

U. S. DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SCHLUMBERGER SOUNDINGS AT THE NORMAN LANDFILL,  
NORMAN, OKLAHOMA

By

Robert J. Bisdorf<sup>1</sup>

Open-File Report 96-668

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In 1995 the U.S. Geological Survey made 17 dc electrical soundings at the Norman Landfill, Norman, OK, using the Schlumberger array (Lucius and Bisdorf, 1995). An additional 23 Schlumberger soundings were made in 1996. The soundings were made to determine the extent of the subsurface spread of the conductive leachate, and to assist in determining the alluvial aquifer geometry. The purpose of this report is to present the new data and its automatic interpretation. Because of erroneous figure captions in the first publication, all 40 soundings are presented.

Figure 1 is a map of the sounding locations. The soundings are represented by circles with the open circles representing the 1995 data and the filled circles representing the 1996 data. The two

lines coming from the circles represent the direction of expansion of the Schlumberger soundings. Table 1 gives the sounding number, x coordinate, y coordinate, and elevation of the soundings. Elevations for soundings 1 through 17 are inferred from measured wells and other sounding locations, whereas the elevations of soundings 18 through 40 were measured using dual-frequency carrier-phase global positioning system receivers. The x and y coordinates are convertible to UTM zone 14 by adding 641,000 m. to the x coordinate and 3,892,200 to the y coordinate respectively.

The data were interpreted using an automatic computerized interpretation program (Zohdy and Bisdorf, 1989) written for IBM PC's and compatible computers.

The soundings are designated Norman 1 through Norman 40. For each sounding curve, the data in the appendix includes:

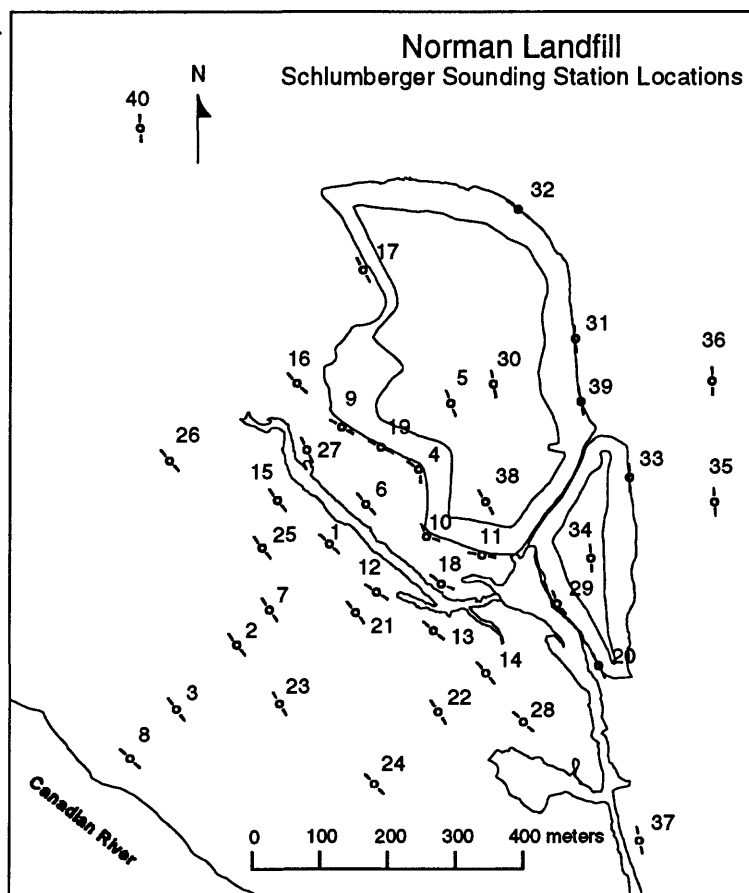


Figure 1. Map showing the location, number and direction of expansion of the Schlumberger soundings.

- 1) A sounding title designated by the name of the survey area followed by the sounding number.

Several sounding titles have a suffix that indicates what special treatment the sounding may have undergone. For instance the suffix S denotes that the field data were smoothed before the inversion was performed, a suffix F indicates that the last layer resistivity was fixed at some value, and a suffix X indicates that the sounding's S-line (Zohdy and others, 1974 p., 36) was manually extended. Any or all of the suffixes may be attached to the sounding number. In general, only the interpreted sounding titles will have suffixes.

- 2) A tabulation of the AB/2 electrode spacings (in meters and feet) and corresponding apparent resistivities (in ohm-meters).
- 3) A log-log plot of the field data points. Each set of data points that were made with the same potential electrode spacing (MN) is connected with a solid line. Measurements were made at MN/2 spacings of 2, 20, 60, and 200 feet as appropriate.
- 4) A tabulation of the automatically interpreted layering, with depths in meters and feet and the corresponding resistivities in ohm-meters.
- 5) A log-log plot of the results of the automatic interpretation program. The circles represent the shifted-digitized field data, the continuous curve represents the sounding curve calculated from the interpreted layering, and the step-function curve represents the interpreted layering.

## REFERENCES

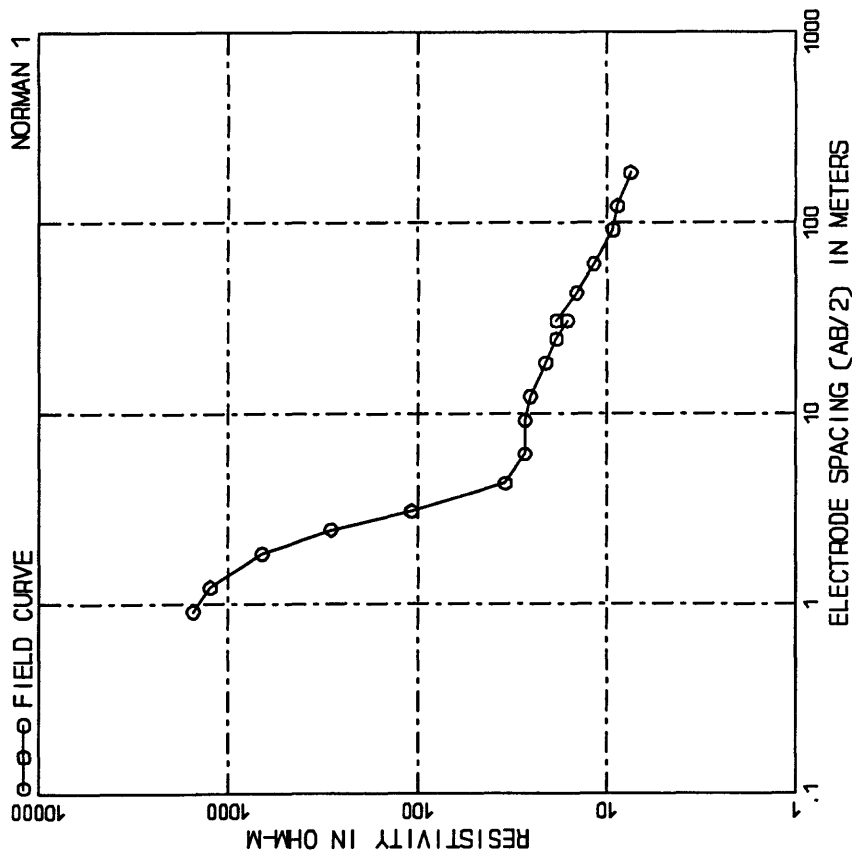
- Lucius, J. E., and Bisdorf, R. J., 1995, Results of geophysical investigations near the Norman, Oklahoma, municipal landfill, 1995: U.S. Geological Survey Open-File report 95-825, 125 p.
- Zohdy, A. A. R., and Bisdorf, R. J., 1989, Programs for the automatic processing and interpretation of Schlumberger sounding curves in QuickBASIC 4.0: U.S. Geological Survey Open-File Report, 89-137 A&B, 64 p. + diskette.
- Zohdy, A. A. R., Eaton, G.P., and Mabey, D. R., 1974, Application of surface geophysics to ground-water investigations: Techniques of water-resources investigations of the United States Geological Survey, Book 2, Chapter D1, 116 p.

Sounding number	x (meters)	y (meters)	Elevation (meters)
1	371.738	416.977	331.0
2	235.990	268.590	331.0
3	146.122	174.251	331.0
4	503.100	527.209	331.0
5	550.000	625.000	343.0
6	425.565	475.722	331.5
7	283.413	320.237	331.0
8	77.756	102.011	331.0
9	389.491	589.540	331.0
10	514.858	427.904	331.0
11	597.274	400.628	331.0
12	441.415	346.198	331.0
13	525.811	289.062	331.0
14	602.671	227.208	331.0
15	294.902	481.556	331.0
16	323.050	654.556	331.0
17	420.000	820.00	332.0
18	537.008	358.254	330.311
19	447.388	559.591	331.249
20	768.954	237.909	332.124

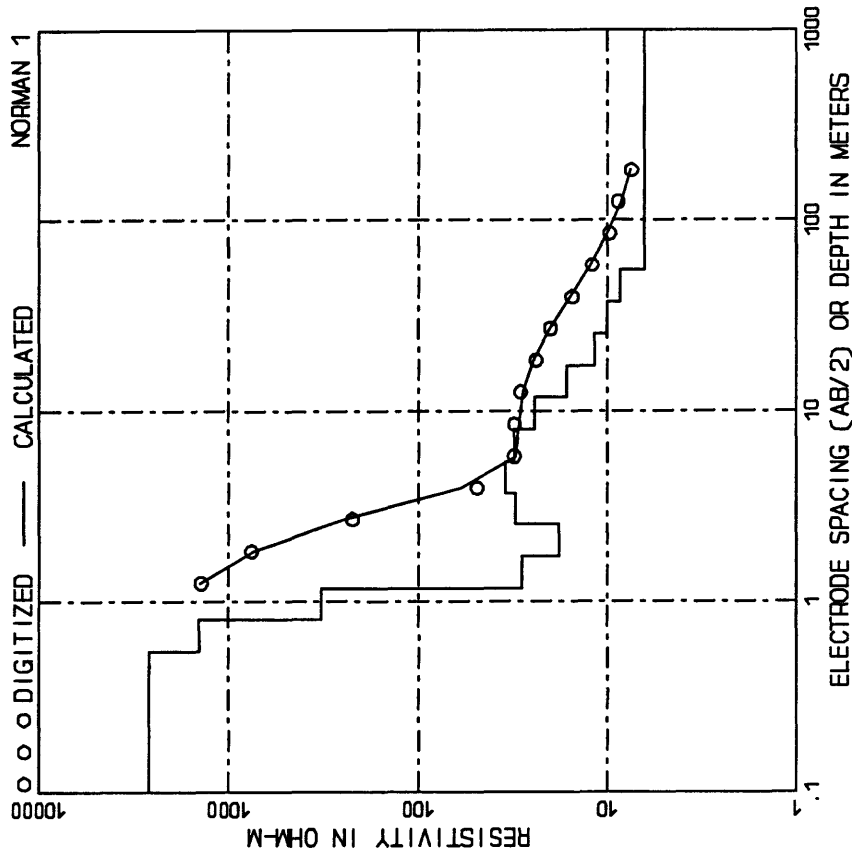
Sounding Number	x (meters)	y (meters)	Elevation (meters)
21	410.739	315.929	330.129
22	532.380	170.172	329.843
23	298.184	182.290	330.175
24	438.547	63.872	330.525
25	272.046	411.446	330.047
26	135.442	540.138	330.460
27	337.907	555.776	331.888
28	658.403	156.002	330.107
29	708.138	328.720	331.488
30	613.324	653.467	342.145
31	733.550	719.670	332.298
32	648.596	909.138	332.369
33	814.195	514.882	331.799
34	757.488	395.853	338.469
35	939.164	478.731	331.897
36	934.918	657.742	331.573
37	829.877	-18.611	331.689
38	602.266	479.038	340.452
39	741.999	627.373	332.562
40	90.948	1028.344	332.936

Table 1. Schlumberger sounding coordinates. X values can be converted to UTM zone 14 coordinates by adding 641,000. Y values can be converted to UTM zone 14 coordinates by adding 3,892,200.

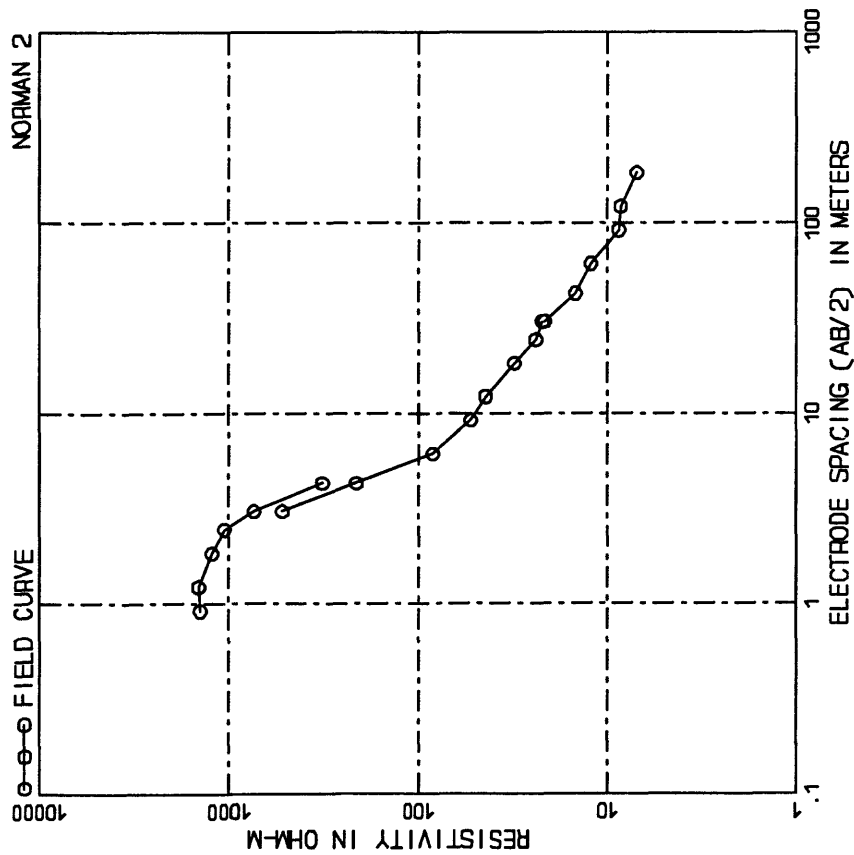
## APPENDIX



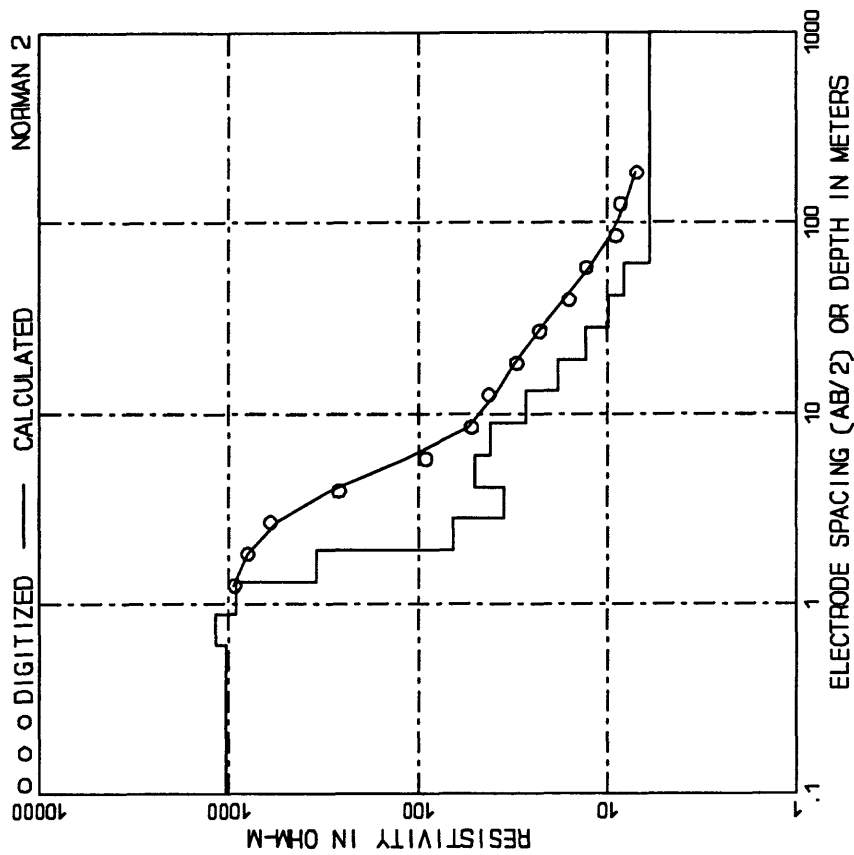
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1.22 {	4.00 {	1240.00	18.29 {	60.00 {	21.00
1.83 {	6.00 {	660.00	24.38 {	80.00 {	18.50
2.44 {	8.00 {	285.00	30.48 {	100.00 {	16.30
3.05 {	10.00 {	107.00	36.58 {	120.00 {	14.50
3.66 {	12.00 {	108.00	42.67 {	140.00 {	11.70
4.27 {	14.00 {	34.50	48.77 {	160.00 {	9.20
4.88 {	16.00 {	27.00	54.87 {	180.00 {	8.80
5.49 {	18.00 {		60.96 {	200.00 {	7.50
6.10 {	20.00 {		67.06 {	220.00 {	
6.71 {	22.00 {		73.15 {	240.00 {	
7.32 {	24.00 {		79.25 {	260.00 {	
7.93 {	26.00 {		85.34 {	280.00 {	
8.54 {	28.00 {		91.44 {	300.00 {	
9.15 {	30.00 {		97.53 {	320.00 {	
9.76 {			103.63 {	340.00 {	
10.37 {			109.72 {	360.00 {	
10.98 {			115.82 {	380.00 {	
11.59 {			121.92 {	400.00 {	
12.20 {			128.01 {	420.00 {	
12.81 {			134.11 {	440.00 {	
13.42 {			140.20 {	460.00 {	
14.03 {			146.30 {	480.00 {	
14.64 {			152.39 {	500.00 {	
15.25 {			158.49 {	520.00 {	
15.86 {			164.58 {	540.00 {	
16.47 {			170.68 {	560.00 {	
17.08 {			176.77 {	580.00 {	
17.69 {			182.87 {	600.00 {	



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.54 {	1.79 {	2602.29	8.00 {	26.24 {	31.17
0.80 {	2.62 {	1431.73	11.74 {	38.52 {	24.10
1.17 {	3.85 {	323.40	17.23 {	56.54 {	16.43
1.72 {	5.65 {	28.38	25.30 {	82.99 {	11.67
2.53 {	8.30 {	17.98	37.13 {	121.81 {	10.05
3.71 {	12.18 {	30.58	54.50 {	178.80 {	8.57
5.45 {	17.88 {	34.76	99.999.00 {	99999.00 {	6.40



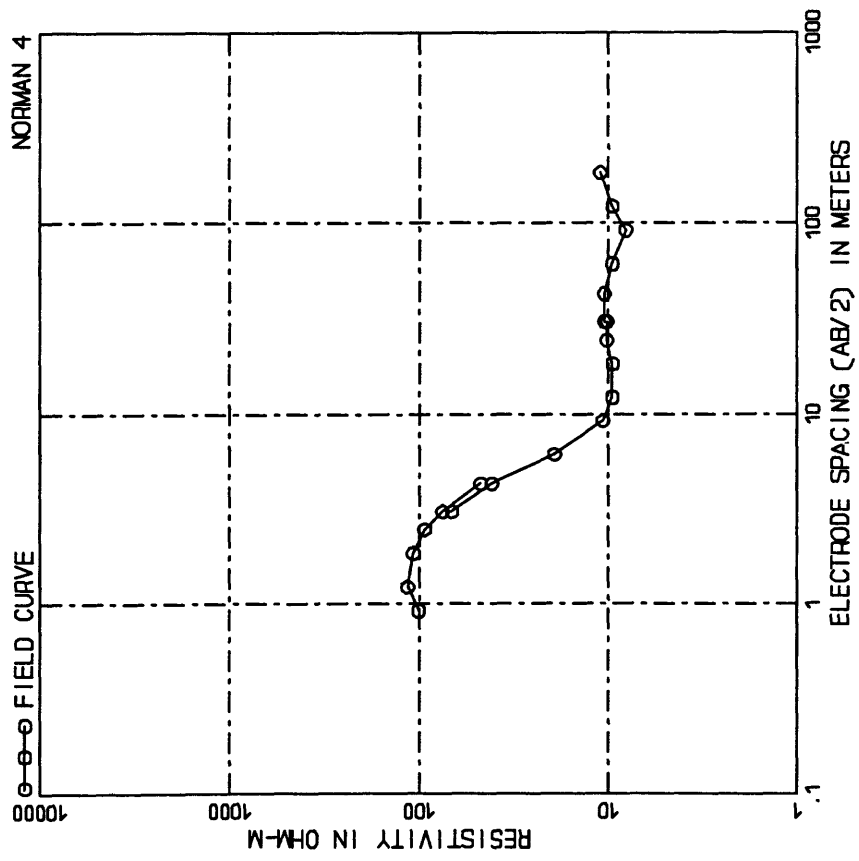
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
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1.23	4.00	1140.00	18.28	60.00	31.00
1.54	6.00	1030.00	24.38	80.00	24.00
2.14	8.00	1050.00	30.48	100.00	22.50
2.45	10.00	735.00	42.67	140.00	14.80
3.47	14.00	320.00	60.96	200.00	12.30
4.35	18.00	212.00	91.44	300.00	8.75
6.10	20.00	84.00	121.92	400.00	8.50
9.14	30.00	52.50	182.88	600.00	7.00



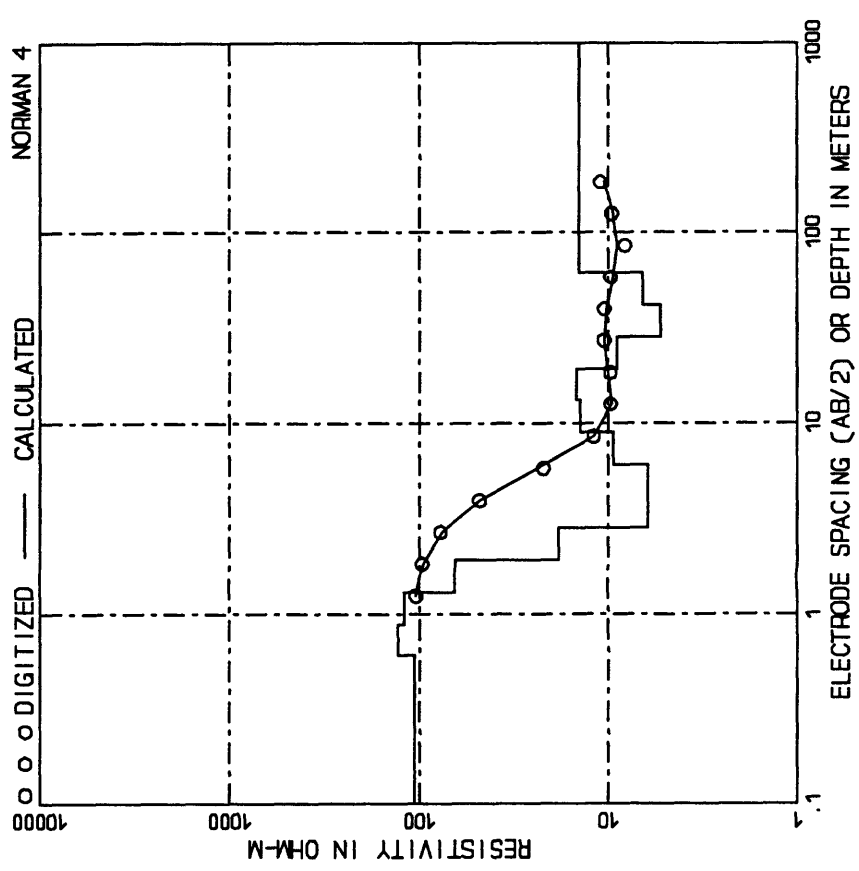
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
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0.98	3.23	1161.47	13.05	42.80	26.88
1.30	4.28	914.12	18.15	62.82	18.30
1.91	6.25	342.10	28.11	92.21	12.94
2.81	9.22	65.62	41.25	135.35	9.87
4.13	13.53	35.10	60.55	198.66	8.18
6.06	19.87	50.16	99999.00	99999.00	6.05





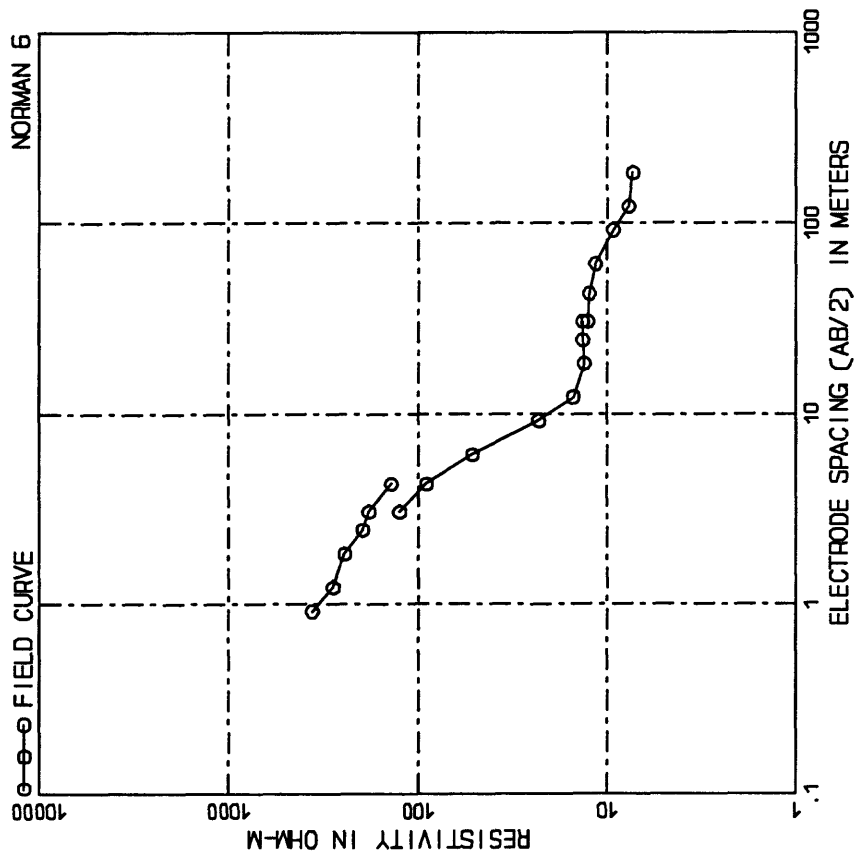


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	100.00	12.19	40.00	9.50
1.22	4.00	115.00	18.39	60.00	9.50
1.83	6.00	107.00	24.38	80.00	10.20
2.84	9.00	93.00	30.48	100.00	10.20
3.05	10.00	75.00	30.48	100.00	10.20
3.27	14.00	47.00	42.67	140.00	10.50
3.55	10.00	67.00	60.96	200.00	9.50
4.17	14.00	41.00	71.44	300.00	8.10
5.10	20.00	19.50	121.92	400.00	7.10
9.14	30.00	10.70	182.88	600.00	11.00

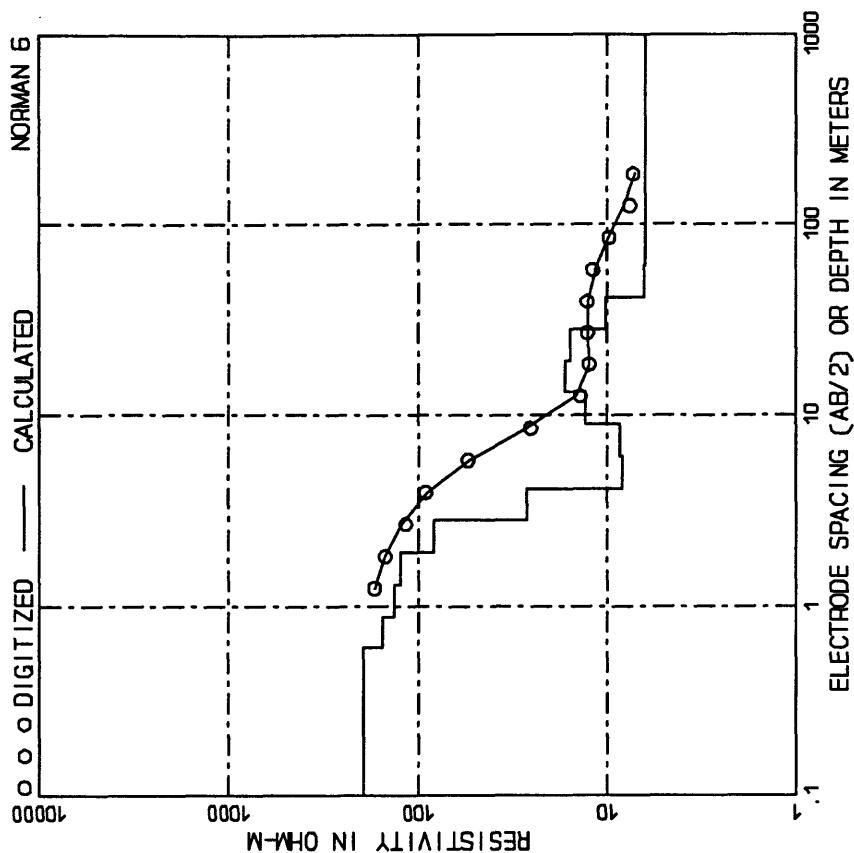


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	106.07	8.89	29.16	9.38
0.89	2.92	129.34	13.05	42.80	14.16
1.30	4.28	120.35	19.15	62.82	14.76
1.91	6.28	164.54	28.11	92.31	9.02
2.81	9.23	18.39	41.25	135.35	5.30
4.13	13.53	6.20	60.55	198.66	6.60
6.06	19.87	6.16	99999.00	99999.00	14.35



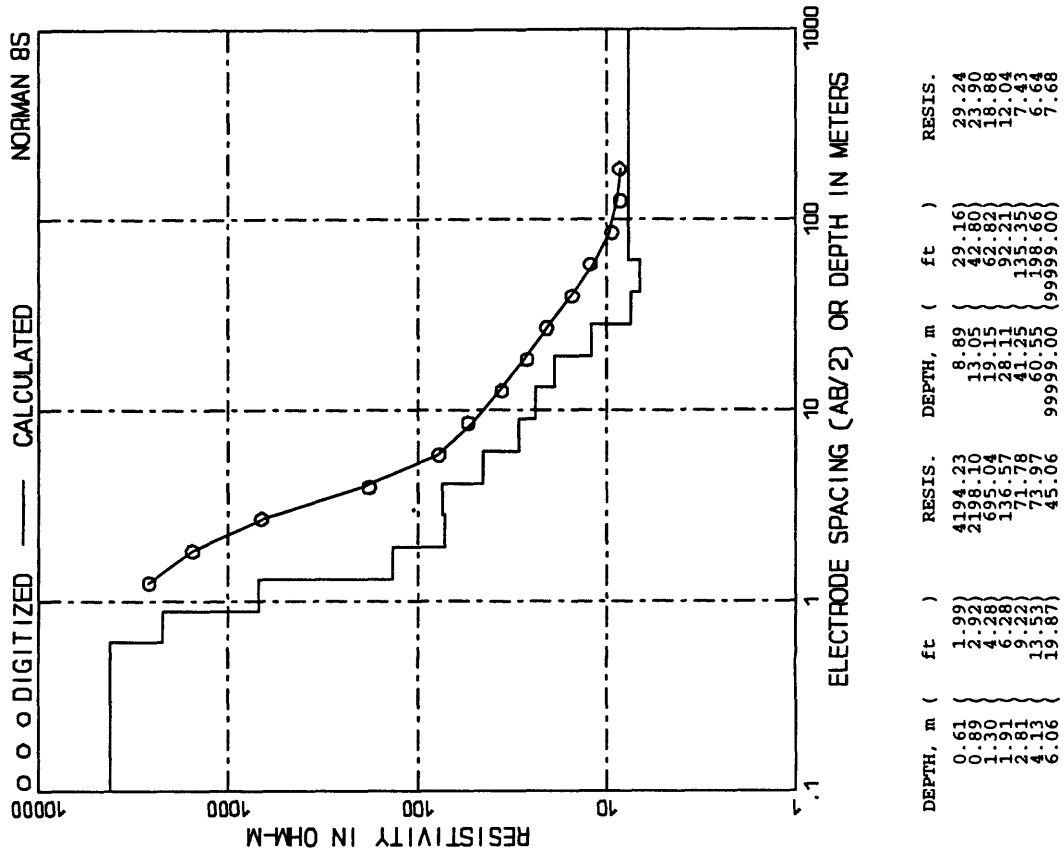
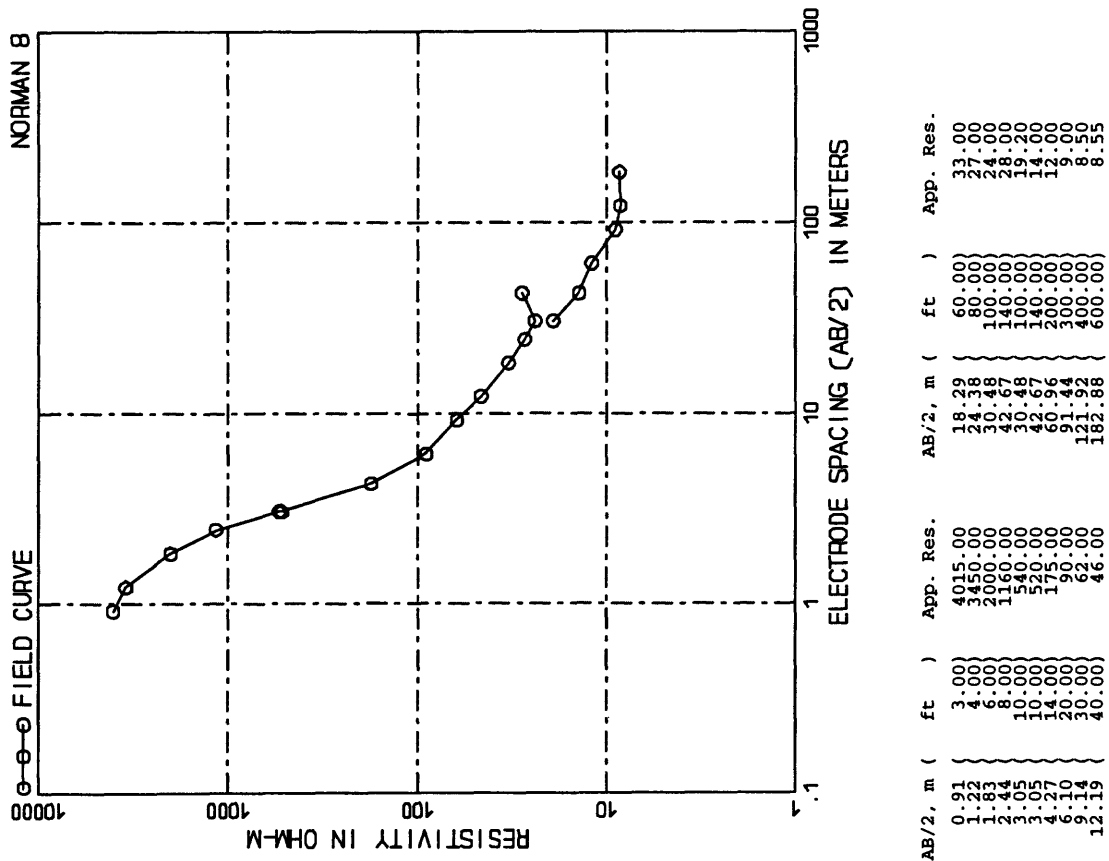


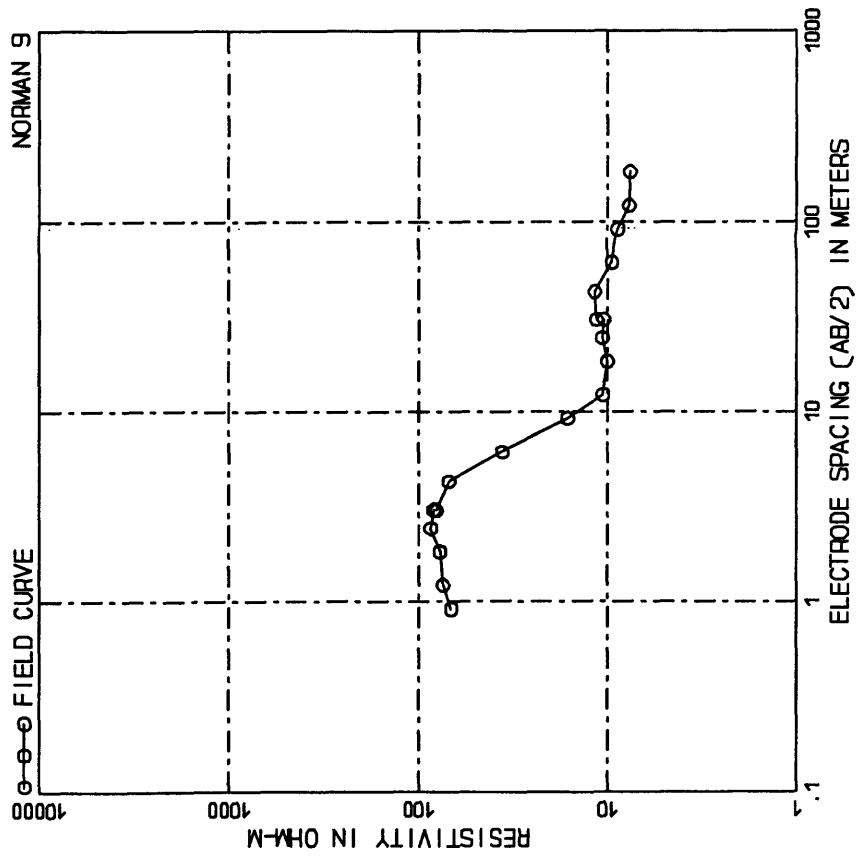
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
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1.23 {	4.00 {	280.00 {	18.29 {	60.00 {	13.30 {
1.84 {	6.00 {	243.00 {	24.38 {	80.00 {	13.50 {
2.45 {	8.00 {	195.00 {	30.48 {	100.00 {	12.70 {
3.06 {	10.00 {	181.00 {	36.58 {	140.00 {	12.40 {
4.27 {	14.00 {	138.00 {	42.67 {	200.00 {	11.50 {
4.27 {	14.00 {	125.00 {	60.96 {	300.00 {	9.30 {
6.10 {	20.00 {	90.00 {	91.44 {	400.00 {	7.70 {
9.14 {	30.00 {	51.50 {	121.92 {	600.00 {	7.30 {
		23.00 {	182.88 {		



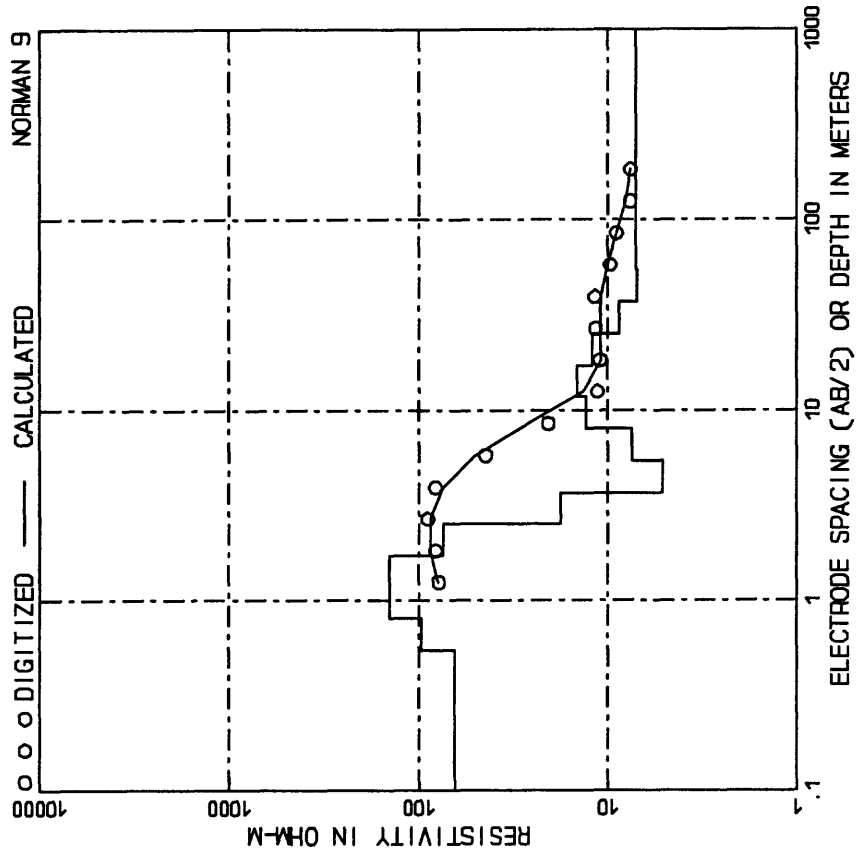
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61 {	1.99 {	193.57 {	8.89 {	29.16 {	8.59 {
0.89 {	2.92 {	153.77 {	13.05 {	42.80 {	12.92 {
1.30 {	4.28 {	133.51 {	19.15 {	62.82 {	16.78 {
1.91 {	6.28 {	114.32 {	28.11 {	92.21 {	15.68 {
2.81 {	9.22 {	82.47 {	41.25 {	135.35 {	10.11 {
4.13 {	13.53 {	26.56 {	60.55 {	198.66 {	6.39 {
6.06 {	19.87 {	8.30 {	99.99.00 {	99999.00 {	6.33 {



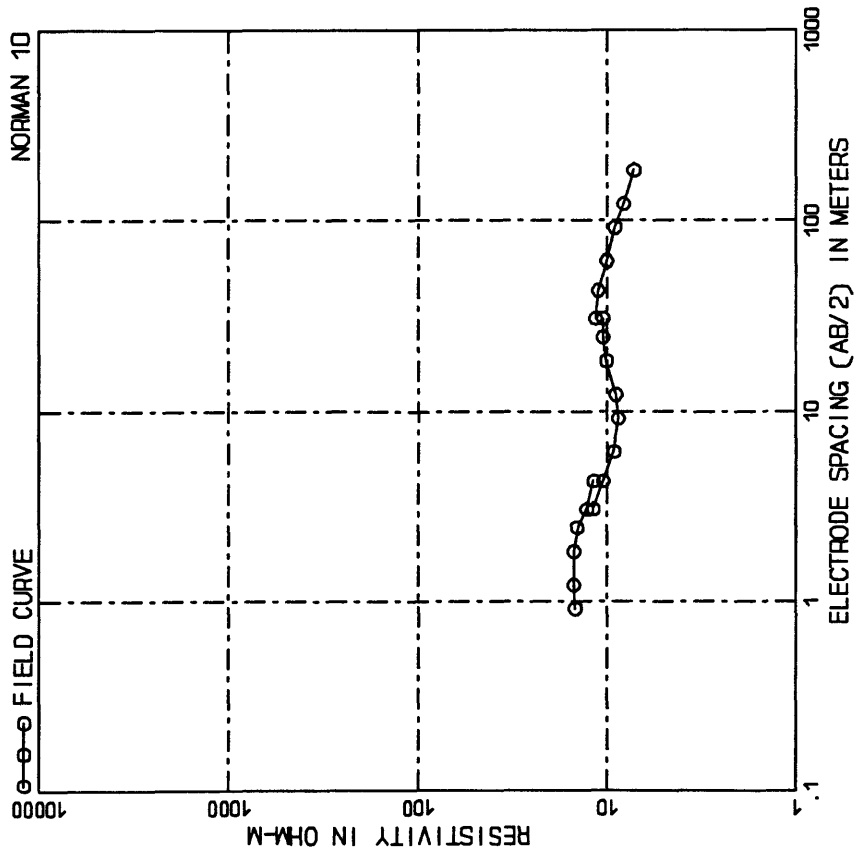




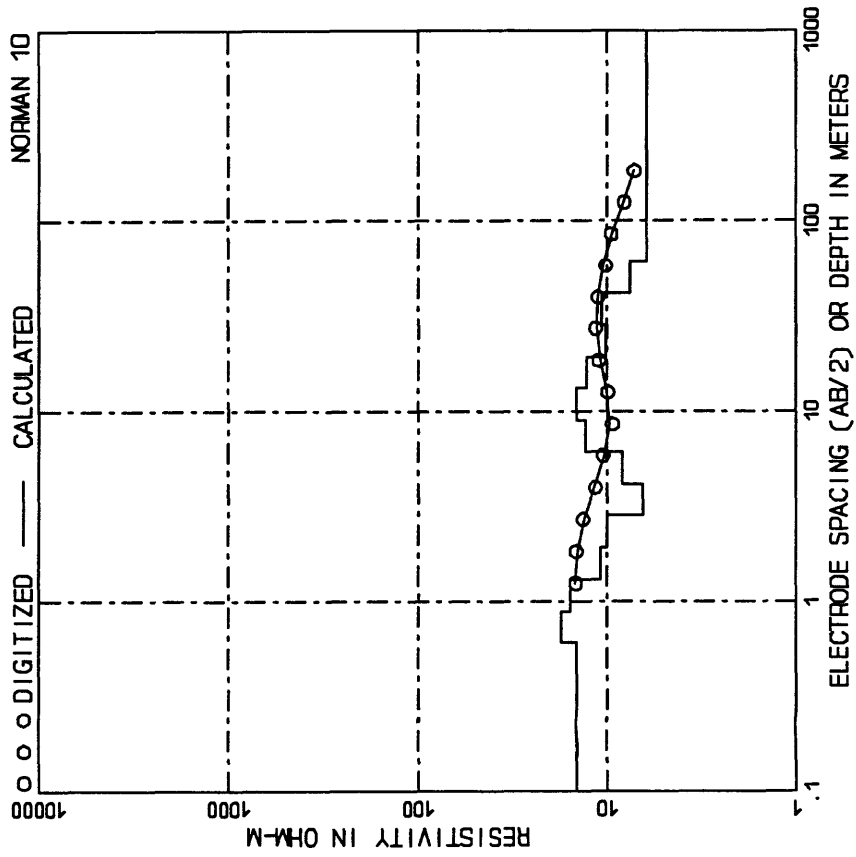
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1.22 {	4.00 {	74.00 {	18.29 {	60.00 {	10.00 {
1.83 {	6.00 {	77.00 {	24.38 {	80.00 {	10.70 {
2.44 {	8.00 {	86.00 {	30.48 {	100.00 {	10.50 {
3.05 {	10.00 {	83.00 {	36.57 {	140.00 {	11.70 {
3.66 {	12.00 {	80.00 {	42.67 {	200.00 {	9.50 {
4.27 {	14.00 {	69.00 {	48.76 {	300.00 {	8.80 {
4.88 {	16.00 {	36.00 {	54.86 {	400.00 {	7.70 {
5.49 {	18.00 {	16.30 {	60.96 {	600.00 {	7.60 {
6.10 {	20.00 {		67.06 {		
6.71 {	22.00 {		73.16 {		
7.32 {	24.00 {		79.26 {		
7.93 {	26.00 {		85.36 {		
8.54 {	28.00 {		91.46 {		
9.15 {	30.00 {		97.56 {		



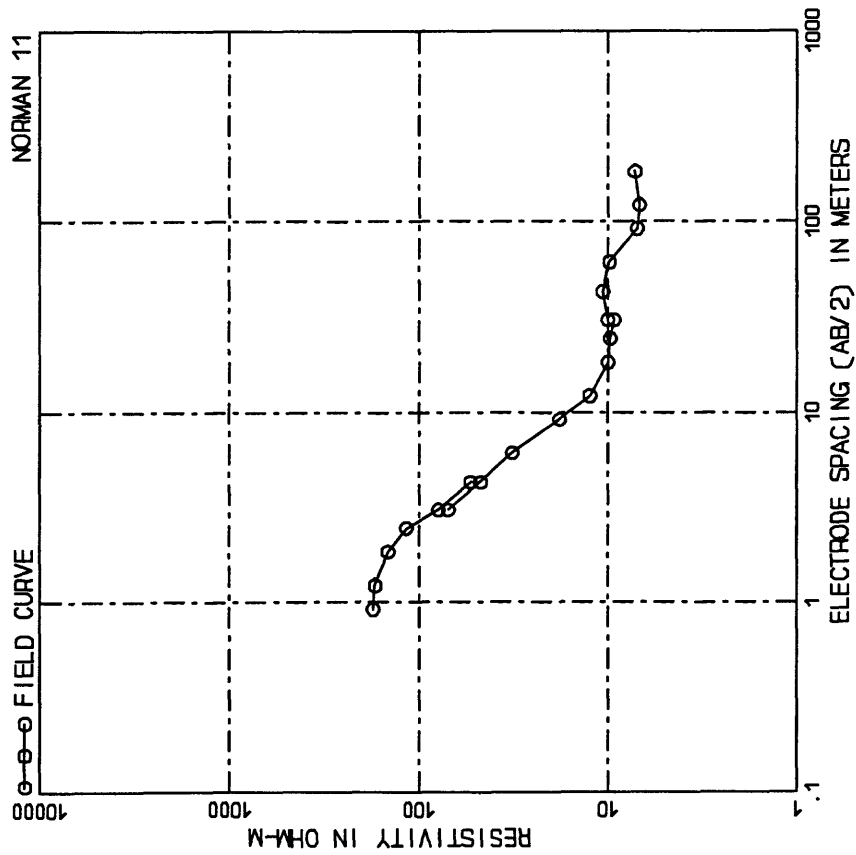
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
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0.80 {	2.62 {	96.62 {	11.74 {	38.52 {	12.98 {
1.17 {	3.85 {	142.35 {	17.23 {	56.54 {	14.61 {
1.72 {	5.65 {	142.10 {	25.30 {	82.99 {	12.01 {
2.53 {	8.30 {	74.13 {	37.13 {	121.81 {	8.66 {
3.71 {	12.18 {	17.78 {	54.50 {	178.80 {	7.00 {
5.45 {	17.88 {	5.15 {	99.99 {	329.99 {	7.12 {



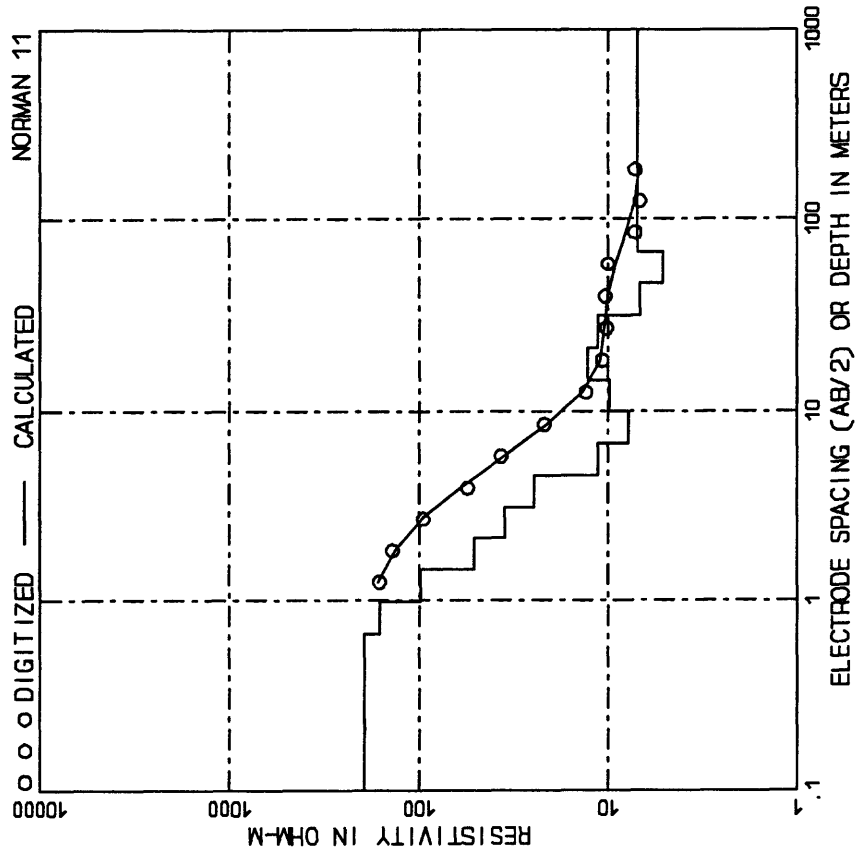
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
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1.22 {	4.00 {	15.00	18.29 {	60.00 {	10.10
1.83 {	6.00 {	15.00	24.38 {	80.00 {	10.50
2.44 {	8.00 {	14.40	30.48 {	100.00 {	10.50
3.05 {	10.00 {	12.80	36.57 {	120.00 {	11.50
4.27 {	14.00 {	11.80	42.67 {	140.00 {	11.20
3.05 {	10.00 {	11.80	60.96 {	200.00 {	10.00
4.27 {	14.00 {	10.50	91.44 {	300.00 {	9.10
6.10 {	20.00 {	9.20	121.92 {	400.00 {	8.20
9.14 {	30.00 {	8.70	182.88 {	600.00 {	7.20



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61 {	1.99 {	14.57	8.89 {	29.16 {	12.96
0.89 {	2.92 {	17.63	13.05 {	42.80 {	14.54
1.30 {	4.28 {	15.63	19.15 {	62.82 {	12.85
1.91 {	6.28 {	10.79	28.11 {	92.21 {	10.13
2.81 {	9.22 {	10.04	41.25 {	135.35 {	10.63
4.13 {	13.53 {	6.48	60.55 {	198.66 {	7.63
6.06 {	19.87 {	8.27	99.99.00 {	999.99.00 {	6.17

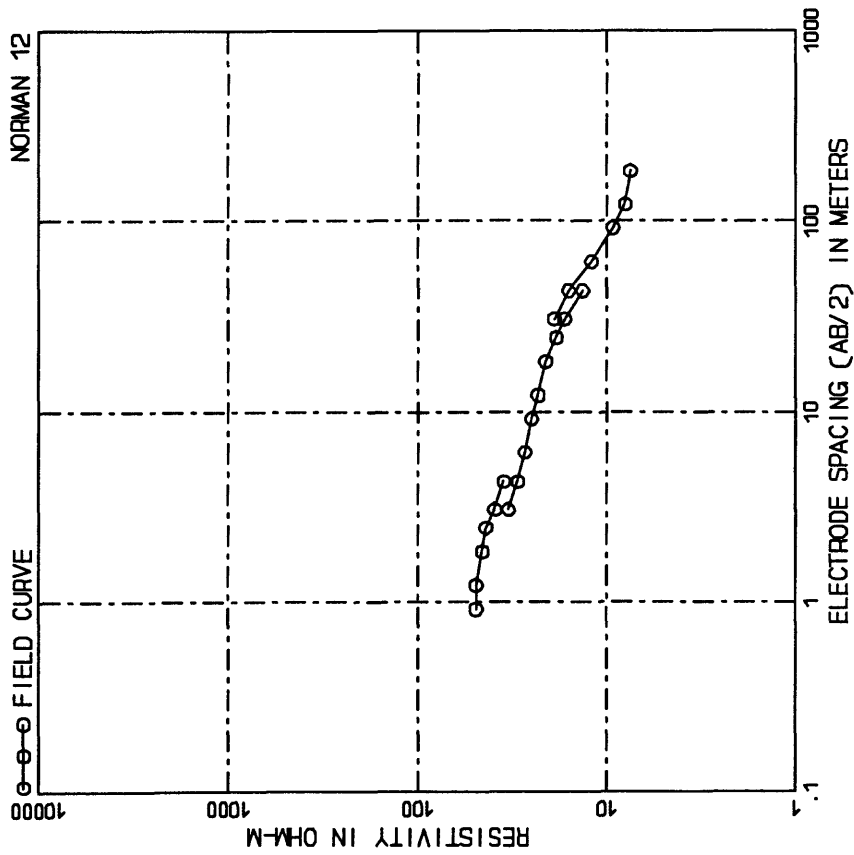


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	174.00 {	12.19 {	40.00 {	12.50 {
1.22 {	4.00 {	170.00 {	18.29 {	60.00 {	10.00 {
1.83 {	6.00 {	142.00 {	24.38 {	80.00 {	9.70 {
2.44 {	8.00 {	116.00 {	30.48 {	100.00 {	9.30 {
3.05 {	10.00 {	79.00 {	36.58 {	120.00 {	10.00 {
4.27 {	14.00 {	53.00 {	42.67 {	140.00 {	10.70 {
3.05 {	10.00 {	70.00 {	60.96 {	200.00 {	9.80 {
4.27 {	14.00 {	47.00 {	91.44 {	300.00 {	7.00 {
6.10 {	20.00 {	32.00 {	121.92 {	400.00 {	6.80 {
9.14 {	30.00 {	18.00 {	182.88 {	600.00 {	7.20 {

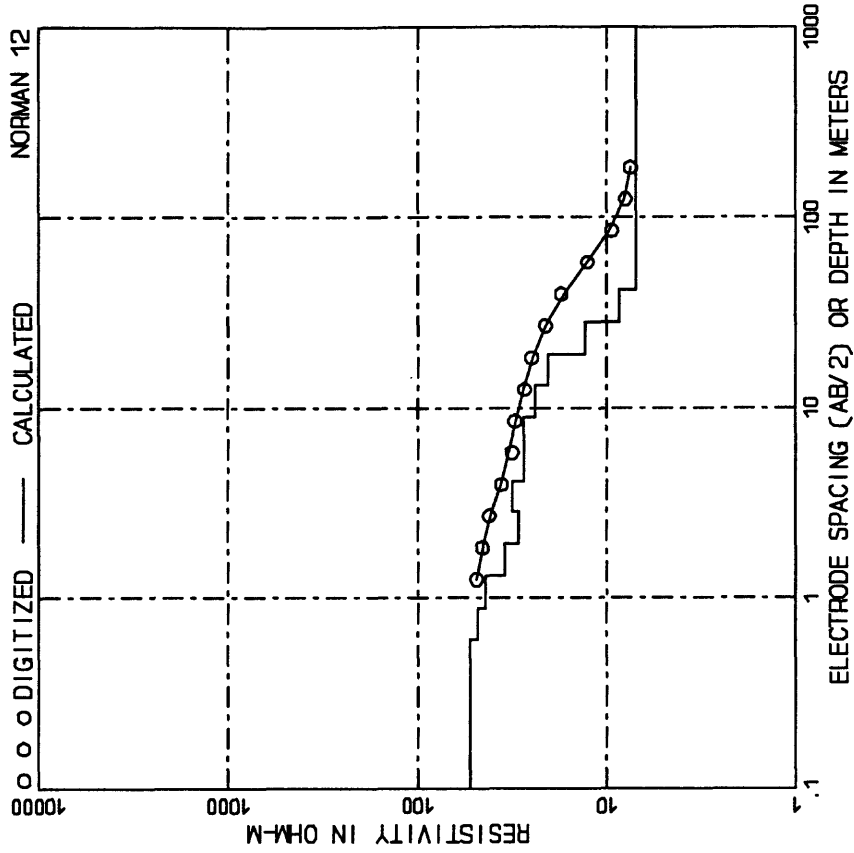


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.67 {	2.21 {	192.08 {	9.88 {	32.40 {	7.76 {
0.99 {	3.24 {	160.82 {	14.58 {	47.50 {	9.85 {
1.45 {	4.76 {	97.50 {	21.28 {	69.80 {	12.88 {
2.13 {	6.98 {	50.79 {	31.23 {	102.49 {	11.24 {
3.12 {	10.25 {	35.22 {	45.84 {	150.39 {	6.75 {
4.58 {	15.04 {	24.59 {	67.28 {	220.74 {	5.12 {
6.73 {	22.07 {	11.38 {	99.99 {	999.99 {	7.01 {

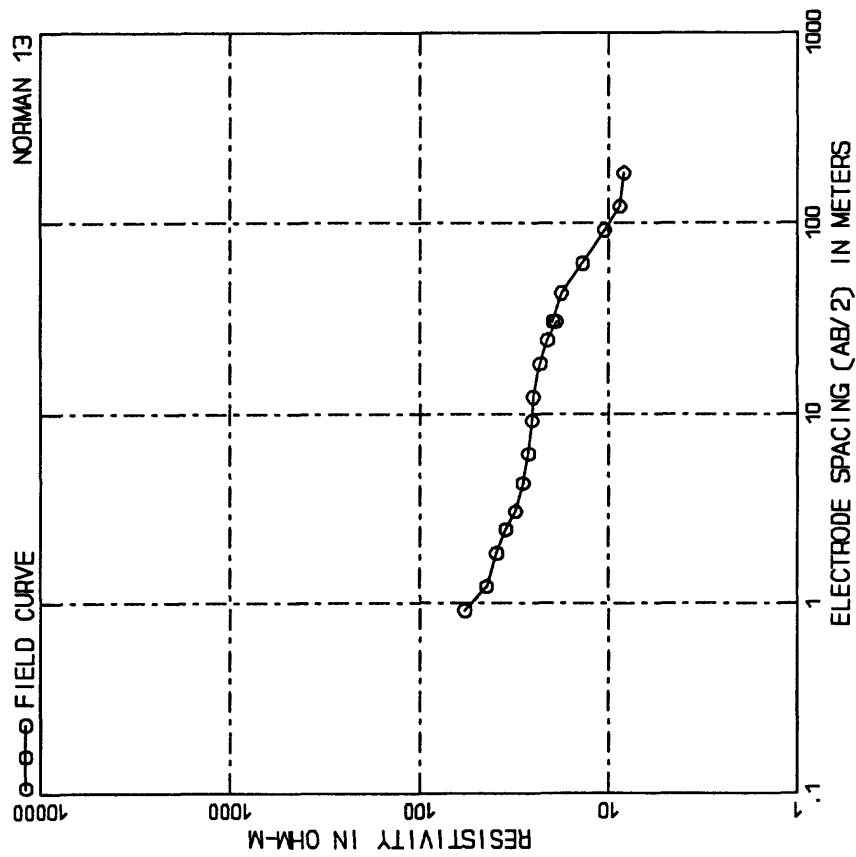




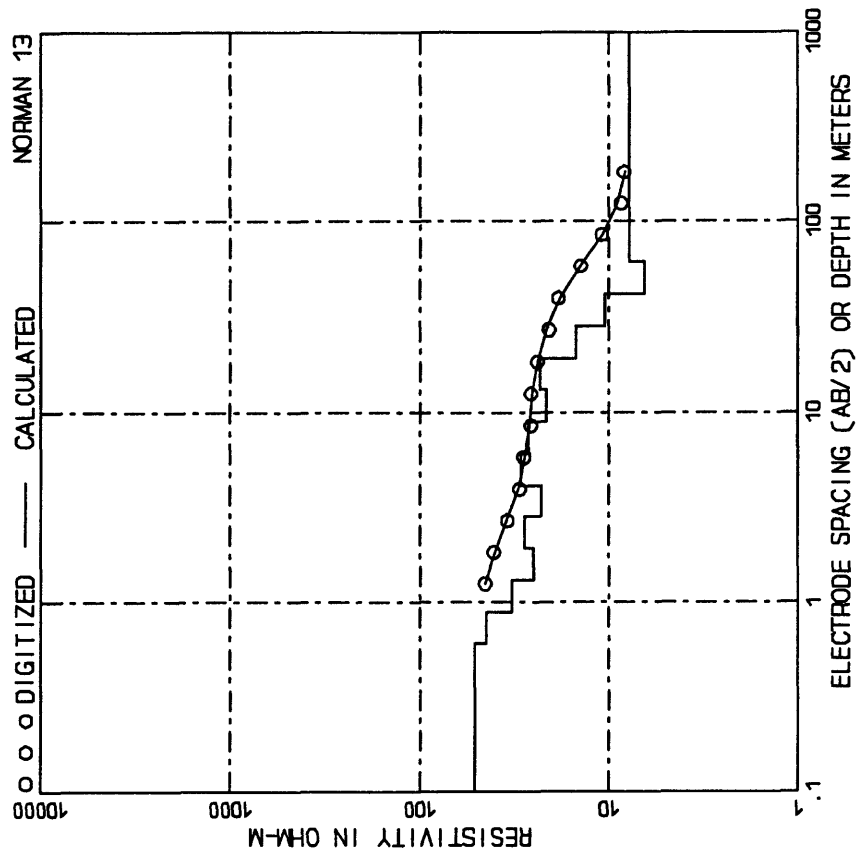
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	49.00	12.19	40.00	23.00
1.22	4.00	49.00	18.29	60.00	21.00
1.83	6.00	45.50	24.38	80.00	18.50
2.44	8.00	45.50	30.48	100.00	16.80
3.05	10.00	39.00	42.67	140.00	13.50
4.27	14.00	33.00	60.96	200.00	10.00
6.10	20.00	29.50	91.44	300.00	12.00
9.14	30.00	25.10	121.92	400.00	8.30
			182.88	600.00	7.50



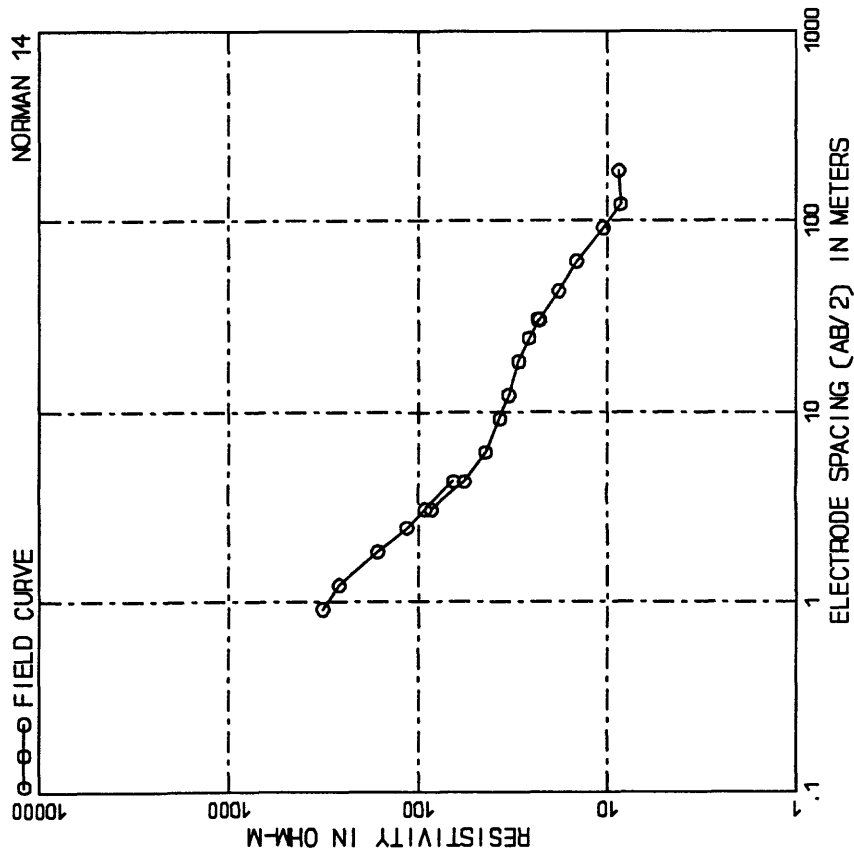
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	52.36	8.89	29.16	27.44
0.89	2.92	47.69	13.00	42.80	23.72
1.30	4.28	43.74	19.15	62.82	20.41
1.91	6.28	34.77	28.11	92.21	13.02
2.81	9.22	29.09	41.25	135.35	8.58
4.13	13.53	31.45	60.55	198.66	6.99
6.06	19.87	27.46	99999.00	99999.00	6.99



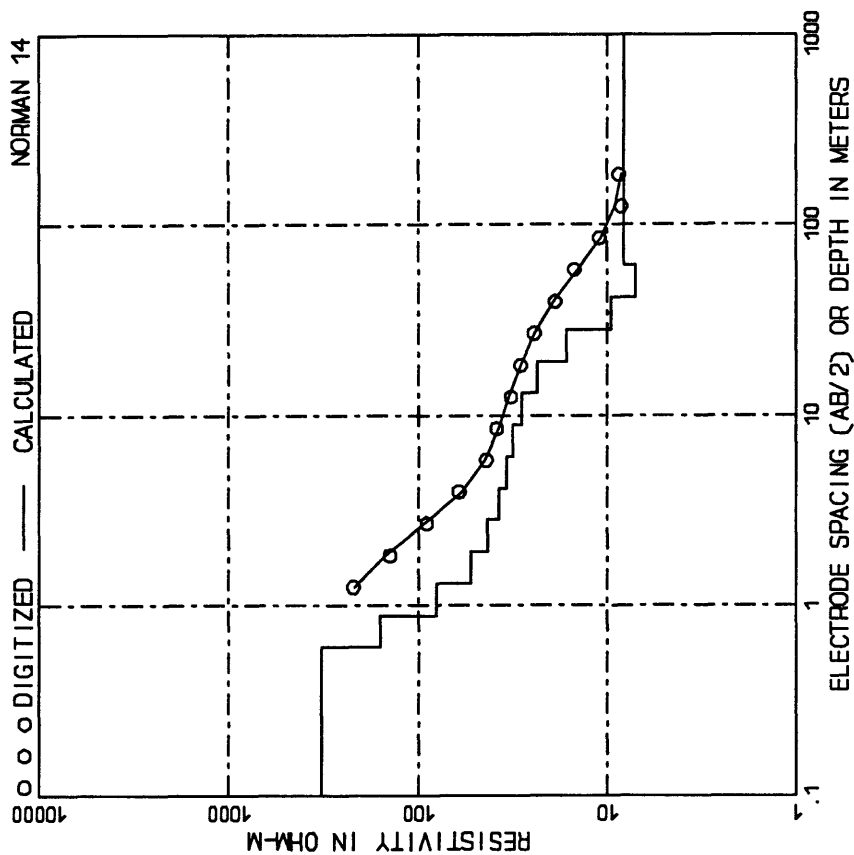
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	57.50	12.19 {	40.00 {	25.00
1.22 {	4.00 {	46.00	18.29 {	60.00 {	21.00
1.82 {	6.00 {	36.00	26.28 {	80.00 {	19.00
2.44 {	8.00 {	32.00	36.48 {	100.00 {	19.70
3.05 {	10.00 {	31.00	50.48 {	160.00 {	17.80
3.27 {	10.80 {	30.50	70.67 {	230.00 {	13.80
4.27 {	14.00 {	28.50	96.96 {	310.00 {	10.50
6.10 {	20.00 {	26.50	121.44 {	400.00 {	8.70
9.14 {	30.00 {	25.50	182.88 {	600.00 {	8.30



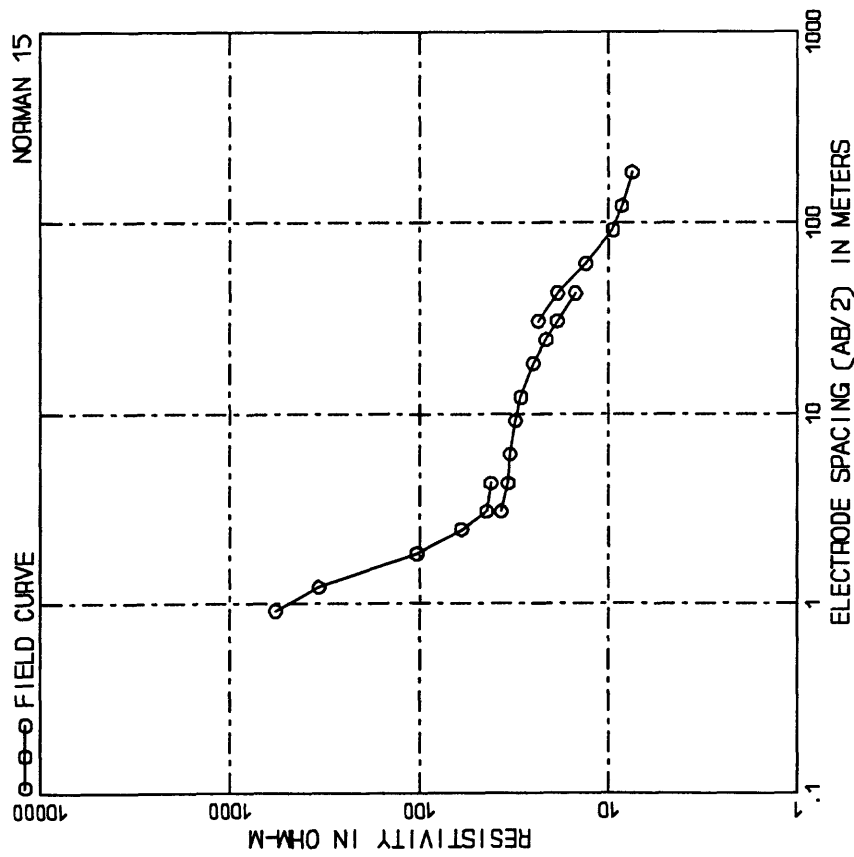
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61 {	1.99 {	51.11	8.89 {	29.16 {	26.43
0.91 {	2.99 {	42.54	12.19 {	40.00 {	21.38
1.22 {	4.00 {	36.05	18.29 {	60.00 {	19.08
1.82 {	6.00 {	32.05	26.28 {	86.22 {	14.88
2.44 {	8.00 {	27.93	36.48 {	120.35 {	10.51
3.05 {	10.00 {	22.93	50.48 {	164.62 {	6.86
3.27 {	10.80 {	28.99	70.67 {	232.99 {	7.86
4.27 {	14.00 {		96.96 {	318.99 {	
6.10 {	20.00 {		121.44 {	399.99 {	
9.14 {	30.00 {		182.88 {	599.99 {	



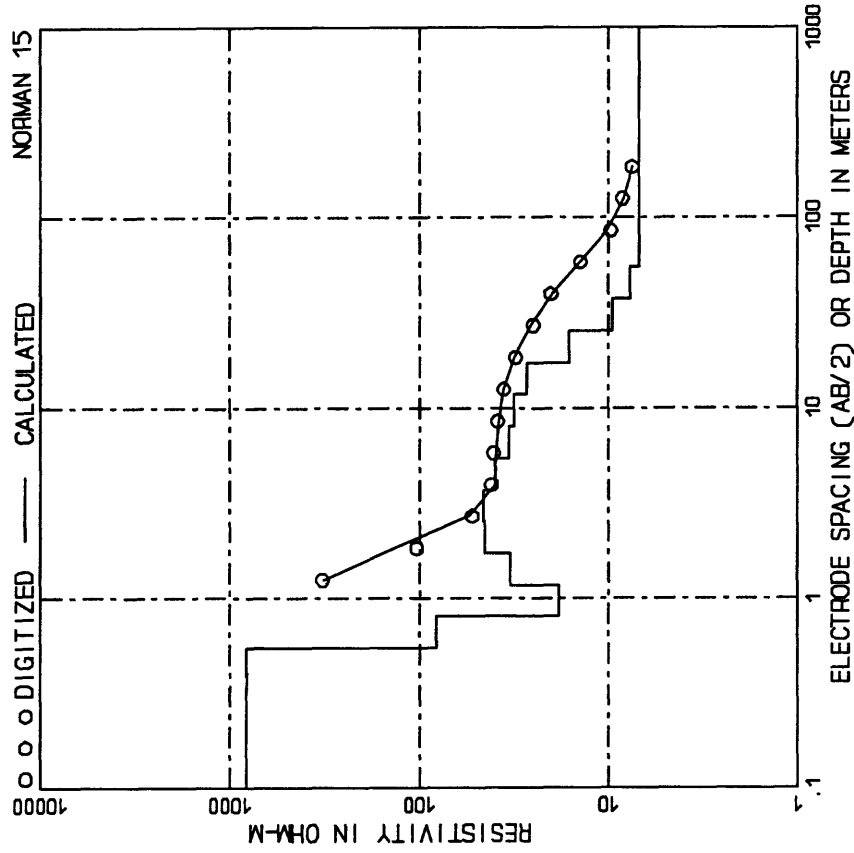
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	318.00	12.19 {	40.00 {	33.20
1.22 {	4.00 {	260.00	18.29 {	60.00 {	29.50
1.83 {	6.00 {	164.00	24.38 {	80.00 {	26.00
2.44 {	8.00 {	115.00	30.48 {	100.00 {	23.30
3.05 {	10.00 {	92.00	36.57 {	120.00 {	22.80
3.27 {	14.00 {	65.00	42.67 {	140.00 {	22.80
3.05 {	18.00 {	85.00	48.76 {	160.00 {	18.00
4.27 {	20.00 {	57.00	54.86 {	180.00 {	14.60
6.10 {	20.00 {	44.00	60.96 {	200.00 {	10.50
9.14 {	30.00 {	37.20	67.06 {	220.00 {	8.50
			73.15 {	240.00 {	8.70
			79.25 {	260.00 {	
			85.34 {	280.00 {	
			91.44 {	300.00 {	
			97.53 {	320.00 {	
			103.63 {	340.00 {	
			109.72 {	360.00 {	
			115.82 {	380.00 {	
			121.91 {	400.00 {	
			128.01 {	420.00 {	
			134.10 {	440.00 {	
			140.20 {	460.00 {	
			146.29 {	480.00 {	
			152.39 {	500.00 {	
			158.48 {	520.00 {	
			164.58 {	540.00 {	
			170.67 {	560.00 {	
			176.77 {	580.00 {	
			182.86 {	600.00 {	



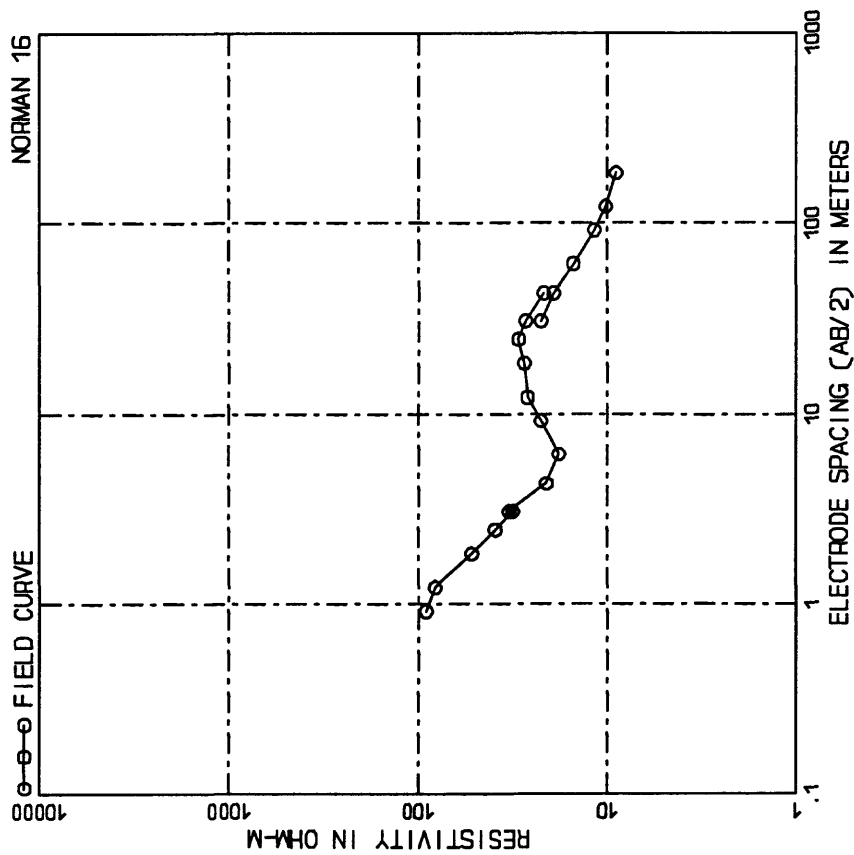
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61 {	1.99 {	323.14	8.89 {	29.16 {	31.45
0.89 {	2.92 {	152.63	13.02 {	42.80 {	28.27
1.30 {	4.28 {	76.89	19.12 {	62.82 {	23.60
1.91 {	6.28 {	53.04	28.11 {	92.21 {	16.54
2.81 {	9.22 {	42.79	41.25 {	135.35 {	9.62
4.13 {	13.53 {	37.32	60.55 {	198.66 {	7.11
6.06 {	19.87 {	33.86	99999.00 {	99999.00 {	8.17



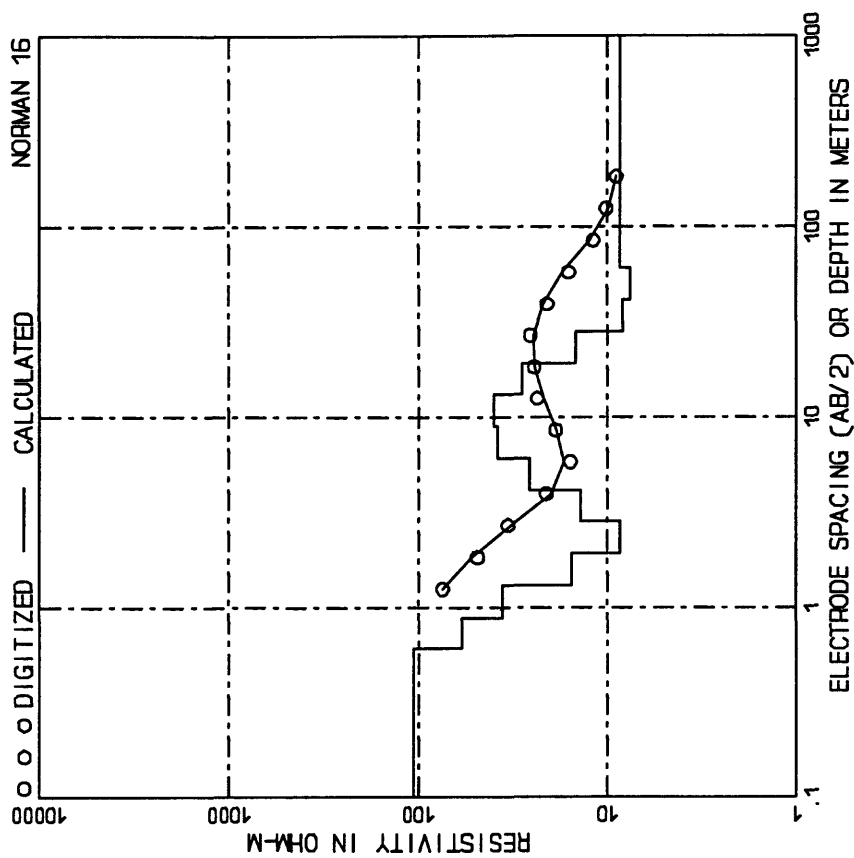
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	576.00 {	12.19 {	40.00 {	29.00 {
1.22 {	4.00 {	340.00 {	18.29 {	60.00 {	25.00 {
1.83 {	6.00 {	103.00 {	24.38 {	80.00 {	21.30 {
2.44 {	8.00 {	60.00 {	30.48 {	100.00 {	18.70 {
3.05 {	10.00 {	44.00 {	42.67 {	140.00 {	15.00 {
4.27 {	14.00 {	37.00 {	60.96 {	200.00 {	13.20 {
6.10 {	20.00 {	34.00 {	91.44 {	300.00 {	9.50 {
9.14 {	30.00 {	31.00 {	121.92 {	400.00 {	8.50 {
			182.88 {	600.00 {	7.50 {



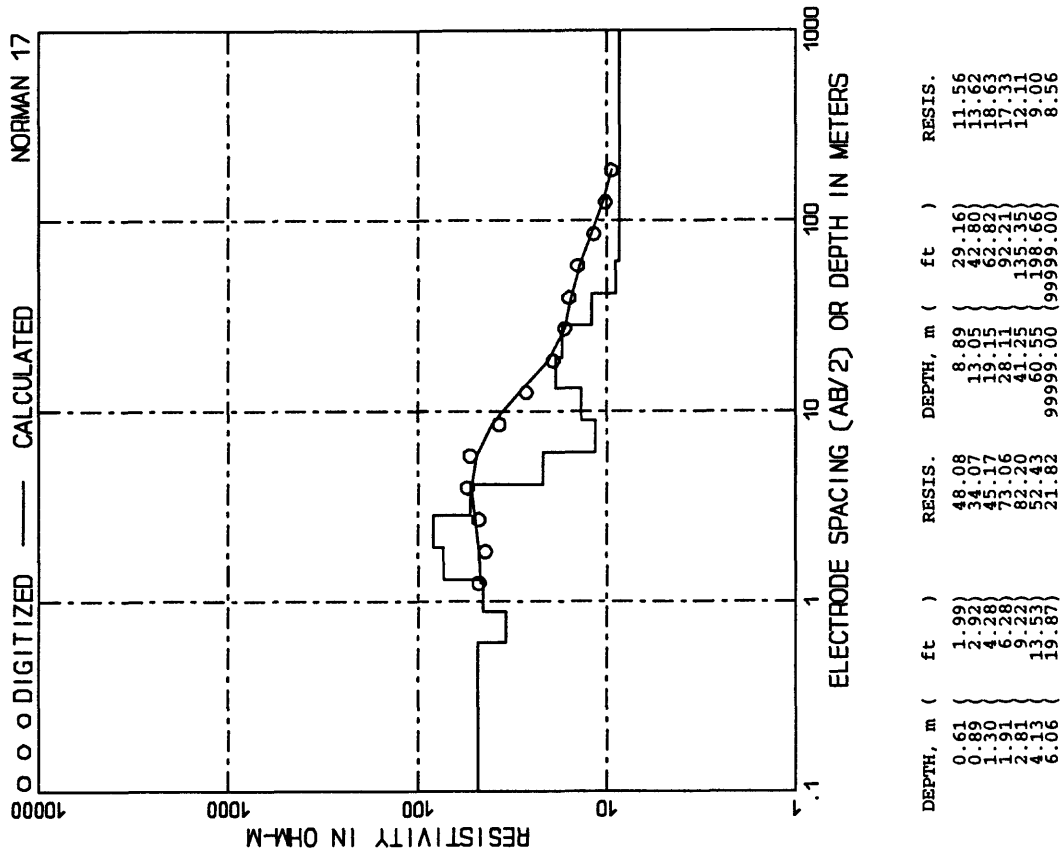
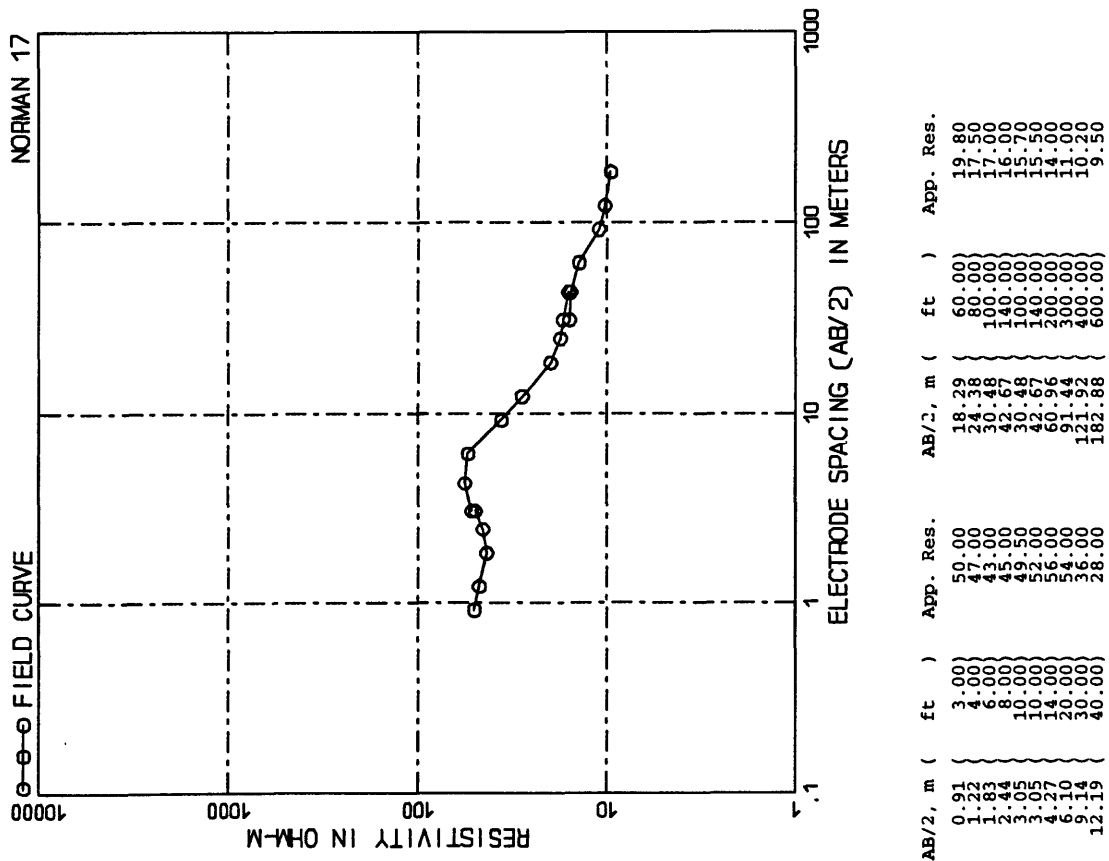
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.54 {	1.79 {	823.30 {	8.00 {	26.24 {	33.69 {
0.80 {	2.62 {	81.20 {	11.74 {	38.52 {	31.53 {
1.17 {	3.85 {	18.21 {	17.23 {	56.54 {	26.85 {
1.72 {	5.65 {	32.99 {	25.30 {	82.99 {	16.15 {
2.53 {	8.30 {	45.16 {	37.13 {	121.81 {	9.49 {
3.71 {	12.18 {	45.49 {	54.50 {	178.80 {	7.70 {
5.45 {	17.88 {	39.56 {	99.999.00 {	99999.00 {	6.85 {

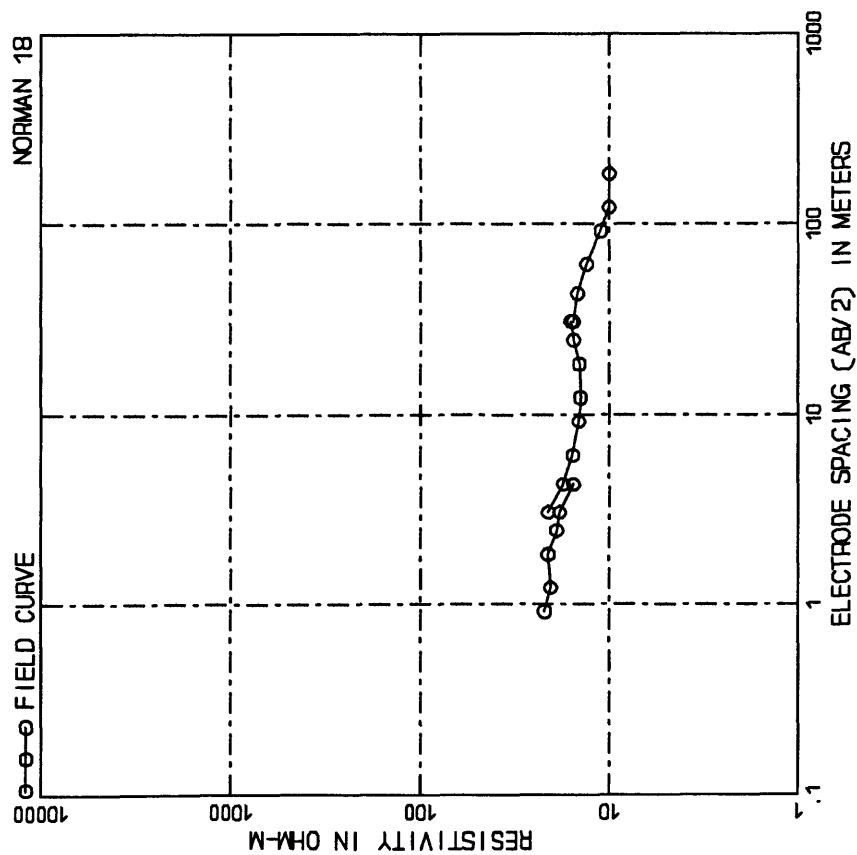


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	91.00	18.29	60.00	27.50
1.22	4.00	81.00	24.38	80.00	27.50
1.83	6.00	52.00	30.48	100.00	27.50
2.44	8.00	39.00	42.67	140.00	21.70
3.05	10.00	31.50	60.96	200.00	22.50
4.27	14.00	21.00	91.44	300.00	15.10
6.10	20.00	18.00	121.92	400.00	11.70
9.14	30.00	22.50	182.88	600.00	10.20
12.19	40.00	26.40			9.00

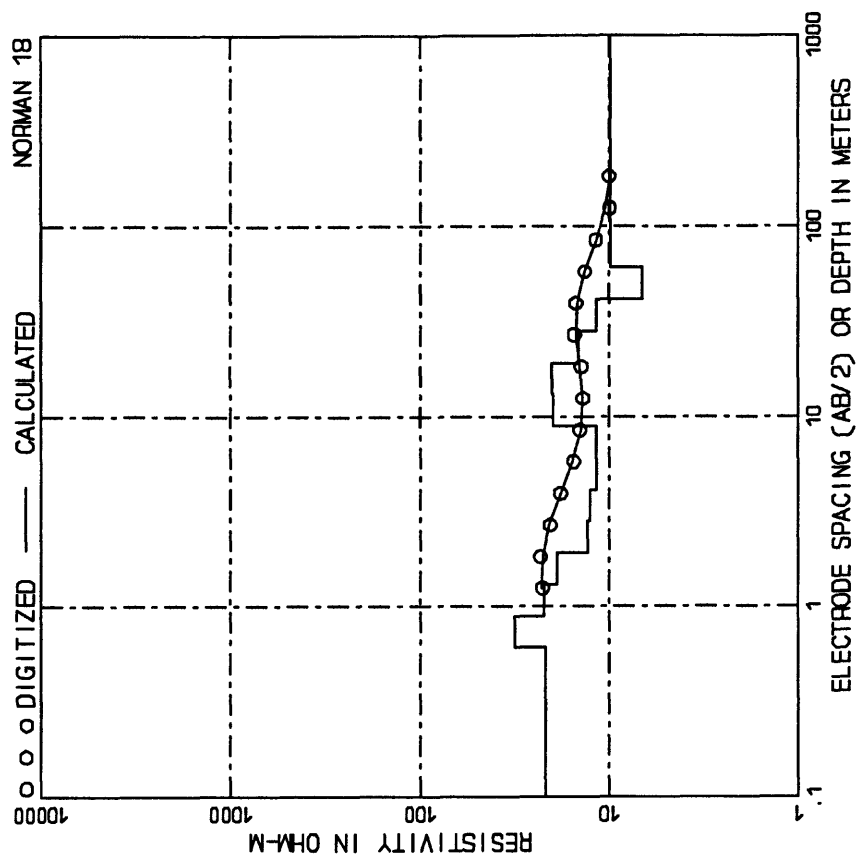


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	105.59	8.89	29.16	37.74
0.89	2.92	58.91	13.05	42.80	39.73
1.30	4.28	35.77	19.15	62.33	28.28
1.91	6.28	15.56	28.11	92.31	14.67
2.81	9.23	8.84	41.25	135.35	8.29
4.13	13.53	25.96	60.96	198.66	7.63
6.06	19.87	99999.00	99999.00	99999.00	8.53

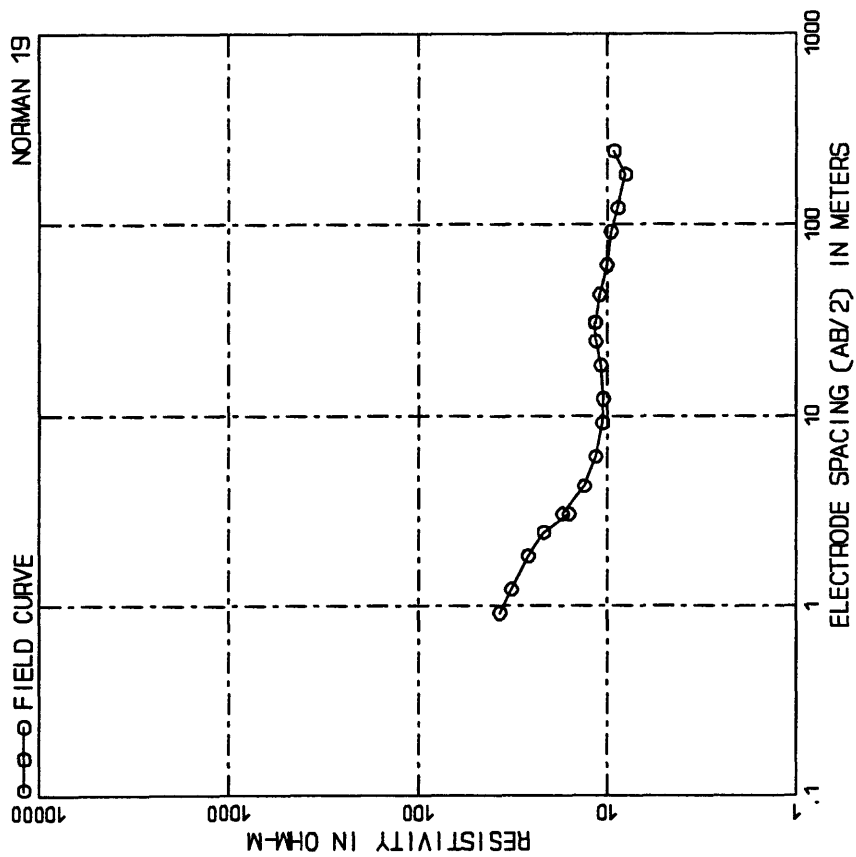




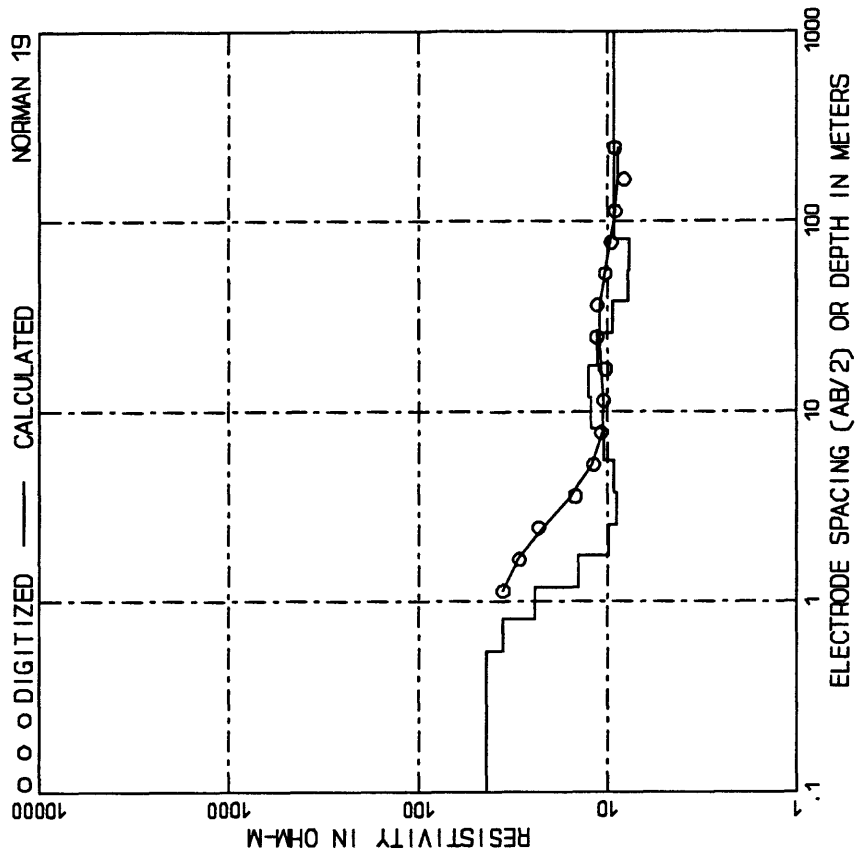
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.32	3.00	22.00	12.19	40.00	14.20
1.83	6.00	21.00	24.38	80.00	15.50
3.65	12.00	19.00	36.57	100.00	15.50
5.48	18.00	18.30	48.76	140.00	15.50
7.30	24.00	17.50	60.95	200.00	14.20
9.14	30.00	17.50	73.14	300.00	13.20
		14.50	85.33	400.00	11.10
			97.52	600.00	10.00



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	21.75	8.89	29.16	11.76
1.22	3.98	21.75	17.64	58.32	16.78
1.83	5.97	21.75	26.46	87.48	20.18
2.44	7.96	18.83	35.28	116.64	14.59
3.05	9.95	18.83	44.10	145.80	11.73
3.66	11.94	12.55	52.92	174.96	9.92
4.27	13.93	11.61	61.74	204.12	
4.88	15.92		70.56	233.28	
5.49	17.91		79.38	262.44	
6.10	19.90		88.20	291.60	
6.71	21.89		97.02	320.76	
7.32	23.88		105.84	349.92	
7.93	25.87		114.66	379.08	
8.54	27.86		123.48	408.24	
9.15	29.85		132.30	437.40	
9.76	31.84		141.12	466.56	
10.37	33.83		150.00	495.72	
10.98	35.82		158.82	524.88	
11.59	37.81		167.64	554.04	
12.20	39.80		176.46	583.20	
12.81	41.79		185.28	612.36	
13.42	43.78		194.10	641.52	
14.03	45.77		202.92	670.68	
14.64	47.76		211.74	700.00	
15.25	49.75		220.56	729.16	
15.86	51.74		229.38	758.32	
16.47	53.73		238.20	787.48	
17.08	55.72		247.02	816.64	
17.69	57.71		255.84	845.80	
18.30	59.70		264.66	874.96	
18.91	61.69		273.48	904.12	
19.52	63.68		282.30	933.28	
20.13	65.67		291.12	962.44	
20.74	67.66		300.00	991.60	
21.35	69.65		308.82	1020.76	
21.96	71.64		317.64	1049.92	
22.57	73.63		326.46	1079.08	
23.18	75.62		335.28	1108.24	
23.79	77.61		344.10	1137.40	
24.40	79.60		352.92	1166.56	
25.01	81.59		361.74	1195.72	
25.62	83.58		370.56	1224.88	
26.23	85.57		379.38	1254.04	
26.84	87.56		388.20	1283.20	
27.45	89.55		397.02	1312.36	
28.06	91.54		405.84	1341.52	
28.67	93.53		414.66	1370.68	
29.28	95.52		423.48	1400.00	
29.89	97.51		432.30	1429.16	
30.50	99.50		441.12	1458.32	
31.11	101.49		450.00	1487.48	
31.72	103.48		458.82	1516.64	
32.33	105.47		467.64	1545.80	
32.94	107.46		476.46	1574.96	
33.55	109.45		485.28	1604.12	
34.16	111.44		494.10	1633.28	
34.77	113.43		502.92	1662.44	
35.38	115.42		511.74	1691.60	
35.99	117.41		520.56	1720.76	
36.60	119.40		529.38	1750.00	
37.21	121.39		538.20	1779.16	
37.82	123.38		547.02	1808.32	
38.43	125.37		555.84	1837.48	
39.04	127.36		564.66	1866.64	
39.65	129.35		573.48	1895.80	
40.26	131.34		582.30	1924.96	
40.87	133.33		591.12	1954.12	
41.48	135.32		600.00	1983.28	
42.09	137.31		608.82	2012.44	
42.70	139.30		617.64	2041.60	
43.31	141.29		626.46	2070.76	
43.92	143.28		635.28	2100.00	
44.53	145.27		644.10	2129.16	
45.14	147.26		652.92	2158.32	
45.75	149.25		661.74	2187.48	
46.36	151.24		670.56	2216.64	
46.97	153.23		679.38	2245.80	
47.58	155.22		688.20	2274.96	
48.19	157.21		697.02	2304.12	
48.80	159.20		705.84	2333.28	
49.41	161.19		714.66	2362.44	
49.99	163.18		723.48	2391.60	
50.60	165.17		732.30	2420.76	
51.21	167.16		741.12	2450.00	
51.82	169.15		750.00	2479.16	
52.43	171.14		758.82	2508.32	
53.04	173.13		767.64	2537.48	
53.65	175.12		776.46	2566.64	
54.26	177.11		785.28	2595.80	
54.87	179.10		794.10	2624.96	
55.48	181.09		802.92	2654.12	
56.09	183.08		811.74	2683.28	
56.70	185.07		820.56	2712.44	
57.31	187.06		829.38	2741.60	
57.92	189.05		838.20	2770.76	
58.53	191.04		847.02	2800.00	
59.14	193.03		855.84	2829.16	
59.75	195.02		864.66	2858.32	
60.36	197.01		873.48	2887.48	
60.97	199.00		882.30	2916.64	
61.58	200.99		891.12	2945.80	
62.19	202.98		900.00	2974.96	
62.80	204.97		908.82	3004.12	
63.41	206.96		917.64	3033.28	
64.02	208.95		926.46	3062.44	
64.63	210.94		935.28	3091.60	
65.24	212.93		944.10	3120.76	
65.85	214.92		952.92	3150.00	
66.46	216.91		961.74	3179.16	
67.07	218.90		970.56	3208.32	
67.68	220.89		979.38	3237.48	
68.29	222.88		988.20	3266.64	
68.90	224.87		997.02	3295.80	
69.51	226.86		1005.84	3324.96	
70.12	228.85		1014.66	3354.12	
70.73	230.84		1023.48	3383.28	
71.34	232.83		1032.30	3412.44	
71.95	234.82		1041.12	3441.60	
72.56	236.81		1050.00	3470.76	
73.17	238.80		1058.82	3500.00	
73.78	240.79		1067.64	3529.16	
74.39	242.78		1076.46	3558.32	
75.00	244.77		1085.28	3587.48	
75.61	246.76		1094.10	3616.64	
76.22	248.75		1102.92	3645.80	
76.83	250.74		1111.74	3674.96	
77.44	252.73		1120.56	3704.12	
78.05	254.72		1129.38	3733.28	
78.66	256.71		1138.20	3762.44	
79.27	258.70		1147.02	3791.60	
79.88	260.69		1155.84	3820.76	
80.49	262.68		1164.66	3850.00	
81.10	264.67		1173.48	3879.16	
81.71	266.66		1182.30	3908.32	
82.32	268.65		1191.12	3937.48	
82.93	270.64		1200.00	3966.64	
83.54	272.63		1208.82	3995.80	
84.15	274.62		1217.64	4024.96	
84.76	276.61		1226.46	4054.12	
85.37	278.60		1235.28	4083.28	
85.98	280.59		1244.10	4112.44	
86.59	282.58		1252.92	4141.60	
87.20	284.57		1261.74	4170.76	
87.81	286.56		1270.56	4200.00	
88.42	288.55		1279.38	4229.16	
89.03	290.54		1288.20	4258.32	
89.64	292.53		1297.02	4287.48	
90.25	294.52		1305.84	4316.64	
90.86	296.51		1314.66	4345.80	
91.47	298.50		1323.48	4374.96	
92.08	300.49		1332.30	4404.12	
92.69	302.48		1341.12	4433.28	
93.30	304.47		1350.00	4462.44	
93.91	306.46		1358.82	4491.60	
94.52	308.45		1367.64	4520.76	
95.13	310.44		1376.46	4550.00	
95.74	312.43		1385.28	4579.16	
96.35	314.42		1394.10	4608.32	
96.96	316.41		1402.92	4637.48	
97.57	318.40		1411.74	4666.64	
98.18	320.39		1420.56	4695.80	
98.79	322.38		1429.38	4724.96	
99.40	324.37		1438.20	4754.12	
100.01	326.36		1447.02	4783.28	
100.62	328.35		1455.84	4812.44	
101.23	330.34		1464.66	4841.60	
101.84	332.33		1473.48	4870.76	
102.45	334.32		1482.30	4900.00	
103.06	336.31		1491.12	4929.16	
103.67	338.30		1500.00	4958.32	
104.28	340.29		1508.82	4987.48	
104.89	342.28		1517.64	5016.64	
105.50	344.27		1526.46	5045.80	
106.11	346.26		1535.28	5074.96	
106.72	348.25		1544.10	5104.12	
107.33	350.24		1552.92	5133.28	
107.94	352.23		1561.74	5162.44	
108.55	354.22		1570.56	5191.60	
109.16	356.21		1579.38	5220.76	
109.77	358.20		1588.20	5250.00	
110.38	360.19		1597.02	5279.16	
110.99	362.18		1605.84	5308.32	
111.60	364.17		1614.66	5337.48	
112.21	366.16		1623.48	5366.64	
112.82	368.15		1632.30	5395.80	
113.43	370.14		1641.12	5424.96	
114.04	372.13		1650.00	5454.12	
114.65	374.12		1658.82	5483.28	
115.26	376.11		1667.64	5512.44	
115.87	378.10		1676.46	5541.60	
116.48	380.09		1685.28	5570.76	
117.09	382.08		1694.10	5600.00	
117.70	384.07		1702.92	5629.16	
118.31	386.06		1711.74	5658.32	
118.92	388.05		1720.56	5687.48	
119.53	390.04		1729.38	5716.64	
120.14	392.03		1738.20	5745.80	
120.75	394.02		1747.02	5774.96	
121.36	396.01		1755.84	5804.12	
121.97	398.00		1764.66	5833.28	
122.58	400.00		1773.48	5862.44	
123.19	401.99		1782.30	5891.60	
123.80	403.98		1791.12	5920.76	
124.41	405.97		1800.00	5950.00	
125.02	407.96		1808.82	5979.16	
125.63	409.95		1817.64	6008.32	
126.24	411.94		1826.46	6037.48	
126.85	413.93		1835.28	6066.64	
127.46	415.92		1844.10	6095.80	
128.07	417.91		1852.92	6124.96	
128.68	419.90		1861.74	6154.12	
129.29	421.89		1870.56	6183.28	
129.90	423.88		1879.38	6212.44	
130.51	425.87		1888.20	6241.60	
131.12	427.86		1897.02	6270.76	
131.73	429.85		1905.84	6300.00	
132.34	431.84		1914.66	6329.16	
132.95	433.83		1923.48	6358.32	
133					

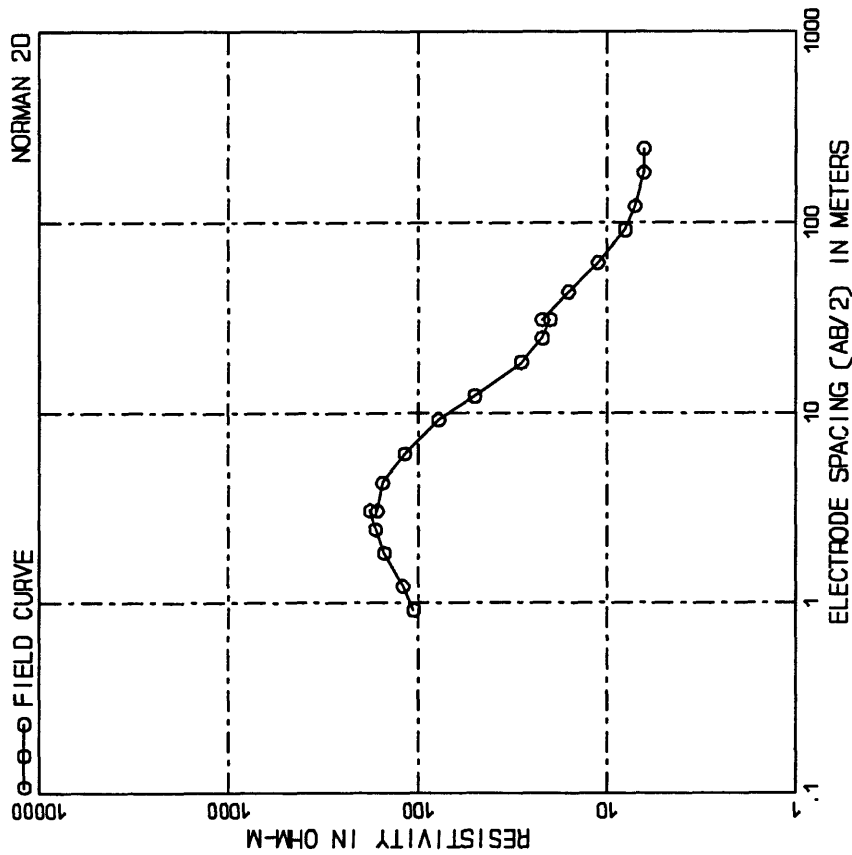


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	37.00 {	18.29 {	60.00 {	10.80 {
1.22 {	4.00 {	32.00 {	24.38 {	80.00 {	11.50 {
1.83 {	6.00 {	26.30 {	30.48 {	100.00 {	11.50 {
2.44 {	8.00 {	21.60 {	36.58 {	140.00 {	11.50 {
3.05 {	10.00 {	16.00 {	42.67 {	200.00 {	10.00 {
3.66 {	12.00 {	13.30 {	48.76 {	300.00 {	9.60 {
4.27 {	14.00 {	11.60 {	54.84 {	400.00 {	8.80 {
4.88 {	16.00 {	10.60 {	60.92 {	600.00 {	8.00 {
5.49 {	18.00 {	10.50 {	67.00 {	800.00 {	9.20 {

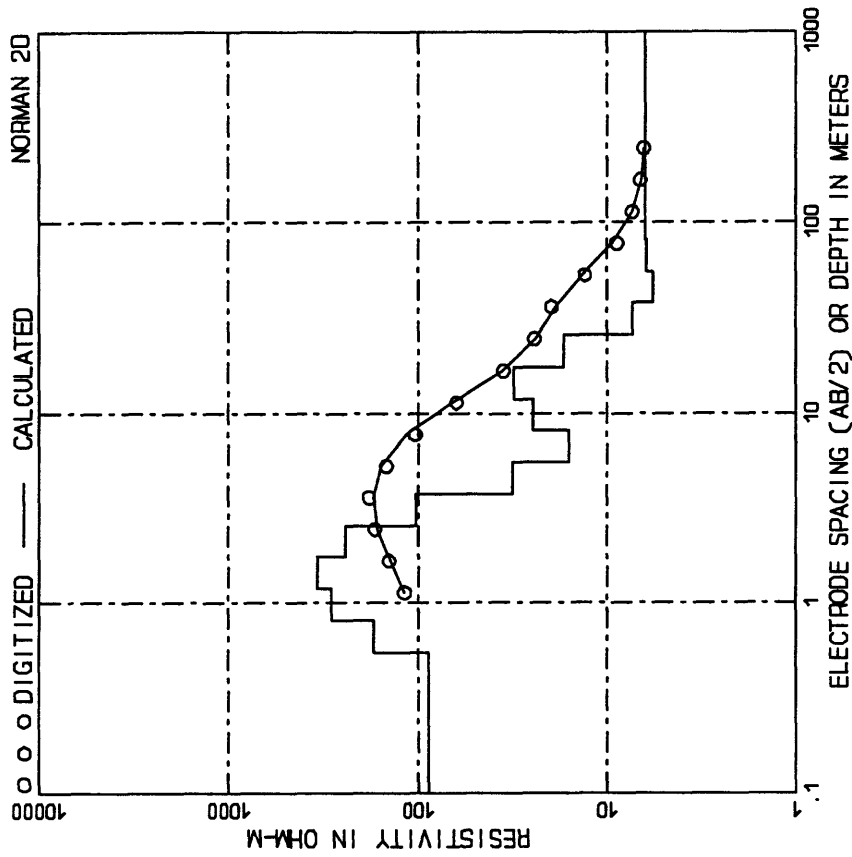


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55 {	1.80 {	43.35 {	8.07 {	26.49 {	10.52 {
0.81 {	2.65 {	35.58 {	11.85 {	38.88 {	12.20 {
1.07 {	3.50 {	24.19 {	15.73 {	51.07 {	12.60 {
1.33 {	4.37 {	14.23 {	19.60 {	63.76 {	11.32 {
1.59 {	5.21 {	9.83 {	23.47 {	76.45 {	9.35 {
1.85 {	6.06 {	8.93 {	27.34 {	90.47 {	7.84 {
2.11 {	6.91 {	9.22 {	31.21 {	102.74 {	7.73 {
2.37 {	7.76 {		35.08 {	115.00 {	9.26 {
2.63 {	8.61 {		38.95 {	127.29 {	
2.89 {	9.46 {		42.82 {	139.58 {	
3.15 {	10.31 {		46.69 {	151.87 {	
3.41 {	11.16 {		50.56 {	164.16 {	
3.67 {	12.01 {		54.43 {	176.45 {	
3.93 {	12.86 {		58.30 {	188.74 {	
4.19 {	13.71 {		62.17 {	201.03 {	
4.45 {	14.56 {		66.04 {	213.32 {	
4.71 {	15.41 {		69.91 {	225.61 {	
4.97 {	16.26 {		73.78 {	237.90 {	
5.23 {	17.11 {		77.65 {	250.19 {	
5.49 {	17.96 {		81.52 {	262.48 {	
5.75 {	18.81 {		85.39 {	274.77 {	
6.01 {	19.66 {		89.26 {	287.06 {	
6.27 {	20.51 {		93.13 {	299.35 {	
6.53 {	21.36 {		97.00 {	311.64 {	
6.79 {	22.21 {		100.87 {	323.93 {	
7.05 {	23.06 {		104.74 {	336.22 {	
7.31 {	23.91 {		108.61 {	348.51 {	
7.57 {	24.76 {		112.48 {	360.80 {	
7.83 {	25.61 {		116.35 {	373.09 {	
8.09 {	26.46 {		120.22 {	385.38 {	
8.35 {	27.31 {		124.09 {	397.67 {	
8.61 {	28.16 {		127.96 {	409.96 {	
8.87 {	29.01 {		131.83 {	422.25 {	
9.13 {	29.86 {		135.70 {	434.54 {	
9.39 {	30.71 {		139.57 {	446.83 {	
9.65 {	31.56 {		143.44 {	459.12 {	
9.91 {	32.41 {		147.31 {	471.41 {	
10.17 {	33.26 {		151.18 {	483.70 {	
10.43 {	34.11 {		155.05 {	496.00 {	
10.69 {	34.96 {		158.92 {	508.29 {	
10.95 {	35.81 {		162.79 {	520.58 {	
11.21 {	36.66 {		166.66 {	532.87 {	
11.47 {	37.51 {		170.53 {	545.16 {	
11.73 {	38.36 {		174.40 {	557.45 {	
11.99 {	39.21 {		178.27 {	569.74 {	
12.25 {	40.06 {		182.14 {	582.03 {	
12.51 {	40.91 {		186.01 {	594.32 {	
12.77 {	41.76 {		189.88 {	606.61 {	
13.03 {	42.61 {		193.75 {	618.90 {	
13.29 {	43.46 {		197.62 {	631.19 {	
13.55 {	44.31 {		201.49 {	643.48 {	
13.81 {	45.16 {		205.36 {	655.77 {	
14.07 {	46.01 {		209.23 {	668.06 {	
14.33 {	46.86 {		213.10 {	680.35 {	
14.59 {	47.71 {		216.97 {	692.64 {	
14.85 {	48.56 {		220.84 {	704.93 {	
15.11 {	49.41 {		224.71 {	717.22 {	
15.37 {	50.26 {		228.58 {	729.51 {	
15.63 {	51.11 {		232.45 {	741.80 {	
15.89 {	51.96 {		236.32 {	754.09 {	
16.15 {	52.81 {		240.19 {	766.38 {	
16.41 {	53.66 {		244.06 {	778.67 {	
16.67 {	54.51 {		247.93 {	790.96 {	
16.93 {	55.36 {		251.80 {	803.25 {	
17.19 {	56.21 {		255.67 {	815.54 {	
17.45 {	57.06 {		259.54 {	827.83 {	
17.71 {	57.91 {		263.41 {	840.12 {	
17.97 {	58.76 {		267.28 {	852.41 {	
18.23 {	59.61 {		271.15 {	864.70 {	
18.49 {	60.46 {		275.02 {	877.00 {	
18.75 {	61.31 {		278.89 {	889.29 {	
19.01 {	62.16 {		282.76 {	901.58 {	
19.27 {	63.01 {		286.63 {	913.87 {	
19.53 {	63.86 {		290.50 {	926.16 {	
19.79 {	64.71 {		294.37 {	938.45 {	
20.05 {	65.56 {		298.24 {	950.74 {	
20.31 {	66.41 {		302.11 {	963.03 {	
20.57 {	67.26 {		305.98 {	975.32 {	
20.83 {	68.11 {		309.85 {	987.61 {	
21.09 {	68.96 {		313.72 {	1000.00 {	
21.35 {	69.81 {		317.59 {		
21.61 {	70.66 {		321.46 {		
21.87 {	71.51 {		325.33 {		
22.13 {	72.36 {		329.20 {		
22.39 {	73.21 {		333.07 {		
22.65 {	74.06 {		336.94 {		
22.91 {	74.91 {		340.81 {		
23.17 {	75.76 {		344.68 {		
23.43 {	76.61 {		348.55 {		
23.69 {	77.46 {		352.42 {		
23.95 {	78.31 {		356.29 {		
24.21 {	79.16 {		360.16 {		
24.47 {	80.01 {		364.03 {		
24.73 {	80.86 {		367.90 {		
24.99 {	81.71 {		371.77 {		
25.25 {	82.56 {		375.64 {		
25.51 {	83.41 {		379.51 {		
25.77 {	84.26 {		383.38 {		
26.03 {	85.11 {		387.25 {		
26.29 {	85.96 {		391.12 {		
26.55 {	86.81 {		394.99 {		
26.81 {	87.66 {		398.86 {		
27.07 {	88.51 {		402.73 {		
27.33 {	89.36 {		406.60 {		
27.59 {	90.21 {		410.47 {		
27.85 {	91.06 {		414.34 {		
28.11 {	91.91 {		418.21 {		
28.37 {	92.76 {		422.08 {		
28.63 {	93.61 {		425.95 {		
28.89 {	94.46 {		429.82 {		
29.15 {	95.31 {		433.69 {		
29.41 {	96.16 {		437.56 {		
29.67 {	97.01 {		441.43 {		
29.93 {	97.86 {		445.30 {		
30.19 {	98.71 {		449.17 {		
30.45 {	99.56 {		453.04 {		
30.71 {	100.41 {		456.91 {		
30.97 {	101.26 {		460.78 {		
31.23 {	102.11 {		464.65 {		
31.49 {	102.96 {		468.52 {		
31.75 {	103.81 {		472.39 {		
32.01 {	104.66 {		476.26 {		
32.27 {	105.51 {		480.13 {		
32.53 {	106.36 {		484.00 {		
32.79 {	107.21 {		487.87 {		
33.05 {	108.06 {		491.74 {		
33.31 {	108.91 {		495.61 {		
33.57 {	109.76 {		499.48 {		
33.83 {	110.61 {		503.35 {		
34.09 {	111.46 {		507.22 {		
34.35 {	112.31 {		511.09 {		
34.61 {	113.16 {		514.96 {		
34.87 {	114.01 {		518.83 {		
35.13 {	114.86 {		522.70 {		
35.39 {	115.71 {		526.57 {		
35.65 {	116.56 {		530.44 {		
35.91 {	117.41 {		534.31 {		
36.17 {	118.26 {		538.18 {		
36.43 {	119.11 {		542.05 {		
36.69 {	120.00 {		545.92 {		
36.95 {	120.85 {		549.79 {		
37.21 {	121.70 {		553.66 {		
37.47 {	122.55 {		557.53 {		
37.73 {	123.40 {		561.40 {		
37.99 {	124.25 {		565.27 {		
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38.51 {	125.95 {		573.01 {		
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39.81 {	130.20 {		592.36 {		
40.07 {	131.05 {		596.23 {		
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40.85 {	133.60 {		607.84 {		
41.11 {	134.45 {		611.71 {		
41.37 {	135.30 {		615.58 {		
41.63 {	136.15 {		619.45 {		
41.89 {	137.00 {		623.32 {		
42.15 {	137.85 {		627.19 {		
42.41 {	138.70 {		631.06 {		
42.67 {	139.55 {		634.93 {		
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43.19 {	141.25 {		642.67 {		
43.45 {	142.10 {		646.54 {		
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44.23 {	144.65 {		658.15 {		
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44.75 {	146.35 {		665.89 {		
45.01 {	147.20 {		669.76 {		
45.27 {	148.05 {		673.63 {		
45.53 {	148.90 {		677.50 {		
45.79 {	149.75 {		681.37 {		
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47.09 {	154.00 {		700.72 {		
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47.61 {	155.70 {		708.46 {		
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48.39 {	158.25 {		720.07 {		
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48.91 {	160.00 {		727.81 {		
49.17 {	160.85 {		731.68 {		
49.43 {	161.70 {		735.55 {		
49.69 {	162.55 {		739.42 {		
49.95 {	163.40 {		743.29 {		
50.21 {	164.25 {		747.16 {		
50.47 {	165.10 {		751.03 {		
50.73 {	165.95 {		754.90 {		
50.99 {	166.80 {		758.77 {		
51.25 {	167.65 {		762.64 {		
51.51 {	168.50 {		766.51 {		
51.77 {	169.35 {		770.38 {		
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52.29 {	171.05 {		778.12 {		

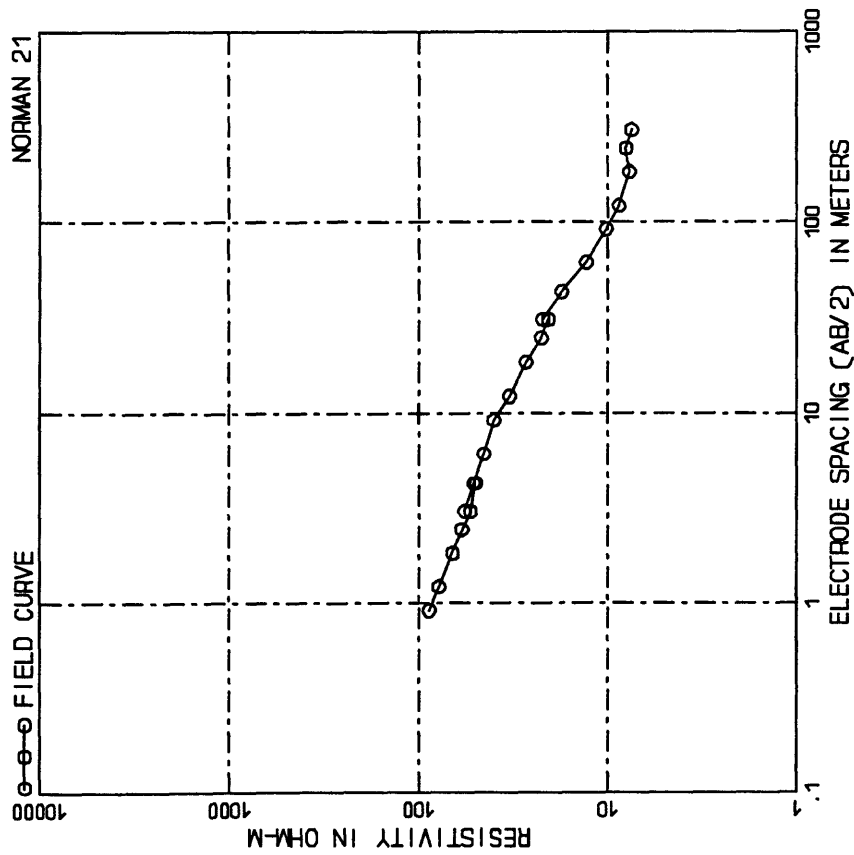




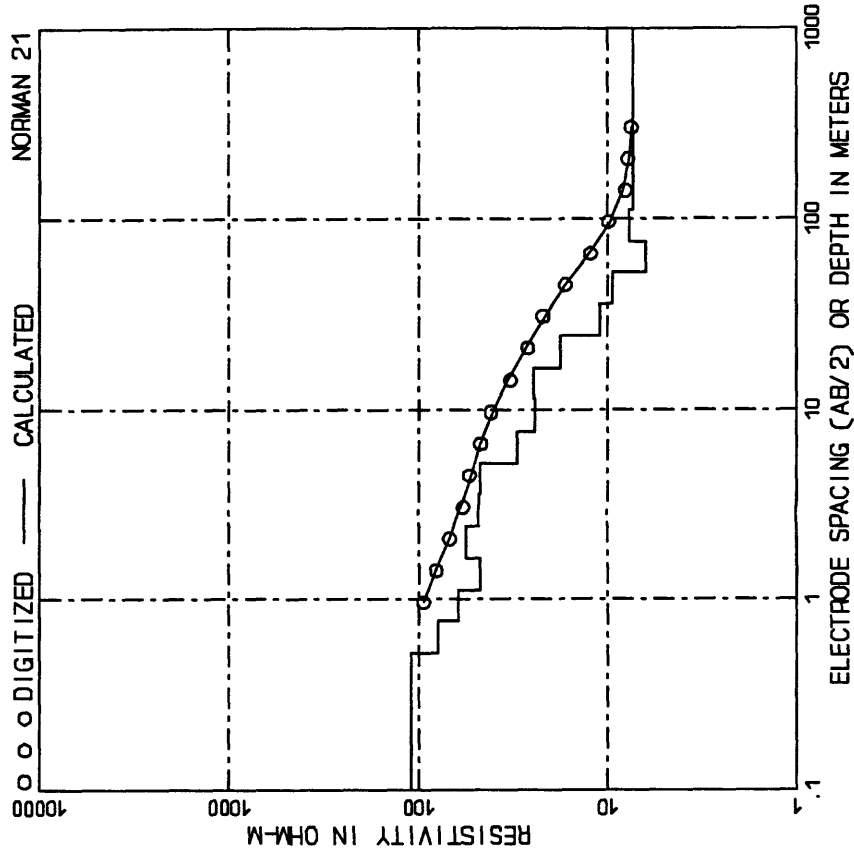
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	105.00	18.29	60.00	28.50
1.82	6.00	120.00	24.38	80.00	22.00
2.73	9.00	150.00	30.48	100.00	20.00
3.65	12.00	167.00	36.57	120.00	22.00
4.57	15.00	178.00	42.67	140.00	16.00
5.49	18.00	163.00	48.76	160.00	11.20
6.41	21.00	154.00	54.86	180.00	8.00
7.32	24.00	117.00	60.96	200.00	7.10
8.24	27.00	78.00	67.05	220.00	6.40
9.15	30.00	50.00	73.15	240.00	6.40
10.07	33.00		79.25	260.00	
10.98	36.00		85.34	280.00	
11.90	39.00		91.44	300.00	
12.81	42.00		97.54	320.00	
13.73	45.00		103.64	340.00	
14.64	48.00		109.73	360.00	
15.56	51.00		115.83	380.00	
16.47	54.00		121.93	400.00	
17.39	57.00		128.03	420.00	
18.30	60.00		134.13	440.00	
19.22	63.00		140.23	460.00	
20.13	66.00		146.33	480.00	
21.05	69.00		152.43	500.00	
21.96	72.00		158.53	520.00	
22.88	75.00		164.63	540.00	
23.79	78.00		170.73	560.00	
24.71	81.00		176.83	580.00	
25.62	84.00		182.93	600.00	
26.54	87.00		189.03	620.00	
27.45	90.00		195.13	640.00	
28.37	93.00		201.23	660.00	
29.28	96.00		207.33	680.00	
30.20	99.00		213.43	700.00	
31.11	102.00		219.53	720.00	
32.03	105.00		225.63	740.00	
32.94	108.00		231.73	760.00	
33.86	111.00		237.83	780.00	
34.77	114.00		243.93	800.00	



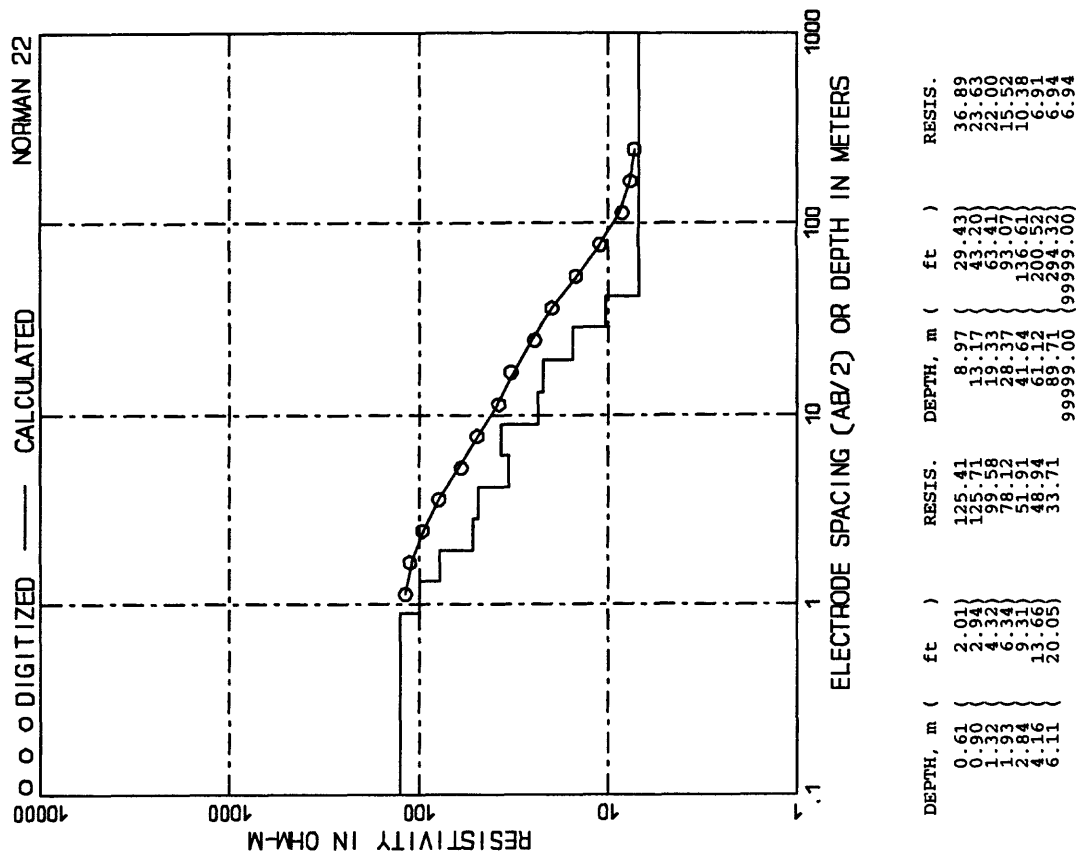
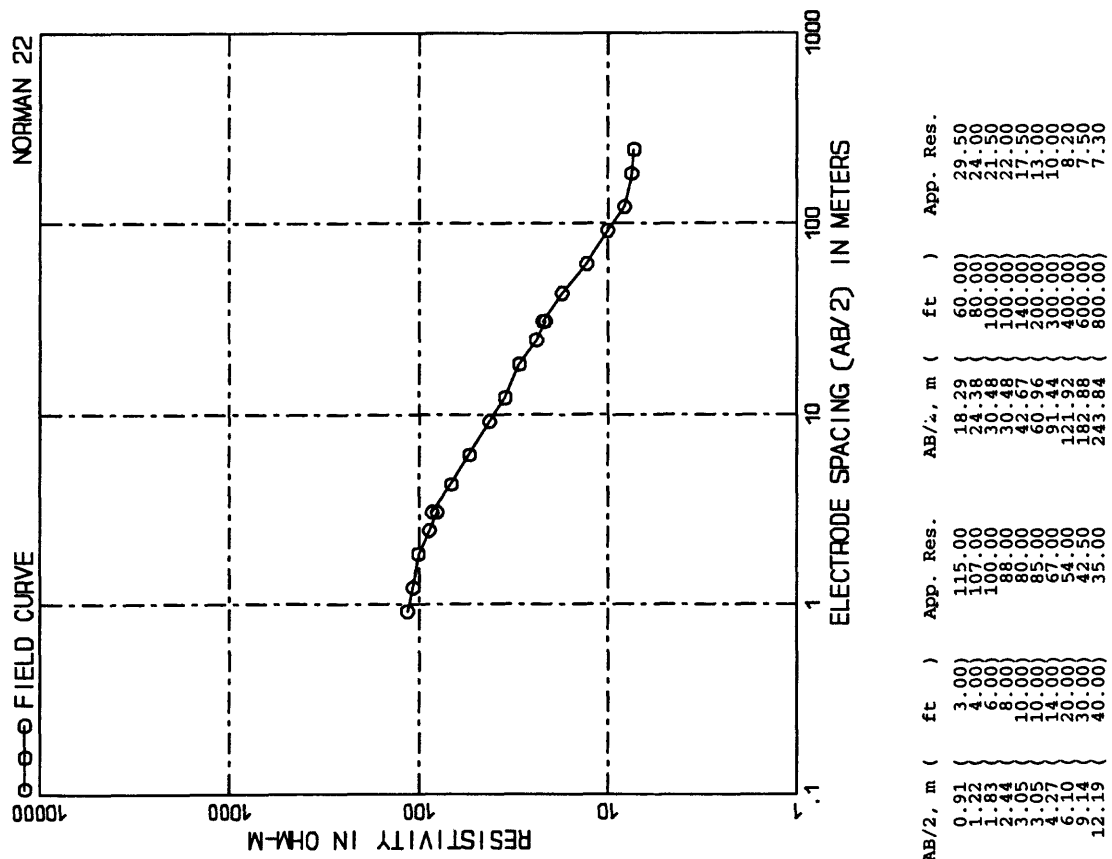
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55	1.80	87.73	8.07	26.49	16.04
0.81	2.65	170.38	11.85	38.88	24.55
1.19	3.89	286.19	17.39	57.07	31.02
1.74	5.71	336.01	25.53	83.76	16.97
2.55	8.38	241.82	37.47	122.95	7.38
3.75	12.29	103.05	55.01	180.47	5.75
5.50	18.05	31.65	80.74	264.89	6.20
			99999.00	99999.00	6.25

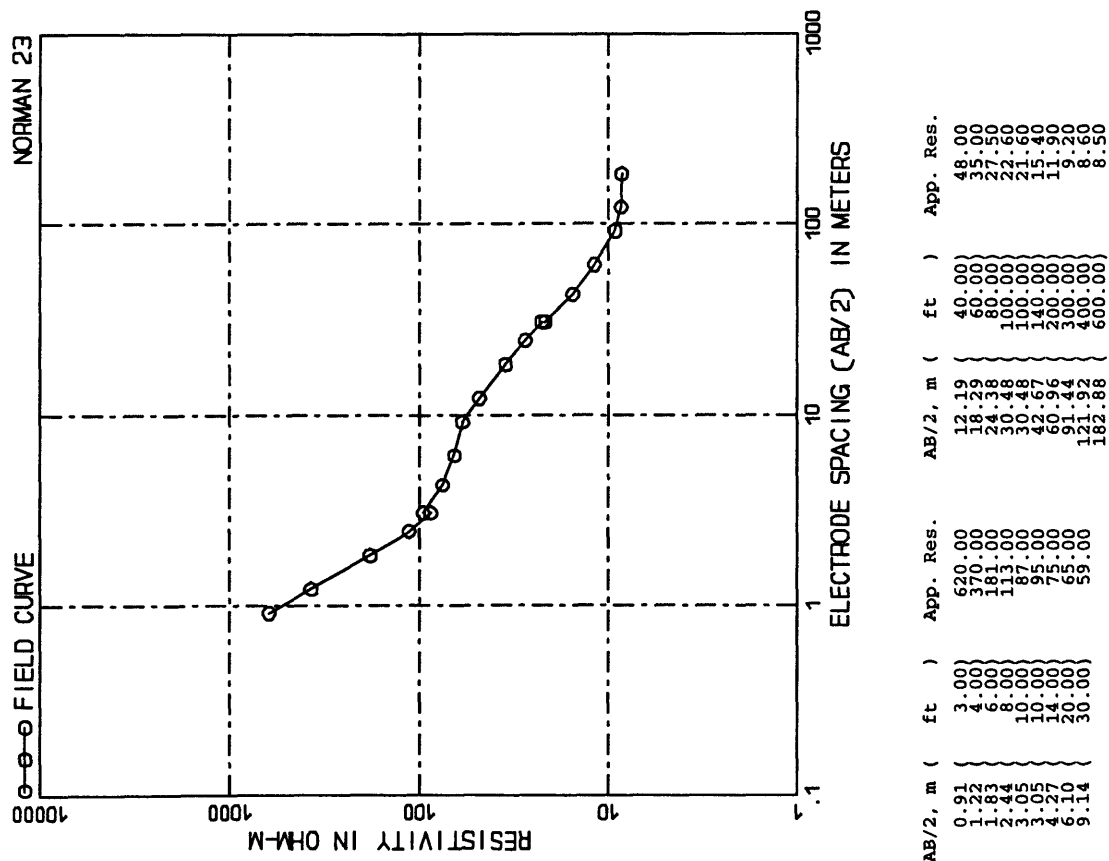


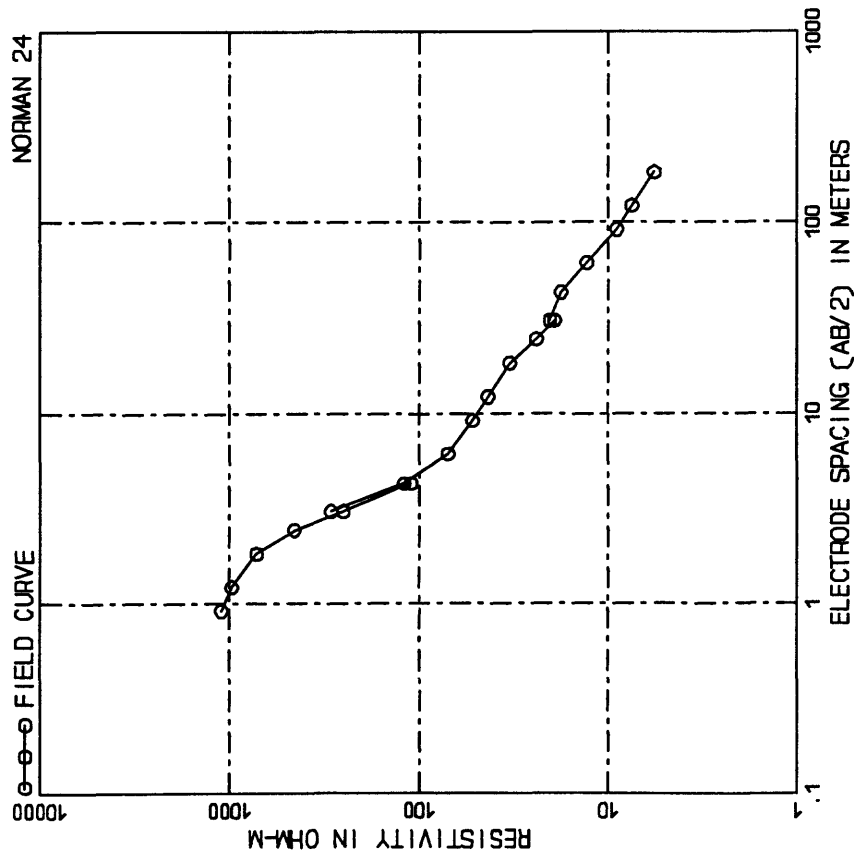
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	88.00	18.29	60.00	27.00
1.22	4.00	78.00	24.38	80.00	22.50
1.83	6.00	68.00	30.48	100.00	22.50
2.44	8.00	58.00	42.67	140.00	17.50
3.05	10.00	53.00	60.96	200.00	13.00
4.27	14.00	50.00	91.44	300.00	10.20
6.10	20.00	51.00	121.92	400.00	8.70
9.14	30.00	45.00	182.88	600.00	7.70
12.19	40.00	40.00	243.84	800.00	8.00
		33.00	304.80	1000.00	7.50



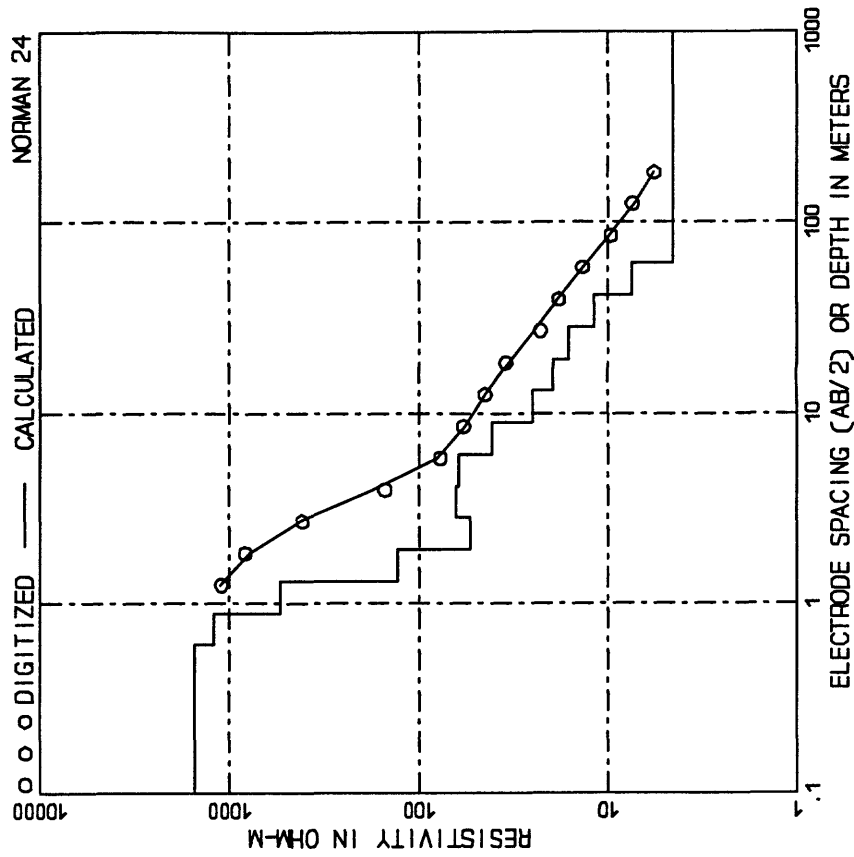
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.52	1.71	108.31	11.21	36.79	24.29
0.72	2.36	78.21	16.45	53.79	24.75
1.12	3.68	61.21	24.16	78.20	17.84
1.65	5.40	47.13	35.45	116.34	11.03
2.42	7.93	35.09	52.05	170.76	9.42
3.55	11.63	28.05	76.40	250.65	6.30
5.20	17.08	20.43	112.14	367.90	7.64
7.64	25.06	15.19	99999.00	99999.00	7.29



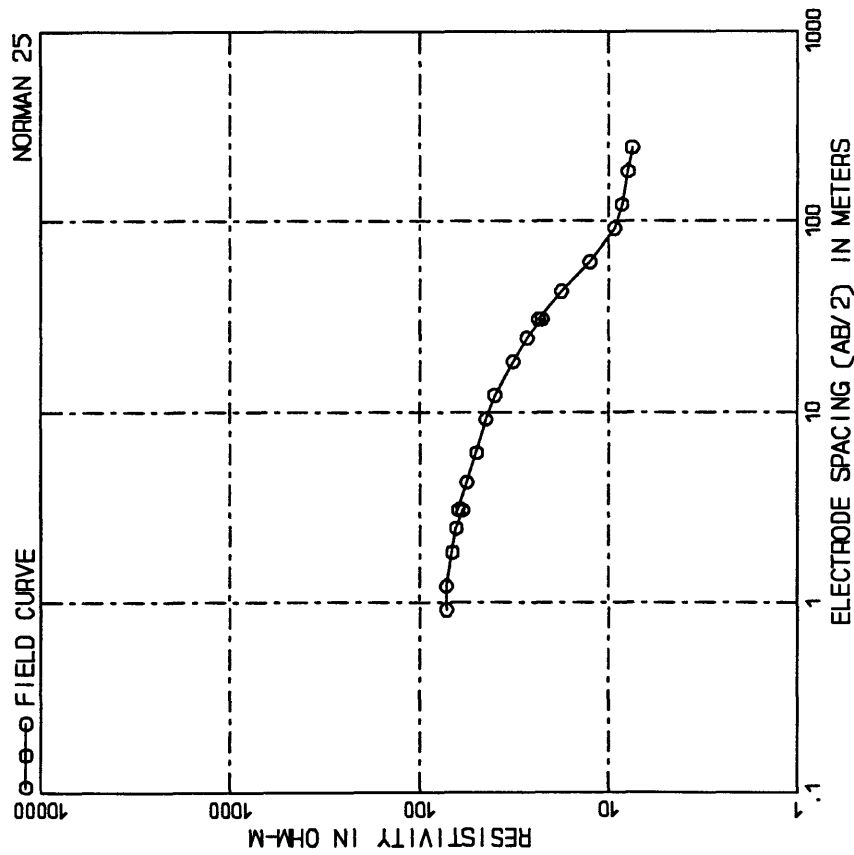




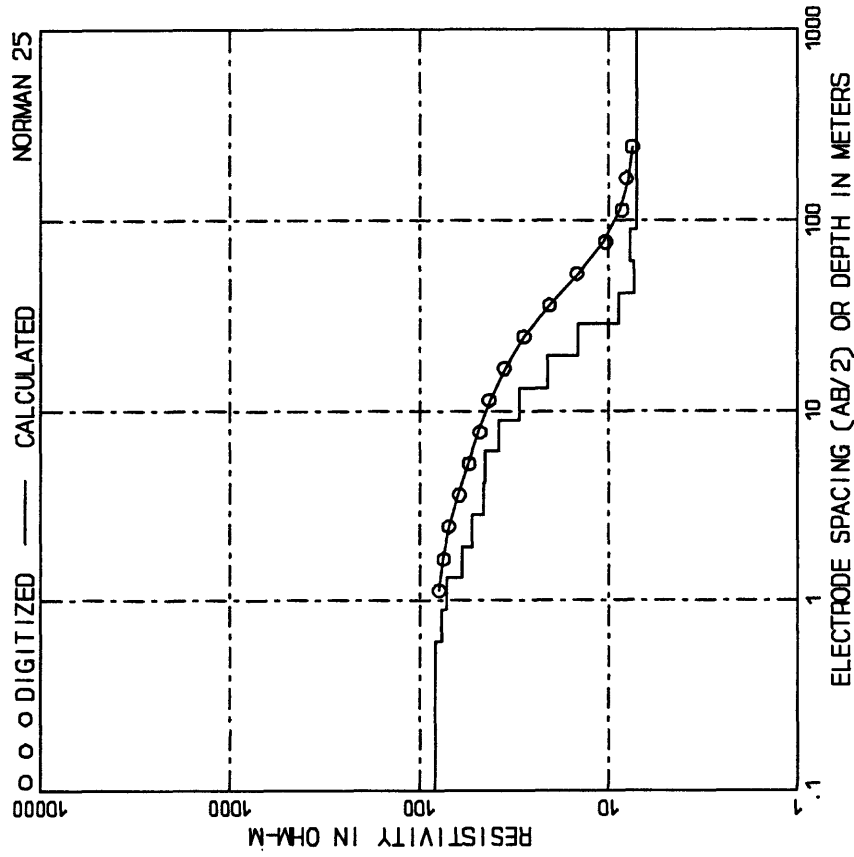
AB/2, m (	ft )	APP. RES.	AB/2, m (	ft )	APP. RES.
0.91	3.00	1100.00	12.19	40.00	43.00
1.23	4.00	970.00	18.29	60.00	33.00
1.83	6.00	720.00	24.38	80.00	24.00
2.44	8.00	555.00	30.48	100.00	19.30
3.05	10.00	450.00	36.58	120.00	15.80
4.27	14.00	310.00	42.67	140.00	13.00
3.05	10.00	290.00	60.96	200.00	9.50
4.27	14.00	120.00	91.44	300.00	7.50
6.10	20.00	70.00	121.92	400.00	5.70
9.14	30.00	52.00	182.88	600.00	



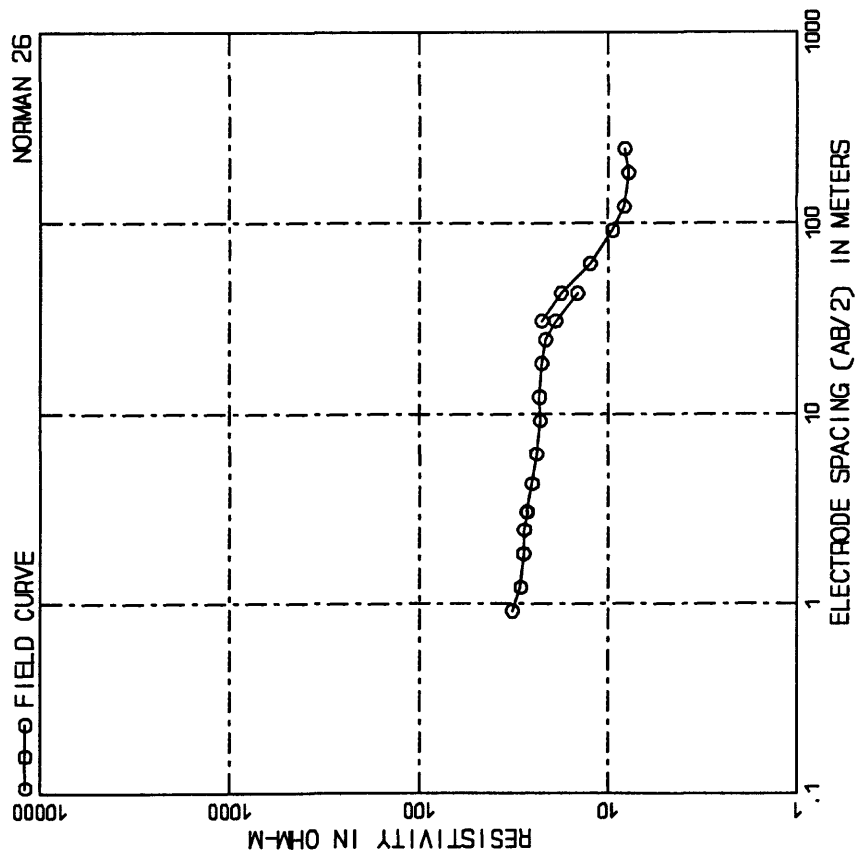
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	1518.03	8.89	29.16	41.00
0.89	2.92	1210.47	13.05	42.80	25.15
1.30	4.28	541.34	19.15	62.82	19.61
1.91	6.28	129.44	28.11	92.21	16.27
2.81	9.23	53.14	41.25	135.35	11.86
4.13	13.53	63.58	60.55	198.66	7.47
6.06	19.87	61.78	99999.00	99999.00	4.52



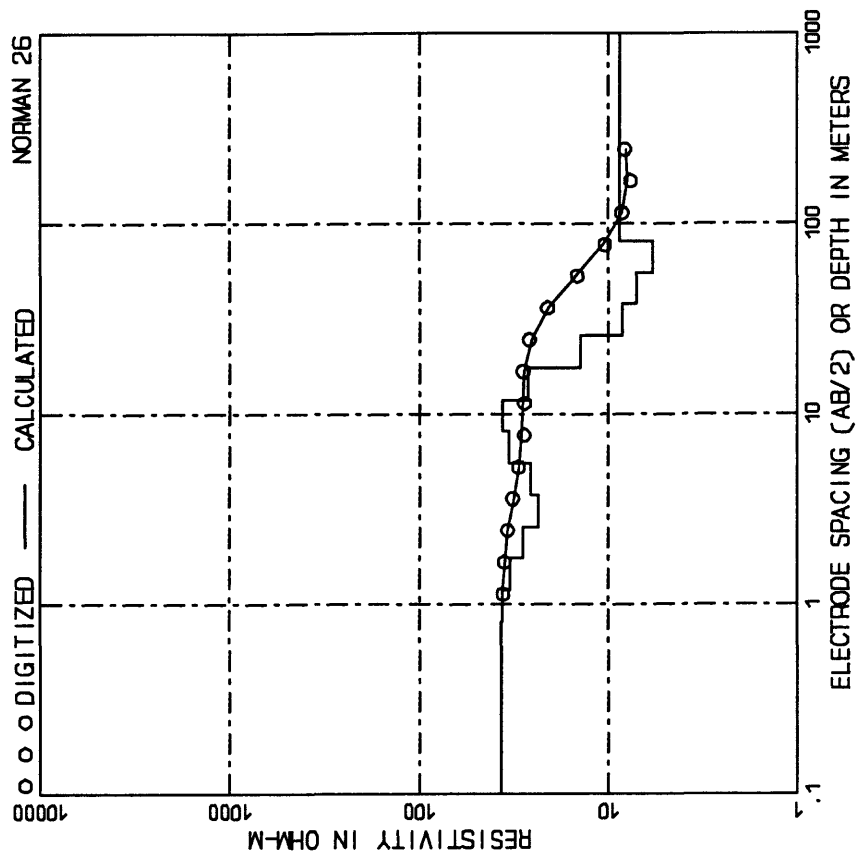
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	72.00	18.29	60.00	32.00
1.22	4.00	67.00	24.38	80.00	27.00
1.83	6.00	64.00	30.48	100.00	22.60
2.44	8.00	59.00	30.48	100.00	23.50
3.05	10.00	52.00	42.67	140.00	17.80
3.05	10.00	62.00	60.96	200.00	12.60
4.27	14.00	56.00	91.44	300.00	9.30
6.10	20.00	44.50	121.92	400.00	8.50
9.14	30.00	40.00	182.88	600.00	7.90
12.19	40.00	40.00	243.84	800.00	7.50



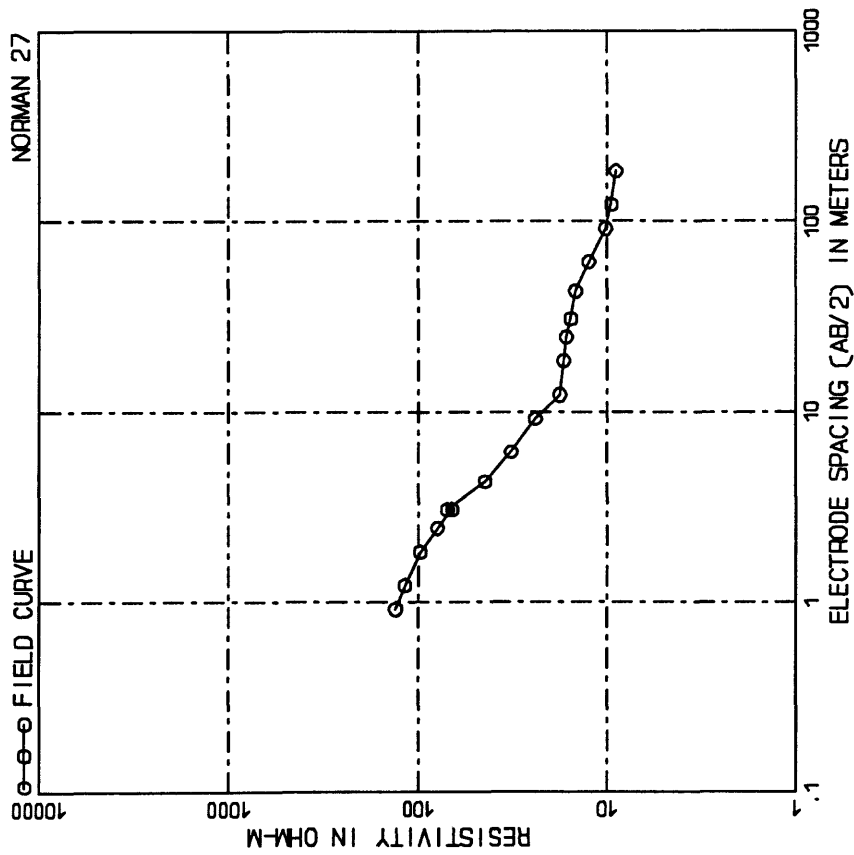
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	2.01	82.71	8.97	29.43	37.76
0.90	2.94	76.42	13.17	43.20	29.74
1.32	4.32	72.30	19.33	63.41	21.02
1.93	6.34	59.52	28.37	93.07	14.48
2.84	9.31	52.71	41.64	136.61	8.89
4.16	13.66	45.96	61.12	200.52	7.31
6.11	20.05	45.05	89.71	294.32	7.71
			99999.00	99999.00	7.07



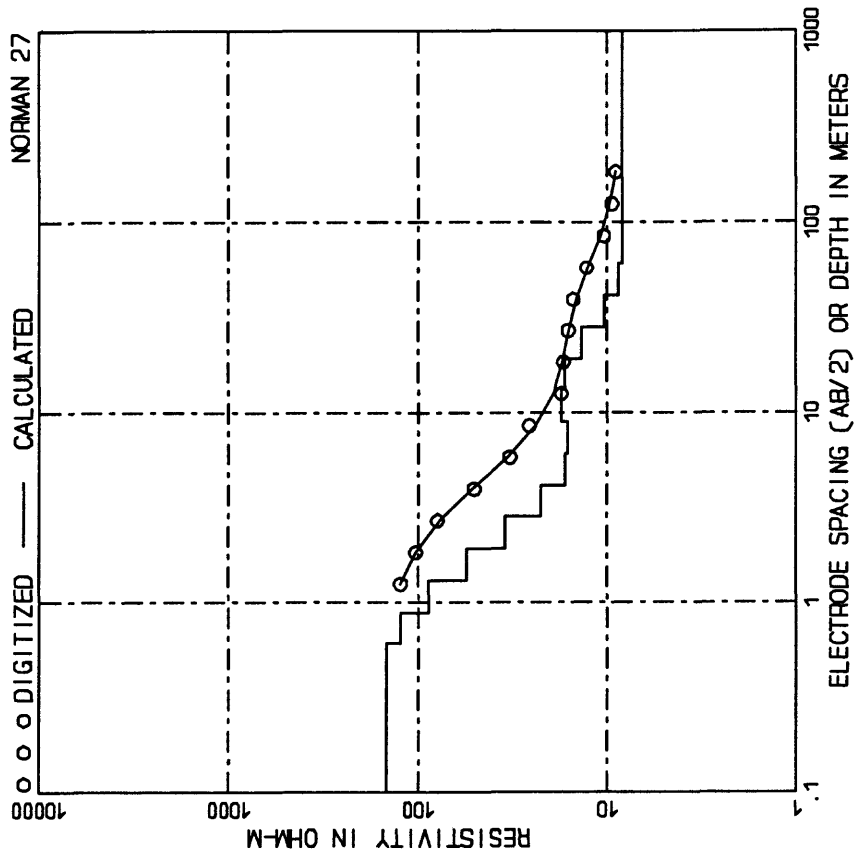
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	32.00	18.29	60.00	22.40
1.23	4.00	29.00	24.38	80.00	21.50
1.83	6.00	28.00	30.48	100.00	19.00
2.43	8.00	27.80	42.67	140.00	14.00
3.03	10.00	27.80	60.96	200.00	12.30
3.63	12.00	27.50	89.14	300.00	12.50
4.23	14.00	24.00	117.97	400.00	9.20
4.83	16.00	23.80	143.84	600.00	7.80
5.43	18.00	23.80	213.84	800.00	8.20
6.03	20.00				
6.63	22.00				
7.23	24.00				
7.83	26.00				
8.43	28.00				
9.03	30.00				
9.63	32.00				
10.23	34.00				
10.83	36.00				
11.43	38.00				
12.03	40.00				



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55	1.80	36.72	8.07	26.49	33.58
0.81	2.65	37.09	11.85	38.88	28.05
1.11	3.65	36.00	17.39	57.07	26.58
1.41	4.65	33.03	25.33	83.96	14.09
1.71	5.65	28.45	35.47	116.23	9.20
2.01	6.65	23.96	48.71	164.89	5.78
2.31	7.65		66.99	220.00	8.68
2.61	8.65		9999.00	9999.00	

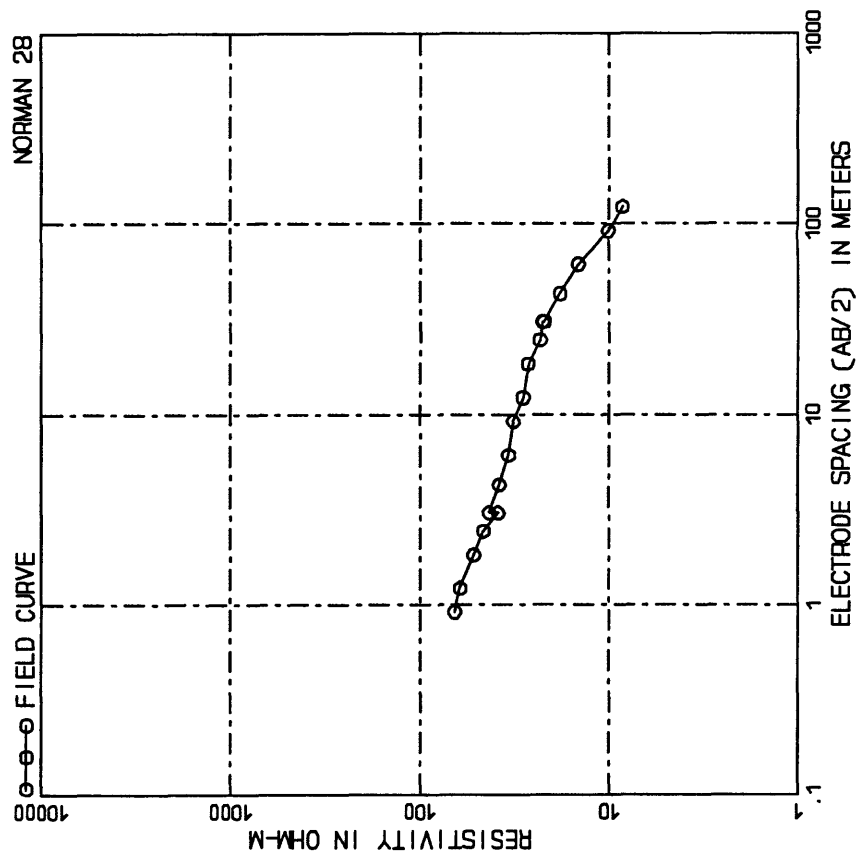


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	131.00	12.19	40.00	17.80
1.82	6.00	107.00	24.38	80.00	17.00
2.73	9.00	79.00	36.57	120.00	16.20
3.64	12.00	62.00	48.76	160.00	15.40
4.55	15.00	50.00	60.95	200.00	14.60
5.46	18.00	44.00	73.14	240.00	13.80
6.37	21.00	38.00	85.33	280.00	13.00
7.28	24.00	32.00	97.52	320.00	12.20
8.19	27.00	27.00	109.71	360.00	11.40
9.10	30.00	24.00	121.90	400.00	10.60
			134.09	440.00	9.80
			146.28	480.00	9.00

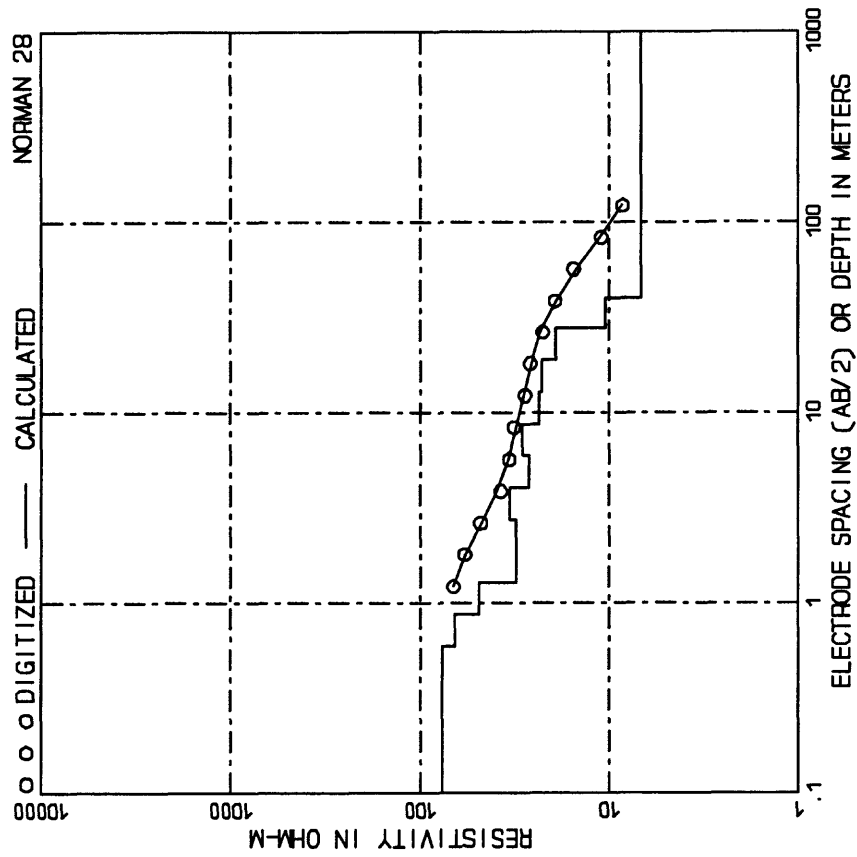


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	1.99	147.48	8.89	29.16	16.27
0.91	2.98	123.97	13.02	42.80	15.40
1.82	5.96	98.78	26.11	85.61	14.60
2.73	8.94	73.35	39.17	128.42	13.80
3.64	11.92	58.68	52.25	171.23	13.00
4.55	14.89	48.59	65.33	214.04	12.20
5.46	17.87	40.50	78.41	256.85	11.40
6.37	20.85	33.77	91.49	299.66	10.60
			104.57	342.47	9.80
			117.65	385.28	9.00

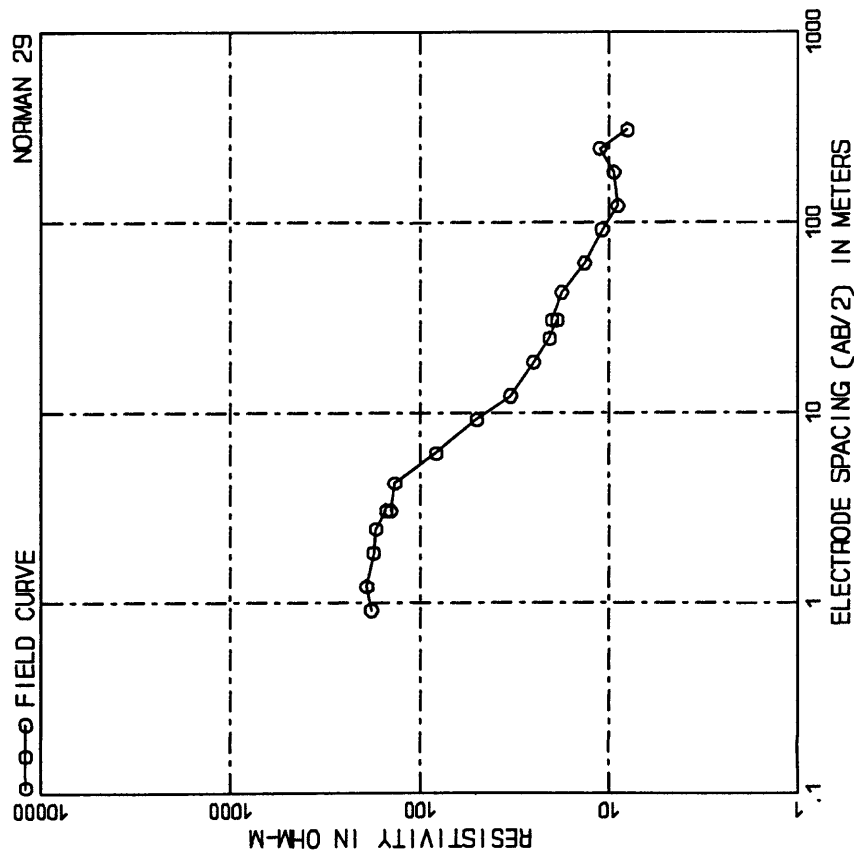




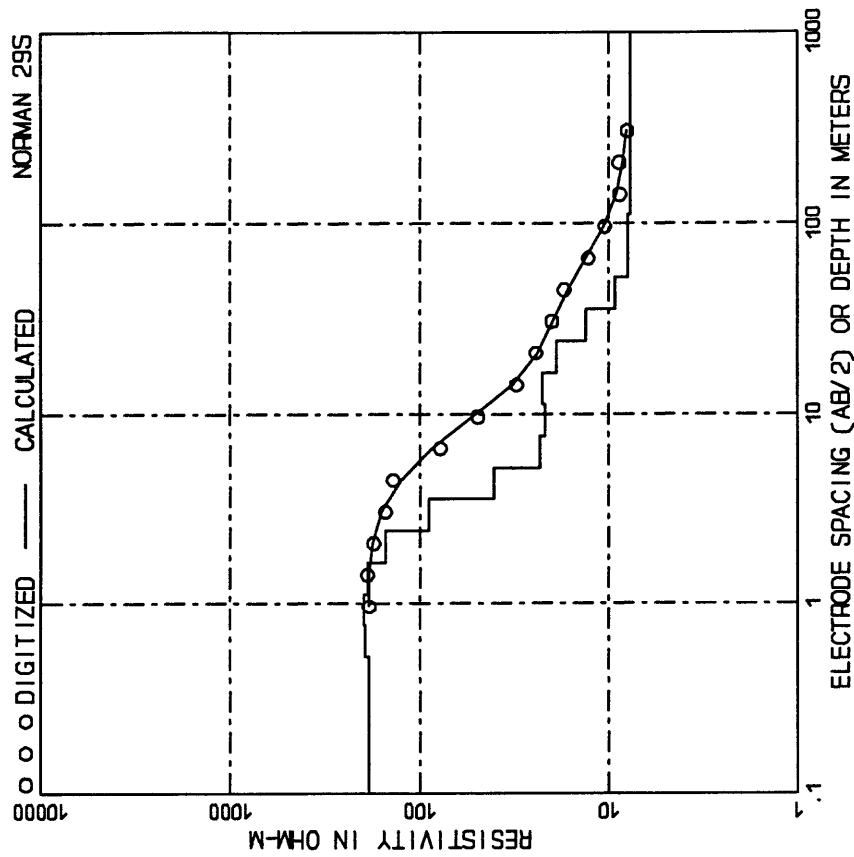
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	65.50	12.19	40.00	28.50
1.22	4.00	57.00	16.28	50.00	26.30
1.83	6.00	52.00	28.48	80.00	23.50
2.44	8.00	46.30	30.48	100.00	22.50
3.05	10.00	38.60	42.67	140.00	18.20
3.05	10.00	43.00	60.96	200.00	14.60
4.27	14.00	38.00	91.44	300.00	10.00
6.10	20.00	34.00	121.92	400.00	8.50
9.14	30.00	32.00			



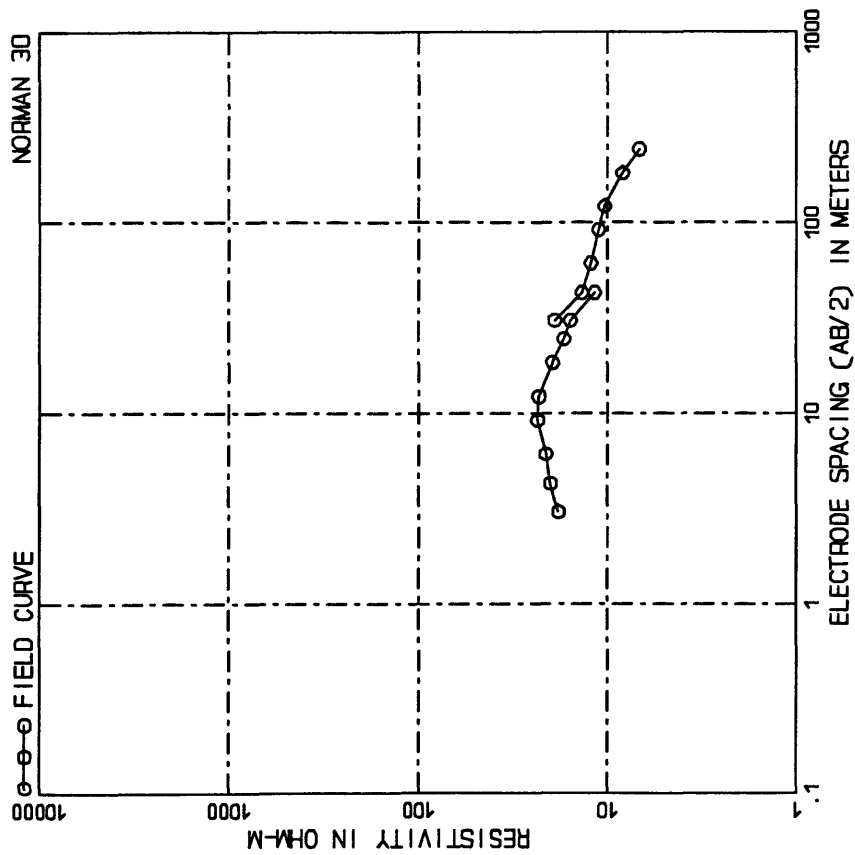
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.59	1.94	76.94	5.93	19.44	26.72
1.22	4.00	65.17	5.70	18.53	26.91
1.83	6.00	48.57	12.77	41.88	23.24
2.75	9.02	31.03	18.74	61.87	22.95
4.04	13.24	31.27	27.50	90.23	19.11
		33.59	40.37	132.44	10.53
			99999.00	99999.00	6.81



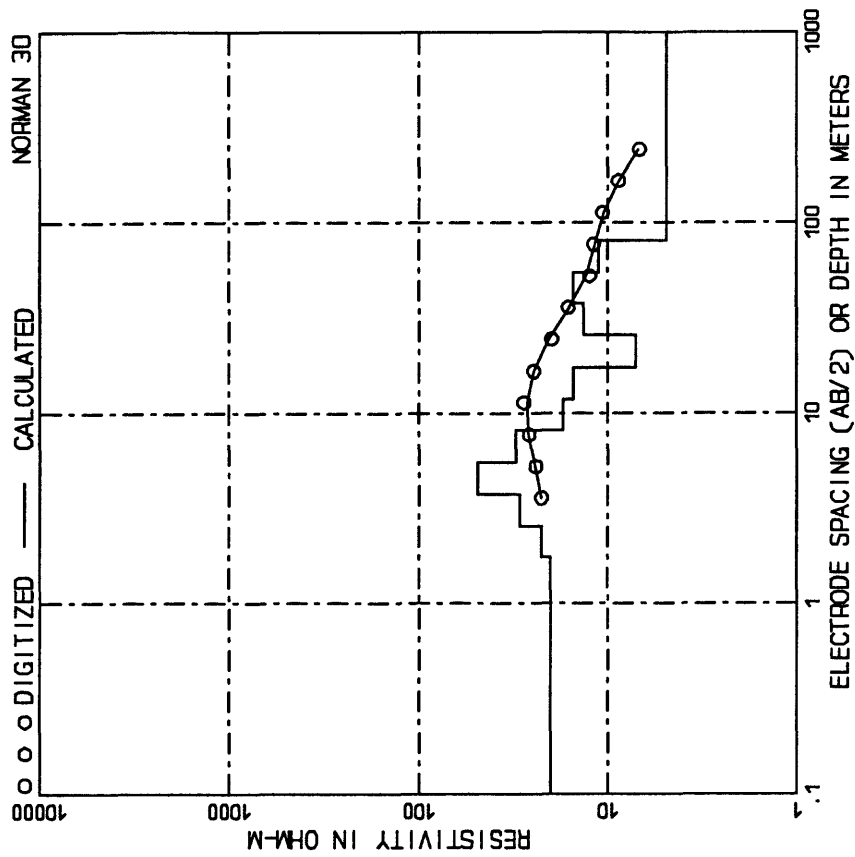
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	180.00	18.29	60.00	25.00
1.82	6.00	172.00	30.48	100.00	18.80
2.44	8.00	170.00	30.48	100.00	18.80
3.05	10.00	150.00	42.67	140.00	17.80
4.27	14.00	135.00	60.96	200.00	13.50
6.10	20.00	82.00	91.44	300.00	10.90
12.19	40.00	50.00	121.92	400.00	9.40
		33.00	182.88	600.00	11.20
			243.84	800.00	8.00
			304.80	1000.00	



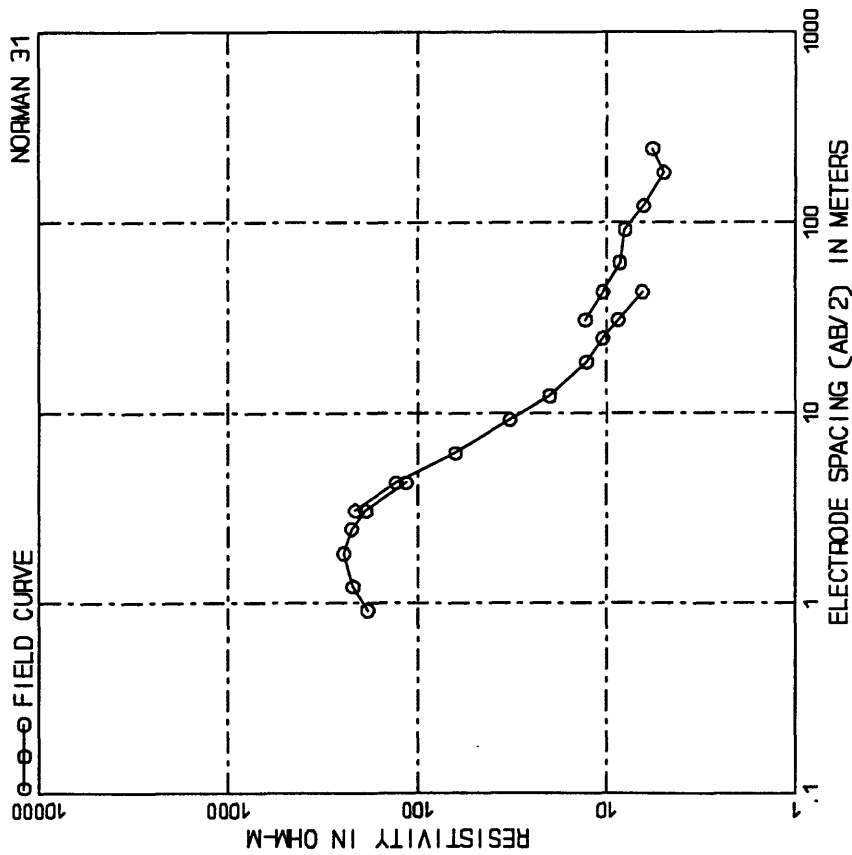
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.52	1.71	184.64	11.21	36.79	21.89
1.12	3.68	125.82	16.16	52.00	22.04
1.65	5.40	125.82	24.16	78.29	19.05
2.42	7.93	125.82	35.45	116.39	13.25
3.55	11.63	125.82	52.05	170.75	9.37
5.20	17.08	125.82	76.40	250.65	7.96
7.64	25.06	125.82	112.14	367.90	7.65
			99999.00	(99999.00)	



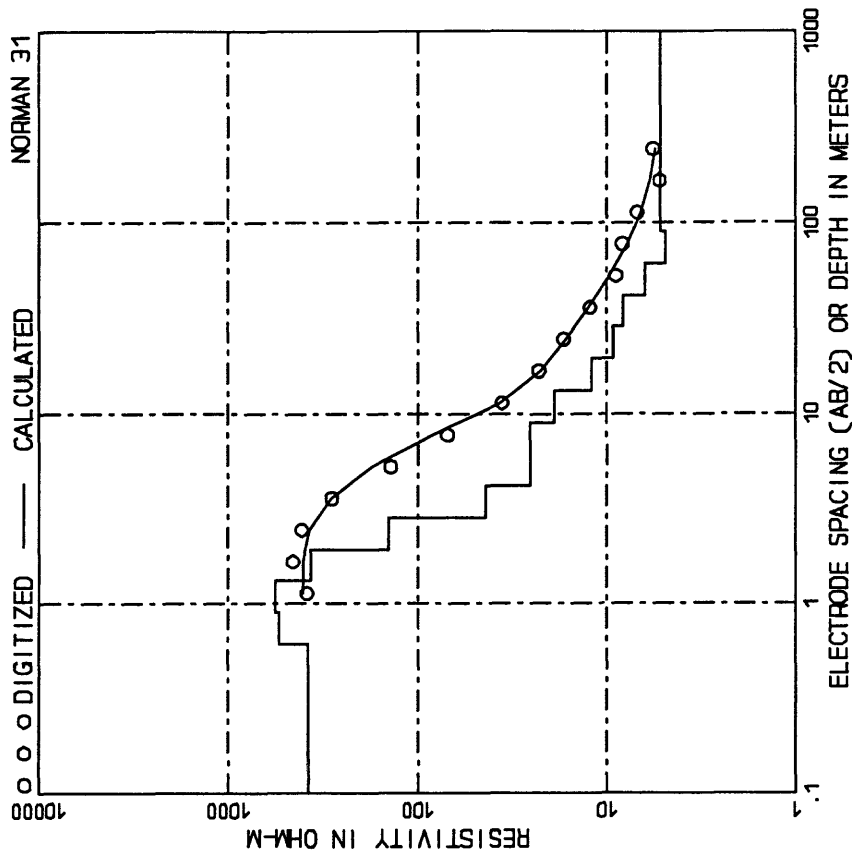
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
3.05 {	10.00 {	18.20	42.67 {	140.00 {	11.70
4.27 {	14.00 {	20.00	30.48 {	100.00 {	19.00
6.10 {	20.00 {	21.20	42.67 {	140.00 {	13.70
9.14 {	30.00 {	23.40	60.96 {	200.00 {	12.30
12.19 {	40.00 {	23.00	91.44 {	300.00 {	11.20
18.29 {	60.00 {	19.50	121.92 {	400.00 {	10.30
24.38 {	80.00 {	17.00	182.88 {	600.00 {	8.30
30.48 {	100.00 {	15.70	243.84 {	800.00 {	6.80



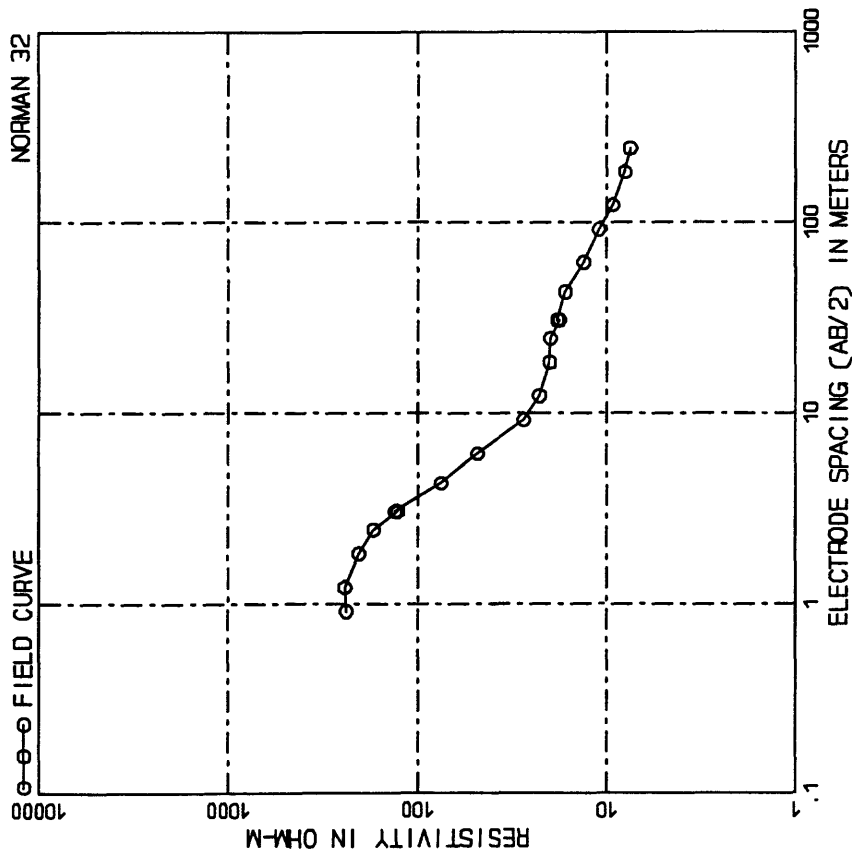
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
1.74 {	5.71 {	20.11	17.39 {	57.07 {	15.25
2.55 {	8.38 {	22.46	25.53 {	83.76 {	17.11
3.75 {	12.29 {	29.12	37.47 {	122.95 {	13.36
5.50 {	18.05 {	48.63	55.01 {	180.47 {	15.15
8.07 {	26.49 {	30.44	80.74 {	264.89 {	11.10
11.85 {	38.88 {	17.31	99999.00 {	99999.00 {	4.88



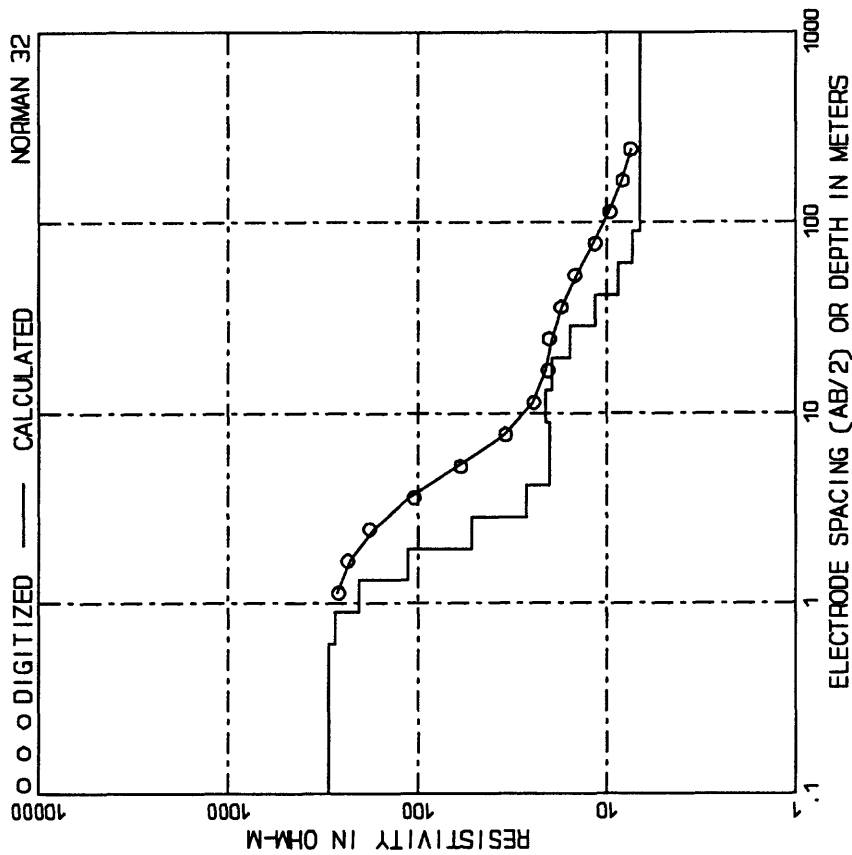
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91 {	3.00 {	183.00 {	18.29 {	60.00 {	12.80 {
1.22 {	4.00 {	218.00 {	24.38 {	80.00 {	10.50 {
1.83 {	6.00 {	245.00 {	30.48 {	100.00 {	8.70 {
2.44 {	8.00 {	223.00 {	42.67 {	140.00 {	6.50 {
3.05 {	10.00 {	187.00 {	30.48 {	100.00 {	13.00 {
4.27 {	14.00 {	115.00 {	42.67 {	140.00 {	10.50 {
3.05 {	10.00 {	213.00 {	60.96 {	200.00 {	8.50 {
4.27 {	14.00 {	130.00 {	91.44 {	300.00 {	8.00 {
6.10 {	20.00 {	63.00 {	121.92 {	400.00 {	6.40 {
9.14 {	30.00 {	32.50 {	182.88 {	600.00 {	5.00 {
12.19 {	40.00 {	20.00 {	243.84 {	800.00 {	5.70 {



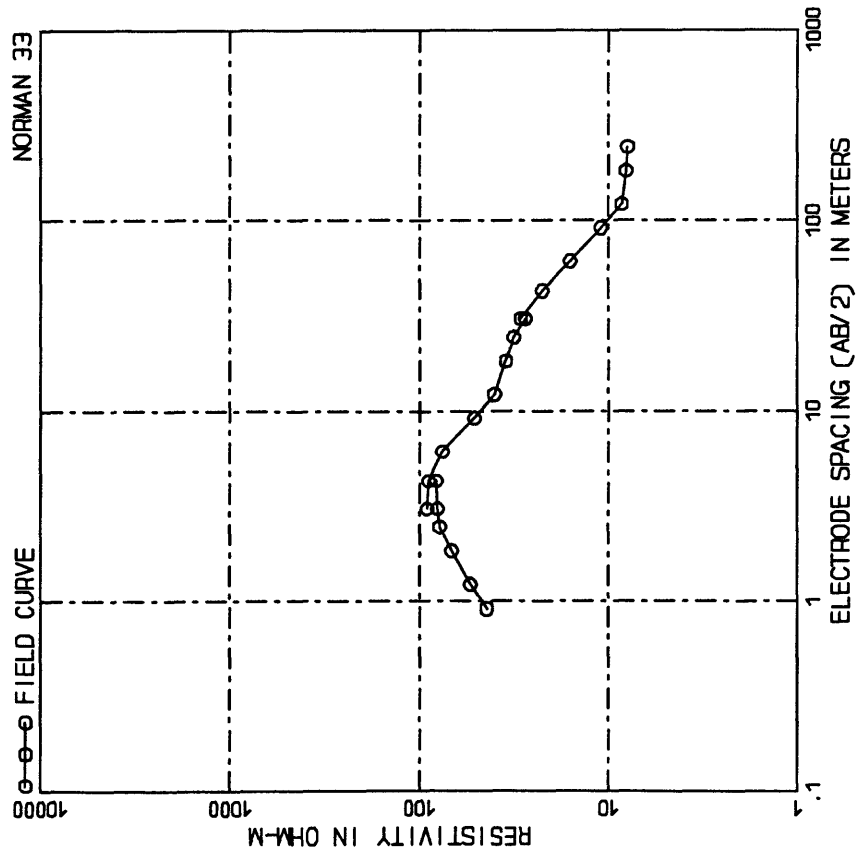
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61 {	2.01 {	375.37 {	8.97 {	29.43 {	25.39 {
0.90 {	2.94 {	536.41 {	13.17 {	43.20 {	18.39 {
1.32 {	4.32 {	565.58 {	19.33 {	63.41 {	12.09 {
1.93 {	6.34 {	367.15 {	28.37 {	93.07 {	9.20 {
2.84 {	9.31 {	141.24 {	41.64 {	136.61 {	8.20 {
4.16 {	13.66 {	43.99 {	61.12 {	200.52 {	6.35 {
6.11 {	20.05 {	25.46 {	89.71 {	294.32 {	4.87 {
			99999.00 {	99999.00 {	5.24 {



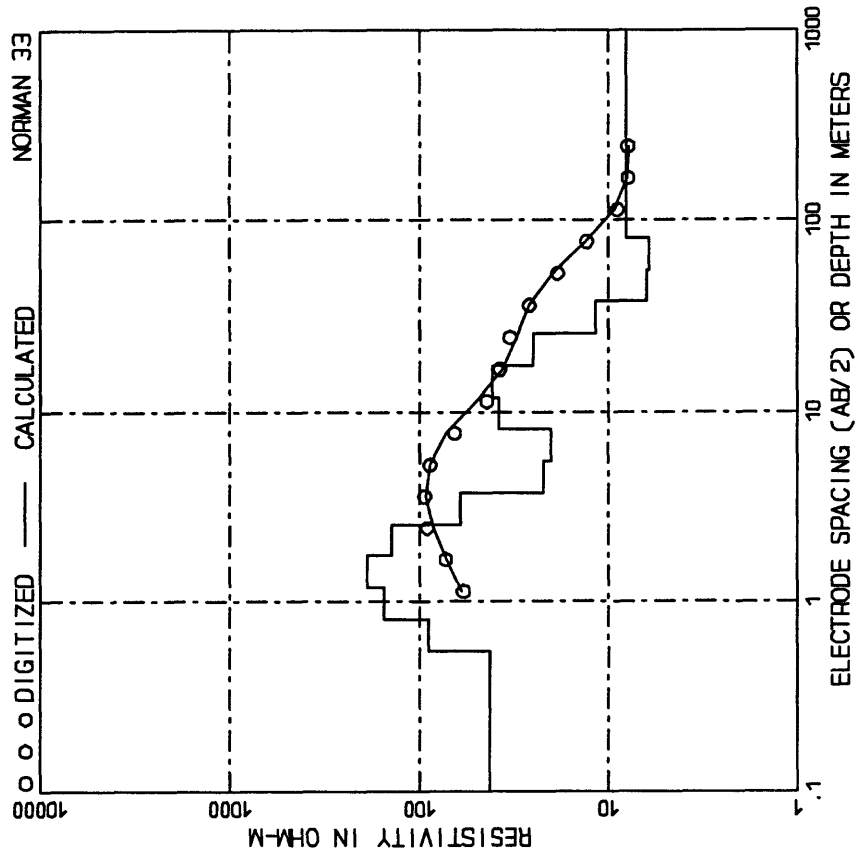
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	237.00	18.29	60.00	20.00
1.22	4.00	242.00	24.38	80.00	19.80
1.83	6.00	203.00	30.48	100.00	17.80
2.44	8.00	170.00	30.48	100.00	18.20
3.05	10.00	127.00	42.67	140.00	16.60
4.27	14.00	131.00	60.96	200.00	13.20
6.10	20.00	75.00	91.44	300.00	11.00
9.14	30.00	48.00	121.92	400.00	9.30
12.19	40.00	27.50	182.88	600.00	8.00
		22.70	243.84	800.00	7.50



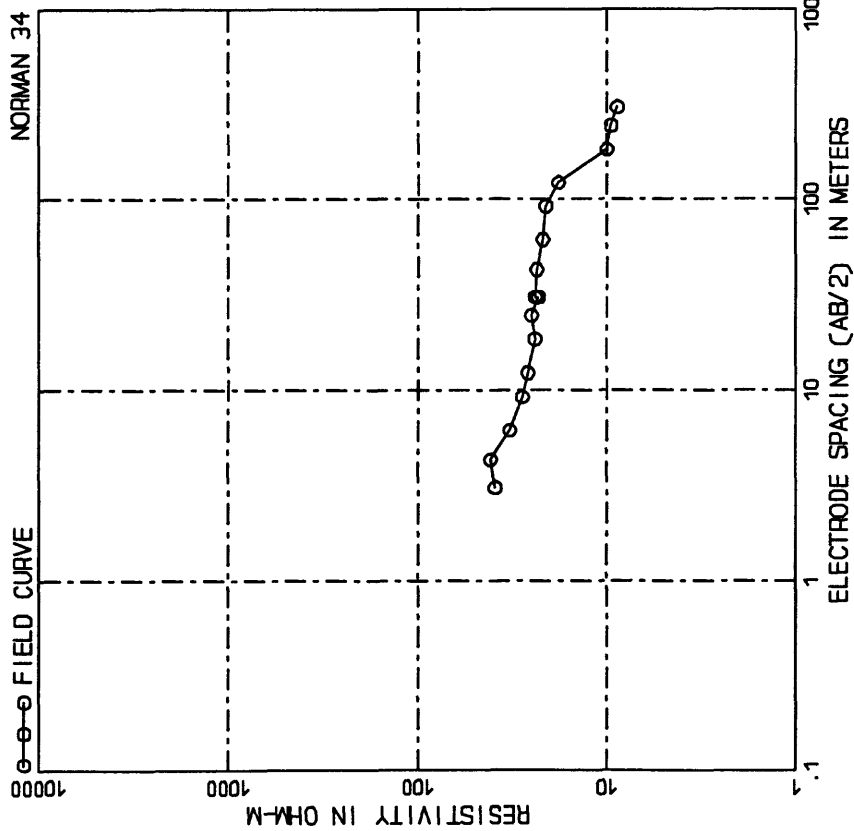
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.61	2.01	295.49	8.97	29.43	20.12
0.90	2.94	270.61	13.17	43.20	21.00
1.32	4.32	202.22	19.33	63.41	19.49
1.93	6.31	112.99	28.37	93.07	15.63
2.84	9.31	51.51	41.64	136.61	11.54
4.16	13.66	26.75	61.12	200.52	8.77
6.11	20.05	20.24	89.71	294.32	7.35
			99999.00	99999.00	6.69



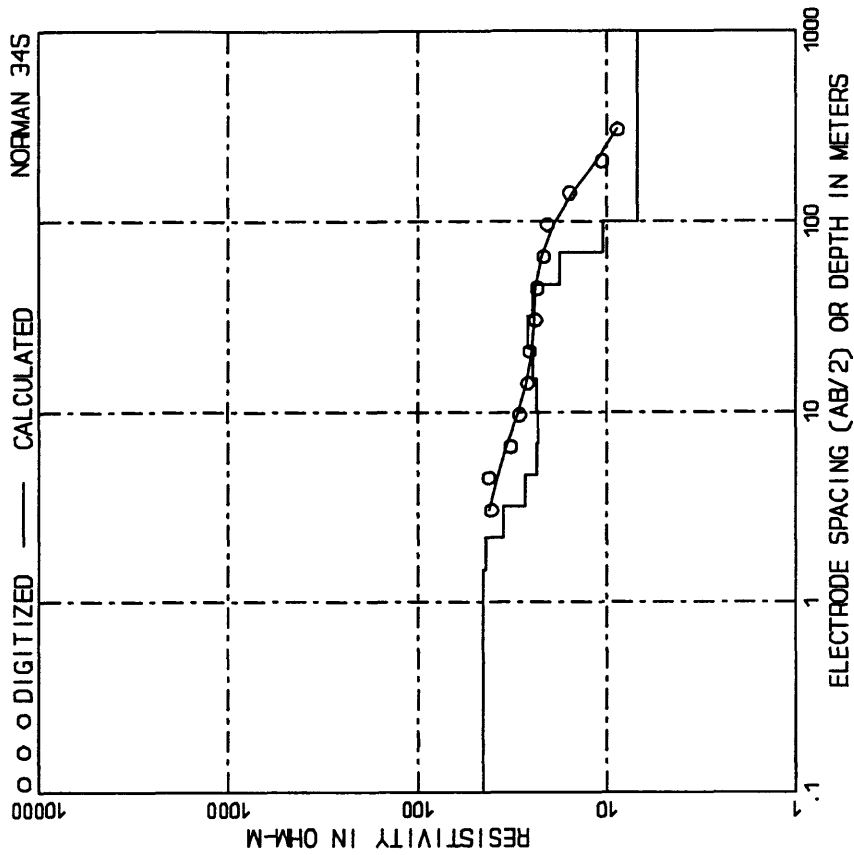
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	44.00	12.19	40.00	40.00
1.23	4.00	53.50	18.29	60.00	35.00
1.83	6.00	67.50	24.38	80.00	31.50
2.44	8.00	78.00	30.48	100.00	27.50
3.05	10.00	80.00	42.67	140.00	25.00
4.27	14.00	81.00	60.96	200.00	22.50
6.10	20.00	91.00	91.44	300.00	16.00
9.14	30.00	99.00	121.92	400.00	11.00
		51.00	183.84	600.00	8.50
			243.84	800.00	7.90



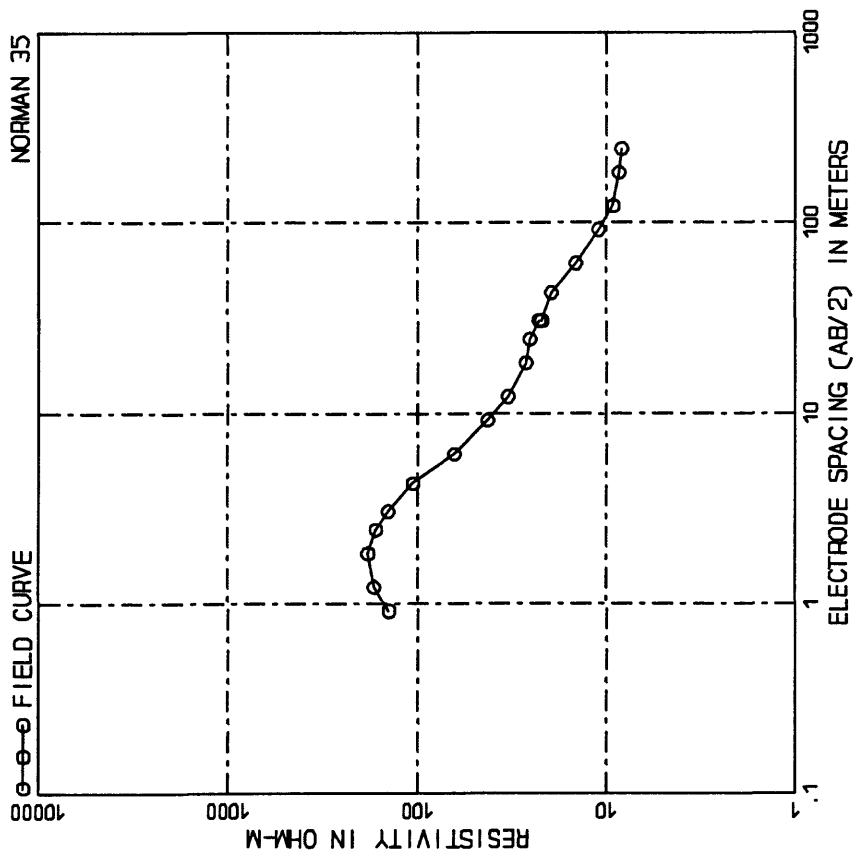
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55	1.80	42.52	8.07	26.49	20.22
0.81	2.65	88.54	11.85	38.88	37.83
1.19	3.89	153.18	17.39	57.07	41.06
1.74	5.71	186.42	25.53	83.76	24.86
2.55	8.38	139.59	37.47	122.35	11.64
3.75	12.29	60.21	55.01	180.47	6.30
5.50	18.05	22.22	80.74	264.89	6.08
			99999.00	99999.00	



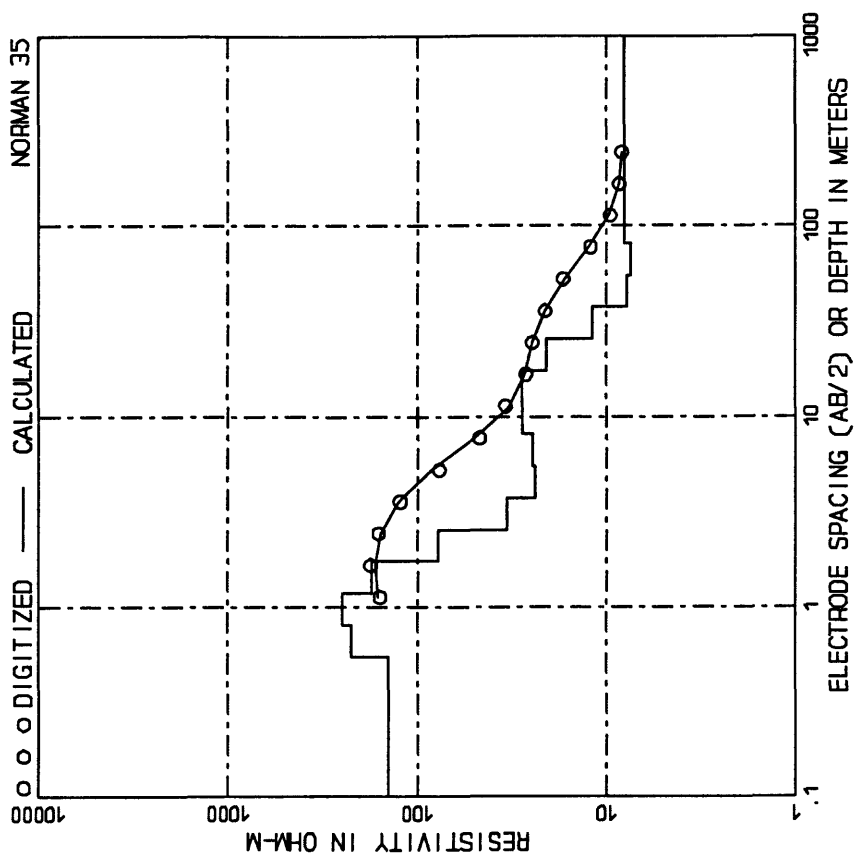
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
3.05 {	10.00 {	39.00 {	30.48 {	100.00 {	24.00 {
4.27 {	14.00 {	41.00 {	42.67 {	140.00 {	23.50 {
6.10 {	20.00 {	32.50 {	60.96 {	200.00 {	21.80 {
9.14 {	30.00 {	28.00 {	91.44 {	300.00 {	21.00 {
12.19 {	40.00 {	26.20 {	121.92 {	400.00 {	18.00 {
18.29 {	60.00 {	24.00 {	182.88 {	600.00 {	10.00 {
24.38 {	80.00 {	25.00 {	243.84 {	800.00 {	9.50 {
30.48 {	100.00 {	23.00 {	304.80 {	1000.00 {	8.80 {



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
1.48 {	4.86 {	44.89 {	14.81 {	48.60 {	23.44 {
2.17 {	7.13 {	43.40 {	21.74 {	71.34 {	24.58 {
3.19 {	10.47 {	34.93 {	31.91 {	104.71 {	26.18 {
4.68 {	15.37 {	26.97 {	46.84 {	153.69 {	24.76 {
6.88 {	22.56 {	23.64 {	68.76 {	225.58 {	17.90 {
10.09 {	33.11 {	23.15 {	100.92 {	331.11 {	10.50 {
			99999.00 {	99999.00 {	6.91 {

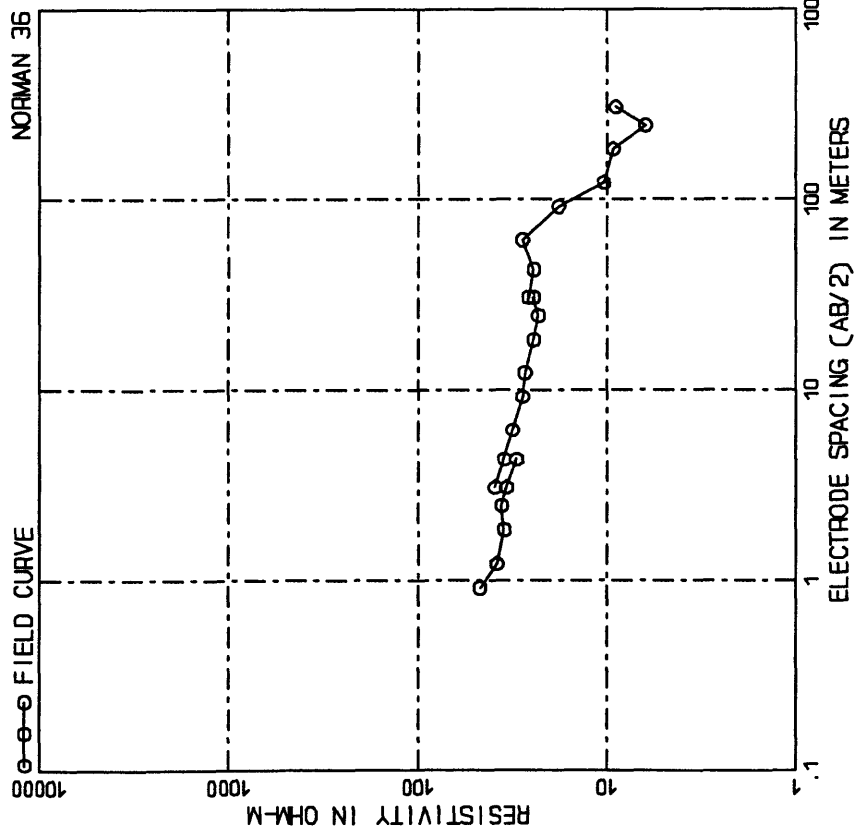


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	141.00	18.29	60.00	25.70
1.23	4.00	168.00	24.38	80.00	25.50
1.83	6.00	181.00	30.48	100.00	22.70
2.44	8.00	165.00	30.48	100.00	22.00
3.05	10.00	142.00	42.67	140.00	19.60
3.66	12.00	105.00	60.96	200.00	14.50
4.27	14.00	105.00	91.44	300.00	11.00
6.10	20.00	63.50	121.92	400.00	9.20
9.14	30.00	42.50	182.88	600.00	8.60
12.19	40.00	33.00	243.84	800.00	8.30

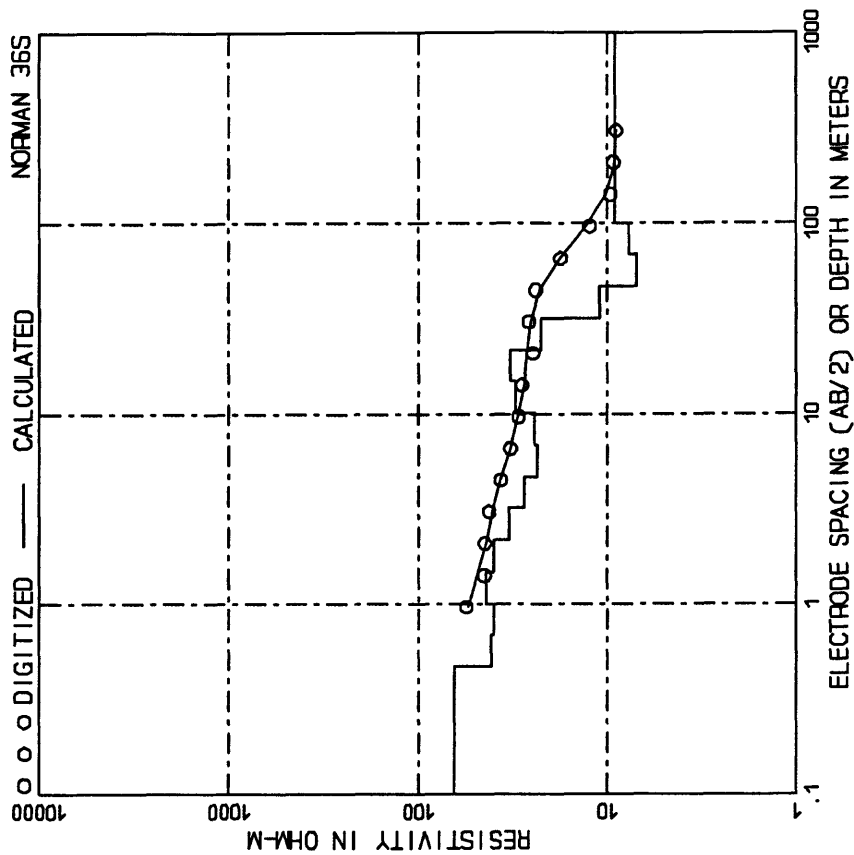


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55	1.80	141.52	8.07	26.49	24.65
0.81	2.65	221.70	11.85	38.88	27.83
1.13	3.71	247.61	17.39	57.07	28.06
1.74	5.71	173.65	25.53	83.76	20.83
2.55	8.38	78.07	37.47	122.95	11.92
3.75	12.29	33.33	55.01	180.47	7.82
5.50	18.05	23.90	80.74	264.89	7.40
			99999.00	99999.00	8.07

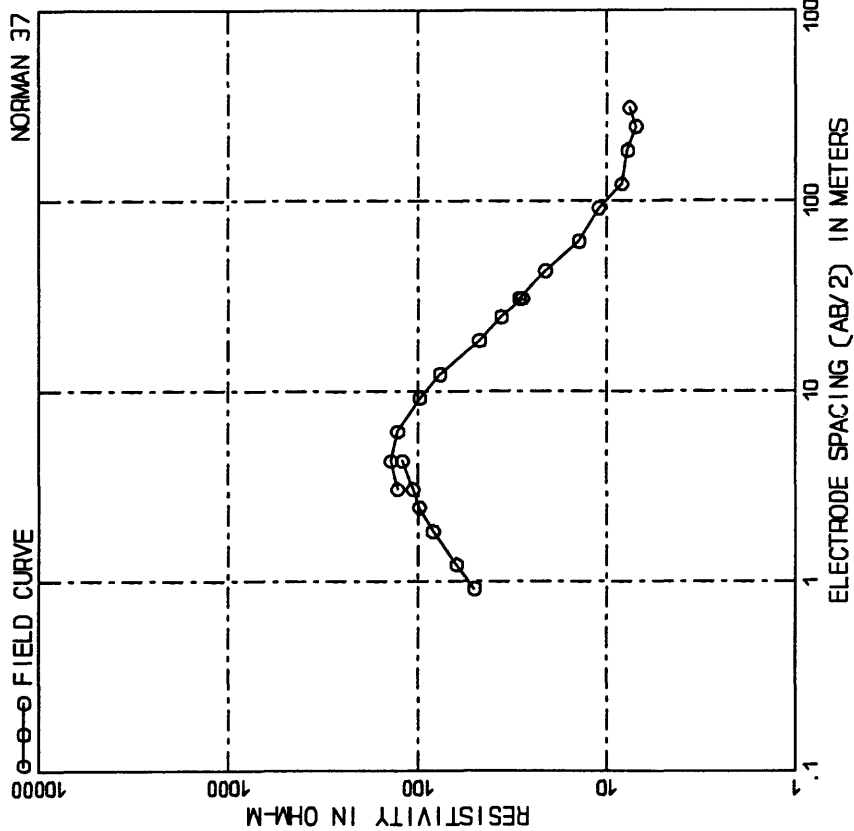




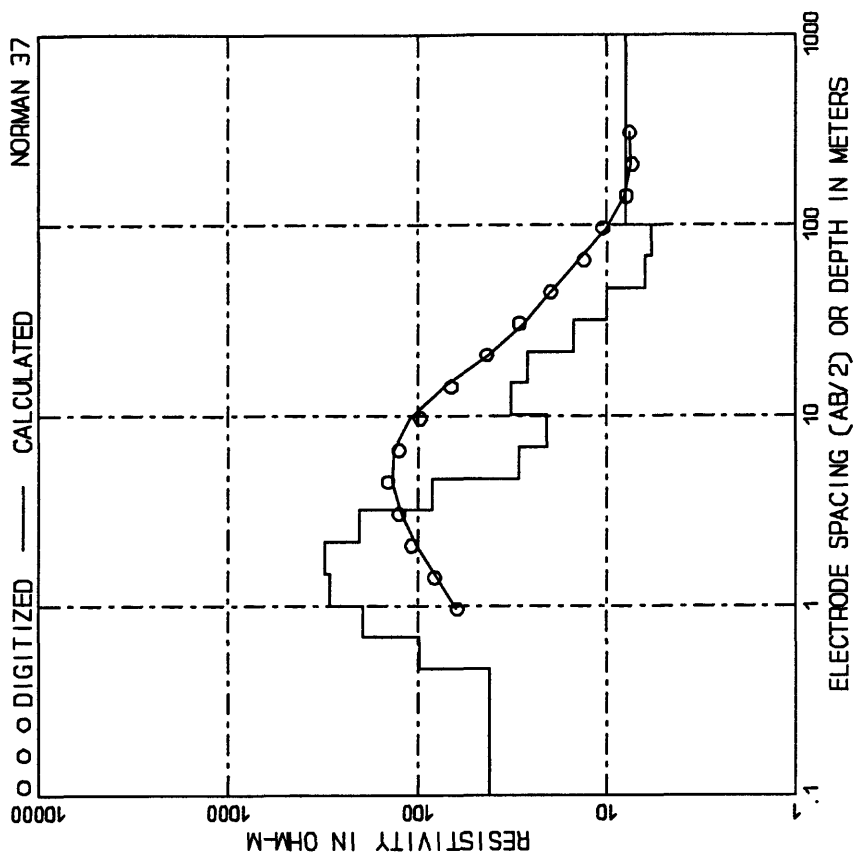
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	46.80	18.29	60.00	24.50
1.22	4.00	38.20	24.38	80.00	23.00
1.83	6.00	35.00	30.48	100.00	24.50
2.44	8.00	36.00	42.67	140.00	26.00
3.05	10.00	34.00	60.96	200.00	24.50
4.27	14.00	30.00	91.44	300.00	28.00
3.05	10.00	39.00	121.92	400.00	18.00
4.27	14.00	35.00	182.88	600.00	10.40
6.10	20.00	31.50	304.80	1000.00	9.30
9.14	30.00	28.20			6.30
12.19	40.00	27.20			



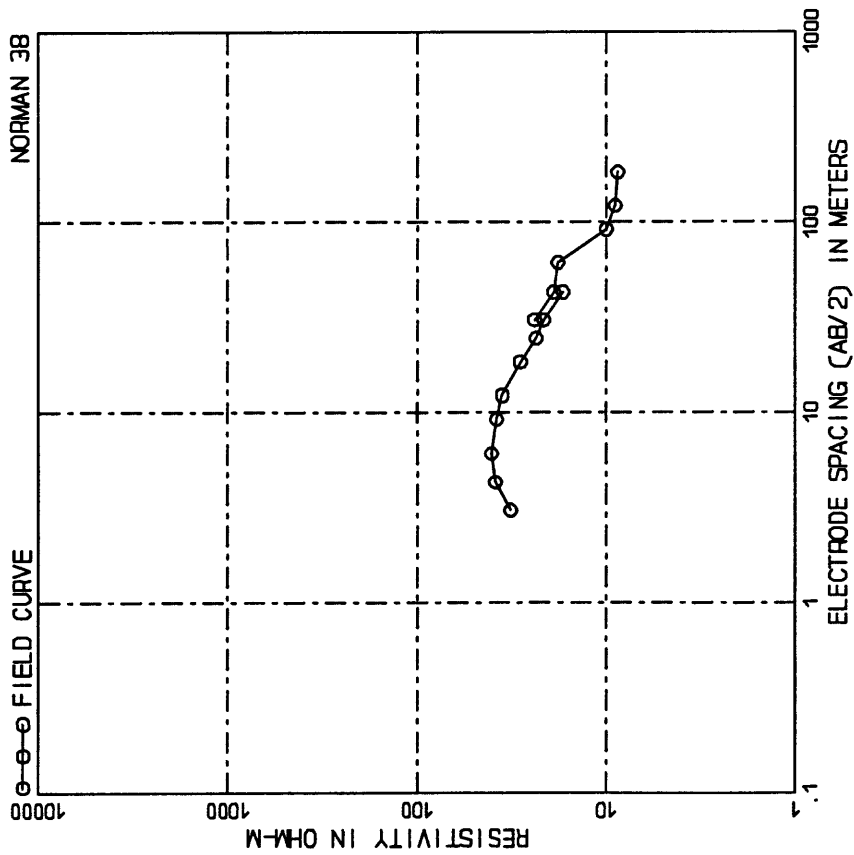
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.47	1.54	64.36	10.09	33.11	24.16
0.69	2.26	40.84	14.81	48.60	30.42
1.01	3.31	39.61	21.74	71.34	32.60
1.48	4.86	43.57	31.91	104.71	22.33
2.17	7.13	40.01	46.84	153.69	10.94
3.19	10.47	33.09	68.76	225.58	7.02
4.68	15.37	27.59	100.92	331.11	7.67
			99999.00	99999.00	9.12



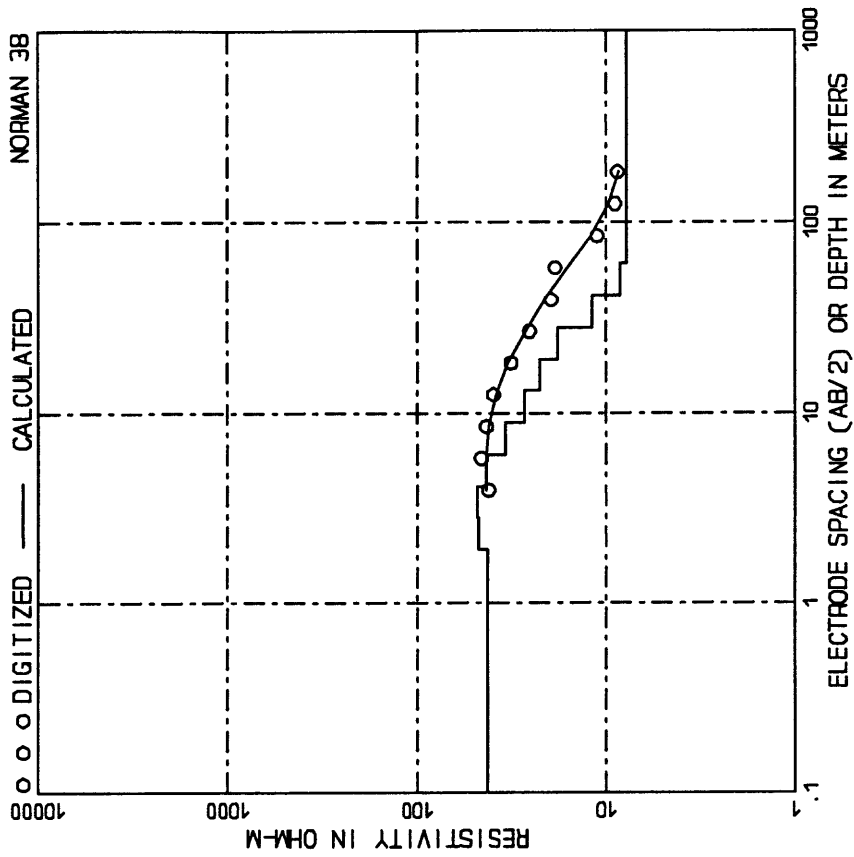
AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	50.00	18.29	60.00	47.00
1.22	4.00	62.00	24.38	80.00	36.00
1.83	6.00	83.00	30.48	100.00	28.00
2.44	8.00	98.00	42.67	140.00	21.00
3.05	10.00	106.00	60.96	200.00	14.00
4.27	14.00	120.00	91.44	300.00	11.00
3.05	10.00	128.00	121.92	400.00	8.30
6.10	20.00	137.00	182.88	600.00	7.75
9.14	30.00	127.00	243.84	800.00	7.00
12.19	40.00	97.00	304.80	1000.00	7.60
		76.00			



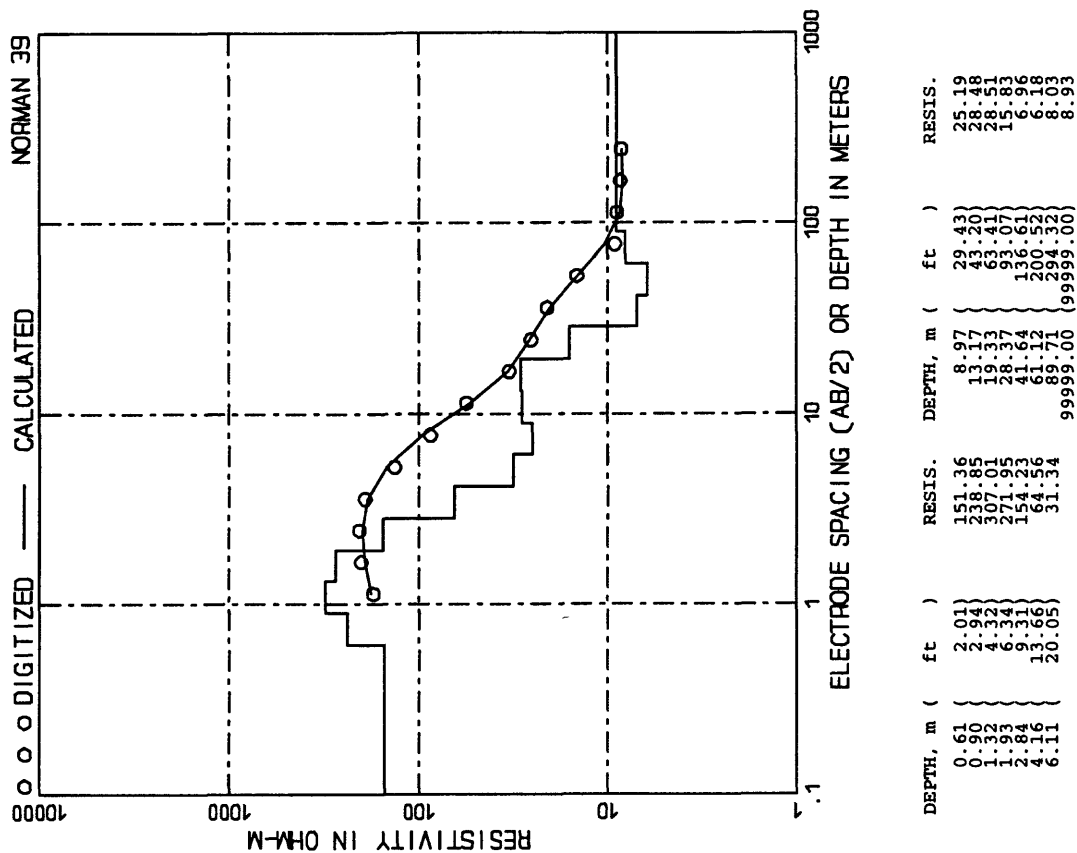
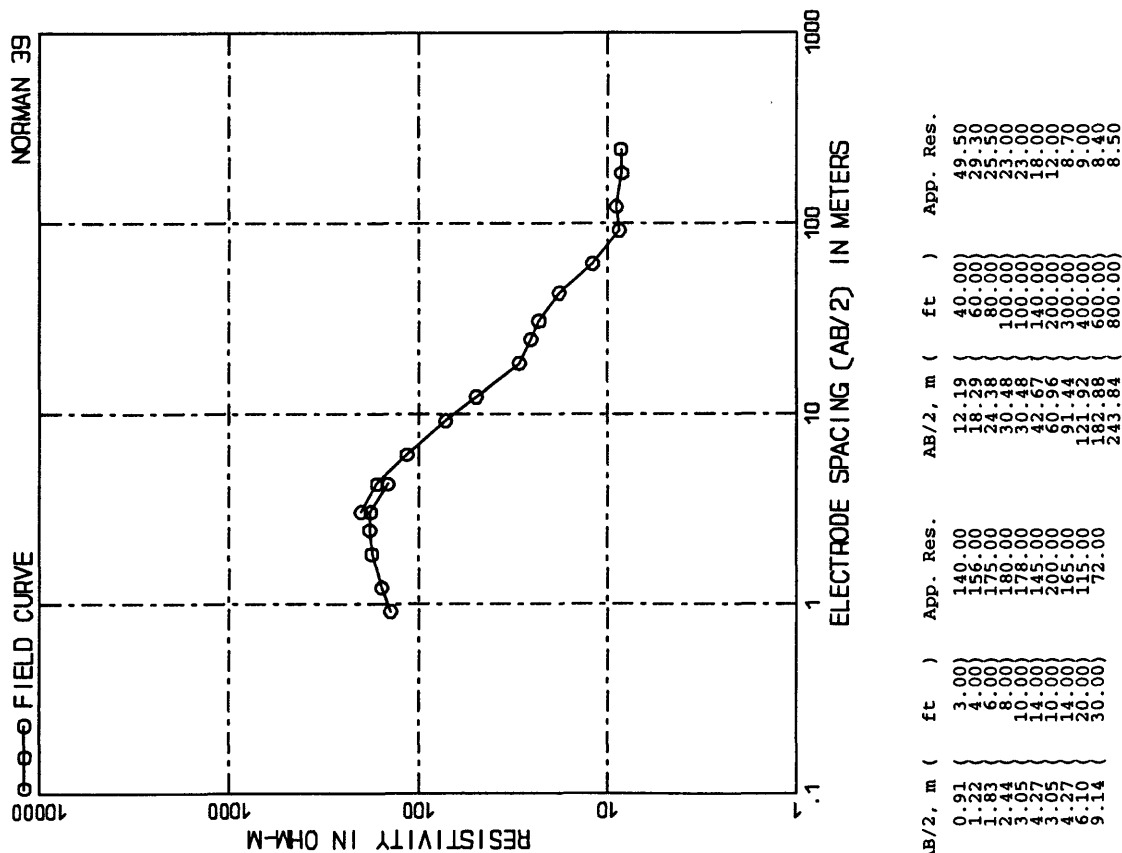
DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.47	1.54	41.69	10.09	33.11	20.79
0.69	2.26	97.71	14.81	48.60	32.01
1.01	3.31	192.66	21.74	71.34	26.34
1.48	4.85	291.64	31.91	104.71	15.02
2.17	7.13	308.53	46.84	153.69	10.02
3.19	10.47	204.14	68.76	225.58	6.30
4.68	15.37	83.71	100.92	331.11	5.80
6.88	22.56	29.38	99999.00	99999.00	7.91

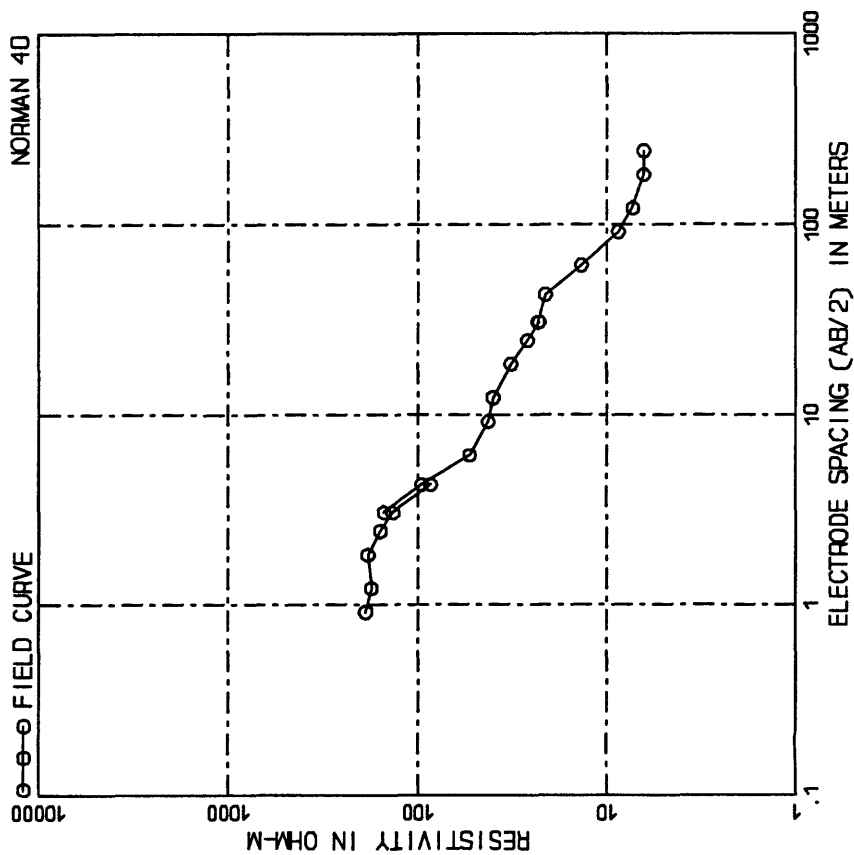


AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
3.05 {	10.00 {	32.00 {	30.48 {	100.00 {	21.50 {
4.27 {	14.00 {	38.50 {	42.67 {	140.00 {	17.00 {
6.10 {	20.00 {	40.50 {	30.48 {	100.00 {	24.00 {
9.14 {	30.00 {	38.50 {	42.67 {	140.00 {	19.00 {
12.19 {	40.00 {	35.50 {	60.96 {	200.00 {	18.00 {
18.29 {	60.00 {	28.50 {	91.44 {	300.00 {	10.00 {
24.38 {	80.00 {	23.50 {	121.92 {	400.00 {	9.00 {
			182.88 {	600.00 {	8.70 {

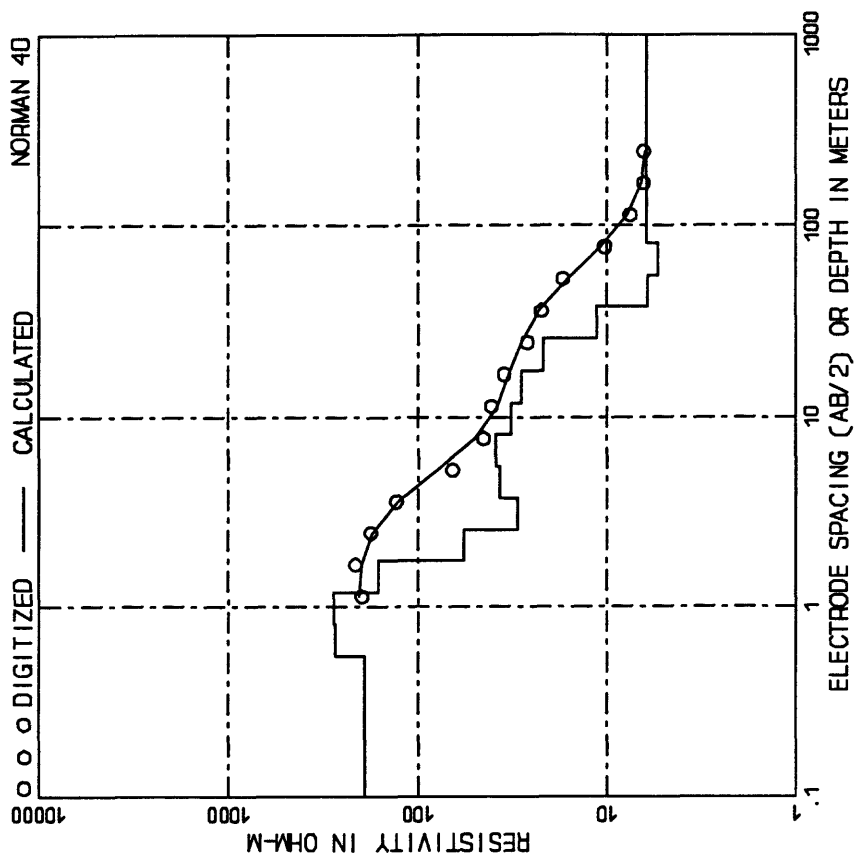


DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
1.91 {	6.28 {	42.10 {	13.05 {	42.80 {	26.83 {
2.81 {	9.22 {	47.20 {	19.15 {	62.82 {	22.59 {
4.13 {	13.53 {	48.27 {	28.11 {	92.21 {	17.84 {
6.06 {	19.87 {	43.14 {	41.25 {	135.35 {	11.87 {
8.89 {	29.16 {	34.27 {	60.55 {	198.66 {	8.43 {
			99999.00 {	99999.00 {	7.79 {





AB/2, m (	ft )	App. Res.	AB/2, m (	ft )	App. Res.
0.91	3.00	187.00	12.19	40.00	40.00
1.22	4.00	175.00	18.29	60.00	32.00
1.83	6.00	183.00	24.38	80.00	26.20
2.44	8.00	157.00	30.48	100.00	22.80
3.05	10.00	135.00	42.67	140.00	23.00
4.27	14.00	185.00	60.96	200.00	21.20
4.27	14.00	150.00	91.44	300.00	13.70
6.10	20.00	53.00	121.92	400.00	8.70
9.14	30.00	42.50	182.88	600.00	7.30
			243.84	800.00	6.40



DEPTH, m (	ft )	RESIS.	DEPTH, m (	ft )	RESIS.
0.55	1.80	191.19	8.07	26.49	38.36
0.81	2.65	272.90	11.85	38.88	31.90
1.19	3.89	272.08	17.39	57.07	28.49
1.74	5.71	160.90	25.33	83.76	21.77
2.55	8.38	56.73	37.47	122.95	11.36
3.75	12.30	29.43	55.01	180.47	6.10
5.50	18.05	36.60	80.74	264.89	5.39
			99999.00	(99999.00)	6.19