Ground-Water Exploration Using Deep Schlumberger Soundings at Edwards Air Force Base, California. Part II: Rogers Lake and North of Edwards Air Force Base.

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Introduction

In late April and early May 1990, the U.S. Geological Survey made 73 Schlumberger soundings (Kunetz, 1966, Zohdy and others, 1974) on Rogers (dry) Lake in Edwards Air Force Base (AFB) and along a profile north of Edwards AFB. These soundings complement a set of 67 soundings that were made in October 1989 (Zohdy and Bisdorf, 1990a) and bring the total number of soundings in the surveyed area to 140.

Figure 1 shows the location of all the key sites that will be refered to in the text as well as the outline of Rogers Lake, Buckhorn Lake, and the outline of quartz monzonite and granite outcrops (Dibblee, 1960, 1967). Figure 2 shows the location and number of all the sounding stations made to date. The 1989 sounding stations are shown as open circles whereas the 1990 sounding stations are shown as solid circles. Most of the soundings were expanded to maximum current-electrode spacings (AB/2) that ranged from 914 m (3000 ft) to 3048 m (10,000 ft). The direction of expansion was parallel to the roads and to the runways.

The purpose of the survey was to map the subsurface distribution of layers composed of sand and gravel which are potentially freshwater aquifers, to delineate the subsurface distribution of layers rich in clay so that they may be avoided in future drilling, and to help determine the depth to granitic basement rocks.

The purpose of this report is to release the data of the 73 Schlumberger soundings obtained in the April-May 1990 survey, to provide an interpretation of the new 73 sounding curves, and to present maps and cross sections of interpreted resistivity based on the interpretation of all 140 soundings.

Field Conditions and Measurement Procedures

The field conditions on Rogers Lake were generally very favorable to making direct current electrical resistivity soundings. Most soundings were made alongside runways. It was possible to make long straight-line Schlumberger soundings with no interference from fences with metal posts, buried cables, or grounded power lines. The runways themselves are part of the natural lake bed and are marked with black paint (no concrete or asphalt roads on the lake bed). There is one fence with metal posts on the far end of the east shore of the lake bed, but soundings were not made near it. This description is given here to emphasize the fact that, to the best of our knowledge, the resistivity measurements made on the lake bed were free from interference by cultural features.

Figure 1 shows the location of key features that will be refered to in the text. The long runway (Figure 1) running essentially north-south on Rogers Lake is Runway 17. It is often used for space-shuttle landings. The northeast-southwest black line east of Runway 17 is known as the Low Altitude Speed Course and the southwest-northeast black line north of Runway 17 is the Fly-By line. Other runways are shown and identified by their numbers in open ovals, but not all runways are included to minimize clutter. To the west of Rogers Lake (running north south) is Lancaster Boulevard or 120th Av, and to the south (running east west) is East Avenue B. To the west of Lancaster Blvd is the Graham Ranch area and Buckhorn Lake. Figure 1 also shows the outline of dry lake deposits in light gray shade and the approximate outline of quartz monzonite and granitic rocks (simplified from Dibblee, 1960, 1967).

As in the previous resistivity survey (Zohdy and Bisdorf, 1990a) all current- and potential-electrode spacings were measured in feet and later converted to meters during interpretation. Current-electrode spacings ranging from 3.05 to 30.5 m (10 to 100 ft) were measured using a cloth tape. The electrode spacings at 42.7 m (140 ft) and 60.1 m (200 ft) were measured using markings on the laid-out potential-electrode cable. Current electrode spacings greater than 60.1 m (200 ft) were measured using truck mounted precision odometers. The precision odometers were very useful not only in measuring the current-electrode-spacing distances but also in precisely locating the sounding stations using the painted runway perimeters as a guide. Three trucks were used for making the resistivity survey: an instrument truck (a carryall) that remained stationary at the center of the sounding, and two pickup trucks that were used to lay out the current cable and expand the distance between current electrodes. A 5 KVA generator was used for power supply and a potentiometric chart recorder was used for measuring the potential differences.

Communication between operator and crew was maintained using 90 watt FM radios. An additional radio (provided by the personnel at Edwards-AFB) was used to communicate with the air traffic controller for permission to enter and to exit the lake bed, to cross runways, to report position, and to work alongside runways. On occasion, a certain area may not be open for the resistivity work, and the survey plans were modified accordingly for that day. On one day the survey was terminated because of a severe dust storm and on another day it was halted by a downpour of rain that transformed the dry lake bed into a very muddy environment.

The sounding curves were plotted in the field as the measurements were made. This procedure is recommended in order to identify and correct mistakes made by the operator or the crew, and to recognize spurious readings caused by man made structures (fences, buried cables, etc), by current leakage, or by equipment malfunction. At the end of each sounding, a test for current leakage (Zohdy, 1968) was made. No current leakage effects were observed on any of the tests.

In this survey, as in the previous survey, the field sounding curves were composed of only three segments. The first segment was obtained by expanding the current-electrode spacing (AB/2) from 3.05 to 30.5 m (10 to 100 ft) with the potential-electrode spacing (MN/2) held fixed at 0.61 m (2 ft). At AB/2 = 30.5 m (100 ft), the potential-electrode spacing (MN/2) was expanded from 0.61 to 6.1 m (2 to 20 ft) and the second segment on the sounding curve was obtained by expanding the current-electrode spacing from 30.5 to 305 m (100 to 1000 ft). Similarly, at AB/2 = 305 m (1000 ft), the potential-electrode spacing (MN/2) was expanded from 6.1 to 61 m (20 to 200 ft) and the third segment of the sounding curve was obtained by expanding the current-electrode spacing from 305 m (1000 ft) to the maximum required spacing which was anywhere from 914 to 3048 m (3000 to 10000 ft). The sounding requirement is satisfied when apparent resistivity measurements are obtained that indicate the detection of a highly resistive geoelectric basement. Such measurements when plotted on log-log scale form a rising branch on the sounding curve which is inclined to the abscissa axis at an angle of 45 degrees.

In contrast to the previous survey (Zohdy and Bisdorf, 1990a) none of the soundings had to be corrected for non-linear geometry of the electrode array (Zohdy and Bisdorf, 1990b). With ample space on the lake bed all soundings were expanded along straight lines.

Schlumberger Sounding Data

The field sounding curves and their interpretations are given in the appendix. The soundings are numbered consecutively from Edwards AFB 68 to Edwards AFB 140. All the sounding data were processed and interpreted using an automatic interpretation computer program (Zohdy, 1989; Zohdy and Bisdorf, 1989). The automatic-data processing consists of:

a) Converting the current-electrode spacings (AB/2) from feet to meters.

b) Shifting the observed-curve segments (obtained with different but fixed potential-electrode spacings (MN/2)) upward or downward to obtain a continuous unsegmented curve. Generally, the segment measured with the largest potential-electrode spacing is kept fixed in position and the other segments are shifted up or down.

c) Sampling the continuous curve at the rate of 6 points per logarithmic cycle to obtain a digitized-sounding curve. The sampling process is automatically made, from right to left, starting at the largest current-electrode spacing.

Following the automatic processing, and prior to the automatic interpretation, the program provides three options that may be used to put one or more constraints on the interpreted model. The reason for using one or more of these options is often to develop a consistent picture for the interpreted resistivity of the highly resistive basement, and occasionally to obtain a better match between digitized and calculated curves. Of these three options, we often chose to fix the resistivity of the last layer at a value of 550 ohm-m. This value is in accord with information obtained from soundings made over basement outcrops and is consistent with the interpretation of the sounding curves obtained in the previous survey (Zohdy and Bisdorf, 1990a). Needless to say, when there was strong evidence to the contrary (see for example soundings 115, 120, etc, which indicate a basement resistivity in the range of 150 to 300 ohm-m) the constraint that the basement resistivity is 550 ohm-m was not used. In addition, we occasionally used the option to compress the thicknesses of the layers to obtain a better fit between observed and calculated sounding curves.

Distorted Sounding Curves:

Very few sounding curves were distorted by severe lateral inhomogeneities or by cultural features. As mentioned earlier, there are no buried metal pipes, metal fences, or the like on Rogers Lake including the various runways and other marked lines (like the Fly-By Line or the Low Altitude Speed Course). Therefore, none of the soundings made on Rogers Lake was

distorted by cultural features. Of the soundings made outside of Rogers Lake, one sounding (see sounding 110 in appendix) was subtly but strongly affected by several metallic objects in its vicinity:

a) A buried cable as indicated by a road sign.

b) A metal fence on the other side of the road.

c) Two railroad tracks located at a distance of a few hundred meters one on each side of the sounding line.

We made sounding 110 while we were aware of the presence of these cultural features, and if the buried cable was insulated then we might have had a sounding that was not strongly distorted. Although there were no obvious distortions on the sounding curve we became very suspicious of its validity towards the end of making the field measurements. Our suspicions stemmed from the following observations:

1) Sounding 110 (see Figures 1 and 2) is located in an area where quartz monzonite and granite outcrops were mapped (Dibblee, 1960, 1967).

2) The data of soundings 135 and 109 (which are located to the west and south of sounding 110 at a distance of about 1.5 km or less) indicate that the basement rocks are indeed shallow (about 40 m).

3) On sounding 110 (see appendix), the apparent resistivity at spacings greater than about 600 m (2000 ft) started a steady decrease from about 160 ohm-m to about 24 ohm-m at AB/2 = 2438 m (8000 ft). If the sounding curve is interpreted as measured, it would yield a minimum depth to a resistive basement of about 1500 m (about 5000 ft). In fact, the effect of a resistive basement was not even seen at the maximum electrode spacing (AB/2) of 2438 m (8000 ft).

4) None of the soundings obtained in this survey showed the behaviour described in item 3 above.

In view of the presence of a buried cable beneath the sounding line (as indicated by the road sign) we assumed that the shape of the sounding curve is being strongly affected by that cable. In order to test this hypothesis (after having completed the sounding measurements), we displaced the location of the potential electrodes by 61 m (200 ft) to the west and repeated the resistivity reading at AB/2 = 1219 m (4000 ft). As suspected, the apparent resistivity jumped from a value of 50 ohm-m to a value of 177 ohm-m (see sounding 110 in appendix). This greater than three-fold increase in apparent resistivity is attributed to the displacement of the potential electrodes away

from the metallic (?) cable buried beneath the sounding line.

Had the earth been composed of laterally homogenous and isotropic layers, there would have been practically no change in apparent resistivity as a result of displacing the potential electrodes laterally by a distance of 60.1 m (200 ft) at an AB/2 = 1219 m (4000 ft). Theoretically, for a homogenous half space earth, the apparent resistivity should have decreased by about 0.2 percent (which is beyond the accuracy of our measurements) as can be shown by comparing the value of the geometric factor for the two arrays. For most horizontally layered earth models (see necessary equations in Zohdy, 1978) the resistivity change would have been less than 2 percent (for this small displacement of the potential electrodes with respect to the length of AB/2). Instead, we measured a 3 fold increase in apparent resistivity. The only remaining possibility, other than the influence of the metallic (?) buried cable, would be that by displacing the potential electrodes laterally we placed them on a lateral inhomogeneity of much larger resistivity than where the center of the sounding is located. In effect this is exactly what happened, except that it is the material beneath the center of the sounding where the inhomogeneity exists in the form of a very low resistivity object which is the buried cable.

In view of the above reasoning, we decided to discard the measurements made beyond AB/2 = 426 m (1400 ft). The truncation of the curve results in an interpretation which is limited to a depth of of about 150 m and ignores the possibility of a very-thick low-resistivity "layer" at depth. The interpreted resistivity rises to about 150 ohm-m at a depth of about 45 m (about 150 ft), which indicates the probable presence of a highly weathered basement rock at that depth. This interpretation is in much better agreement with the interpretation of soundings 109 and 135, and with the mapped granitic outcrops in the area.

Rock-Formation Resistivities at Edwards AFB

In part I of this report (Zohdy and Bisdorf, 1990a) we stated that the resistivity of the granitic basement rocks (in this study area) tends to be in the range of a few hundred ohm-meters and that these relatively low resistivities persist to considerable depth, especially when the basement is composed of weathered quartz monzonite. These findings were further substantiated by the interpretation of the soundings made in this survey. Weathered granitic rock in road-cut outcrops (near soundings 135, 115 and 120) was so friable that it could be crushed by hand. At soundings 115 and 120, made along the profile north of Edwards AFB (see Figure 2 for location), the interpreted resistivity ranges from about 100 to 250 ohm-meters from a depth of few meters down to a depth of about 750 m (about 2500 ft). Other soundings (113, 114, 121, 107, etc) indicate that the basement resistivity is in the 300 to 550 ohm-m range.

On the interpreted resistivity maps and cross sections, the depth to granitic basement is assumed to be approximately delineated by the 100 ohm-m contour and on most interpreted sounding curves, the basement resistivity is fixed at 550 ohm-m. The assumption that the basement resistivity is fixed at 550 ohm-m has little or no effect on the interpreted depth to the high resistivity basement when the overlying layer has low resistivity in the range of 10 to 30 ohm-m. The purpose of using a fixed last layer resistivity of 550 ohm-m along certain cross sections is to obtain an easily identifiable high resistivity basement surface, rather than having a varying basement resistivity (probably between 150 and 600 ohm-m) which is caused by the different maximum-electrode spacing reached by different soundings and by changes in the resistivities in the upper part of the section, rather than reflecting any actual variations in the geoelectric-basement resistivity itself. As mentioned earlier, the assumption of a fixed geoelectric-basement resistivity was not forced on the interpretation of soundings that displayed evidence to the contrary.

As in the 1989 survey, sand and gravel aquifers in the studied area are characterized by resistivities in the range from 30 to 70 ohm-m. Normally, the higher the resistivity the coarser the material and the lower the clay content. Similarly, clay-rich layers are characterized by resistivities of less than 15 ohm-m. The lowest measured or interpreted resistivity was about 2 ohm-m.

Interpreted Resistivity Maps

Six maps of interpreted-resistivity were generated for depths of 10, 30, 100, 300, 450, and 700 m (or about 33, 100, 330, 1000, 1500, and 2300 ft, respectively). These maps are based on the interpretation of all 140 electrical soundings except for soundings 111 through 121 which are excluded because they are located too far north (about 5 km) from the nearest sounding on Edwards AFB (see Figure 2 for location). All the interpreted resistivity maps show the location of the sounding stations, the outline of Rogers Lake, and other significant roads such as Lancaster Blvd which is the main north-south road. On these maps, warm colors (yellows, oranges, and reds) signify moderate to high resistivity materials of 70 to > 450 ohm-m (dry sand and gravel or granitic rocks), green colors signify medium resistivities of 30 and 45 ohm-m (mainly sand and gravel), and blue colors signify low resistivities of <4.5 to 20 ohm-m (clays to sandy clays).

10 m Depth Map:

Figure 3 shows the interpreted-resistivity map at a depth of 10 m (about 33 ft). High resistivity materials (70 to >450 ohm-m) exist in three areas: in the southwest, in the midwest, and in the northeastern part of the map. Only the high resistivity anomaly in the midwestern part represent granitic basement rocks, as evidenced by the proximity of mapped outcrops (Dibblee, 1960, 1967). The large southwestern anomaly (resembling the outline of a large alluvial fan) and the small northeastern high-resistivity anomaly probably represent dry sand and gravel layers. We know this by looking at the maps shown in subsequent figures and seeing that the southwestern and northeastern anomalies disappear at greater depths; whereas the midwestern anomaly, representing basement rocks, persists and even becomes larger. We also know this by looking at the cross sections given in part I of this report (Zohdy and Bisdorf, 1990a).

Low resistivity anomalies (<4.5 to 20 ohm-m) are seen in blue colors over significant portions of Rogers Lake. The small, single station, medium resistivity, green-color anomaly north of the Fly-By line at sounding 59 is at the location of the old basement outcrop on the lake bed which was removed by blasting because it was hazardous to emergency landings (Zohdy and Bisdorf, 1990a). As shown on this map this is an isolated anomaly and by virtue of its disappearance on subsequent maps it may represent the remaining part of a "floating" block of highly altered and weathered basement rock similar to other postulated floating blocks discussed in part I of this report (Zohdy and Bisdorf, 1990a).

At the northeast end of the Fly-By line, a low resistivity (<7 ohm-m) anomaly exists. It may be caused by clay deposits or by salty fluids in a sandy deposit. The extension of this low resistivity anomaly to as far south as station 108 (see Figure 2 for location) was unexpected since station 108 is located within a few hundred meters from an isolated basement outcrop. This low resistivity anomaly is separated to the west from another low resistivity (mostly <15 ohm-m) anomaly by a medium (30 to 45 ohm-m) resistivity anomaly.

30 m Depth Map:

Figure 4 shows the interpreted resistivity map at a depth of 30 m (about 100 ft). Notice that the high resistivity (70 to >450 ohm-m) material that dominated the southwestern part of the 10 m map is here replaced by primarily medium resistivity (30 to 45 ohm-m) material. Similarly some of the high resistivity anomalies in the northeastern part of the 10 m map are here smaller in size and are mostly replaced by medium resistivity materials. However, the high resistivity anomalies in the midwestern and midnorthern part of the 10 m map are still present at 30 m depth and they represent granitic basement.

The low resistivity (<7 ohm-m) anomaly in the northeastern part of the 10 m depth map is still present at this 30 m depth, but to the west, the low resistivity area in the northern part of Rogers Lake has shrunk considerably and is mostly replaced by medium resistivity (30 to 45 ohm-m) material (clays replaced by sand and gravel). In the southern part of Rogers Lake, however, the low resistivity materials (clays) now extend to the west and almost form a continuous belt of low resistivities connecting the southern end of Rogers Lake with Buckhorn Lake in the western part of the map.

100 m depth map:

Figure 5 shows the interpreted resistivity map at a depth of 100 m (about 330 ft). The map is dominated by medium resistivity (30 and 45 ohm-m) materials indicating that most of the clayey beds seen at shallower depths are here replaced by sand and gravel layers. In the northern part of the lake, however, a significant clayey body occupies a small basin that trends northwest-southeast. The flanks of this clayey body are seen on the previous two maps (10 and 30 m depth maps) where they appeared to the northeast and to the southwest of its location on this 100 m depth map.

In the midwestern part of the map, the high resistivity (100 to 450 ohm-m) materials depicting the presence of granitic basement are separated from the medium-high resistivity (45 to 70 ohm-m) region to the south by a steep gradient. This steep gradient may represent a geologic fault or the edge of a buried basin (or both). In the Graham Ranch area, moderately high-resistivity anomalies (70 to 150 ohm-m) tend to surround a small basin-like feature of medium resistivity (30 and 45 ohm-m).

300 m depth map:

Figure 6 shows the interpreted resistivity map at a depth of 300 m (about 1000 ft) which shows a gradual closure of the small basin-like feature near Graham Ranch (Zohdy and Bisdorf, 1990a). The map also shows the presence of a significant second clay layer of low resistivity (10 to 20 ohm-m) over the southern part of Rogers Lake which at the depth of 100 m was predominantly composed of sand and gravel layers of medium resistivity (30 and 45 ohm-m). A well pronounced, northeast-southwest zone of medium resistivity (30 to 45 ohm-m) materials separates high resistivity (70 to >450 ohm-m) basement rocks in the Graham Ranch area from low resistivity (10 to 15 ohm-m) clayey materials in the southern part of Rogers Lake and in the southwestern part of the map.

In the northern part of the map, the low resistivity anomaly (clayey body) seen on the 100 m depth map is still present on this 300 m depth map. It is separated from the large low resistivity anomaly in the southern half of Rogers Lake by a very

wide (4 to 5 km) medium resistivity material (sand and gravel). The persistance of the northern low resistivity clayey body at this depth and its unmistakable northwest-southeast trend may be evidence to the presence of a suspected fault (Dibblee, 1960) that approximately coincides with the northeastern edge of the clayey body.

450 m depth map:

Figure 7 shows the interpreted resistivity map at a depth of 450 m (about 1500 ft). At this depth the map shows the disappearance of the small basin-like feature near Graham Ranch where the previously medium resistivity anomaly of 30 to 70 ohm-m material is now replaced by high resistivity values ranging from 100 to greater than 450 ohm-m. The northeast-southwest zone of medium resistivity material (separating high resistivity basement rocks in the Graham Ranch area from low resistivity materials in the southern part of Rogers Lake and in the southwestern part of the map) is very well pronounced on this map. In the northern part of the map, the low resistivity clayey body occupying the northwest-southeast trending basin still exists but at this depth the clayey body covers a smaller area, thus signaling the shrinkage and closure of that basin with increasing depth. To the east of this shrinking basin, high resistivity materials (70 to 150 ohm-m) are present showing the detection of granitic basement rocks at this depth of 450 m (about 1500 ft). Similarly, in the southern part of the map, near the southern end of Rogers Lake, high resistivity materials are seen at this depth, again signaling the detection of granitic basement rocks. As mentioned in part I of this report (Zohdy and Bisdorf, 1990a) the test well drilled at the Holly site, approximately 300 m northeast of sounding 56 and near the isolated resistivity high on the southern boundary of the map, may have penetrated weathered granitic rock at a depth of about 300 m (about 1000 ft).

700 m depth map:

Figure 8 shows the interpreted resistivity at a depth of 700 m (about 2300 ft). At this depth most of the low and medium resistivity materials, which designate sedimentary deposits and were seen on previous maps, are here much smaller in area whereas those of medium to high resistivities are significantly larger in area and cover almost half the map.

In the northern part of the map, a broad east-west high resistivity (100 to >450 ohm-m) anomaly crosses Rogers Lake. The western part of the anomaly shows the broad extension of the basement rocks, which outcrop in the west, to beneath Runway 18. The broad anomaly in the west narrows to a 2 kilometer wide anomaly (east of Runway 18) as it extends to the east shore of the lake bed. This narrow anomaly is interpreted as representing

the core of a buried ridge of granitic basement rocks. The axis of this buried ridge is essentially beneath Runway 23 (north of the the Fly-By line and also north of sounding 59 which was made near the granitic "outcrop" on the lake bed). This shows that, after all, there is a buried granitic basement ridge that runs from east to west across the northern part of Rogers Lake; however, the location of this buried ridge (beneath Runway 23) is about two kilometers north of where it was suspected to be and the depth to its top is much greater than previously thought. The materials, at shallower depths, overlying the buried ridge may be composed of completely weathered and altered rocks that have the resistivity of sand and gravel deposits and they should not form a groundwater barrier. To the north of the Runway-23 buried ridge, a medium-resistivity (20 to 45 ohm-m) anomaly shows the southern edge of a deep basin in the north.

It should be noted that the near coincidence of the location of the high resistivity anomaly with the location of Runway 23 is not associated with the presence of man made structures because (as mentioned earlier) there are no man made structures on the lake bed. Furthermore, two other soundings (99 and 102) north of Runway 23 also show the presence of the high resistivity materials at the depth of 700 m. The association of Runway-23 with the presence of a buried ridge beneath it should not be construed to imply that perhaps there are errors in the resistivity measurements caused by man made structures along Runway 23.

In the middle portion of the map the remaining outlines of at least two basins are shown by low and medium resistivity (10 to 45 ohm-m) materials. It is not clear whether a second, broad, buried ridge exists and crosses Rogers Lake at the intersection of Runway 17 and Runway 24 near the middle of the Lake. Additional soundings west of Runway 17 are needed to map the subsurface more adequately.

In the southern part of Rogers Lake a prominent high resistivity (70 to >450 ohm-m) anomaly shows the full detection of high-resistivity basement rocks at this depth of 700 m (about 2300 ft). The geologic map of the area (Dibblee, 1960) shows quartz monzonite basement rocks outcropping on a large hill to the south-southeast of Rogers Lake. The high resistivity anomaly undoubtedly represents the extension of these basement rocks beneath the earth surface.

In the southwestern part of the map, the northern part of a a deep basin is shown by low and medium resistivity ((10 to 45 ohm-m) materials. This basin probably extends to greater depths beyond the edge of the map.

Resistivity Cross Sections

Three interpreted resistivity cross sections were made. Two northeast-southwest cross sections were made from soundings on Rogers Lake and one east-west cross section was made from soundings made along a profile approximately five kilometers north of highway 58 (see Figure 2). The cross sections made on Rogers Lake are referred to as the Runway-17 and the Low-Altitude-Speed-Course cross sections, respectively.

Runway-17 and Low-Altitude-Speed-Course Cross Sections:

These two northeast-southwest cross sections are not exactly parallel to one another as they are separated by a distance of about 1.5 km in the south and by a distance of more than 4 km in the north. The two cross sections are presented together in Figure 9. Note that both cross sections are vertically exaggerated by a factor of 2.

In the southwestern half, both cross sections show from top to bottom:

1) A shallow low resistivity (7 to 15 ohm-m) layer of clay.

2) A significant medium resistivity (30 and 45 ohm-m) layer of sand and gravel extending down to a depth of about 200 m.

3) A thick low resistivity (7 to 15 ohm-m) material (predominantly clay) approximately 400-500 m thick.

4) A high resistivity (70 to >450 ohm-m) material (granitic basement) at a depth of about 700 to 800 m.

A medium-depth test well recently drilled near sounding 122 (Low-Altitude-Speed-Coarse cross section) to a depth of about 230 m (760 ft), confirmed the geoelectrically predicted layering of a thin clay near the top, few hundred feet of sand and gravel in the middle, and a clay layer near the bottom of the well (Clark Londquist, oral communication). The clay layer penetrated near the bottom of the well represents the top of the thick low resistivity material on the cross sections.

Near the southwestern edge of the cross sections, the high resistivity basement drops from a depth of about 450 m (about 1500 ft) to a depth of about 700 to 800 m (about 2300 to 2600 ft) within a distance ranging from 1.5 to 3 km toward the northeast.

In the middle part of the cross sections, a definite lateral increase in interpreted resistivity occurs from southwest to northeast. On the Runway-17 cross section the lateral increase in interpreted resistivity is somewhat abrupt between soundings 71 and 70 and the depth to high-resistivity basement beneath

soundings 70, 69, and 68 is not as clear as beneath other soundings on the section. However, the segment of the cross section from soundings 70 to nearly sounding 84 is composed of materials having intermediate resistivities of 20 to 70 ohm-m which are generally characteristic of sand and gravel deposits and not of basement rocks. If future drilling proves that these materials are basement rocks then these basement rocks must be highly weathered, possibly altered, and highly fractured to the extent that they form a good aquifer. The same intermediate resistivity layer (20 to 70 ohm-m) exists on the Low-Altitude-Speed-Course cross section from sounding 89 in the southwest to nearly sounding 66 in the northeast. The depth to the high-resistivity basement in this zone (on both cross sections) ranges from about 750 m (about 2400 ft) to as deep as 1300 m (about 4300 ft).

In the north-east part of the cross sections the buried basement ridge, previously shown on the 700 m depth map (Figure 8), is shown beneath sounding 84 on the Runway-17 cross section and beneath sounding 66 on the Low-Altitude-Speed-Course cross section, respectively. A small basin filled with low resistivity (<20 ohm-m) material and having a thickness of about 300 m (about 1000 ft) is shown on the northeastern part of Runway-17 cross section.

East-West Cross Section North of Edwards AFB:

A cross section based on 11 soundings was made along an east-west line approximately 5 km north of Edwards AFB (see Figure 2 for location). The purpose of making the soundings along this line was to determine the depth to basement across the valley and therefore determine if large amounts of groundwater may be moving through that area. The results of the interpretation of soundings 111 through 121 are shown in Figure 10. The geoelectric cross section is vertically exaggerated 2 times.

In the western part of the section, the soundings were made over highly-weathered granitic rocks which were exposed along the roadsides. The interpretation of soundings 120, 115, and 114 indicates that the interpreted resistivity of these granitic rocks ranged from slightly less than 150 to slightly more than 300 ohm-m. These relatively low resistivities (for basement rocks) persisted to depths of as much as 1000 m (about 3300 ft). These basement resistivities, however, were never as low as 30 to 70 ohm-m, which is the resistivity of a major portion of the materials in the mid section of Rogers Lake where very shallow basement was suspected.

A buried valley filled with 30 to 100 ohm-m material, which is probably composed mostly of sand and gravel, exists beneath soundings 112 to 118. The maximum depth to high-resistivity (basement) rocks is about 500 m (about 1600 ft) beneath soundings

111 and 116. To the west of sounding 112, the depth to resistive basement rocks diminishes to less than 100 m (330 ft) and by sounding 114 the underlying rocks are basement rocks. In view of the low to intermediate resistivity of these basement rocks (with interesting zones of about 150 ohm-m), it is very likely that large amounts of ground water can be produced from these rocks with wells drilled to intersect highly-fractured zones. In the eastern part of the cross section, the materials of 45 to 150 ohm-m beneath soundings 118 and 119 probably represent volcanic rocks which outcrop within a distance of one kilometer from sounding 119.

To summarize: the sounding interpretations show that the valley fill is approximately 4 km wide and about 500 m (about 1600 ft) thick and that it is primarily filled with 30 to 70 ohm-m material (probably mostly sand and gravel). Therefore, significant amounts of groundwater may flow through this alluvial material unobstructed by shallow basement rocks or by significant amounts of clay.

Depth to High-Resistivity Basement Map

Figure 11 shows a map of depth to high-resistivity basement rocks which is based on the interpretation of all the soundings made on Edwards AFB except soundings 111 to 121, which are located about 5 km north of the northern boundary of Edwards AFB. The depth to basement on this map is defined as the depth at which the interpreted resistivity equals 100 ohm-m and beneath which it exceeds 100 ohm-m to very great depths. The contour interval on the map is 100 m.

The depth to high-resistivity basement map, which bears a great deal of resemblance to the interpreted resistivity map at a depth of 700 m (Figure 8), shows essentially three major basins:

In the north, we see part of a basin with a maximum depth (in the mapped area) of a little more than 1000 m (about 3300 ft). A test hole (Dibblee, 1960) located approximately 5.6 km (about 3.5 miles) east of sounding 106 reached a depth of about 710 m (2328 ft) and did not penetrate basement. It bottomed in Tertiary sandstone with some granitic cobble and occasional layers of grey clay. To the south of this northern basin we see the east-west buried ridge (shown earlier on the 700 m depth map) which we refered to as the Runway-23 buried ridge. The average depth to its top is about 600 m (about 2000 ft).

To the south of the Runway-23 buried ridge lies a large basin which we shall refer to as Rogers-Lake basin. It, in turn, may be subdivided into two smaller, northern and southern, basins that are vaguely separated by a discontinuous, broad, low lying basement high which lies beneath Runway 24 and essentially

parallels the Runway-23 buried ridge. This basement high is nowhere nearly as pronounced as the Runway-23 buried ridge. The deepest part of the Rogers-Lake basin lies beneath the northern part of Runway 17. The maximum depth there is interpreted to be a little more than 1000 m (about 3300 ft). On average, however, the depth to basement is about 800 m (about 2600 ft) in both the northern and southern Rogers-Lake basins.

In the southern Rogers-Lake basin, a 700 m depth contour runs east-west, which signals a general shallowing of the basement rocks to the south and outlines the edge of a "plateau" of shallower basement rocks. This plateau has some knobs and ridges on it which bring the basement rocks to depths that are shallower than 500 m (about 1600 ft) such as at sounding 56 on East Avenue B (see Figures 1 and 2). As mentioned in part I of this report (Zohdy and Bisdorf, 1990a), two of three test wells drilled less than 2 m apart and at a distance of about 300 m northeast of sounding 56, may have penetrated basement rocks at a depth of 328 m (1075 ft) and 334 m (1095 ft), respectively. Neither of the two wells penetrated the weathered-basement rocks sufficiently to obtain high resistivity values on the resistivity logs. A small sample of weathered granitic rock was obtained from the bottom of one of the wells. Needless to say, the sample could have been from a large boulder rather than true basement. In any case, according to the interpretation of the soundings, the basement rocks are less than 500 m deep, at this site, and therefore probably are not all that much deeper than the total depth (about 330 m) of the test-wells.

In the southwestern part of the map, there is a large basin in which there are three small sub-basins. The interpreted depth to basement in these sub-basins is greater than 1000 m (about 3300 ft) and may reach 1700 m (about 5600 ft) beneath sounding 53. The morphology of this southwestern basin is somewhat complicated, and deserves further study with additional soundings west of Lancaster Blvd (120th Av) and south of East Avenue B.

In the western and northwestern parts of the map, that is in the Graham Ranch area and north of Edwards, the basement rocks are generally at a depth of about 100 m (about 330 ft) or less but do drop to depths of 300 and 400 m (about 1000 and 1300 ft) as we move southward. The detailed interpretation of the sounding data in the Graham Ranch area and vicinity was discussed in part I of this report (Zohdy and Bisdorf, 1990a) and will not be repeated here.

The depth to basement map shows that in the area east of Lancaster Blvd, the southeast-basement high is almost connected to the midwestern-basement high (southeast of Graham Ranch area) except for a small gap (about 1.5 km wide) where the basement is deeper. The depth to basement in this gap is in the 600 to 700 m (about 2000 to 2300 ft) range as inferred from the interpretation of soundings 129 and 130.

3-D Shaded Relief of Basement Topography

Figure 12 shows a computed 3-D shaded relief image (top part) and a plan-view map for reference (bottom part). The plan-view map is a reduced-size version of the depth-to-basement map shown in Figure 11. The 3-D image is vertically exaggerated approximately 5 times. The location of the viewer is indicated on the plan-view map by a large dot with a label that reads "You are here". The viewer is looking to the northeast as indicated by the arrow. The light source is from the southeast at an angle of incidence of 45 degrees. Our choice of the color palette gives the illusion of a second light source at an angle of incidence of about 90 degrees (information regarding the generation of this 3-D shaded relief image is given in the section on computers and peripherals).

Several features are labeled with the letters A through I on both the 3-D image and on the plan-view map to facilitate identification of common features on both presentations. For example the Runway-23 buried ridge is marked by the letter A. Localized basement highs are marked with the letters B, C, D, E and G. A subtle linear feature (marked by the letter F) is clearly visible on the 3-D relief because of the back lighting. On the left side of viewer, on the 3-D image, we see the strong indication of a double step showing probable fault planes and an area where the basement is shallow marked by the letter I. In the middle of the foreground we see one of the smaller basins of the southwestern part of the map (marked by the letter H) with a depth of at least 500 m in comparison to the surrounding relief and a total depth from land surface of about 1300 m.

Although it is fascinating to examine this new way of presenting this type of information, we must remember that:

a) Although we can view an interpreted basement relief map in a convincing 3-D presentation, this does not mean that the interpretation is any more accurate or any more real than on the plan-view map. We simply have a much better mental imprint of how it looks. Occasionally, we may note a feature that we overlooked on the plan-view map.

b) This 3-D presentation is vertically exaggerated several times to increase the visual impact. Therefore, the fault planes are not as steep as they look and the edges of the buried ridges and basins are not as steep as they are portrayed.

We present Figure 12 mainly as a sample of the state of the art of today's science in desktop computer visualization.

Recent Test-Hole Information

Several shallow test holes have been drilled on Rogers Lake since the completion of the resistivity survey and some sketchy information is available at the time of this writing. To date, the following test wells were drilled (Clark Londquist, oral communication):

1) Test well drilled in the northeastern part of Rogers Lake near sounding 103 to a depth of 96 m (315 ft). No information on very low resistivity (2 to 4 ohm-m) layer at very shallow depth of 1.5 to 4 m (about 5 to 12 ft) as indicated by sounding 103. Well bottomed in sand and gravel.

2) Test well drilled south of the Fly-By Line at a distance of about 230 to 300 m (about 750 to 1000 ft) southwest of sounding 137 to a depth of 68.6 m (225 ft). Reportedly, hard rock was encountered at a depth of about 58 m (190 ft) and the drill hole remained in it to a depth of 68.6 m (225 ft) where the drilling was terminated.

At present this is the available information (Clark Londquist, oral communication): From a depth of about 58 to 68.6 m (190 to 225 ft) the drilling rate was slowed because of hard rocks, the rock cuttings show quartz, the drilling mud turns black and at a depth 68.6 m (225 ft) the drilling is stopped because of lack of progress in deepening the hole. No logs are available at this time.

The quartz in the cuttings and the hardness of the rock may cause one to interpret the rock to be quartz monzonite. The report that the drilling mud turned black may be caused by an abundance of biotite (but this is unlikely) and it should have been easy to identify biotite in the drilling mud with a hand lens. Manganese in sediments or black mud rich in organic material can turn the drilling mud black, but then they are not necessarily associated with hard rocks.

The interpretation of sounding 137 (which is located at a distance of about 300 m from the test well) shows a resistivity of about 20 ohm-m in the depth range between 47 and 100 m (about 150 to about 300 ft), the interpreted resistivity is mostly about 30 to 45 ohm-m (less than 60 ohm-m) down to a depth of about 680 m (about 2200 ft). Furthermore, the gravity map of the area (Morin and others, 1990) shows a small gravity low northeast of the test well. We will not elaborate on the possible interpretation of the depth to basement on the basis of the gravity map since as of this writing it has not been fully interpreted.

We hope to have the opportunity to make future soundings in the immediate vicinity of this test well and we hope that funding will permit the deepening of the well to few hundred feet and to

obtain core samples of this material, because at present it is very unlikely (according to the resistivity interpretation) that the rock encountered at the bottom of this test hole represents the true basement.

3) A test well drilled between soundings 71 and 88 to a depth of 119.8 m (393 ft). No basement rocks encountered.

4) A test well drilled near sounding 122 to a depth of 231.6 m (760 ft). It bottomed in tight clay and some boulders that damaged the core barrel.

5) A test well drilled off Rogers Lake on East Ave B (Figure 1) near sounding 53 (Figure 2) to a depth of nearly 305 m (1000 ft) did not penetrate basement rocks.

All five-new test wells (except the one drilled about 300 m from sounding 137) and all four-old test wells (discussed in part I, Zohdy and Bisdorf, 1990a) support the resistivity interpretation. Nevertheless, it is unfortunate that groundwater test holes are almost never deep enough (rarely exceed 300 m (about 1000 feet) to yield the required information for calibrating surface geophysical surveys. On the other hand, conventional resistivity sounding data never have the resolution to map all the thin layers in the upper 300 m (about 1000 ft), which is often desired by the hydrologist.

Summary and Conclusions

To date 140 deep Schlumberger soundings were made in the Edwards AFB area and vicinity. The purpose of this part of the report is to document the field sounding curves obtained from sounding 68 to 140 and to present their interpretation (see appendix). The results of the interpretation of all 140 soundings were shown in the form of several maps of interpreted resistivity at several depths, in the form of three interpreted resistivity cross sections, a depth to basement map (here defined as depth to greater than 100 ohm-m material), and in the form of a 3-D presentation of the interpreted basement relief.

We found that there is no geoelectric evidence of a very shallow basement ridge crossing Rogers Lake in an east-west direction north of the Fly-By Line. Instead we found evidence for a buried ridge at a depth of about 600 meters that crosses Rogers Lake in an east-west direction, essentially beneath Runway 23, and approximately 1.5 kilometers north of the suspected location of the shallow buried ridge.

Recent drill hole information at a distance of about 230 to 300 m (750 to 1000 ft) southwest of sounding 137 indicates that hard rock (quartz monzonite ?) was penetrated at a depth of about

58 m (190 ft). On the basis of the interpretation of sounding 137, however, we do not believe that the rock encountered in the test hole is the true basement material. We found that the resistivity of outcrops of quartz monzonite in the area is indeed low (150 to 350 ohm-m) but not as low as 20 to 45 ohm-m as the material is interpreted to be at a depth of about 60 m beneath sounding 137. The nearest sounding with a material of about 70 to 80 ohm-m at a depth of about 100 m is sounding 60 (see Figure 10 in part I, Zohdy and Bisdorf, 1990a) which lies approximately 2 km northwest of sounding 137. Even beneath sounding 60, the moderately high resistivity material is interpreted to be underlain by low resistivity sediments. It is possible, but rather unlikely, that the basement is indeed shallow at sounding 60 and that the curve is distorted by the very limited lateral extent (Kunetz, 1966) of a buried "hill" beneath sounding 60. However, there is no evidence at sounding 137 of any moderately high resistivity layer at a depth of about 60 m (200 ft). Inasmuch as we interpreted the outcrops of granitic rocks (quartz monzonite) in the Graham Ranch area to represent floating blocks (Zohdy and Bisdorf, 1990a) it is not unlikely that similar buried rock structures may exist beneath Rogers Lake. Further study of this drill-hole information is strongly recommended. Every effort should be made to deepen the test hole, to obtain core samples, and to obtain resistivity logs in the deepened hole, and to make soundings very close to the location of the hole, and to examine the validity of the assumption of the near horizontal stratification of the subsurface material by making variable azimuth resistivity soundings (Zohdy, 1970) and few horizontal resistivity profiles.

In general, the resistivity interpretation has been very beneficial to the mapping and visualization of the subsurface distribution of potential ground-water aquifers in the Roger Lake area. This was done by showing the depth and thickness of medium resistivity (20 to 70 ohm-m) layers which are interpreted to represent predominantly sand and gravel layers as well as those low resistivity (2 to 10 ohm-m) layers which are interpreted to represent predominantly clay layers. Furthermore, the mapping of the depth to the high-resistivity and hence relatively-impermeable basement has been achieved. The results of the sounding interpretations in terms of distribution of sand and gravel layers versus clay layers and in terms of predicted depth to basement have been proven correct by 8 out of 9 drill holes that followed the survey.

Acknowledgements

We wish to acknowledge the cooperation of our colleagues Kenneth J. Hollett, Clark J. Londquist, and William F. McCaffery of the Water Resources Division in Sacramento, California, for paving the way to this investigation and for providing us with

the geologic and geophysical logs obtained from the test wells.

We also acknowledge the cooperation of Mr. Larry D. Plews, (Engineer at Edwards AFB) and all the personnel at Edwards AFB who supported and facilitated the making of this geophysical survey.

Computers and Peripherals

The sounding interpretations were made on an IBM PC/XT computer equipped with a math co-processor. The resistivity maps and cross sections were generated on an Amiga 3000 desktop computer equipped with a 25 MHz MC-68030, 10 megabytes of 32 bit RAM, and a MC-68882 math co-processor. The commercial program Deluxe Paint III (Silva, 1989) was used exclusively in generating the color cross sections and in finalizing the resistivity maps which were calculated and generated in color using a program written by the first author and compiled in HiSoftBASIC Professional Amiga-version 1.05. The maps and cross sections were printed on a Xerox 4020 ink-jet color printer.

The 3-D basement relief image was generated using the commercial program VistaPro recently published by Virtual Reality Laboratories, Inc. for the Amiga computer (Hinkley and Eksten, 1990). We used a conversion program (provided by Virtual Reality Laboratories and modified by us into HiSoftBASIC) to input our own digital data of the interpreted basement topography into VistaPro and to generate several 3-D shaded relief images. In fact, we generated a moderately long computer animation based on over 200 such images which simulated a flight over this interpreted basement relief. The compressed file for the computer animation was about 5.5 Megabytes.

The plan-view map (shown in Figure 12) is a vector map converted from a bitmapped map and combined with the 3-D bitmap image using the commercial program ProDraw version 2.0 by Gold Disk for the Amiga computer. The automatic tracing of the bitmap was made using the program "Trace" provided with ProDraw version 2.0.

The tabulations and log-log plots of the sounding curves shown in the appendix were made as follows. The data files from the automatic interpretation program were used to generate graphics and text files compatible with WordPerfect 5.1, using a program written by the second author in Microsoft QuickBASIC 4.5. The output of WordPerfect 5.1 was printed on an HP Laser printer.

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Appendix

On the following pages, the data for each sounding curve includes:

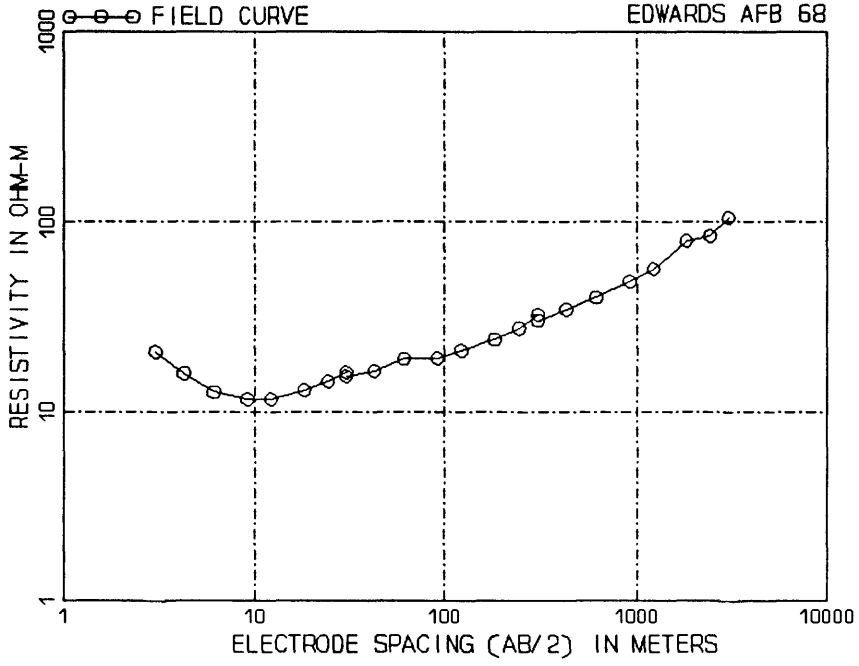
1) A sounding title which is designated by the name of the survey area followed by the sounding number. A few interpreted-sounding numbers have the suffix S and/or the suffix X (see for example: Edwards AFB 110S, Edwards AFB 68X). The suffix S indicates that the sounding curve was smoothed prior to interpretation whereas the suffix X indicates that the sounding curve was extrapolated to larger current-electrode spacings in order to better define the final rising branch which depicts the detection of a high resistivity basement. In either case, the observed-sounding curve is always presented as it was originally measured, as a reminder of how the actual data looked prior to data processing and interpretation.

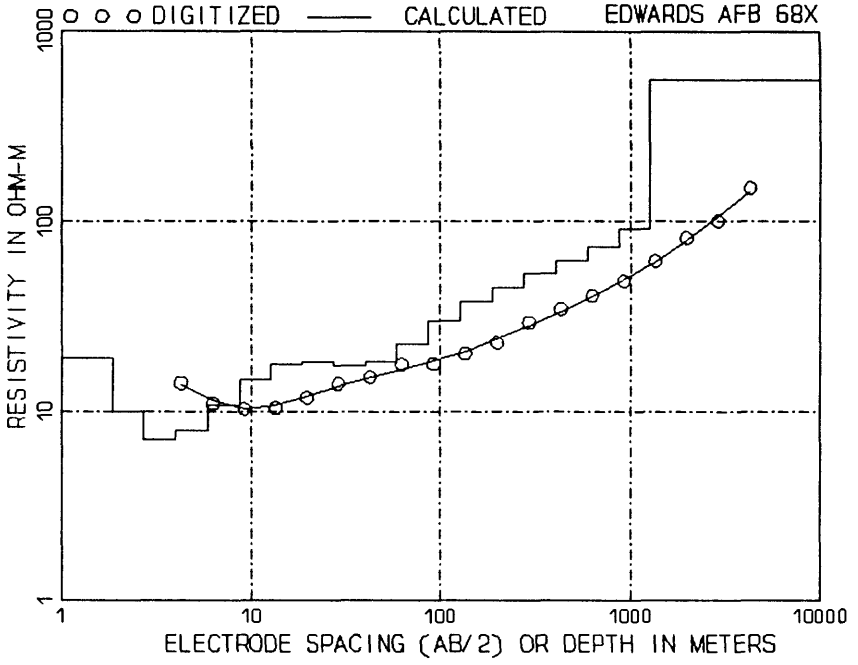
2) A tabulation of the current-electrode spacings (AB/2) in meters (and in feet) and corresponding apparent resistivities in ohm-meters.

3) A log-log plot of the field-sounding data. Each set of data points that was made with the same potential-electrode spacing (MN/2) is connected with a solid line to form a continuous segment on the curve. Measurements were made at the fixed potential-electrode spacings of 2, 20, and 200 ft, respectively.

4) A tabulation of the automatically interpreted layering, with depths in meters (and in feet) and corresponding interpreted resistivities in ohm-meters.

5) A log-log plot of the output of the automatic interpretation program. The circles represent the shifted-digitized sounding curve, the continuous curve represents the calculated sounding curve, and the step-function curve represents the interpreted layering model. Note that the abscissa is used to represent the current-electrode spacing for both the digitized and calculated sounding curves as well as the interpreted depth to the various layers. Similarly, the ordinate is used to represent the digitized and calculated apparent resistivities as well as the interpreted resistivity of the various layers in the step-function model.





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3.05 (10.00)	20.70	121.92 (400.00)	21.00
4.27 (14.00)	16.00	182.88 (600.00)	24.00
6.10 (20.00)	12.70	243.84 (800.00)	27.50
9.14 (30.00)	11.70	304.80 (1000.00)	32.50
12.19 (40.00)	11.70	304.80 (1000.00)	30.20
18.29 (60.00)	13.00	426.72 (1400.00)	34.70
24.38 (80.00)	14.50	609.60 (2000.00)	40.00
30.48 (100.00)	16.20	914.40 (3000.00)	48.50
30.48 (100.00)	15.40	1219.20 (4000.00)	56.50
42.67 (140.00)	16.40	1828.80 (6000.00)	80.00
60.96 (200.00)	19.00	2438.40 (8000.00)	85.00
91.44 (300.00)	19.20	3048.00 (10000.00)	105.00

DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.87 (6.12)	19.25	59.02 (193.65)	18.36
2.74 (8.99)	10.00	86.63 (284.23)	22.83
4.02 (13.19)	7.12	127.16 (417.20)	30.17
5.90 (19.36)	7.88	186.65 (612.36)	37.84
8.66 (28.42)	10.78	273.96 (898.82)	45.05
12.72 (41.72)	14.63	402.12 (1319.29)	53.10
18.66 (61.24)	17.72	590.23 (1936.45)	62.43
27.40 (89.88)	18.35	866.34 (2842.32)	73.81
40.21 (131.93)	17.52	1271.61 (4171.96)	92.02
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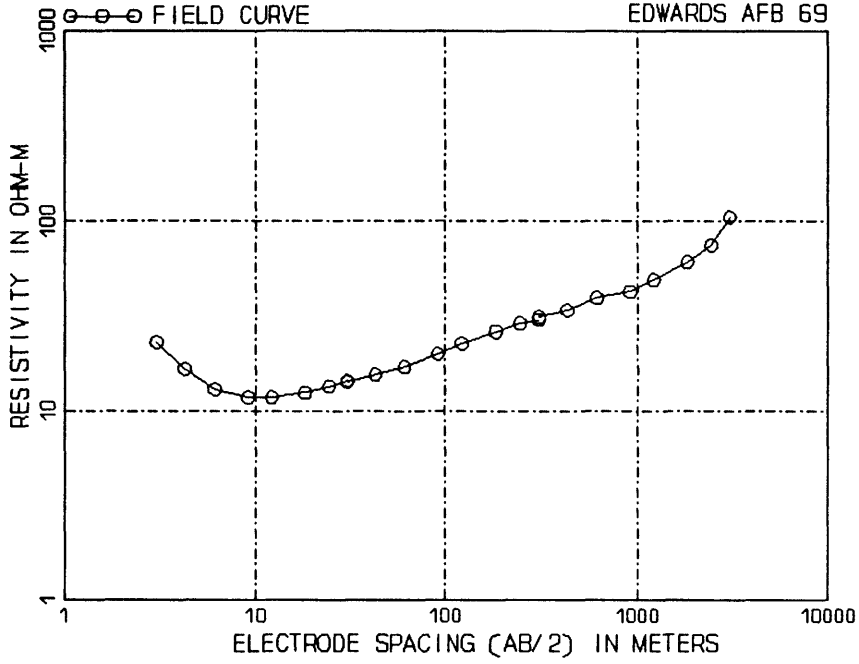

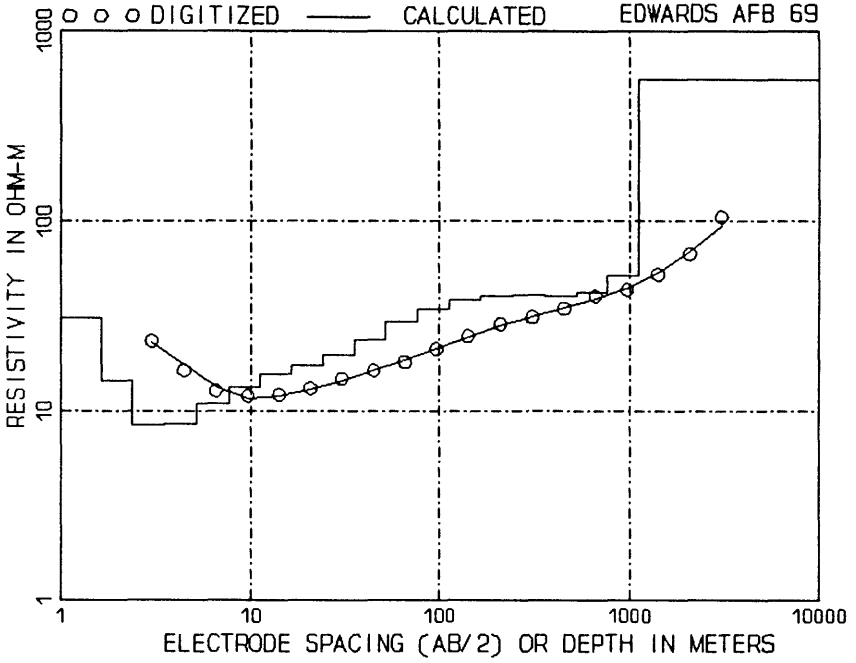

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12.19 (40.00)	11.80	304.80 (1000.00)	31.30
18.29 (60.00)	12.50	426.72 (1400.00)	34.00
24.38 (80.00)	13.50	609.60 (2000.00)	39.50
30.48 (100.00)	14.50	914.40 (3000.00)	42.50
30.48 (100.00)	14.30	1219.20 (4000.00)	49.00
42.67 (140.00)	15.60	1828.80 (6000.00)	61.00
60.96 (200.00)	17.10	2438.40 (8000.00)	75.00
91.44 (300.00)	20.00	3048.00 (10000.00)	105.00

DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	31.04	52.05 (170.76)	23.94
2.42 (7.93)	14.41	76.40 (250.65)	29.46
3.55 (11.63)	8.36	112.14 (367.90)	34.73
5.20 (17.08)	8.61	164.59 (540.00)	38.35
7.64 (25.06)	11.05	241.59 (792.61)	40.43
11.21 (36.79)	13.47	354.60 (1163.40)	40.97
16.46 (54.00)	15.53	520.49 (1707.63)	40.44
24.16 (79.26)	17.36	763.97 (2506.46)	42.49
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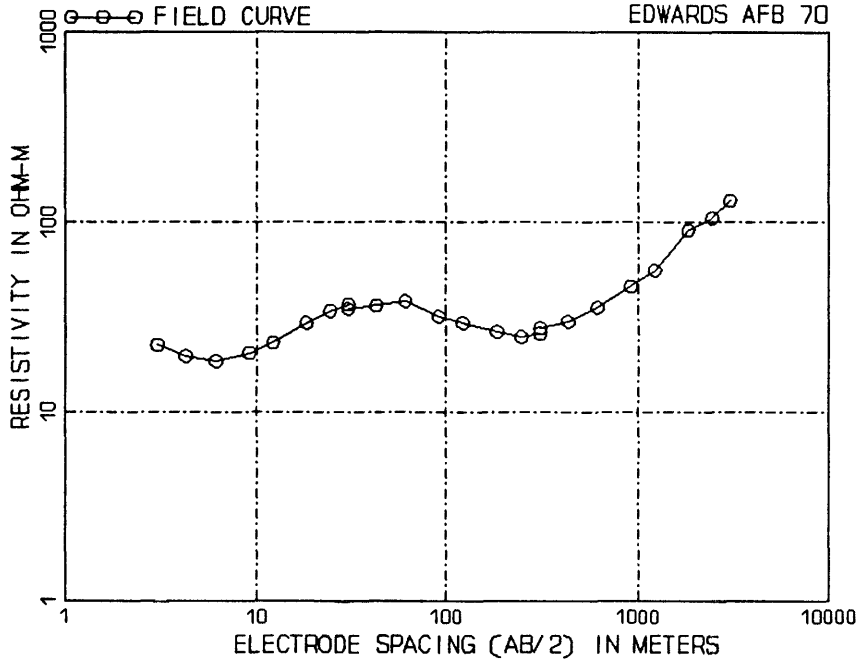

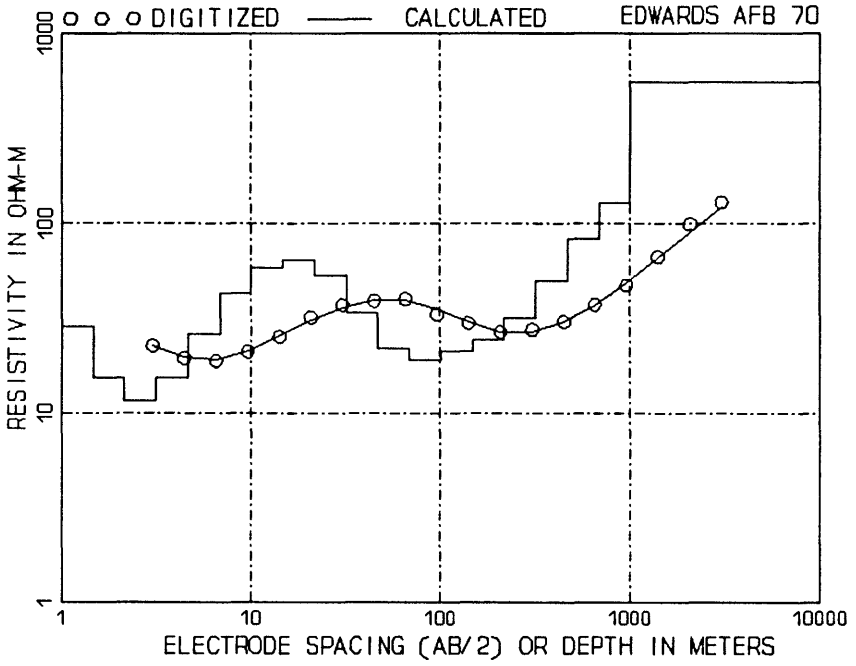

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6.10 (20.00)	18.60	243.84 (800.00)	25.00
9.14 (30.00)	20.50	304.80 (1000.00)	26.00
12.19 (40.00)	23.30	304.80 (1000.00)	27.70
18.29 (60.00)	29.50	426.72 (1400.00)	30.00
24.38 (80.00)	34.20	609.60 (2000.00)	35.50
30.48 (100.00)	37.00	914.40 (3000.00)	46.00
30.48 (100.00)	35.00	1219.20 (4000.00)	56.00
42.67 (140.00)	36.50	1828.80 (6000.00)	91.00
60.96 (200.00)	38.50	2438.40 (8000.00)	105.00
91.44 (300.00)	32.00	3048.00 (10000.00)	130.00

DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
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2.17 (7.13)	15.38	68.76 (225.58)	21.98
3.19 (10.47)	11.71	100.92 (331.11)	19.14
4.68 (15.37)	15.30	148.13 (486.00)	21.24
6.88 (22.56)	25.92	217.43 (713.35)	24.72
10.09 (33.11)	42.54	319.14 (1047.06)	32.08
14.81 (48.60)	58.83	468.44 (1536.87)	50.00
21.74 (71.34)	64.49	687.57 (2255.81)	83.56
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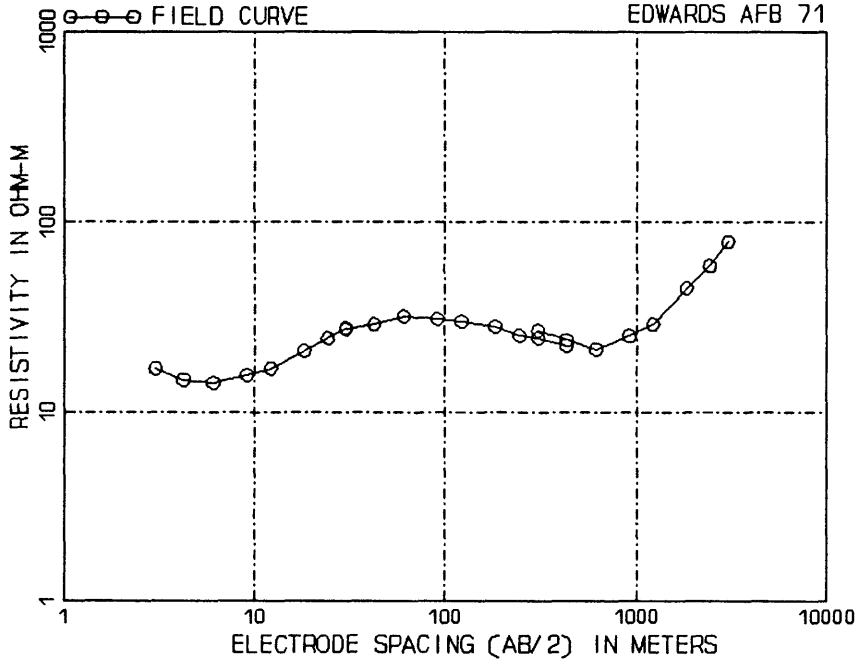

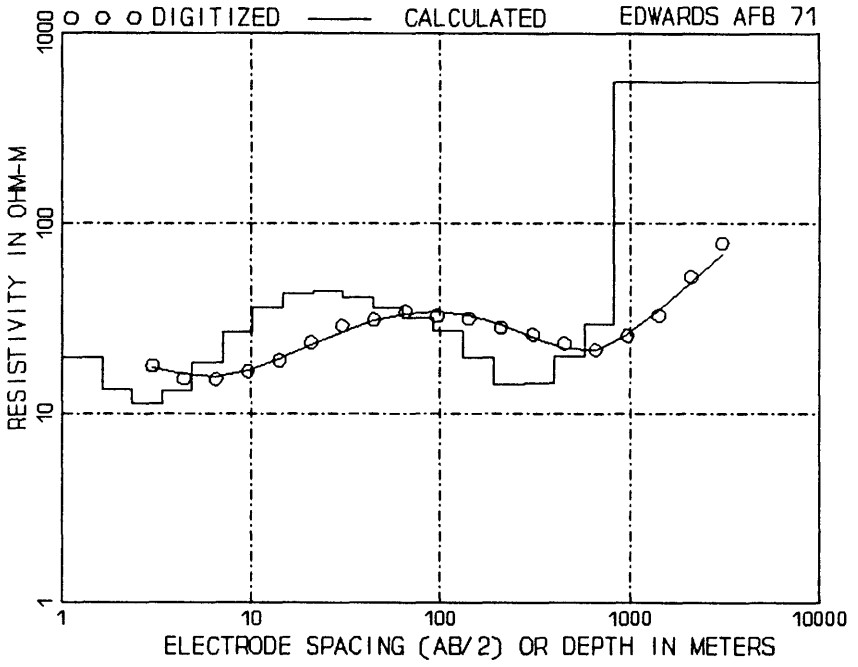

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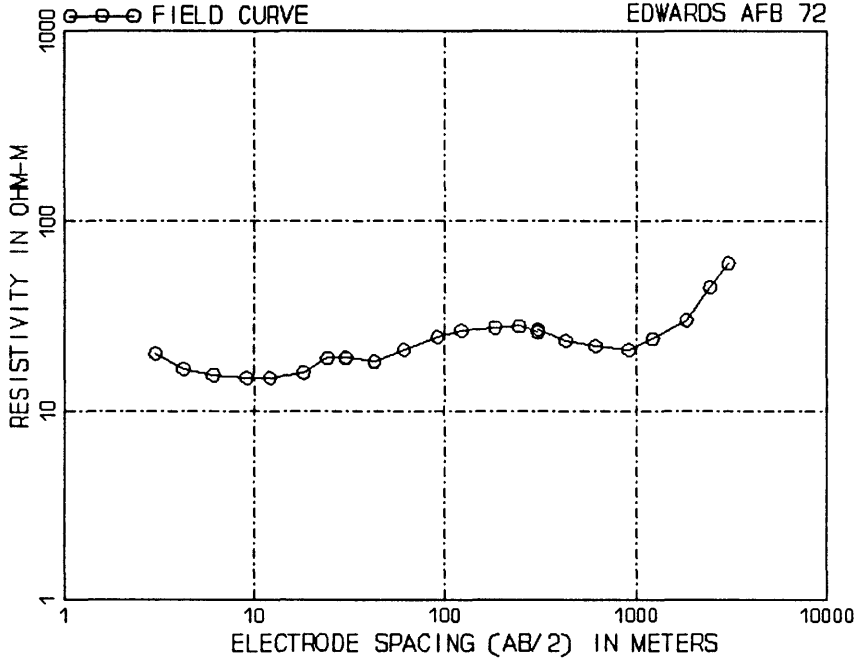
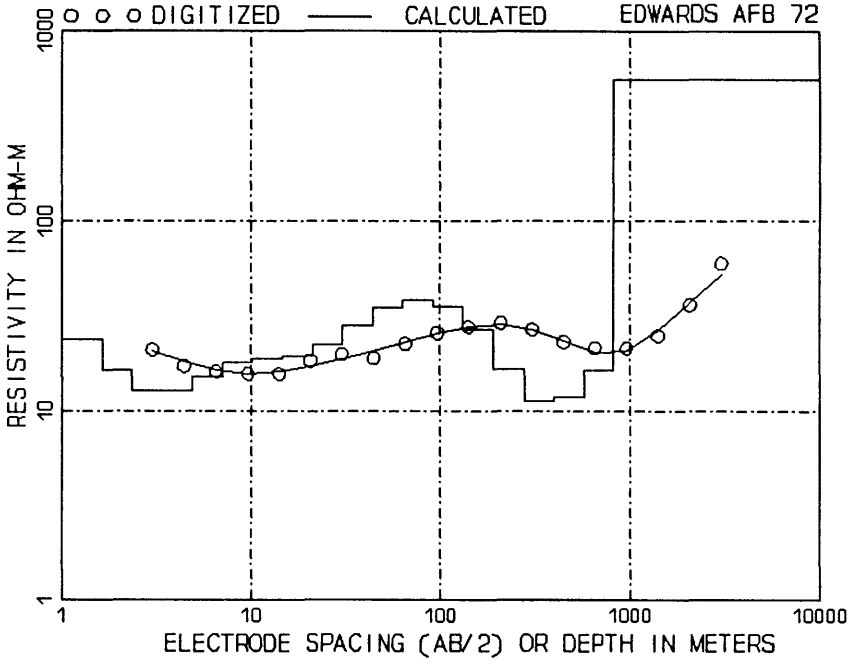
6.10 (20.00)	14.30	243.84 (800.00)	25.30
9.14 (30.00)	15.70	304.80 (1000.00)	24.50
12.19 (40.00)	17.00	426.72 (1400.00)	22.50
18.29 (60.00)	21.00	304.80 (1000.00)	27.00
24.38 (80.00)	24.50	426.72 (1400.00)	24.00
30.48 (100.00)	27.70	609.60 (2000.00)	21.50
30.48 (100.00)	27.30	914.40 (3000.00)	25.20
42.67 (140.00)	29.00	1219.20 (4000.00)	29.00
60.96 (200.00)	32.00	1828.80 (6000.00)	45.00
91.44 (300.00)	31.00	2438.40 (8000.00)	59.00
		3048.00 (10000.00)	79.00

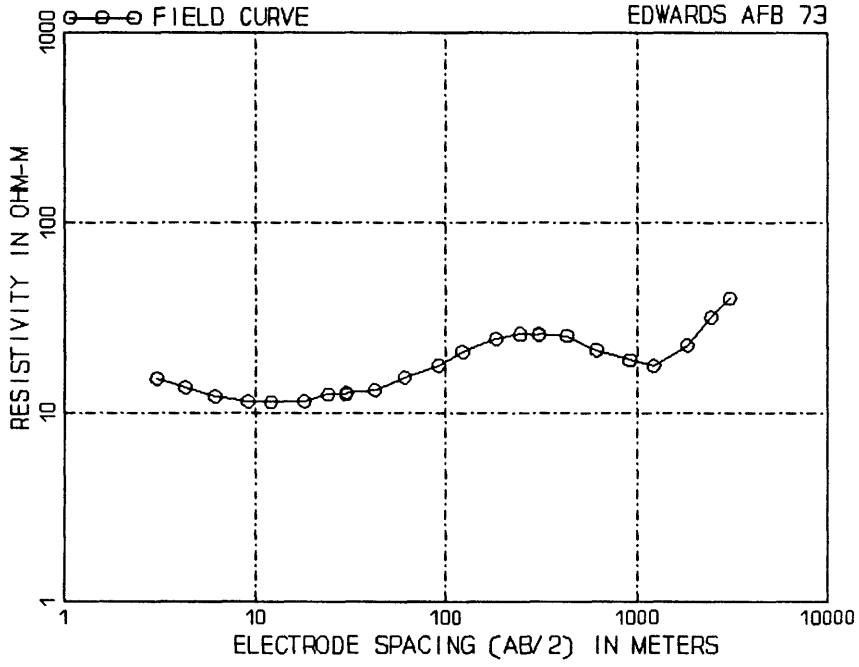
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	19.70	44.16 (144.87)	40.68
2.37 (7.78)	13.51	63.64 (208.78)	35.92
3.42 (11.22)	11.39	91.71 (300.90)	32.09
4.93 (16.17)	13.20	132.18 (433.67)	27.35
7.10 (23.30)	18.51	190.50 (625.01)	19.81
10.23 (33.58)	26.83	274.56 (900.77)	14.28
14.75 (48.39)	36.08	395.70 (1298.21)	14.57
21.26 (69.74)	42.75	570.28 (1871.01)	20.06
30.64 (100.52)	44.11	821.90 (2696.54)	29.37
		99999.00 (99999.00)	550.00

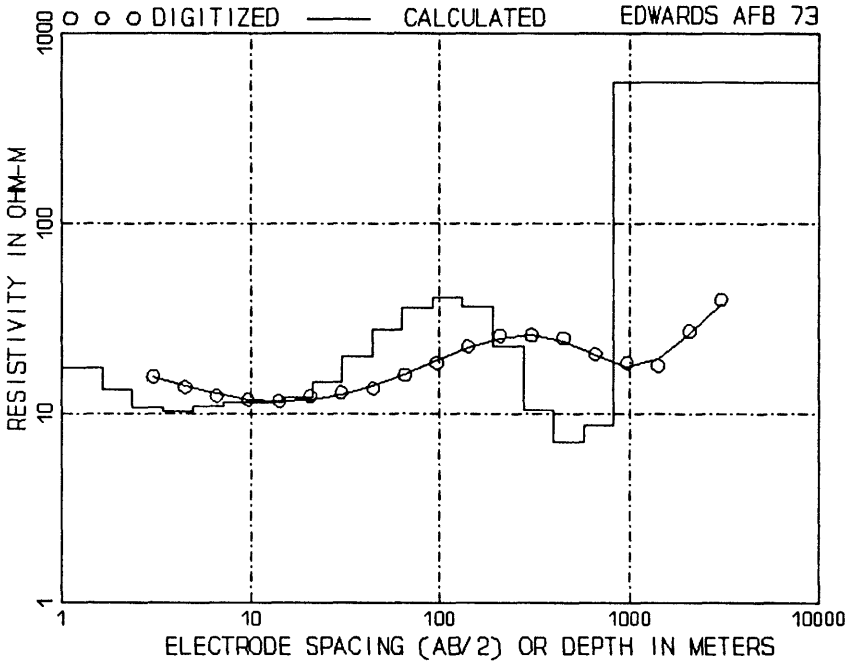




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	20.00	121.92 (400.00)	26.60
4.27 (14.00)	16.70	182.88 (600.00)	27.50
6.10 (20.00)	15.50	243.84 (800.00)	28.00
9.14 (30.00)	15.00	304.80 (1000.00)	26.00
12.19 (40.00)	15.00	304.80 (1000.00)	27.00
18.29 (60.00)	16.00	426.72 (1400.00)	23.50
24.38 (80.00)	19.00	609.60 (2000.00)	22.00
30.48 (100.00)	19.00	914.40 (3000.00)	21.00
30.48 (100.00)	19.20	1219.20 (4000.00)	24.00
42.67 (140.00)	18.20	1828.80 (6000.00)	30.00
60.96 (200.00)	21.00	2438.40 (8000.00)	45.00
91.44 (300.00)	24.50	3048.00 (10000.00)	60.00

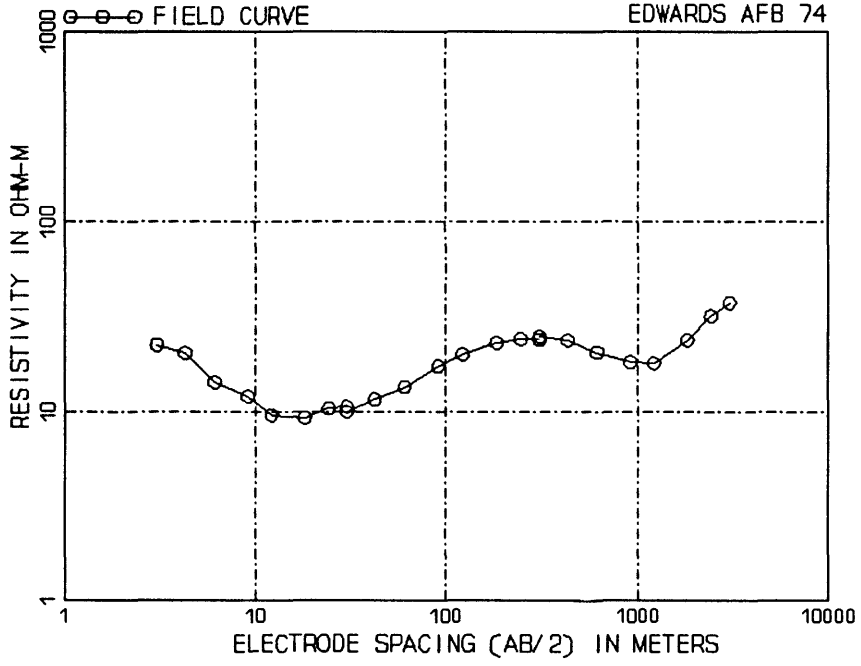
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	23.94	44.16 (144.87)	28.23
2.37 (7.78)	16.34	63.64 (208.78)	34.78
3.42 (11.22)	12.74	91.71 (300.90)	38.39
4.93 (16.17)	12.74	132.18 (433.67)	35.81
7.10 (23.30)	15.22	190.50 (625.01)	27.07
10.23 (33.58)	18.06	274.56 (900.77)	16.78
14.75 (48.39)	18.89	395.70 (1298.21)	11.28
21.26 (69.74)	19.37	570.28 (1871.01)	11.76
30.64 (100.52)	22.39	821.90 (2696.54)	16.29
		99999.00 (99999.00)	550.00

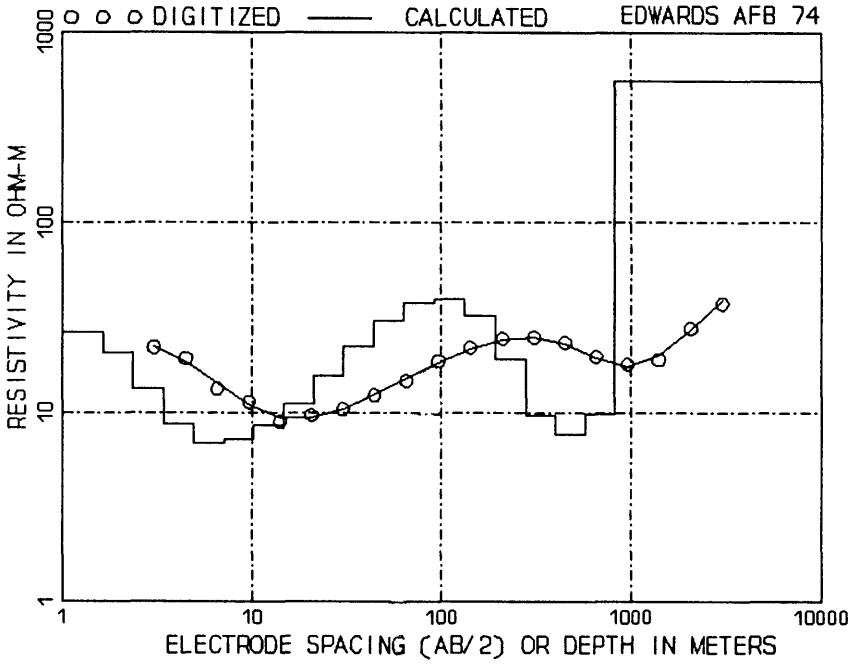




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	15.20	121.92 (400.00)	21.00
4.27 (14.00)	13.60	182.88 (600.00)	24.50
6.10 (20.00)	12.20	243.84 (800.00)	26.00
9.14 (30.00)	11.50	304.80 (1000.00)	25.70
12.19 (40.00)	11.40	304.80 (1000.00)	26.00
18.29 (60.00)	11.50	426.72 (1400.00)	25.50
24.38 (80.00)	12.50	609.60 (2000.00)	21.50
30.48 (100.00)	12.50	914.40 (3000.00)	19.00
30.48 (100.00)	12.80	1219.20 (4000.00)	17.70
42.67 (140.00)	13.20	1828.80 (6000.00)	22.70
60.96 (200.00)	15.40	2438.40 (8000.00)	32.00
91.44 (300.00)	17.80	3048.00 (10000.00)	40.00

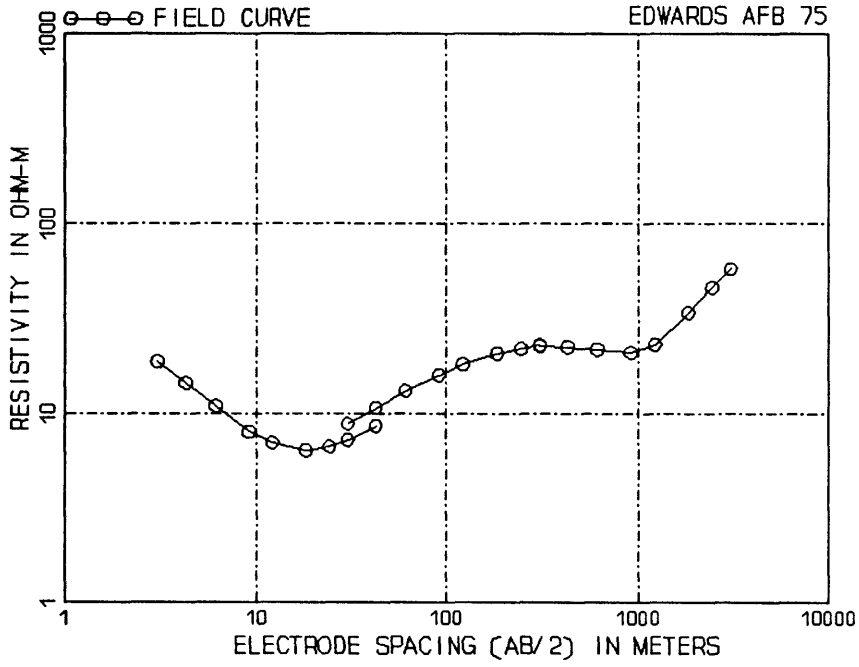
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	17.54	44.16 (144.87)	19.96
2.37 (7.78)	13.46	63.64 (208.78)	27.71
3.42 (11.22)	10.87	91.71 (300.90)	36.12
4.93 (16.17)	10.26	132.18 (433.67)	41.12
7.10 (23.30)	10.89	190.50 (625.01)	36.81
10.23 (33.58)	11.48	274.56 (900.77)	22.62
14.75 (48.39)	11.55	395.70 (1298.21)	10.50
21.26 (69.74)	12.19	570.28 (1871.01)	7.11
30.64 (100.52)	14.74	821.90 (2696.54)	8.70
		99999.00 (99999.00)	550.00

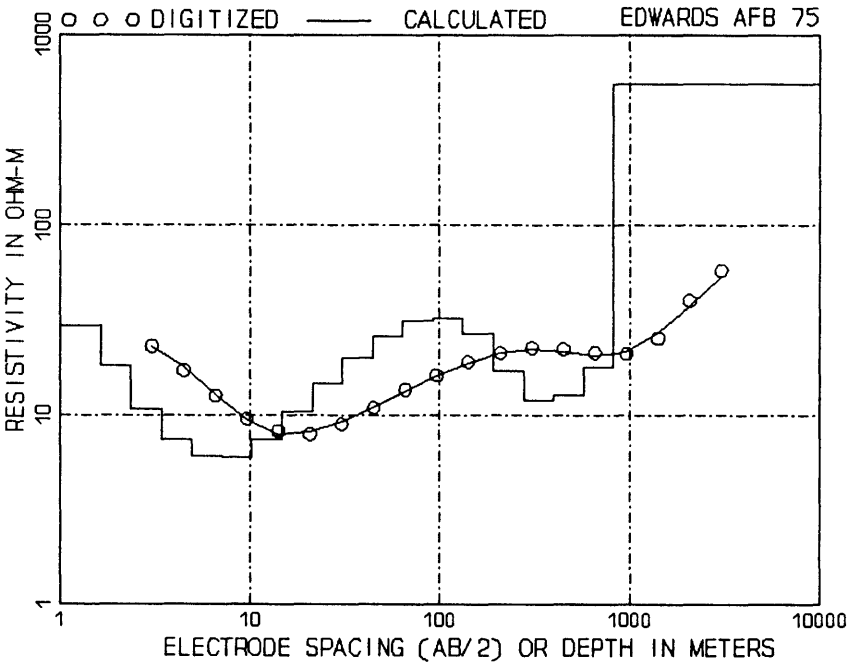




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	22.50	121.92	(400.00)	20.00
4.27	(14.00)	20.40	182.88	(600.00)	23.00
6.10	(20.00)	14.30	243.84	(800.00)	24.20
9.14	(30.00)	12.00	304.80	(1000.00)	24.00
12.19	(40.00)	9.60	304.80	(1000.00)	25.00
18.29	(60.00)	9.30	426.72	(1400.00)	23.80
24.38	(80.00)	10.40	609.60	(2000.00)	20.50
30.48	(100.00)	10.60	914.40	(3000.00)	18.20
30.48	(100.00)	10.00	1219.20	(4000.00)	18.00
42.67	(140.00)	11.60	1828.80	(6000.00)	23.80
60.96	(200.00)	13.50	2438.40	(8000.00)	32.00
91.44	(300.00)	17.40	3048.00	(10000.00)	37.50

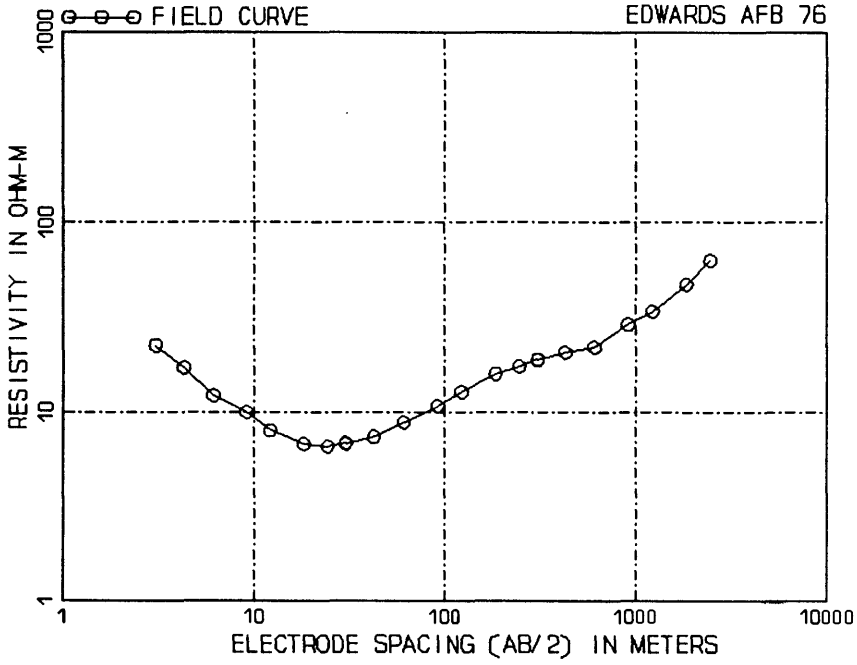
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.65	(5.40)	26.37	44.16	(144.87)	22.49
2.37	(7.78)	20.62	63.64	(208.78)	30.57
3.42	(11.22)	13.42	91.71	(300.90)	37.62
4.93	(16.17)	8.63	132.18	(433.67)	39.63
7.10	(23.30)	6.92	190.50	(625.01)	32.60
10.23	(33.58)	7.21	274.56	(900.77)	19.18
14.75	(48.39)	8.58	395.70	(1298.21)	9.71
21.26	(69.74)	11.17	570.28	(1871.01)	7.65
30.64	(100.52)	15.72	821.90	(2696.54)	9.86
			99999.00	(99999.00)	550.00

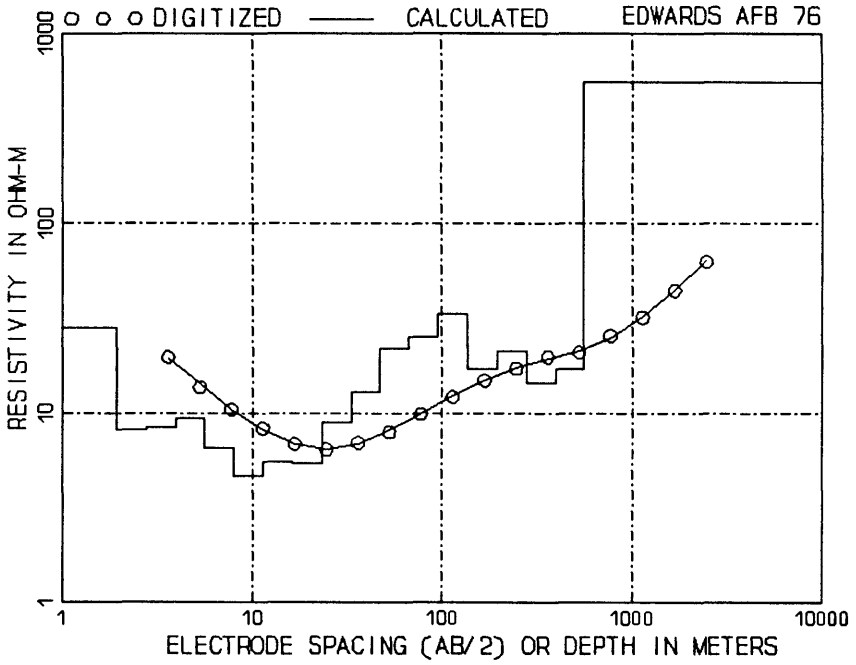




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	18.80	91.44 (300.00)	16.00
4.27 (14.00)	14.50	121.92 (400.00)	18.20
6.10 (20.00)	11.00	182.88 (600.00)	20.80
9.14 (30.00)	8.00	243.84 (800.00)	22.00
12.19 (40.00)	7.00	304.80 (1000.00)	23.00
18.29 (60.00)	6.40	304.80 (1000.00)	22.80
24.38 (80.00)	6.70	426.72 (1400.00)	22.50
30.48 (100.00)	7.25	609.60 (2000.00)	21.80
42.67 (140.00)	8.60	914.40 (3000.00)	21.00
30.48 (100.00)	8.80	1219.20 (4000.00)	23.20
42.67 (140.00)	10.70	1828.80 (6000.00)	34.00
60.96 (200.00)	13.20	2438.40 (8000.00)	46.50
		3048.00 (10000.00)	58.00

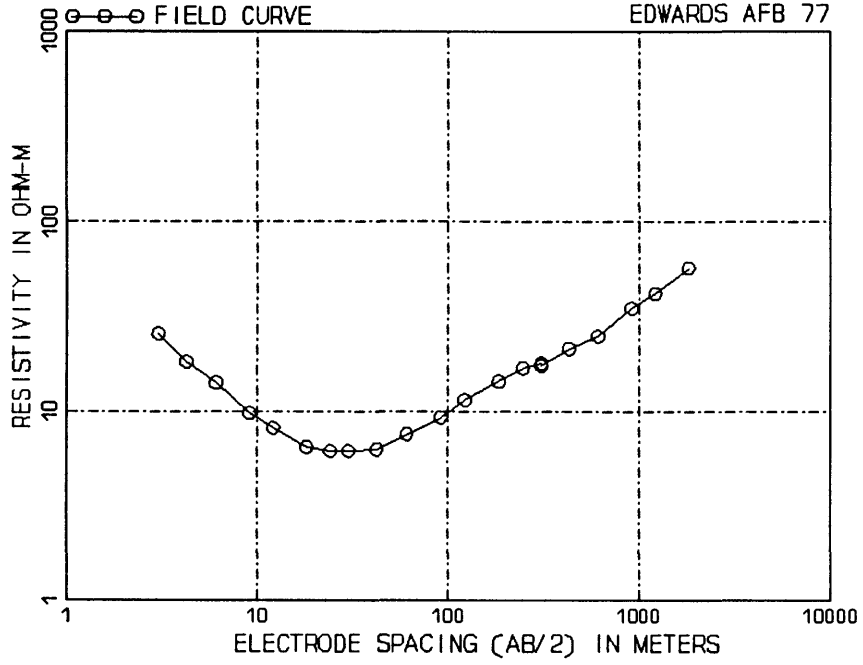
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	29.41	44.16 (144.87)	20.17
2.37 (7.78)	18.19	63.64 (208.78)	26.19
3.42 (11.22)	10.86	91.71 (300.90)	31.43
4.93 (16.17)	7.49	132.18 (433.67)	32.63
7.10 (23.30)	6.10	190.50 (625.01)	26.73
10.23 (33.58)	5.97	274.56 (900.77)	17.23
14.75 (48.39)	7.40	395.70 (1298.21)	11.98
21.26 (69.74)	10.42	570.28 (1871.01)	12.87
30.64 (100.52)	14.76	821.90 (2696.54)	18.06
		99999.00 (99999.00)	550.00

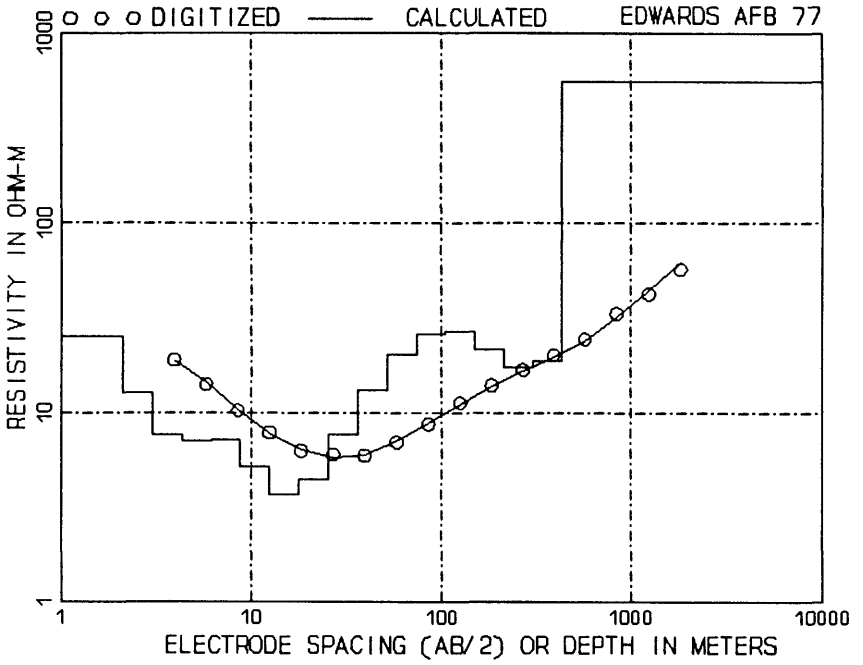




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	22.50	91.44 (300.00)	10.80
4.27 (14.00)	17.20	121.92 (400.00)	12.80
6.10 (20.00)	12.20	182.88 (600.00)	16.00
9.14 (30.00)	10.00	243.84 (800.00)	17.50
12.19 (40.00)	8.00	304.80 (1000.00)	19.00
18.29 (60.00)	6.80	304.80 (1000.00)	18.80
24.38 (80.00)	6.60	426.72 (1400.00)	20.70
30.48 (100.00)	6.90	609.60 (2000.00)	22.00
30.48 (100.00)	6.80	914.40 (3000.00)	29.00
42.67 (140.00)	7.40	1219.20 (4000.00)	34.00
60.96 (200.00)	8.85	1828.80 (6000.00)	47.00
		2438.40 (8000.00)	63.00

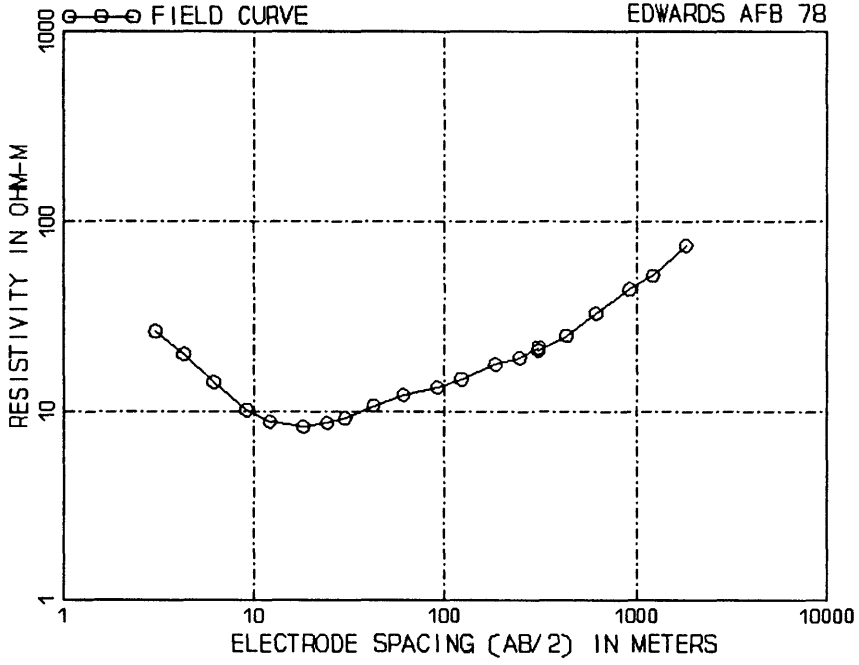
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	28.22	46.86 (153.73)	12.90
2.75 (9.04)	8.10	66.78 (219.08)	21.92
3.93 (12.88)	8.47	95.16 (312.22)	25.33
5.59 (18.35)	9.37	135.62 (444.94)	33.35
7.97 (26.15)	6.52	193.27 (634.09)	17.15
11.36 (37.27)	4.68	275.43 (903.64)	21.27
16.19 (53.12)	5.50	392.52 (1287.78)	14.47
23.07 (75.70)	5.44	559.38 (1835.22)	17.13
32.88 (107.87)	8.95	99999.00 (99999.00)	550.00

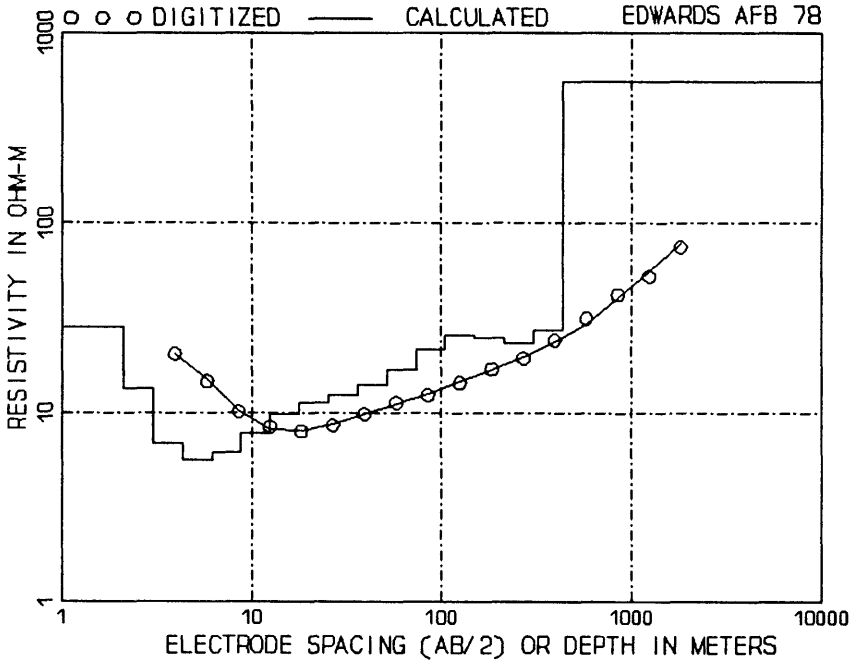




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	25.70	91.44 (300.00)	9.30
4.27 (14.00)	18.30	121.92 (400.00)	11.50
6.10 (20.00)	14.20	182.88 (600.00)	14.40
9.14 (30.00)	9.80	243.84 (800.00)	17.00
12.19 (40.00)	8.20	304.80 (1000.00)	18.00
18.29 (60.00)	6.50	304.80 (1000.00)	17.50
24.38 (80.00)	6.20	426.72 (1400.00)	21.50
30.48 (100.00)	6.20	609.60 (2000.00)	25.00
30.48 (100.00)	6.20	914.40 (3000.00)	35.00
42.67 (140.00)	6.30	1219.20 (4000.00)	42.00
60.96 (200.00)	7.60	1828.80 (6000.00)	57.00

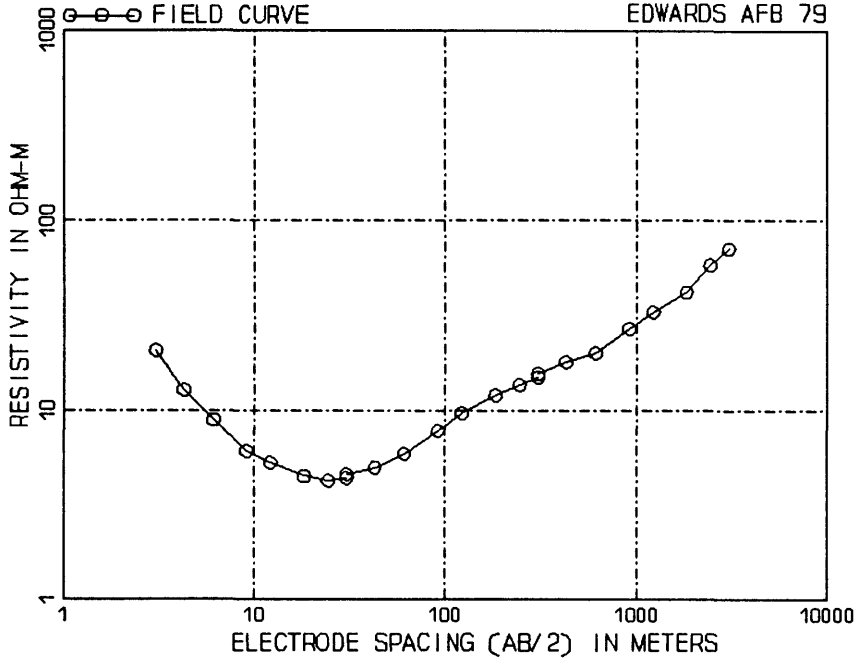
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	25.33	36.20 (118.75)	7.63
3.03 (9.95)	12.71	51.58 (169.24)	13.30
4.32 (14.18)	7.65	73.51 (241.18)	20.44
6.16 (20.20)	7.10	104.76 (343.71)	26.28
8.78 (28.79)	7.21	149.30 (489.82)	26.84
12.51 (41.03)	5.24	212.76 (698.04)	21.76
17.82 (58.47)	3.71	303.21 (994.77)	17.49
25.40 (83.33)	4.44	432.10 (1417.66)	18.70
		99999.00 (99999.00)	550.00

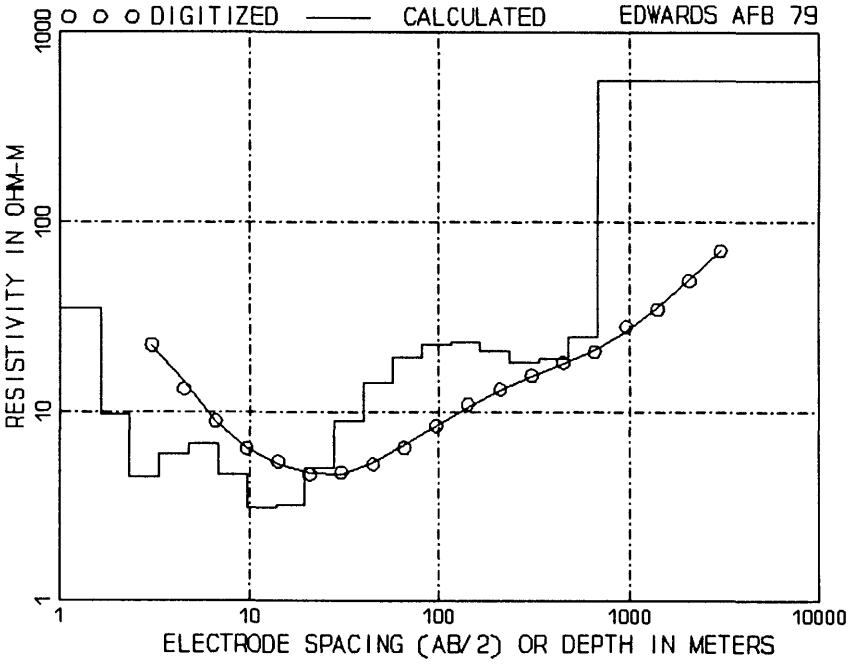




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	26.40	91.44 (300.00)	13.40
4.27 (14.00)	20.00	121.92 (400.00)	14.80
6.10 (20.00)	14.30	182.88 (600.00)	17.70
9.14 (30.00)	10.20	243.84 (800.00)	19.20
12.19 (40.00)	8.80	304.80 (1000.00)	21.80
18.29 (60.00)	8.30	304.80 (1000.00)	21.00
24.38 (80.00)	8.70	426.72 (1400.00)	25.10
30.48 (100.00)	9.20	609.60 (2000.00)	33.00
30.48 (100.00)	9.20	914.40 (3000.00)	44.00
42.67 (140.00)	10.70	1219.20 (4000.00)	52.00
60.96 (200.00)	12.20	1828.80 (6000.00)	75.00

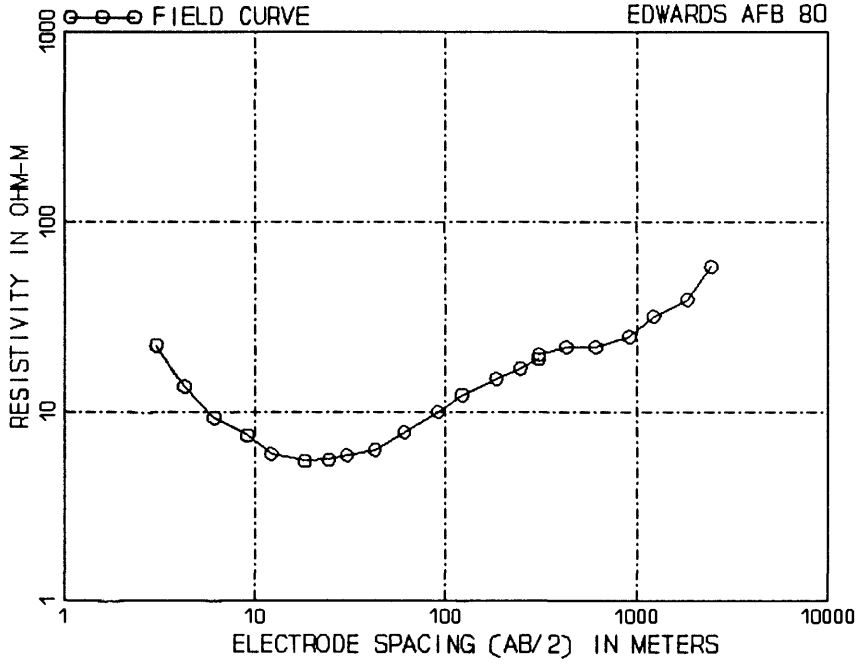
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	28.00	36.20 (118.75)	12.48
3.03 (9.95)	13.45	51.58 (169.24)	14.12
4.32 (14.18)	6.92	73.51 (241.18)	16.91
6.16 (20.20)	5.63	104.76 (343.71)	21.56
8.78 (28.79)	6.21	149.30 (489.82)	25.55
12.51 (41.03)	7.81	212.76 (698.04)	24.74
17.82 (58.47)	9.87	303.21 (994.77)	23.39
25.40 (83.33)	11.33	432.10 (1417.66)	27.49
		99999.00 (99999.00)	550.00

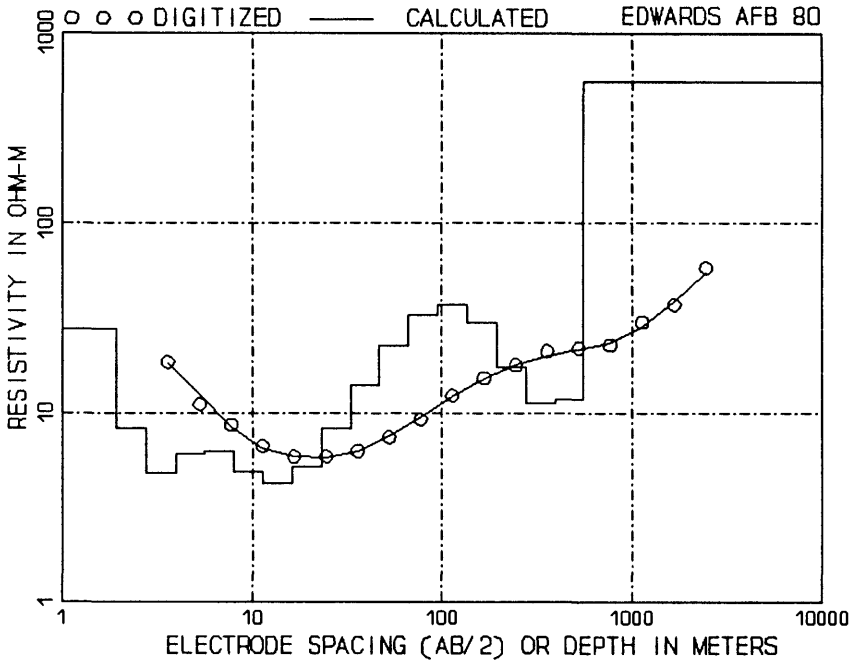




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	20.70	121.92 (400.00)	9.70
4.27 (14.00)	12.80	182.88 (600.00)	12.00
6.10 (20.00)	8.90	243.84 (800.00)	13.60
9.14 (30.00)	6.10	304.80 (1000.00)	15.00
12.19 (40.00)	5.30	304.80 (1000.00)	15.60
18.29 (60.00)	4.50	426.72 (1400.00)	18.00
24.38 (80.00)	4.25	609.60 (2000.00)	20.00
30.48 (100.00)	4.40	914.40 (3000.00)	27.00
30.48 (100.00)	4.60	1219.20 (4000.00)	33.00
42.67 (140.00)	5.00	1828.80 (6000.00)	42.00
60.96 (200.00)	5.90	2438.40 (8000.00)	58.50
91.44 (300.00)	7.80	3048.00 (10000.00)	71.00

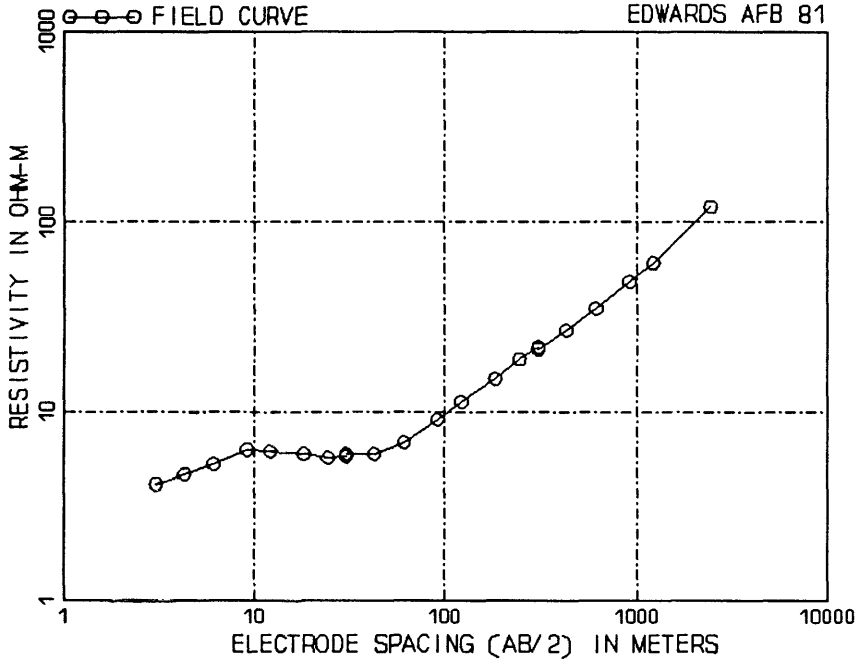
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	34.81	39.90 (130.92)	8.95
2.35 (7.70)	9.61	56.87 (186.58)	14.25
3.34 (10.97)	4.51	81.04 (265.89)	19.44
4.76 (15.63)	5.96	115.49 (378.92)	22.80
6.79 (22.27)	6.80	164.59 (540.00)	23.34
9.67 (31.74)	4.66	234.56 (769.56)	21.10
13.79 (45.23)	3.13	334.27 (1096.70)	18.37
19.65 (64.46)	3.21	476.37 (1562.90)	19.06
28.00 (91.87)	5.07	678.88 (2227.30)	24.85
		99999.00 (99999.00)	550.00

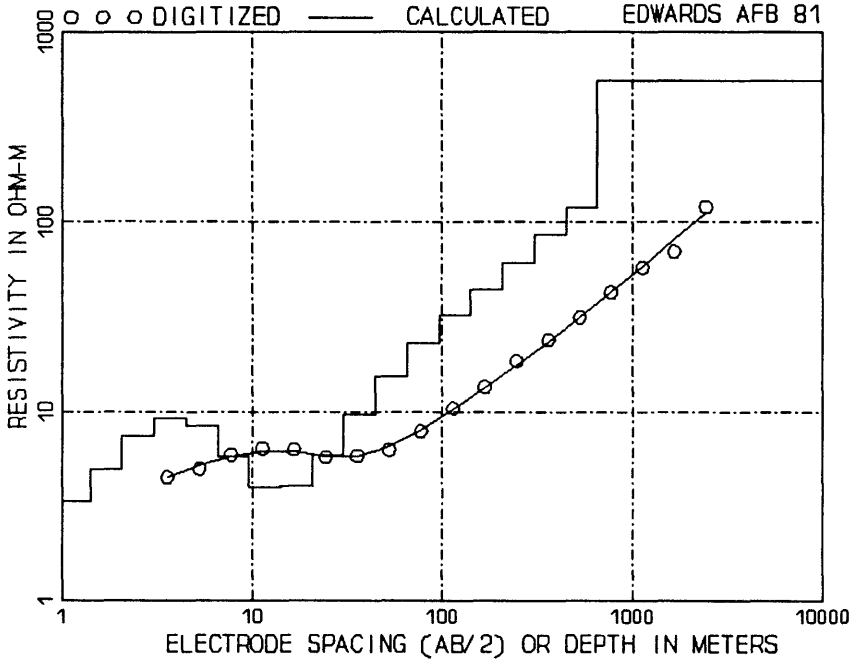




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	22.50	91.44 (300.00)	10.00
4.27 (14.00)	13.60	121.92 (400.00)	12.30
6.10 (20.00)	9.30	182.88 (600.00)	15.00
9.14 (30.00)	7.50	243.84 (800.00)	17.00
12.19 (40.00)	6.00	304.80 (1000.00)	19.00
18.29 (60.00)	5.50	304.80 (1000.00)	20.00
24.38 (80.00)	5.60	426.72 (1400.00)	22.00
30.48 (100.00)	5.90	609.60 (2000.00)	22.00
30.48 (100.00)	5.90	914.40 (3000.00)	25.00
42.67 (140.00)	6.30	1219.20 (4000.00)	32.00
60.96 (200.00)	7.80	1828.80 (6000.00)	39.00
		2438.40 (8000.00)	58.50

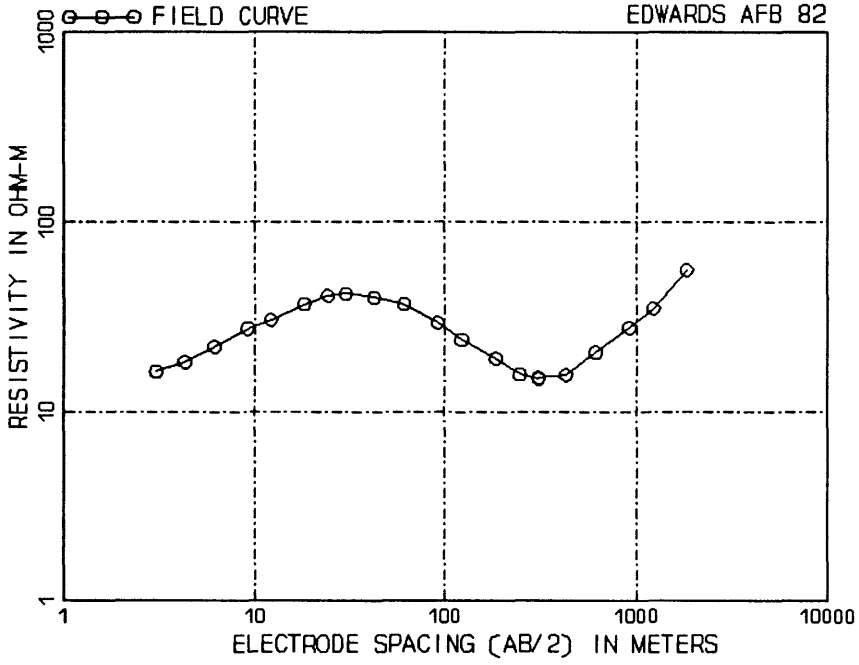
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	27.59	46.86 (153.73)	14.04
2.75 (9.04)	8.32	66.78 (219.08)	22.84
3.93 (12.88)	4.82	95.16 (312.22)	33.07
5.59 (18.35)	6.13	135.62 (444.94)	37.53
7.97 (26.15)	6.30	193.27 (634.09)	29.81
11.36 (37.27)	4.93	275.43 (903.64)	17.48
16.19 (53.12)	4.25	392.52 (1287.78)	11.37
23.07 (75.70)	5.19	559.38 (1835.22)	11.83
32.88 (107.87)	8.28	99999.00 (99999.00)	550.00

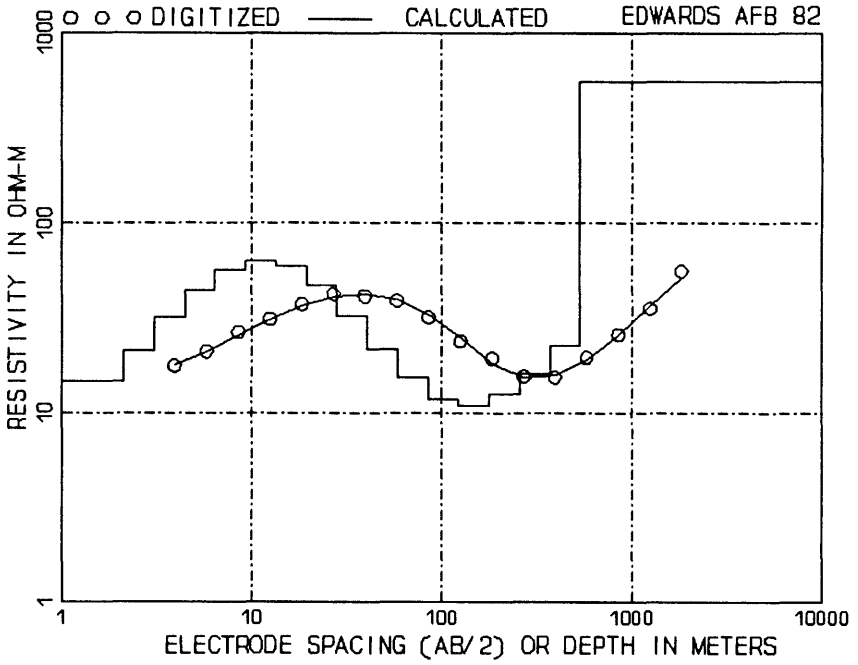




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	4.15	91.44 (300.00)	9.10
4.27 (14.00)	4.70	121.92 (400.00)	11.30
6.10 (20.00)	5.30	182.88 (600.00)	15.00
9.14 (30.00)	6.30	243.84 (800.00)	19.00
12.19 (40.00)	6.20	304.80 (1000.00)	22.00
18.29 (60.00)	6.00	304.80 (1000.00)	21.50
24.38 (80.00)	5.70	426.72 (1400.00)	27.00
30.48 (100.00)	5.80	609.60 (2000.00)	35.00
30.48 (100.00)	6.00	914.40 (3000.00)	48.50
42.67 (140.00)	6.00	1219.20 (4000.00)	61.00
60.96 (200.00)	6.90	2438.40 (8000.00)	120.00

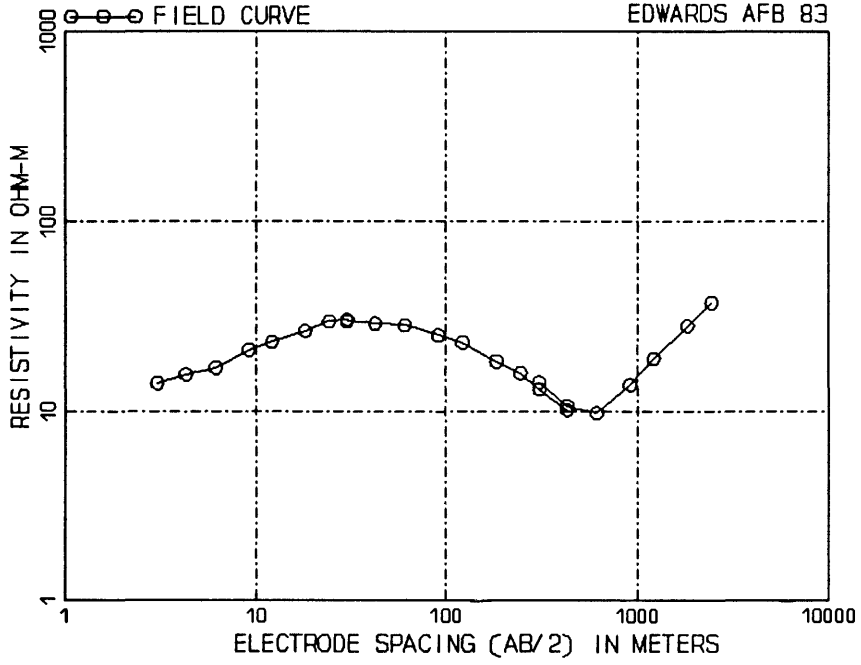
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.41 (4.62)	3.36	44.55 (146.18)	9.62
2.07 (6.78)	4.99	65.40 (214.56)	15.41
3.04 (9.96)	7.49	95.99 (314.93)	23.08
4.46 (14.62)	9.24	140.89 (462.25)	32.44
6.54 (21.46)	8.38	206.80 (678.49)	44.36
9.60 (31.49)	5.77	303.55 (995.89)	61.22
14.09 (46.23)	3.99	445.55 (1461.77)	85.79
20.68 (67.85)	4.04	653.97 (2145.58)	119.27
30.35 (99.59)	5.89	99999.00 (99999.00)	550.00

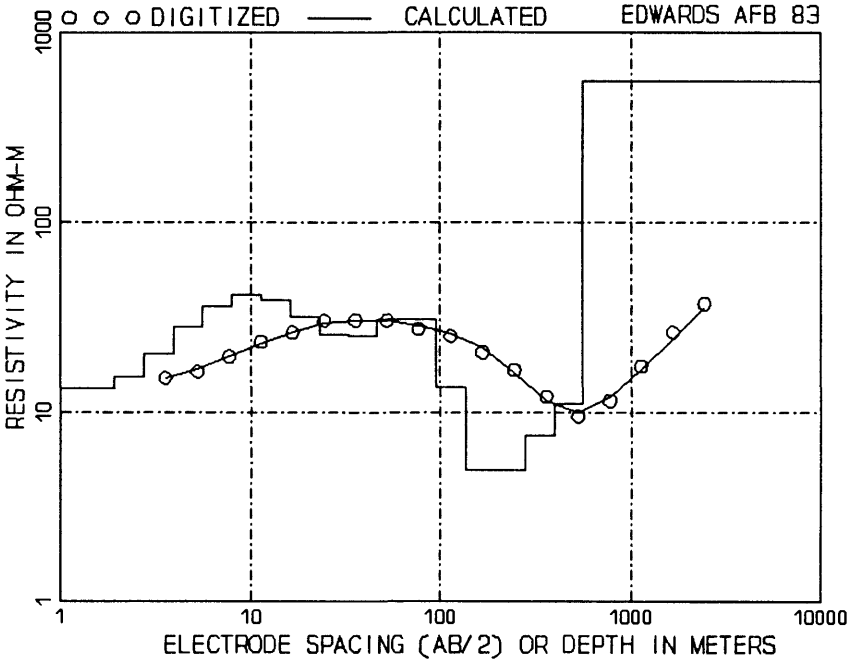




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	16.30	91.44 (300.00)	29.50
4.27 (14.00)	18.30	121.92 (400.00)	24.00
6.10 (20.00)	22.00	182.88 (600.00)	19.10
9.14 (30.00)	27.50	243.84 (800.00)	15.80
12.19 (40.00)	30.50	304.80 (1000.00)	15.00
18.29 (60.00)	37.00	304.80 (1000.00)	15.20
24.38 (80.00)	41.00	426.72 (1400.00)	15.70
30.48 (100.00)	42.00	609.60 (2000.00)	20.60
30.48 (100.00)	42.00	914.40 (3000.00)	27.80
42.67 (140.00)	40.00	1219.20 (4000.00)	35.00
60.96 (200.00)	37.00	1828.80 (6000.00)	56.00

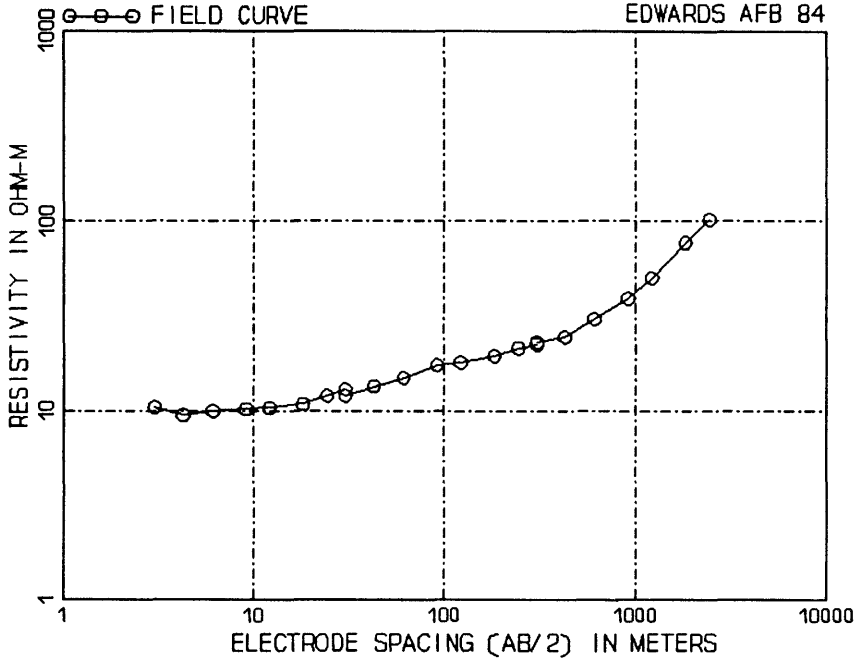
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	14.61	40.54 (133.01)	32.27
3.08 (10.09)	21.46	58.60 (192.26)	21.65
4.45 (14.58)	31.75	84.70 (277.89)	15.51
6.43 (21.08)	44.40	122.43 (401.68)	11.81
9.29 (30.47)	56.76	176.97 (580.60)	11.00
13.42 (44.04)	63.45	255.80 (839.23)	12.67
19.40 (63.66)	59.78	369.74 (1213.05)	16.28
28.05 (92.02)	47.08	534.43 (1753.39)	22.67
		99999.00 (99999.00)	550.00

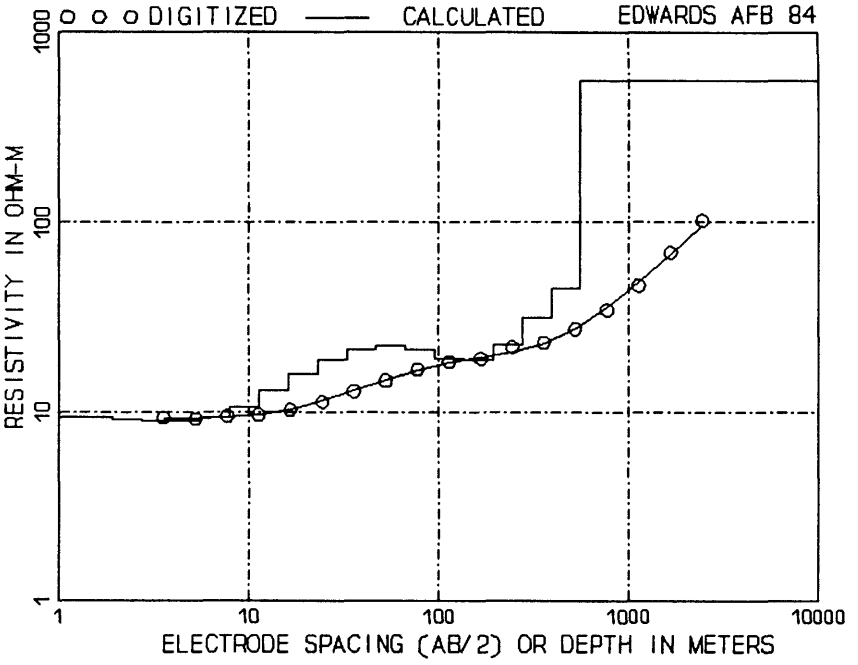




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	14.10	121.92 (400.00)	23.20
4.27 (14.00)	15.70	182.88 (600.00)	18.40
6.10 (20.00)	17.00	243.84 (800.00)	16.00
9.14 (30.00)	21.10	304.80 (1000.00)	13.10
12.19 (40.00)	23.30	426.72 (1400.00)	10.20
18.29 (60.00)	26.50	304.80 (1000.00)	14.30
24.38 (80.00)	29.80	426.72 (1400.00)	10.70
30.48 (100.00)	30.50	609.60 (2000.00)	9.80
30.48 (100.00)	29.80	914.40 (3000.00)	13.80
42.67 (140.00)	29.00	1219.20 (4000.00)	19.00
60.96 (200.00)	28.50	1828.80 (6000.00)	28.20
91.44 (300.00)	25.20	2438.40 (8000.00)	37.50

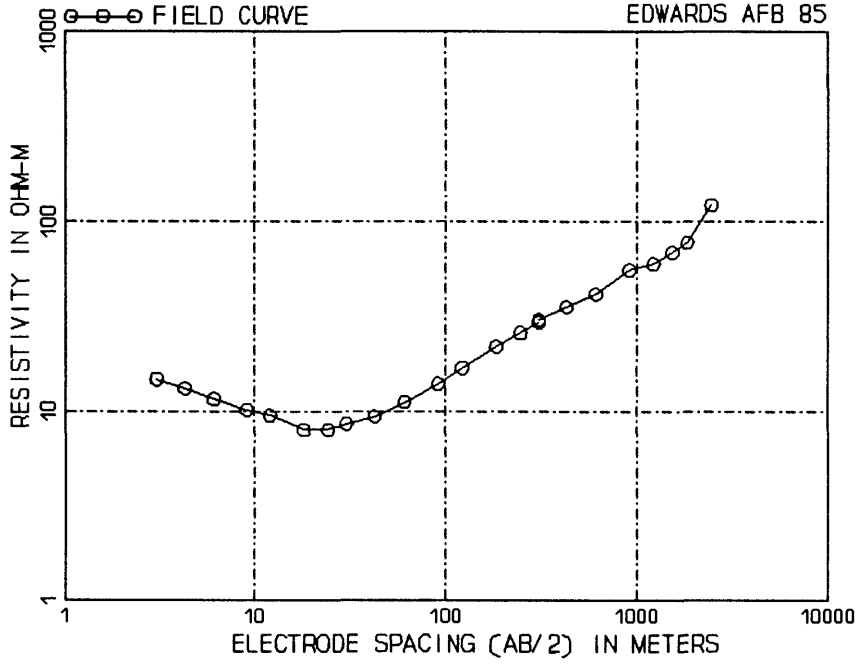
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	13.49	46.86 (153.73)	25.41
2.75 (9.04)	15.35	66.78 (219.08)	31.16
3.93 (12.88)	20.47	95.16 (312.22)	30.85
5.59 (18.35)	28.24	135.62 (444.94)	13.69
7.97 (26.15)	36.40	193.27 (634.09)	4.97
11.36 (37.27)	41.24	275.43 (903.64)	4.99
16.19 (53.12)	39.33	392.52 (1287.78)	7.50
23.07 (75.70)	32.16	559.38 (1835.22)	11.12
32.88 (107.87)	25.85	99999.00 (99999.00)	550.00

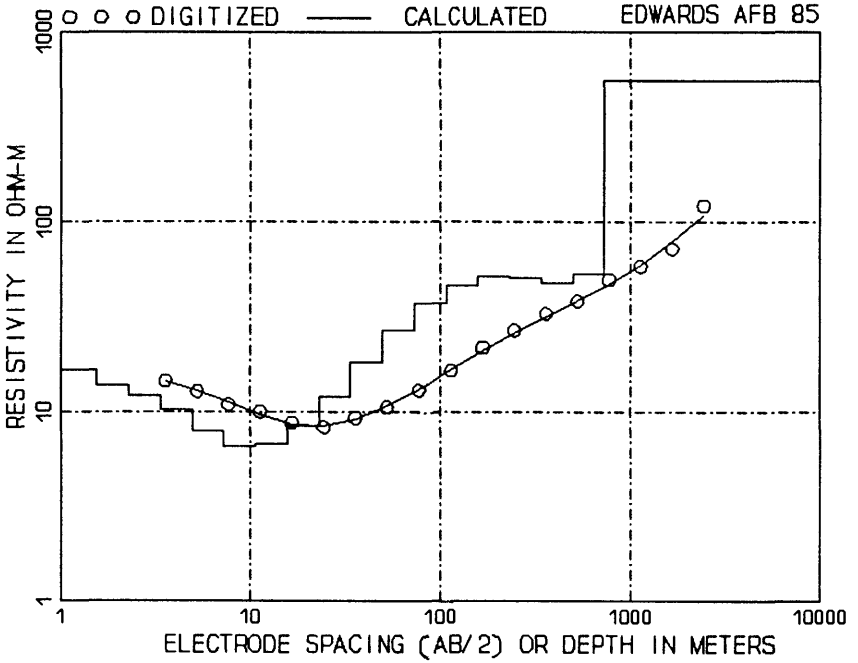




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	10.50	91.44 (300.00)	17.50
4.27 (14.00)	9.50	121.92 (400.00)	18.00
6.10 (20.00)	10.00	182.88 (600.00)	19.50
9.14 (30.00)	10.25	243.84 (800.00)	21.50
12.19 (40.00)	10.40	304.80 (1000.00)	22.50
18.29 (60.00)	10.90	304.80 (1000.00)	23.00
24.38 (80.00)	12.00	426.72 (1400.00)	24.50
30.48 (100.00)	13.00	609.60 (2000.00)	30.50
30.48 (100.00)	12.00	914.40 (3000.00)	39.00
42.67 (140.00)	13.50	1219.20 (4000.00)	50.00
60.96 (200.00)	15.00	1828.80 (6000.00)	77.00
		2438.40 (8000.00)	102.00

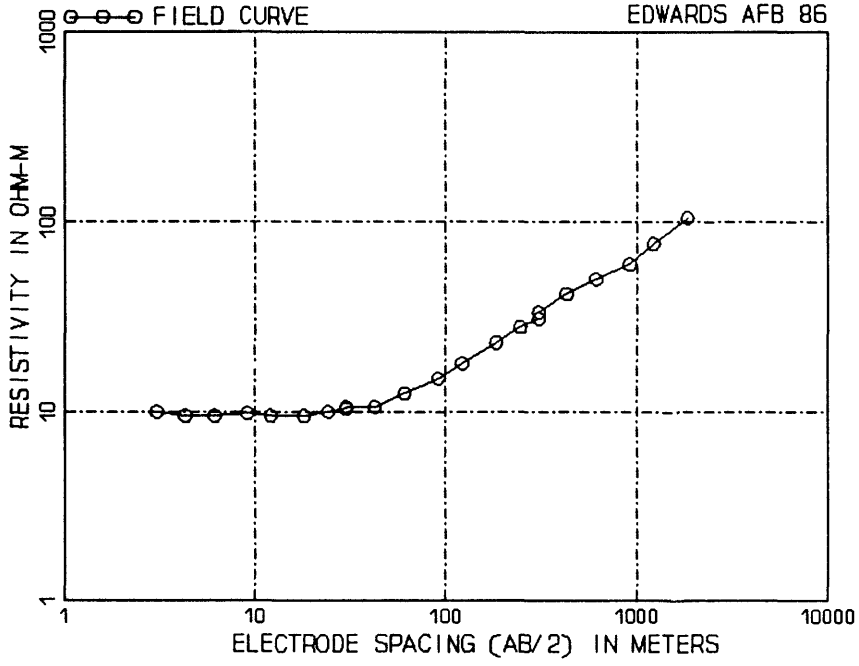
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	9.39	46.86 (153.73)	21.28
2.75 (9.04)	9.07	66.78 (219.08)	22.28
3.93 (12.88)	8.91	95.16 (312.22)	21.33
5.59 (18.35)	8.92	135.62 (444.94)	19.27
7.97 (26.15)	9.38	193.27 (634.09)	18.89
11.36 (37.27)	10.66	275.43 (903.64)	22.60
16.19 (53.12)	12.93	392.52 (1287.78)	31.31
23.07 (75.70)	15.94	559.38 (1835.22)	44.94
32.88 (107.87)	18.97	99999.00 (99999.00)	550.00

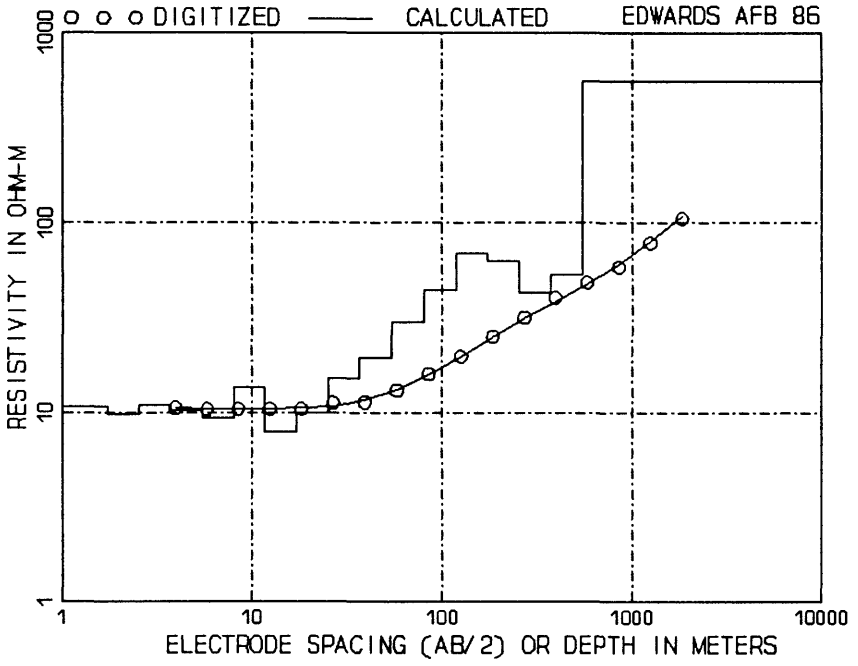




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	14.80	121.92 (400.00)	17.00
4.27 (14.00)	13.20	182.88 (600.00)	22.00
6.10 (20.00)	11.60	243.84 (800.00)	26.00
9.14 (30.00)	10.20	304.80 (1000.00)	29.50
12.19 (40.00)	9.50	304.80 (1000.00)	30.50
18.29 (60.00)	8.00	426.72 (1400.00)	35.50
24.38 (80.00)	8.00	609.60 (2000.00)	41.50
30.48 (100.00)	8.60	914.40 (3000.00)	55.50
30.48 (100.00)	8.60	1219.20 (4000.00)	60.00
42.67 (140.00)	9.40	1524.00 (5000.00)	69.00
60.96 (200.00)	11.20	1828.80 (6000.00)	78.00
91.44 (300.00)	14.00	2438.40 (8000.00)	122.00

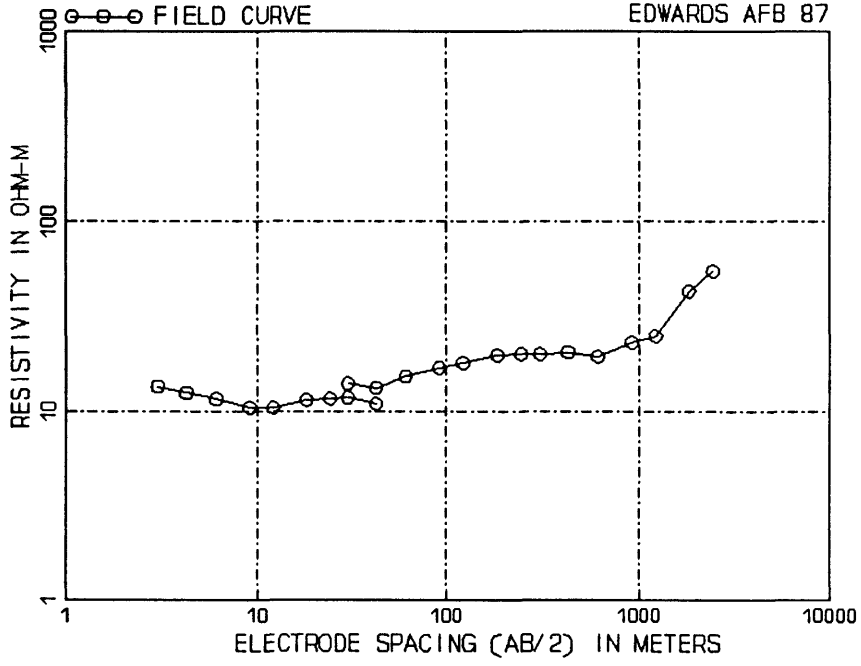
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.57 (5.14)	16.72	49.51 (162.42)	18.25
2.30 (7.54)	13.88	72.66 (238.40)	27.07
3.37 (11.07)	12.16	106.66 (349.92)	37.02
4.95 (16.24)	10.28	156.55 (513.61)	46.00
7.27 (23.84)	7.89	229.78 (753.88)	51.19
10.67 (34.99)	6.61	337.27 (1106.54)	50.44
15.65 (51.36)	6.80	495.05 (1624.19)	48.12
22.98 (75.39)	8.38	726.64 (2383.98)	52.86
33.73 (110.65)	11.96	99999.00 (99999.00)	550.00

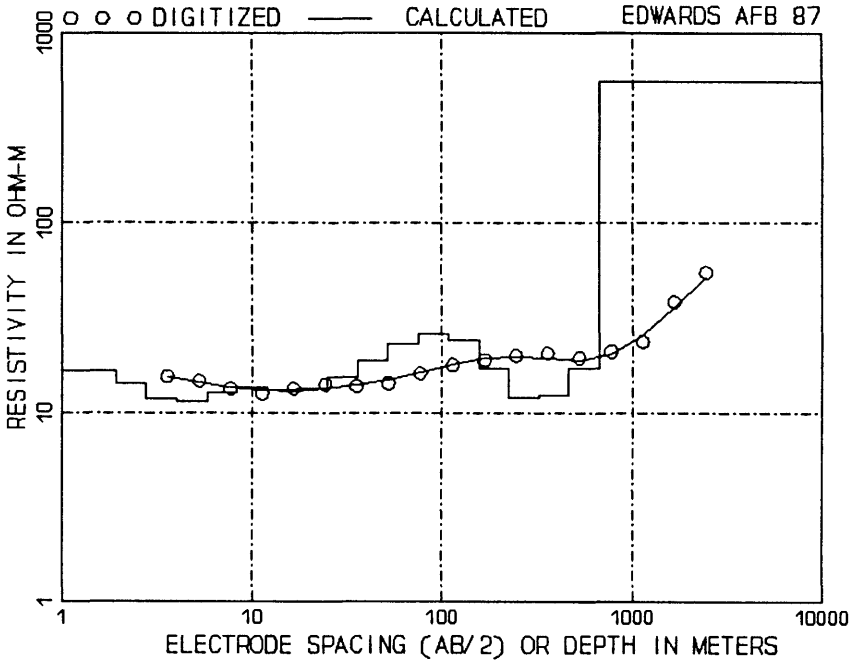




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	10.00	91.44 (300.00)	15.00
4.27 (14.00)	9.50	121.92 (400.00)	18.00
6.10 (20.00)	9.50	182.88 (600.00)	23.20
9.14 (30.00)	9.80	243.84 (800.00)	28.00
12.19 (40.00)	9.50	304.80 (1000.00)	31.00
18.29 (60.00)	9.50	304.80 (1000.00)	33.50
24.38 (80.00)	10.00	426.72 (1400.00)	42.00
30.48 (100.00)	10.40	609.60 (2000.00)	50.00
30.48 (100.00)	10.60	914.40 (3000.00)	60.00
42.67 (140.00)	10.60	1219.20 (4000.00)	77.00
60.96 (200.00)	12.50	1828.80 (6000.00)	105.00

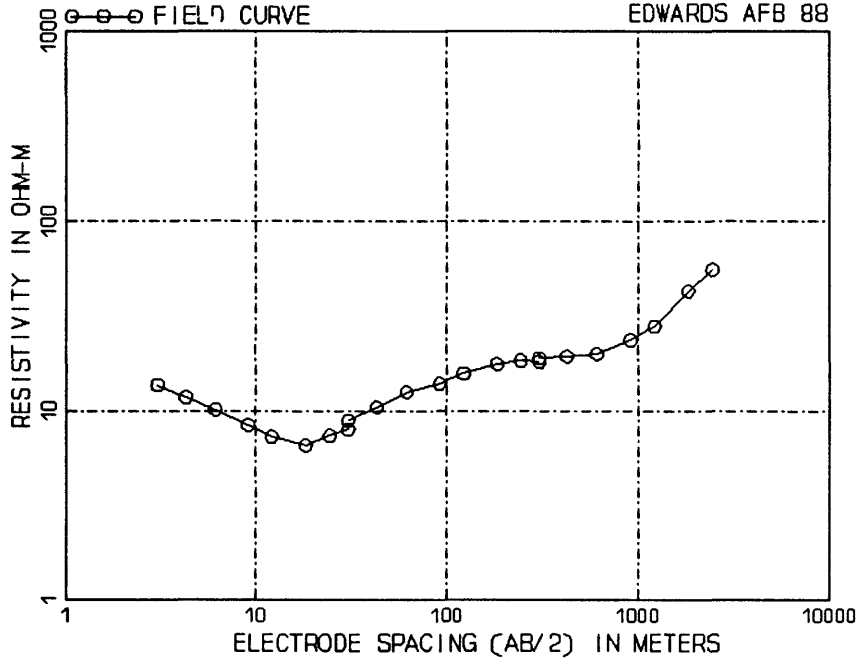
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.72 (5.65)	10.80	37.13 (121.81)	15.27
2.53 (8.30)	9.84	54.50 (178.80)	19.32
3.71 (12.18)	10.92	79.99 (262.44)	30.22
5.45 (17.88)	10.24	117.41 (385.21)	43.97
8.00 (26.24)	9.41	172.34 (565.41)	69.54
11.74 (38.52)	13.63	252.96 (829.91)	62.82
17.23 (56.54)	7.97	371.29 (1218.14)	42.63
25.30 (82.99)	10.05	544.98 (1787.98)	53.19
		99999.00 (99999.00)	550.00

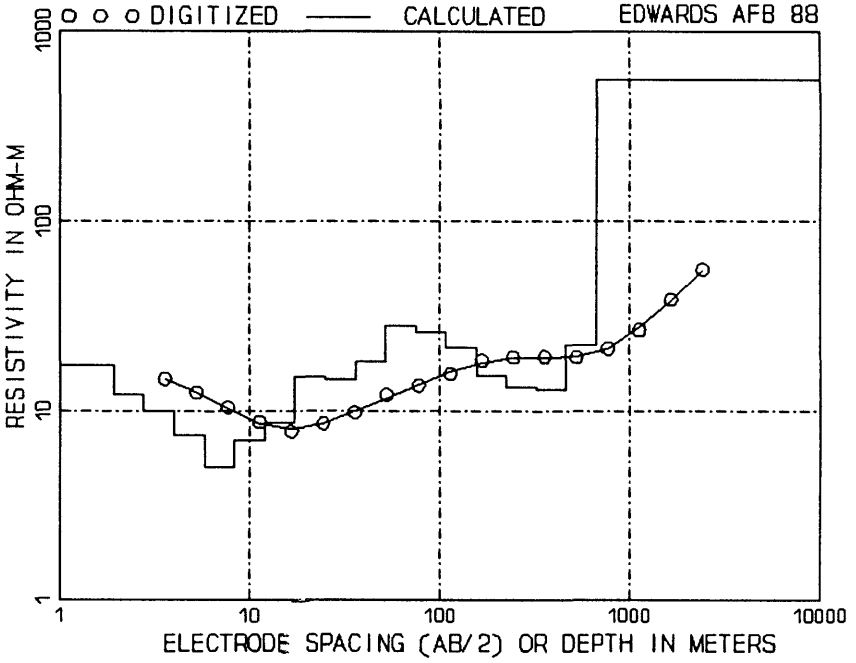




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	13.50	91.44	(300.00)	17.00
4.27	(14.00)	12.50	121.92	(400.00)	18.00
6.10	(20.00)	11.60	182.88	(600.00)	19.70
9.14	(30.00)	10.50	243.84	(800.00)	20.00
12.19	(40.00)	10.50	304.80	(1000.00)	20.00
18.29	(60.00)	11.50	304.80	(1000.00)	20.00
24.38	(80.00)	11.70	426.72	(1400.00)	20.50
30.48	(100.00)	11.80	609.60	(2000.00)	19.50
42.67	(140.00)	11.00	914.40	(3000.00)	23.00
30.48	(100.00)	14.00	1219.20	(4000.00)	25.00
42.67	(140.00)	13.30	1828.80	(6000.00)	43.00
60.96	(200.00)	15.30	2438.40	(8000.00)	55.00

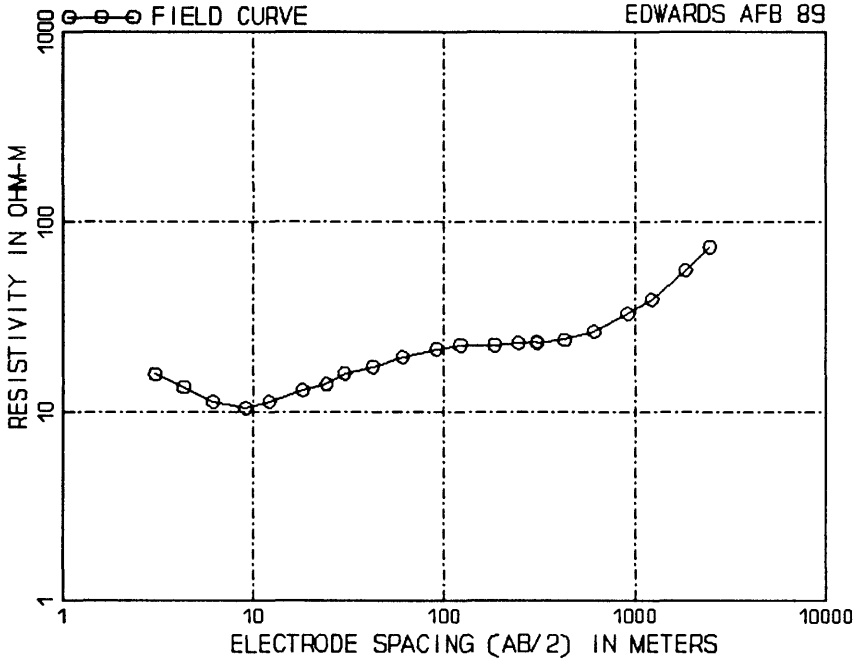
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.93	(6.34)	16.77	51.85	(170.11)	18.95
2.79	(9.14)	14.26	74.73	(245.16)	23.15
4.01	(13.17)	11.89	107.70	(353.33)	26.15
5.79	(18.98)	11.44	155.21	(509.23)	24.09
8.34	(27.36)	12.81	223.70	(733.91)	17.05
12.02	(39.43)	13.66	322.39	(1057.72)	12.01
17.32	(56.82)	13.23	464.64	(1524.41)	12.41
24.96	(81.90)	13.45	669.65	(2197.01)	17.10
35.98	(118.03)	15.48	99999.00	(99999.00)	550.00

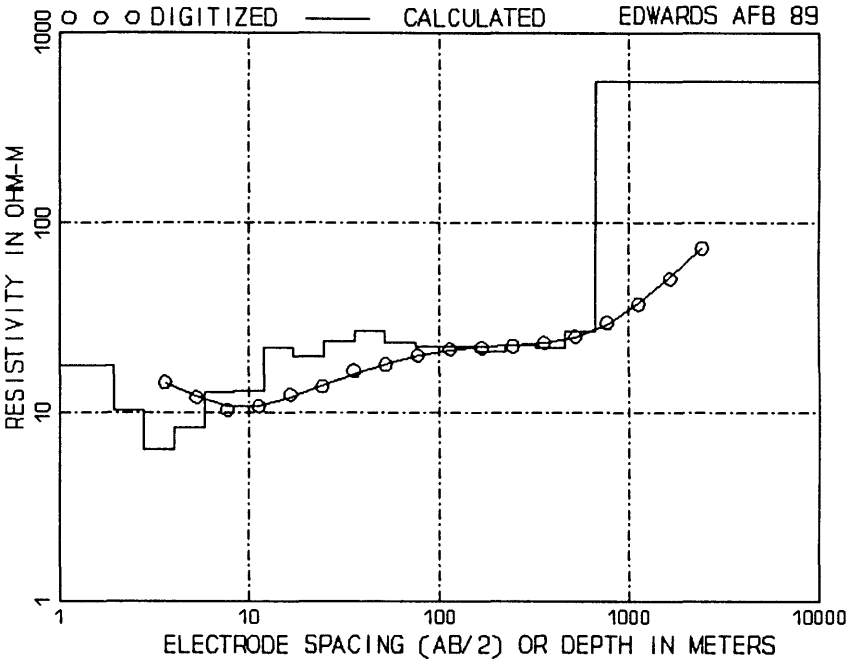




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	13.70	91.44 (300.00)	14.00
4.27 (14.00)	11.80	121.92 (400.00)	15.80
6.10 (20.00)	10.20	182.88 (600.00)	17.70
9.14 (30.00)	8.40	243.84 (800.00)	18.50
12.19 (40.00)	7.30	304.80 (1000.00)	18.20
18.29 (60.00)	6.60	304.80 (1000.00)	19.00
24.38 (80.00)	7.40	426.72 (1400.00)	19.50
30.48 (100.00)	8.00	609.60 (2000.00)	20.00
30.48 (100.00)	8.90	914.40 (3000.00)	23.70
42.67 (140.00)	10.50	1219.20 (4000.00)	28.00
60.96 (200.00)	12.60	1828.80 (6000.00)	43.00
		2438.40 (8000.00)	56.00

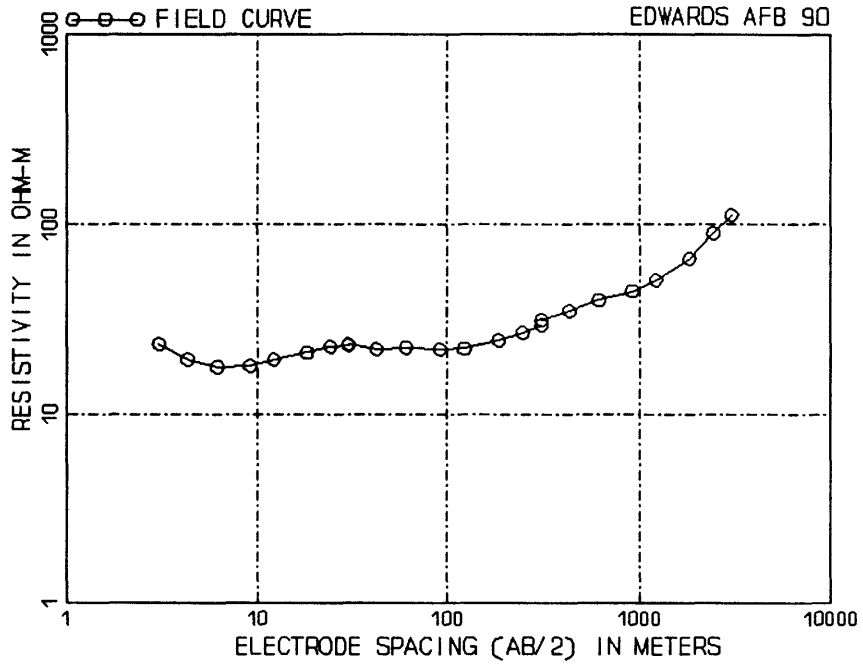
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	17.42	51.85 (170.11)	18.20
2.79 (9.14)	12.25	74.73 (245.16)	28.05
4.01 (13.17)	9.97	107.70 (353.33)	26.07
5.79 (18.98)	7.46	155.21 (509.23)	21.66
8.34 (27.36)	5.05	223.70 (733.91)	15.46
12.02 (39.43)	6.97	322.39 (1057.72)	13.34
17.32 (56.82)	8.66	464.64 (1524.41)	13.09
24.96 (81.90)	15.22	669.65 (2197.01)	22.23
35.98 (118.03)	14.80	99999.00 (99999.00)	550.00

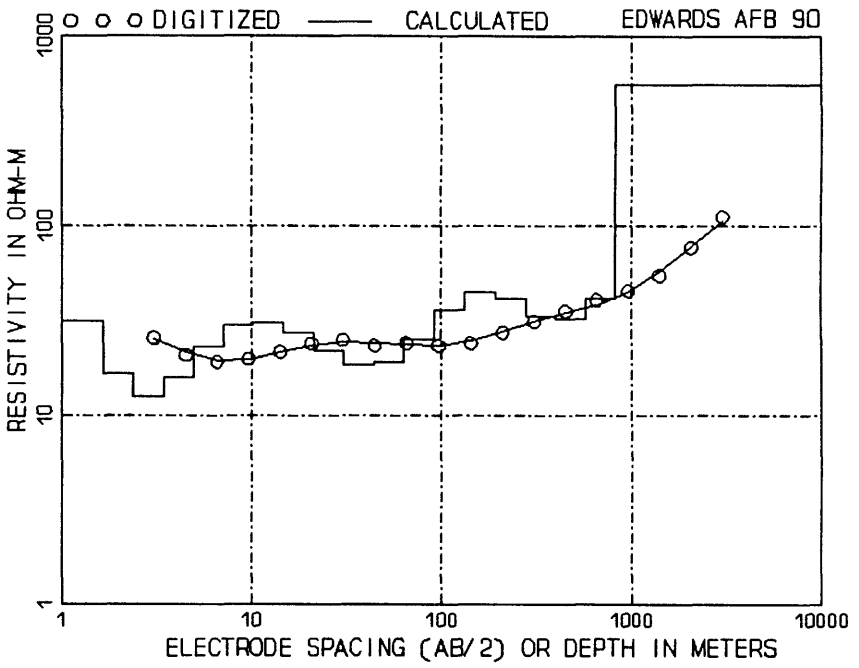




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	15.80	91.44 (300.00)	21.50
4.27 (14.00)	13.50	121.92 (400.00)	22.50
6.10 (20.00)	11.30	182.88 (600.00)	22.50
9.14 (30.00)	10.50	243.84 (800.00)	23.00
12.19 (40.00)	11.30	304.80 (1000.00)	23.50
18.29 (60.00)	13.00	304.80 (1000.00)	23.00
24.38 (80.00)	14.00	426.72 (1400.00)	24.00
30.48 (100.00)	16.00	609.60 (2000.00)	26.50
30.48 (100.00)	16.00	914.40 (3000.00)	33.00
42.67 (140.00)	17.30	1219.20 (4000.00)	39.00
60.96 (200.00)	19.50	1828.80 (6000.00)	56.00
		2438.40 (8000.00)	74.00

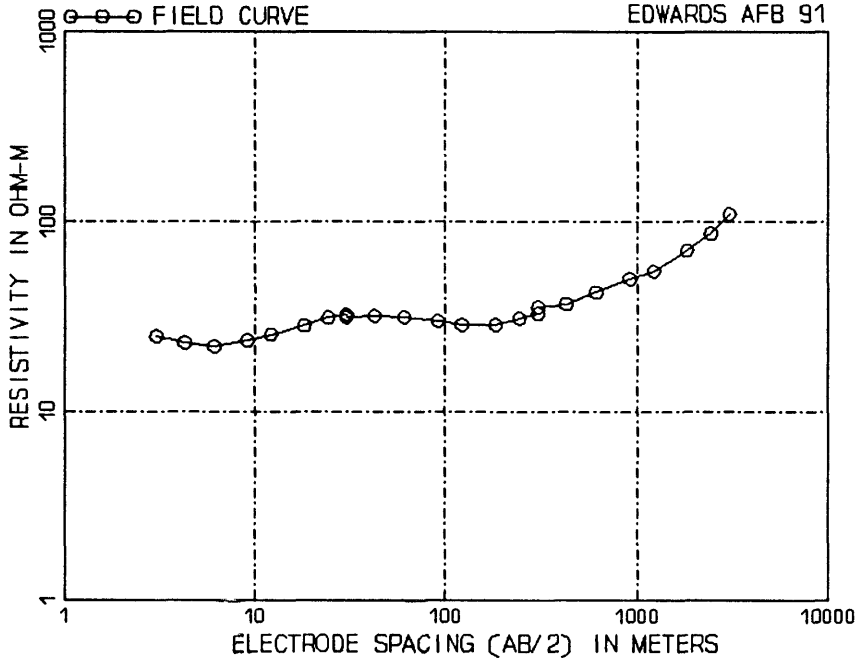
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	17.73	51.85 (170.11)	26.90
2.79 (9.14)	10.25	74.73 (245.16)	23.36
4.01 (13.17)	6.32	107.70 (353.33)	22.43
5.79 (18.98)	8.26	155.21 (509.23)	22.48
8.34 (27.36)	12.81	223.70 (733.91)	20.94
12.02 (39.43)	13.05	322.39 (1057.72)	22.66
17.32 (56.82)	21.95	464.64 (1524.41)	22.06
24.96 (81.90)	19.89	669.65 (2197.01)	26.78
35.98 (118.03)	23.88	99999.00 (99999.00)	550.00

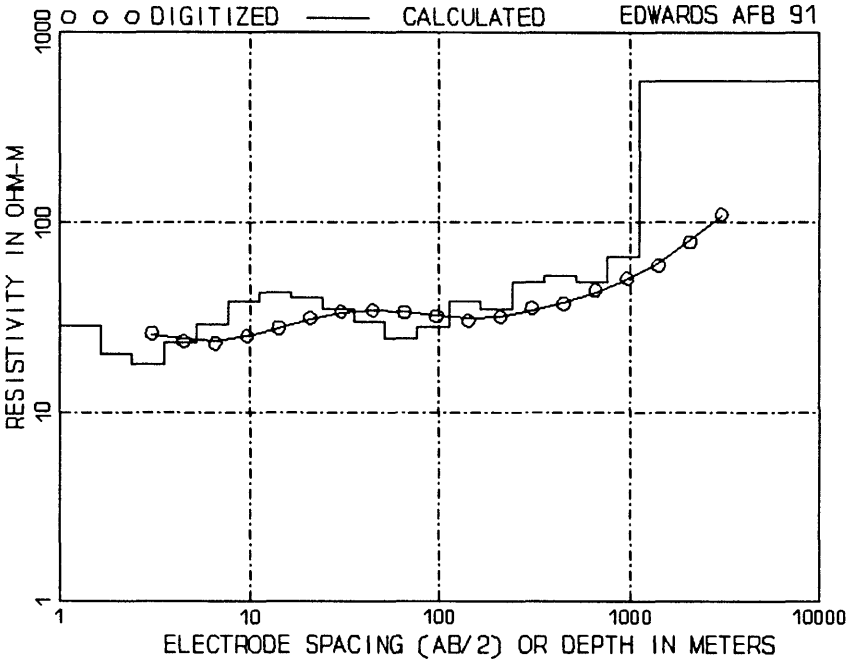




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	23.50	121.92 (400.00)	22.20
4.27 (14.00)	19.50	182.88 (600.00)	24.50
6.10 (20.00)	17.80	243.84 (800.00)	27.00
9.14 (30.00)	18.00	304.80 (1000.00)	29.50
12.19 (40.00)	19.40	304.80 (1000.00)	31.50
18.29 (60.00)	21.20	426.72 (1400.00)	35.00
24.38 (80.00)	22.80	609.60 (2000.00)	40.00
30.48 (100.00)	23.00	914.40 (3000.00)	44.50
30.48 (100.00)	23.50	1219.20 (4000.00)	51.00
42.67 (140.00)	22.00	1828.80 (6000.00)	66.00
60.96 (200.00)	22.50	2438.40 (8000.00)	90.00
91.44 (300.00)	22.00	3048.00 (10000.00)	112.00

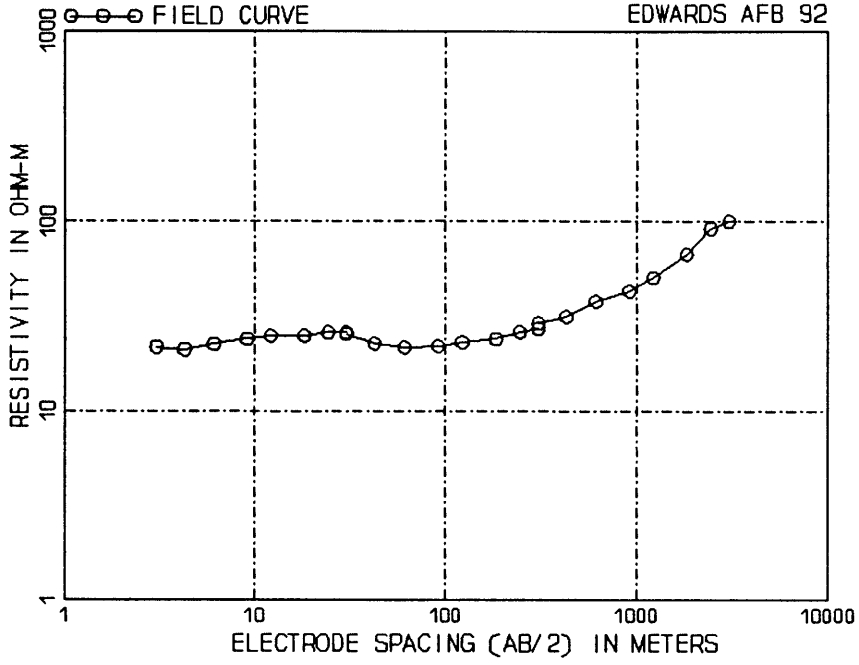
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	31.35	44.16 (144.87)	18.48
2.37 (7.78)	16.69	63.64 (208.78)	19.10
3.42 (11.22)	12.56	91.71 (300.90)	25.50
4.93 (16.17)	15.77	132.18 (433.67)	36.38
7.10 (23.30)	23.20	190.50 (625.01)	44.59
10.23 (33.58)	29.91	274.56 (900.77)	41.55
14.75 (48.39)	31.01	395.70 (1298.21)	33.57
21.26 (69.74)	27.20	570.28 (1871.01)	32.67
30.64 (100.52)	22.09	821.90 (2696.54)	41.60
		99999.00 (99999.00)	550.00

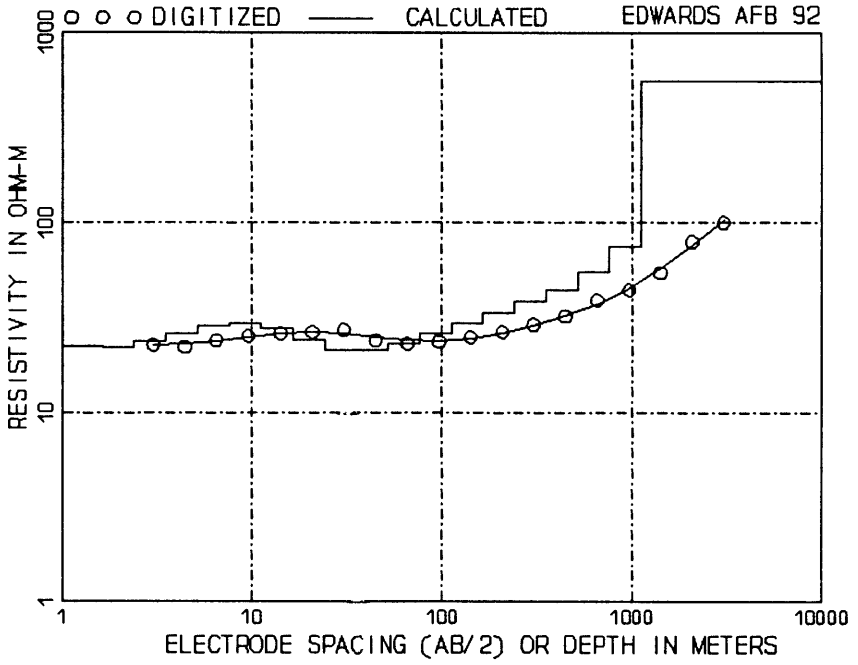




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	25.00	121.92 (400.00)	28.70
4.27 (14.00)	23.00	182.88 (600.00)	28.60
6.10 (20.00)	22.00	243.84 (800.00)	31.00
9.14 (30.00)	23.70	304.80 (1000.00)	32.80
12.19 (40.00)	25.50	304.80 (1000.00)	35.50
18.29 (60.00)	28.50	426.72 (1400.00)	37.00
24.38 (80.00)	31.30	609.60 (2000.00)	42.50
30.48 (100.00)	32.50	914.40 (3000.00)	50.00
30.48 (100.00)	31.50	1219.20 (4000.00)	55.00
42.67 (140.00)	32.00	1828.80 (6000.00)	71.00
60.96 (200.00)	31.50	2438.40 (8000.00)	87.00
91.44 (300.00)	30.00	3048.00 (10000.00)	110.00

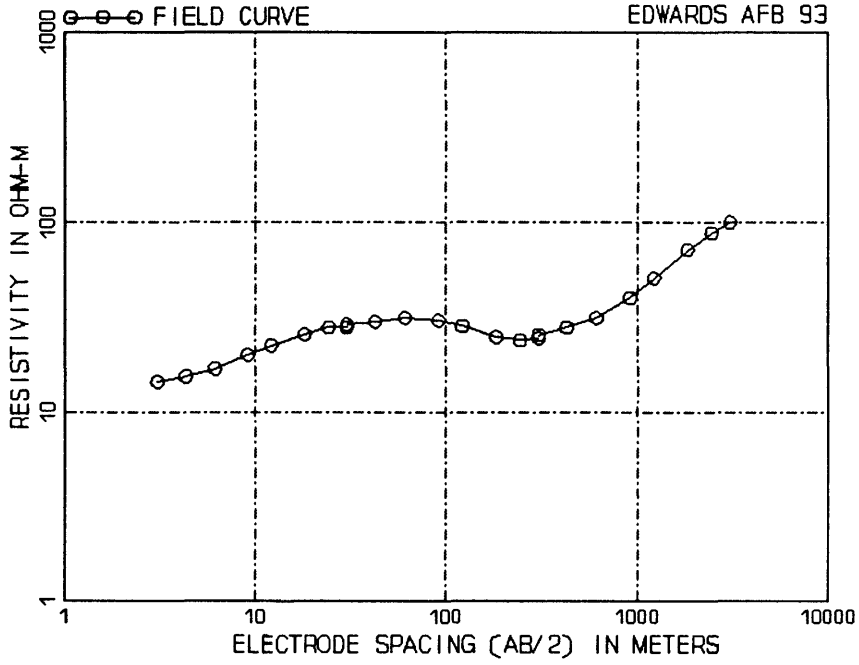
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	28.74	52.05 (170.76)	30.02
2.42 (7.93)	20.37	76.40 (250.65)	24.39
3.55 (11.63)	17.99	112.14 (367.90)	28.29
5.20 (17.08)	23.37	164.59 (540.00)	38.35
7.64 (25.06)	29.01	241.59 (792.61)	35.24
11.21 (36.79)	38.17	354.60 (1163.40)	48.56
16.46 (54.00)	43.05	520.49 (1707.63)	52.48
24.16 (79.26)	40.39	763.97 (2506.46)	48.33
35.46 (116.34)	35.17	1121.35 (3678.98)	65.93
		99999.00 (99999.00)	550.00

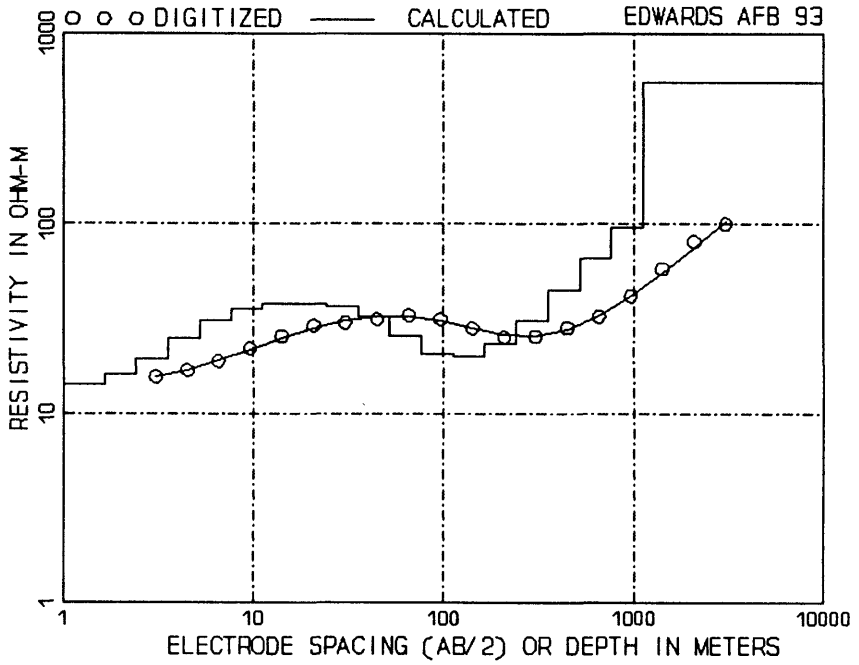




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	21.80	121.92 (400.00)	23.00
4.27 (14.00)	21.14	182.88 (600.00)	24.00
6.10 (20.00)	22.60	243.84 (800.00)	26.20
9.14 (30.00)	24.00	304.80 (1000.00)	27.20
12.19 (40.00)	25.00	304.80 (1000.00)	29.00
18.29 (60.00)	25.00	426.72 (1400.00)	31.50
24.38 (80.00)	26.00	609.60 (2000.00)	38.00
30.48 (100.00)	26.00	914.40 (3000.00)	43.00
30.48 (100.00)	25.50	1219.20 (4000.00)	50.50
42.67 (140.00)	22.80	1828.80 (6000.00)	67.00
60.96 (200.00)	21.70	2438.40 (8000.00)	92.00
91.44 (300.00)	22.00	3048.00 (10000.00)	100.00

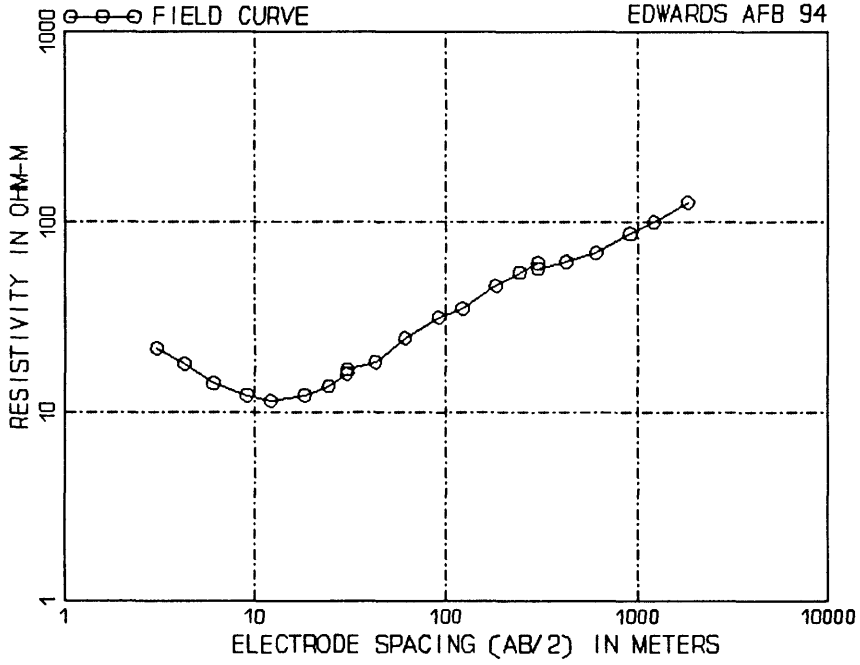
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	22.24	52.05 (170.76)	21.22
2.42 (7.93)	22.15	76.40 (250.65)	23.20
3.55 (11.63)	23.65	112.14 (367.90)	25.97
5.20 (17.08)	26.16	164.59 (540.00)	29.31
7.64 (25.06)	28.43	241.59 (792.61)	33.47
11.21 (36.79)	29.31	354.60 (1163.40)	38.27
16.46 (54.00)	27.63	520.49 (1707.63)	44.47
24.16 (79.26)	23.99	763.97 (2506.46)	55.35
35.46 (116.34)	21.27	1121.35 (3678.98)	74.37
		99999.00 (99999.00)	550.00

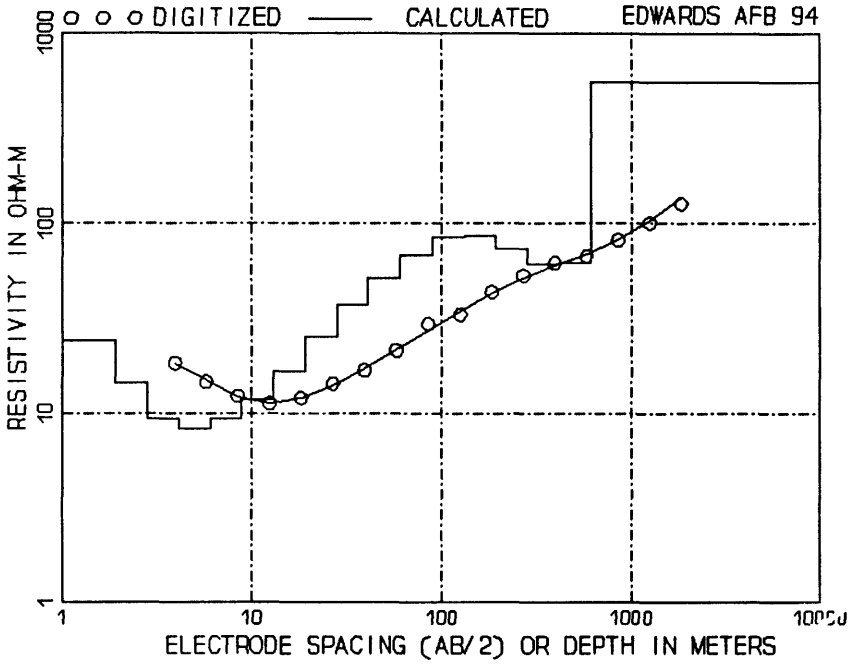




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	14.50	121.92 (400.00)	28.50
4.27 (14.00)	15.50	182.88 (600.00)	25.00
6.10 (20.00)	17.00	243.84 (800.00)	24.00
9.14 (30.00)	20.00	304.80 (1000.00)	24.50
12.19 (40.00)	22.50	304.80 (1000.00)	25.50
18.29 (60.00)	25.80	426.72 (1400.00)	28.00
24.38 (80.00)	28.00	609.60 (2000.00)	31.50
30.48 (100.00)	28.00	914.40 (3000.00)	40.00
30.48 (100.00)	29.00	1219.20 (4000.00)	51.00
42.67 (140.00)	30.00	1828.80 (6000.00)	72.00
60.96 (200.00)	31.50	2438.40 (8000.00)	88.00
91.44 (300.00)	30.50	3048.00 (10000.00)	100.00

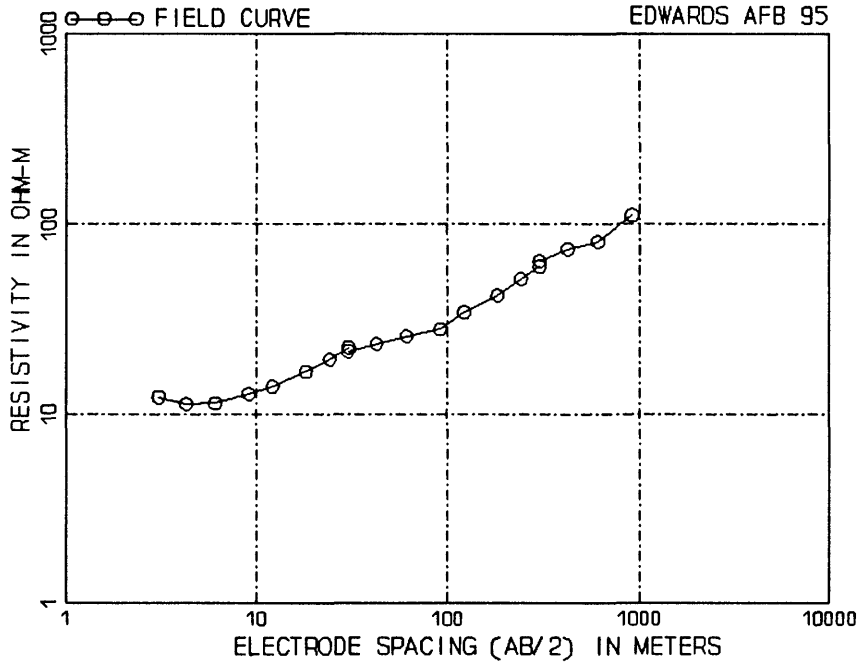
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	14.33	52.05 (170.76)	32.39
2.42 (7.93)	16.07	76.40 (250.65)	25.78
3.55 (11.63)	19.47	112.14 (367.90)	20.65
5.20 (17.08)	24.82	164.59 (540.00)	19.92
7.64 (25.06)	31.03	241.59 (792.61)	23.41
11.21 (36.79)	35.78	354.60 (1163.40)	30.96
16.46 (54.00)	37.72	520.49 (1707.63)	44.65
24.16 (79.26)	37.79	763.97 (2506.46)	66.31
35.46 (116.34)	36.50	1121.35 (3678.98)	95.43
		99999.00 (99999.00)	550.00

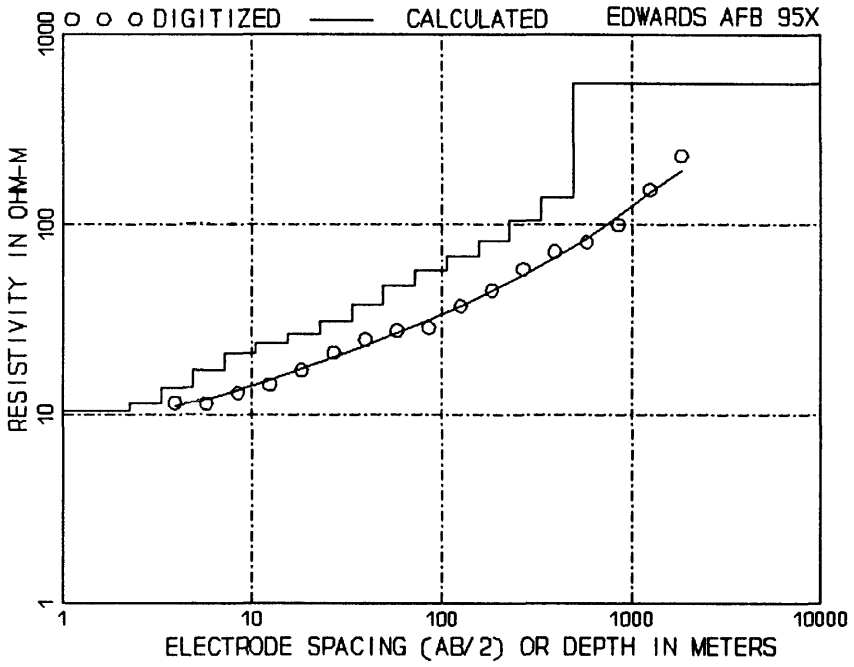




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	21.70	91.44 (300.00)	31.50
4.27 (14.00)	18.00	121.92 (400.00)	35.00
6.10 (20.00)	14.20	182.88 (600.00)	46.50
9.14 (30.00)	12.30	243.84 (800.00)	54.50
12.19 (40.00)	11.50	304.80 (1000.00)	61.00
18.29 (60.00)	12.30	304.80 (1000.00)	57.00
24.38 (80.00)	13.70	426.72 (1400.00)	62.00
30.48 (100.00)	16.00	609.60 (2000.00)	69.00
30.48 (100.00)	16.80	914.40 (3000.00)	87.00
42.67 (140.00)	18.40	1219.20 (4000.00)	100.00
60.96 (200.00)	24.50	1828.80 (6000.00)	127.00

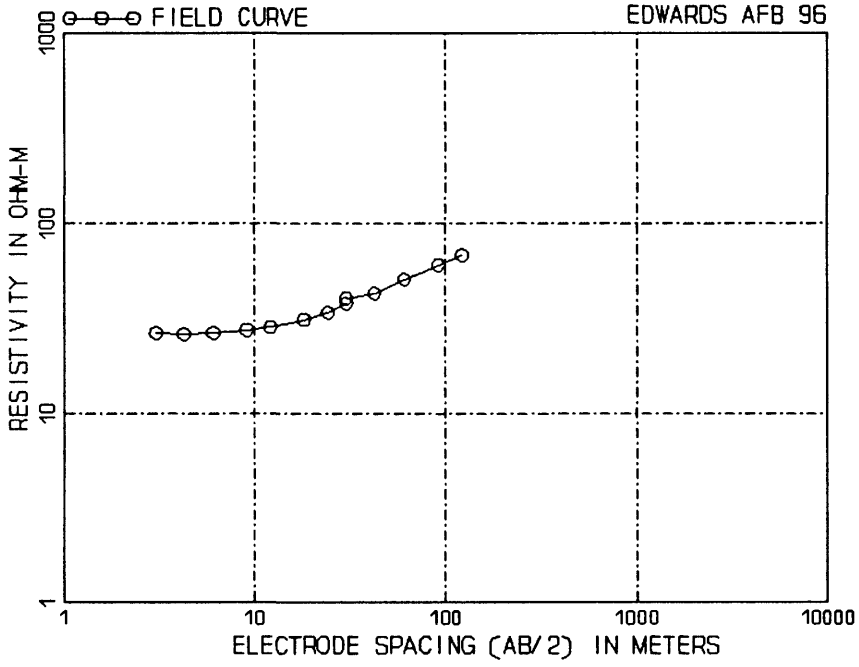
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.91 (6.28)	24.00	41.25 (135.35)	37.25
2.81 (9.22)	14.37	60.55 (198.66)	51.27
4.13 (13.53)	9.41	88.88 (291.60)	68.66
6.06 (19.87)	8.28	130.46 (428.01)	84.39
8.89 (29.16)	9.40	191.49 (628.23)	86.45
13.05 (42.80)	11.86	281.06 (922.12)	73.77
19.15 (62.82)	16.68	412.54 (1353.49)	61.50
28.11 (92.21)	25.46	605.73 (1986.65)	62.12
		99999.00 (99999.00)	550.00

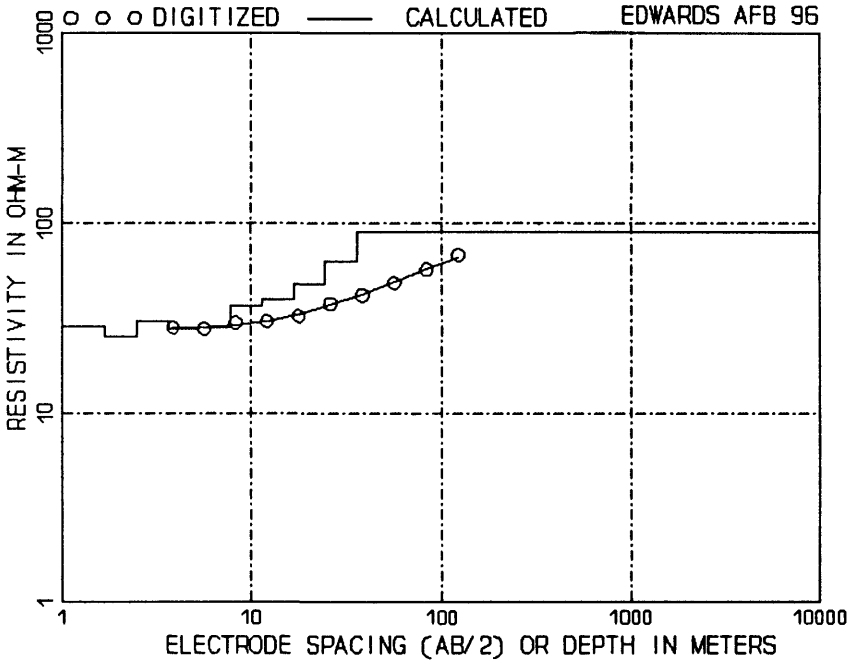




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	12.30	60.96 (200.00)	25.80
4.27 (14.00)	11.30	91.44 (300.00)	28.00
6.10 (20.00)	11.40	121.92 (400.00)	34.40
9.14 (30.00)	12.80	182.88 (600.00)	42.30
12.19 (40.00)	14.00	243.84 (800.00)	51.50
18.29 (60.00)	16.80	304.80 (1000.00)	60.00
24.38 (80.00)	19.50	304.80 (1000.00)	64.00
30.48 (100.00)	22.50	426.72 (1400.00)	74.00
30.48 (100.00)	21.50	609.60 (2000.00)	81.00
42.67 (140.00)	23.50	914.40 (3000.00)	111.50

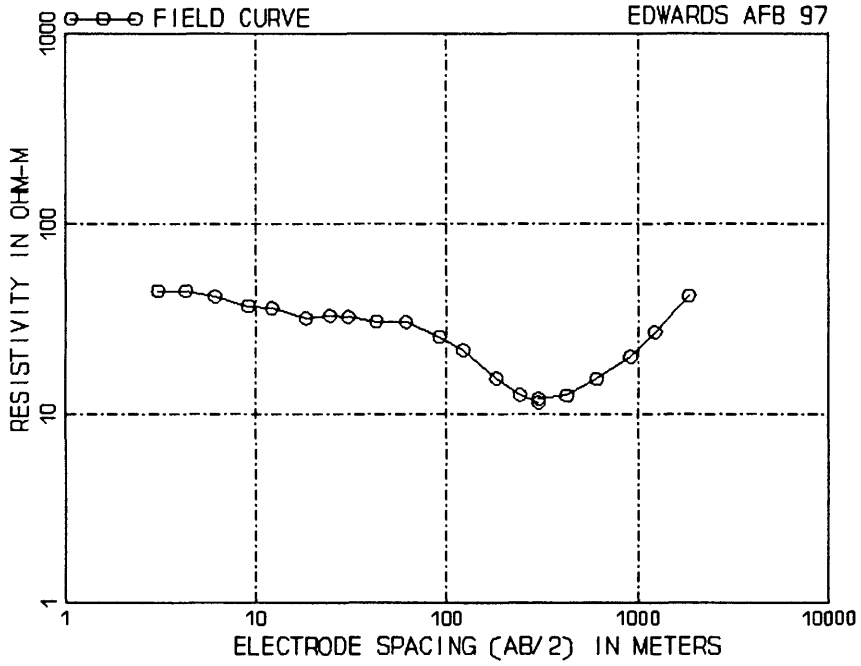
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.55 (5.09)	10.42	33.42 (109.63)	30.77
2.28 (7.47)	10.43	49.05 (160.92)	37.88
3.34 (10.96)	11.50	71.99 (236.20)	47.56
4.90 (16.09)	13.84	105.67 (346.69)	57.84
7.20 (23.62)	17.27	155.10 (508.87)	68.05
10.57 (34.67)	20.95	227.66 (746.92)	81.85
15.51 (50.89)	23.91	334.16 (1096.32)	104.88
22.77 (74.69)	26.59	490.48 (1609.19)	139.68
		99999.00 (99999.00)	550.00

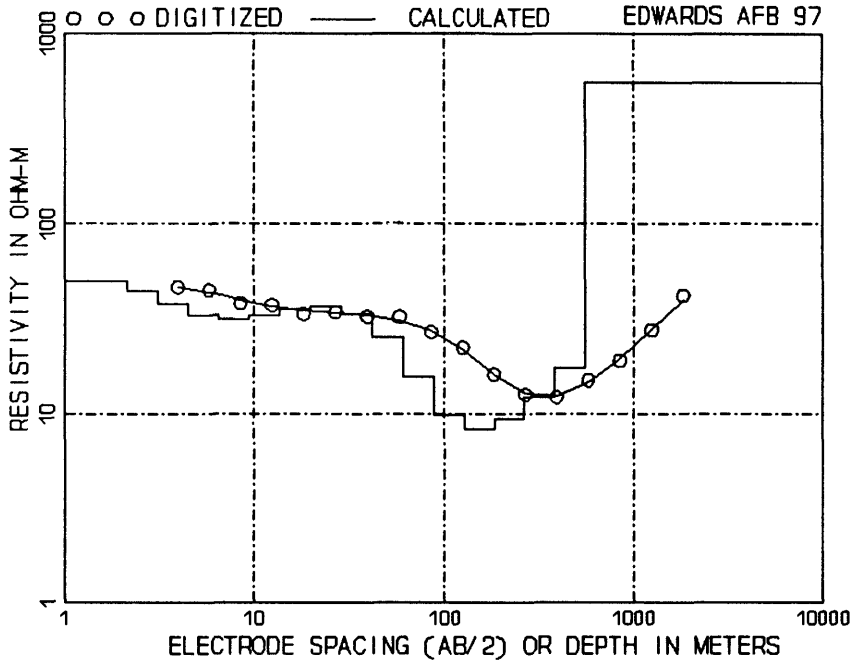




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	26.60	24.38 (80.00)	34.00
4.27 (14.00)	26.20	30.48 (100.00)	38.00
6.10 (20.00)	26.50	30.48 (100.00)	40.50
9.14 (30.00)	27.50	42.67 (140.00)	43.00
12.19 (40.00)	28.50	60.96 (200.00)	51.00
18.29 (60.00)	31.20	91.44 (300.00)	60.50
		121.92 (400.00)	68.00

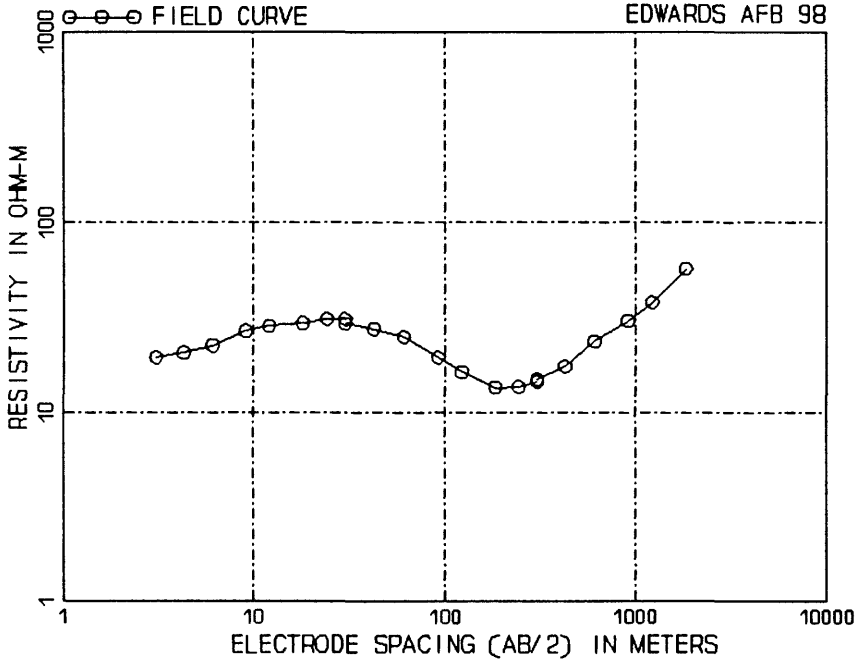
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.69 (5.53)	28.55	11.49 (37.69)	36.87
2.48 (8.12)	25.23	16.86 (55.33)	39.43
3.63 (11.92)	30.47	24.75 (81.21)	47.99
5.33 (17.50)	27.62	36.33 (119.20)	62.91
7.83 (25.68)	28.17	99999.00 (99999.00)	89.69

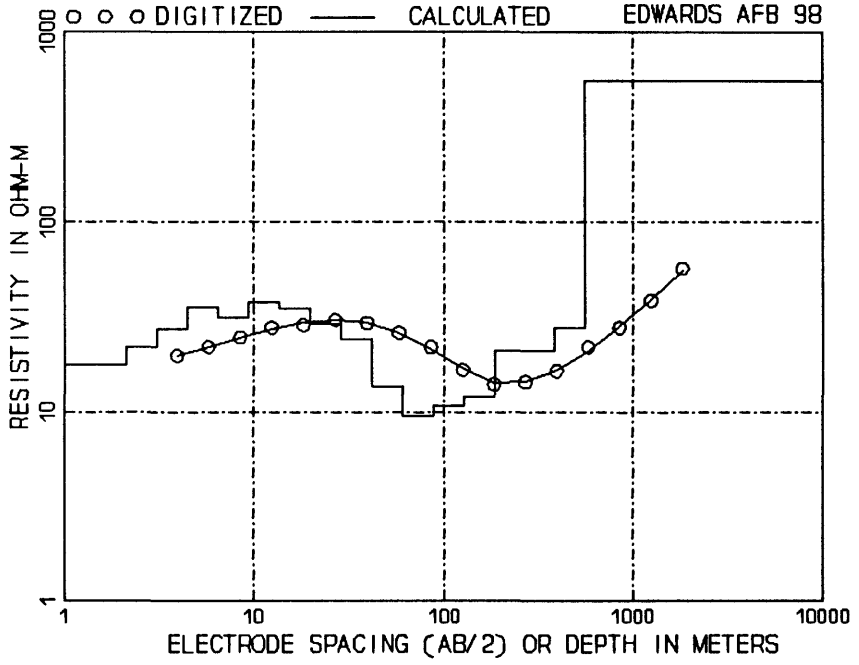




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	44.50	91.44 (300.00)	25.50
4.27 (14.00)	44.50	121.92 (400.00)	21.70
6.10 (20.00)	41.50	182.88 (600.00)	15.40
9.14 (30.00)	37.00	243.84 (800.00)	12.60
12.19 (40.00)	36.00	304.80 (1000.00)	11.50
18.29 (60.00)	32.00	304.80 (1000.00)	12.00
24.38 (80.00)	33.00	426.72 (1400.00)	12.50
30.48 (100.00)	32.50	609.60 (2000.00)	15.30
30.48 (100.00)	32.50	914.40 (3000.00)	20.00
42.67 (140.00)	30.70	1219.20 (4000.00)	27.00
60.96 (200.00)	30.50	1828.80 (6000.00)	42.00

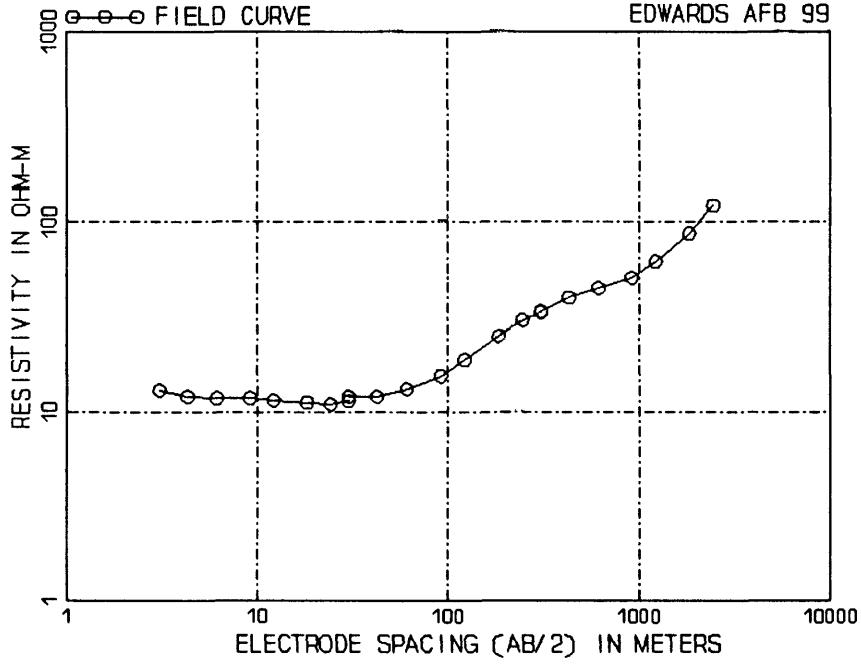
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	49.84	41.52 (136.21)	33.48
3.08 (10.12)	44.33	60.19 (197.47)	25.27
4.47 (14.67)	37.67	87.26 (286.27)	15.68
6.48 (21.27)	32.90	126.50 (415.02)	9.82
9.40 (30.83)	31.39	183.39 (601.68)	8.30
13.63 (44.70)	32.84	265.87 (872.27)	9.33
19.75 (64.81)	35.55	385.44 (1264.57)	12.30
28.64 (93.95)	36.70	558.79 (1833.30)	17.51
		99999.00 (99999.00)	550.00

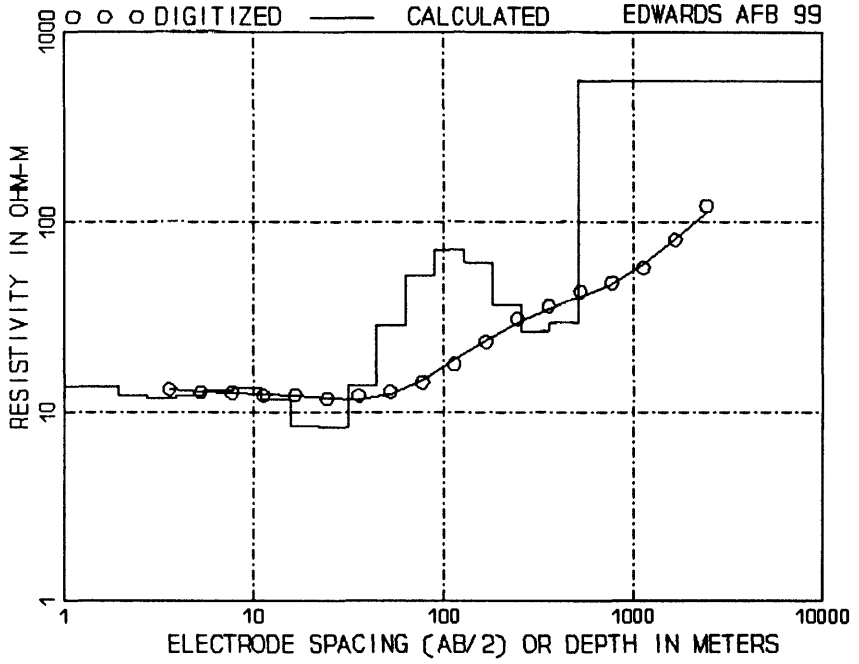




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	19.50	91.44 (300.00)	19.50
4.27 (14.00)	20.60	121.92 (400.00)	16.30
6.10 (20.00)	22.50	182.88 (600.00)	13.50
9.14 (30.00)	26.80	243.84 (800.00)	13.60
12.19 (40.00)	28.50	304.80 (1000.00)	14.50
18.29 (60.00)	29.40	304.80 (1000.00)	15.00
24.38 (80.00)	31.00	426.72 (1400.00)	17.50
30.48 (100.00)	31.00	609.60 (2000.00)	23.60
30.48 (100.00)	29.30	914.40 (3000.00)	30.20
42.67 (140.00)	27.50	1219.20 (4000.00)	38.00
60.96 (200.00)	25.00	1828.80 (6000.00)	57.00

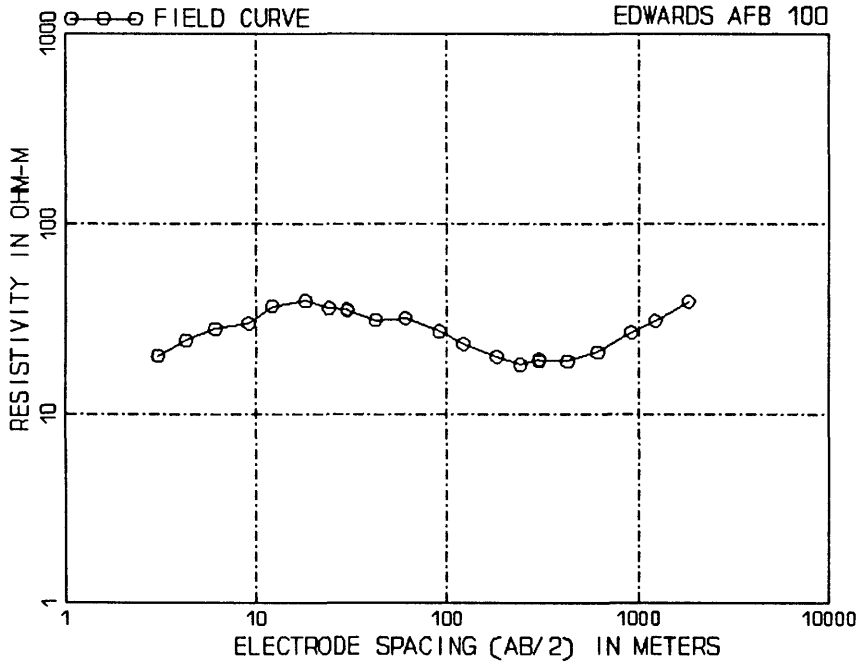
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	17.69	41.52 (136.21)	24.27
3.08 (10.12)	22.14	60.19 (197.47)	13.61
4.47 (14.67)	27.49	87.26 (286.27)	9.59
6.48 (21.27)	35.58	126.50 (415.02)	10.72
9.40 (30.83)	31.68	183.39 (601.68)	12.09
13.63 (44.70)	37.80	265.87 (872.27)	21.07
19.75 (64.81)	35.02	385.44 (1264.57)	20.96
28.64 (93.95)	29.13	558.79 (1833.30)	27.71
		99999.00 (99999.00)	550.00

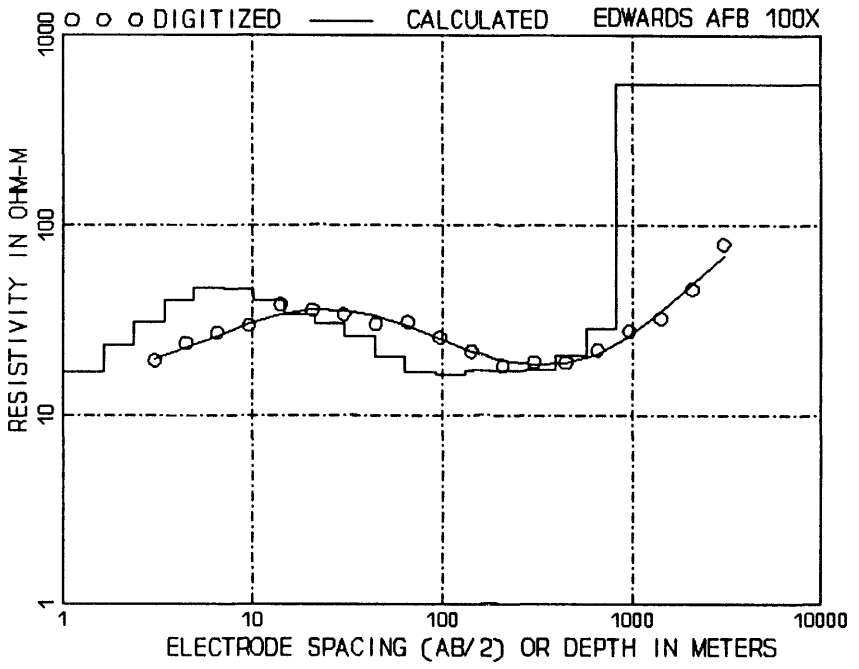




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	13.00	91.44 (300.00)	15.50
4.27 (14.00)	12.00	121.92 (400.00)	18.80
6.10 (20.00)	11.80	182.88 (600.00)	25.00
9.14 (30.00)	11.80	243.84 (800.00)	30.50
12.19 (40.00)	11.50	304.80 (1000.00)	33.50
18.29 (60.00)	11.20	304.80 (1000.00)	34.00
24.38 (80.00)	11.00	426.72 (1400.00)	40.00
30.48 (100.00)	11.40	609.60 (2000.00)	45.00
30.48 (100.00)	12.00	914.40 (3000.00)	51.00
42.67 (140.00)	12.00	1219.20 (4000.00)	62.00
60.96 (200.00)	13.20	1828.80 (6000.00)	87.00
		2438.40 (8000.00)	122.00

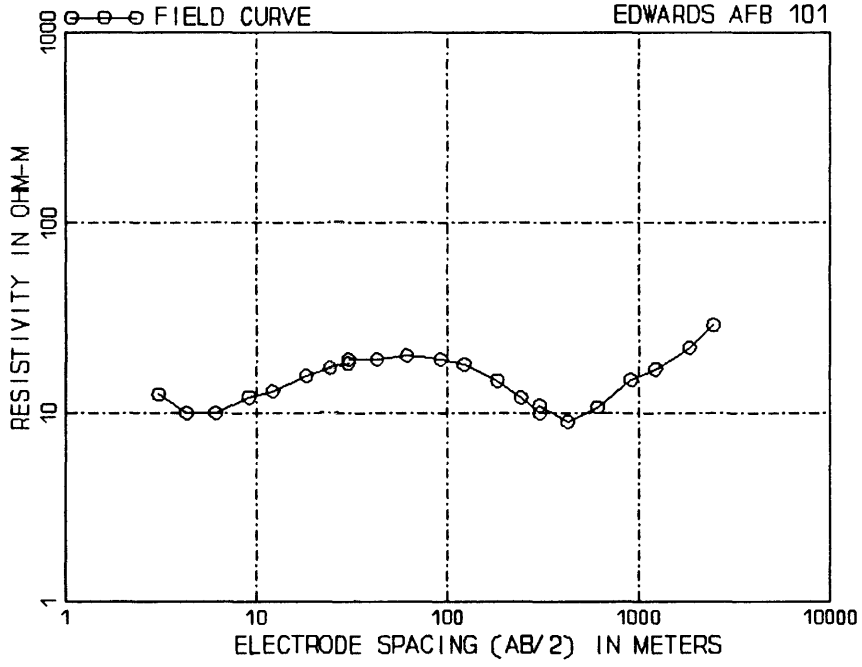
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	13.61	44.65 (146.48)	13.90
2.74 (8.99)	12.26	63.29 (207.64)	28.51
3.88 (12.74)	11.85	89.71 (294.32)	52.68
5.50 (18.06)	12.25	127.16 (417.19)	71.36
7.80 (25.60)	13.04	180.24 (591.35)	60.90
11.06 (36.28)	13.49	255.49 (838.23)	36.94
15.68 (51.43)	11.62	362.15 (1188.17)	26.37
22.22 (72.90)	8.44	513.34 (1684.20)	29.38
31.50 (103.34)	8.32	99999.00 (99999.00)	550.00

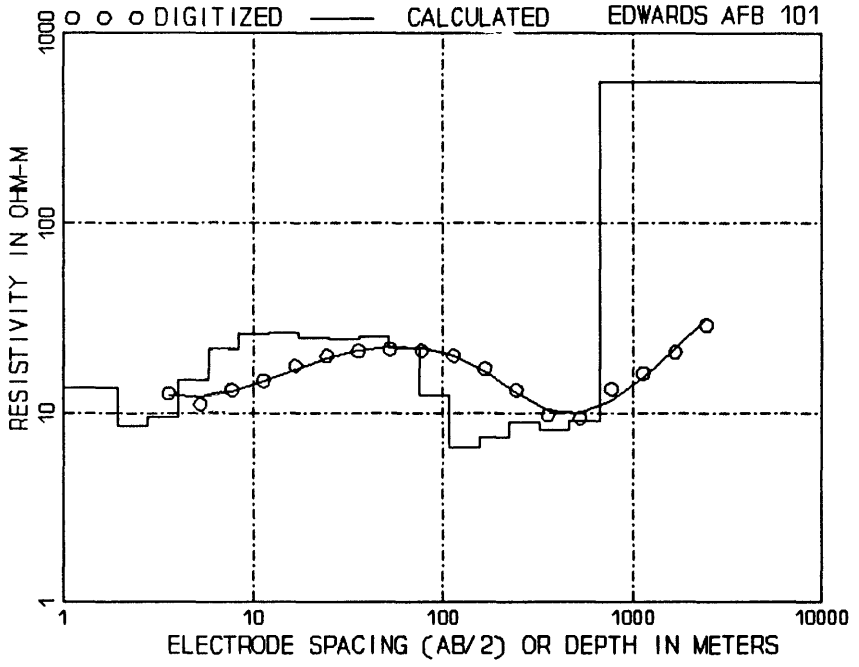




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	20.20	91.44 (300.00)	27.20
4.27 (14.00)	24.40	121.92 (400.00)	23.50
6.10 (20.00)	28.00	182.88 (600.00)	20.00
9.14 (30.00)	30.00	243.84 (800.00)	18.20
12.19 (40.00)	37.00	304.80 (1000.00)	19.50
18.29 (60.00)	39.50	304.80 (1000.00)	19.00
24.38 (80.00)	36.00	426.72 (1400.00)	19.00
30.48 (100.00)	35.50	609.60 (2000.00)	21.20
30.48 (100.00)	35.00	914.40 (3000.00)	27.00
42.67 (140.00)	31.20	1219.20 (4000.00)	31.00
60.96 (200.00)	32.00	1828.80 (6000.00)	39.00

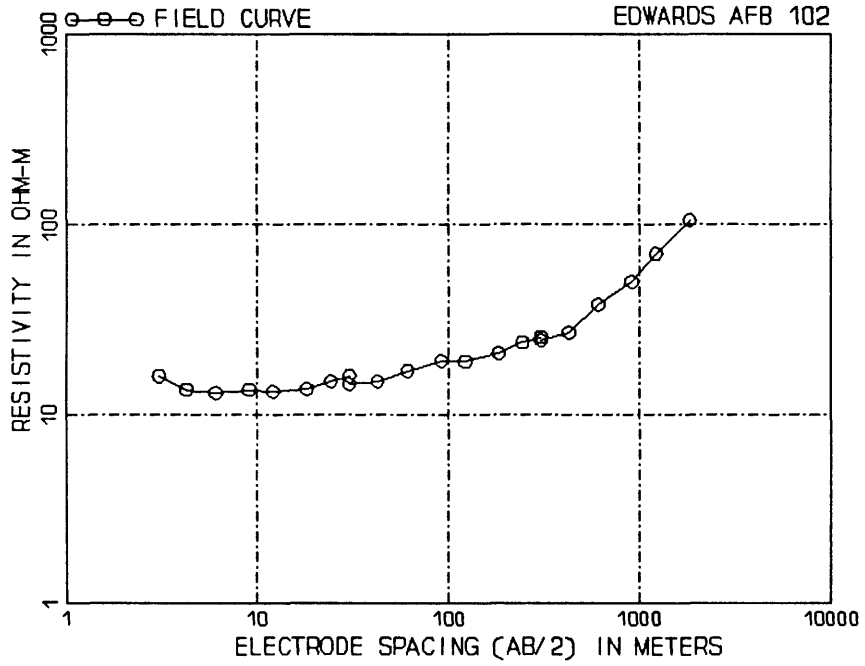
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	16.90	44.16 (144.87)	26.04
2.37 (7.78)	23.25	63.64 (208.78)	20.40
3.42 (11.22)	31.20	91.71 (300.90)	16.88
4.93 (16.17)	40.09	132.18 (433.67)	16.37
7.10 (23.30)	46.81	190.50 (625.01)	17.09
10.23 (33.58)	46.36	274.56 (900.77)	17.23
14.75 (48.39)	39.99	395.70 (1298.21)	17.50
21.26 (69.74)	33.97	570.28 (1871.01)	20.73
30.64 (100.52)	30.36	821.90 (2696.54)	28.44
		99999.00 (99999.00)	550.00

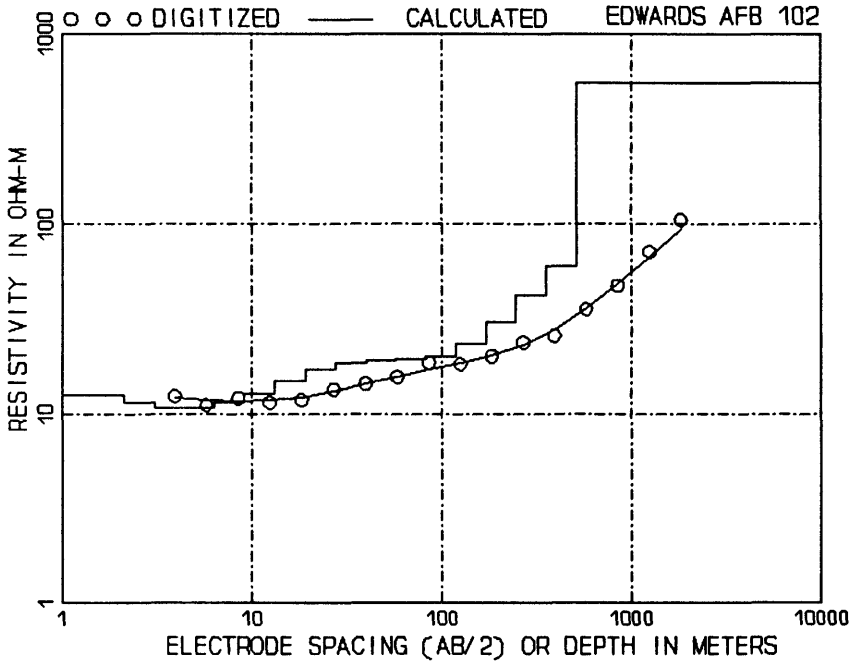




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	12.50	91.44 (300.00)	19.20
4.27 (14.00)	10.00	121.92 (400.00)	18.00
6.10 (20.00)	10.00	182.88 (600.00)	14.80
9.14 (30.00)	12.10	243.84 (800.00)	12.00
12.19 (40.00)	13.00	304.80 (1000.00)	10.00
18.29 (60.00)	15.70	304.80 (1000.00)	11.00
24.38 (80.00)	17.20	426.72 (1400.00)	9.00
30.48 (100.00)	18.20	609.60 (2000.00)	10.70
30.48 (100.00)	19.20	914.40 (3000.00)	15.00
42.67 (140.00)	19.20	1219.20 (4000.00)	17.00
60.96 (200.00)	20.00	1828.80 (6000.00)	22.00
		2438.40 (8000.00)	29.00

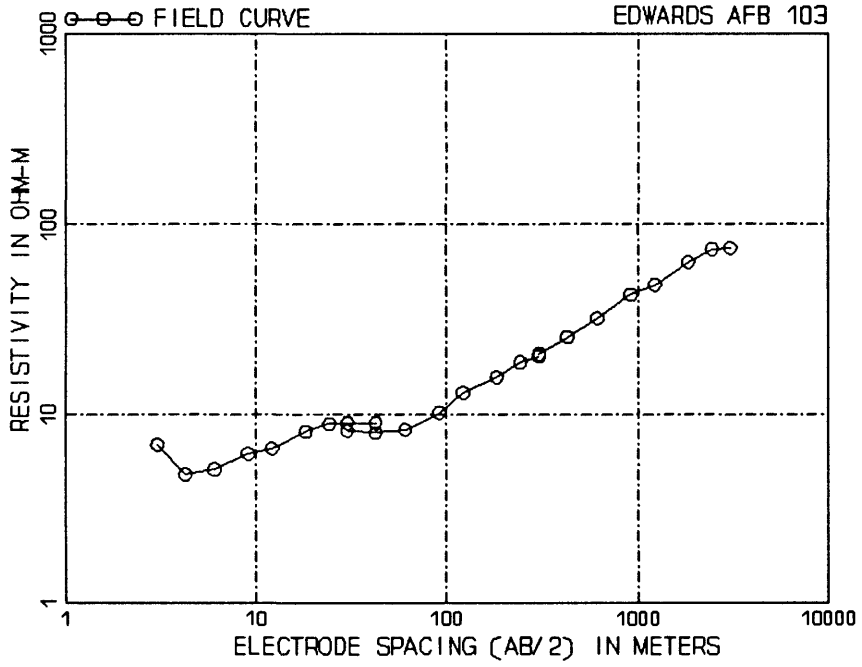
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	13.57	51.85 (170.11)	25.23
2.79 (9.14)	8.53	74.73 (245.16)	22.11
4.01 (13.17)	9.60	107.70 (353.33)	12.42
5.79 (18.98)	14.98	155.21 (509.23)	6.58
8.34 (27.36)	21.83	223.70 (733.91)	7.43
12.02 (39.43)	26.28	322.39 (1057.72)	9.03
17.32 (56.82)	26.64	464.64 (1524.41)	8.21
24.96 (81.90)	25.02	669.65 (2197.01)	9.05
35.98 (118.03)	24.48	99999.00 (99999.00)	550.00

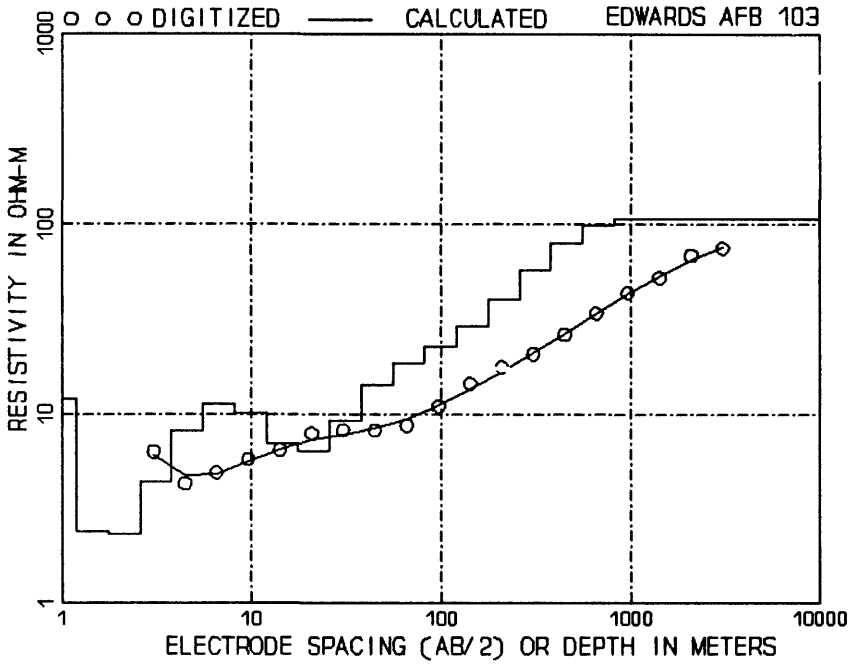




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	16.00	91.44 (300.00)	19.20
4.27 (14.00)	13.50	121.92 (400.00)	19.00
6.10 (20.00)	13.00	182.88 (600.00)	21.00
9.14 (30.00)	13.50	243.84 (800.00)	24.00
12.19 (40.00)	13.20	304.80 (1000.00)	25.50
18.29 (60.00)	13.60	304.80 (1000.00)	24.50
24.38 (80.00)	15.00	426.72 (1400.00)	27.00
30.48 (100.00)	16.00	609.60 (2000.00)	38.00
30.48 (100.00)	14.50	914.40 (3000.00)	50.00
42.67 (140.00)	15.00	1219.20 (4000.00)	70.00
60.96 (200.00)	17.00	1828.80 (6000.00)	105.00

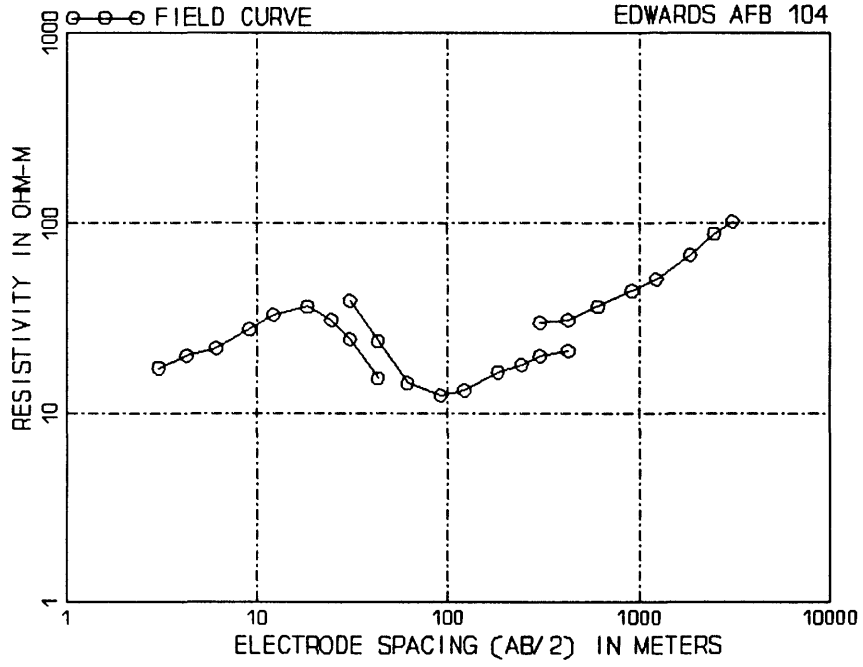
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	12.62	39.60 (129.93)	18.59
3.07 (10.06)	11.39	57.08 (187.26)	19.11
4.42 (14.50)	10.77	82.26 (269.89)	19.28
6.37 (20.90)	10.72	118.56 (388.96)	20.18
9.18 (30.12)	11.40	170.87 (560.58)	23.30
13.23 (43.40)	12.88	246.26 (807.92)	30.26
19.07 (62.55)	14.92	354.91 (1164.40)	42.22
27.48 (90.15)	17.08	511.50 (1678.15)	59.88
		99999.00 (99999.00)	550.00

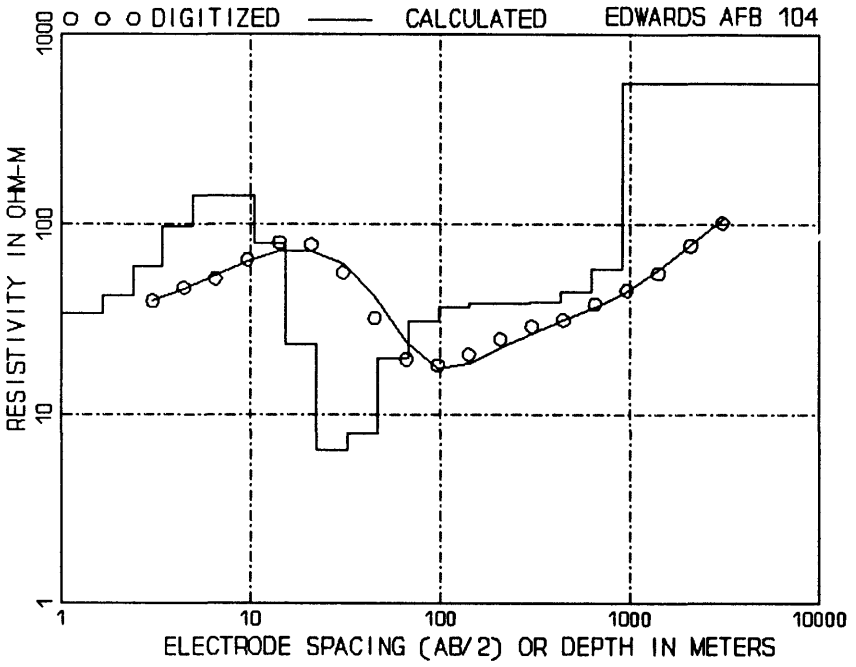




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	6.90	91.44 (300.00)	10.20
4.27 (14.00)	4.80	121.92 (400.00)	13.00
6.10 (20.00)	5.10	182.88 (600.00)	15.70
9.14 (30.00)	6.20	243.84 (800.00)	18.80
12.19 (40.00)	6.60	304.80 (1000.00)	20.20
18.29 (60.00)	8.10	304.80 (1000.00)	20.80
24.38 (80.00)	8.90	426.72 (1400.00)	25.50
30.48 (100.00)	9.00	609.60 (2000.00)	32.00
42.67 (140.00)	9.00	914.40 (3000.00)	42.50
30.48 (100.00)	8.20	1219.20 (4000.00)	48.00
42.67 (140.00)	8.00	1828.80 (6000.00)	63.00
60.96 (200.00)	8.30	2438.40 (8000.00)	74.00
		3048.00 (10000.00)	75.00

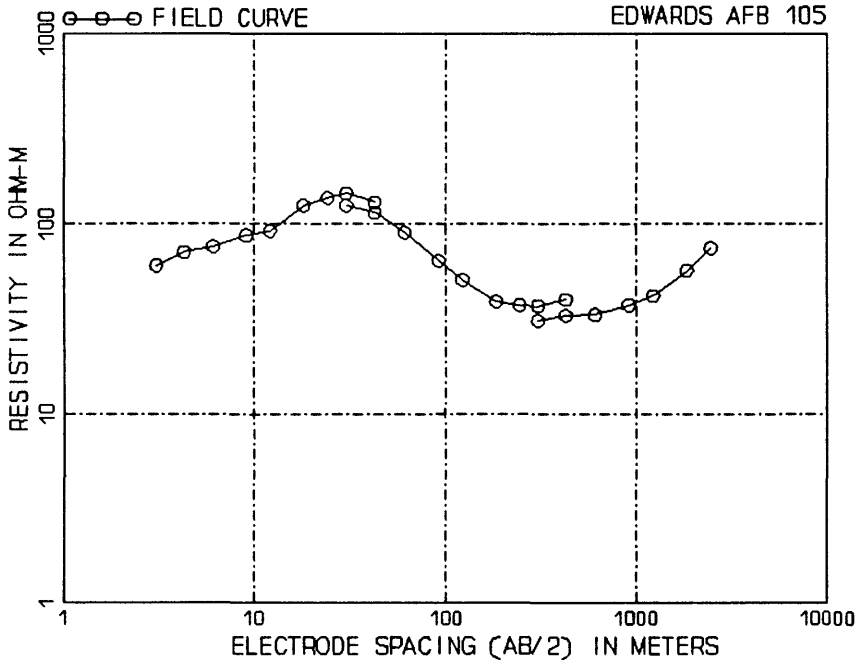
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.20 (3.94)	11.97	37.94 (124.49)	9.26
1.76 (5.78)	2.40	55.69 (182.72)	14.25
2.59 (8.48)	2.33	81.75 (268.20)	18.51
3.79 (12.45)	4.38	119.99 (393.66)	22.55
5.57 (18.27)	8.11	176.12 (577.81)	29.12
8.17 (26.82)	11.31	258.51 (848.11)	40.31
12.00 (39.37)	10.10	379.43 (1244.86)	57.46
17.61 (57.78)	6.96	556.93 (1827.21)	79.78
25.85 (84.81)	6.37	817.47 (2681.98)	99.57
		99999.00 (99999.00)	107.38

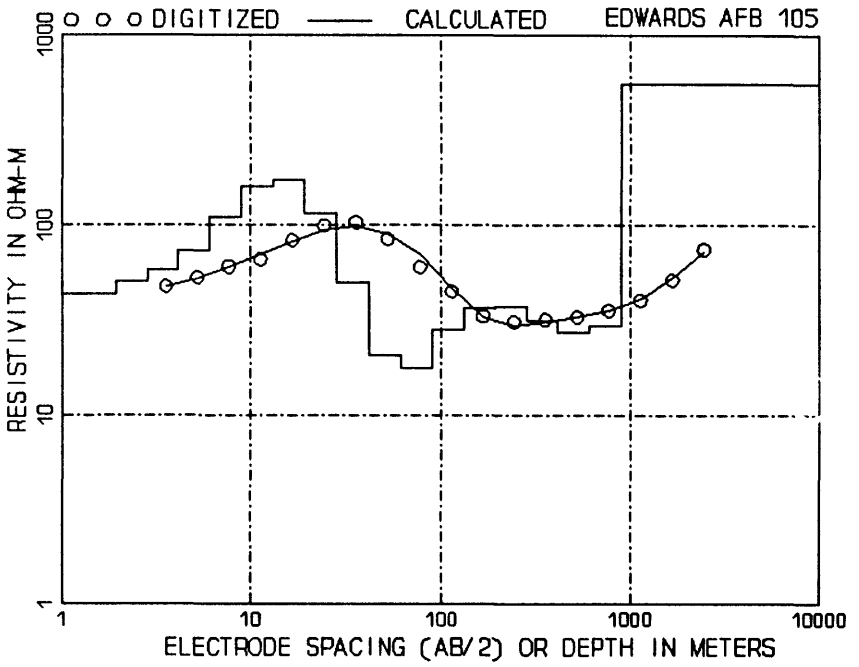




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	17.30	121.92 (400.00)	13.20
4.27 (14.00)	20.00	182.88 (600.00)	16.50
6.10 (20.00)	22.00	243.84 (800.00)	18.00
9.14 (30.00)	27.70	304.80 (1000.00)	20.00
12.19 (40.00)	33.00	426.72 (1400.00)	21.30
18.29 (60.00)	36.50	304.80 (1000.00)	30.00
24.38 (80.00)	31.00	426.72 (1400.00)	31.00
30.48 (100.00)	24.50	609.60 (2000.00)	36.50
42.67 (140.00)	15.30	914.40 (3000.00)	44.00
30.48 (100.00)	39.00	1219.20 (4000.00)	51.00
42.67 (140.00)	24.00	1828.80 (6000.00)	68.00
60.96 (200.00)	14.40	2438.40 (8000.00)	88.00
91.44 (300.00)	12.40	3048.00 (10000.00)	102.00

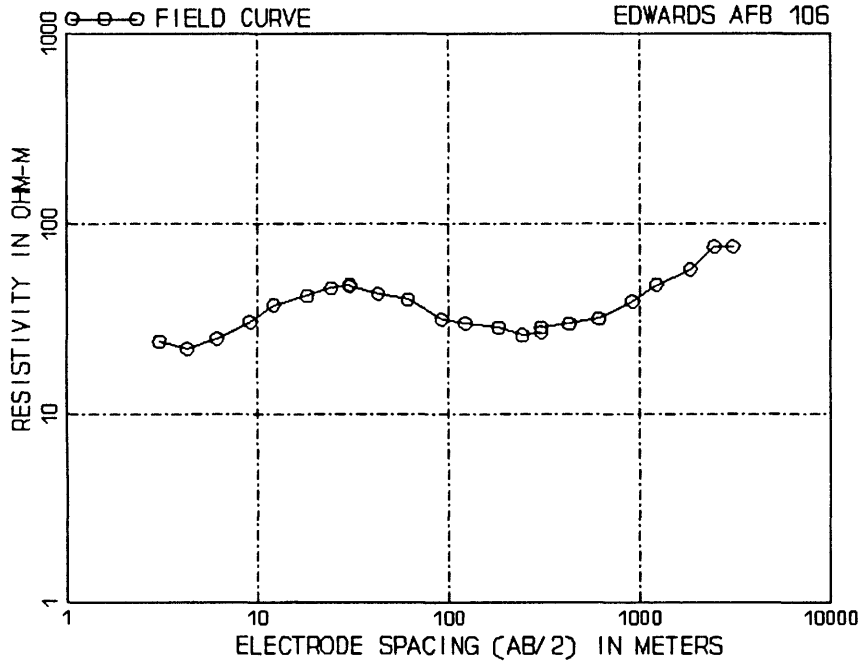
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	33.89	46.56 (152.76)	7.91
2.39 (7.83)	42.11	67.50 (221.46)	19.78
3.46 (11.35)	60.03	97.86 (321.06)	30.93
5.02 (16.45)	96.75	141.87 (465.45)	36.77
7.27 (23.85)	140.79	205.68 (674.79)	38.66
10.54 (34.58)	140.90	298.18 (978.27)	38.51
15.28 (50.13)	79.21	432.28 (1418.24)	38.92
22.15 (72.68)	23.39	626.69 (2056.07)	44.47
32.12 (105.37)	6.47	908.54 (2980.77)	58.52
		99999.00 (99999.00)	550.00

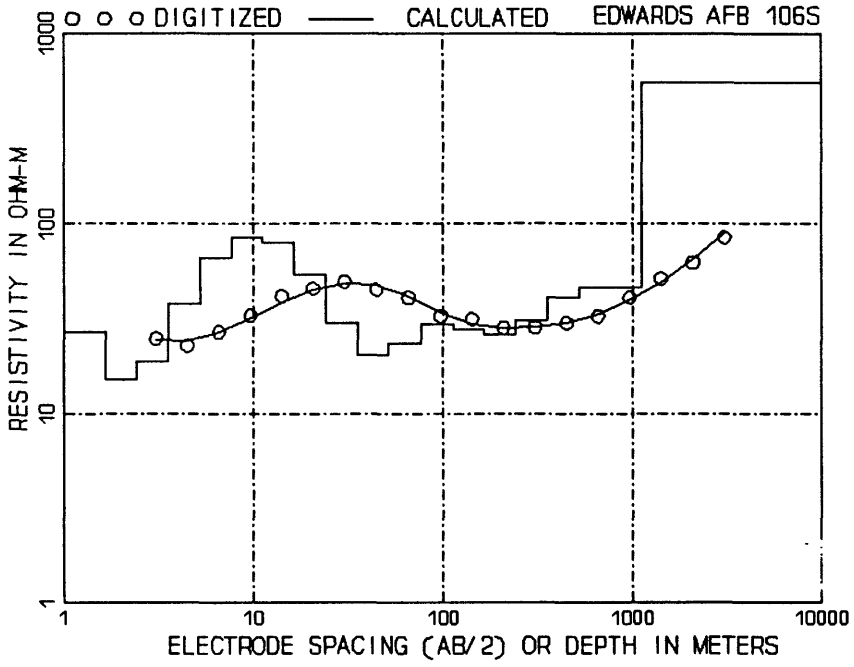




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	60.50	91.44 (300.00)	64.00
4.27 (14.00)	71.00	121.92 (400.00)	51.00
6.10 (20.00)	76.00	182.88 (600.00)	39.00
9.14 (30.00)	87.00	243.84 (800.00)	37.50
12.19 (40.00)	92.00	304.80 (1000.00)	37.00
18.29 (60.00)	125.00	426.72 (1400.00)	40.00
24.38 (80.00)	137.00	304.80 (1000.00)	31.00
30.48 (100.00)	145.00	426.72 (1400.00)	33.00
42.67 (140.00)	130.00	609.60 (2000.00)	33.30
30.48 (100.00)	125.00	914.40 (3000.00)	37.50
42.67 (140.00)	115.00	1219.20 (4000.00)	42.00
60.96 (200.00)	90.00	1828.80 (6000.00)	57.00
		2438.40 (8000.00)	75.00

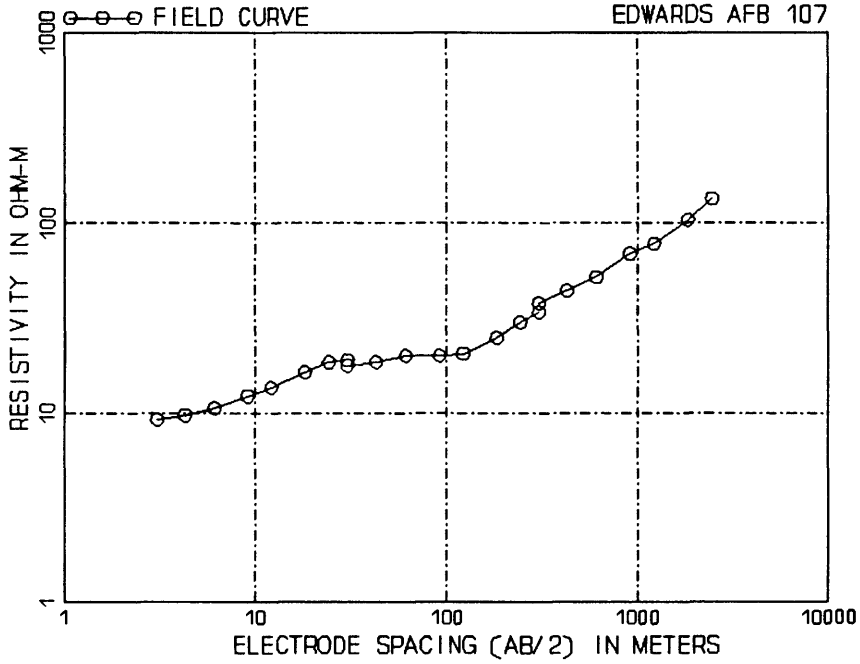
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	43.61	61.12 (200.52)	20.65
2.84 (9.31)	50.96	89.71 (294.32)	17.81
4.16 (13.66)	58.47	131.67 (432.00)	27.98
6.11 (20.05)	74.25	193.27 (634.09)	36.85
8.97 (29.43)	110.91	283.68 (930.72)	37.15
13.17 (43.20)	160.49	416.39 (1366.10)	31.54
19.33 (63.41)	172.18	611.17 (2005.17)	27.23
28.37 (93.07)	116.18	897.08 (2943.18)	29.75
41.64 (136.61)	50.07	99999.00 (99999.00)	550.00

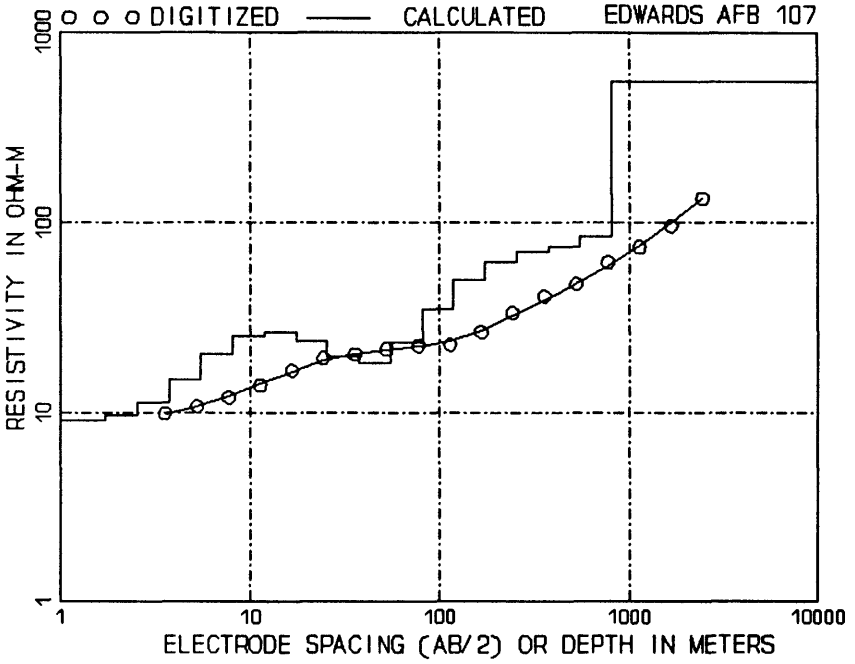




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	24.00	121.92	(400.00)	30.00
4.27	(14.00)	22.00	182.88	(600.00)	28.50
6.10	(20.00)	25.00	243.84	(800.00)	26.00
9.14	(30.00)	30.50	304.80	(1000.00)	27.00
12.19	(40.00)	37.50	304.80	(1000.00)	28.50
18.29	(60.00)	42.00	426.72	(1400.00)	29.80
24.38	(80.00)	46.00	609.60	(2000.00)	31.70
30.48	(100.00)	48.00	914.40	(3000.00)	39.20
30.48	(100.00)	47.00	1219.20	(4000.00)	48.00
42.67	(140.00)	43.00	1828.80	(6000.00)	57.50
60.96	(200.00)	40.00	2438.40	(8000.00)	76.00
91.44	(300.00)	31.50	3048.00	(10000.00)	76.00

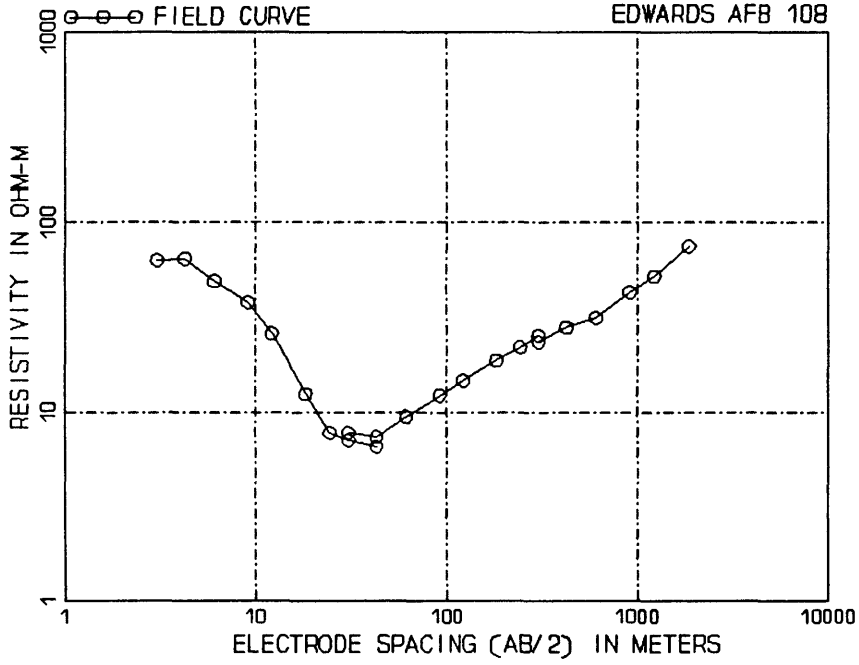
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.65	(5.40)	26.78	52.05	(170.76)	20.43
2.42	(7.93)	15.09	76.40	(250.65)	23.46
3.55	(11.63)	18.94	112.14	(367.90)	29.29
5.20	(17.08)	37.58	164.59	(540.00)	27.96
7.64	(25.06)	65.70	241.59	(792.61)	26.19
11.21	(36.79)	85.08	354.66	(1163.40)	30.89
16.46	(54.00)	79.63	520.49	(1707.63)	41.17
24.16	(79.26)	53.78	763.97	(2506.46)	46.00
35.46	(116.34)	29.95	1121.35	(3678.98)	46.24
			99999.00	(99999.00)	550.00

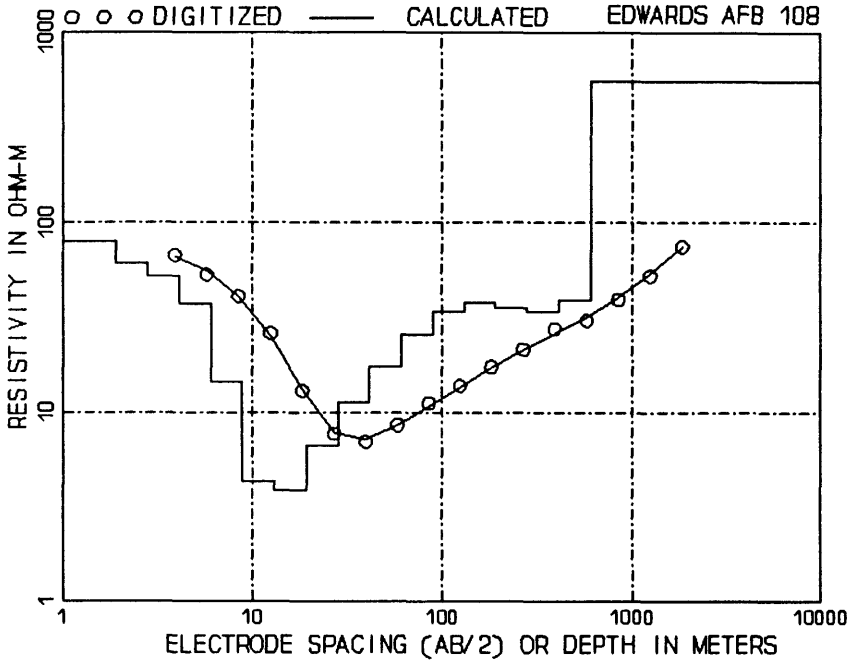




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	9.25	91.44 (300.00)	20.00
4.27 (14.00)	9.75	121.92 (400.00)	20.50
6.10 (20.00)	10.60	182.88 (600.00)	25.00
9.14 (30.00)	12.30	243.84 (800.00)	30.00
12.19 (40.00)	13.60	304.80 (1000.00)	34.00
18.29 (60.00)	16.40	304.80 (1000.00)	38.00
24.38 (80.00)	18.50	426.72 (1400.00)	44.00
30.48 (100.00)	19.00	609.60 (2000.00)	52.00
30.48 (100.00)	17.80	914.40 (3000.00)	69.00
42.67 (140.00)	18.60	1219.20 (4000.00)	78.00
60.96 (200.00)	20.00	1828.80 (6000.00)	104.00
		2438.40 (8000.00)	134.00

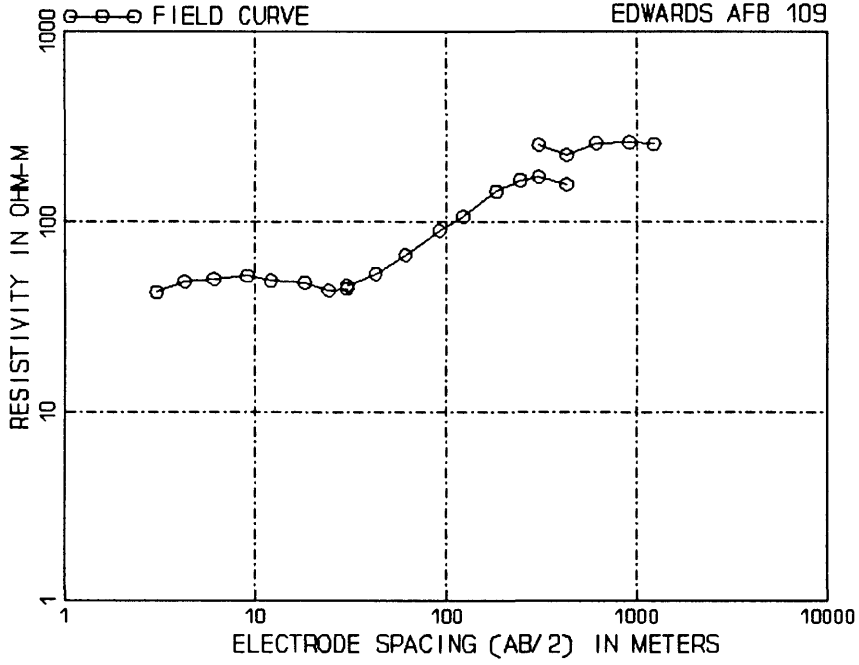
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.74 (5.71)	9.05	55.01 (180.46)	18.30
2.55 (8.38)	9.62	80.74 (264.89)	23.26
3.75 (12.29)	11.28	118.51 (388.80)	35.21
5.50 (18.05)	14.99	173.94 (570.68)	49.95
8.07 (26.49)	20.52	255.31 (837.64)	62.57
11.85 (38.88)	25.29	374.75 (1229.49)	70.09
17.39 (57.07)	26.56	550.06 (1804.65)	74.50
25.53 (83.76)	23.98	807.37 (2648.86)	84.92
37.47 (122.95)	19.77	99999.00 (99999.00)	550.00

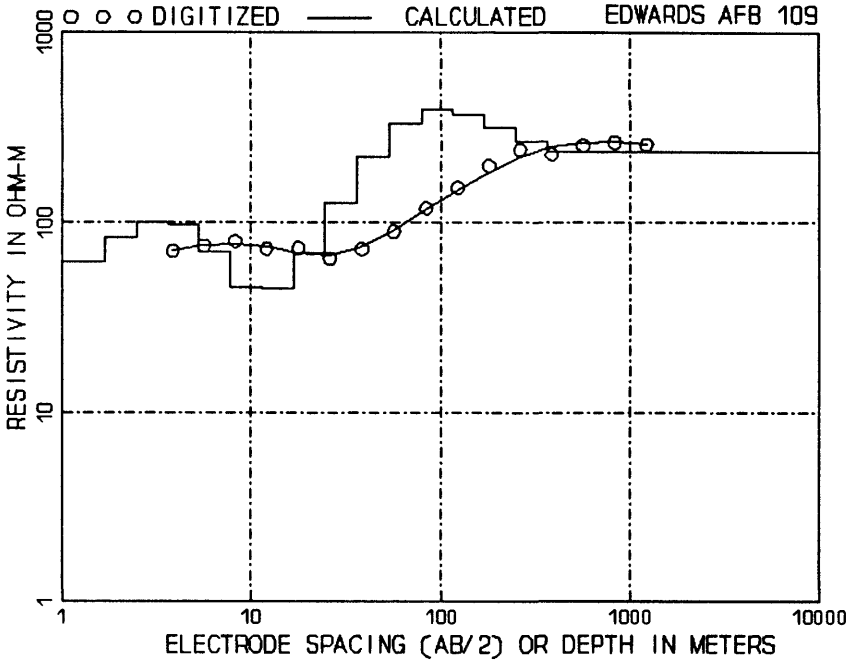




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	63.00	60.96 (200.00)	9.50
4.27 (14.00)	64.50	91.44 (300.00)	12.30
6.10 (20.00)	49.00	121.92 (400.00)	14.70
9.14 (30.00)	38.00	182.88 (600.00)	18.70
12.19 (40.00)	26.00	243.84 (800.00)	22.00
18.29 (60.00)	12.50	304.80 (1000.00)	25.30
24.38 (80.00)	7.80	304.80 (1000.00)	23.50
30.48 (100.00)	7.10	426.72 (1400.00)	28.00
42.67 (140.00)	6.60	609.60 (2000.00)	31.50
30.48 (100.00)	7.80	914.40 (3000.00)	43.00
42.67 (140.00)	7.40	1219.20 (4000.00)	52.00
		1828.80 (6000.00)	75.00

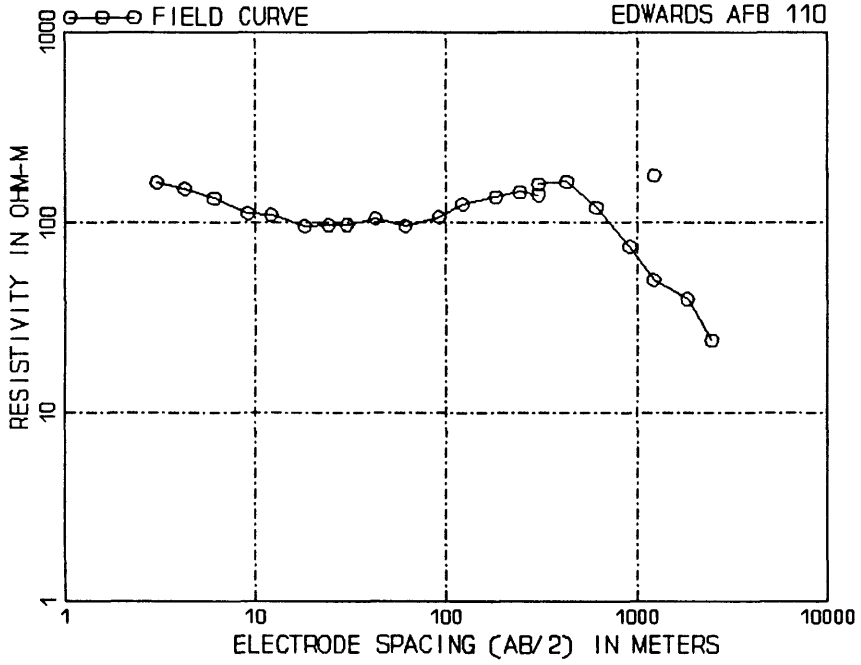
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.91 (6.28)	79.29	41.25 (135.35)	11.30
2.81 (9.22)	61.11	60.55 (198.66)	17.52
4.13 (13.53)	52.38	88.88 (291.60)	25.65
6.06 (19.87)	37.36	130.46 (428.01)	33.97
8.89 (29.16)	14.56	191.49 (628.23)	37.65
13.05 (42.80)	4.35	281.06 (922.12)	35.59
19.15 (62.82)	3.86	412.54 (1353.49)	34.06
28.11 (92.21)	6.70	605.53 (1986.65)	38.85
		99999.00 (99999.00)	550.00

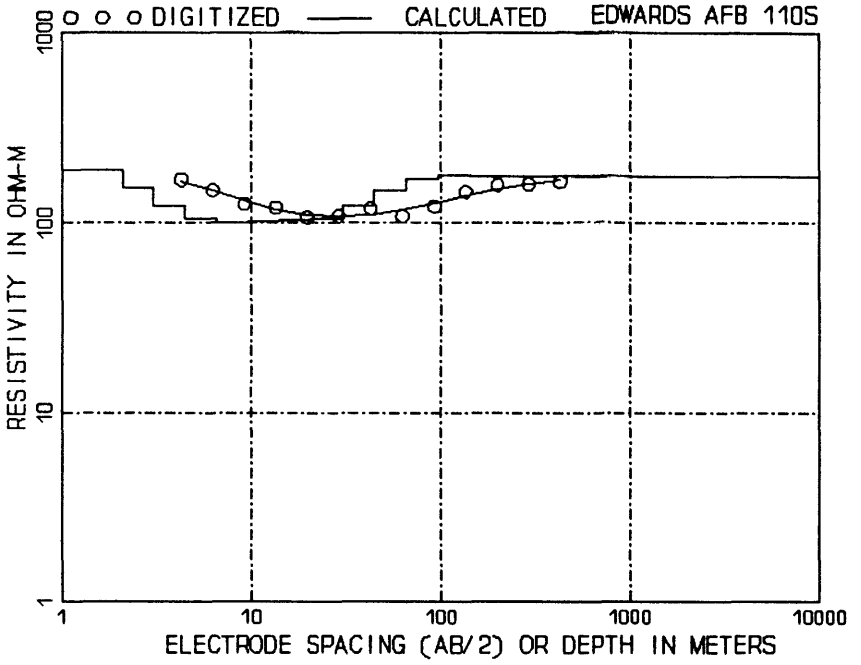




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	42.50	91.44	(300.00)	90.00
4.27	(14.00)	48.50	121.92	(400.00)	107.00
6.10	(20.00)	50.00	182.88	(600.00)	145.00
9.14	(30.00)	52.00	243.84	(800.00)	166.00
12.19	(40.00)	49.00	304.80	(1000.00)	173.00
18.29	(60.00)	48.00	426.72	(1400.00)	158.00
24.38	(80.00)	43.50	304.80	(1000.00)	255.00
30.48	(100.00)	44.50	426.72	(1400.00)	225.00
30.48	(100.00)	46.50	609.60	(2000.00)	260.00
42.67	(140.00)	53.50	914.40	(3000.00)	262.00
60.96	(200.00)	67.00	1219.20	(4000.00)	257.00

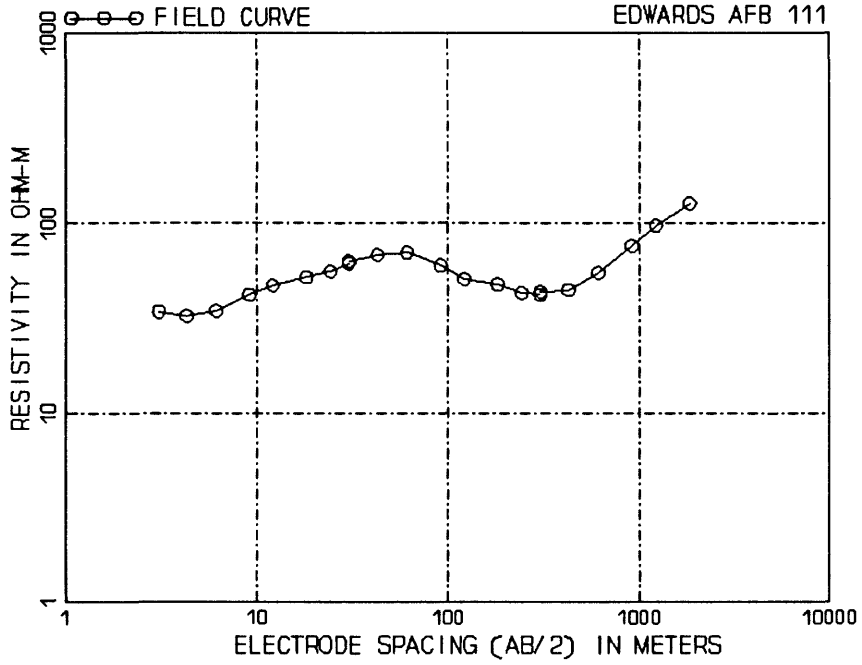
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.69	(5.53)	62.13	36.33	(119.20)	126.64
2.48	(8.12)	83.47	53.33	(174.96)	222.95
3.63	(11.92)	100.09	78.27	(256.81)	333.16
5.33	(17.50)	96.92	114.89	(376.94)	390.85
7.83	(25.68)	69.88	168.64	(553.27)	369.95
11.49	(37.69)	45.76	247.53	(812.09)	315.33
16.86	(55.33)	44.76	363.32	(1191.99)	267.91
24.75	(81.21)	69.46	99999.00	(99999.00)	234.00

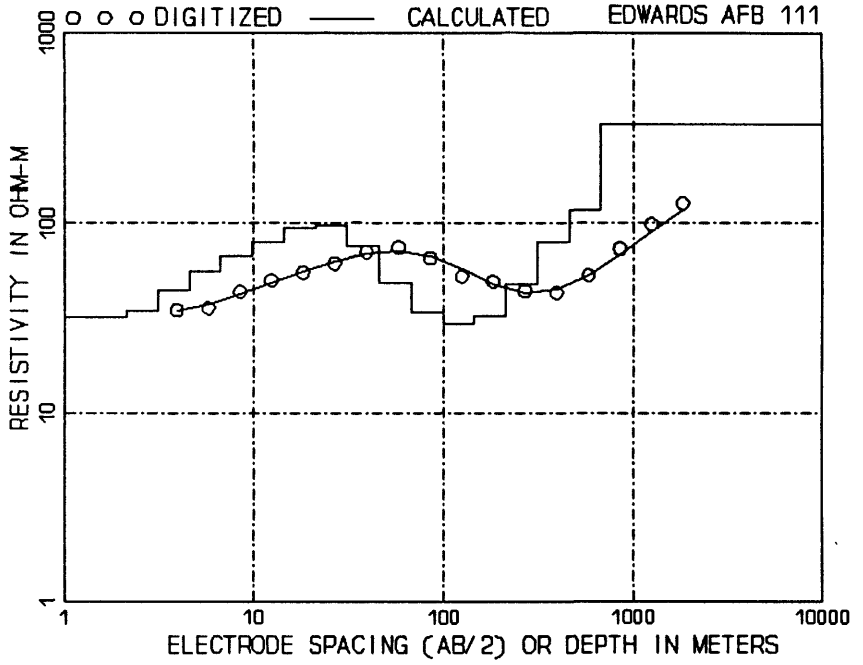




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	162.00	121.92 (400.00)	125.00
4.27 (14.00)	150.00	182.88 (600.00)	136.00
6.10 (20.00)	134.00	243.84 (800.00)	145.00
9.14 (30.00)	112.00	304.80 (1000.00)	140.00
12.19 (40.00)	110.00	304.80 (1000.00)	159.00
18.29 (60.00)	96.00	426.72 (1400.00)	164.00
24.38 (80.00)	97.00	609.60 (2000.00)	120.00
30.48 (100.00)	98.00	914.40 (3000.00)	75.00
30.48 (100.00)	97.00	1219.20 (4000.00)	50.00
42.67 (140.00)	105.00	1828.80 (6000.00)	39.50
60.96 (200.00)	96.00	2438.40 (8000.00)	24.00
91.44 (300.00)	107.00	1219.20 (4000.00)	177.00

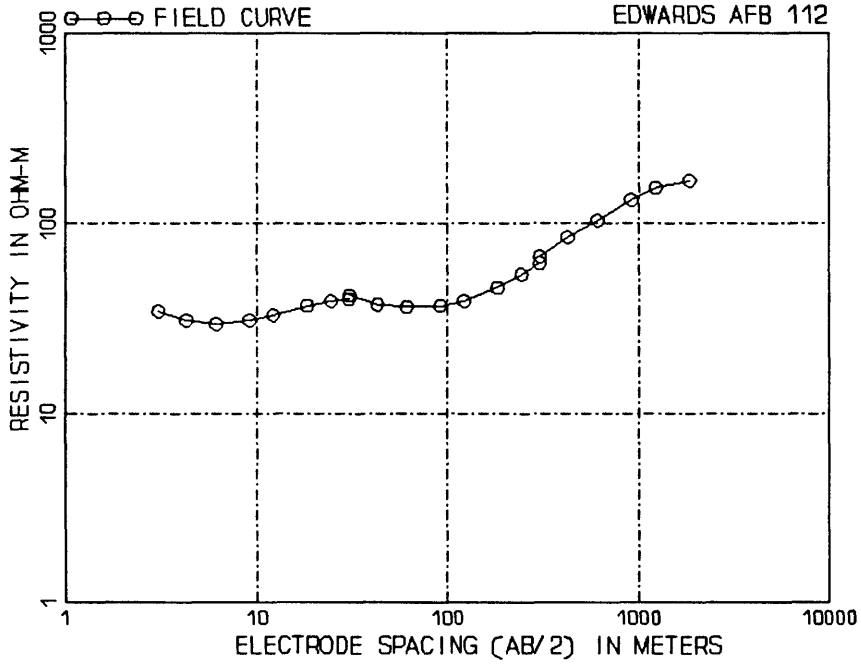
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.07 (6.80)	190.86	20.74 (68.04)	102.94
3.04 (9.99)	152.38	30.44 (99.87)	105.92
4.47 (14.66)	121.91	44.68 (146.59)	122.17
6.56 (21.52)	105.10	65.58 (215.16)	148.55
9.63 (31.58)	100.36	96.26 (315.81)	169.87
14.13 (46.36)	102.43	141.29 (463.55)	177.57
		99999.00 (99999.00)	175.43

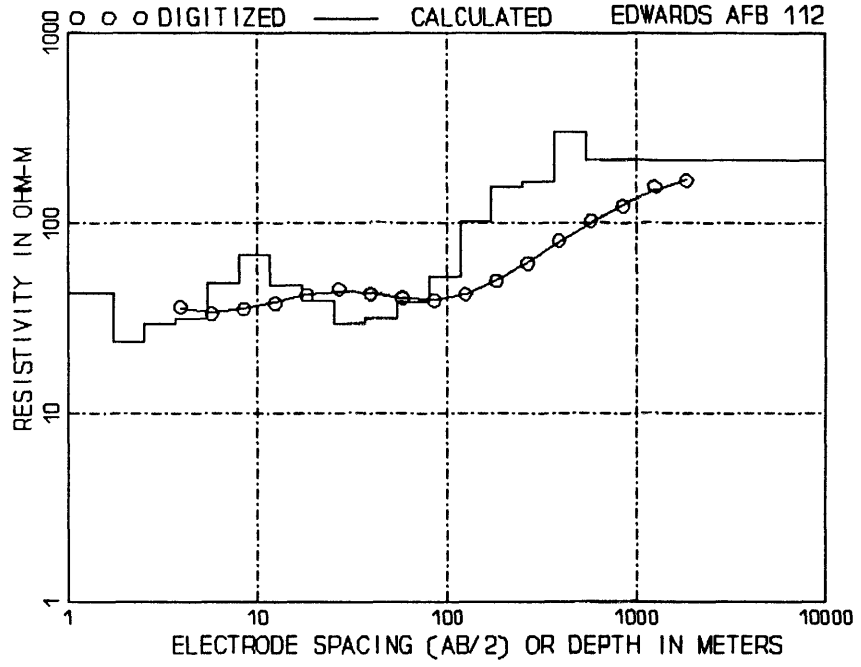




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	34.20	91.44 (300.00)	60.00
4.27 (14.00)	32.50	121.92 (400.00)	51.00
6.10 (20.00)	34.50	182.88 (600.00)	47.50
9.14 (30.00)	42.00	243.84 (800.00)	43.00
12.19 (40.00)	47.00	304.80 (1000.00)	42.00
18.29 (60.00)	52.00	304.80 (1000.00)	43.50
24.38 (80.00)	56.00	426.72 (1400.00)	44.50
30.48 (100.00)	61.50	609.60 (2000.00)	55.00
30.48 (100.00)	63.00	914.40 (3000.00)	76.00
42.67 (140.00)	68.00	1219.20 (4000.00)	97.00
60.96 (200.00)	70.00	1828.80 (6000.00)	127.00

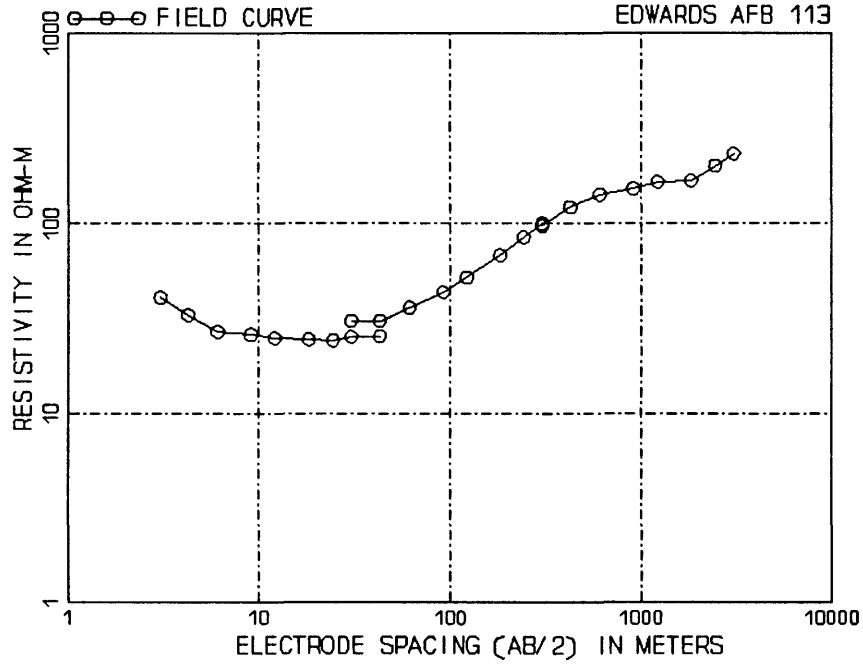
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	31.73	45.84 (150.39)	75.72
3.12 (10.25)	34.44	67.28 (220.74)	48.52
4.58 (15.04)	44.01	98.76 (324.00)	33.85
6.73 (22.07)	56.14	144.95 (475.57)	29.60
9.88 (32.40)	67.02	212.76 (698.04)	32.41
14.50 (47.56)	79.87	312.29 (1024.58)	48.10
21.28 (69.80)	94.68	458.38 (1503.88)	79.31
31.23 (102.46)	97.06	672.81 (2207.39)	117.48
		99999.00 (99999.00)	330.00

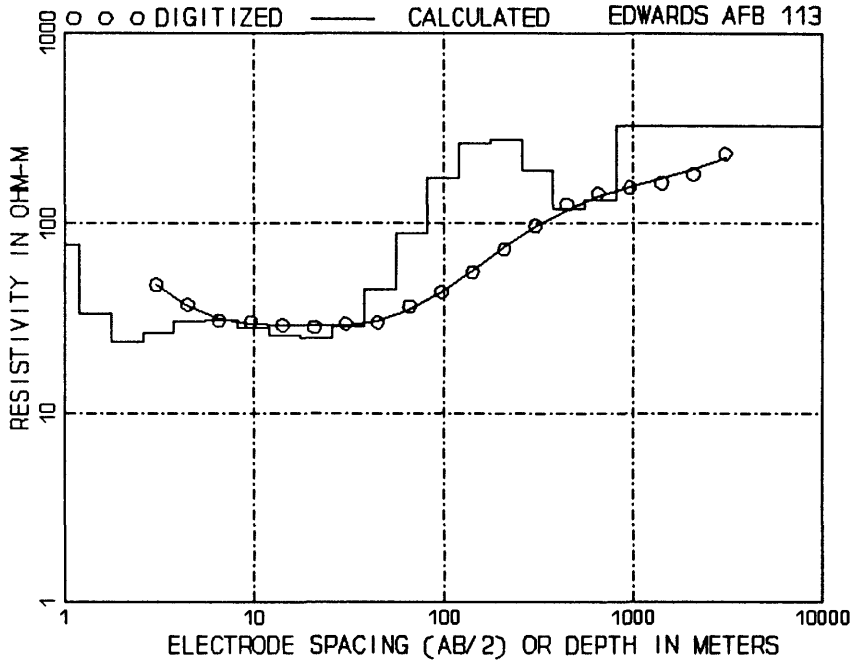




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	34.50	91.44	(300.00)	37.00
4.27	(14.00)	31.00	121.92	(400.00)	39.00
6.10	(20.00)	29.50	182.88	(600.00)	46.00
9.14	(30.00)	31.00	243.84	(800.00)	54.00
12.19	(40.00)	33.00	304.80	(1000.00)	62.00
18.29	(60.00)	37.00	304.80	(1000.00)	67.00
24.38	(80.00)	39.00	426.72	(1400.00)	85.00
30.48	(100.00)	40.00	609.60	(2000.00)	104.00
30.48	(100.00)	42.00	914.40	(3000.00)	133.00
42.67	(140.00)	37.50	1219.20	(4000.00)	154.00
60.96	(200.00)	36.50	1828.80	(6000.00)	168.00

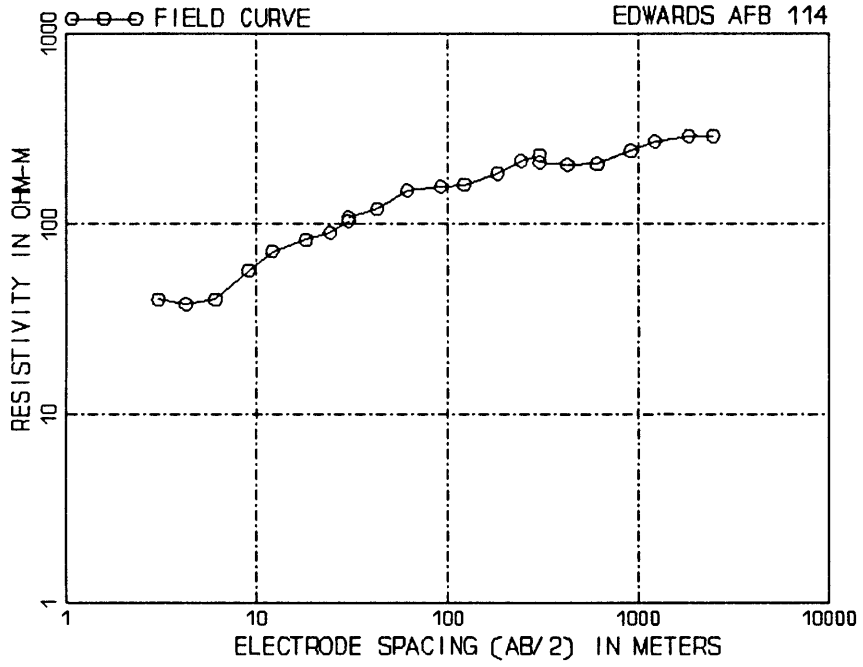
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.72	(5.65)	42.61	37.13	(121.81)	29.75
2.53	(8.30)	23.67	54.50	(178.80)	31.36
3.71	(12.18)	29.79	79.99	(262.44)	38.33
5.45	(17.88)	31.24	117.41	(385.21)	52.01
8.00	(26.24)	48.33	172.34	(565.41)	101.52
11.74	(38.52)	68.51	252.96	(829.91)	154.16
17.23	(56.54)	46.98	371.29	(1218.14)	163.80
25.30	(82.99)	38.92	544.98	(1787.98)	304.03
			99999.00	(99999.00)	215.08

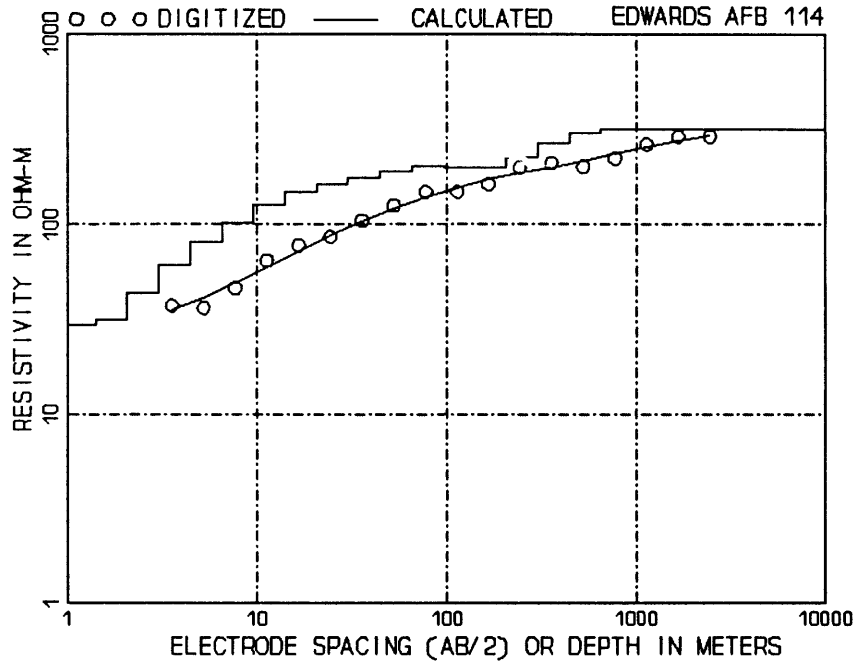




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	40.70	91.44 (300.00)	43.50
4.27 (14.00)	33.00	121.92 (400.00)	52.00
6.10 (20.00)	27.00	182.88 (600.00)	68.00
9.14 (30.00)	26.00	243.84 (800.00)	85.00
12.19 (40.00)	25.00	304.80 (1000.00)	100.00
18.29 (60.00)	24.50	304.80 (1000.00)	97.00
24.38 (80.00)	24.30	426.72 (1400.00)	122.00
30.48 (100.00)	25.30	609.60 (2000.00)	142.00
42.67 (140.00)	25.50	914.40 (3000.00)	152.00
30.48 (100.00)	30.70	1219.20 (4000.00)	165.00
42.67 (140.00)	30.70	1828.80 (6000.00)	168.00
60.96 (200.00)	36.00	2438.40 (8000.00)	200.00
		3048.00 (10000.00)	233.00

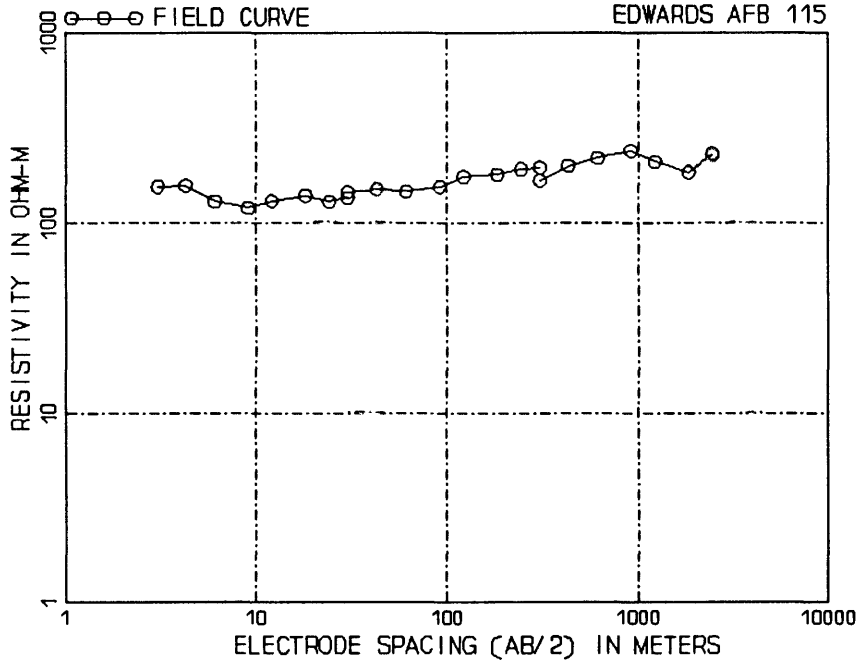
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.20 (3.94)	77.62	37.94 (124.49)	28.43
1.76 (5.78)	33.66	55.69 (182.72)	44.89
2.59 (8.48)	23.84	81.75 (268.20)	88.90
3.79 (12.45)	26.60	119.99 (393.66)	172.31
5.57 (18.27)	30.67	176.12 (577.81)	263.57
8.17 (26.82)	31.13	258.51 (848.11)	274.16
12.00 (39.37)	28.01	379.43 (1244.86)	189.27
17.61 (57.78)	25.88	556.93 (1827.21)	119.58
25.85 (84.81)	25.00	817.47 (2681.98)	133.09
		99999.00 (99999.00)	325.55

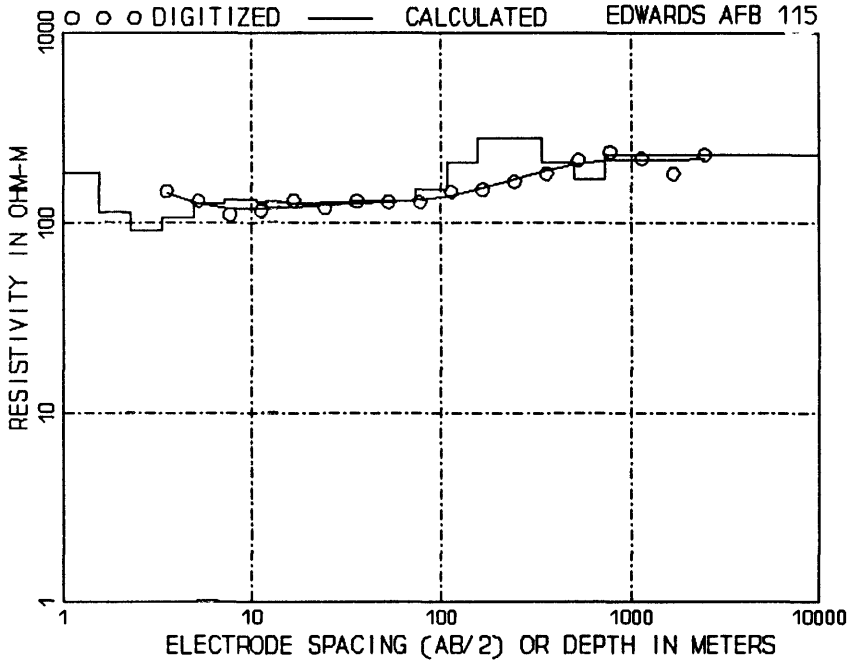




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	40.00	91.44	(300.00)	157.00
4.27	(14.00)	38.00	121.92	(400.00)	161.00
6.10	(20.00)	40.00	182.88	(600.00)	185.00
9.14	(30.00)	57.00	243.84	(800.00)	215.00
12.19	(40.00)	72.00	304.80	(1000.00)	230.00
18.29	(60.00)	83.00	304.80	(1000.00)	212.00
24.38	(80.00)	90.00	426.72	(1400.00)	205.00
30.48	(100.00)	104.00	609.60	(2000.00)	207.00
30.48	(100.00)	108.00	914.40	(3000.00)	242.00
42.67	(140.00)	120.00	1219.20	(4000.00)	272.00
60.96	(200.00)	150.00	1828.80	(6000.00)	290.00
			2438.40	(8000.00)	290.00

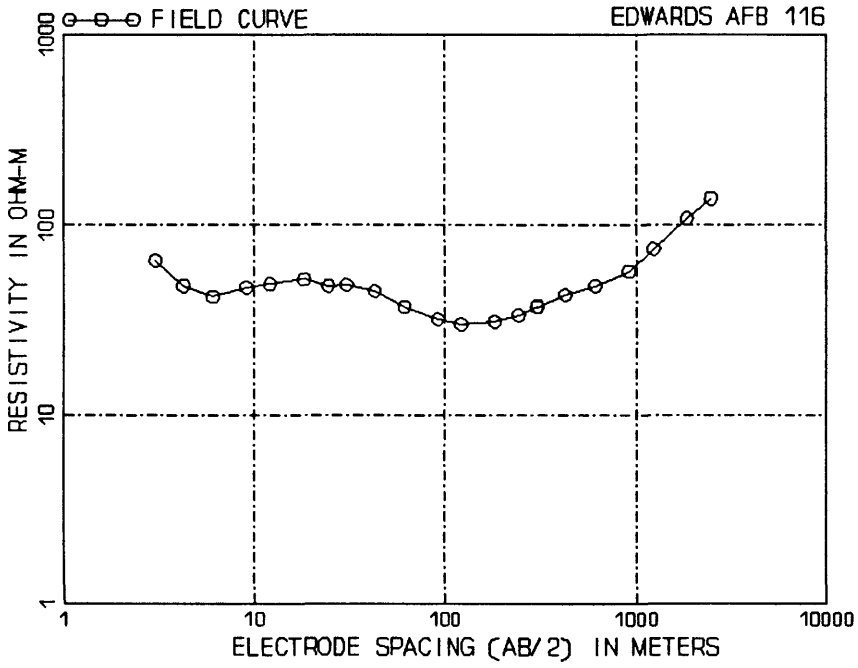
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.41	(4.62)	29.36	44.55	(146.18)	174.47
2.07	(6.78)	31.45	65.40	(214.56)	190.87
3.04	(9.96)	43.56	95.99	(314.93)	202.38
4.46	(14.62)	61.13	140.89	(462.25)	199.14
6.54	(21.46)	80.30	206.80	(678.49)	199.28
9.60	(31.49)	101.86	303.55	(995.89)	224.10
14.09	(46.23)	126.51	445.55	(1461.77)	266.92
20.68	(67.85)	148.82	653.97	(2145.58)	301.53
30.35	(99.59)	162.90	99999.00	(99999.00)	314.97

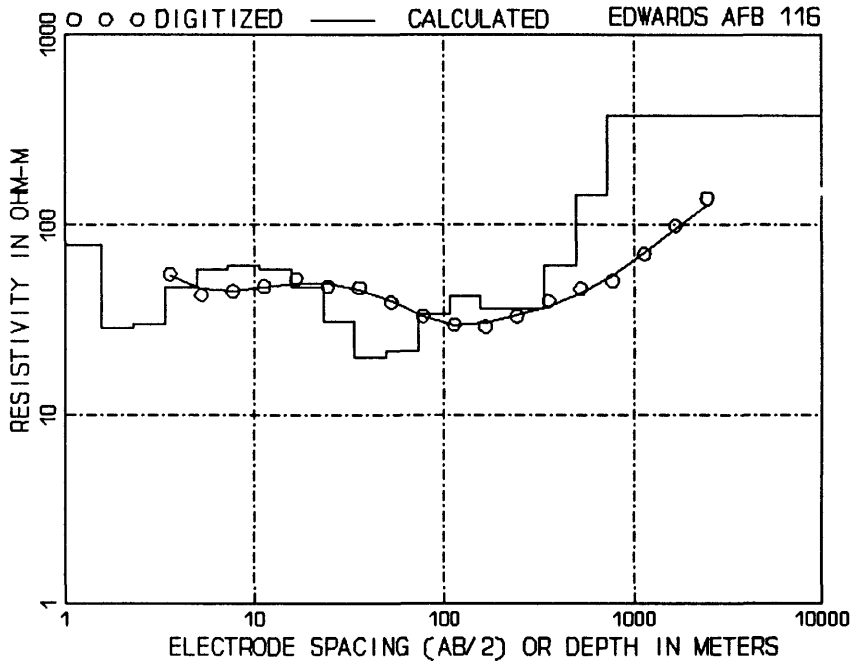




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	156.00	91.44	(300.00)	156.00
4.27	(14.00)	158.00	121.92	(400.00)	175.00
6.10	(20.00)	130.00	182.88	(600.00)	180.00
9.14	(30.00)	120.00	243.84	(800.00)	192.00
12.19	(40.00)	131.00	304.80	(1000.00)	195.00
18.29	(60.00)	140.00	304.80	(1000.00)	168.00
24.38	(80.00)	130.00	426.72	(1400.00)	200.00
30.48	(100.00)	136.00	609.60	(2000.00)	220.00
30.48	(100.00)	146.00	914.40	(3000.00)	240.00
42.67	(140.00)	150.00	1219.20	(4000.00)	210.00
60.96	(200.00)	147.00	1828.80	(6000.00)	184.00
			2438.40	(8000.00)	228.00

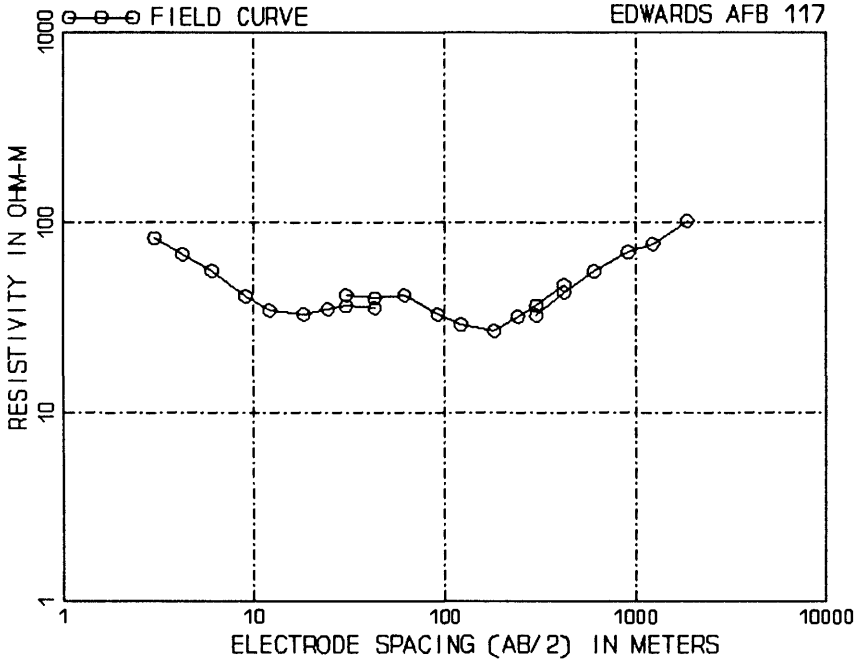
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.57	(5.14)	183.03	49.51	(162.42)	130.40
2.30	(7.54)	113.34	72.66	(238.40)	131.74
3.37	(11.07)	90.89	106.66	(349.92)	151.09
4.95	(16.24)	106.26	156.55	(513.61)	206.97
7.27	(23.84)	126.24	229.78	(753.88)	278.48
10.67	(34.99)	132.28	337.27	(1106.54)	281.31
15.65	(51.36)	129.59	495.05	(1624.19)	208.30
22.98	(75.39)	125.92	726.64	(2383.98)	169.53
33.73	(110.65)	128.08	99999.00	(99999.00)	226.77

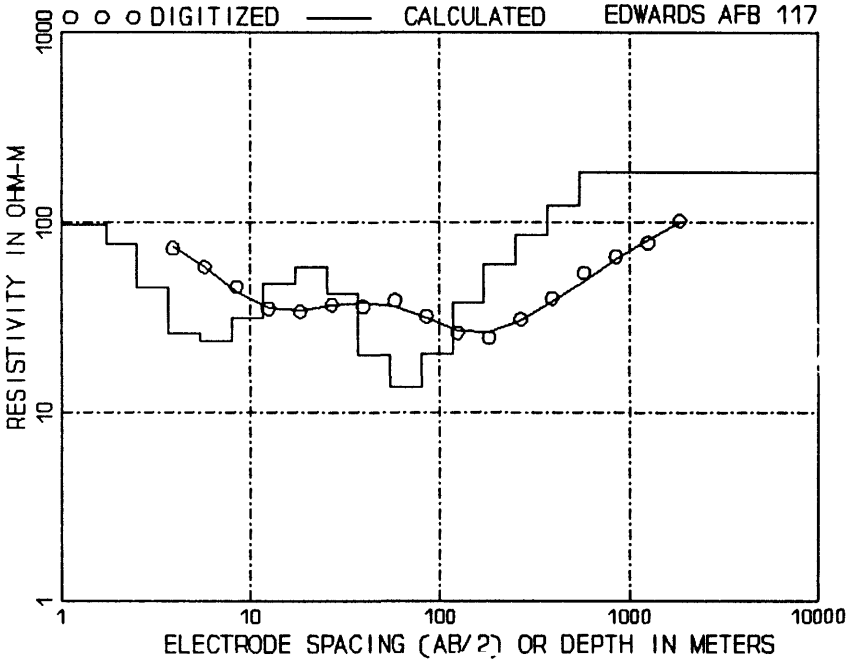




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	65.00	91.44	(300.00)	32.00
4.27	(14.00)	48.00	121.92	(400.00)	30.00
6.10	(20.00)	42.00	182.88	(600.00)	31.00
9.14	(30.00)	47.00	243.84	(800.00)	33.50
12.19	(40.00)	49.00	304.80	(1000.00)	37.50
18.29	(60.00)	52.00	304.80	(1000.00)	37.00
24.38	(80.00)	48.00	426.72	(1400.00)	43.00
30.48	(100.00)	48.50	609.60	(2000.00)	48.00
30.48	(100.00)	48.50	914.40	(3000.00)	57.00
42.67	(140.00)	45.00	1219.20	(4000.00)	75.00
60.96	(200.00)	37.00	1828.80	(6000.00)	108.00
			2438.40	(8000.00)	138.00

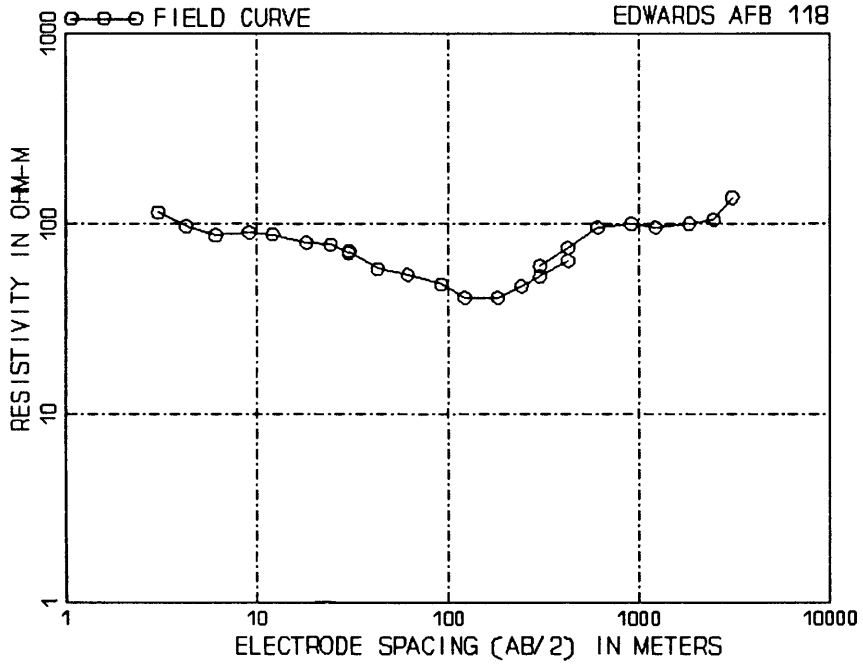
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.57	(5.14)	77.90	49.51	(162.42)	20.20
2.30	(7.54)	28.42	72.66	(238.40)	21.61
3.37	(11.07)	29.83	106.66	(349.92)	34.18
4.95	(16.24)	46.72	156.55	(513.61)	42.01
7.27	(23.84)	58.61	229.78	(753.88)	35.86
10.67	(34.99)	61.45	337.27	(1106.54)	36.20
15.65	(51.36)	58.49	495.05	(1624.19)	61.29
22.98	(75.39)	47.39	726.64	(2383.98)	143.50
33.73	(110.65)	31.02	99999.00	(99999.00)	375.53

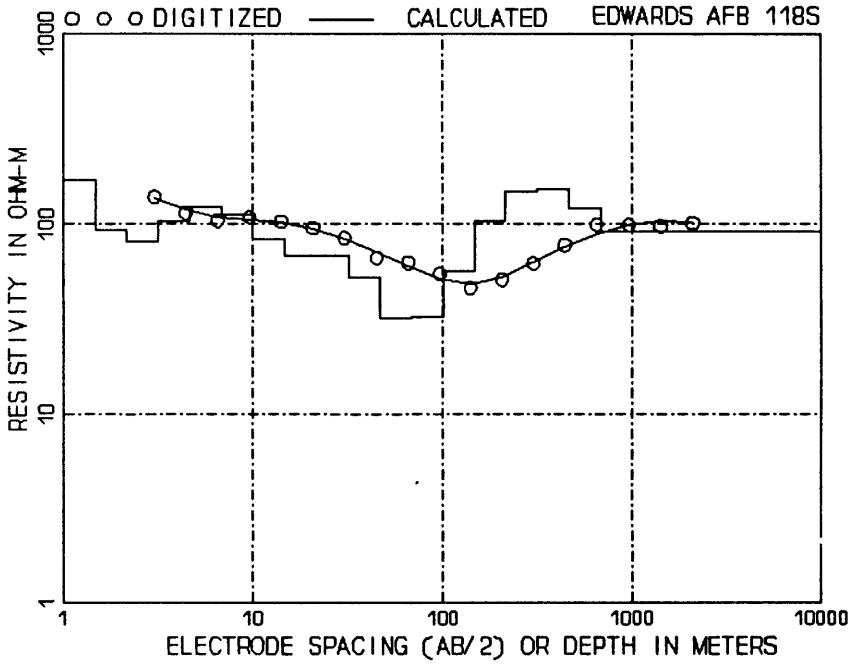




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	83.00	91.44 (300.00)	33.00
4.27 (14.00)	68.00	121.92 (400.00)	29.00
6.10 (20.00)	56.00	182.88 (600.00)	27.00
9.14 (30.00)	41.00	243.84 (800.00)	32.00
12.19 (40.00)	34.50	304.80 (1000.00)	36.50
18.29 (60.00)	33.00	426.72 (1400.00)	47.00
24.38 (80.00)	35.00	304.80 (1000.00)	32.50
30.48 (100.00)	36.50	426.72 (1400.00)	43.00
42.67 (140.00)	35.50	609.60 (2000.00)	55.50
30.48 (100.00)	41.50	914.40 (3000.00)	70.00
42.67 (140.00)	40.00	1219.20 (4000.00)	77.50
60.96 (200.00)	41.50	1828.80 (6000.00)	102.00

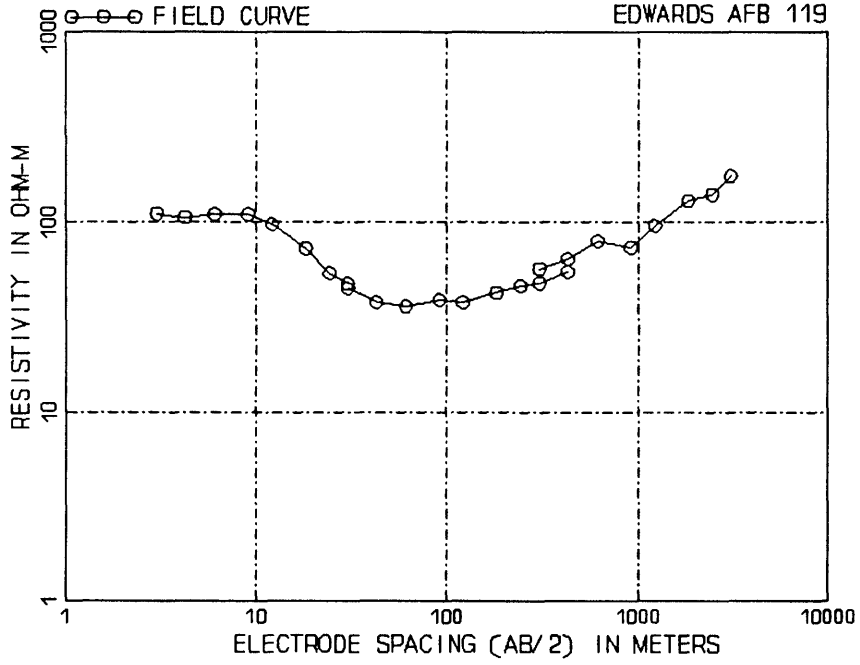
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.72 (5.65)	97.29	37.13 (121.81)	42.45
2.53 (8.30)	76.70	54.50 (178.80)	19.98
3.71 (12.18)	45.78	79.99 (262.44)	13.59
5.45 (17.88)	26.30	117.41 (385.21)	20.43
8.00 (26.24)	23.76	172.34 (565.41)	37.76
11.74 (38.52)	31.62	252.96 (829.91)	60.52
17.23 (56.54)	47.59	371.29 (1218.14)	86.33
25.30 (82.99)	58.23	544.98 (1787.98)	122.92
		99999.00 (99999.00)	184.00

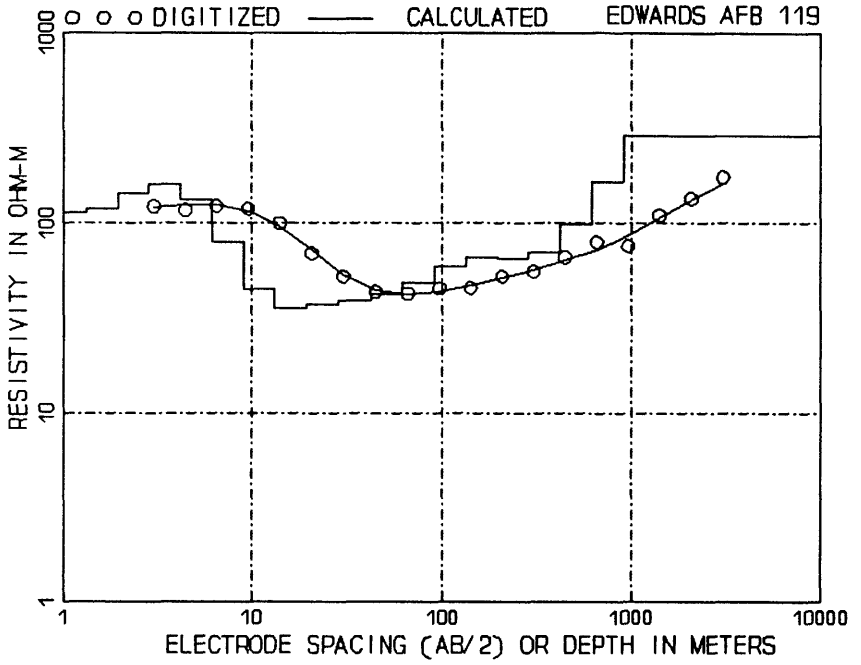




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	115.00	121.92 (400.00)	41.00
4.27 (14.00)	97.00	182.88 (600.00)	41.00
6.10 (20.00)	87.00	243.84 (800.00)	47.00
9.14 (30.00)	90.00	304.80 (1000.00)	53.00
12.19 (40.00)	88.00	426.72 (1400.00)	64.00
18.29 (60.00)	80.00	304.80 (1000.00)	60.00
24.38 (80.00)	78.00	426.72 (1400.00)	75.00
30.48 (100.00)	70.00	609.60 (2000.00)	96.00
30.48 (100.00)	72.00	914.40 (3000.00)	100.00
42.67 (140.00)	58.00	1219.20 (4000.00)	96.00
60.96 (200.00)	54.00	1828.80 (6000.00)	100.00
91.44 (300.00)	48.20	2438.40 (8000.00)	105.00
		3048.00 (10000.00)	138.00

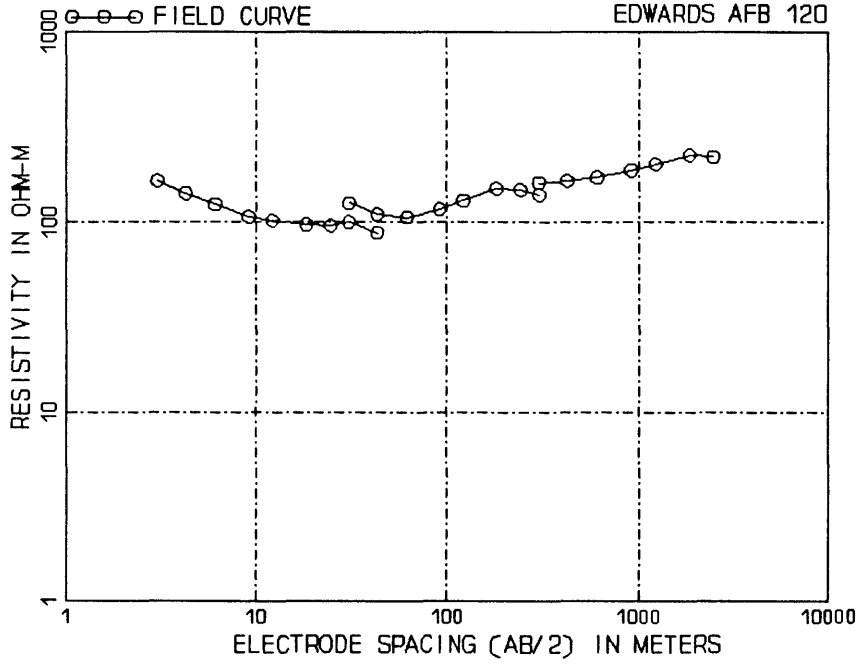
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.48 (4.86)	171.44	46.84 (153.69)	52.35
2.17 (7.13)	92.94	68.76 (225.58)	32.16
3.19 (10.47)	81.40	100.92 (331.11)	32.65
4.68 (15.37)	104.24	148.13 (486.00)	56.52
6.88 (22.56)	122.49	217.43 (713.35)	103.49
10.09 (33.11)	111.57	319.14 (1047.06)	148.18
14.81 (48.60)	83.39	468.44 (1536.87)	152.12
21.74 (71.34)	68.30	687.57 (2255.81)	121.47
31.91 (104.71)	67.95	99999.00 (99999.00)	91.30

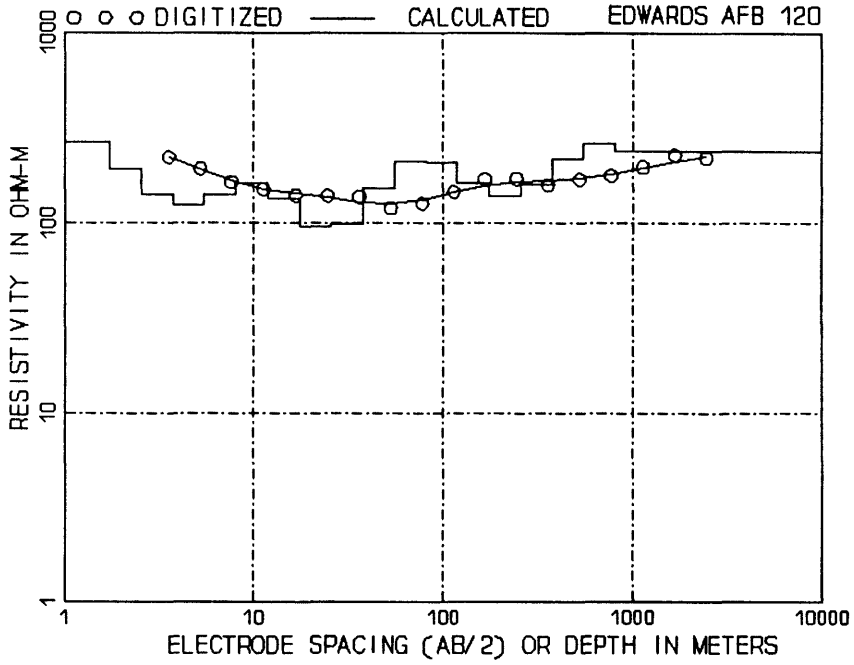




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	111.00	121.92 (400.00)	38.00
4.27 (14.00)	106.00	182.88 (600.00)	42.50
6.10 (20.00)	110.00	243.84 (800.00)	46.50
9.14 (30.00)	110.00	304.80 (1000.00)	48.00
12.19 (40.00)	97.50	426.72 (1400.00)	55.00
18.29 (60.00)	73.00	304.80 (1000.00)	57.00
24.38 (80.00)	54.00	426.72 (1400.00)	64.00
30.48 (100.00)	47.50	609.60 (2000.00)	80.00
30.48 (100.00)	45.00	914.40 (3000.00)	74.00
42.67 (140.00)	38.00	1219.20 (4000.00)	96.00
60.96 (200.00)	36.00	1828.80 (6000.00)	130.00
91.44 (300.00)	39.00	2438.40 (8000.00)	140.00
		3048.00 (10000.00)	175.00

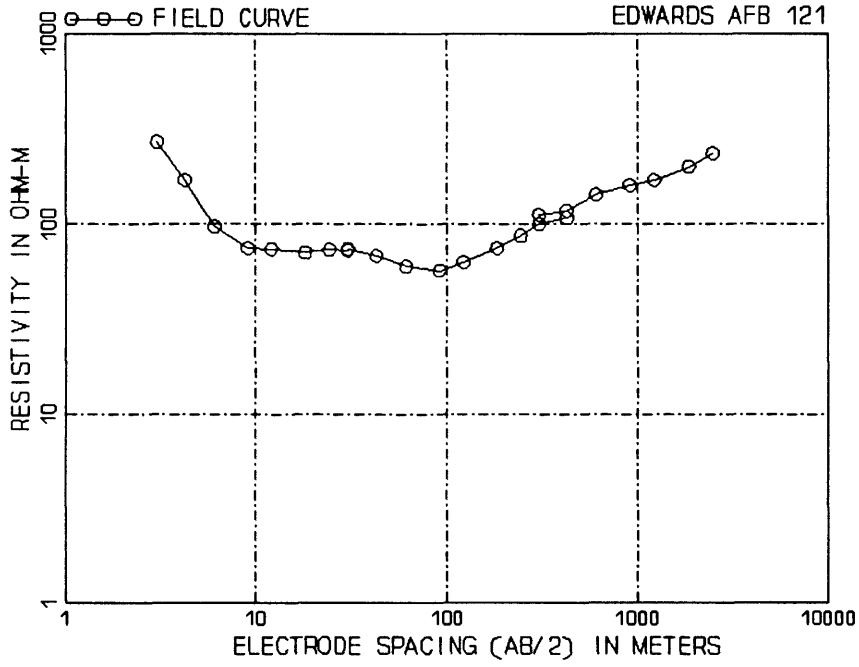
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.33 (4.37)	113.86	42.16 (138.32)	39.16
1.96 (6.42)	118.49	61.88 (203.02)	41.98
2.87 (9.42)	144.13	90.83 (298.00)	48.82
4.22 (13.83)	160.82	133.32 (437.40)	59.61
6.19 (20.30)	133.13	195.69 (642.02)	66.44
9.08 (29.80)	79.45	287.23 (942.35)	64.89
13.33 (43.74)	44.63	421.59 (1383.18)	70.00
19.57 (64.20)	35.38	618.81 (2030.23)	98.87
28.72 (94.23)	37.10	908.30 (2979.97)	165.37
		99999.00 (99999.00)	287.61

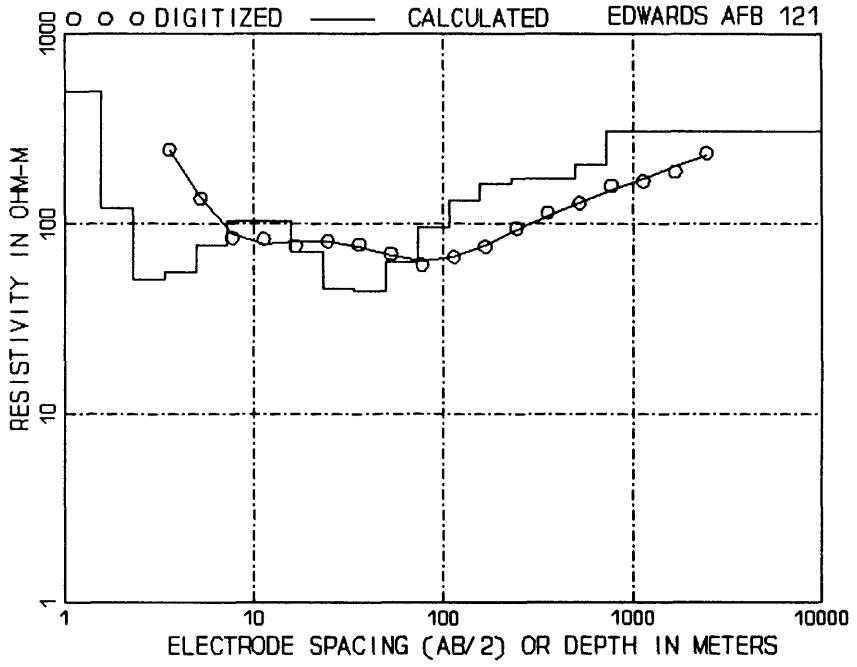




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	165.00	91.44	(300.00)	117.00
4.27	(14.00)	142.00	121.92	(400.00)	130.00
6.10	(20.00)	124.00	182.88	(600.00)	150.00
9.14	(30.00)	107.00	243.84	(800.00)	148.00
12.19	(40.00)	102.00	304.80	(1000.00)	139.00
18.29	(60.00)	97.00	304.80	(1000.00)	161.00
24.38	(80.00)	96.00	426.72	(1400.00)	165.00
30.48	(100.00)	100.00	609.60	(2000.00)	172.00
42.67	(140.00)	88.00	914.40	(3000.00)	188.00
30.48	(100.00)	126.00	1219.20	(4000.00)	202.00
42.67	(140.00)	110.00	1828.80	(6000.00)	225.00
60.96	(200.00)	106.00	2438.40	(8000.00)	220.00

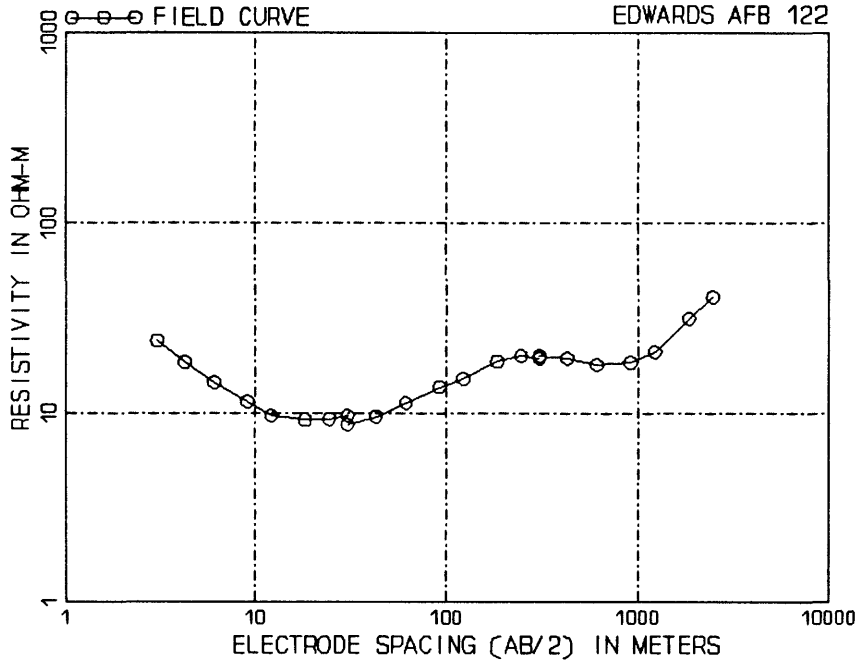
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.74	(5.71)	265.44	55.01	(180.46)	152.47
2.55	(8.38)	193.42	80.74	(264.89)	211.49
3.75	(12.29)	141.38	118.51	(388.80)	207.87
5.50	(18.05)	125.17	173.94	(570.68)	162.74
8.07	(26.49)	141.38	255.31	(837.64)	138.80
11.85	(38.88)	161.33	374.75	(1229.49)	158.88
17.39	(57.07)	134.76	550.06	(1804.65)	216.59
25.53	(83.76)	95.53	807.37	(2648.86)	261.22
37.47	(122.95)	99.41	99999.00	(99999.00)	239.97

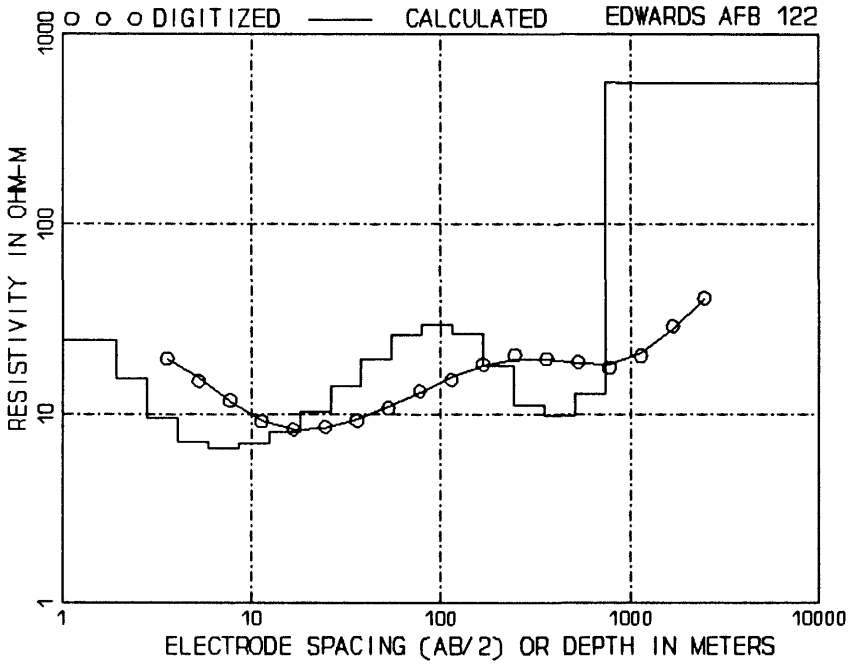




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	270.00	121.92 (400.00)	63.00
4.27 (14.00)	170.00	182.88 (600.00)	75.00
6.10 (20.00)	97.00	243.84 (800.00)	87.00
9.14 (30.00)	75.00	304.80 (1000.00)	100.00
12.19 (40.00)	74.00	426.72 (1400.00)	108.00
18.29 (60.00)	71.00	304.80 (1000.00)	112.00
24.38 (80.00)	73.50	426.72 (1400.00)	118.00
30.48 (100.00)	73.00	609.60 (2000.00)	143.00
30.48 (100.00)	74.00	914.40 (3000.00)	160.00
42.67 (140.00)	68.00	1219.20 (4000.00)	170.00
60.96 (200.00)	60.00	1828.80 (6000.00)	200.00
91.44 (300.00)	57.00	2438.40 (8000.00)	235.00

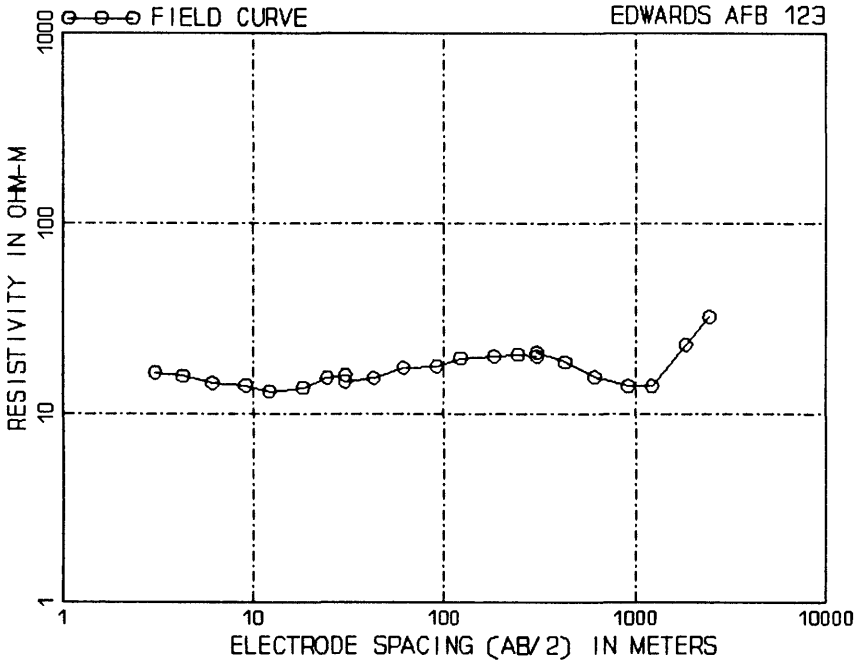
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.57 (5.14)	493.70	49.51 (162.42)	44.40
2.30 (7.54)	120.88	72.66 (238.40)	63.25
3.37 (11.07)	50.77	106.66 (349.92)	96.34
4.95 (16.24)	55.70	156.55 (513.61)	133.86
7.27 (23.84)	76.97	229.78 (753.88)	163.17
10.67 (34.99)	103.40	337.27 (1106.54)	171.47
15.65 (51.36)	104.45	495.05 (1624.19)	172.56
22.98 (75.39)	71.45	726.64 (2383.98)	206.02
33.73 (110.65)	45.75	99999.00 (99999.00)	308.20

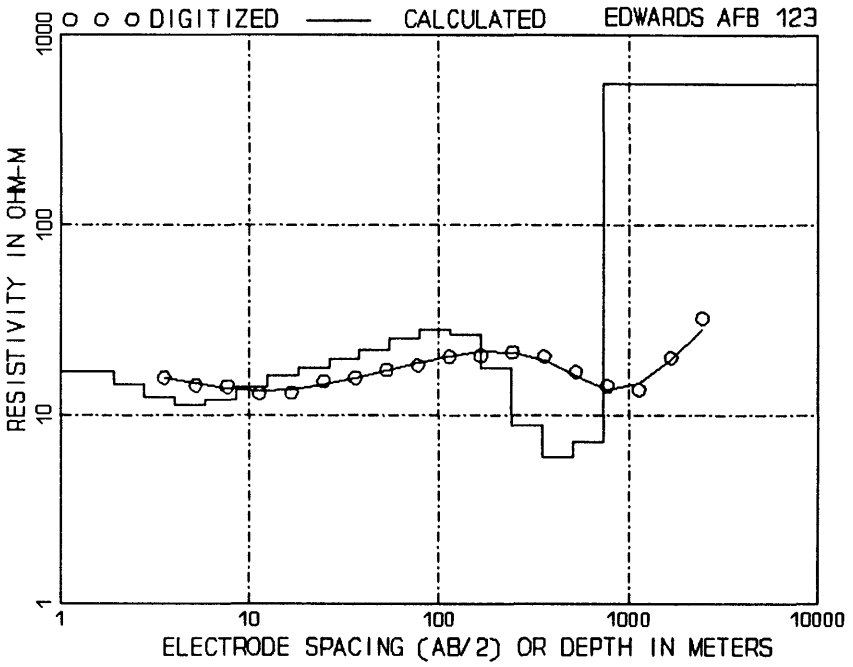




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	24.00	91.44 (300.00)	13.70
4.27 (14.00)	18.50	121.92 (400.00)	15.20
6.10 (20.00)	14.50	182.88 (600.00)	18.70
9.14 (30.00)	11.50	243.84 (800.00)	20.00
12.19 (40.00)	9.70	304.80 (1000.00)	19.50
18.29 (60.00)	9.20	304.80 (1000.00)	20.00
24.38 (80.00)	9.30	426.72 (1400.00)	19.50
30.48 (100.00)	9.70	609.60 (2000.00)	18.00
30.48 (100.00)	8.70	914.40 (3000.00)	18.50
42.67 (140.00)	9.60	1219.20 (4000.00)	21.00
60.96 (200.00)	11.30	1828.80 (6000.00)	31.50
		2438.40 (8000.00)	41.00

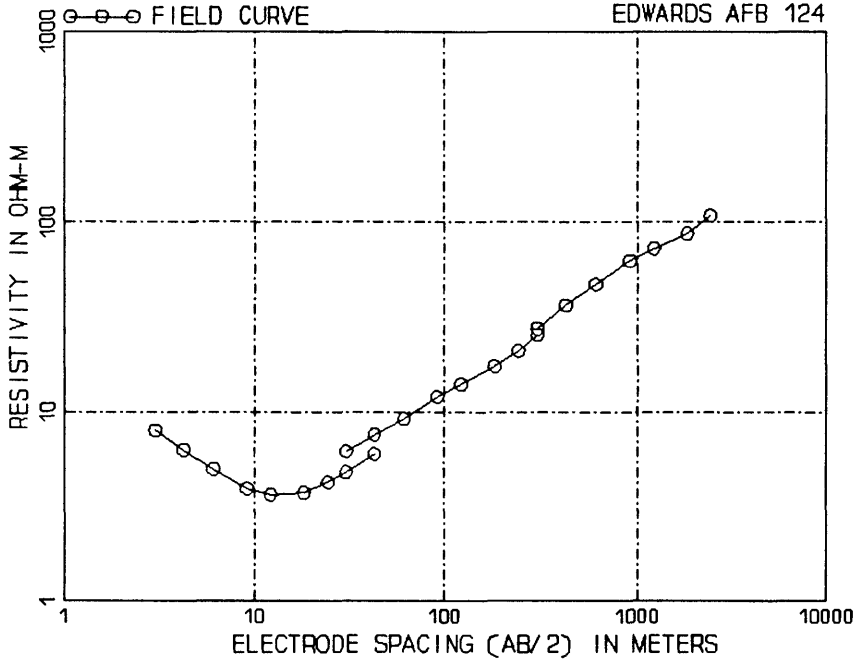
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	24.42	54.67 (179.38)	19.61
2.80 (9.19)	15.35	79.26 (260.05)	26.00
4.06 (13.33)	9.60	114.91 (377.00)	29.73
5.89 (19.32)	7.13	166.59 (546.56)	26.59
8.54 (28.01)	6.59	241.51 (792.36)	17.96
12.38 (40.61)	6.95	350.13 (1148.72)	11.17
17.94 (58.87)	8.07	507.60 (1665.35)	9.86
26.01 (85.35)	10.34	735.89 (2414.32)	12.83
37.71 (123.73)	14.11	99999.00 (99999.00)	550.00

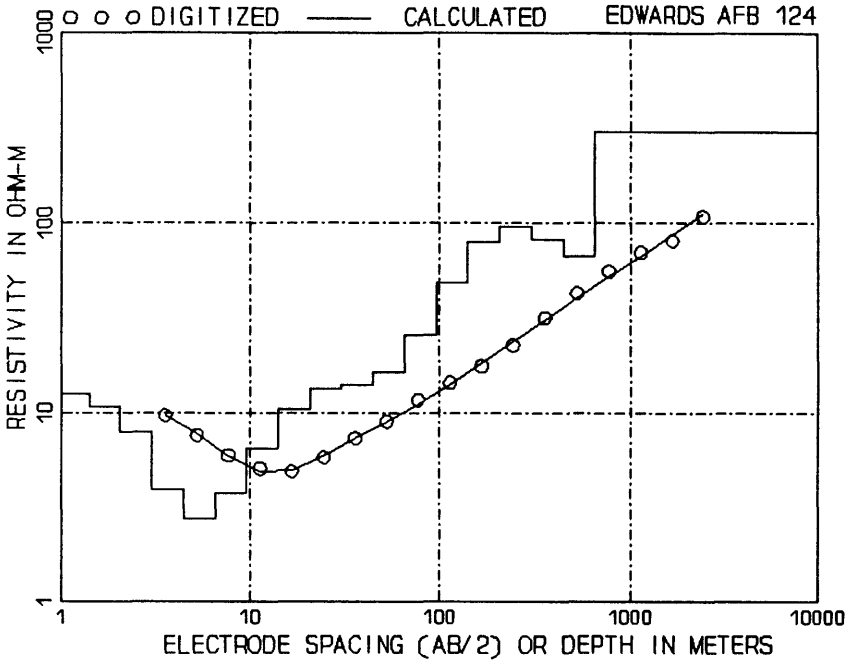




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	16.50	91.44 (300.00)	17.80
4.27 (14.00)	15.80	121.92 (400.00)	19.60
6.10 (20.00)	14.50	182.88 (600.00)	20.00
9.14 (30.00)	14.10	243.84 (800.00)	20.50
12.19 (40.00)	13.10	304.80 (1000.00)	20.00
18.29 (60.00)	13.70	304.80 (1000.00)	21.00
24.38 (80.00)	15.50	426.72 (1400.00)	18.70
30.48 (100.00)	16.00	609.60 (2000.00)	15.60
30.48 (100.00)	14.80	914.40 (3000.00)	14.00
42.67 (140.00)	15.40	1219.20 (4000.00)	14.00
60.96 (200.00)	17.50	1828.80 (6000.00)	23.00
		2438.40 (8000.00)	32.50

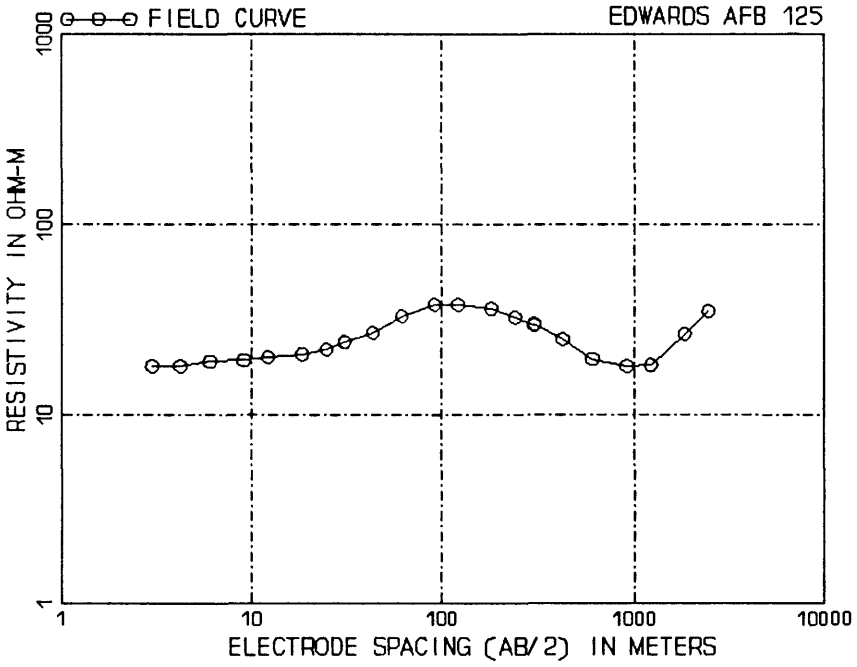
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	16.82	54.67 (179.38)	22.03
2.80 (9.19)	14.44	79.26 (260.05)	25.35
4.06 (13.33)	12.43	114.91 (377.00)	28.27
5.89 (19.32)	11.39	166.59 (546.56)	26.59
8.54 (28.01)	12.03	241.51 (792.36)	17.73
12.38 (40.61)	14.02	350.13 (1148.72)	8.81
17.94 (58.87)	16.11	507.60 (1665.35)	5.98
26.01 (85.35)	17.83	735.89 (2414.32)	7.22
37.71 (123.73)	19.61	99999.00 (99999.00)	550.00

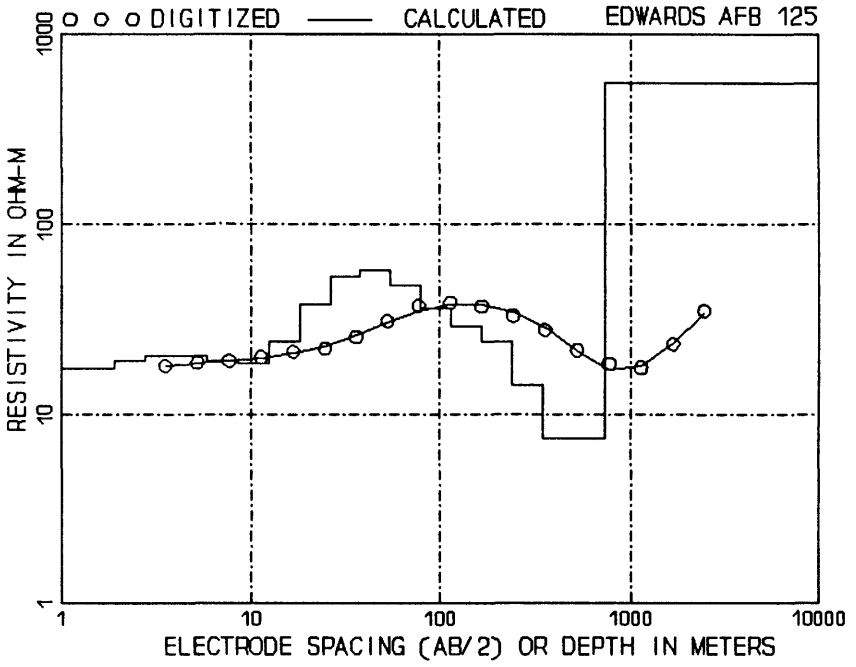




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	8.00	91.44 (300.00)	12.00
4.27 (14.00)	6.30	121.92 (400.00)	14.00
6.10 (20.00)	5.00	182.88 (600.00)	17.50
9.14 (30.00)	3.95	243.84 (800.00)	21.00
12.19 (40.00)	3.67	304.80 (1000.00)	25.50
18.29 (60.00)	3.75	304.80 (1000.00)	27.50
24.38 (80.00)	4.25	426.72 (1400.00)	36.50
30.48 (100.00)	4.80	609.60 (2000.00)	47.00
42.67 (140.00)	6.00	914.40 (3000.00)	62.70
30.48 (100.00)	6.20	1219.20 (4000.00)	73.00
42.67 (140.00)	7.60	1828.80 (6000.00)	87.00
60.96 (200.00)	9.20	2438.40 (8000.00)	109.00

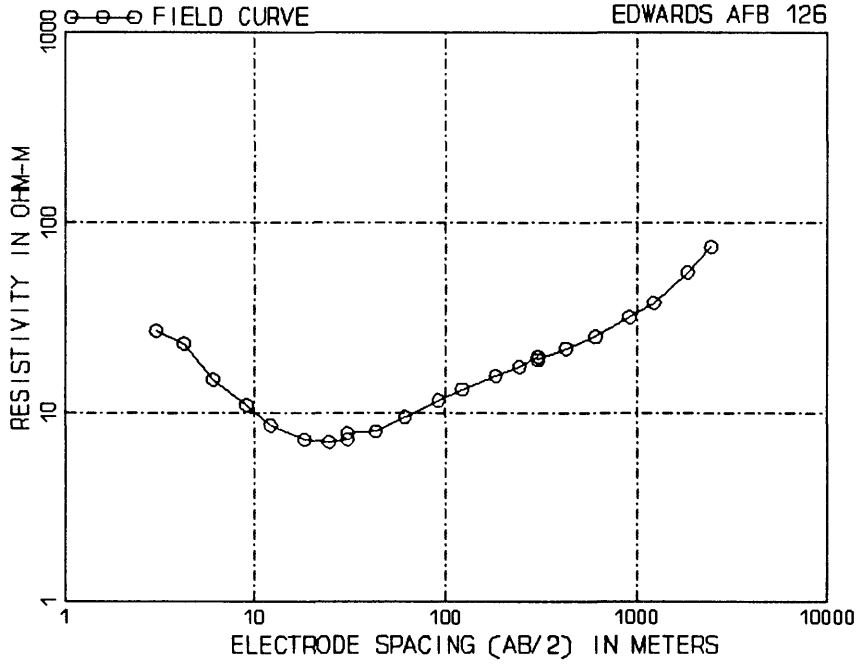
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.41 (4.62)	12.50	44.55 (146.18)	14.13
2.07 (6.78)	10.79	65.40 (214.56)	16.41
3.04 (9.96)	7.92	95.99 (314.93)	25.89
4.46 (14.62)	3.97	140.89 (462.25)	48.40
6.54 (21.46)	2.77	206.80 (678.49)	79.99
9.60 (31.49)	3.74	303.55 (995.89)	95.31
14.09 (46.23)	6.44	445.55 (1461.77)	82.31
20.68 (67.85)	10.50	653.97 (2145.58)	67.00
30.35 (99.59)	13.43	99999.00 (99999.00)	300.00

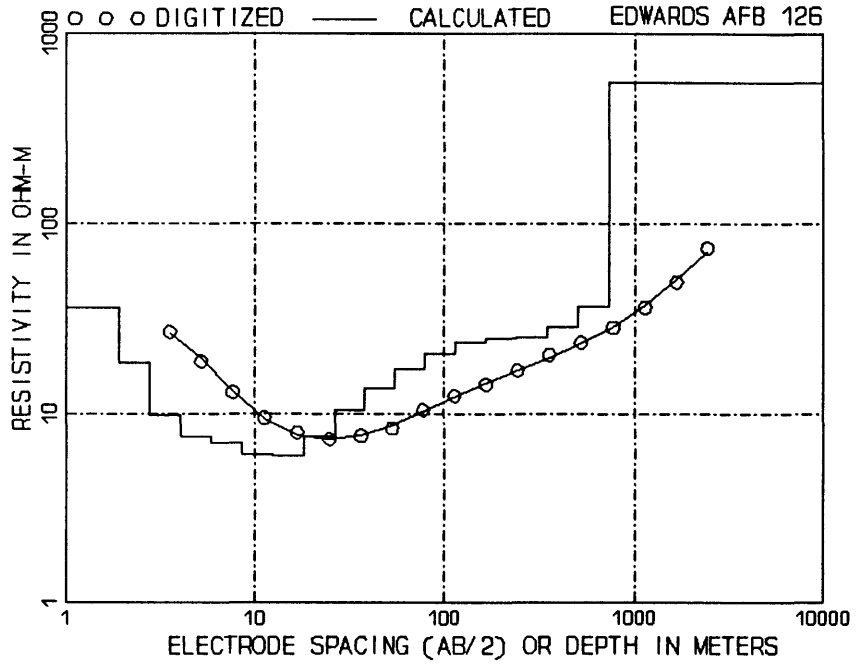




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	18.00	91.44 (300.00)	38.00
4.27 (14.00)	18.00	121.92 (400.00)	38.00
6.10 (20.00)	19.00	182.88 (600.00)	36.00
9.14 (30.00)	19.30	243.84 (800.00)	32.50
12.19 (40.00)	20.00	304.80 (1000.00)	29.50
18.29 (60.00)	20.80	304.80 (1000.00)	30.00
24.38 (80.00)	22.00	426.72 (1400.00)	25.00
30.48 (100.00)	24.20	609.60 (2000.00)	19.60
30.48 (100.00)	24.00	914.40 (3000.00)	18.00
42.67 (140.00)	27.00	1219.20 (4000.00)	18.20
60.96 (200.00)	33.00	1828.80 (6000.00)	26.50
		2438.40 (8000.00)	35.00

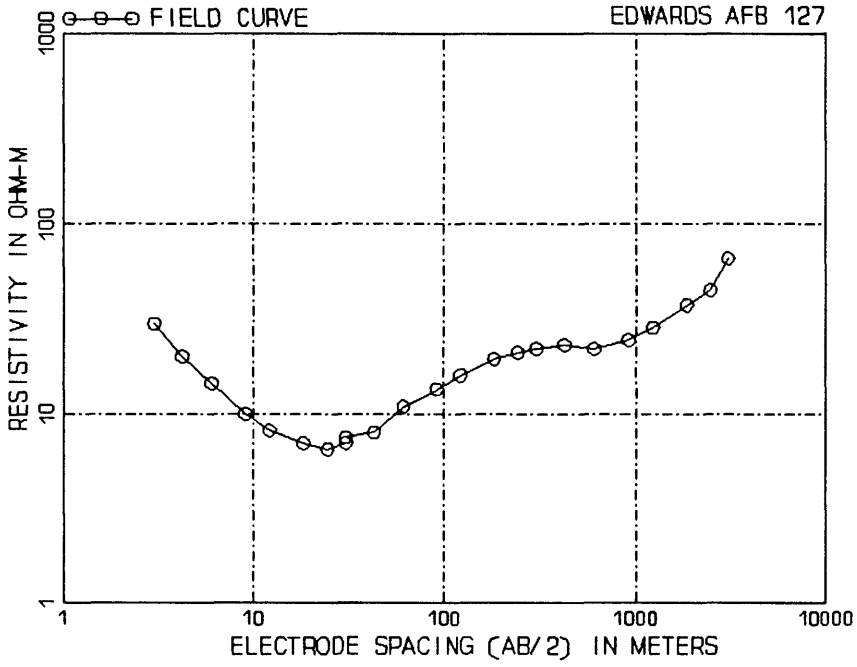
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	17.43	54.67 (179.38)	57.47
2.80 (9.19)	19.04	79.26 (260.05)	48.01
4.06 (13.33)	20.30	114.91 (377.00)	36.05
5.89 (19.32)	20.47	166.59 (546.56)	29.09
8.54 (28.01)	19.02	241.51 (792.36)	24.22
12.38 (40.61)	18.62	350.13 (1148.72)	14.24
17.94 (58.87)	24.04	507.60 (1665.35)	7.45
26.01 (85.35)	37.73	735.89 (2414.32)	7.40
37.71 (123.73)	53.37	99999.00 (99999.00)	550.00

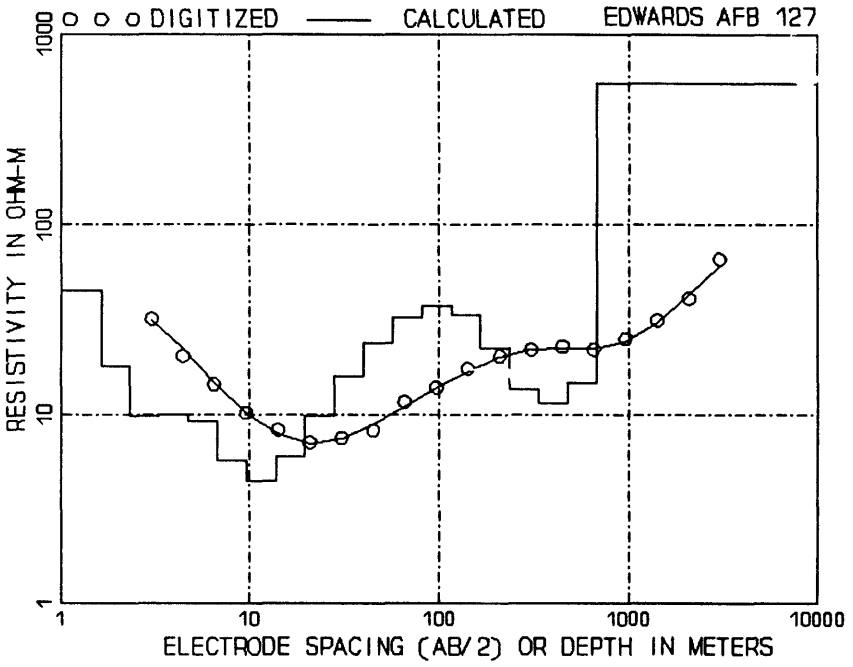




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	27.00	91.44 (300.00)	11.60
4.27 (14.00)	23.00	121.92 (400.00)	13.30
6.10 (20.00)	15.00	182.88 (600.00)	15.70
9.14 (30.00)	11.00	243.84 (800.00)	17.50
12.19 (40.00)	8.60	304.80 (1000.00)	19.70
18.29 (60.00)	7.20	304.80 (1000.00)	19.00
24.38 (80.00)	7.00	426.72 (1400.00)	21.80
30.48 (100.00)	7.20	609.60 (2000.00)	25.20
30.48 (100.00)	7.80	914.40 (3000.00)	32.00
42.67 (140.00)	8.00	1219.20 (4000.00)	38.00
60.96 (200.00)	9.50	1828.80 (6000.00)	55.00
		2438.40 (8000.00)	75.00

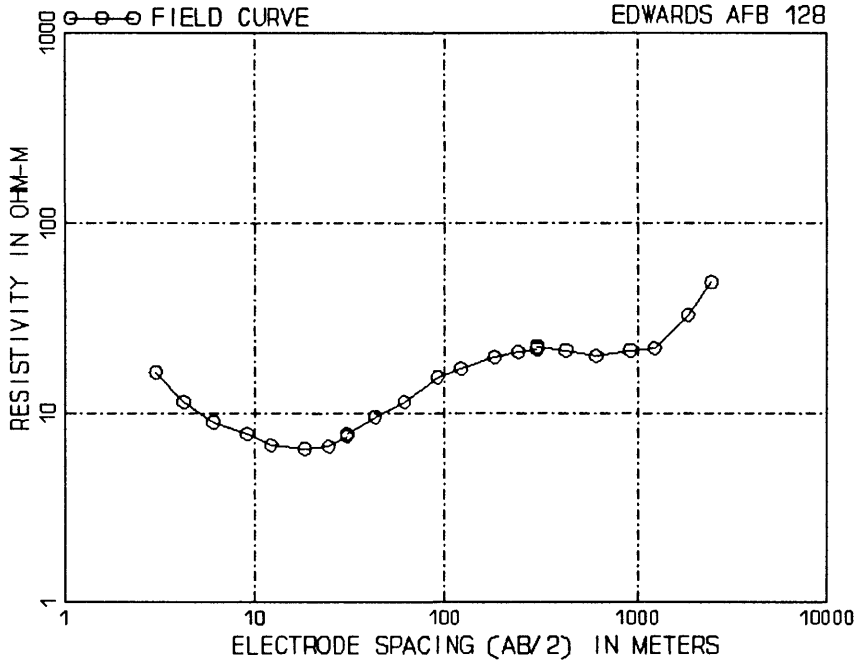
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	36.29	54.67 (179.38)	13.66
2.80 (9.19)	18.45	79.26 (260.05)	17.12
4.06 (13.33)	9.86	114.91 (377.00)	20.85
5.89 (19.32)	7.59	166.59 (546.56)	23.91
8.54 (28.01)	6.96	241.51 (792.36)	25.05
12.38 (40.61)	6.08	350.13 (1148.72)	25.45
17.94 (58.87)	6.03	507.60 (1665.35)	28.47
26.01 (85.35)	7.53	735.89 (2414.32)	36.90
37.71 (123.73)	10.37	99999.00 (99999.00)	550.00

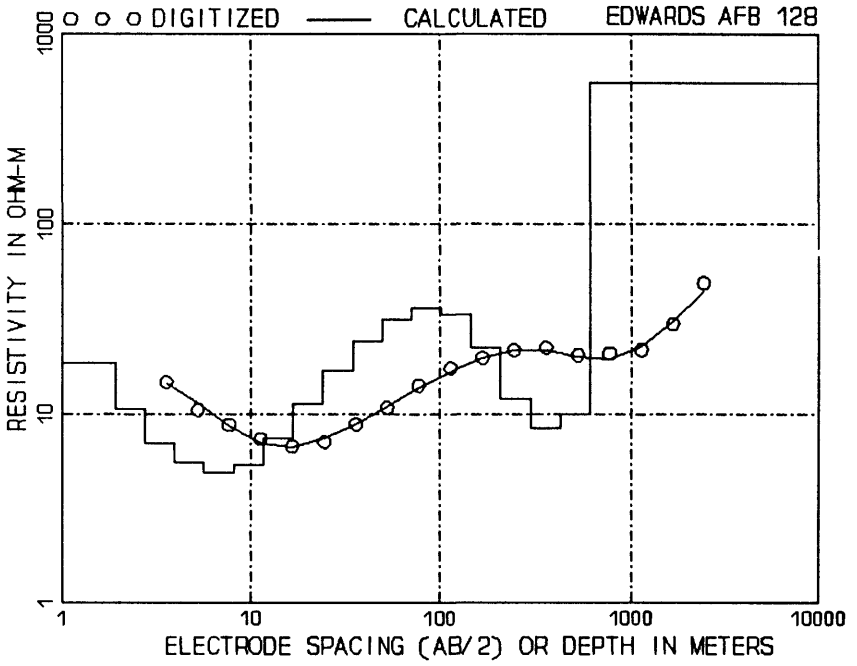




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	29.80	121.92 (400.00)	16.00
4.27 (14.00)	20.00	182.88 (600.00)	19.50
6.10 (20.00)	14.50	243.84 (800.00)	21.00
9.14 (30.00)	10.00	304.80 (1000.00)	22.00
12.19 (40.00)	8.20	304.80 (1000.00)	22.00
18.29 (60.00)	7.00	426.72 (1400.00)	23.00
24.38 (80.00)	6.50	609.60 (2000.00)	22.00
30.48 (100.00)	7.00	914.40 (3000.00)	24.50
30.48 (100.00)	7.50	1219.20 (4000.00)	28.50
42.67 (140.00)	8.00	1828.80 (6000.00)	37.50
60.96 (200.00)	11.00	2438.40 (8000.00)	45.00
91.44 (300.00)	13.50	3048.00 (10000.00)	66.00

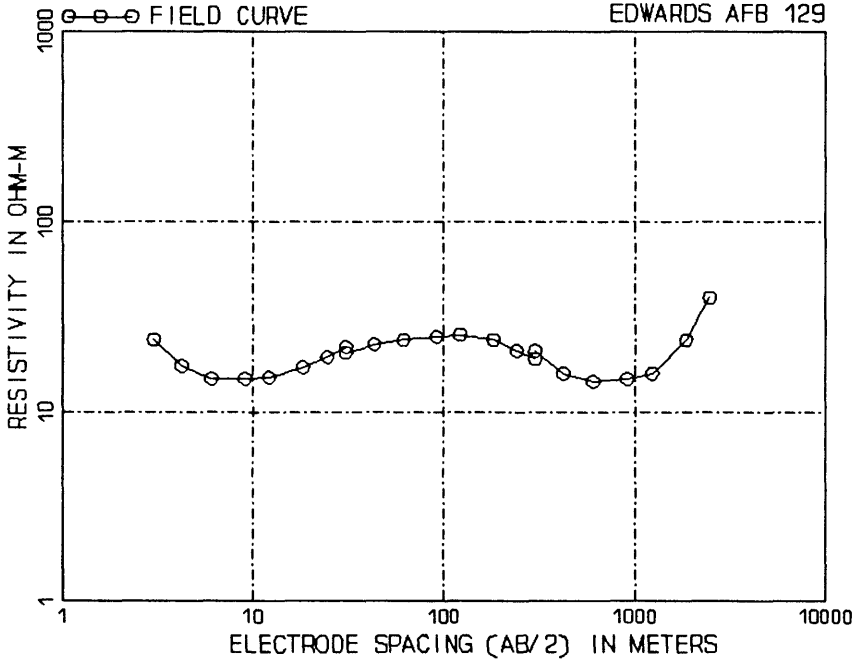
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.65 (5.40)	45.14	39.90 (130.92)	15.82
2.35 (7.70)	17.96	56.87 (186.58)	23.93
3.34 (10.97)	9.85	81.04 (265.89)	32.56
4.76 (15.63)	10.03	115.49 (378.92)	37.37
6.79 (22.27)	9.23	164.59 (540.00)	33.41
9.67 (31.74)	5.69	234.56 (769.56)	22.41
13.79 (45.23)	4.43	334.27 (1096.70)	13.60
19.65 (64.46)	5.95	476.37 (1562.90)	11.55
28.00 (91.87)	9.80	678.88 (2227.30)	14.66
		99999.00 (99999.00)	550.00

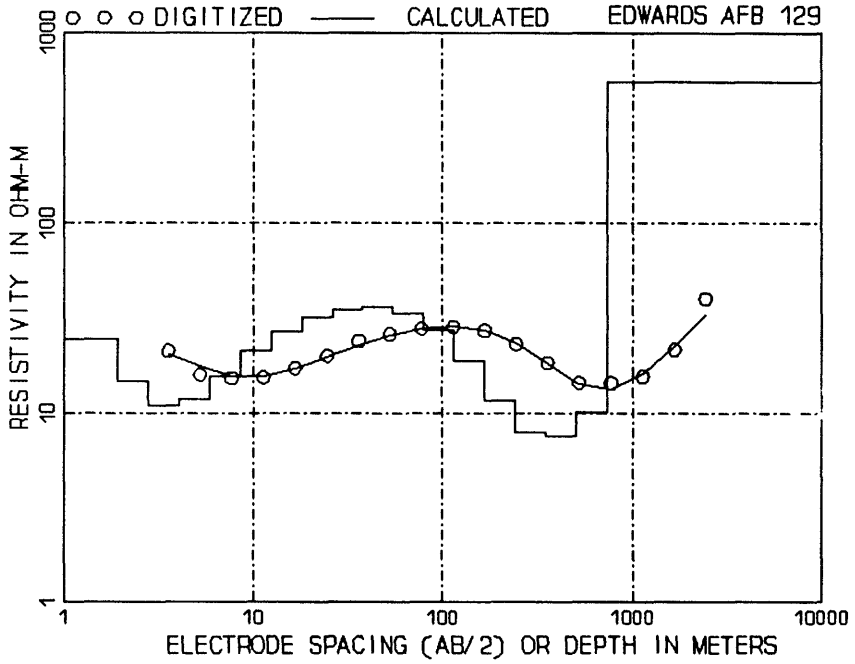




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	16.50	91.44 (300.00)	15.50
4.27 (14.00)	11.50	121.92 (400.00)	17.20
6.10 (20.00)	9.00	182.88 (600.00)	19.70
9.14 (30.00)	7.80	243.84 (800.00)	21.00
12.19 (40.00)	6.80	304.80 (1000.00)	21.80
18.29 (60.00)	6.50	304.80 (1000.00)	22.50
24.38 (80.00)	6.70	426.72 (1400.00)	21.50
30.48 (100.00)	7.60	609.60 (2000.00)	20.00
30.48 (100.00)	7.80	914.40 (3000.00)	21.50
42.67 (140.00)	9.60	1219.20 (4000.00)	22.00
60.96 (200.00)	11.50	1828.80 (6000.00)	33.00
		2438.40 (8000.00)	49.00

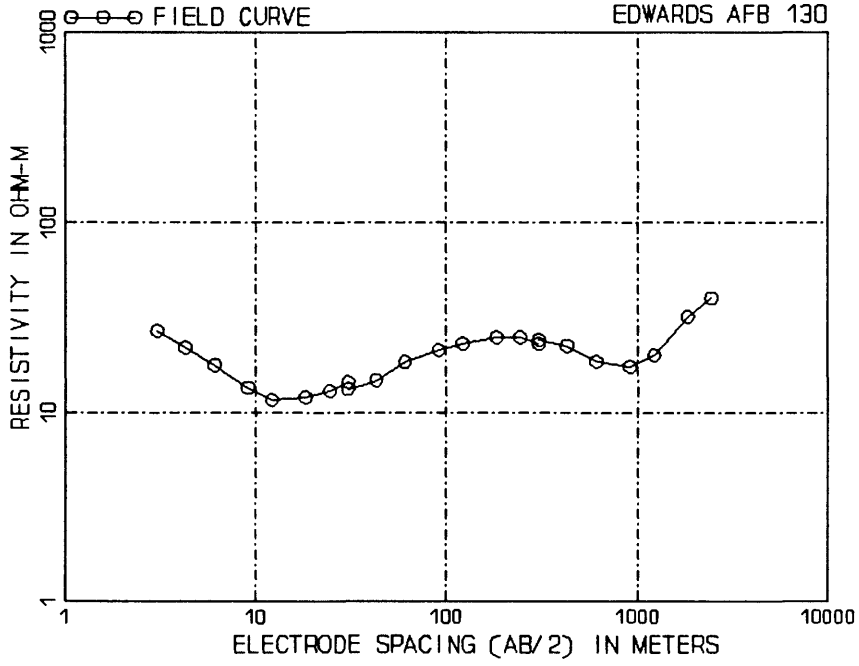
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	18.61	49.25 (161.58)	24.07
2.77 (9.09)	10.60	70.58 (231.55)	31.39
3.97 (13.02)	6.97	101.14 (331.82)	36.06
5.69 (18.66)	5.58	144.93 (475.50)	33.44
8.15 (26.74)	4.87	207.69 (681.40)	22.49
11.68 (38.32)	5.33	297.62 (976.45)	11.98
16.74 (54.91)	7.39	426.50 (1399.27)	8.47
23.98 (78.69)	11.25	611.17 (2005.17)	10.03
34.37 (112.76)	16.96	99999.00 (99999.00)	550.00

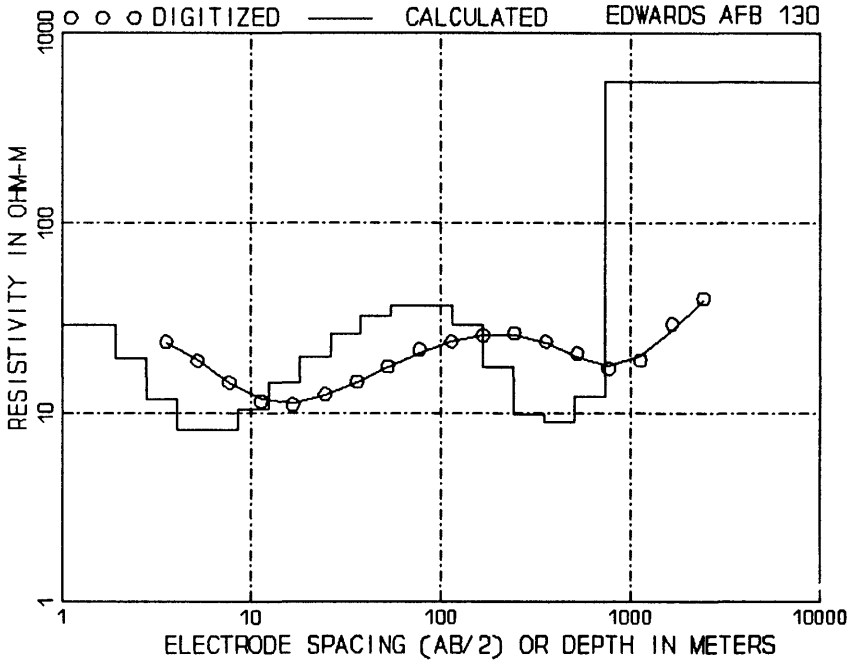




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	24.00	91.44 (300.00)	25.00
4.27 (14.00)	17.50	121.92 (400.00)	25.50
6.10 (20.00)	15.00	182.88 (600.00)	24.00
9.14 (30.00)	15.00	243.84 (800.00)	21.00
12.19 (40.00)	15.20	304.80 (1000.00)	19.00
18.29 (60.00)	17.20	304.80 (1000.00)	21.00
24.38 (80.00)	19.50	426.72 (1400.00)	16.00
30.48 (100.00)	22.00	609.60 (2000.00)	14.50
30.48 (100.00)	20.50	914.40 (3000.00)	15.00
42.67 (140.00)	22.70	1219.20 (4000.00)	16.00
60.96 (200.00)	24.00	1828.80 (6000.00)	24.00
		2438.40 (8000.00)	40.00

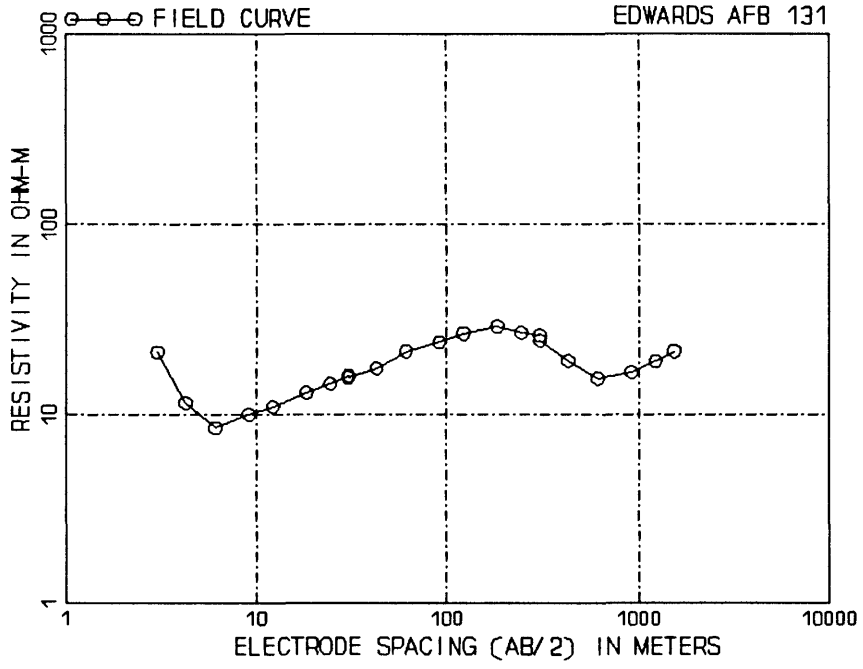
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	24.73	54.67 (179.38)	36.04
2.80 (9.19)	14.69	79.26 (260.05)	33.56
4.06 (13.33)	10.97	114.91 (377.00)	27.13
5.89 (19.32)	11.93	166.59 (546.56)	18.76
8.54 (28.01)	15.72	241.51 (792.36)	11.70
12.38 (40.61)	21.18	350.13 (1148.72)	7.88
17.94 (58.87)	27.01	507.60 (1665.35)	7.59
26.01 (85.35)	31.85	735.89 (2414.32)	10.10
37.71 (123.73)	35.07	99999.00 (99999.00)	550.00

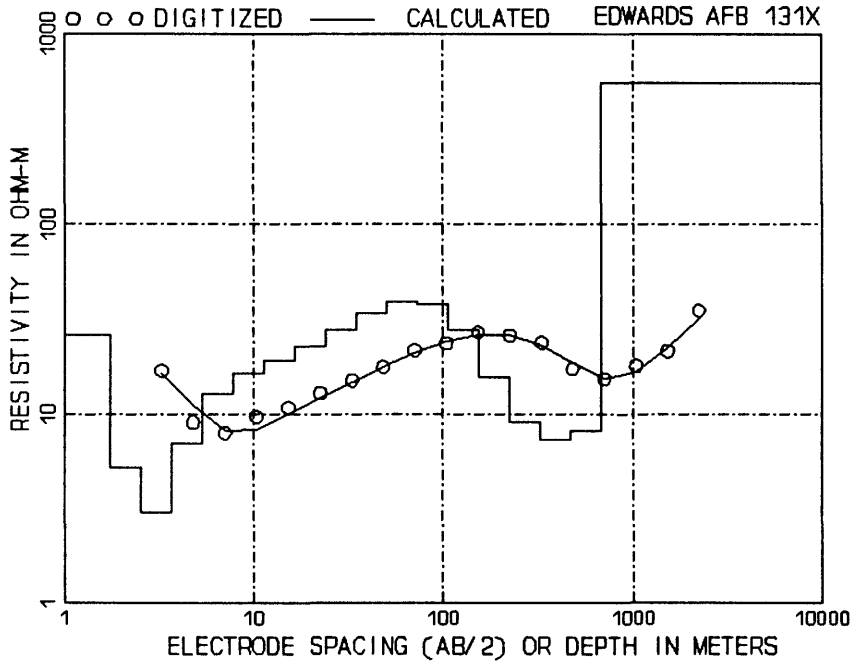




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	27.00	91.44 (300.00)	21.40
4.27 (14.00)	22.00	121.92 (400.00)	23.00
6.10 (20.00)	17.80	182.88 (600.00)	25.00
9.14 (30.00)	13.50	243.84 (800.00)	25.00
12.19 (40.00)	11.70	304.80 (1000.00)	23.00
18.29 (60.00)	12.00	304.80 (1000.00)	24.20
24.38 (80.00)	13.00	426.72 (1400.00)	22.50
30.48 (100.00)	14.50	609.60 (2000.00)	18.60
30.48 (100.00)	13.30	914.40 (3000.00)	17.50
42.67 (140.00)	14.80	1219.20 (4000.00)	20.00
60.96 (200.00)	18.50	1828.80 (6000.00)	32.00
		2438.40 (8000.00)	40.00

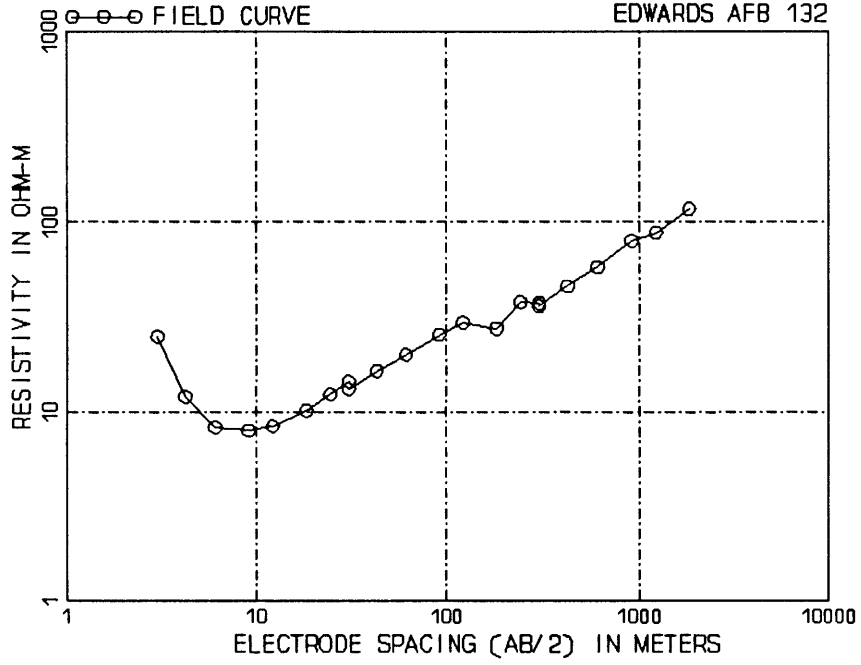
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	29.17	54.67 (179.38)	32.37
2.80 (9.19)	19.52	79.26 (260.05)	36.71
4.06 (13.33)	11.79	114.91 (377.00)	36.52
5.89 (19.32)	8.16	166.59 (546.56)	29.12
8.54 (28.01)	8.12	241.51 (792.36)	17.42
12.38 (40.61)	10.41	350.1[illegible] (1148.72)	9.85
17.94 (58.87)	14.38	507.60 (1665.35)	8.95
26.01 (85.35)	19.86	735.89 (2414.32)	12.19
37.71 (123.73)	26.24	99999.00 (99999.00)	550.00

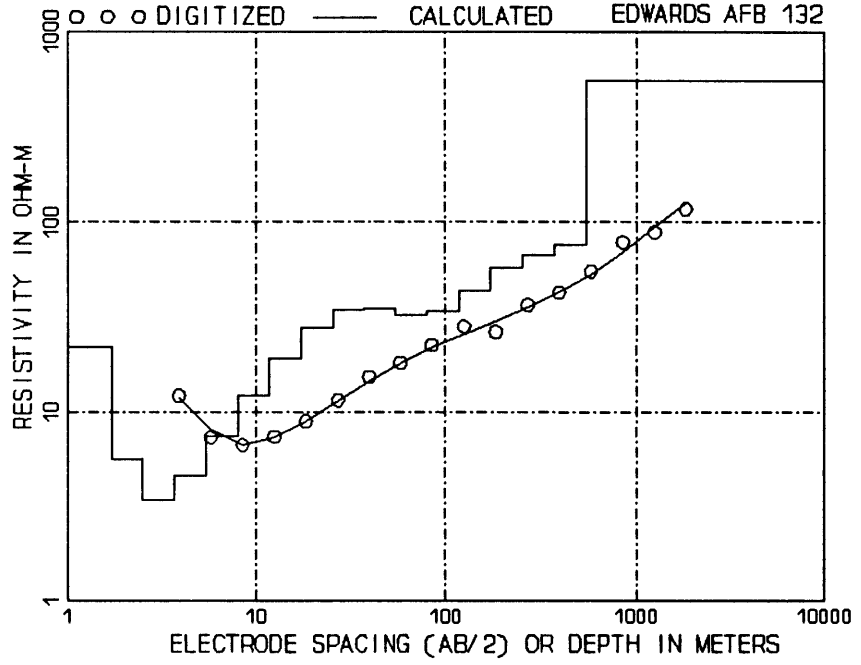




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	21.20	91.44	(300.00)	24.00
4.27	(14.00)	11.50	121.92	(400.00)	26.70
6.10	(20.00)	8.50	182.88	(600.00)	29.00
9.14	(30.00)	10.00	243.84	(800.00)	27.00
12.19	(40.00)	11.00	304.80	(1000.00)	26.00
18.29	(60.00)	13.00	304.80	(1000.00)	24.50
24.38	(80.00)	14.50	426.72	(1400.00)	19.20
30.48	(100.00)	16.00	609.60	(2000.00)	15.50
30.48	(100.00)	15.60	914.40	(3000.00)	16.70
42.67	(140.00)	17.50	1219.20	(4000.00)	19.00
60.96	(200.00)	21.50	1524.00	(5000.00)	21.50

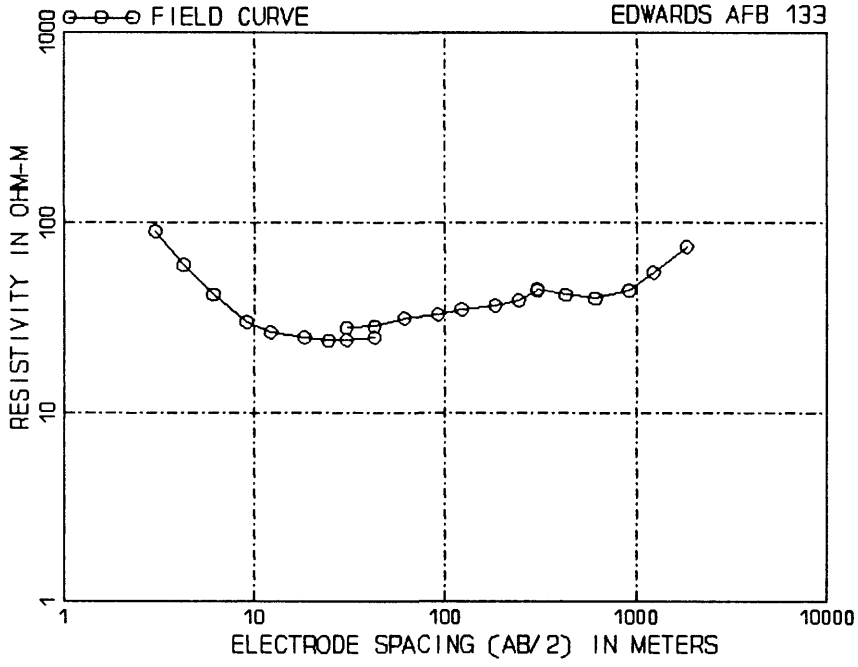
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.77	(5.82)	26.18	50.16	(164.55)	33.84
2.57	(8.43)	5.24	72.71	(238.56)	39.02
3.73	(12.23)	3.04	105.42	(345.85)	38.09
5.40	(17.72)	7.04	152.83	(501.40)	27.82
7.83	(25.70)	12.78	221.56	(726.89)	15.54
11.35	(37.25)	16.34	321.20	(1053.81)	9.16
16.46	(54.01)	19.11	465.66	(1527.75)	7.36
23.86	(78.29)	22.71	675.08	(2214.84)	8.22
34.60	(113.51)	27.73	99999.00	(99999.00)	550.00

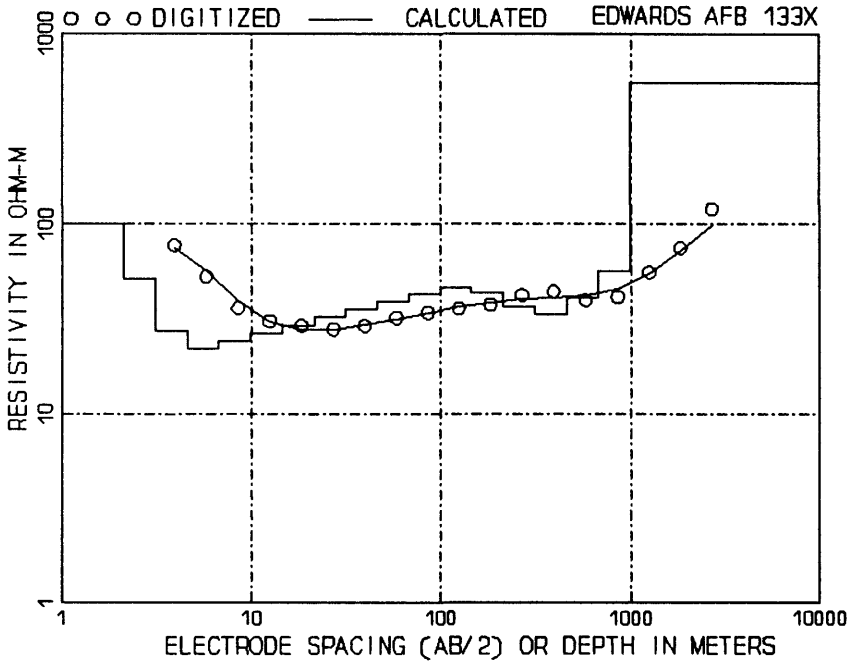




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	25.00	91.44 (300.00)	25.50
4.27 (14.00)	12.00	121.92 (400.00)	29.50
6.10 (20.00)	8.30	182.88 (600.00)	27.50
9.14 (30.00)	8.00	243.84 (800.00)	38.00
12.19 (40.00)	8.40	304.80 (1000.00)	37.50
18.29 (60.00)	10.20	304.80 (1000.00)	36.00
24.38 (80.00)	12.40	426.72 (1400.00)	46.00
30.48 (100.00)	14.50	609.60 (2000.00)	58.00
30.48 (100.00)	13.20	914.40 (3000.00)	80.00
42.67 (140.00)	16.50	1219.20 (4000.00)	88.00
60.96 (200.00)	20.00	1828.80 (6000.00)	117.00

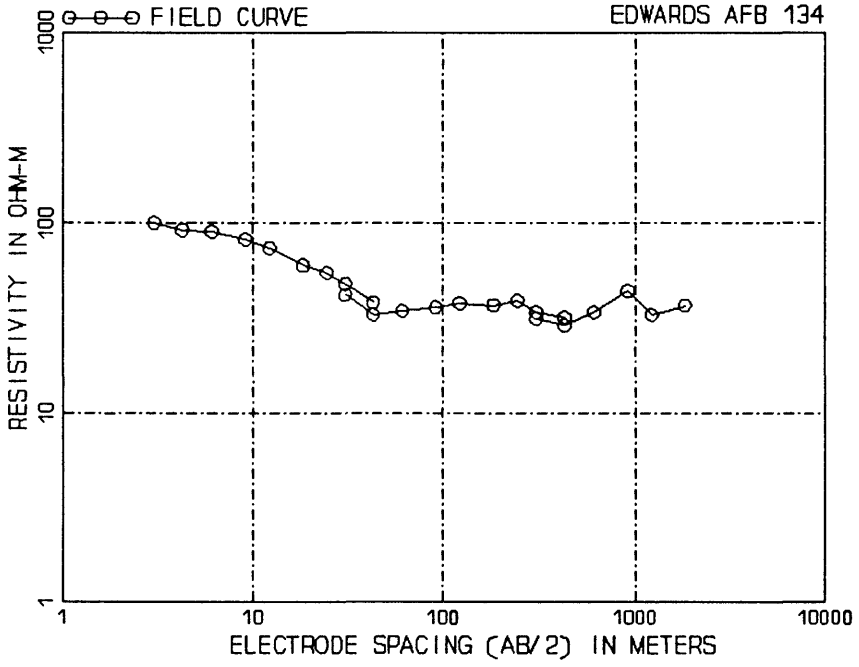
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.72 (5.65)	21.95	37.13 (121.81)	34.35
2.53 (8.30)	5.66	54.50 (178.80)	34.76
3.71 (12.18)	3.44	79.99 (262.44)	32.19
5.45 (17.88)	4.59	117.41 (385.21)	33.98
8.00 (26.24)	7.41	172.34 (565.41)	43.60
11.74 (38.52)	12.23	252.96 (829.91)	57.73
17.23 (56.54)	19.21	371.29 (1218.14)	67.69
25.30 (82.99)	27.72	544.98 (1787.98)	76.13
		99999.00 (99999.00)	550.00

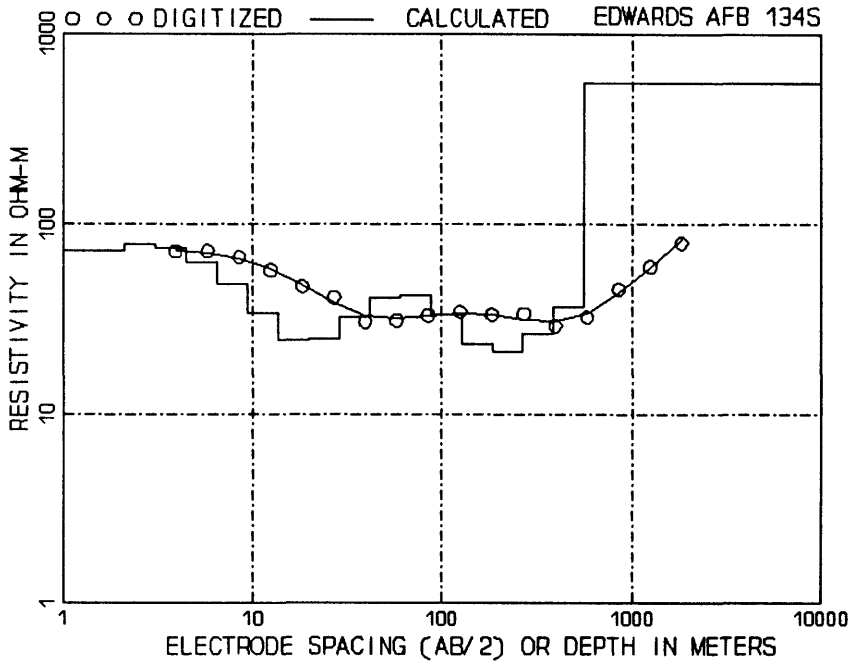




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	90.00	60.96 (200.00)	31.50
4.27 (14.00)	60.00	91.44 (300.00)	33.00
6.10 (20.00)	42.00	121.92 (400.00)	35.00
9.14 (30.00)	30.00	182.88 (600.00)	36.80
12.19 (40.00)	26.50	243.84 (800.00)	39.00
18.29 (60.00)	25.00	304.80 (1000.00)	44.00
24.38 (80.00)	24.00	304.80 (1000.00)	45.00
30.48 (100.00)	24.20	426.72 (1400.00)	42.00
42.67 (140.00)	25.00	609.60 (2000.00)	40.00
30.48 (100.00)	28.00	914.40 (3000.00)	44.00
42.67 (140.00)	28.50	1219.20 (4000.00)	55.00
		1828.80 (6000.00)	75.00

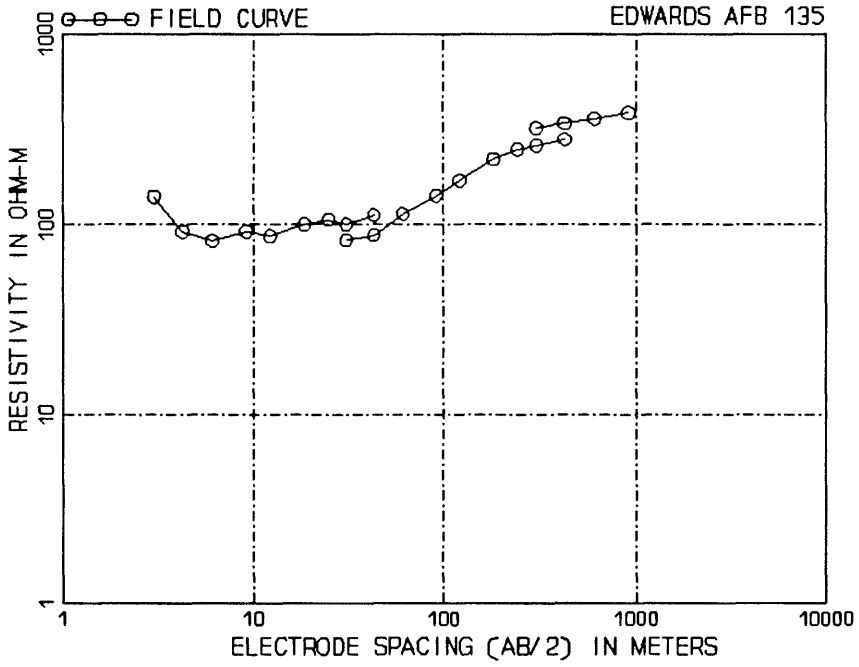
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	101.04	67.28 (220.74)	38.83
3.12 (10.25)	51.83	98.76 (324.00)	42.93
4.58 (15.04)	27.15	144.95 (475.57)	46.27
6.73 (22.07)	22.10	212.76 (698.04)	43.72
9.88 (32.40)	24.25	312.29 (1024.58)	36.45
14.50 (47.56)	26.35	458.38 (1503.88)	33.67
21.28 (69.80)	28.90	672.81 (2207.39)	40.76
31.23 (102.46)	32.37	987.55 (3240.00)	57.06
45.84 (150.39)	35.67	99999.00 (99999.00)	550.00

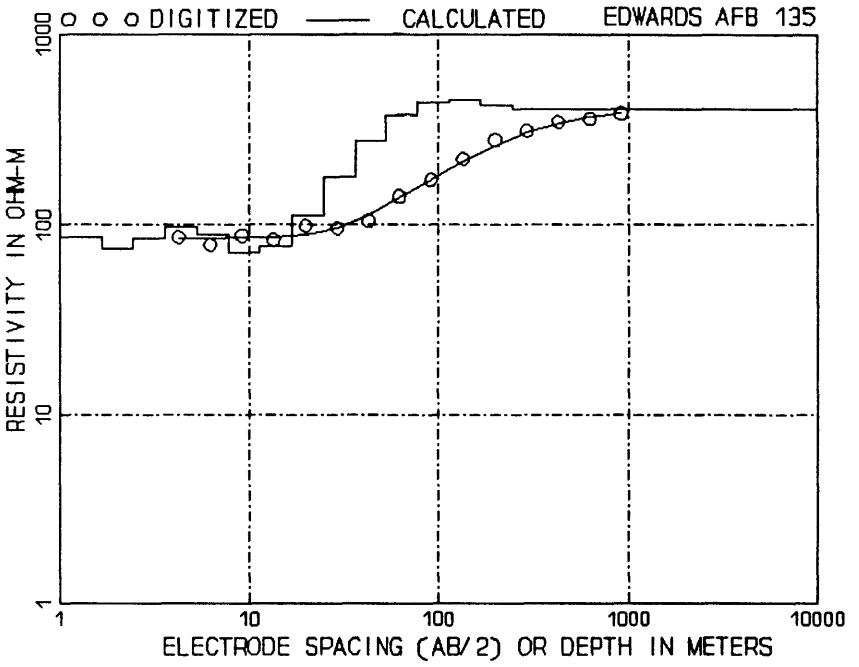




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	100.00	91.44 (300.00)	36.00
4.27 (14.00)	92.00	121.92 (400.00)	38.00
6.10 (20.00)	90.00	182.88 (600.00)	37.00
9.14 (30.00)	82.00	243.84 (800.00)	39.00
12.19 (40.00)	74.00	304.80 (1000.00)	34.00
18.29 (60.00)	60.00	426.72 (1400.00)	32.00
24.38 (80.00)	55.00	304.80 (1000.00)	31.50
30.48 (100.00)	48.00	426.72 (1400.00)	29.00
42.67 (140.00)	38.20	609.60 (2000.00)	34.00
30.48 (100.00)	42.00	914.40 (3000.00)	44.00
42.67 (140.00)	33.00	1219.20 (4000.00)	33.00
60.96 (200.00)	34.50	1828.80 (6000.00)	37.00

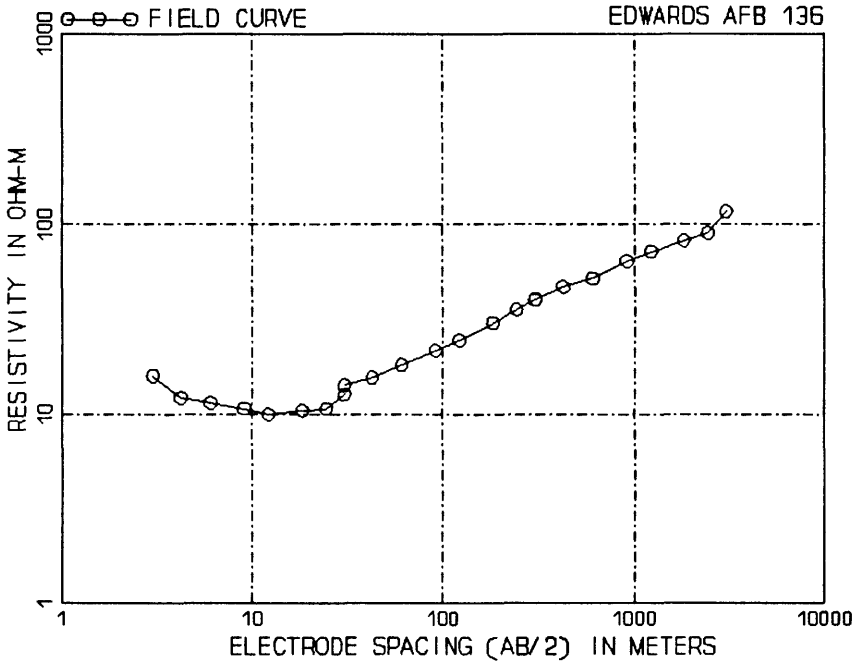
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
2.13 (6.98)	73.08	41.52 (136.21)	32.36
3.08 (10.12)	78.19	60.19 (197.47)	40.59
4.47 (14.67)	74.95	87.26 (286.27)	42.13
6.48 (21.27)	63.24	126.50 (415.02)	33.36
9.40 (30.83)	48.83	183.39 (601.68)	23.33
13.63 (44.70)	34.21	265.87 (872.27)	21.21
19.75 (64.81)	24.49	385.44 (1264.57)	26.52
28.64 (93.95)	24.77	558.79 (1833.30)	37.00
		99999.00 (99999.00)	550.00

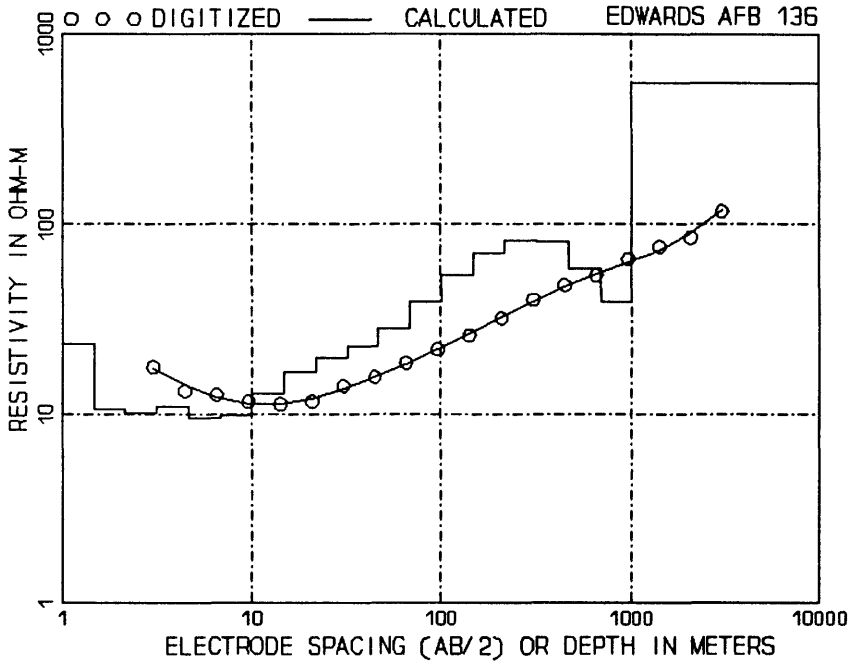




AB/2, m	(ft)	App. Res.	AB/2, m	(ft)	App. Res.
3.05	(10.00)	140.00	60.96	(200.00)	114.00
4.27	(14.00)	92.00	91.44	(300.00)	142.00
6.10	(20.00)	82.00	121.92	(400.00)	170.00
9.14	(30.00)	92.00	182.88	(600.00)	220.00
12.19	(40.00)	87.00	243.84	(800.00)	248.00
18.29	(60.00)	100.00	304.80	(1000.00)	260.00
24.38	(80.00)	106.00	426.72	(1400.00)	280.00
30.48	(100.00)	100.00	304.80	(1000.00)	320.00
42.67	(140.00)	112.00	426.72	(1400.00)	340.00
30.48	(100.00)	83.00	609.60	(2000.00)	360.00
42.67	(140.00)	88.00	914.40	(3000.00)	385.00

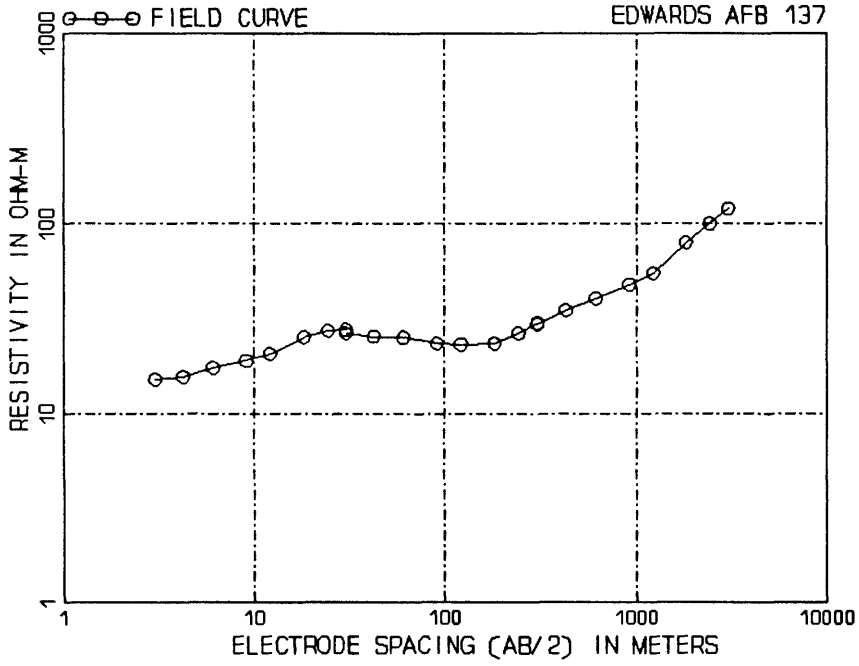
DEPTH, m	(ft)	RESIS.	DEPTH, m	(ft)	RESIS.
1.67	(5.48)	86.34	24.52	(80.46)	112.20
2.45	(8.05)	74.87	36.00	(118.10)	179.25
3.60	(11.81)	84.71	52.84	(173.34)	274.81
5.28	(17.33)	97.50	77.55	(254.43)	373.55
7.76	(25.44)	88.21	113.83	(373.46)	437.45
11.38	(37.35)	71.97	167.08	(548.16)	448.95
16.71	(54.82)	77.43	245.24	(804.59)	427.62
			99999.00	(99999.00)	403.22

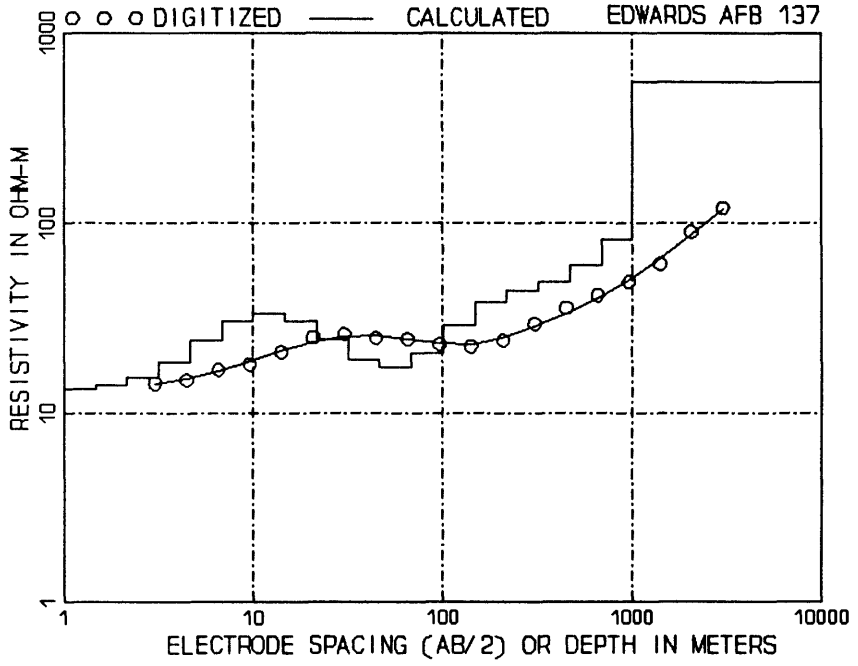




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	16.00	121.92 (400.00)	24.50
4.27 (14.00)	12.20	182.88 (600.00)	30.20
6.10 (20.00)	11.50	243.84 (800.00)	35.50
9.14 (30.00)	10.70	304.80 (1000.00)	40.50
12.19 (40.00)	10.00	304.80 (1000.00)	40.00
18.29 (60.00)	10.50	426.72 (1400.00)	47.00
24.38 (80.00)	10.70	609.60 (2000.00)	52.00
30.48 (100.00)	12.70	914.40 (3000.00)	64.00
30.48 (100.00)	14.20	1219.20 (4000.00)	72.00
42.67 (140.00)	15.60	1828.80 (6000.00)	82.50
60.96 (200.00)	18.20	2438.40 (8000.00)	90.00
91.44 (300.00)	21.70	3048.00 (10000.00)	117.00

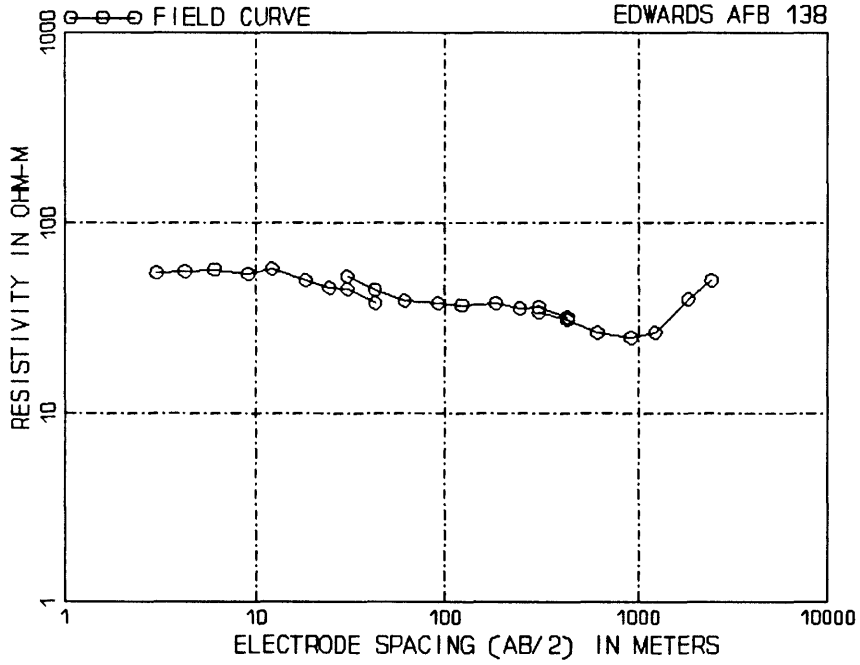
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.48 (4.86)	23.36	46.84 (153.69)	22.79
2.17 (7.13)	10.60	68.76 (225.58)	28.26
3.19 (10.47)	10.11	100.92 (331.11)	38.92
4.68 (15.37)	11.05	148.13 (486.00)	54.17
6.88 (22.56)	9.47	217.43 (713.35)	69.93
10.09 (33.11)	9.82	319.14 (1047.06)	82.34
14.81 (48.60)	12.88	468.44 (1536.87)	80.86
21.74 (71.34)	16.60	687.57 (2255.81)	58.59
31.91 (104.71)	19.74	1009.22 (3311.08)	39.30
		99999.00 (99999.00)	550.00

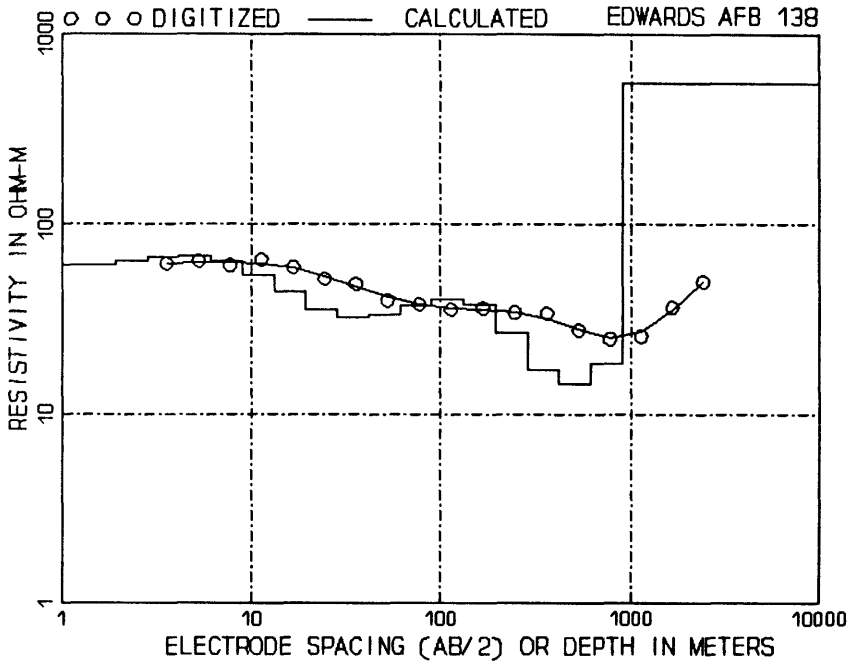




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	15.20	121.92 (400.00)	23.20
4.27 (14.00)	15.70	182.88 (600.00)	23.50
6.10 (20.00)	17.50	243.84 (800.00)	26.50
9.14 (30.00)	19.00	304.80 (1000.00)	30.00
12.19 (40.00)	20.70	304.80 (1000.00)	29.50
18.29 (60.00)	25.40	426.72 (1400.00)	35.00
24.38 (80.00)	27.30	609.60 (2000.00)	40.50
30.48 (100.00)	27.70	914.40 (3000.00)	48.00
30.48 (100.00)	26.60	1219.20 (4000.00)	55.00
42.67 (140.00)	25.50	1828.80 (6000.00)	80.00
60.96 (200.00)	25.20	2438.40 (8000.00)	100.00
91.44 (300.00)	23.50	3048.00 (10000.00)	120.00

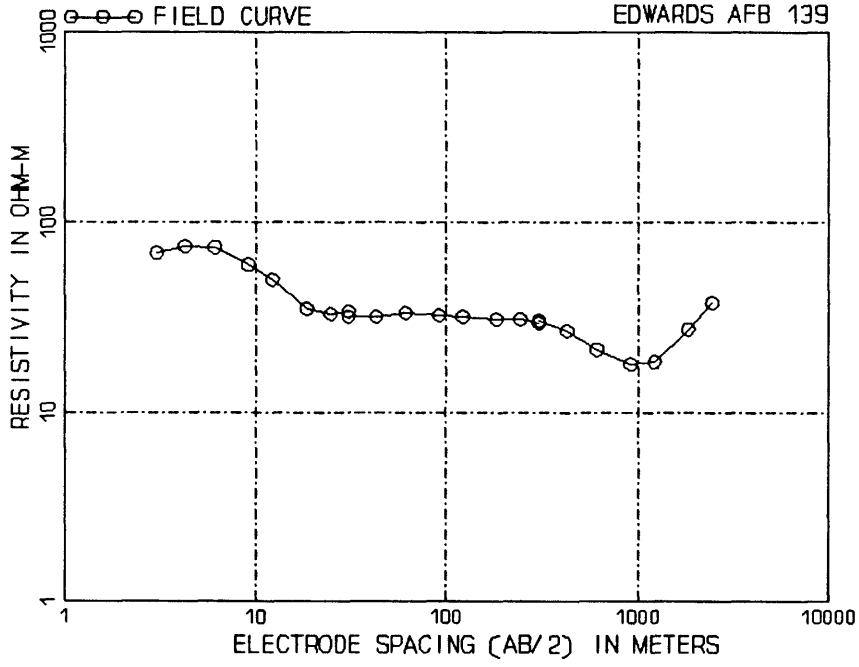
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.48 (4.86)	13.47	46.84 (153.69)	19.20
2.17 (7.13)	13.97	68.76 (225.58)	17.36
3.19 (10.47)	15.36	100.92 (331.11)	20.82
4.68 (15.37)	18.54	148.13 (486.00)	29.12
6.88 (22.56)	24.27	217.43 (713.35)	38.17
10.09 (33.11)	30.62	319.14 (1047.06)	44.14
14.81 (48.60)	33.27	468.44 (1536.87)	49.46
21.74 (71.34)	30.49	687.57 (2255.81)	60.65
31.91 (104.71)	24.60	1009.22 (3311.08)	81.74
		99999.00 (99999.00)	550.00

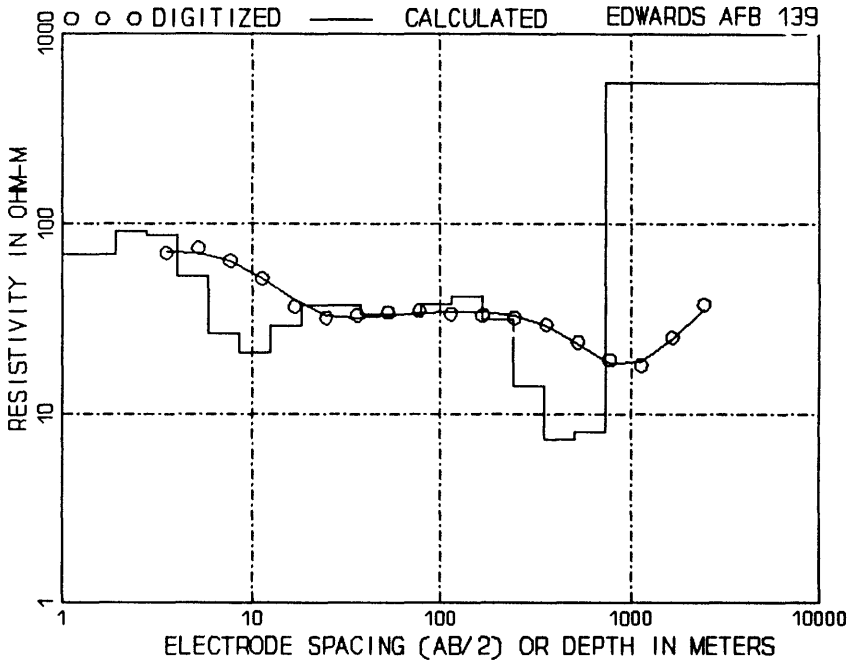




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	55.00	91.44 (300.00)	38.00
4.27 (14.00)	56.00	121.92 (400.00)	37.00
6.10 (20.00)	57.00	182.88 (600.00)	38.00
9.14 (30.00)	54.00	243.84 (800.00)	35.50
12.19 (40.00)	57.50	304.80 (1000.00)	36.00
18.29 (60.00)	50.00	426.72 (1400.00)	32.00
24.38 (80.00)	45.50	304.80 (1000.00)	34.00
30.48 (100.00)	45.00	426.72 (1400.00)	31.00
42.67 (140.00)	38.00	609.60 (2000.00)	26.50
30.48 (100.00)	52.50	914.40 (3000.00)	25.00
42.67 (140.00)	44.50	1219.20 (4000.00)	26.50
60.96 (200.00)	39.00	1828.80 (6000.00)	39.70
		2438.40 (8000.00)	50.00

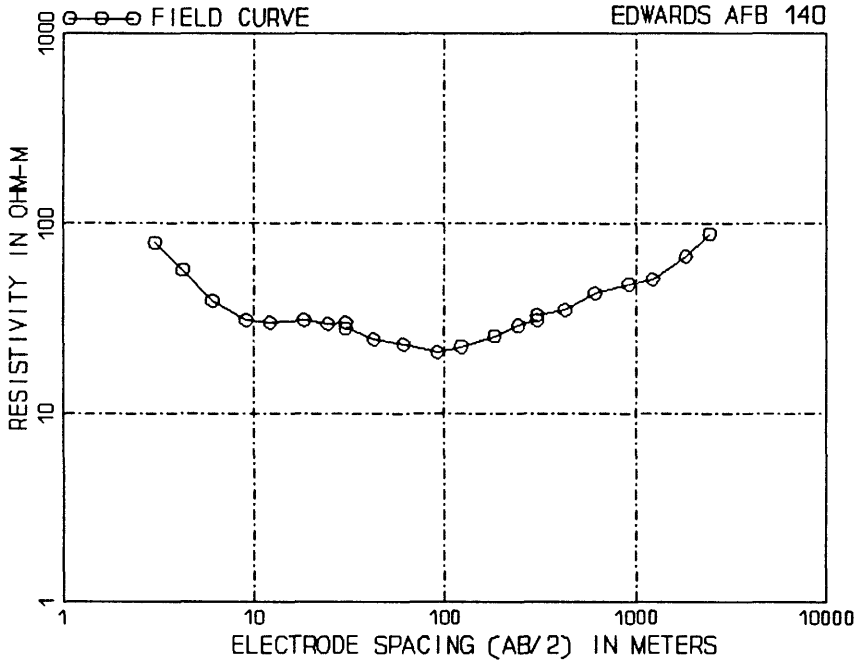
DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	61.33	61.12 (200.52)	33.45
2.84 (9.31)	63.83	89.71 (294.32)	37.37
4.16 (13.66)	66.64	131.67 (432.00)	40.55
6.11 (20.05)	68.26	193.27 (634.09)	37.66
8.97 (29.43)	64.07	283.68 (930.72)	27.04
13.17 (43.20)	54.40	416.39 (1366.10)	17.10
19.33 (63.41)	43.86	611.17 (2005.17)	14.52
28.37 (93.07)	35.68	897.08 (2943.18)	18.46
41.64 (136.61)	32.20	99999.00 (99999.00)	550.00

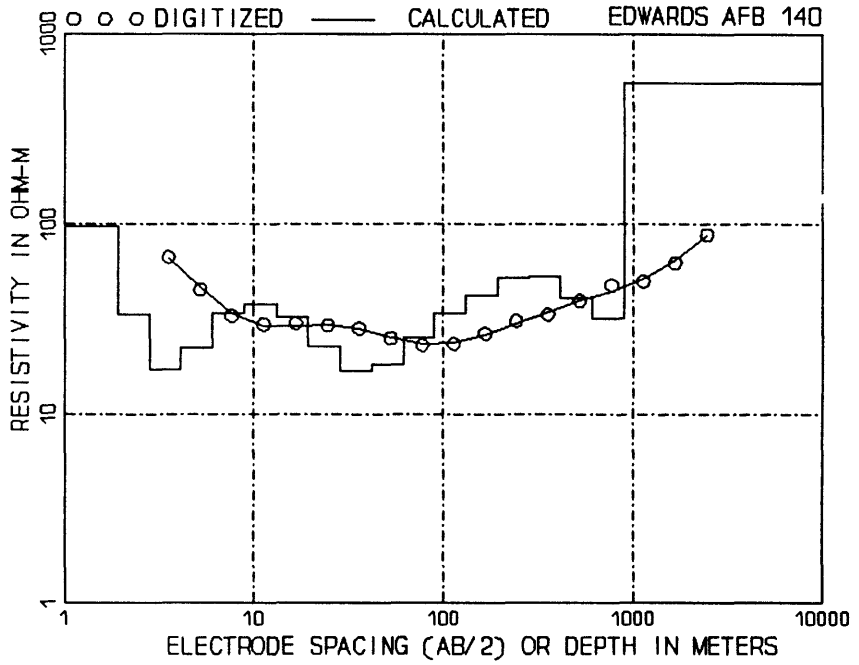




AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	69.00	91.44 (300.00)	32.50
4.27 (14.00)	75.00	121.92 (400.00)	32.00
6.10 (20.00)	74.00	182.88 (600.00)	31.00
9.14 (30.00)	60.00	243.84 (800.00)	31.00
12.19 (40.00)	50.00	304.80 (1000.00)	29.50
18.29 (60.00)	35.00	304.80 (1000.00)	30.50
24.38 (80.00)	33.00	426.72 (1400.00)	27.00
30.48 (100.00)	34.00	609.60 (2000.00)	21.50
30.48 (100.00)	32.00	914.40 (3000.00)	18.00
42.67 (140.00)	32.00	1219.20 (4000.00)	18.50
60.96 (200.00)	33.50	1828.80 (6000.00)	27.50
		2438.40 (8000.00)	38.00

DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	69.51	54.67 (179.38)	33.64
2.80 (9.19)	92.05	79.26 (260.05)	33.19
4.06 (13.33)	87.47	114.91 (377.00)	37.97
5.89 (19.32)	53.14	166.59 (546.56)	41.48
8.54 (28.01)	26.31	241.51 (792.36)	31.22
12.38 (40.61)	21.06	350.13 (1148.72)	13.95
17.94 (58.87)	29.11	507.60 (1665.35)	7.32
26.01 (85.35)	37.51	735.89 (2414.32)	8.02
37.71 (123.73)	37.55	99999.00 (99999.00)	550.00





AB/2, m (ft)	App. Res.	AB/2, m (ft)	App. Res.
3.05 (10.00)	79.00	91.44 (300.00)	21.00
4.27 (14.00)	57.00	121.92 (400.00)	22.50
6.10 (20.00)	39.00	182.88 (600.00)	25.50
9.14 (30.00)	31.00	243.84 (800.00)	29.00
12.19 (40.00)	30.00	304.80 (1000.00)	31.00
18.29 (60.00)	31.00	304.80 (1000.00)	33.00
24.38 (80.00)	29.50	426.72 (1400.00)	35.00
30.48 (100.00)	30.00	609.60 (2000.00)	43.00
30.48 (100.00)	28.00	914.40 (3000.00)	48.00
42.67 (140.00)	24.50	1219.20 (4000.00)	51.00
60.96 (200.00)	23.00	1828.80 (6000.00)	67.00
		2438.40 (8000.00)	88.00

DEPTH, m (ft)	RESIS.	DEPTH, m (ft)	RESIS.
1.93 (6.34)	97.02	61.12 (200.52)	18.15
2.84 (9.31)	33.69	89.71 (294.32)	25.33
4.16 (13.66)	17.17	131.67 (432.00)	33.89
6.11 (20.05)	22.30	193.27 (634.09)	42.45
8.97 (29.43)	33.92	283.68 (930.72)	52.21
13.17 (43.20)	38.04	416.39 (1366.10)	53.46
19.33 (63.41)	32.47	611.17 (2005.17)	41.12
28.37 (93.07)	22.72	897.08 (2943.18)	32.05
41.64 (136.61)	16.89	99999.00 (99999.00)	550.00

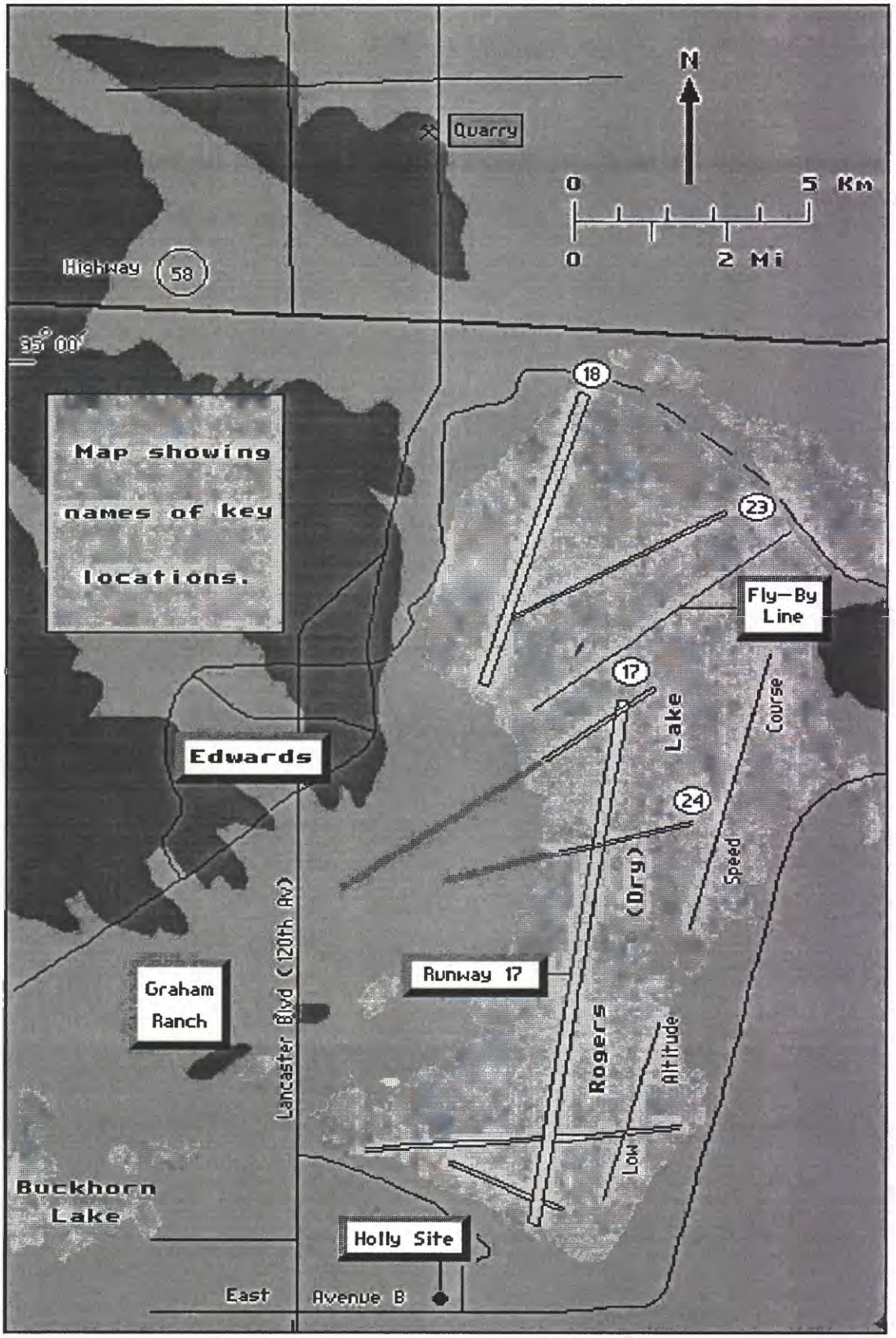


Figure 1. Map showing location of key sites and simplified geology.

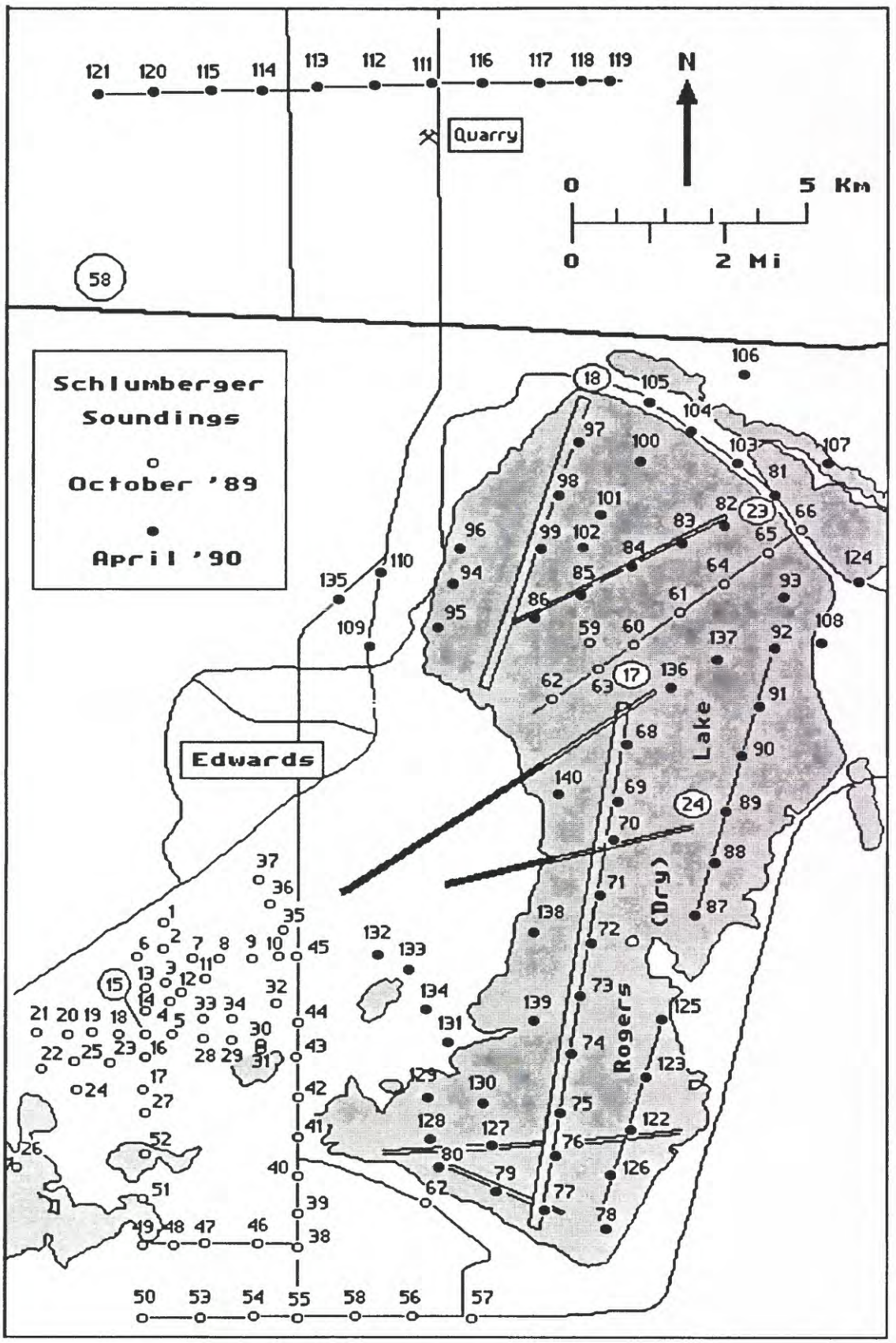


Figure 2. Map showing location of Schlumberger sounding stations.

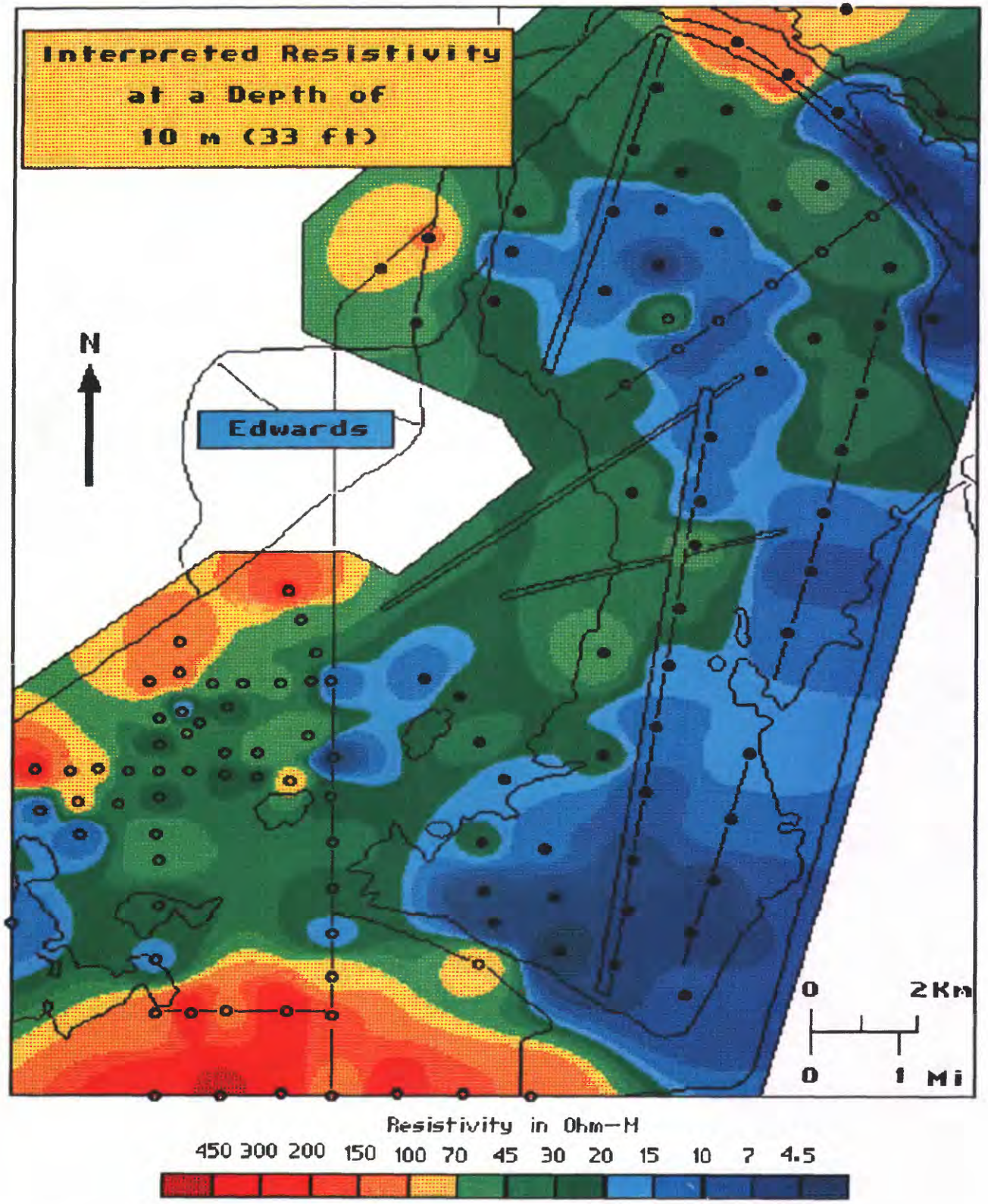


Figure 3. Map showing interpreted resistivity distribution at a depth of 10 m (about 33 ft)

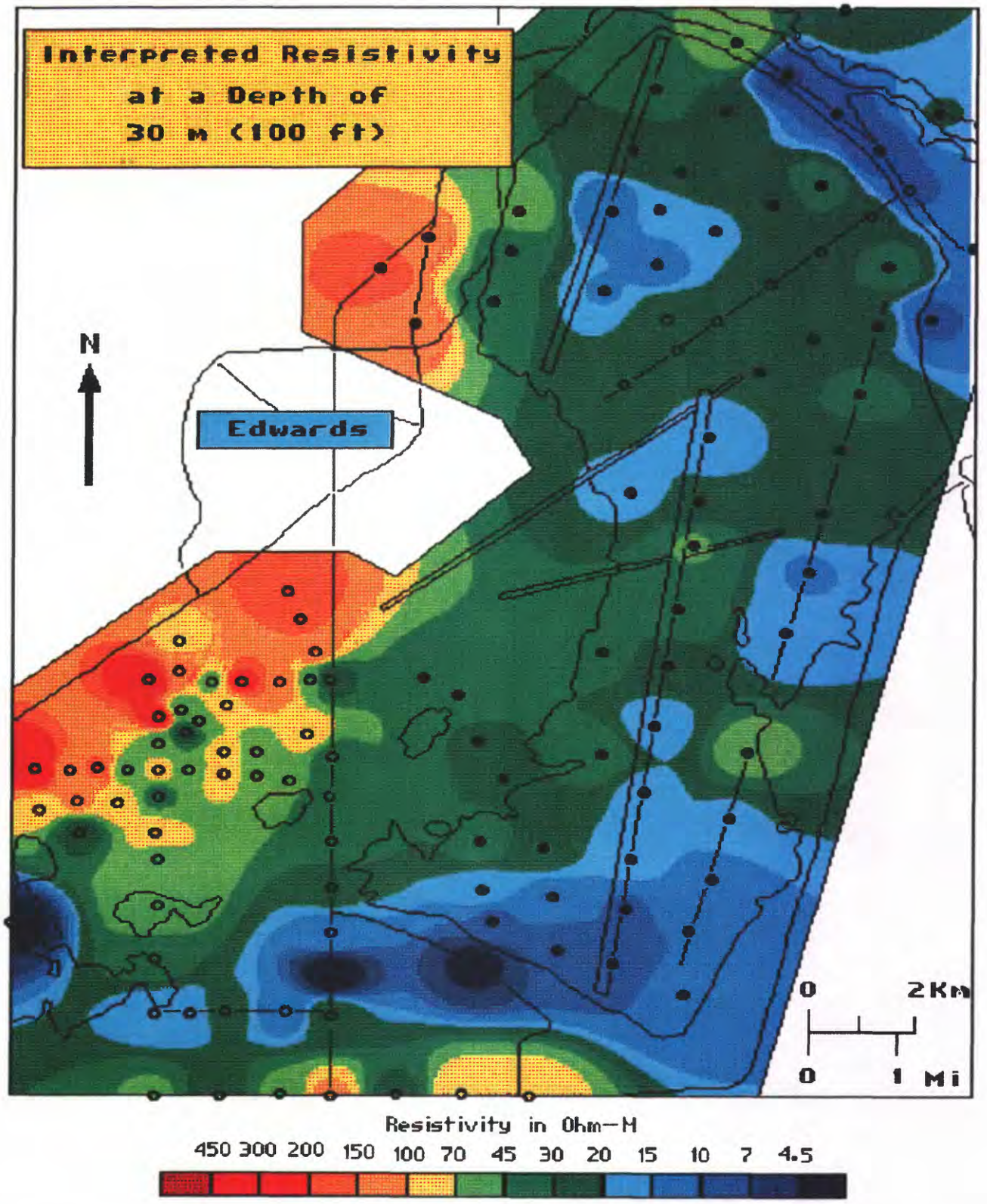


Figure 4. Map showing interpreted resistivity distribution at a depth of 30 m (about 100 ft)

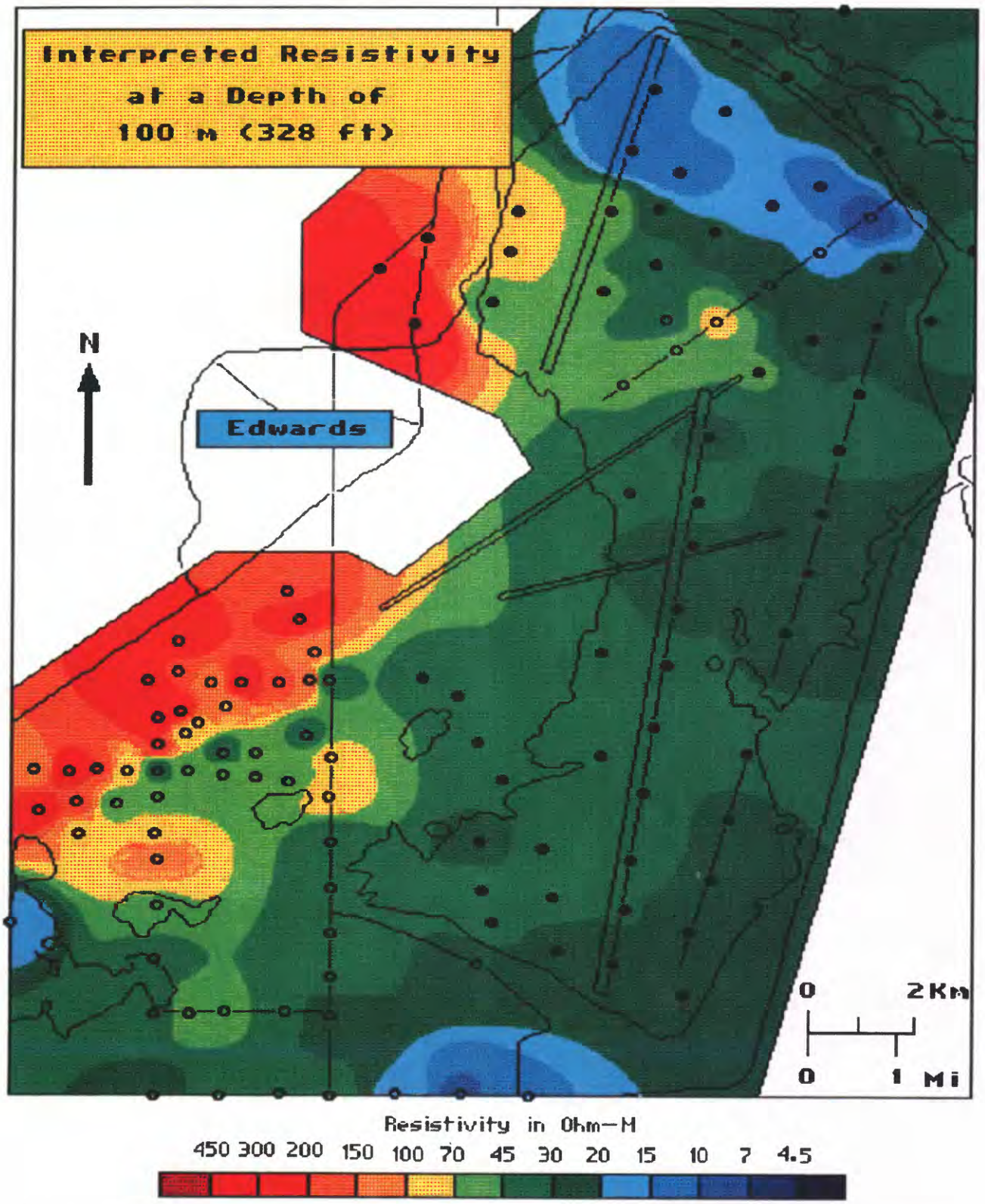


Figure 5. Map showing interpreted resistivity distribution at a depth of 100 m (about 330 ft)

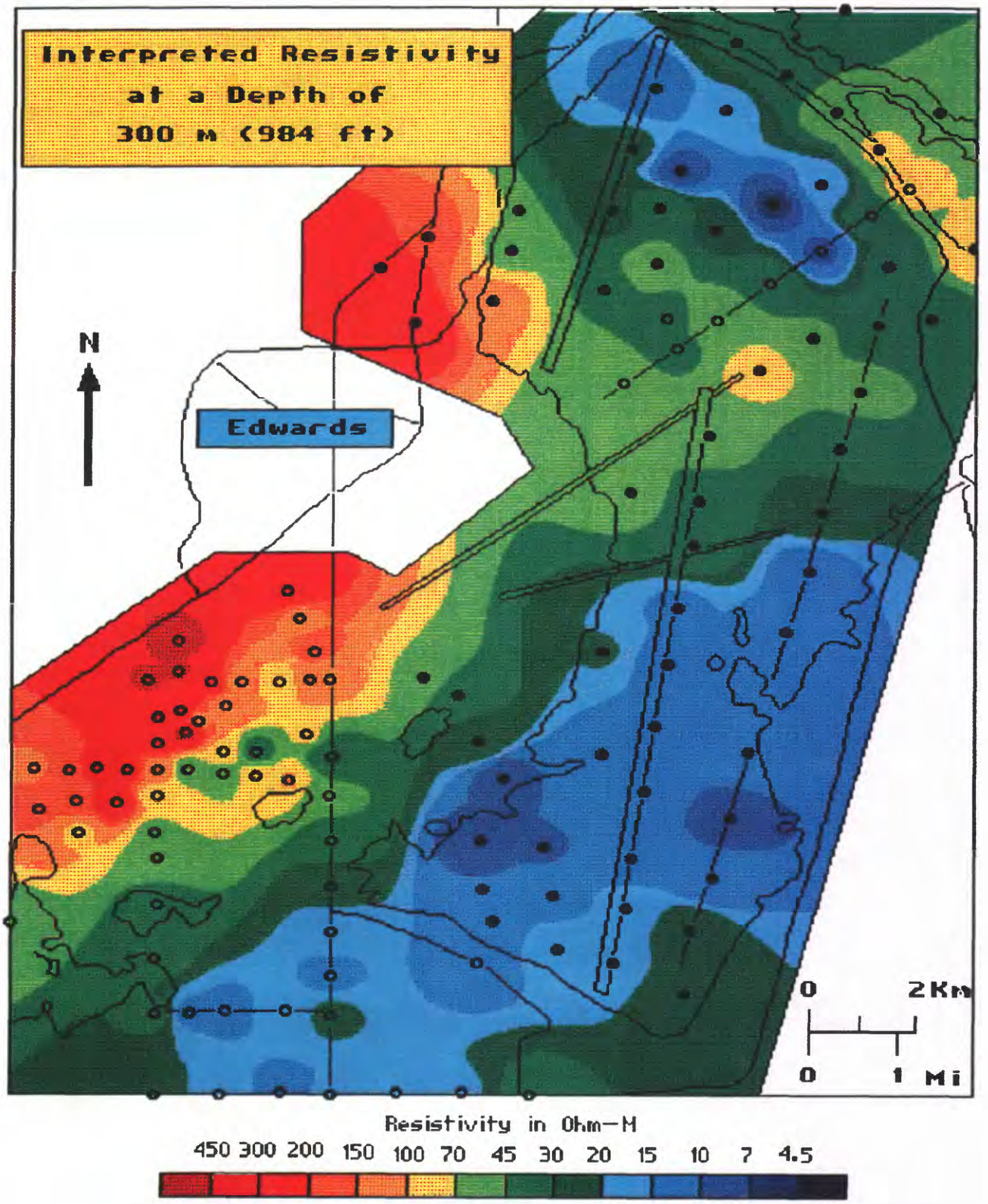


Figure 6. Map showing interpreted resistivity distribution at a depth of 300 m (about 1000 ft).

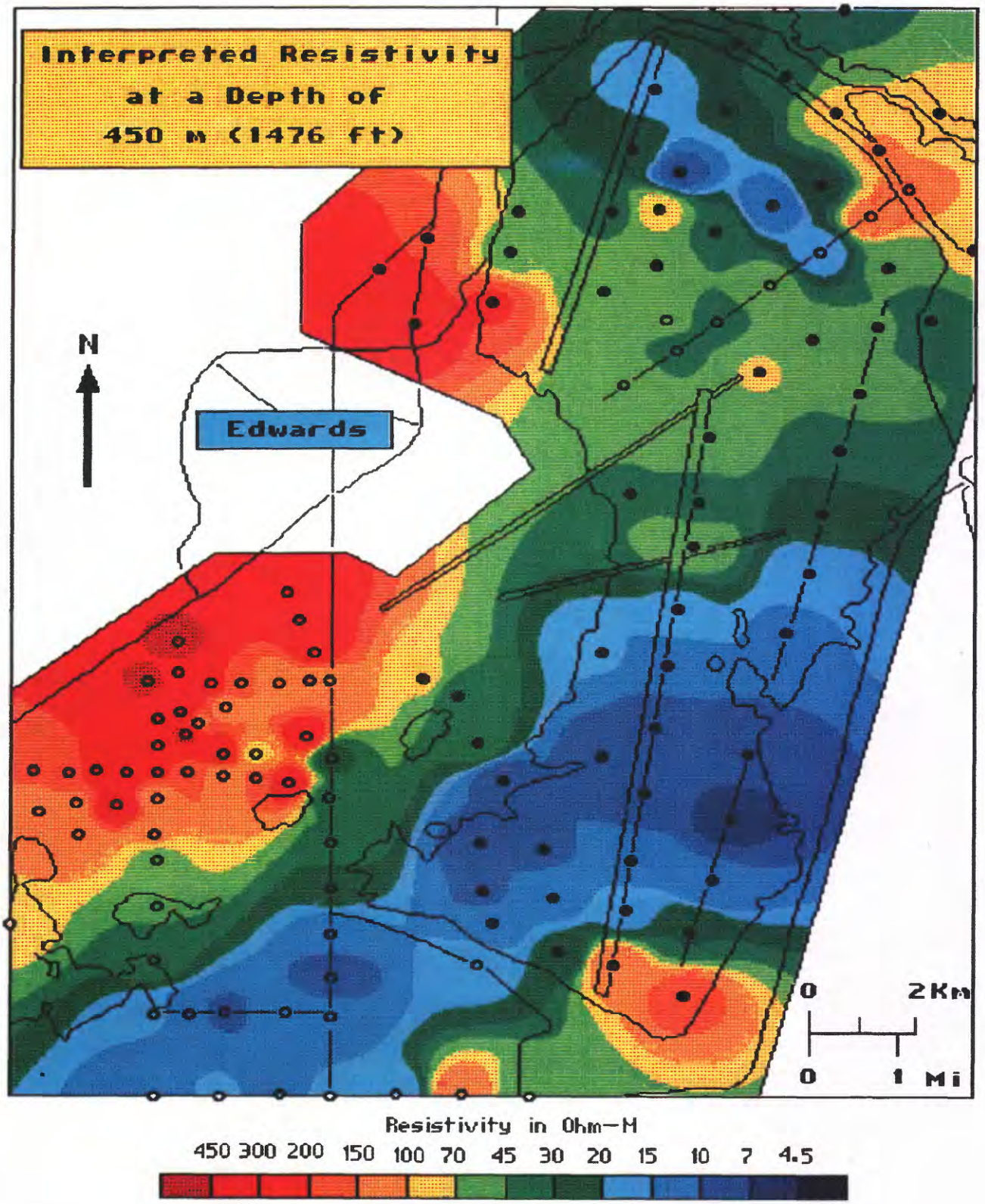


Figure 7. Map showing interpreted resistivity distribution at a depth of 450 m (about 1500 ft).

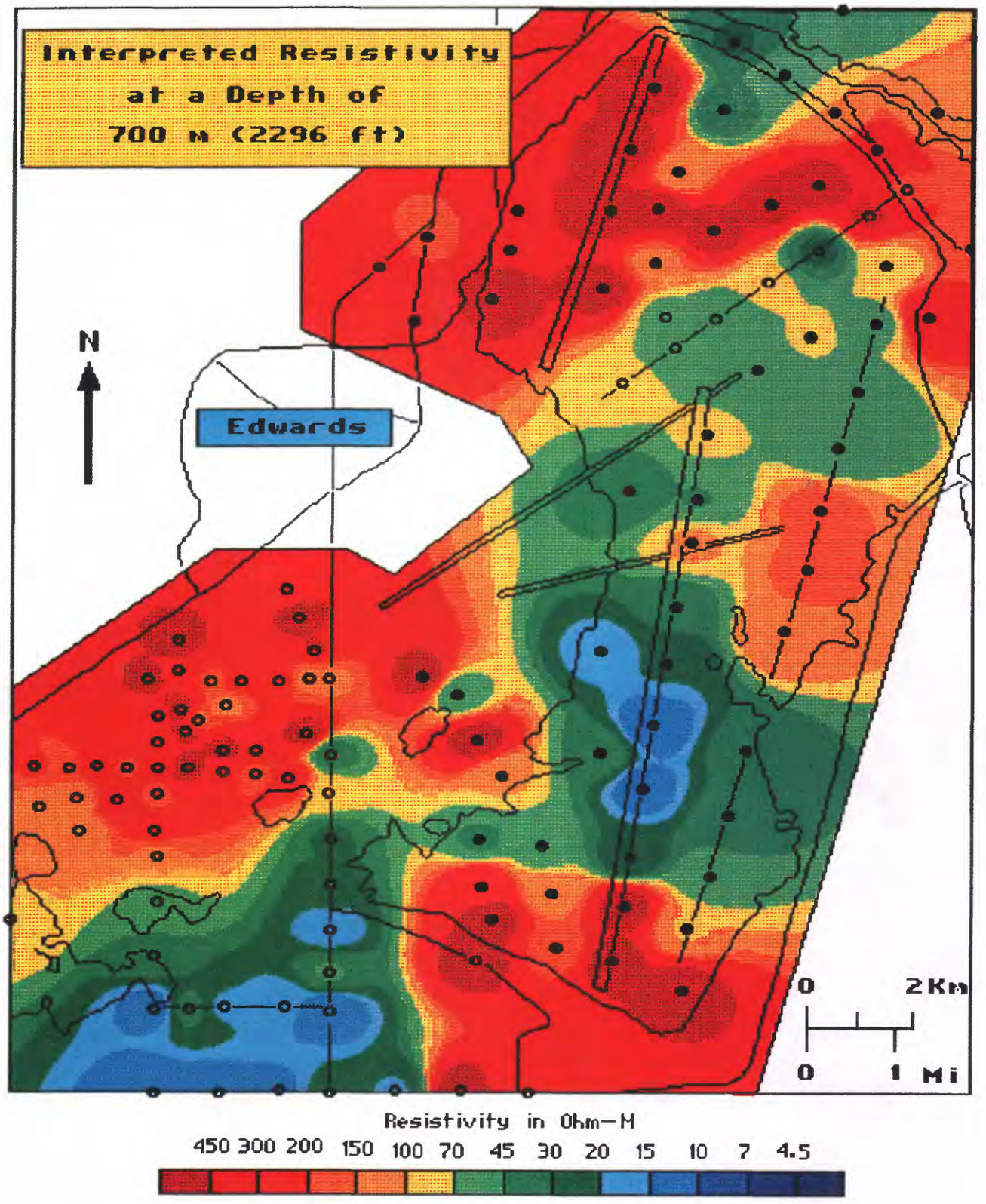


Figure 8. Map showing interpreted resistivity distribution at a depth of 700 m (about 2300 ft).

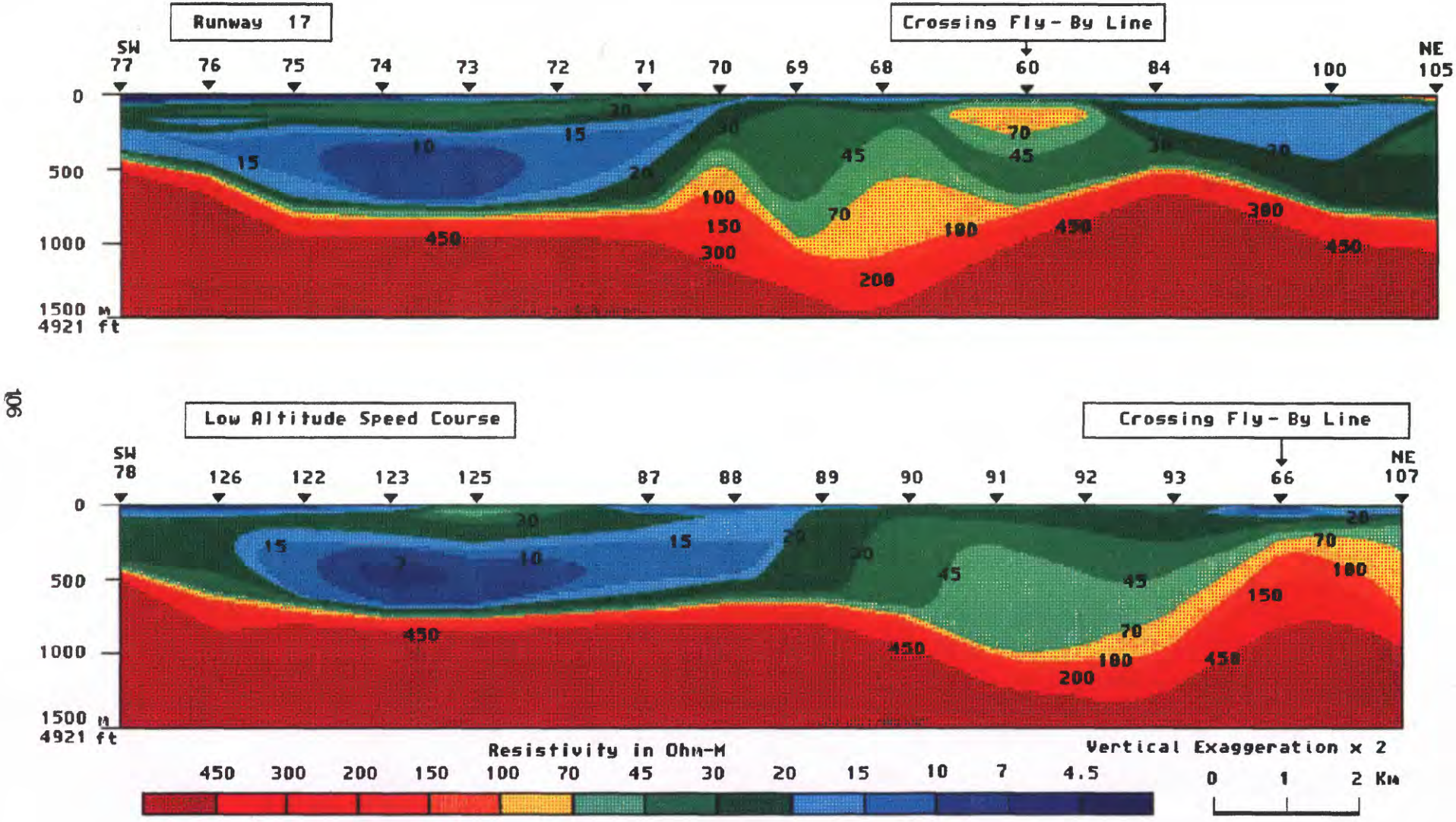


Figure 9. Runway 17 and Low-Altitude-Speed-Course geoelectric cross sections. Vertical exaggeration x 2.

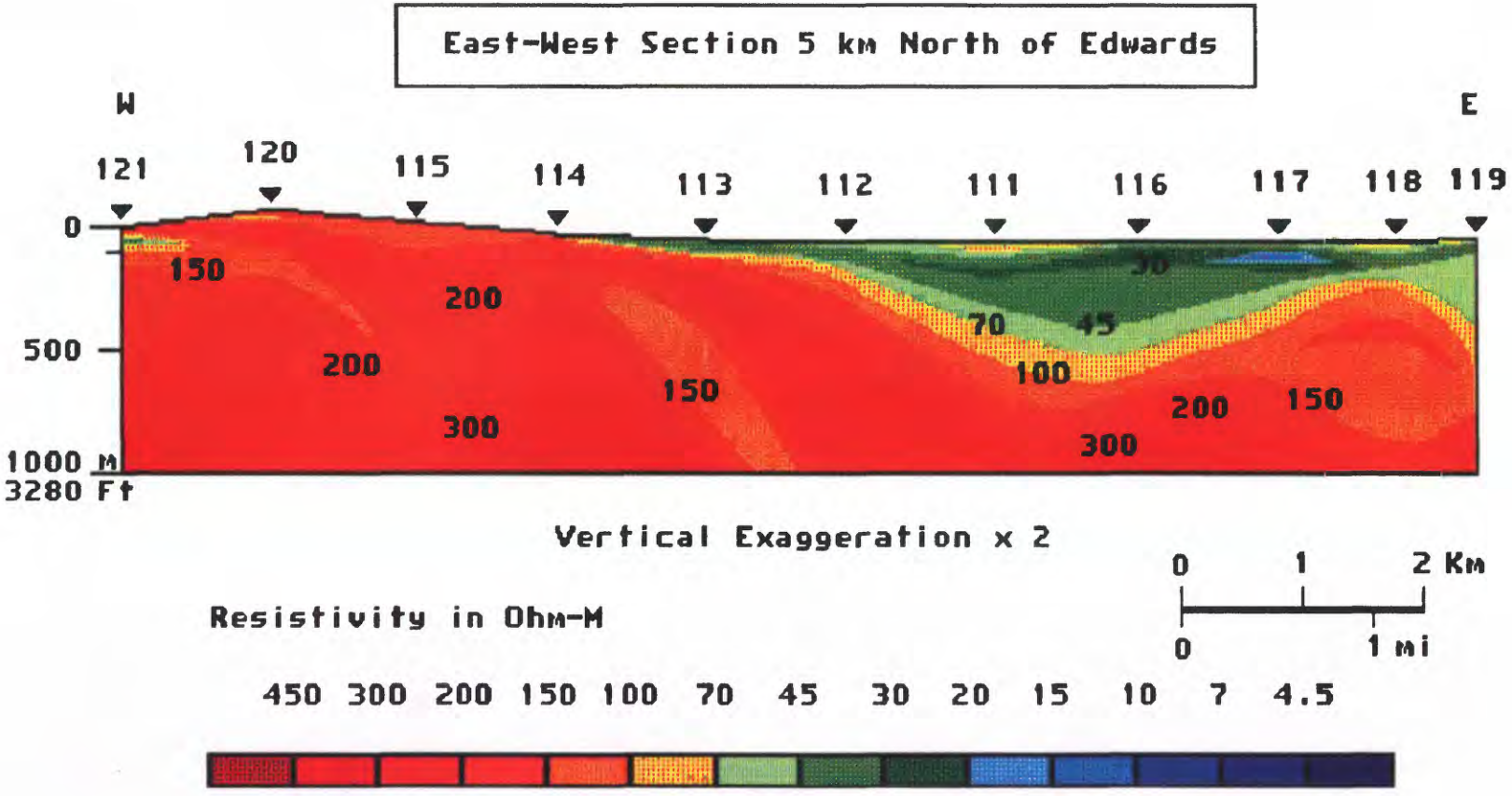


Figure 10. East–west geoelectric cross section approximately 5 km north of Edwards AFB. Vertical exaggeration x 2.

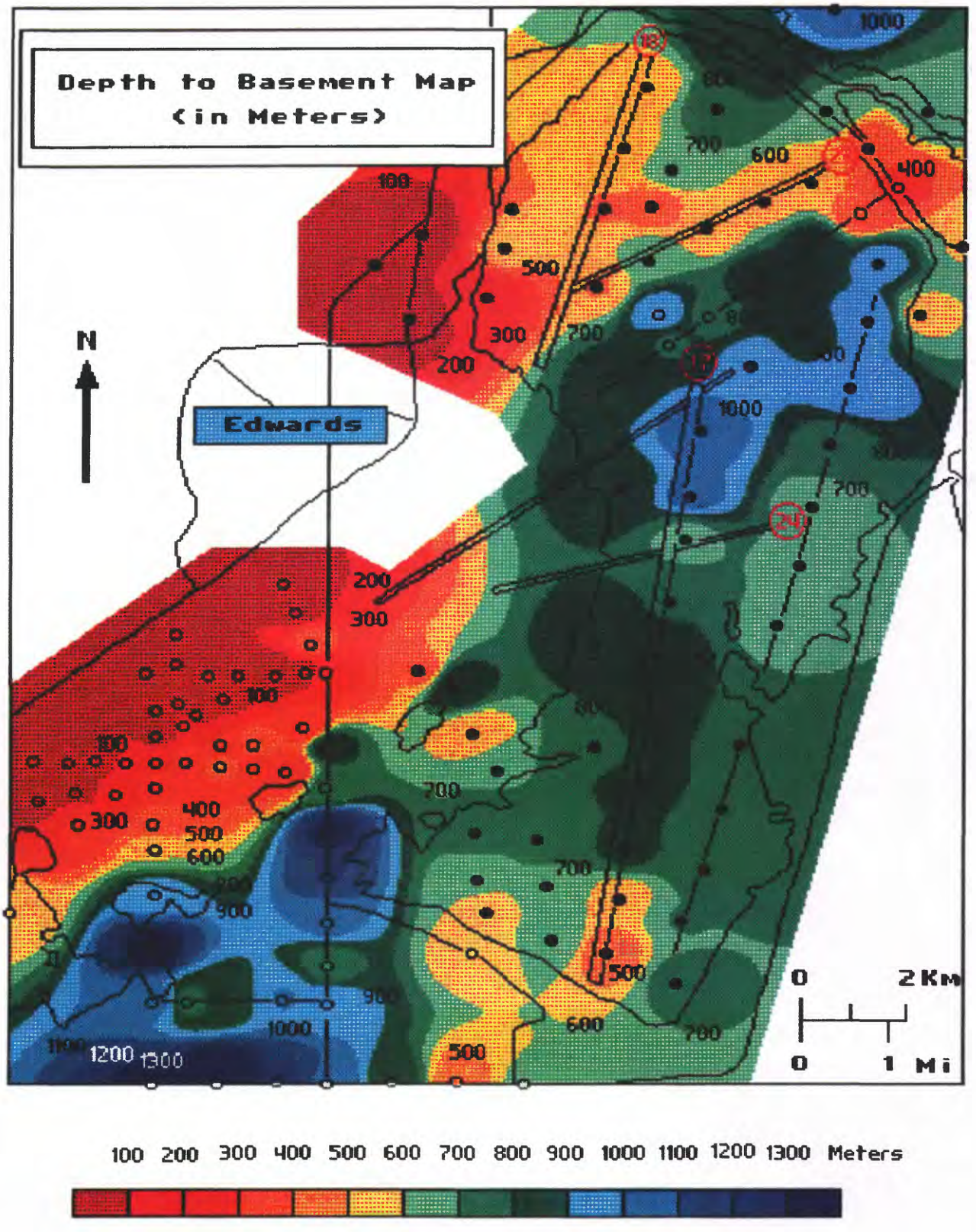
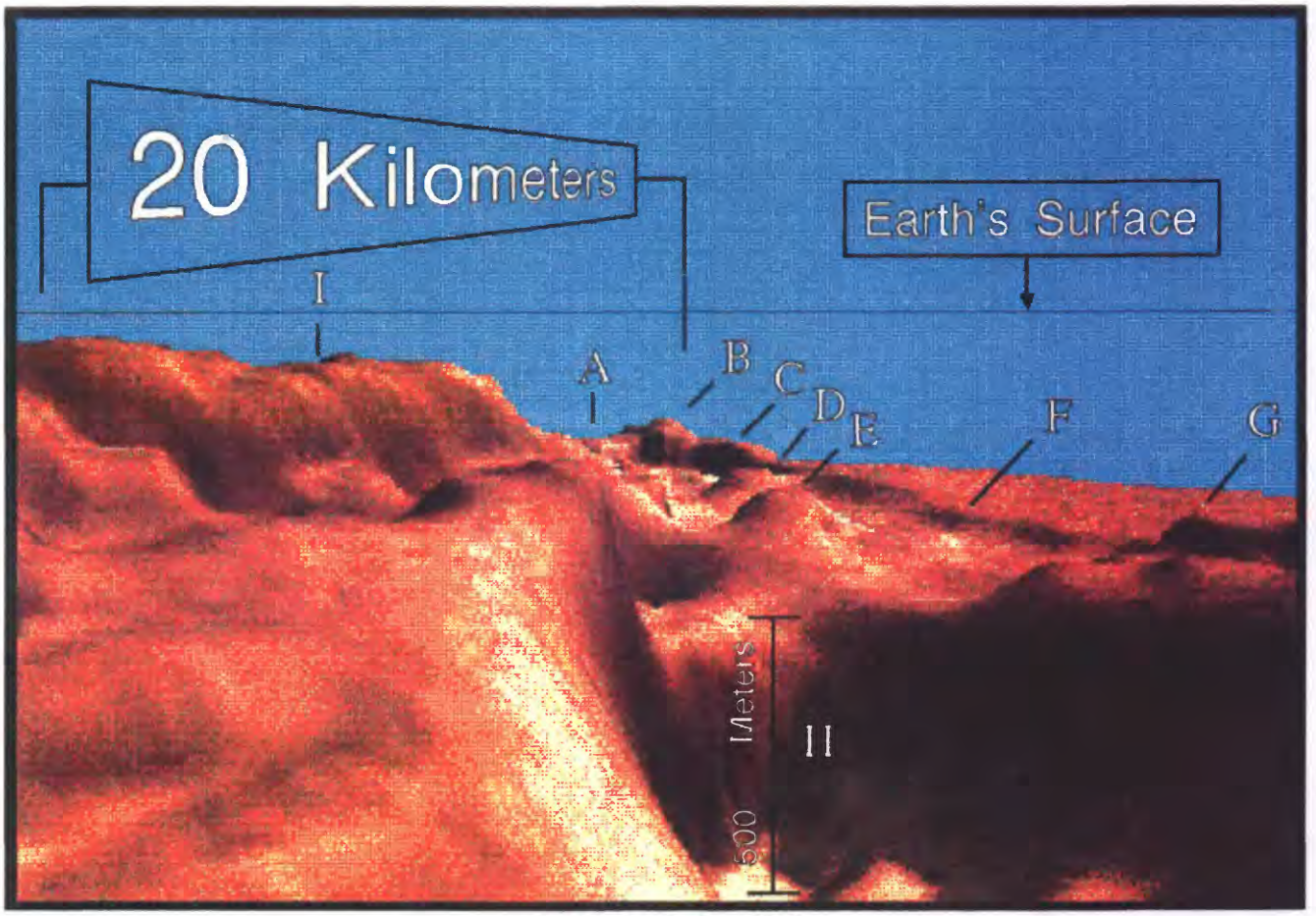
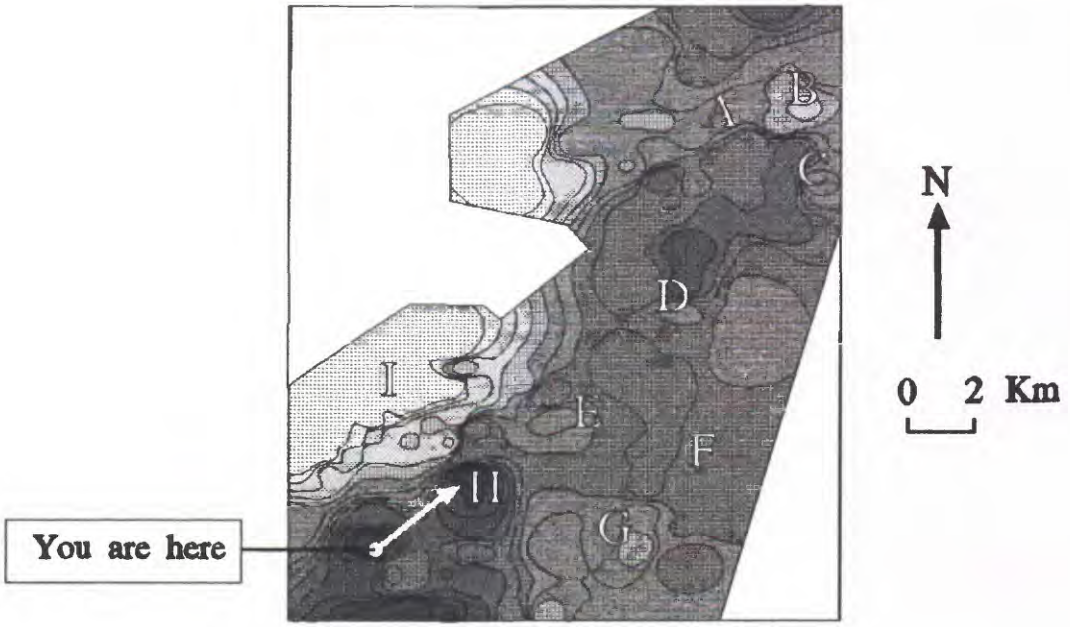


Figure 11. Map showing interpreted depth to high-resistivity geoelectric basement.



3-D shaded relief



Map

Figure 12. Basement topography at Edwards AFB