

APPENDIX A

KKLS FIELD STRENGTH MEASUREMENTS

Extracted from KKLS
1978 full proof of performance
(BL-14492)

APRIL 1978

EXHIBIT E-5.01
 Radial 10°T
 Page 1 of 2

K K L S
 BLACK HILLS BROADCASTING COMPANY
 920 KHz 5 kW-D 0.5 kW-PSA DA-D
 RAPID CITY, SOUTH DAKOTA

*MAP
 Pts*

FIELD STRENGTH MEASUREMENTS - DATA

	<u>Point No. and Distance</u>		Time (MST)	Date (1978)	ND (mV/m)	DA (mV/m)	DA/ND Ratio
	km	(mi)					
	1.69	(1.05)	1135	3/31	150	230	1.53
	1.77	(1.1)	1137	"	145	228	1.57
11	3.89	(2.42) 1	1145	"	66	92	1.39
12	4.15	(2.58) 2	1150	"	59.5	87	1.46
13	4.22	(2.62) 3	1152	"	56	84	1.50
14	5.47	(3.4) 4	1155	"	44.5	74	1.66
15	7.16	(4.45) 5	1202	"	35.5	51	1.44
16	8.77	(5.45) 6	0830	4/1	27.5	44	1.60
17	10.41	(6.47) 7	0840	"	24.8	39.4	1.59
18	11.43	(7.1) 8	1220	3/31	23	34	1.48
	12.71	(7.9)	1222	"	19.8	31.5	1.59
20	13.68	(8.5) 9	0848	4/1	18.4	29.5	1.60
21	15.30	(9.51) 10	0855	"	15.5	25	1.61
	15.45*	(9.6)	0859	"	15.2	24.7	1.62
	15.61*	(9.7)	0905	"	15.1	24.4	1.62
	15.77*	(9.8)	0907	"	14.9	24.1	1.62
	15.93*	(9.9)	0912	"	14.7	23.8	1.62
	16.09	(10.0)	0915	"	14.5	23.5	1.62
	16.25*	(10.1)	0920	"	14.3	23.2	1.62
	16.42*	(10.2)	0922	"	14.1	22.9	1.62
	16.58*	(10.3)	0927	"	13.9	22.6	1.62
	16.74*	(10.4)	0932	"	13.7	22.3	1.63
	16.90	(10.5)	0935	"	13.5	22.0	1.63
	17.06*	(10.6)	0937	"	13.3	21.7	1.63
	17.22*	(10.7)	0942	"	13.1	21.4	1.63
	17.38*	(10.8)	0945	"	12.9	21.1	1.64
	17.54*	(10.9)	0950	"	12.7	20.8	1.64
	17.70	(11.0)	0952	"	12.5	22.6	1.81
	17.86*	(11.1)	0955	"	12.3	20.2	1.64
	18.02*	(11.2)	1002	"	12.1	19.9	1.64
	18.18*	(11.3)	1005	"	11.9	19.6	1.65
	18.35*	(11.4)	1007	"	11.7	19.3	1.65
	18.51	(11.5)	1010	"	11.54	19.25	1.67

*Point not shown on Field Intensity vs. Distance Graph

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u>	<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km (miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
22 18.64* (11.58) "	1257	3/31	11.3	18.8	1.66
18.67* (11.6)	1015	4/1	11.2	18.6	1.66
18.83* (11.7)	1017	"	10.9	18.4	1.69
18.99* (11.8)	1022	"	10.7	18.3	1.71
19.15* (11.9)	1025	"	10.5	18.1	1.72
19.31 (12.0)	1030	"	10.28	17.9	1.74
19.47* (12.1)	1035	"	10	17.8	1.78
19.63* (12.2)	1037	"	9.84	17.65	1.79
19.79* (12.3)	1040	"	9.6	17.5	1.82
19.96 (12.4)	1045	"	9.3	17.3	1.86
23.00 (14.29)	1317	3/31	9.5	16	1.68
26.88 (16.7)	1340	"	7.5	13.2	1.76
29.77 (18.5)	1410	"	6	11	1.83
Average Ratio					<u>1.64</u>

*Point not shown on Field Intensity vs. Distance Graph

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K K L S
BLACK HILLS BROADCASTING COMPANY
920 kHz 5 kW-D 0.5 kW-PSA DA-D
RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

Point No. and Distance		Time	Date	ND	DA	DA/ND	
km	(mi)	(MST)	(MST)	(mV/m)	(mV/m)	Ratio	
	1.42*	(0.88)	0818	3/31	145	145	1.00
	1.69	(1.05)	0822	"	150	152	1.01
	1.77	(1.1)	0832	"	150	150	1.00
1	2.01	(1.25)	0837	"	130	125	0.96
2	2.22	(1.38)	0840	"	110	105	0.95
3	2.33	(1.45)	0845	"	105	102	0.97 MP#1
4	2.49	(1.55)	0847	"	103	101	0.98
5	2.66	(1.65)	0850	"	101	100	0.99
6	2.82	(1.75)	0900	"	102	101.5	1.00
7	7.05	(4.38)	0915	"	34.5	34	0.98
8	7.08*	(4.4)	1122	4/1	33.6	33.2	0.99
9	7.24*	(4.5)	1127	"	32.5	32.3	0.99
10	7.40*	(4.6)	1130	"	31.7	31.5	0.99
	7.56	(4.7)	1132	"	30.8	30.6	0.99
	7.72*	(4.8)	1137	"	30	29.7	0.99
	7.88*	(4.9)	1140	"	29	29	1.00
	8.05	(5.0)	1142	"	28.3	28	0.99
	8.21*	(5.1)	1147	"	27.6	27.3	0.99
	8.37*	(5.2)	1150	"	26.5	26.1	0.98
	8.53	(5.3)	1155	"	25.5	25.4	1.00
	8.69*	(5.4)	1202	"	24.6	24.2	0.98
22-1	8.85*	(5.55)	0927	3/31	23.5	23.2	0.99
23-	9.01	(5.6)	1210	4/1	23	22.9	1.00
24-	12.58	(7.82)	1225	"	18	17.2	0.96
25-	15.45	(9.6)	1245	"	14.2	13.9	0.98
	17.14	(10.65)	0957	3/31	12	10.5	0.88
	18.51	(11.5)	1307	4/1	11.5	10	0.87
	18.86	(11.70)	1310	"	11.3	9.9	0.88
	20.52	(12.75)	1015	3/31	11	9.5	0.86
	21.24	(13.2)	1330	4/1	10.5	9.18	0.87

*Point not shown on Field Intensity vs. Distance Graph

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
21.40*	(13.3)	1335	4/1	10.4	9.1	0.88
21.56*	(13.4)	1337	"	10.3	9	0.87
21.73*	(13.5)	1342	"	10.25	8.95	0.88
21.89	(13.6)	1345	"	10.1	8.84	0.88
22.05*	(13.7)	1350	"	10	8.75	0.88
22.21*	(13.8)	1353	"	9.8	8.7	0.89
22.37*	(13.9)	1357	"	9.75	8.63	0.88
22.53	(14.0)	1402	"	9.62	8.52	0.88
22.69*	(14.1)	1405	"	9.55	8.45	0.88
22.85*	(14.2)	1407	"	9.4	8.36	0.89
23.01*	(14.3)	1412	"	9.35	8.3	0.89
23.17*	(14.4)	1415	"	9.22	8.2	0.89
23.34	(14.5)	1417	"	9.1	8.15	0.90
23.50*	(14.6)	1420	"	9	8.1	0.90
23.66*	(14.7)	1425	"	8.9	8	0.90
23.82*	(14.8)	1027	3/31	8.8	7.9	0.90
23.98	(14.9)	1030	"	8.1	7.75	0.96
25.43	(15.8)	1037	"	7.8	6.8	0.87
27.12	(16.85)	1045	"	7.6	6.5	0.86
28.81	(17.9)	1052	"	7	6.4	0.91
Average Ratio						<u>0.936</u>

*Point not shown on Field Intensity vs. Distance Graph

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APRIL 1978

EXHIBIT E-5.03
 Radial 116.5°T
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K K L S
 BLACK HILLS BROADCASTING COMPANY
 920 KHz 5 kW-D 0.5 kW-PSA DA-D
 RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>			<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>		<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
	1.80	(1.12)	1300	3/30	122	140	1.15
	2.28	(1.42)	1305	"	120	125	1.04
	2.41	(1.5)	1510	4/1	114.5	118	1.03
	3.22	(2.0)	1517	"	87.5	88	1.00
5-	3.93	(2.42)	1315	3/30	66	63	0.95
6-	4.42	(2.75)	1320	"	52	58	1.12
7-	4.83	(3.0)	1525	4/1	48.2	54	1.12
8-	5.71	(3.55)	1322	3/30	43	47	1.09
9-	5.95	(3.7)	1540	4/1	42	46.8	1.11
	6.44	(4.0)	1547	"	39.4	43.5	1.10
11-	7.48	(4.65)	1327	3/30	30	33	1.10
	8.05	(5.0)	1600	4/1	29.5	32.8	1.11
	8.85	(5.5)	1610	"	25.8	27.7	1.07
14-	9.33	(5.8)	1335	3/30	23	24	1.04
	9.66	(6.0)	1625	4/1	22.7	23.8	1.05
16-	10.46	(6.5)	1635	"	21.6	22.7	1.05
17-	11.10	(6.9)	1515	3/30	21.5	22.5	1.05
	11.26	(7.0)	1642	4/1	21	21.8	1.04
19-	12.07	(7.5)	1650	"	19.6	20.6	1.05
	12.87	(8.0)	1520	3/30	16	16	1.00
	13.68	(8.5)	1702	4/1	17.6	18.6	1.06
	14.48	(9.0)	1527	3/30	16	18.5	1.16
	14.72	(9.15)	1705	4/1	15.8	18	1.14
	16.09	(10.0)	1532	3/30	13.5	15.5	1.15
	16.90	(10.5)	0845	4/2	12.4	14.8	1.19
	17.54	(10.9)	1537	3/30	11.5	14	1.22
	18.51	(11.5)	0857	4/2	11.75	15.1	1.28
	19.22	(11.94)	1545	3/30	12	16	1.33
	20.12	(12.5)	0905	4/2	11.2	12.8	1.14
	20.92	(13.0)	0912	"	10.2	11.7	1.15

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
21.08	(13.1)	1550	3/30	10	12	1.20
21.73	(13.5)	0917	4/2	9.92	11.86	1.20
22.53	(14.0)	0922	"	9.82	11.68	1.19
22.88	(14.22)	1557	3/30	9.8	11.5	1.17
23.79	(14.78)	1602	"	9.6	11	1.14
24.14	(15.0)	0937	4/2	9.4	10.7	1.14
24.94	(15.5)	0942	"	8.92	10	1.12
25.83	(16.05)	1607	3/30	8.4	9.4	1.12
26.23	(16.3)	1612	"	8.18	8.92	1.09
26.55	(16.5)	0957	4/2	7.92	8.57	1.08
27.36	(17.0)	1005	"	7.1	7.32	1.03
28.24	(17.55)	1617	3/30	6.4	6.2	0.97
30.01	(18.65)	1020	4/2	6.25	6.1	0.98
30.58	(19.0)	1622	3/30	6	5.8	0.97
31.90	(19.82)	1627	"	5.6	5.5	0.98
Average Ratio						<u>1.10</u>

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APRIL 1978

EXHIBIT E-5.04
 Radial 185°T
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K K L S
 BLACK HILLS BROADCASTING COMPANY
 920 kHz 5 kW-D 0.5 kW-PSA DA-D
 RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
	1.61 (1.0)	1320	3/31	180	560	3.11
	2.41 (1.5)	1047	4/2	140	420	3.00
	3.22 (2.0)	1055	"	102	285	2.79
	3.54 (2.2)	1335	3/31	86	230	2.67
	4.02 (2.5)	1110	4/2	78	210	2.69
	4.83 (3.0)	1115	"	65	178	2.74
7-	5.81 (3.61) 1	1122	"	49	140	2.86
8-	6.28 (3.9) 2	1345	3/31	41	120	2.93
9-	6.44 (4.0) 3	1135	4/2	40	118	2.95
10-	7.24 (4.5) 4	1142	"	37.8	111	2.94
	8.05 (5.0)	1155	"	35	103	2.94
	9.01 (5.6) 4	1207	"	32	93	2.91
13-	10.46 (6.5)	1220	"	27.5	78	2.84
14-	11.26 (7.0)	1230	"	24.5	70	2.86
15-	11.59 (7.2) 5	1245	"	23.5	68	2.89
16-	11.91 (7.4) 6	1250	"	22	62	2.82
17-	12.55 (7.8) 7	1355	3/31	20	55	2.75
18-	12.87 (8.0) 8	1300	4/2	18.5	50	2.70
	13.68 (8.5)	1307	"	17.5	47.5	2.71
	14.48 (9.0)	1315	"	16.5	45	2.73
	15.29 (9.5)	1327	"	15.5	43	2.77
	16.09 (10.0)	1340	"	14.5	40	2.76
	16.58* (10.3)	1347	"	14.2	39.5	2.78
	16.74* (10.4)	1350	"	13.8	38.6	2.80
	16.90 (10.5)	1355	"	13.5	38	2.81
	17.06* (10.6)	1400	"	13.3	37	2.78
	17.22* (10.7)	1402	"	13	36	2.77
	17.38* (10.8)	1407	"	12.95	34.5	2.66
	17.54* (10.9)	1410	"	12.8	33.5	2.62
	17.70 (11.0)	1415	"	12.5	35.5	2.84

*Point not shown on Field Intensity vs. Distance Graph

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u>	<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA-ND</u>
<u>km (miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
17.86* (11.1)	1417	4/2	12.2	34.8	2.85
18.02* (11.2)	1420	"	12	34.3	2.86
18.18* (11.3)	1422	"	11.8	33.5	2.84
18.25* (11.34)	1405	3/31	11.5	33	2.87
18.35* (11.4)	1427	4/2	11.4	32.8	2.88
18.51 (11.5) 9	1430	"	11.38	32.5	2.86
18.67* (11.6)	1432	"	11.25	32.3	2.87
18.83* (11.7)	1442	"	11.22	32	2.85
18.99* (11.8)	1445	"	11.1	31.8	2.86
19.15* (11.9)	1450	"	11.1	31.5	2.84
19.31 (12.0)	1452	"	11	31.2	2.84
19.47* (12.1)	1455	"	10.9	31	2.84
19.63* (12.2)	1457	"	10.8	30.6	2.83
19.79* (12.3)	1505	"	10.78	30.5	2.83
19.96 (12.4)	1507	"	10.75	30.2	2.81
20.92 (13.0)	1515	"	10.3	28.7	2.79
21.73 (13.5)	1527	"	9.95	27.5	2.76
22.53 (14.0)	1532	"	9.6	26.2	2.73
23.34 (14.5)	1415	3/31	9	25	2.78
24.14 (15.0)	1547	4/2	8.3	23.5	2.83
24.75 (15.38)	1422	3/31	7.7	22	2.86
25.10 (15.6)	1600	4/2	7.3	21.5	2.94
26.31 (16.35)	1425	3/31	6.8	21	3.09
27.36 (17.0)	1430	"	7.8	21	2.69
31.14 (19.35)	1437	"	5.8	16	2.76
Average Ratio					<u>2.82</u>

*Point not shown on Field Intensity vs. Distance Graph

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APRIL 1978

EXHIBIT E-5.05
 Radial 225°T
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K K L S
 BLACK HILLS BROADCASTING COMPANY
 920 kHz 5 kW-D 0.5 kW-PSA DA-D
 RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
	1.61 (1.0)	0850	4/1	175	520	2.97
	1.77 (1.1)	0900	"	180	530	2.94
	1.93 (1.2)	0905	"	145	410	2.83
	2.09 (1.3)	0907	"	138	392	2.84
	2.25 (1.4)	0912	"	130	378	2.91
	2.41 (1.5)	0917	"	120	360	3.00
	2.49 (1.55)	1522	3/31	115	345	3.00
	2.57 (1.6)	0925	4/1	110	330	3.00
	2.74 (1.7)	0930	"	105	320	3.05
	2.90 (1.8)	0937	"	102	305	2.99
	3.06 (1.9)	0942	"	100	292	2.92
	3.22 (2.0)	0945	"	95	278	2.93
	3.38 (2.1)	0957	"	90	265	2.94
	2.54 (2.2)	1002	"	85	255	3.00
	3.70 (2.3)	1007	"	82	240	2.93
	3.86 (2.4)	1010	"	77	230	2.99
17	4.02 (2.5)	1017	"	72	212	2.94
18	4.18 (2.6)	1555	3/31	70	200	2.86
19	4.34 (2.7)	1020	4/1	68	195	2.87
	4.51 (2.8)	1027	"	66	191	2.89
	4.67 (2.9)	1030	"	65	186	2.86
	4.83 (3.0)	1035	"	64	184	2.88
	4.99 (3.1)	1038	"	63	180	2.86
	5.15 (3.2)	1042	"	62.5	178	2.85
25-	5.31 (3.3)	1047	"	60	172	2.87
26-	5.47 (3.4)	1052	"	58.5	170	2.90
	5.63 (3.5)	1100	"	58	165	2.84
	5.79 (3.6)	1105	"	57	162	2.84
	5.95 (3.7)	1112	"	56	158	2.82
30-	7.56 (4.7)	1625	3/31	42	125	2.98

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

	<u>Point No. and Distance</u>			<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
	<u>km</u>	<u>(miles)</u>		<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
31-	8.29	(5.15)	3	1617	3/31	37	110	2.97
32-	8.77	(5.45)	4	1640	"	31.5	88	2.79
33-	11.18	(6.95)	5	1647	"	19	56	2.95
34	13.52	(8.4)	6	1655	"	18	52	2.89
	23.36	(14.50)		1130	4/1	3	8.6	2.87
	25.54	(15.87)	7	1650	3/30	1.2	3.35	2.79
	27.81	(17.28)	8	1640	"	0.96	2.68	2.79
	29.85	(18.55)		1625	"	1.15	2.65	2.30
	30.01	(18.65)		1430	"	1.25	3.5	2.80
	30.18	(18.75)		1425	"	1.35	3.45	2.56
	30.90	(19.2)		1635	"	1.42	4.1	2.89
	34.68	(21.55)		1545	"	0.76	2.1	2.76
	36.77	(22.85)		1518	"	0.69	1.92	2.78
Average Ratio								<u>2.94</u>

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APRIL 1978

EXHIBIT E-5.06
Radial 252.5°T
Page 1 of 2

K K L S
BLACK HILLS BROADCASTING COMPANY
920 kHz 5 kW-D 0.5 kW-PSA DA-D
RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>		Time (MST)	Date (1978)	ND (mV/m)	DA (mV/m)	DA/ND Ratio
km	(miles)					
	1.45 (0.9)	1010	3/30	250	690	2.76
	1.61 (1.0)	1015	"	220	610	2.77
	2.49* (1.55)	1035	"	228	355	†
	2.82 (1.75)	1625	4/2	115	315	2.74
	2.99 (1.86)	1630	"	105	280	2.67
	3.14 (1.95)	1040	3/30	100	265	2.65
7	3.22 (2.0) 1	1635	4/2	98	260	2.65
8	3.23* (2.01) 2	1637	"	95	250	2.63
	3.33* (2.07)	1640	"	90	230	2.56
	3.38 (2.1) 2	1642	"	88	225	2.56
MP#2	3.46 (2.15) 3	1045	3/30	87	240	2.55 MP#2
	3.54 (2.2)	1645	4/2	86.5	220	2.54
13	3.70 (2.3)	1647	"	85.2	218	2.56
14	3.86 (2.4)	1652	"	84	216	2.57
15	4.02 (2.5)	1655	"	82.7	215	2.60
	4.18 (2.6)	1700	"	81.5	210	2.58
19	5.74 (3.57) 4	1056	3/30	78	188	2.41
18	5.95 (3.7) 5	1102	"	67	181	2.70
	6.28 (3.9)	0905	4/3	60	165	2.75
	6.36 (3.95)	0910	"	59	160	2.71
	7.64 (4.75)	1120	3/30	35	96	2.74
22	8.18 (5.08) 6	0927	4/3	27	72	2.67
23	8.29 (5.15) 7	1125	3/30	24	65	2.71
	8.53 (5.3) 8	0935	4/3	23	61	2.65
	8.67 (5.39) 9	1130	3/30	28	74	2.64
	9.09 (5.65) 10	0947	4/3	19	54.5	2.87
	11.91 (7.4)	1010	"	17	47.5	2.79
	12.07* (7.5)	1012	"	16.6	44.8	2.70
	12.23* (7.6)	1017	"	16.2	42	2.59
	12.39 (7.7)	1020	"	15.8	39.5	2.50

*Point not shown on Field Intensity vs. Distance Graph

†Not included in analysis

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u>	<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km (miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
12.55* (7.8)	1025	4/3	15.5	36.5	2.35
12.71* (7.9)	1030	"	15.4	34	+
12.87 (8.0)	1032	"	15.25	31.5	+
13.04* (8.1)	1035	"	15	28.8	+
16.17 (10.05)	1055	"	11.5	25	+
17.48 (10.86)	1107	"	8	21.4	2.68
23.14 (14.38)	1225	3/30	1.75	4.6	2.63
24.19 (15.03)	1142	4/3	1.53	4.1	2.68
26.38 (16.39)	1245	3/30	0.98	2.52	2.57
26.52 (16.48)	1210	4/3	1.48	3.9	2.64
26.55* (16.5)	1215	"	1.45	3.84	2.65
26.72* (16.6)	1220	"	1.42	3.7	2.60
29.45 (18.3)	1245	"	1.22	3.18	2.61
32.99 (20.5)	1315	"	0.94	2.30	2.45
35.89 (22.3)	1322	3/30	0.51	1.28	2.51
Average Ratio					<u>2.63</u>

*Point not shown on Field Intensity vs. Distance Graph

†Not included in analysis

* * * * *

APRIL 1978

EXHIBIT E-5.07
 Radial 300°T
 Page 1 of 2

K K L S
 BLACK HILLS BROADCASTING COMPANY
 920 kHz 5 kW-D 0.5 kW-PSA DA-D
 RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
	1.61 (1.0)	1700	3/31	168	475	2.83
	1.74 (1.08)	1527	4/3	145	400	2.76
	1.93 (1.2)	1522	"	120	330	2.75
	2.09 (1.3)	1520	"	98	270	2.76
	2.38 (1.48)	1515	"	97	266	2.74
	2.57 (1.6)	1510	"	95	264	2.78
	2.70 (1.68)	1505	"	93.5	260	2.78
	3.14 (1.95)	1502	"	90	252	2.80
9	3.25 (2.02) 1	1457	"	84	235	2.80
10	3.38 (2.1) 2	1455	"	78	218	2.79
11	3.54 (2.2) 3	1452	"	71	200	2.82
12	3.70 (2.3) 4	1450	"	64	181	2.83
13	4.02 (2.5) 5	1445	"	50	145	2.90
	4.52 (2.81)	1440	"	38	110	2.89
	4.83 (3.0)	1435	"	37	105	2.84
16	4.99 (3.1) 6	1432	"	47	135	2.87
	5.15 (3.2)	1430	"	35.5	100	2.82
18	5.31 (3.3) 7	1425	"	34.9	99	2.84
	5.94 (3.69)	1440	"	43	125	2.91
	7.27 (4.52)	1415	"	25.3	72	2.84
	7.48 (4.65)	1410	"	24.5	69	2.82
	7.80 (4.85)	1548	3/31	26	76	2.92
23	7.97 (4.95) 8	1542	"	25.5	72	2.82
24	8.71 (5.41) 9	1540	"	24	67	2.79
	9.28 (5.77)	1402	4/3	22.5	58	2.58
26	10.78 (6.70) 10	1530	3/31	16.2	44.5	2.75
	11.26 (7.0)	1357	4/3	15.5	43	2.77
	12.31 (7.65)	1350	"	14.5	39	2.69
	20.52 (12.75)	1445	3/31	2.8	7.9	2.82
	21.37 (13.28)	1450	"	2.65	7.6	2.87

APRIL 1978
 K K L S
 BLACK HILLS BROADCASTING COMPANY
 RAPID CITY, SOUTH DAKOTA

EXHIBIT E-5.07
 Radial 300°T
 Page 2 of 2

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u>		<u>Time</u>	<u>Date</u>	<u>ND</u>	<u>DA</u>	<u>DA/ND</u>
<u>km</u>	<u>(miles)</u>	<u>(MST)</u>	<u>(1978)</u>	<u>(mV/m)</u>	<u>(mV/m)</u>	<u>Ratio</u>
21.89	(13.6)	1500	3/31	2.5	7.2	2.88
22.37	(13.9)	1510	"	2.3	6.9	3.00
25.60	(15.91)	1515	"	2.1	5.7	2.71
30.16	(18.74)	1330	"	1.2	3.35	2.79
30.32	(18.84)	1325	"	1.05	2.95	2.81
34.47	(21.42)	1300	"	0.7	1.90	2.71
34.76	(21.6)	1305	"	0.52	1.52	2.92
35.08	(21.8)	1310	"	0.47	1.35	2.87
35.47	(22.04)	1315	"	0.44	1.25	2.84
36.53	(22.7)	1318	"	0.43	1.2	2.79
36.84	(22.89)	1312	"	0.45	1.28	2.84
Average Ratio						<u>2.81</u>

* * * * *

K K L S
BLACK HILLS BROADCASTING COMPANY
920 KHz 5 kW-D 0.5 kW-PSA DA-D
RAPID CITY, SOUTH DAKOTA

FIELD STRENGTH MEASUREMENTS - DATA

	Point No. and Distance		Time (MST)	Date (1978)	ND (mV/m)	DA (mV/m)	DA/ND Ratio
	km	(miles)					
	1.61	(1.0)	0815	3/31	165	410	2.48
	1.90	(1.18)	1535	4/3	158	390	2.47
	2.09	(1.3)	0820	3/31	150	360	2.40
	3.06	(1.9)	0825	"	100	210	†
5-	3.57	(2.22) †	1545	4/3	87.5	193	†
	4.02	(2.5)	1547	"	76	178	†
	4.75*	(2.95)	1552	"	57	153	2.68
8-	4.83	(3.0) 2	0835	3/31	55	150	2.73
9-	4.99	(3.1) 3	1557	4/3	53	144	2.72
10-	5.18	(3.22) 4	1602	"	50	136	2.72
11-	5.28*	(3.28) 5	1607	"	48	131	2.73
12-	5.34	(3.32) 6	1612	"	47.8	128	2.68
	5.99	(3.72)	0845	3/31	39	102	2.62
14-	6.10	(3.79) 7	0850	"	38	99	2.60
	6.44	(4.0)	0855	"	37	85	†
16-	7.85	(4.88) 8	0900	"	31	77	2.48
	7.88*	(4.9)	1625	4/3	30.8	76	2.47
	8.05*	(5.0)	1627	"	30.4	75	2.47
	8.21	(5.1)	1630	"	30	74.2	2.47
	8.37*	(5.2)	1632	"	29.5	73	2.47
	8.53	(5.3)	1637	"	29.3	72.5	2.47
	8.69*	(5.4)	1640	"	28.8	71.8	2.49
	8.85	(5.5)	1645	"	28.5	71	2.49
	9.01*	(5.6)	1647	"	28.2	70.5	2.50
	9.08*	(5.64)	1650	"	28	70	2.50
	9.17	(5.7)	1655	"	27.8	69	2.48
21-	10.06	(6.25) 9	1705	"	22.5	59	2.62
28-	10.54	(6.55) 10	1712	"	22	57	2.59
	11.59	(7.2)	0840	4/4	20.5	51	2.49
	16.82	(10.45)	0857	"	11.5	30.5	2.65

*Point not shown on Field Intensity vs. Distance Graph

†Not included in analysis

FIELD STRENGTH MEASUREMENTS - DATA - Cont'd

<u>Point No. and Distance</u> <u>km (miles)</u>	<u>Time</u> <u>(MST)</u>	<u>Date</u> <u>(1978)</u>	<u>ND</u> <u>(mV/m)</u>	<u>DA</u> <u>(mV/m)</u>	<u>DA/ND</u> <u>Ratio</u>
18.35 (11.4)	1005	3/31	10.5	27	2.57
18.51* (11.5)	0905	4/4	10.44	26.8	2.57
18.67* (11.6)	0907	"	10.37	26.6	2.56
18.83* (11.7)	0912	"	10.31	26.5	2.57
18.99* (11.8)	0917	"	10.26	26.4	2.57
19.15* (11.9)	0922	"	10.2	26.3	2.58
19.30 (12.0)	0925	"	10.18	26.1	2.56
19.47* (12.1)	0927	"	10.1	25.9	2.56
19.63* (12.2)	0932	"	10	25.8	2.58
19.79* (12.3)	0935	"	9.96	25.6	2.57
19.96* (12.4)	0940	"	9.9	25.5	2.58
20.12 (12.5)	0942	"	9.85	25.3	2.57
20.28* (12.6)	0947	"	9.74	25.2	2.59
20.44 (12.7)	1011	3/31	9.7	25	2.58
21.81 (13.55)	1017	"	7.8	20.5	2.63
22.13* (13.75)	1020	"	8.2	21.5	2.62
29.29 (18.20)	1045	"	6.3	16.5	2.62
33.96 (21.10)	1115	"	5.4	14.2	2.63
36.18 (22.48)	1130	"	5.2	13.8	2.65
Average Ratio					<u>2.569</u>

*Point not shown on Field Intensity vs. Distance Graph

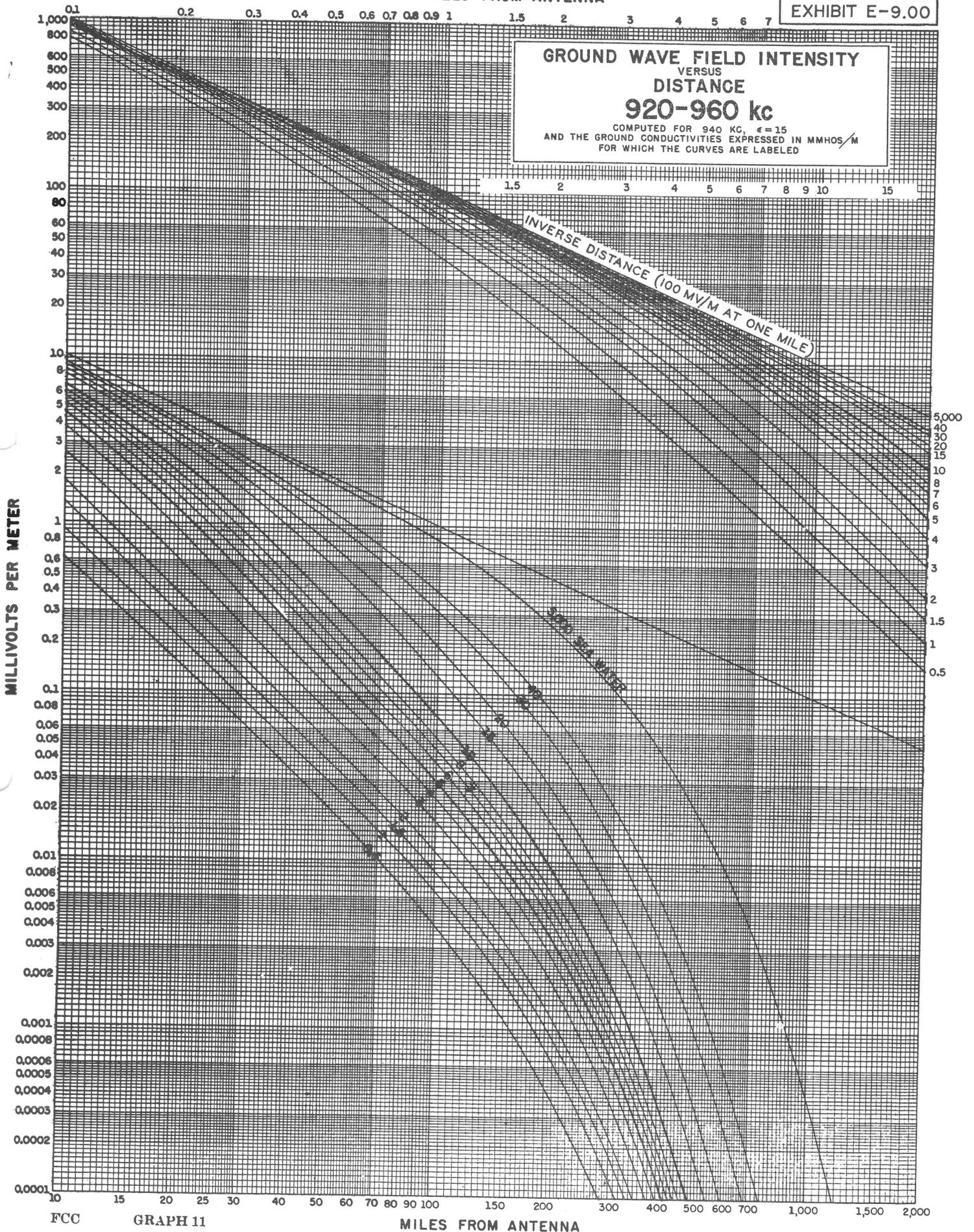
* * * * *

MILES FROM ANTENNA

EXHIBIT E-9.00

GROUND WAVE FIELD INTENSITY VERSUS DISTANCE 920-960 kc

COMPUTED FOR 940 KC, $\epsilon = 15$
AND THE GROUND CONDUCTIVITIES EXPRESSED IN MMHOS/M
FOR WHICH THE CURVES ARE LABELED

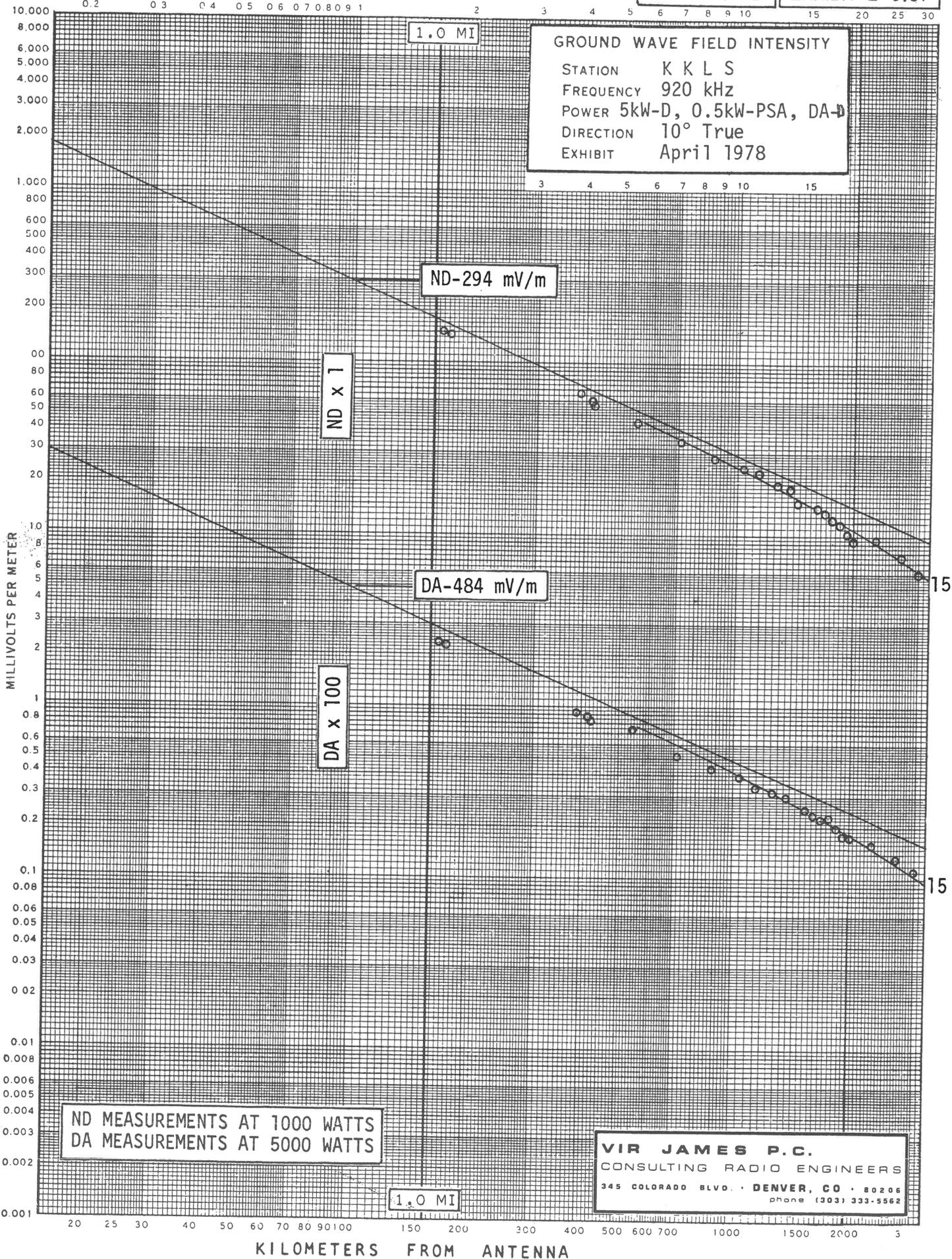


MILLIVOLTS PER METER

FCC

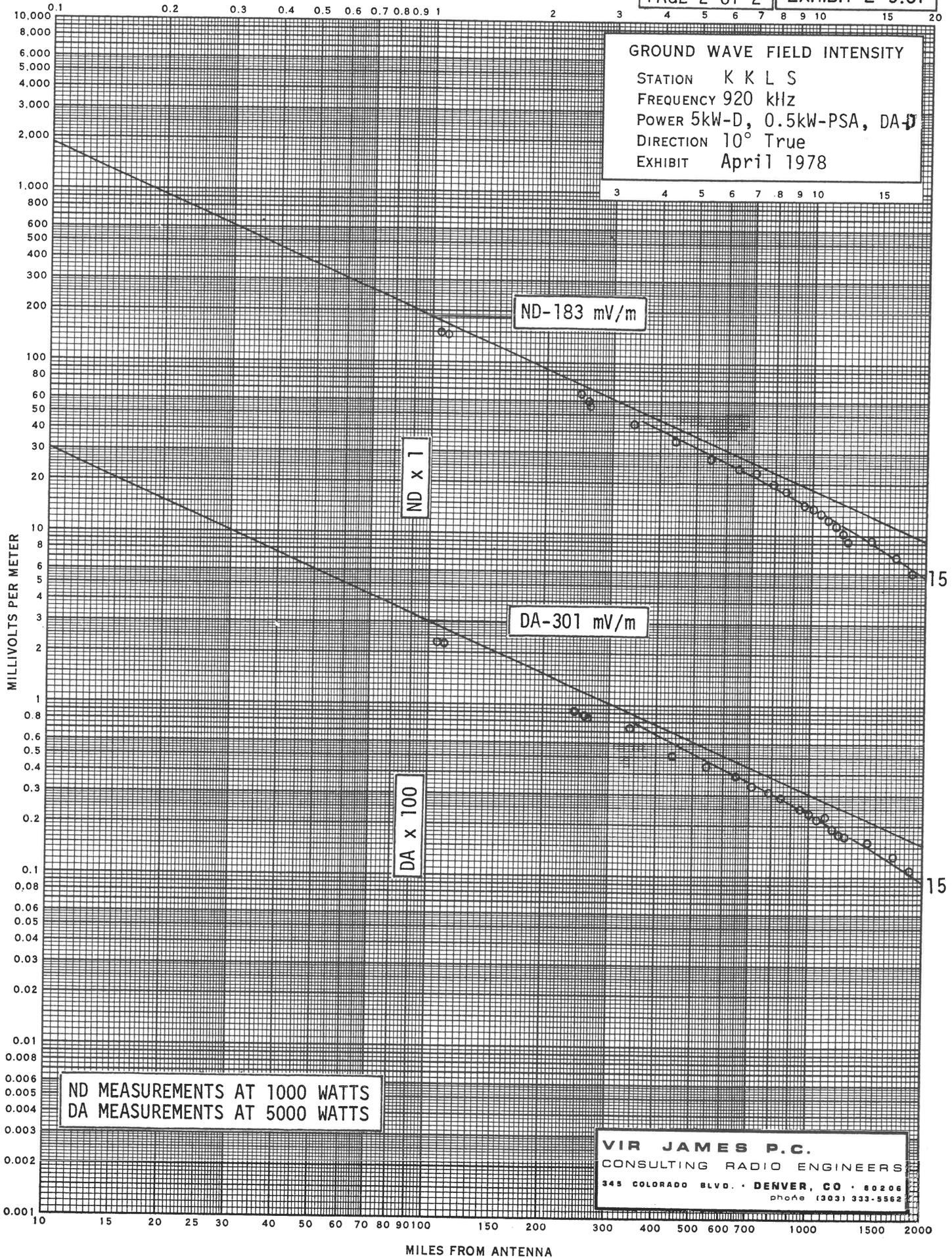
GRAPH 11

MILES FROM ANTENNA

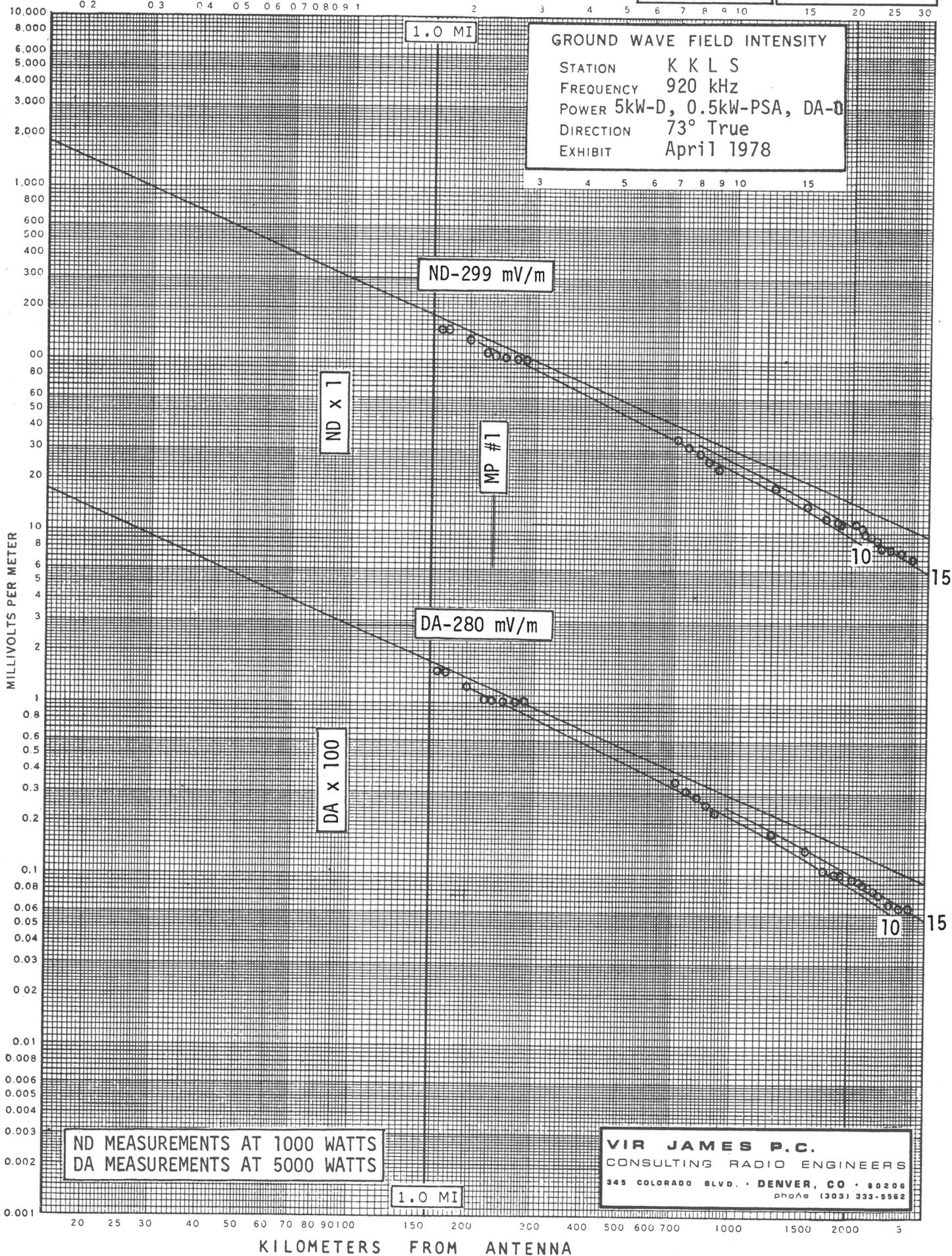


GROUND WAVE FIELD INTENSITY

STATION K K L S
FREQUENCY 920 kHz
POWER 5kW-D, 0.5kW-PSA, DA
DIRECTION 10° True
EXHIBIT April 1978

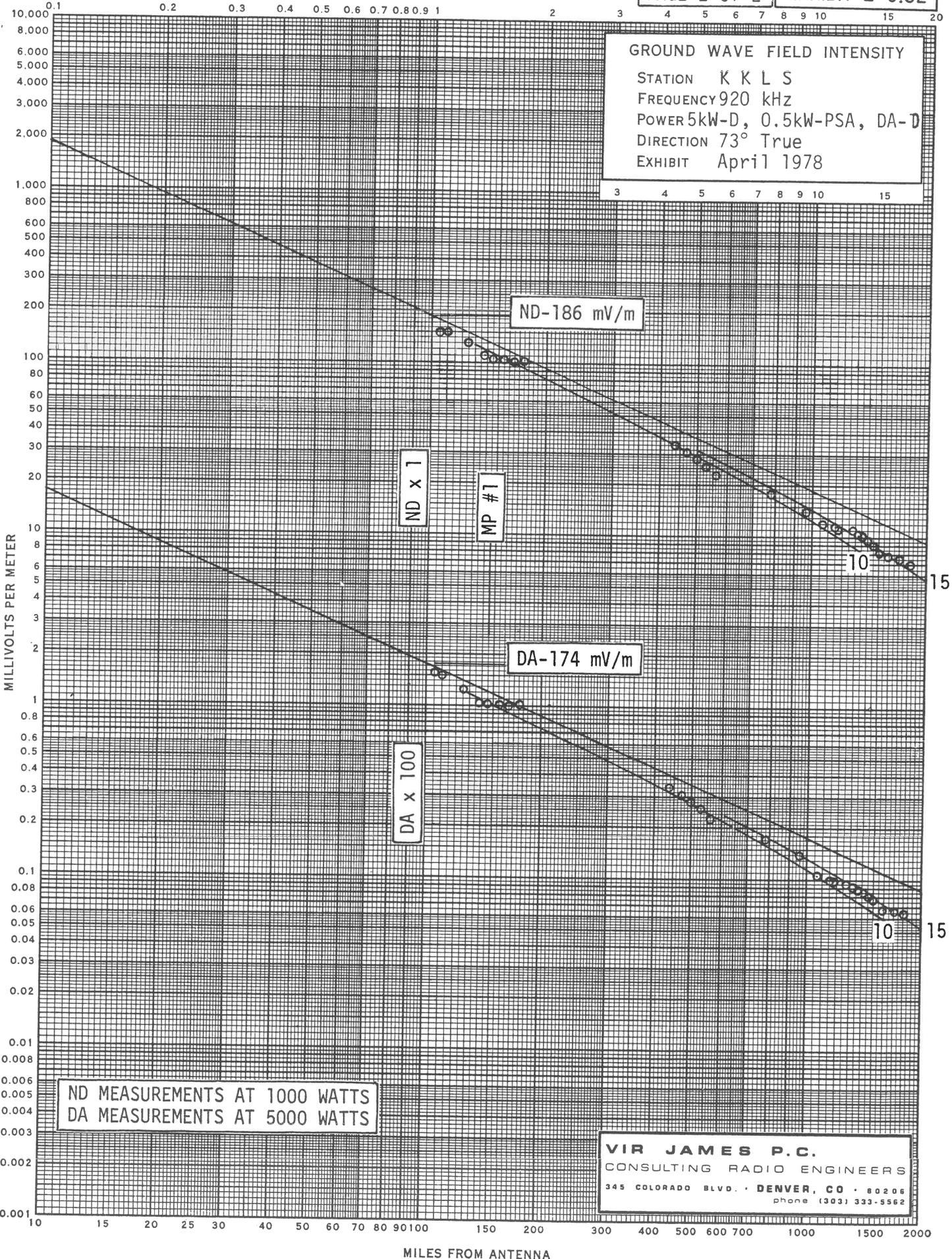


VIR JAMES P.C.
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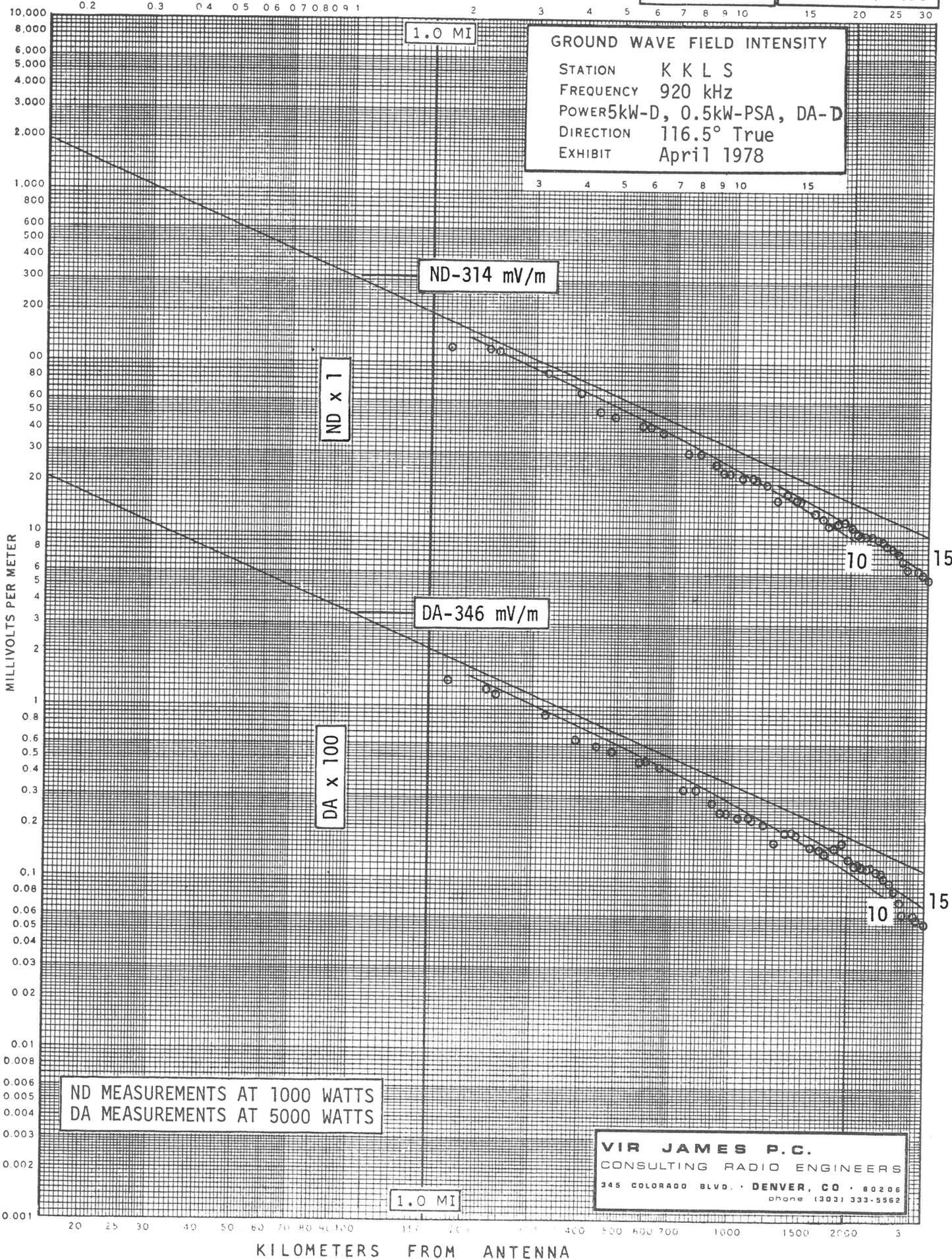
GROUND WAVE FIELD INTENSITY

STATION K K L S
FREQUENCY 920 kHz
POWER 5kW-D, 0.5kW-PSA, DA-D
DIRECTION 73° True
EXHIBIT April 1978



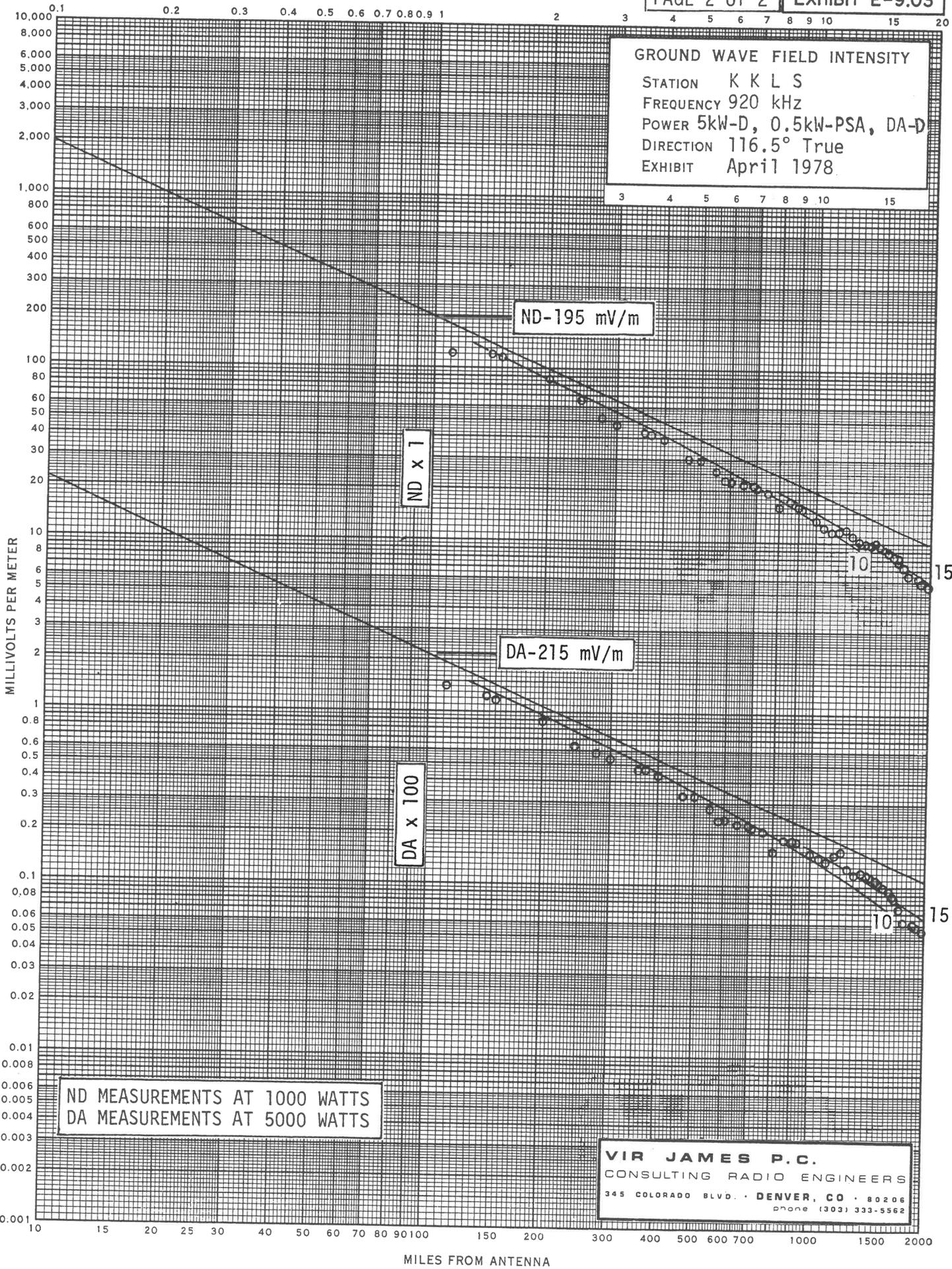
ND MEASUREMENTS AT 1000 WATTS
DA MEASUREMENTS AT 5000 WATTS

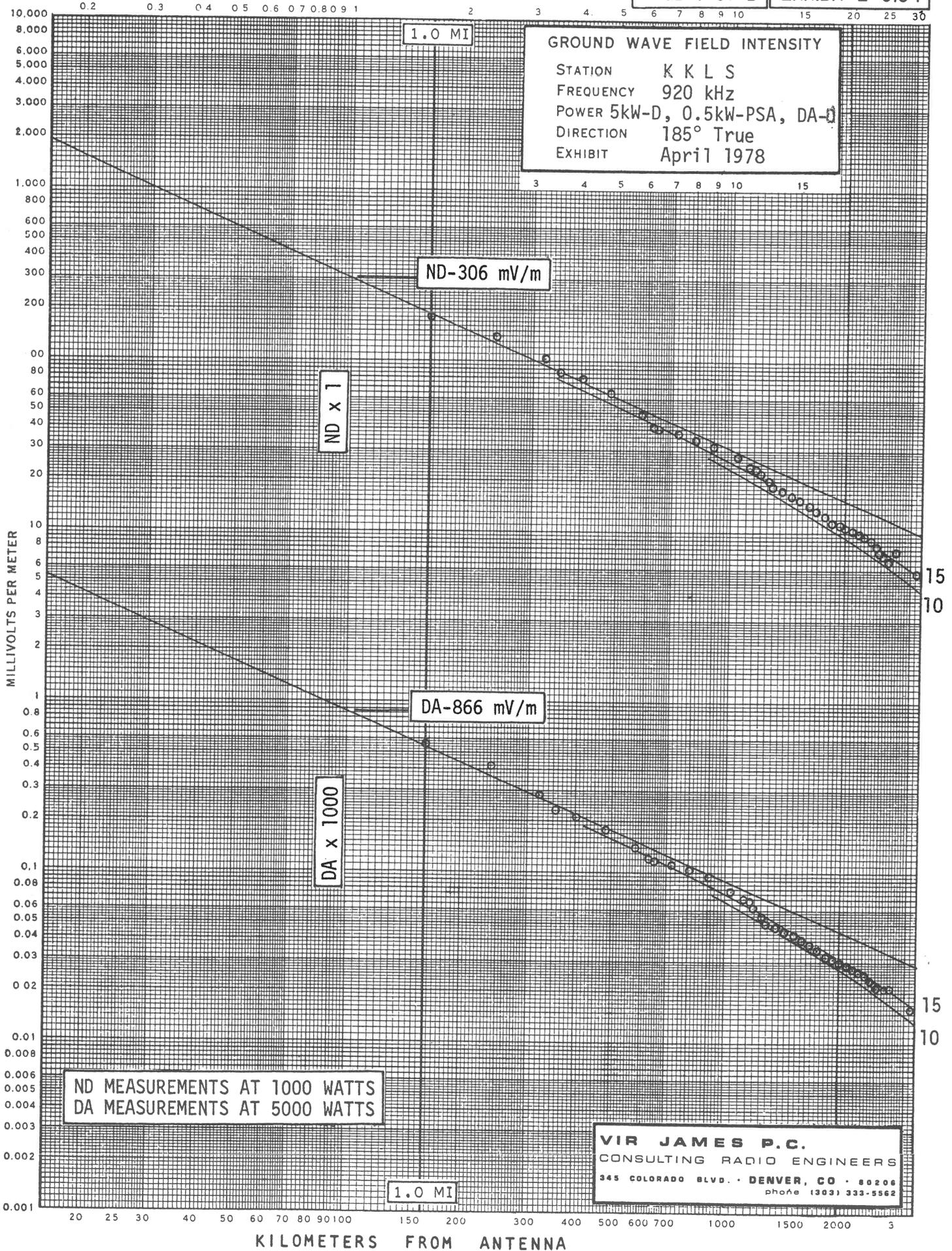
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CONSULTING RADIO ENGINEERS
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phone (303) 333-5562



GROUND WAVE FIELD INTENSITY

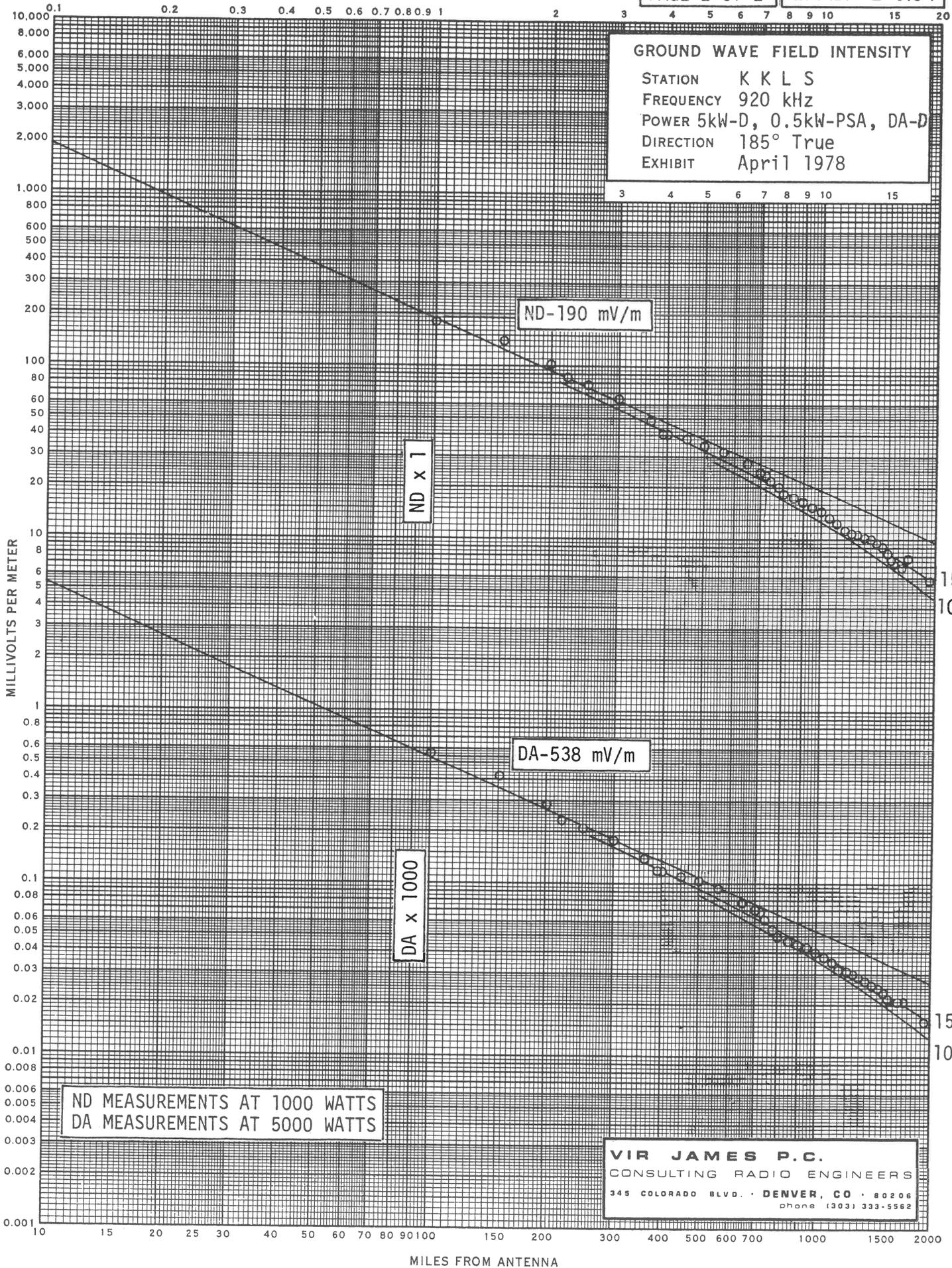
STATION K K L S
FREQUENCY 920 kHz
POWER 5kW-D, 0.5kW-PSA, DA-D
DIRECTION 116.5° True
EXHIBIT April 1978

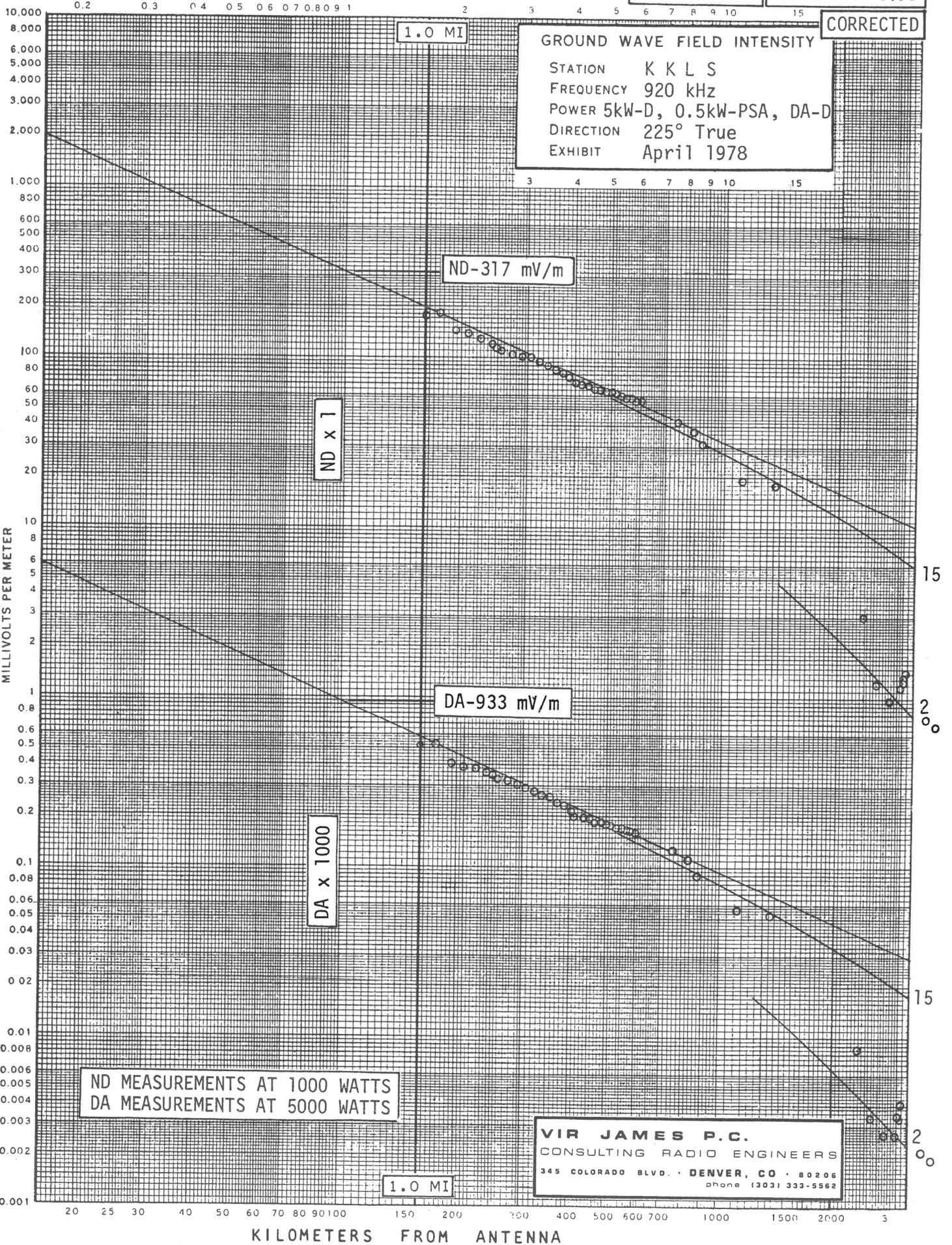




GROUND WAVE FIELD INTENSITY

STATION K K L S
 FREQUENCY 920 kHz
 POWER 5kW-D, 0.5kW-PSA, DA-D
 DIRECTION 185° True
 EXHIBIT April 1978

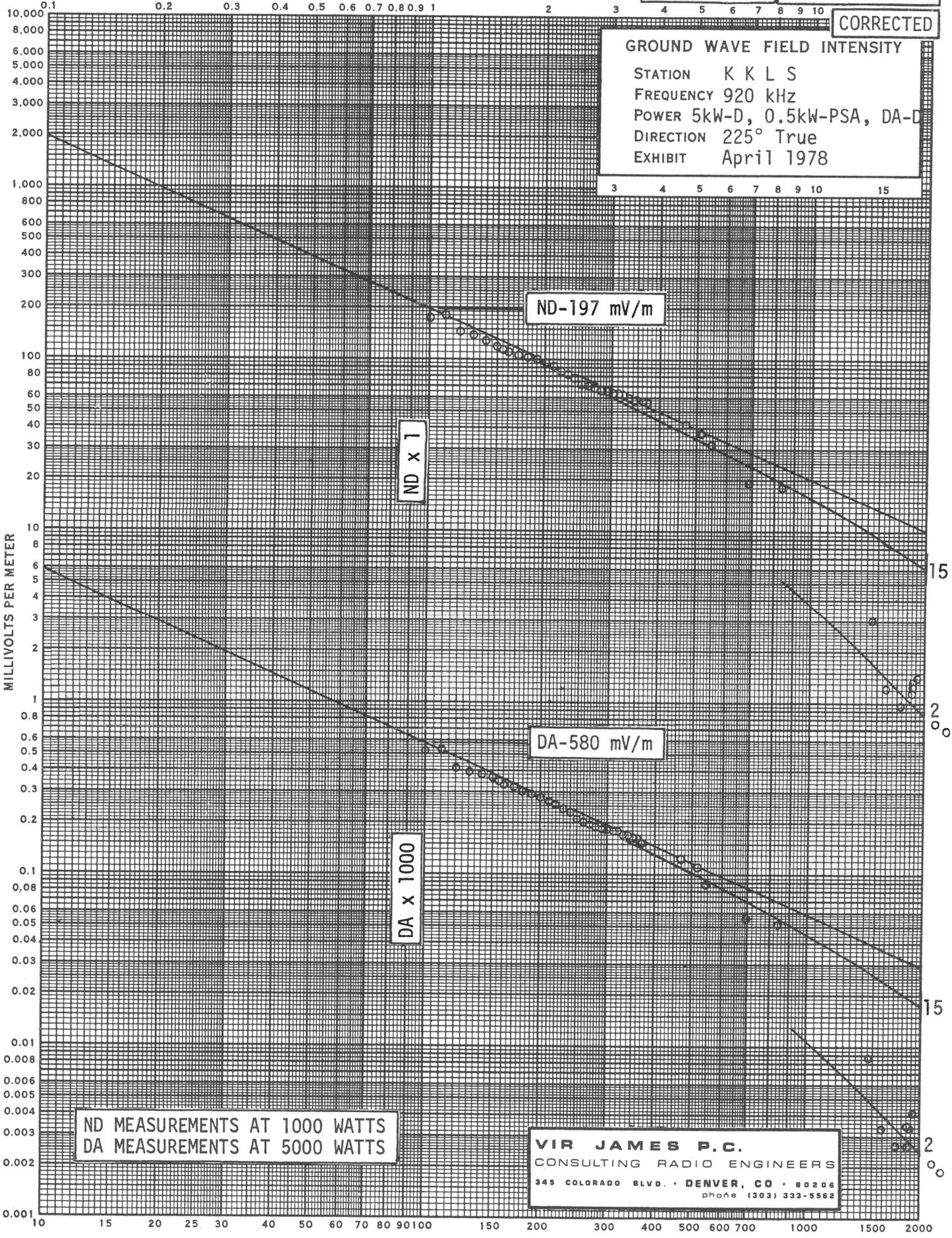




CORRECTED

GROUND WAVE FIELD INTENSITY

STATION K K L S
FREQUENCY 920 kHz
POWER 5kW-D, 0.5kW-PSA, DA-D
DIRECTION 225° True
EXHIBIT April 1978



ND-197 mV/m

ND x 1

DA-580 mV/m

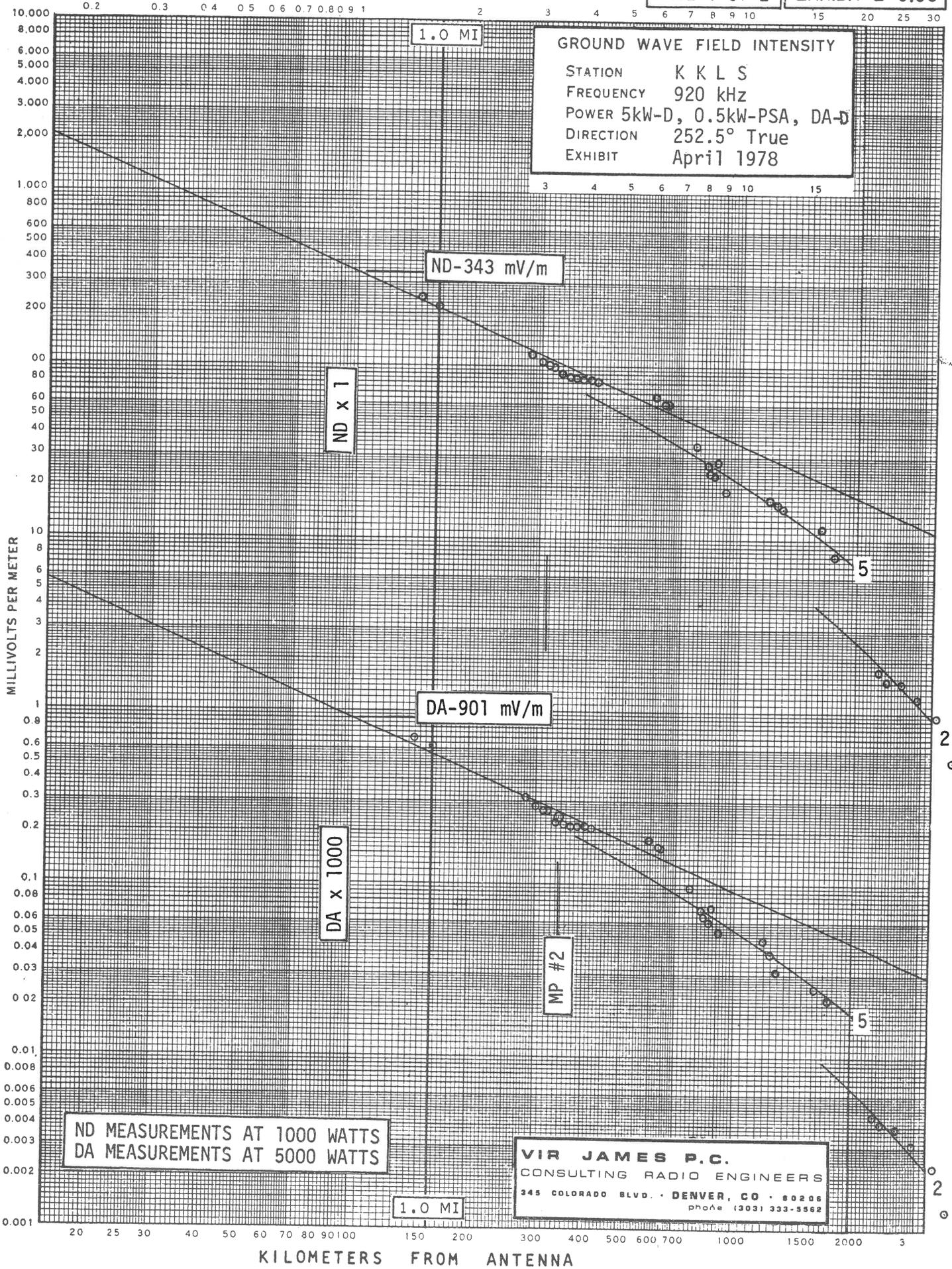
DA x 1000

ND MEASUREMENTS AT 1000 WATTS
DA MEASUREMENTS AT 5000 WATTS

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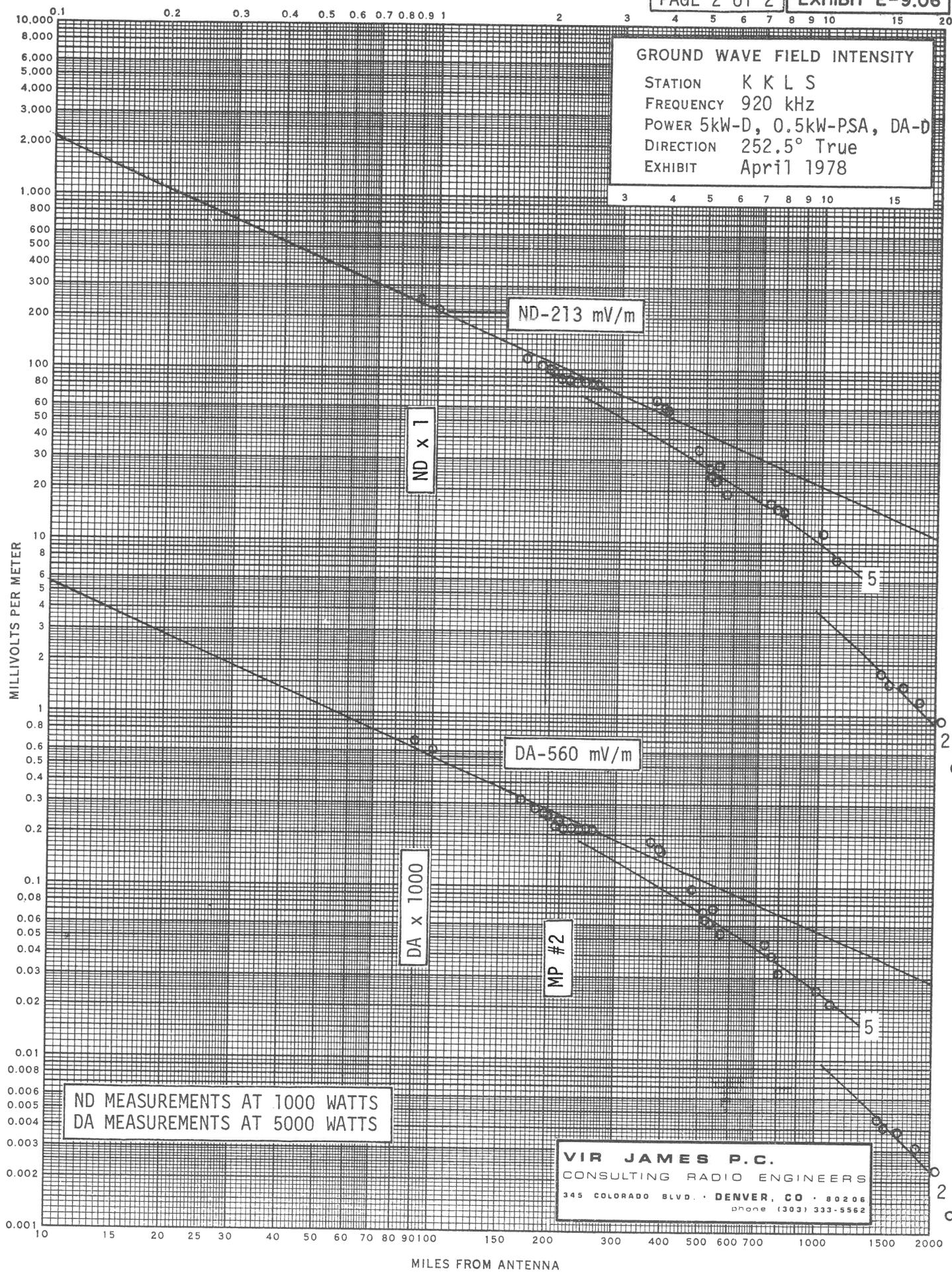
MILLIVOLTS PER METER

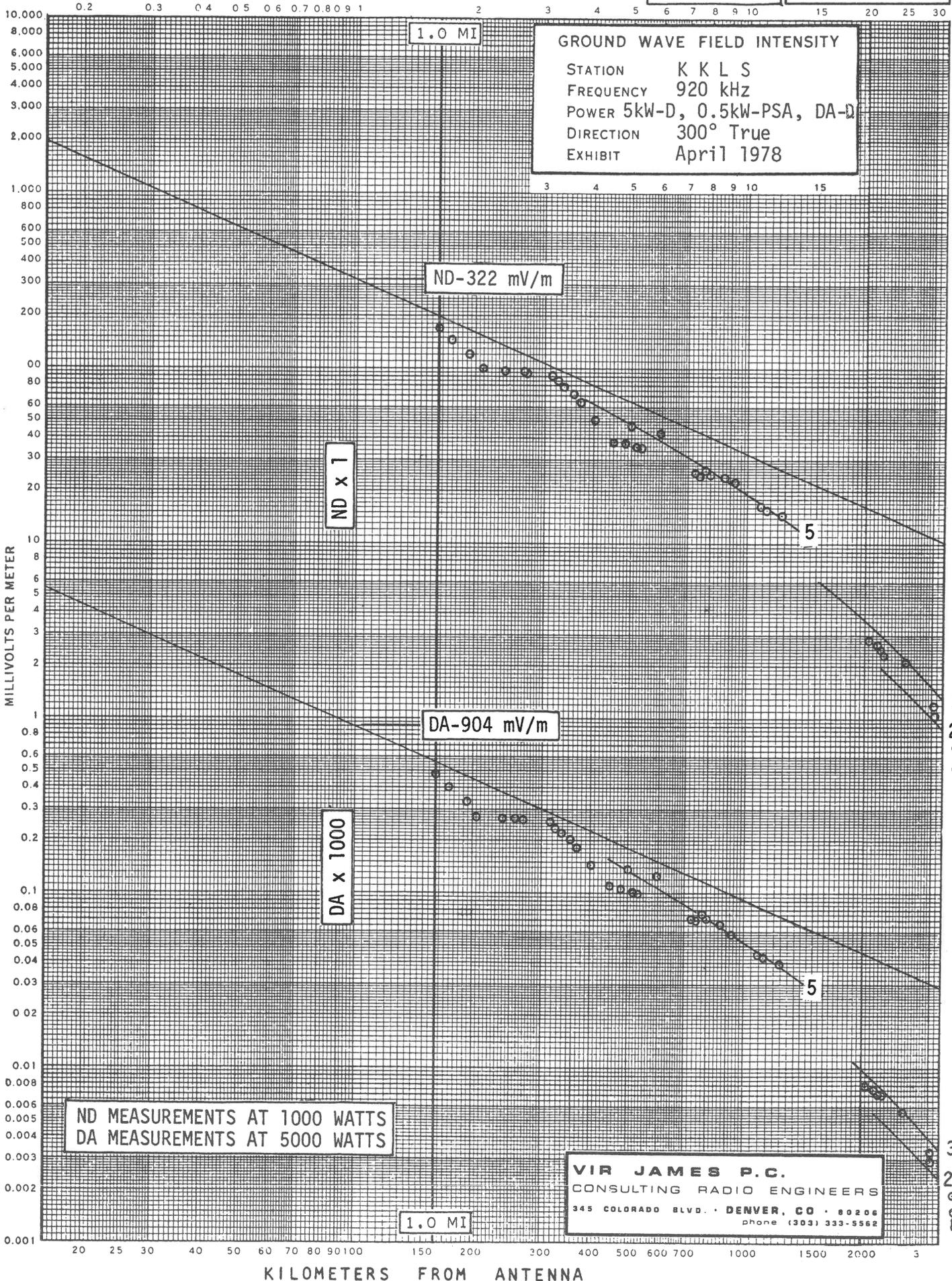
MILES FROM ANTENNA

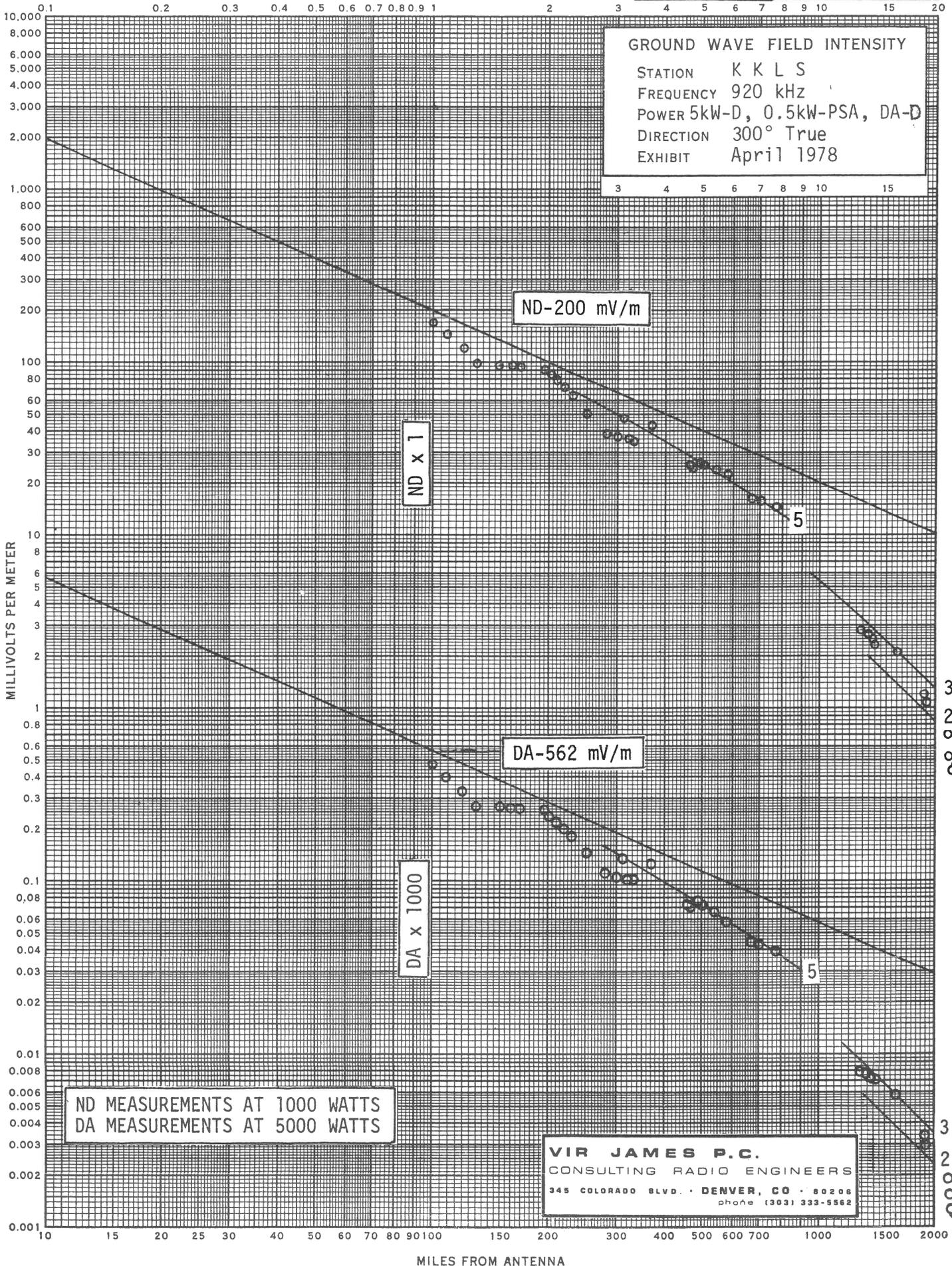


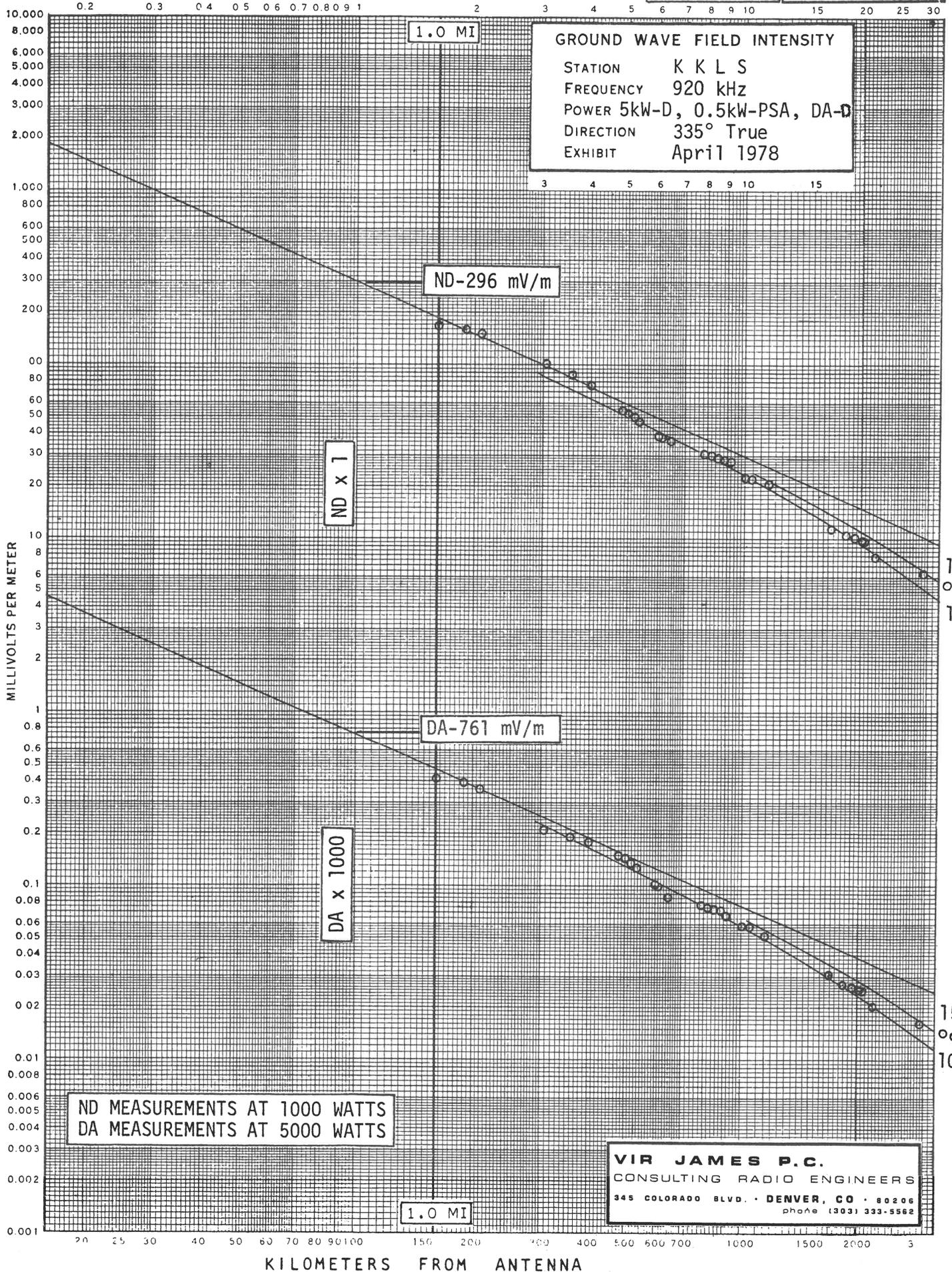
GROUND WAVE FIELD INTENSITY

STATION K K L S
 FREQUENCY 920 kHz
 POWER 5kW-D, 0.5kW-PSA, DA-D
 DIRECTION 252.5° True
 EXHIBIT April 1978









GROUND WAVE FIELD INTENSITY

STATION K K L S
 FREQUENCY 920 kHz
 POWER 5kW-D, 0.5kW-PSA, DA-D
 DIRECTION 335° True
 EXHIBIT April 1978

