKY facility will not change. The same site will continue to be used for both daytime and nighttime operation.

Directional Antenna System

A total of three towers will be employed for the daytime directional antenna pattern. As indicated on Sheet 1 of Figure 1, the radiating elements for existing towers number 1 and 4 are 62.5 meters (205 feet) in height and have an overall height of 63.4 meters (208 feet) above ground level. A new third tower is proposed with a radiating element of 59.4 meters (195 feet) in height and an overall height of 60.4 meters (198 feet). Sheet 2 of Figure 1 shows a plat of the transmitter site. A summary of specifications for the daytime directional antenna array is included herein as Figure 2.

The directional antenna patterns have been calculated in accordance with 47 CFR 73.150 assuming a one-ohm lumped loss resistance at the current loop of each tower in the array. The daytime standard radiation pattern is shown herein as Figure 3 and is tabulated in Figure 4.

The provisions of 47 CFR 73.24(g) require that the population within the 1,000 mV/m contour not exceed 1 percent of the population within the 25 mV/m groundwave contour. At the proposed location, during daytime hours, the proposed 1,000 mV/m contour encompasses 748 persons or 0.99 percent of the 75,578 persons in the 25 mV/m contour.

Daytime Coverage

The proposed WHKY daytime field strength contours are depicted on Figure 5. As indicated on Figure 5, the proposed daytime 5 mV/m contour will completely encompass the city limits of Hickory. The Hickory city limits depicted were obtained from a map contained in the TIGER 2000 U.S. census files.

Daytime Allocation Study

A daytime allocation study was made utilizing FCC Figure M-3 as shown on Figure 6. Daytime field strength contours were calculated in accordance with 47 CFR 73.183. Figure 7 is a tabulation of the data employed in the calculation of daytime contours. Based on this analysis, the proposed WHKY facility will comply with all relevant allocation criteria.

Field Strength Measurements

In order to establish the actual ground conductivity in the area, field strength measurements were taken on WHKY. Measurement data is contained in Figure 8 both in graphical and tabular form.

Field strength measurements were taken by Mr. Tom Long, Jr. or by others under his direct supervision. A recently calibrated field intensity meter was employed.

Environmental Considerations

The proposed WHKY operation was evaluated in terms of both the electric and magnetic field components which will be present at the base of each tower. Using Figures 1 through 4 of Supplement A to OET Bulletin 65, the worst case interpolated distance at which the electric and magnetic fields would fall below ANSI guidelines is 4 meters. Accordingly, the areas surrounding the base of each tower will be appropriately restricted with a fence having a minimum radius of 4 meters (13 feet) unless data obtained after construction has been completed indicates otherwise. The fence will assure that persons on the property outside the fenced area will not be exposed to radiofrequency field levels in excess of those recommended by the ANSI. In addition, warning signs will be posted.

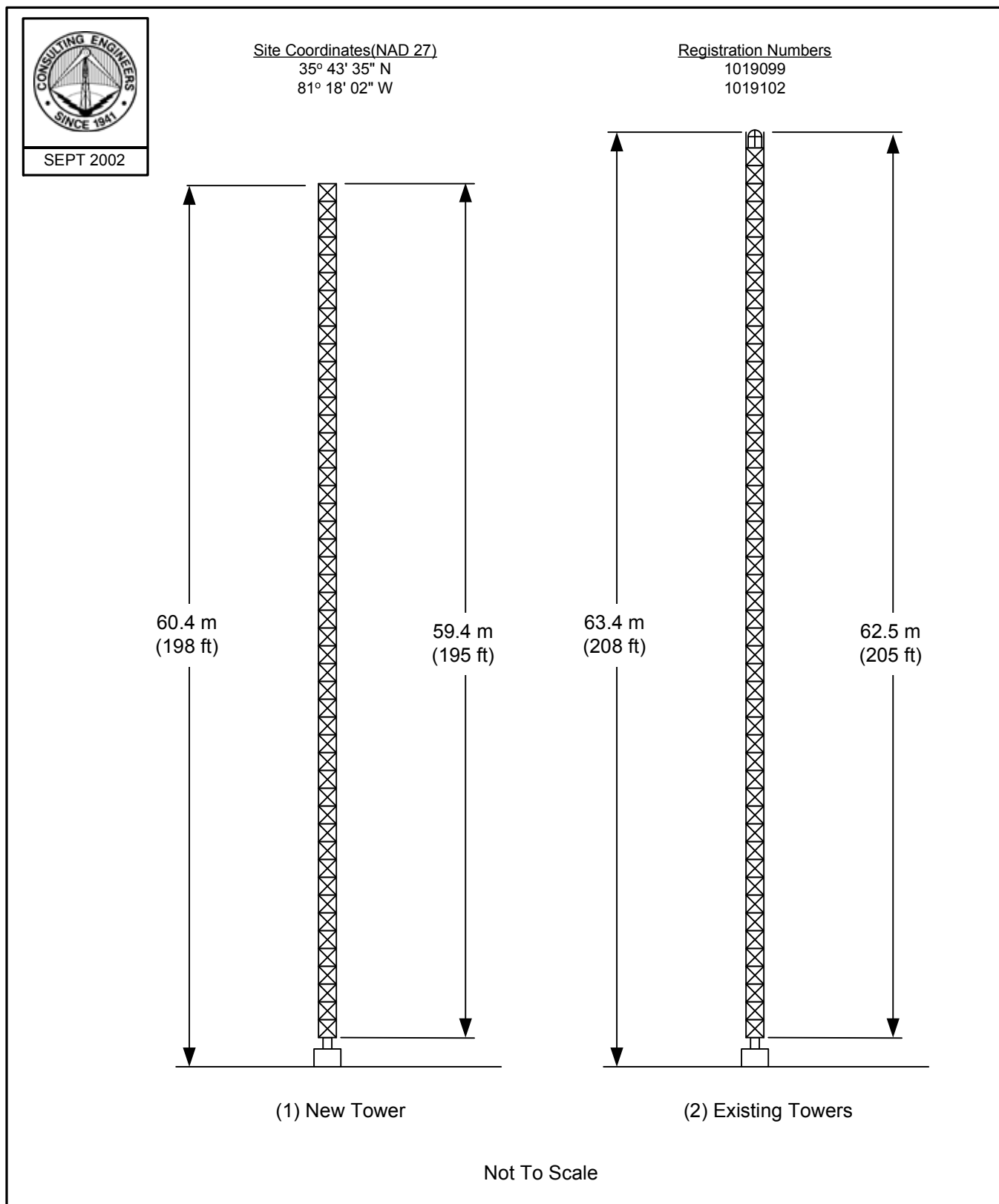
The proposed operation is categorically excluded from environmental processing, as it meets all the criteria for such an exclusion as specified in 47 CFR 1.1306. The proposal does not involve construction at a site location as specified under 47 CFR 1.1307(a)(1)-(7)

and the human exposure to radiofrequency radiation is predicted to be within the standards specified in 47 CFR 1.1307(b).

Matthew Folkert
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237

(941) 329-6000

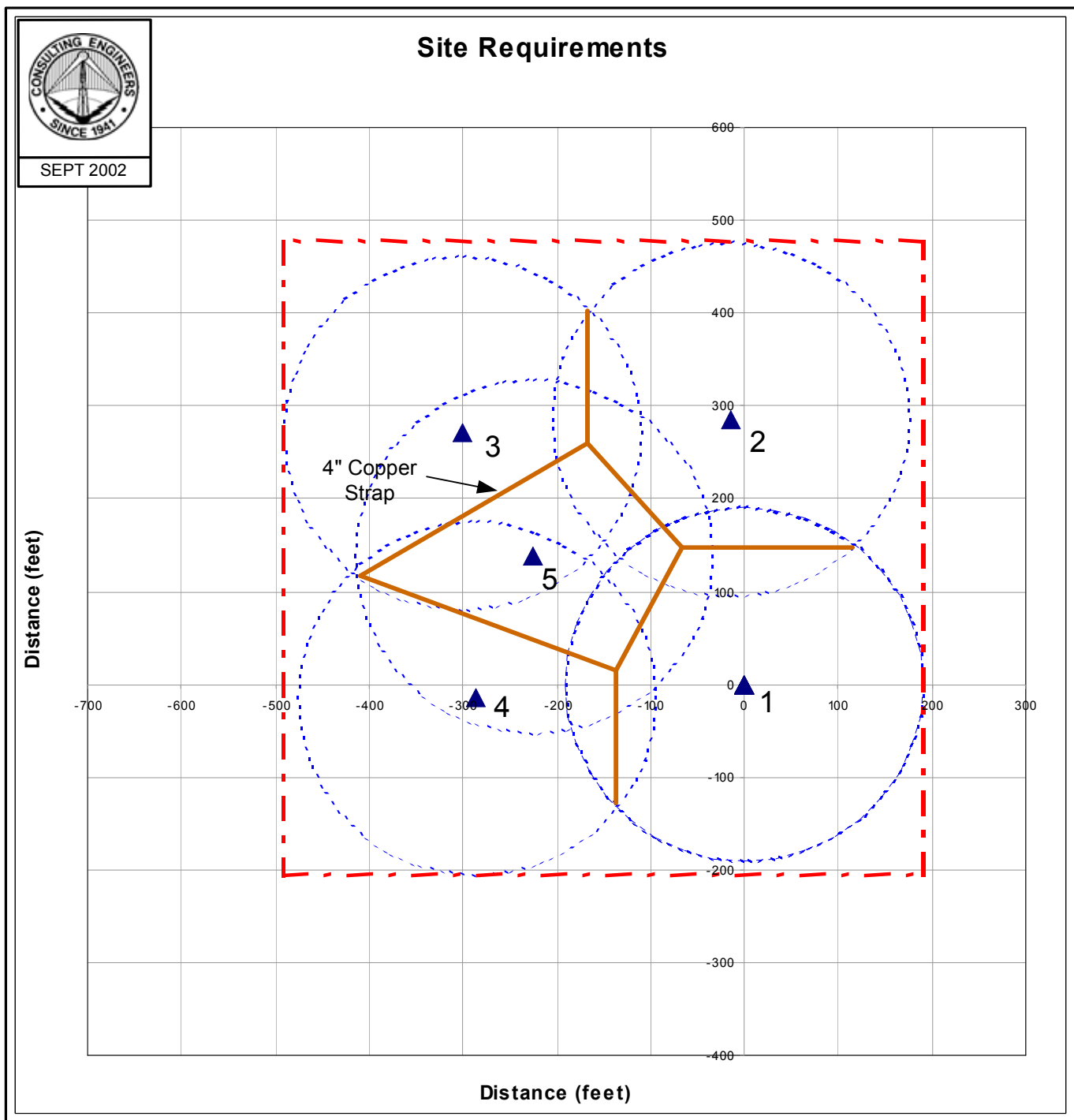
September 3, 2002



SKETCH OF ANTENNA ELEMENTS

RADIO STATION WHKY
HICKORY, NORTH CAROLINA
1290 KHZ 50 KW-D 1 KW-N U DA-2

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



PLAT OF TRANSMITTER SITE

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Specification for Daytime
Directional Antenna System

Frequency:	1290 kHz
Hours of Operation:	Unlimited
Power:	50 kW
Number of Towers:	3
Type of Tower:	Guyed, Uniform Cross-section, base-insulated
Towers No. 1 & 4 - height above base insulator	62.5 m (205 ft)
Towers No. 1 & 4 - overall height	63.4 m (208 ft)
Tower No. 5 - height above base insulator	59.4 m (195 ft)
Tower No. 5 - overall height	60.4 m (198 ft)

Tower Arrangement:

Tower No.	Spacing (deg.) / (m)	Orientation (deg. True)
1 (SE)	0.0/0.0	0.0
4 (SW)	135.0/87.2	267.0
5 (C)	124.4/80.4	301.5

Element Field Parameters:

Daytime:

<u>Tower</u> <u>No.</u>	<u>Field</u> <u>Ratio</u>	<u>Phase</u> <u>(degrees)</u>
1 (SE)	1.000	0.0
4 (SW)	0.881	-127.7
5 (C)	0.911	-32.4

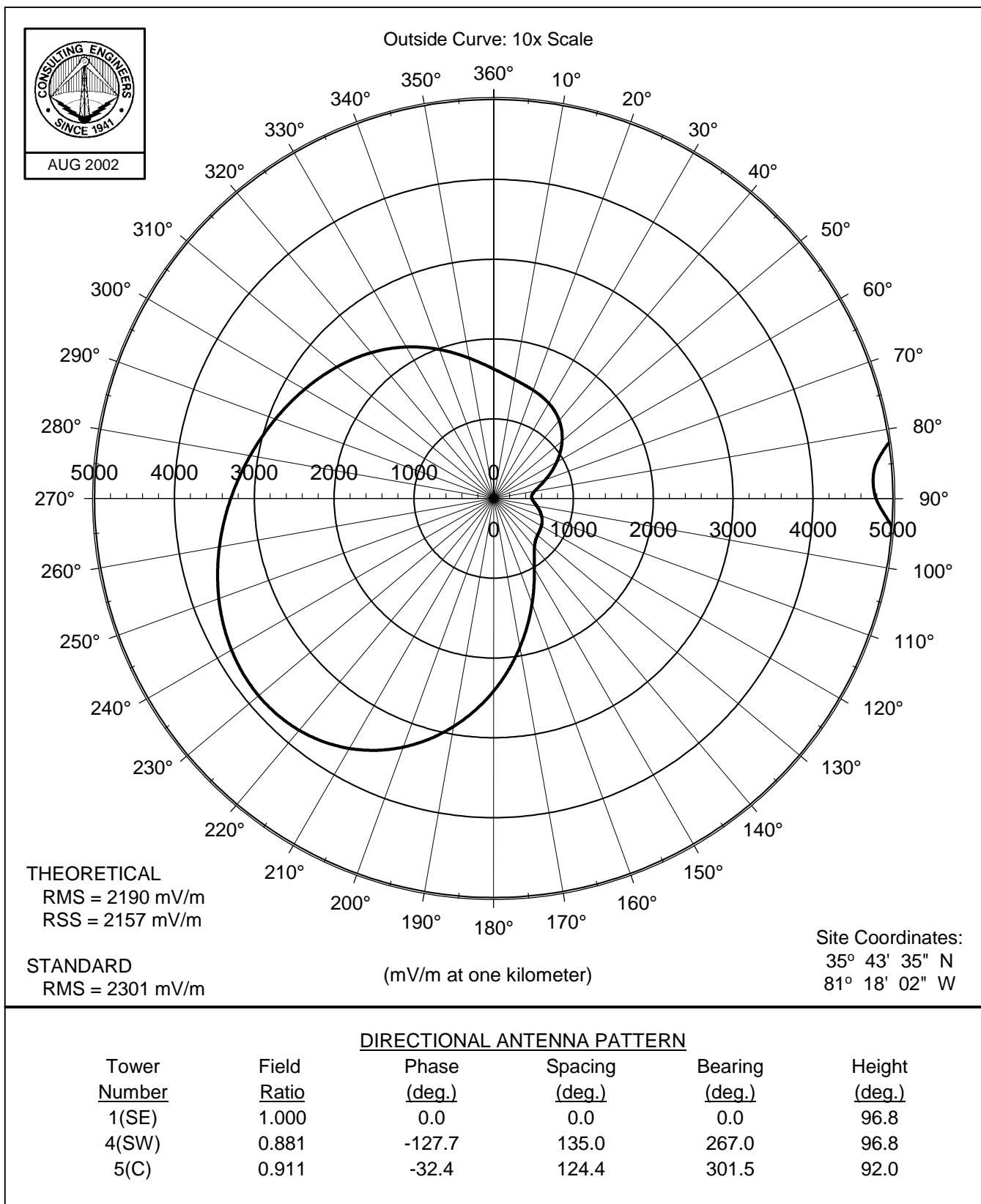
Ground System:

Installed about the base of each tower are 120 evenly spaced, buried copper wire radials (#10 AWG), extending 58.1 meters (191 ft) from all towers except where shortened and bonded to transverse copper strap between towers. In addition, copper strap runs from the transmitter and down the line of towers and is bonded to ground at the base of each tower.

Geographic Coordinates of
Center of Antenna Array:

35° 43' 35" North Latitude
81° 18' 02" West Longitude

Figure 3



PROPOSED DAYTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN

RADIO STATION WHKY
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Figure 4

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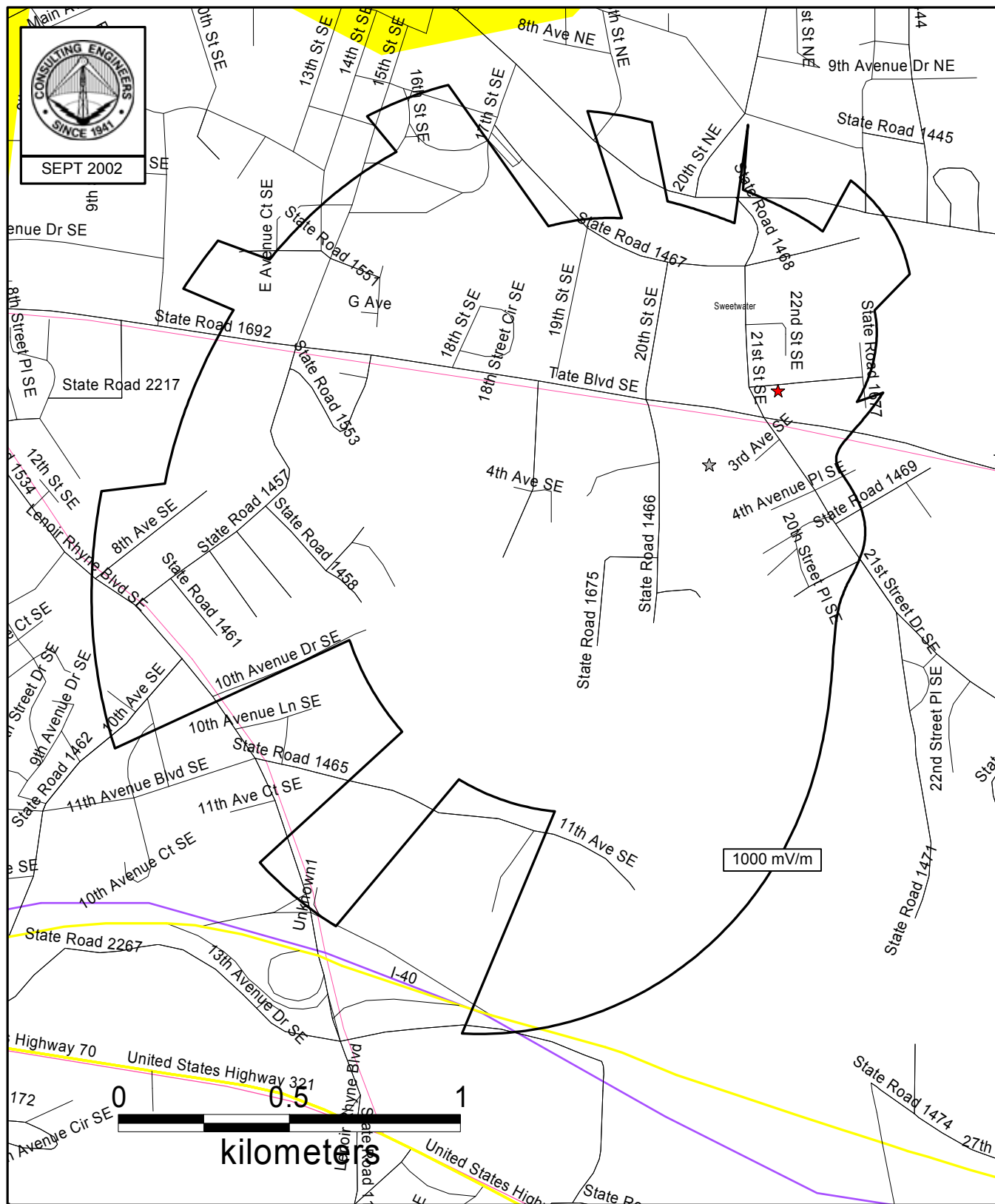
1290 KHZ 50 KW-D 1 KW-N U DA-2

DAYTIME RADIATION PATTERN
(Radiation Values at One Kilometer)

Tower <u>Number</u>	Field <u>Ratio</u>	Phase <u>(deg.)</u>	Spacing <u>(deg.)</u>	Bearing <u>(deg.)</u>	Height <u>(deg.)</u>
1 (SE)	1.000	0.0	0.0	0.0	96.8
4 (SW)	0.881	-127.7	135.0	267.0	96.8
5 (C)	0.911	-32.4	124.4	301.5	92.0

Input Power <u>(kW)</u>	Loop Loss <u>(ohms)</u>	Theo. RMS <u>(mV/m)</u>	Theo. RSS <u>(mV/m)</u>	Q Factor <u>(mV/m)</u>	Standard RMS <u>(mV/m)</u>
50	1.0	2190	2157	70.7	2301

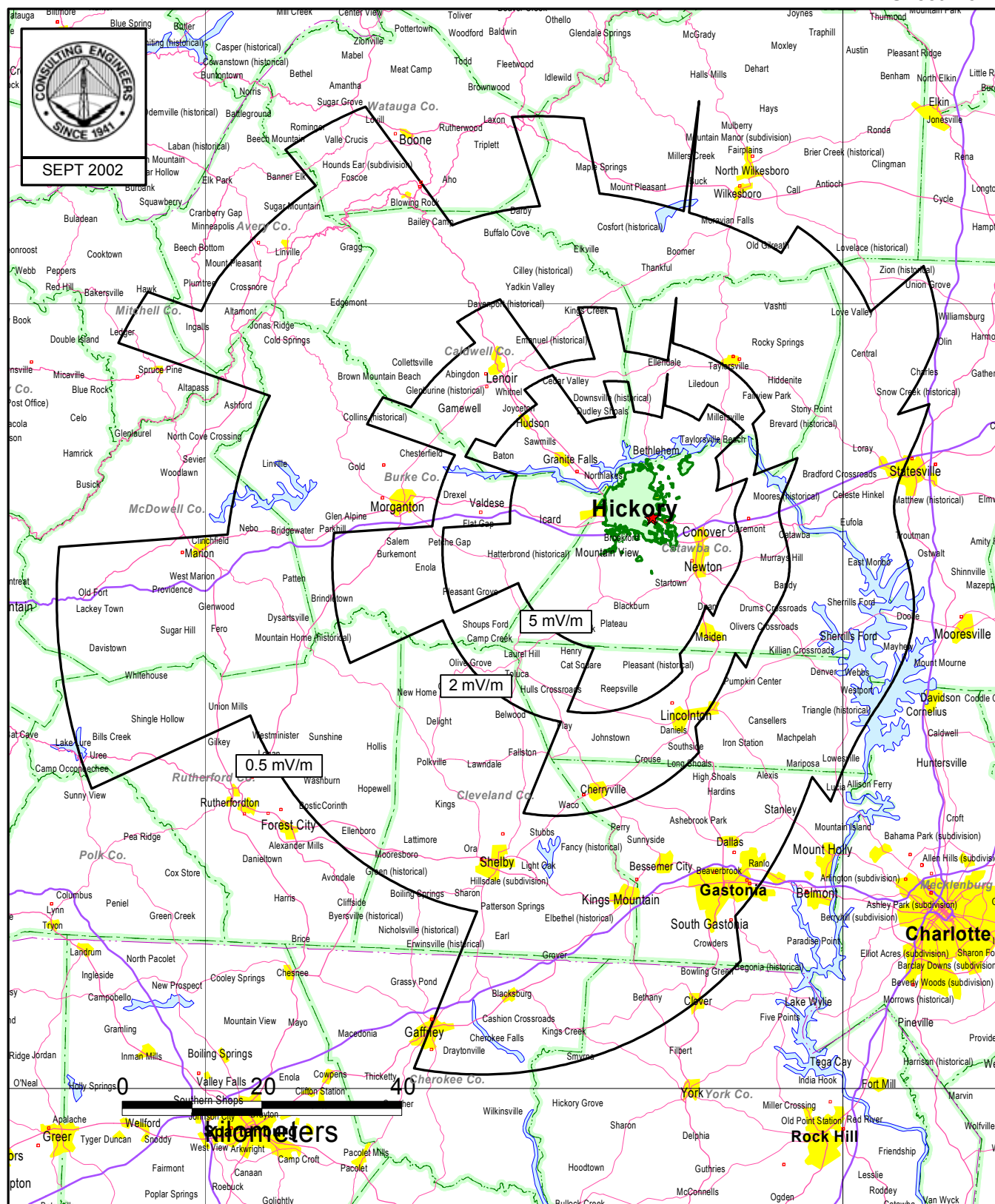
<u>Azimuth</u> <u>(mV/m)</u>	<u>Field</u> <u>(mV/m)</u>	<u>Azimuth</u> <u>(mV/m)</u>	<u>Field</u> <u>(mV/m)</u>	<u>Azimuth</u> <u>(mV/m)</u>	<u>Field</u> <u>(mV/m)</u>	<u>Azimuth</u> <u>(mV/m)</u>	<u>Field</u> <u>(mV/m)</u>
0	1623	90.0	479	180	2411	270	3293
5	1561	95.0	507	185	2664	275	3194
10	1513	100	552	190	2902	280	3097
15	1476	105	599	195	3121	285	3002
20	1445	110	639	200	3315	290	2911
25	1415	115	670	205	3481	295	2822
30	1380	120	690	210	3616	300	2735
35	1335	125	703	215	3720	305	2650
40	1278	130	716	220	3791	310	2564
45	1205	135	742	225	3832	315	2477
50	1119	140	795	230	3844	320	2386
55	1020	145	886	235	3829	325	2291
60	911	150	1020	240	3792	330	2192
65	799	155	1195	245	3736	335	2090
70	689	160	1404	250	3664	340	1987
75	592	165	1639	255	3580	345	1885
80	519	170	1891	260	3489	350	1788
85	480	175	2151	265	3392	355	1699



PROPOSED DAYTIME FIELD STRENGTH CONTOURS

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HICKORY, NORTH CAROLINA
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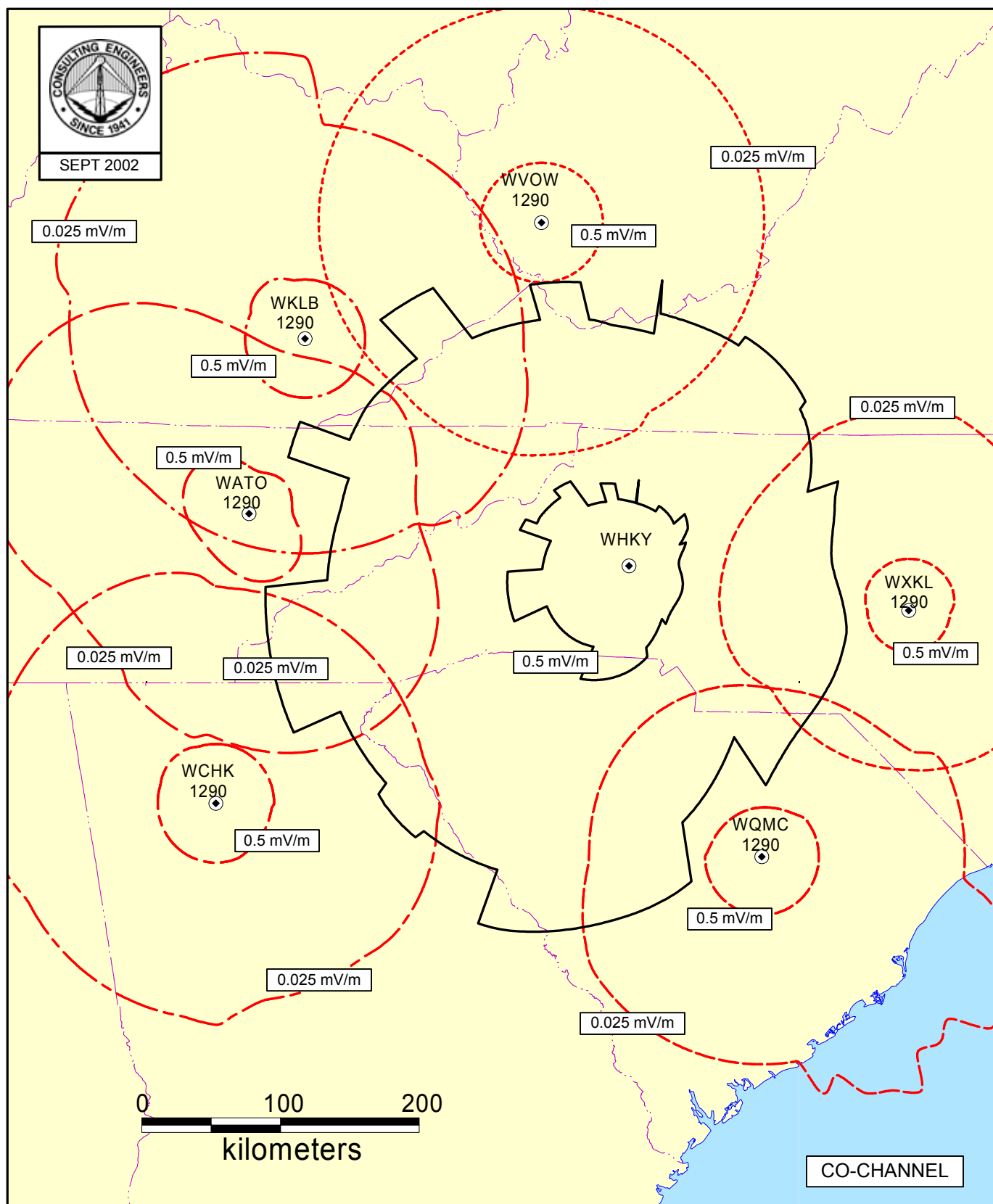
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PROPOSED DAYTIME FIELD STRENGTH CONTOURS

RADIO STATION WHKY
HICKORY, NORTH CAROLINA
1290 KHZ 50 KW-D 1 KW-N U DA-2

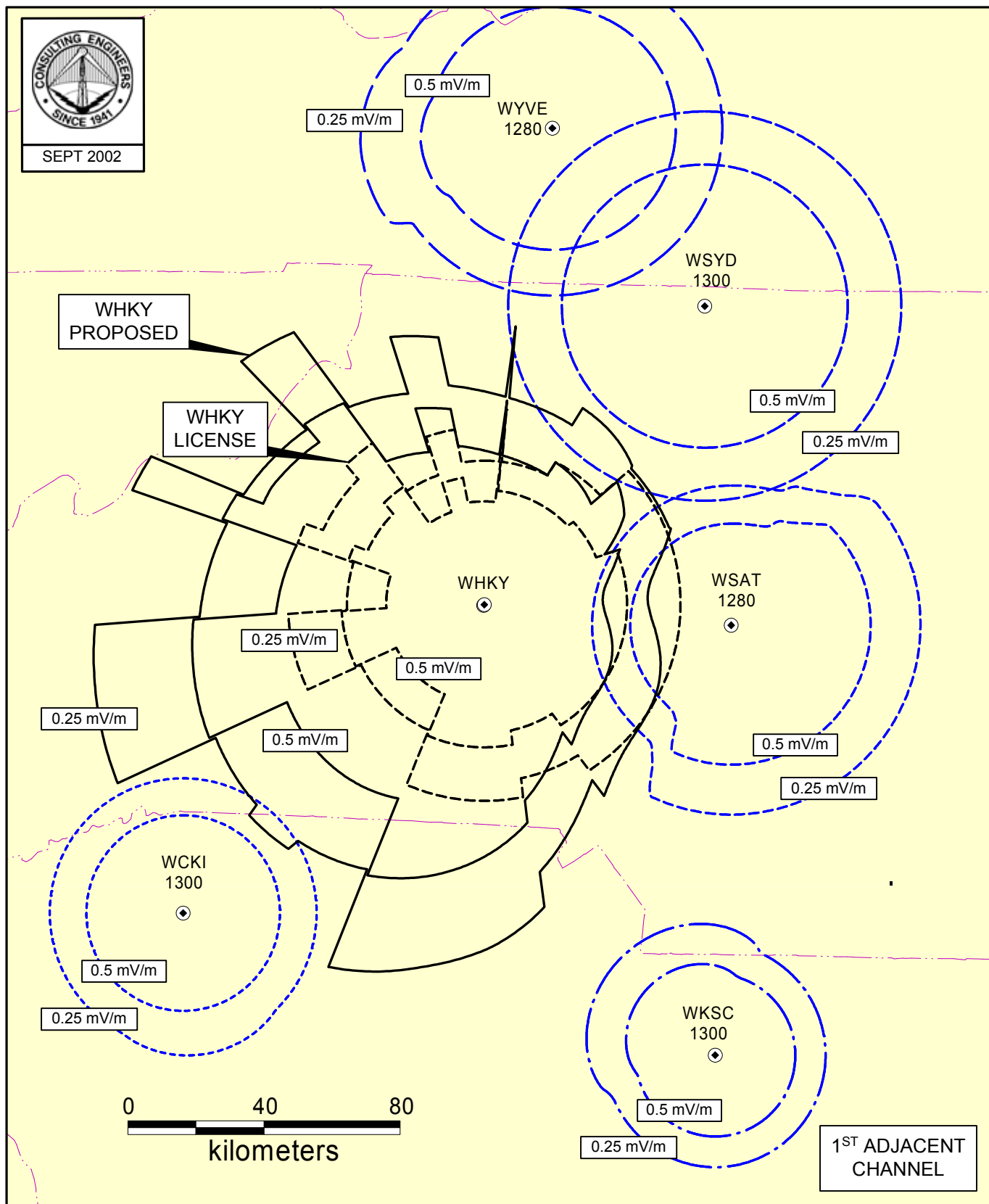
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DAYTIME ALLOCATION STUDY

RADIO STATION WHKY
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DAYTIME ALLOCATION STUDY

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Tabulation of Data Employed in
Calculation of Groundwave Contours

Call: WHKY
Hickory, North Carolina
Coordinates: 35-43-35 North 81-18-02 West
Frequency: 1290 kHz

Measured Conductivity Data:

Azimuth (deg)	Region 1 (mS/m)	Dist. 1 (km)	Region 2 (mS/m)	Dist. 2 (km)	Region 3 (mS/m)	Dist. 3 (km)	Region 4 (mS/m)	Dist. 4 (km)
7-26	1	35	0.5	68				
27-46	2	18	1	70				
47-67	1	10	0.5	35	2	58	0.5	62
148-168	2	10	1.5	80	0.1	96.5		
204-218	0.1	98						
219-228	1.5	15	0.1	74				
229-244	0.1	105						
268-288	1.5	20	0.1	140				
295-315	1.5	70	0.1	99				
326-340	0.1	120						
341-350	1.5	140						
351-6	0.5	140						

FCC Figure M-3 conductivity employed along all other azimuths

Call: WVOW - LICENSE
Logan, West Virginia
Coordinates: 37-51-28 North 81-58-16 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WXKL - LICENSE
Sanford, North Carolina
Coordinates: 35-27-01 North 79-09-30 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WQMC - LICENSE
Sumter, South Carolina
Coordinates: 33-55-16 North 80-16-59 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WXKL - LICENSE
Canton, Georgia
Coordinates: 34-15-08 North 84-27-49 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WATO - LICENSE
Oak Ridge, Tennessee
Coordinates: 36-03-02 North 84-12-38 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WKLB - LICENSE
Manchester, Kentucky
Coordinates: 37-08-15 North 83-46-50 West
Frequency: 1290 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WYVE - LICENSE
Wytheville, Virginia
Coordinates: 36-57-54 North 81-04-50 West
Frequency: 1280 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WSYD - LICENSE
Mount Airy, North Carolina
Coordinates: 36-30-12 North 80-35-35 West
Frequency: 1300 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WSAT - LICENSE
Salisbury, North Carolina
Coordinates: 35-40-30 North 80-30-30 West
Frequency: 1280 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WKSC - LICENSE
Kershaw, South Carolina
Coordinates: 34-33-30 North 80-33-34 West
Frequency: 1300 kHz

FCC Figure M-3 conductivity employed along all azimuths

Call: WCKI - LICENSE
Greer, South Carolina
Coordinates: 34-55-39 North 82-15-42 West
Frequency: 1300 kHz

FCC Figure M-3 conductivity employed along all azimuths

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HICKORY, NORTH CAROLINA

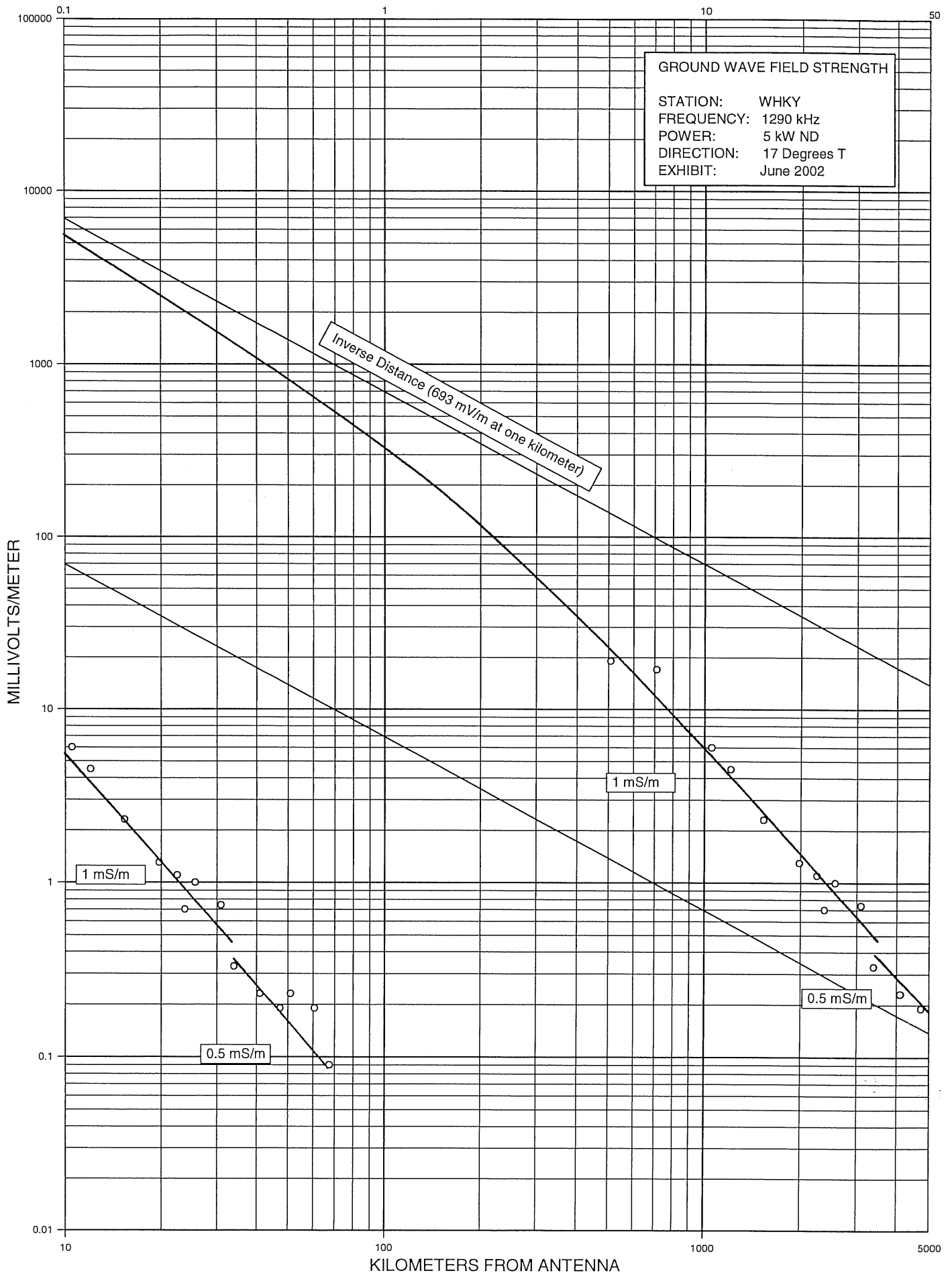
1290 KHZ 50 KW-D 1 KW-N U DA-2

Field Strength Measurements

Radio Station: WHKY

17 Degree Radial - Day

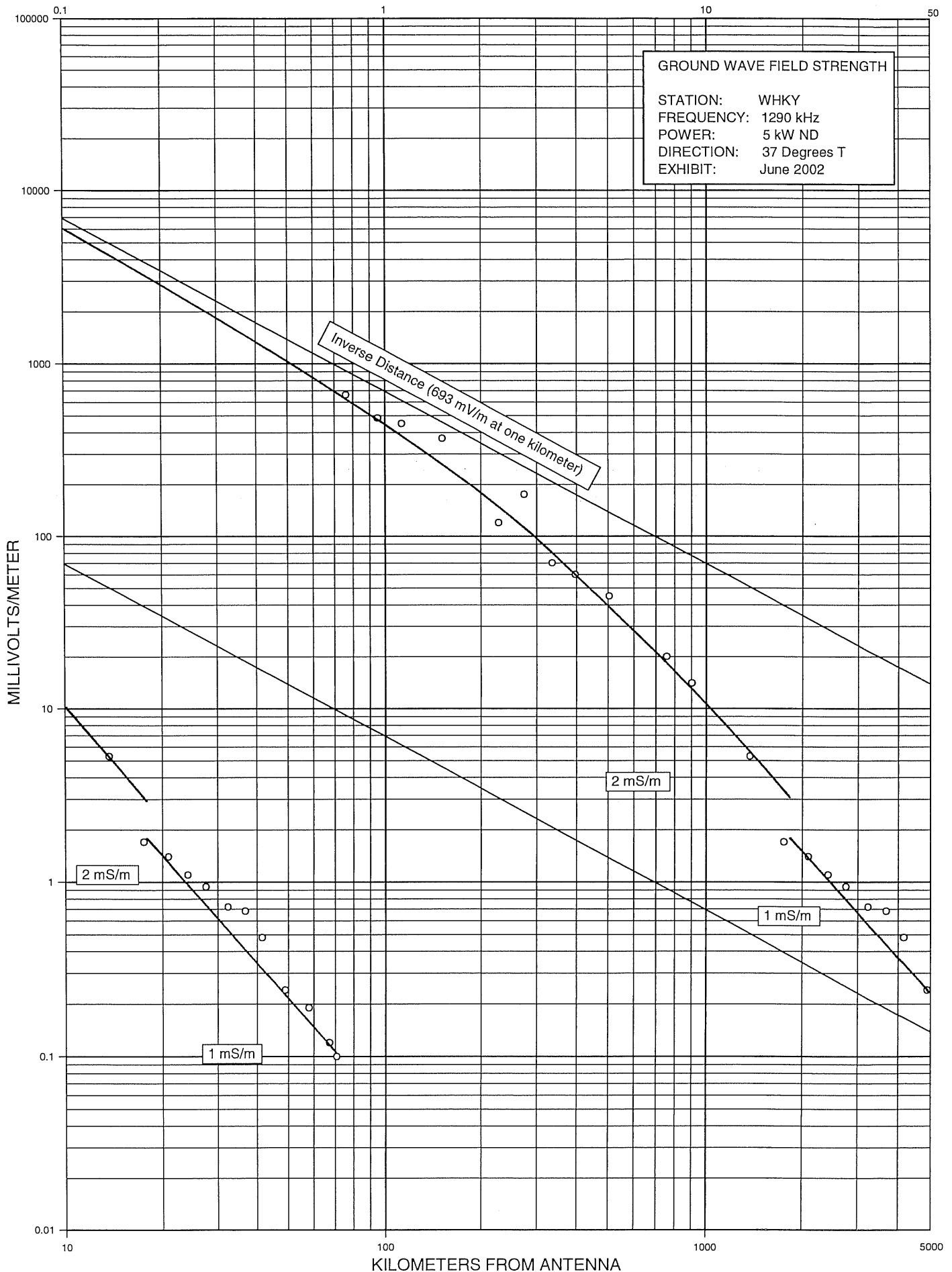
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/15/2002	
1	5.08	1356	19.0
2	7.10	1344	17.0
3	10.51	1330	6.00
4	12.07	1324	4.50
5	15.29	1316	2.30
6	19.79	1306	1.30
7	22.53	1216	1.10
8	23.81	1233	0.700
9	25.74	1235	1.00
10	30.90	1245	0.740
11	33.95	1138	0.330
12	41.03	1145	0.230
13	47.30	1155	0.190
14	51.00	1205	0.230
15	60.66	1223	0.190
16	67.42	1240	0.900



Radio Station: WHKY

37 Degree Radial - Day

Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/15/2002	
1	0.76	840	660
2	0.95	846	485
3	1.13	851	450
4	1.51	858	370
5	2.28	904	120
6	2.74	909	175
7	3.35	915	70.0
8	3.96	922	60.0
9	5.04	928	45.0
10	7.56	950	20.0
11	9.03	959	14.0
12	13.68	1036	5.30
13	17.54	1053	1.70
14	20.92	1102	1.40
15	24.14	1110	1.10
16	27.51	1121	0.940
17	32.34	1136	0.720
18	36.69	1146	0.680
19	41.51	1509	0.480
20	48.91	1455	0.240
21	57.92	1426	0.190
22	67.10	1410	0.120
23	70.64	1336	0.100

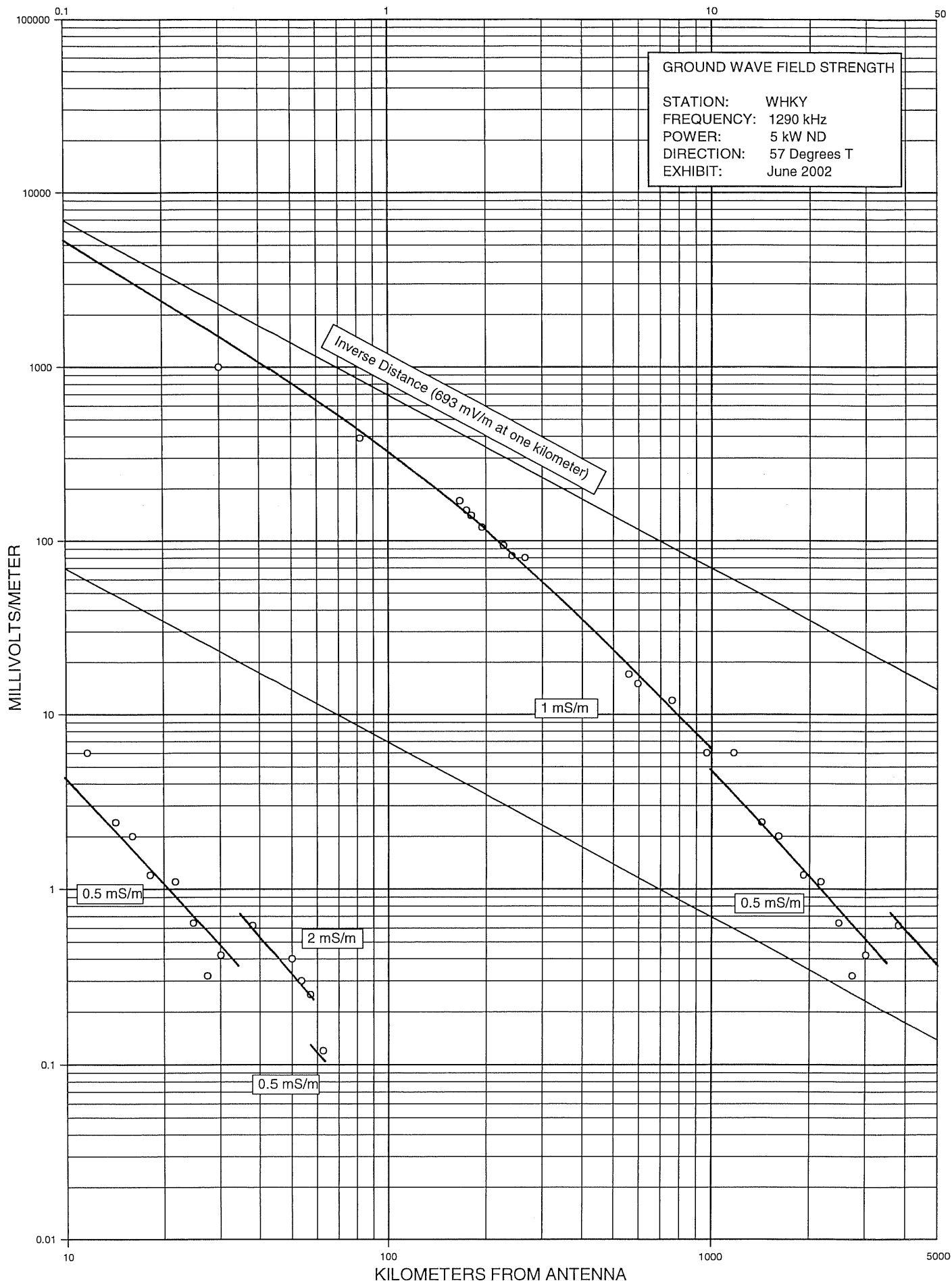


Radio Station: WHKY

57 Degree Radial - Day

Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/13/2002	
1	0.03	1129	1000
2	0.82	1143	390
3	1.66	1156	170
4	1.74	1159	150
5	1.80	1203	140
6	1.94	1206	120
7	2.27	1212	94.0
8	2.41	1215	82.0
9	2.65	1219	80.0
10	5.58	1248	17.0
11	5.95	1256	15.0
12	7.59	1305	12.0
13	9.67	1316	6.00
14	11.65	1325	6.00
15	14.18	1333	24.0
16	16.01	1342	2.00
17	19.15	1408	1.20
18	21.72	1417	1.10
19	24.78	1426	0.640
20	27.35	1436	0.320
21	30.09	1447	0.420
		5/18/2002	
22	37.97	1532	0.620
23	50.04	1610	0.400
24	53.58	1617	0.300
25	62.59	1642	0.120

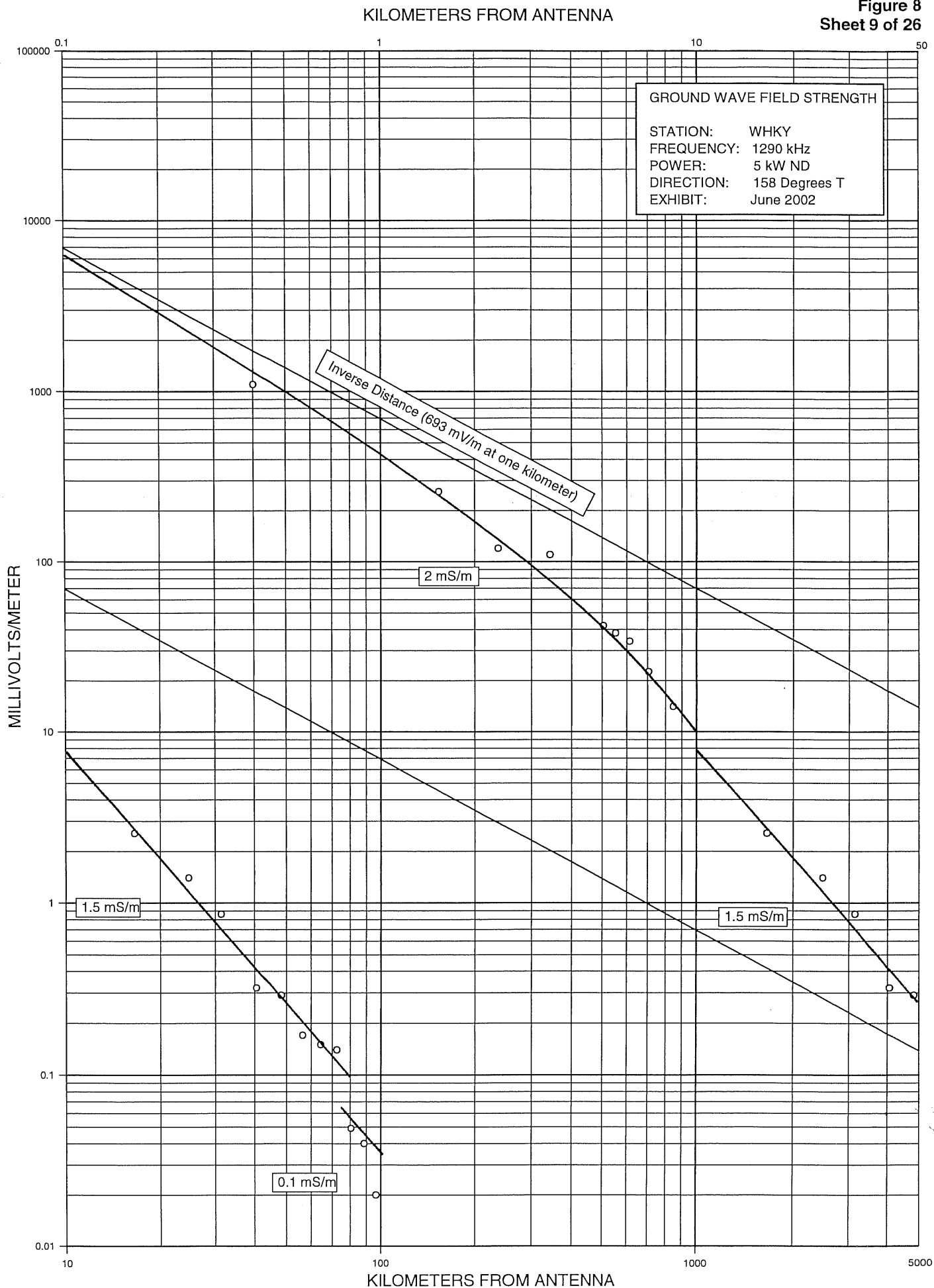
KILOMETERS FROM ANTENNA



Radio Station: WHKY

158 Degree Radial - Day

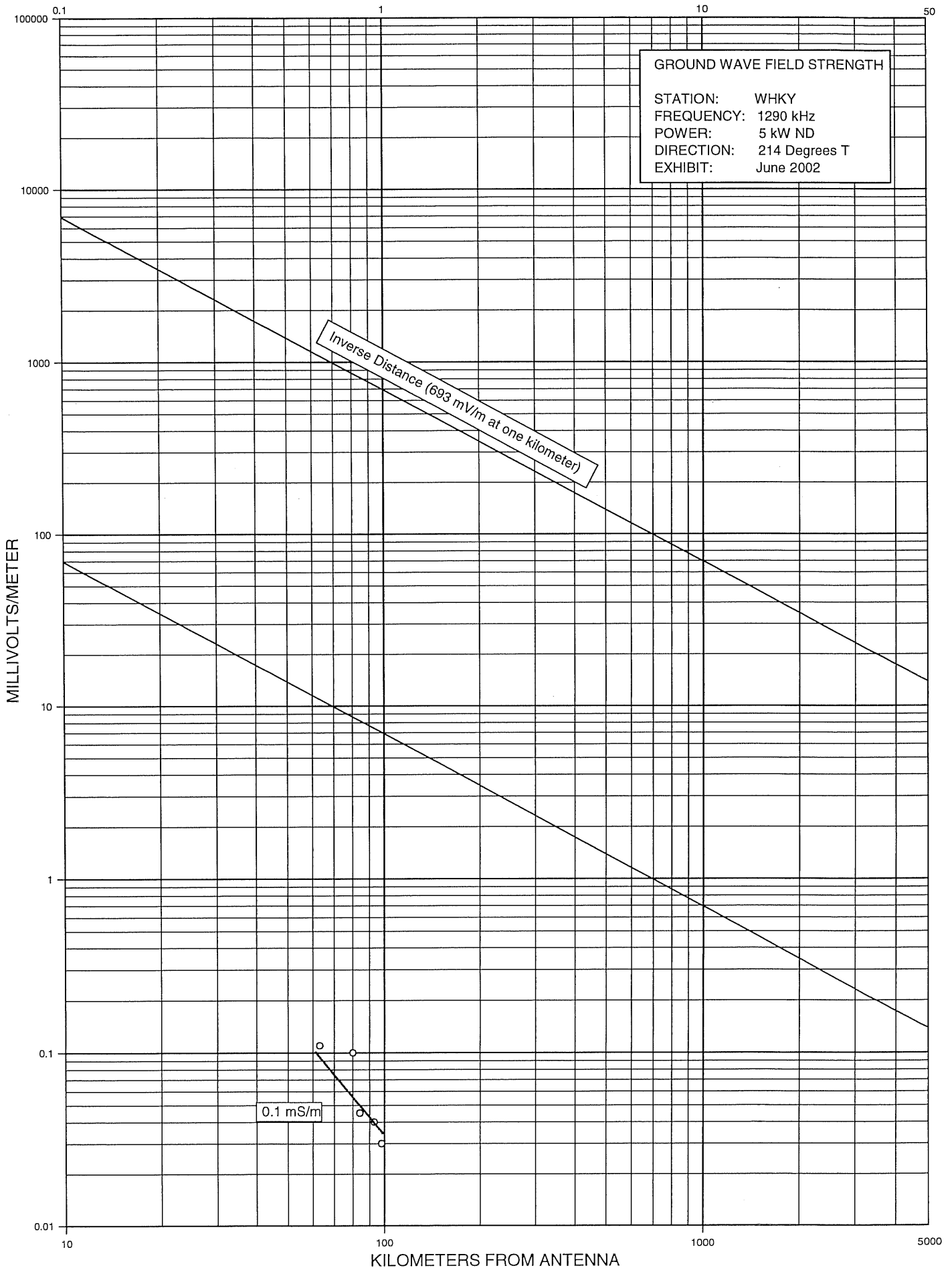
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		7/31/2002	
1	0.40	1735	1100
2	1.54	1741	258
3	2.37	1750	120
4	3.43	1757	110
5	5.05	1805	42.0
6	5.52	1808	38.0
7	6.13	1811	34.0
8	7.06	1816	22.5
9	8.46	1822	14.0
10	16.57	1133	2.54
		07/23/02	
11	24.78	1158	1.40
12	31.38	1217	0.860
13	40.55	1235	0.320
14	48.27	1604	0.290
		07/28/02	
15	56.32	1602	0.170
16	64.36	1646	0.150
17	72.41	1718	0.140
18	80.45	1742	0.049
19	88.50	1756	0.040
20	96.54	1837	0.020



Radio Station: WHKY

214 Degree Radial - Day

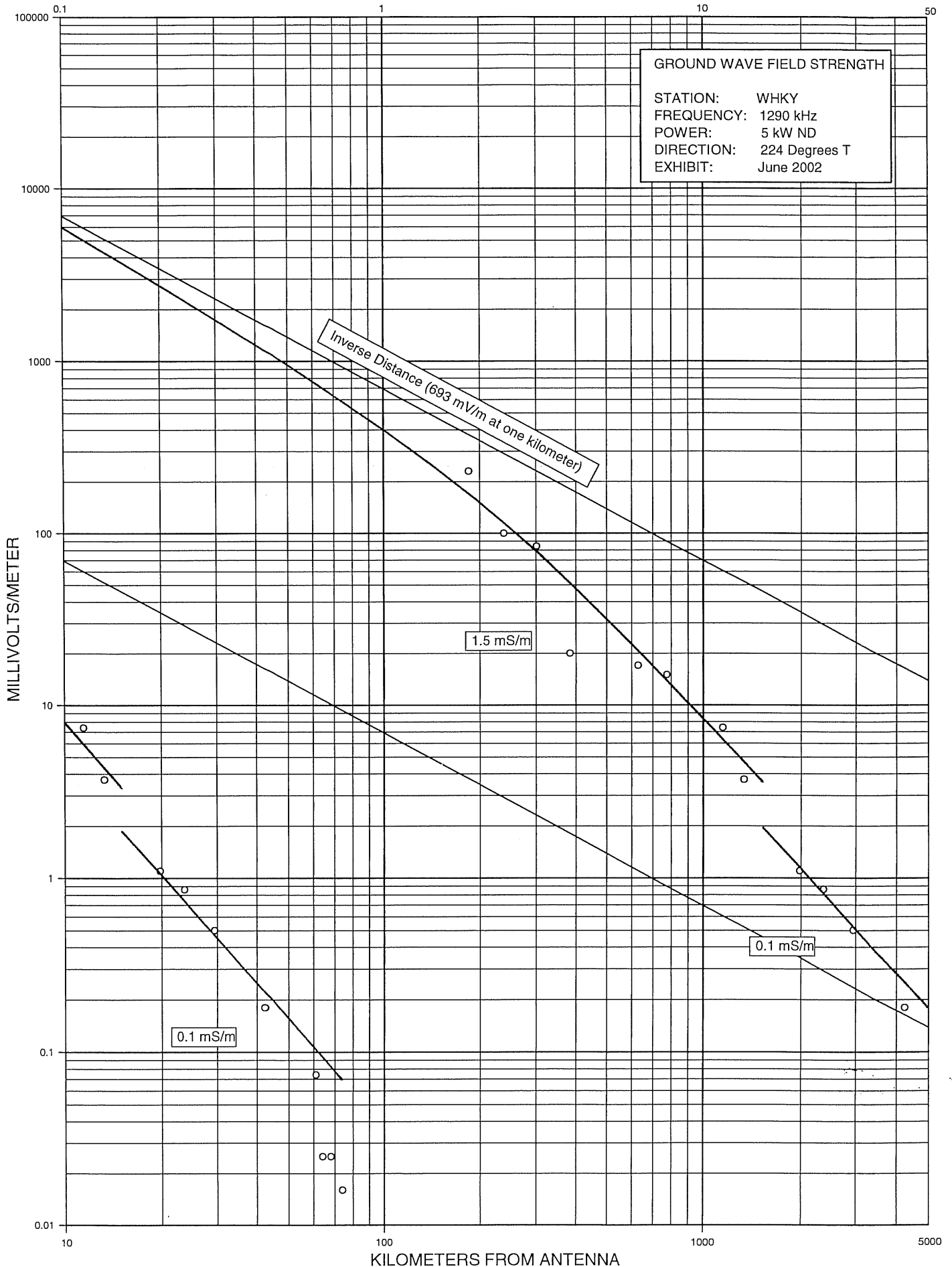
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/19/2002	
1	62.91	900.0	0.110
2	79.81	937.0	0.100
3	83.51	944.0	0.045
4	93.32	1004.0	0.040
5	97.67	1014.0	0.030



Radio Station: WHKY

224 Degree Radial - Day

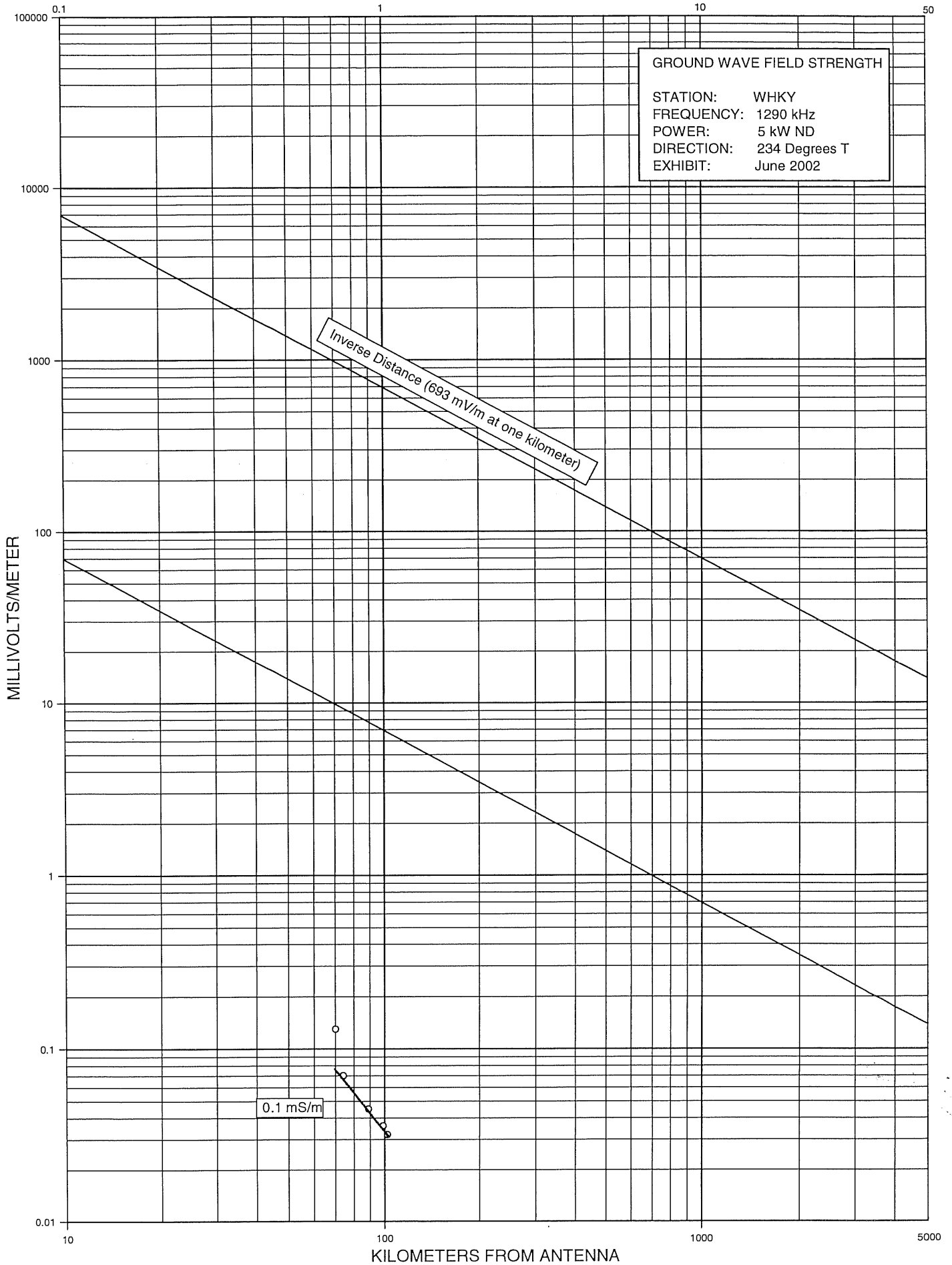
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/17/2002	
1	1.85	1417	230
2	2.38	1444	100
3	3.01	1454	84.0
4	3.83	1459	20.0
5	6.29	1600	17.0
6	7.74	1607	15.0
7	11.47	1618	7.40
8	13.29	1425	3.70
9	19.79	1640	1.10
10	23.65	1652	0.860
		5/22/2002	
11	29.44	1226	0.500
12	42.32	1241	0.180
13	60.50	1316	0.074
14	64.20	1327	0.025
15	67.58	1346	0.025
16	74.01	1357	0.016



Radio Station: WHKY

234 Degree Radial - Day

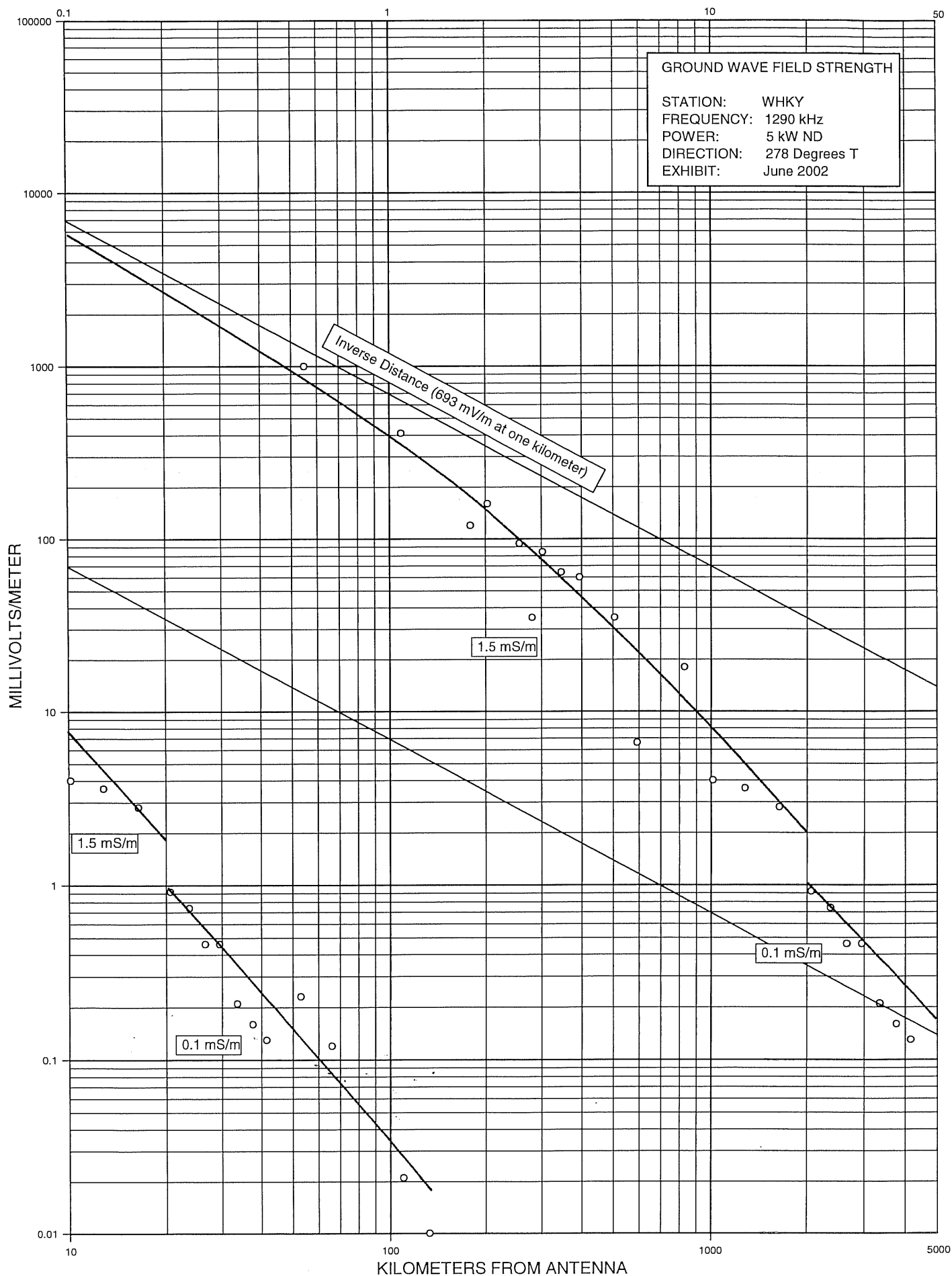
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/19/2002	
1	70.31	1208	0.130
2	73.85	1157	0.070
3	89.46	1136	0.045
4	98.63	1118	0.036
5	102.01	1108	0.032



Radio Station: WHKY

278 Degree Radial - Day

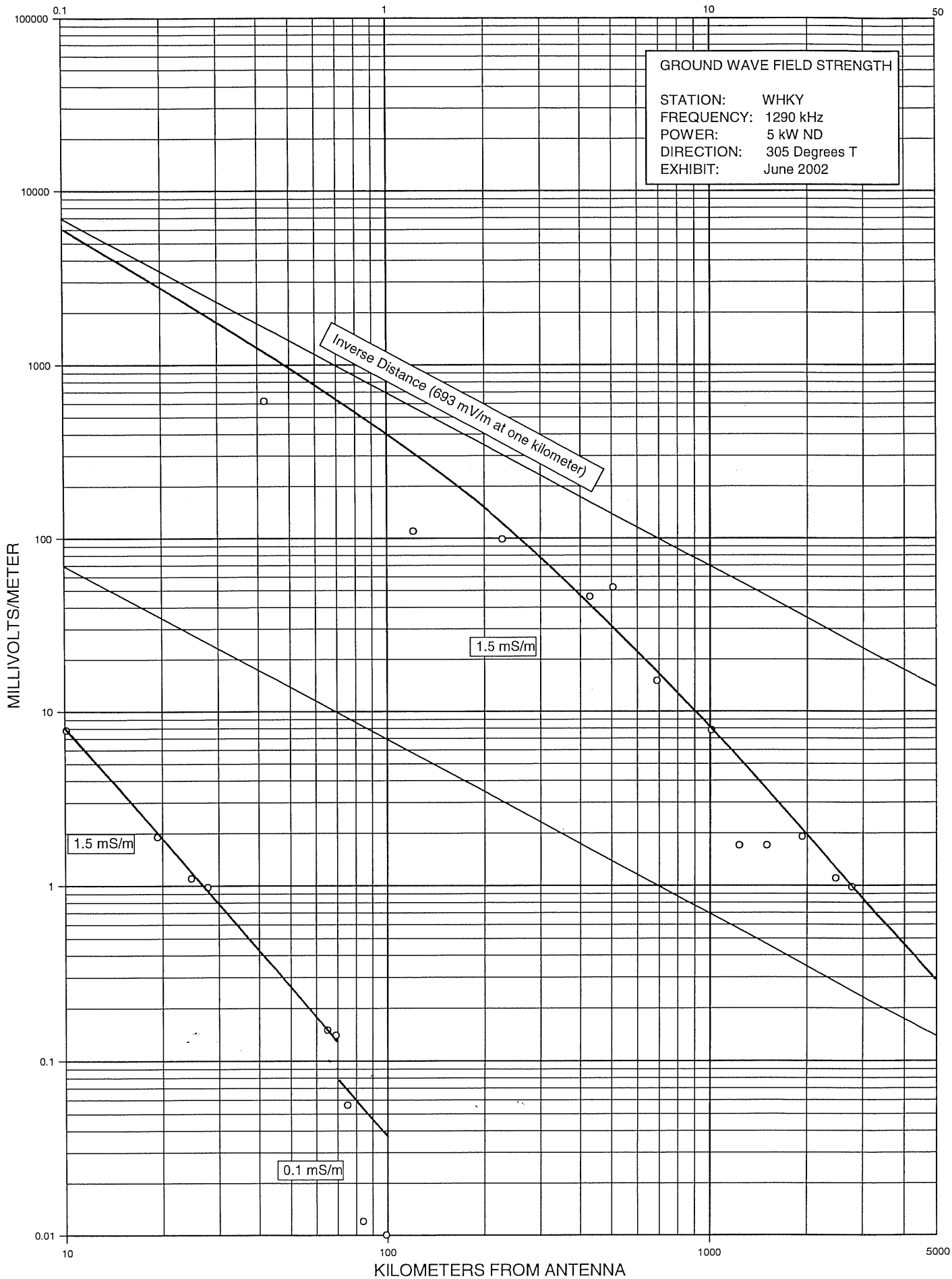
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/17/2002	
1	0.55	912	1000
2	1.09	919	410
3	1.79	929	120
4	2.03	934	160
5	2.56	941	94.0
6	2.80	944	35.0
7	3.02	947	84.0
8	3.46	953	64.0
9	3.94	1000	60.0
10	5.05	1005	35.0
11	5.92	1012	6.60
12	8.29	1020	18.0
13	10.12	1052	4.00
14	12.78	1107	3.60
15	16.41	1115	2.80
16	20.60	1125	0.920
17	23.65	1137	0.740
18	26.55	1146	0.460
19	29.44	1157	0.460
20	33.48	1210	0.210
21	37.49	1226	0.160
22	41.51	1236	0.130
		5/22/2002	
23	52.61	912	0.230
24	65.65	1010	0.120
		5/21/2002	
25	110.38	1500	0.021
26	133.06	1539	0.010



Radio Station: WHKY

305 Degree Radial - Day

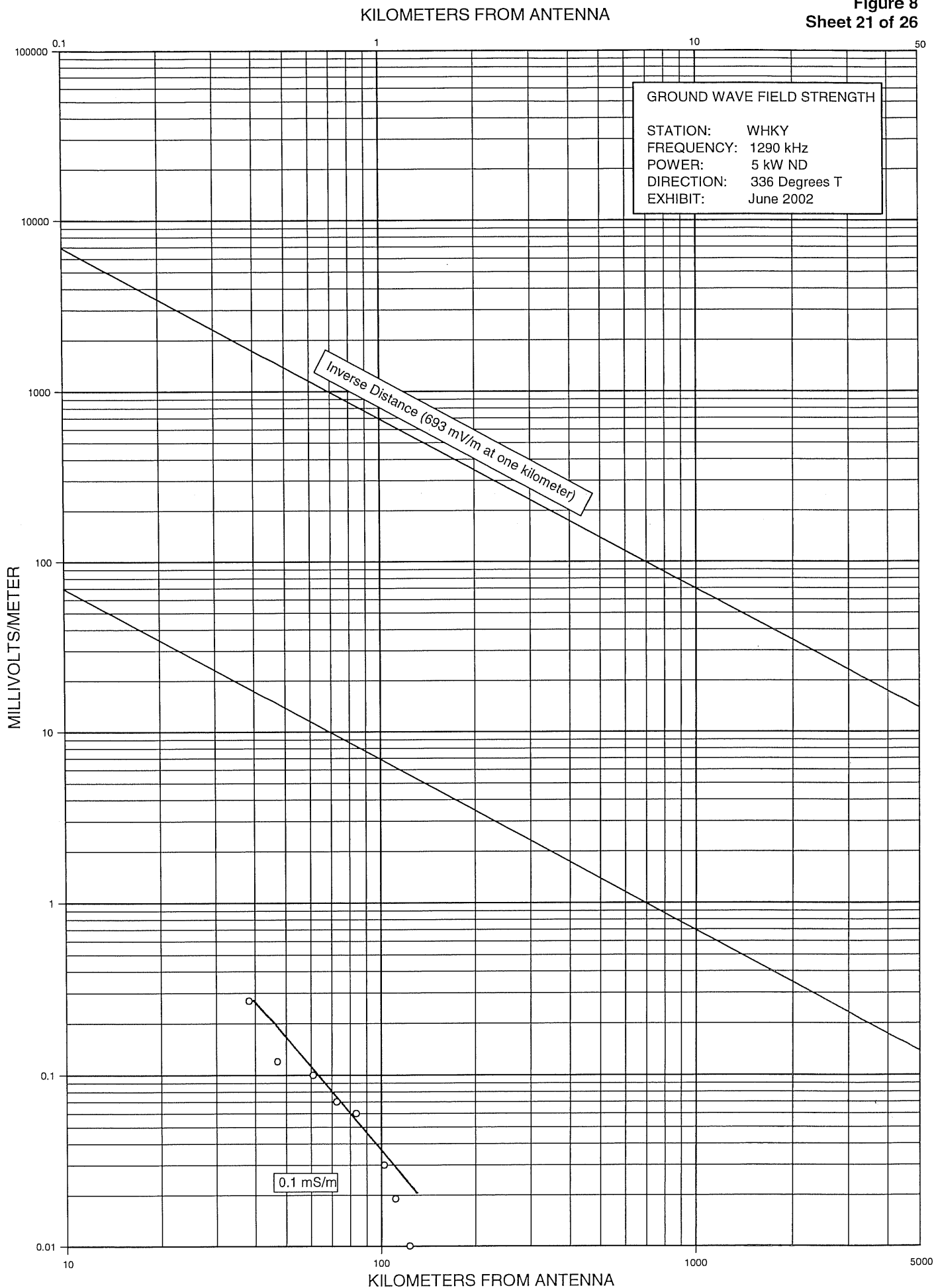
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/16/2002	
1	0.42	1141	620.0
2	1.21	1153	110.0
3	2.28	1201	99.0
4	4.28	1216	46.0
5	5.05	1223	52.0
6	6.89	1231	15.0
7	10.10	1242	7.80
		5/21/2002	
8	12.28	946	1.70
9	14.95	1013	1.70
10	19.31	1022	1.90
11	24.62	1035	1.10
12	27.67	1052	0.980
13	64.52	1217	0.150
14	68.54	1225	0.140
15	75.30	1249	0.056
16	94.45	1314	0.012
17	98.63	1322	0.010



Radio Station: WHKY

336 Degree Radial - Day

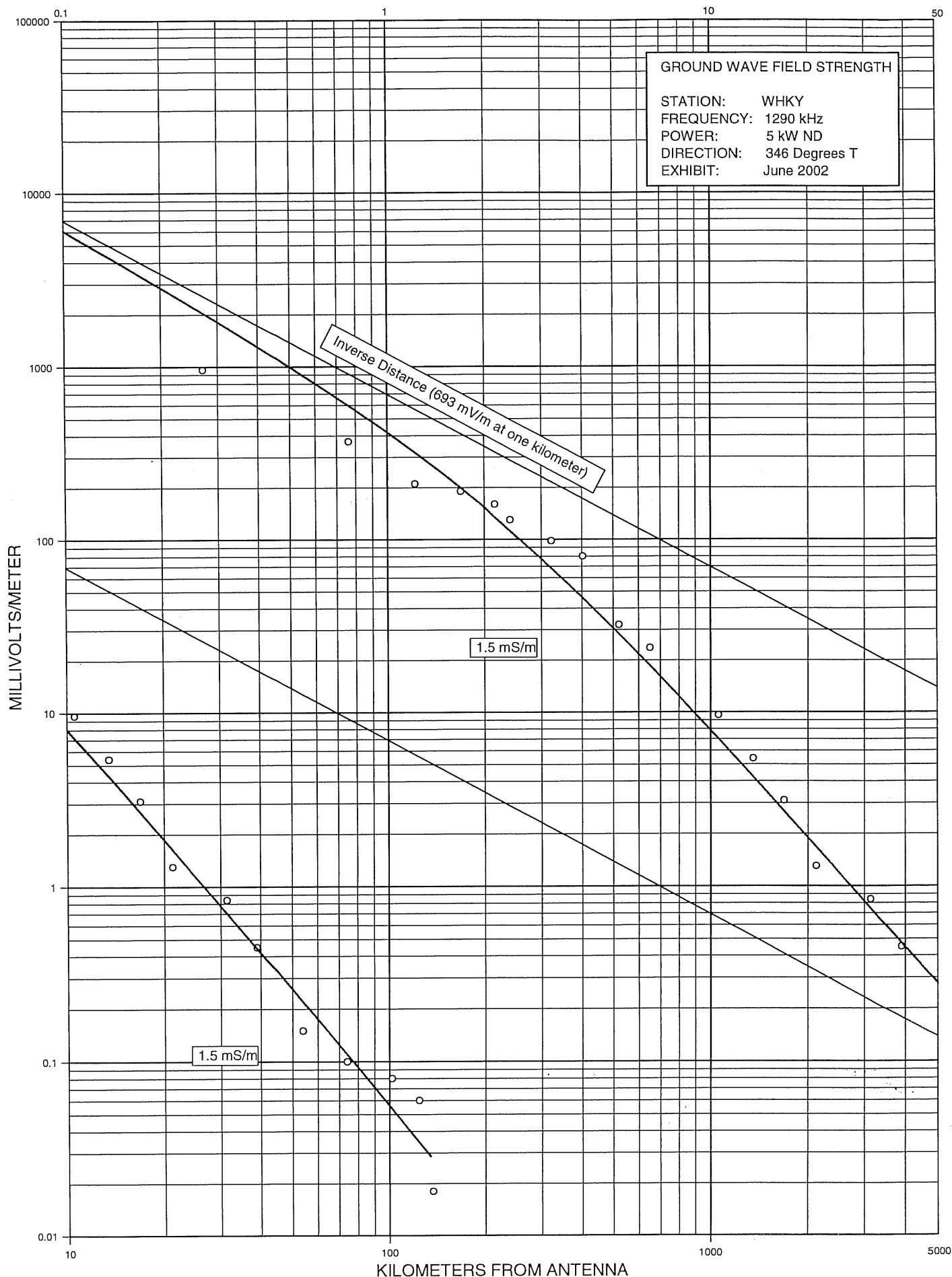
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		8/4/2002	
1	38.20	1530	0.270
2	46.77	1612	0.120
3	60.84	1718	0.100
4	72.45	1747	0.070
		8/5/2002	
5	83.39	1407	0.060
6	102.41	1447	0.030
7	111.18	1500	0.019
8	123.49	1526	0.010
		5/12/2002	
9	124.86	1246	0.050
10	136.12	1402	0.040
11	147.22	1331	0.030



Radio Station: WHKY

346 Degree Radial - Day

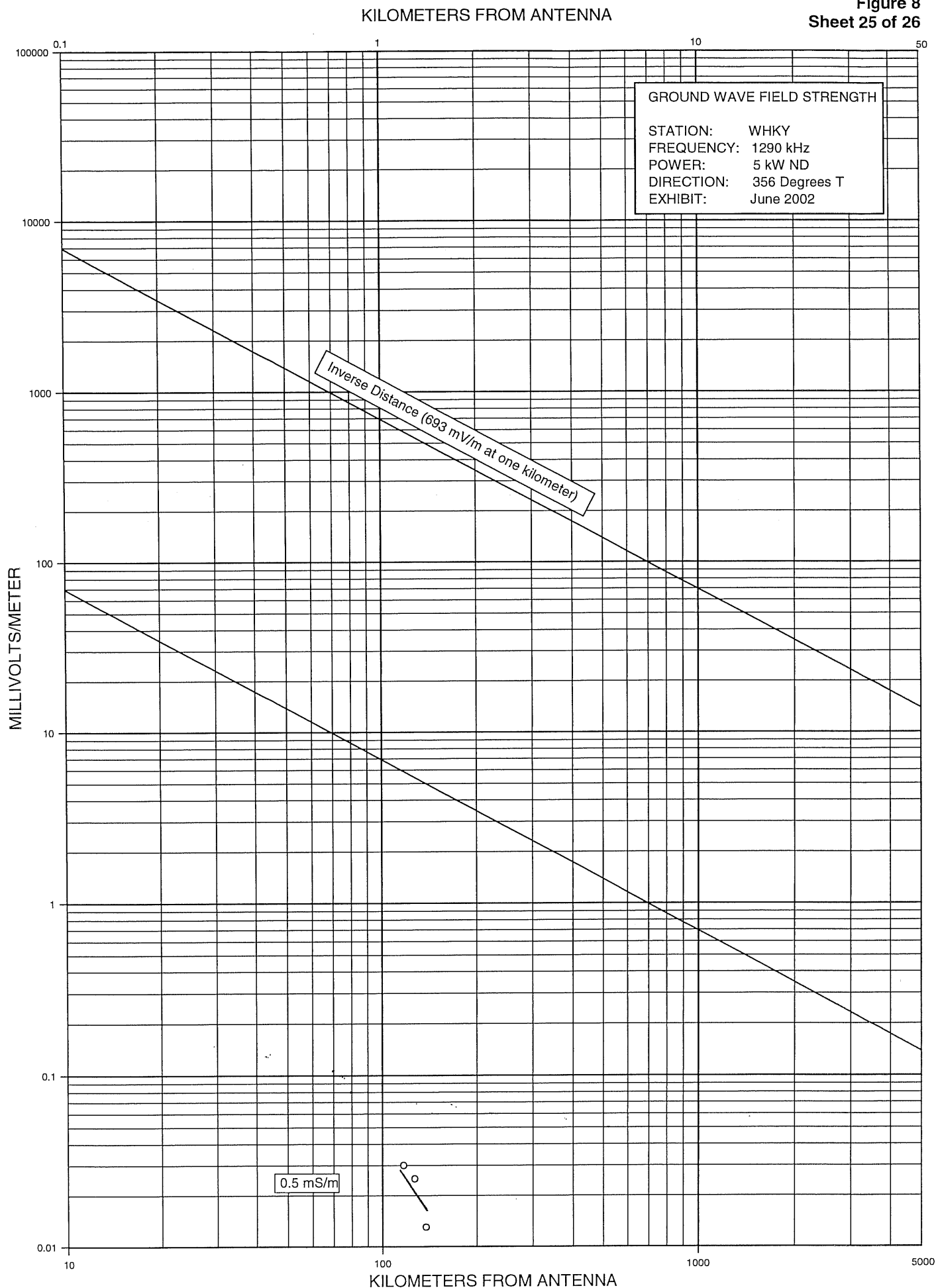
Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/16/2002	
1	0.27	850	960
2	0.76	859	370
3	1.22	905	210
4	1.69	915	190
5	2.16	919	160
6	2.41	924	130
7	3.22	932	98.0
8	4.02	940	80.0
9	5.21	946	32.0
10	6.50	959	23.5
11	10.56	1016	9.60
12	13.50	1022	5.40
13	16.89	1033	3.10
14	21.24	1046	1.30
		5/20/2002	
15	31.38	943	0.840
16	38.94	958	0.450
17	54.22	1027	0.150
18	74.17	1050	0.100
19	101.53	1141	0.080
20	123.73	1224	0.060
21	137.25	1454	0.018



Radio Station: WHKY

356 Degree Radial - Day

Point Desig.	Distance (km)	Date & Time (local)	Field Strength (mV/m)
		5/20/2002	
1	117.14	1700	0.030
2	126.63	1613	0.025
3	138.37	1522	0.013



KILOMETERS FROM ANTENNA

