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A Report on the 1983 Geophysical Surveys
over Area 1, Agnew grid, E.L. 11/76.

for

Gold Fields Exploration Pty Ltd

by

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SUMMARY

Area 1 of the Agnew grid is an area of anomalous IP and geochemistry in the southeastern corner of the Heemskirk Granite where the target is for tin in association with poly-metallic sulphides. It was first defined by a gradient array IP survey in 1981.

Following more detailed IP surveys, the area was drilled: of the 6 holes drilled to date, 3 have intersected mineralisation. Applied potential surveys have been carried out, both on the surface and down-hole, using a down-hole electrode in two of the holes. The results of the first survey, which used the mineralisation intersected in Fed 20, were reported by Howland-Rose (1982). A second survey, which used a more resistive intersection in Fed 21, was carried out in early 1983 and the results are given in this report. All holes have also been surveyed by down-hole IP.

The aim of the follow up surveys has been to define the three dimensional shape of the deposit: and in particular, to locate the source or 'feeder' for the deposit. The effectiveness of these surveys in helping to achieve this goal is commented on and many results have been re-presented. This has been done since, previously the grid had not been properly located (and as the interpretation of applied potential surveys is essentially concerned with shape, positioning is of paramount importance).

The detailed gradient array IP survey largely confirmed the findings of the 1981 reconnaissance survey. Three lines of dipole-dipole IR were part of the follow up and this data, integrated with the drilling results, has been the most helpful in the planning of further drill holes.

The applied potential surveys produced a vast amount of data (most of which has been included in this report), but the results have not been very useful. It is likely that the mineralisation in Fed 21 was too resistive for the method to work. The small offset (between the highest value and the surface projection of the electrode) and the near-circular concentric rings from the Fed 20 survey, suggest that there is only a small quantity of Fed 20 type sulphides. The down-hole IP surveys mostly 'worked' but were of little assistance in locating the feeder.

Broadly, there are four areas where the feeder is likely to occur (these are best seen on the project geologist's (A. Cartwright) model, but are also evident on contour plans such as Figure 1). These are: (1) The southeastern corner, between Fed 25 and 22 (ie, under Fed 21, as is shown in the model). (2) A southern exit, between Fed 22 and 20. (3) The northwestern corner, either side of (or below) Fed 24. (4) The northeastern corner outside of Fed 21 and 25. Five drill holes have been proposed to test these possibilities. Apart from the constraints imposed by the existing holes, these recommendations were largely designed from the dipole-dipole IP information. There are however two possible

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shortcomings of the IP method. Firstly, rock chip geochemistry has defined an anomalous area to the north (and up-slope) of the IP anomaly; and secondly, the IP may only (or largely) respond to a halo of sulphide around the source of the tin.

I suggest that the lack of IP response over the geochemically anomalous area (where sulphides have been observed from the near-surface) is due to a resistive weathering around the sulphides, or alternatively, to a coating of the grains by sphalerite (which does not give an IP effect). The first suggestion implies only a thin veneer of surface mineralisation, but even if the second (or any other) suggestion is correct, I believe it is unlikely that the bulk of the sulphides lie outside of the main IP anomaly.

The second possible limitation arises from the genetic model for the deposit. Cartwright has indicated (on his model) a tin-rich core which has a halo with a higher percentage of sulphides and if this is correct, then the IP will probably not (directly) locate the feeder.

With these provisos, the following drill holes are proposed. They have been designed to locate the feeder and are in order of priority. Thus an intersection would invalidate any of the subsequent proposals. The recommended holes do not cover all of the possibilities, but any further holes would depend upon the results from these proposals. The proposed holes are:

	collar position	bearing (deg. AMG)	dip (deg.)	length (m)
A.	Fed 21	300	80	140
B.	Fed 21	272	45	130
C.	Fed 20	346	57	125
D.	351797mE/5358750mN	276	51	150
E.	351797mE/5358750mN	297	80	110

Despite the lack of success of the applied potential surveys at Area 1, it is recommended that the method be used again, in similar environments, where down hole IP has indicated a sufficient resistivity contrast. It is also recommended that, in future, a series of orthogonal dipole-dipole surveys be undertaken. Such surveys would remove the possible problem of responses from off-line sources and, using a number of dipole spacings, should help to better define the deposit.

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INTRODUCTION

Area 1, Agnew grid (also called anomaly 1 of the Agnew grid or just Agnew 1) was the most prospective of 12 anomalies defined by an IP survey of the Agnew grid in Jan. 1981. It is located in the southeast corner of the Heemskirk Granite where the expected target is for tin (cassiterite with some stannite) in association with poly-metallic sulphides: silver may be a significant accessory.

Four holes (Fed 20 to 23) were drilled in early 1982 following some detailed IP surveys in Nov. 1981. Mineralisation was intersected in two of the four holes and from one of these (Fed 20), an applied potential survey was initiated. A second applied potential survey was carried out in the following (1983) field season using the other mineralised intersection (in Fed 21). And following this survey, two more holes (Fed 24 and 25) were targeted into Agnew 1: mineralisation was intersected only in Fed 24. The earlier surveys had included down hole IP and applied potential surveys; these were completed by surveys down the last two holes in March 1983.

Whilst the original geophysical survey was successful in defining the anomalous area, Agnew 1; the subsequent surveys have been less successful in determining the (three dimensional) shape of the deposit. From the drilling record, it may be inferred that this is not an easy task (drilling at the adjacent and similar Sweeney's deposit, has recorded mineralisation in only 6 of the 18 holes).

The mineralisation is presumed to have a source at depth; thus a mineralised fracture zone or pipe-like structure is sought beneath the near surface expression of the body. This report integrates the various geophysical surveys and suggests further drill targets to locate the 'feeder'.

The details of the 1983 surveys are given in Appendix 1.

PREVIOUS GEOPHYSICAL SURVEYS

A gradient array IP survey was carried out over the Agnew grid in Jan., 1981. This survey recorded a 50+ mV/V anomaly at Agnew 1 (Howland-Rose, 1981a). The follow up gradient array and dipole-dipole IP surveys have been reported by Bishop (1982) and Howland-Rose (1981b), however the grid was not surveyed until February, 1983 and the correctly located, detailed gradient array IP results are presented in this report (Figures 1 & 2). The averaged chargeability and resistivity values from the dipole-dipole IP surveys are also presented (Figures 3 & 4). The results from both sets of surveys are briefly described here since the surveying of the grid has produced significantly different plans to those originally presented.

The gradient array chargeability plan (Figure 1) suggests two

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areas of near-surface or more concentrated sulphides: one almost directly above, and sub-parallel to, the mineralisation in Fed 20 and the second, above the unmineralised Fed 22. The resistivity plan (Figure 2) does not resolve these two 'pods' and shows a single, central low (<500 ohm-m) in a background of 1000 to 2000 ohm-m. The survey did not extend sufficiently far to assist the mapping of the alteration halo around the deposit.

The rather limited amount of contoured dipole-dipole IP (produced using Fraser's (1981) algorithm, which was designed for steeply dipping tabular bodies), is similar to the gradient array data in extent and magnitude but suggests a sharper cutoff to the west.

The surface and down hole applied potential surveys using an electrode down Fed 20, and the down hole IP surveys of the four holes were reported by Howland-Rose (1982). Again the (surface) applied potential results have been shown on an incorrect grid and, since the interpretation of such data is mostly concerned with shape, it has been represented here on the corrected grid (Figures 5, 6 & 7). It is also pointed out that the V_s parameter (secondary potential) shown in Howland-Rose (1982) was incorrectly contoured, and the two separate closures (which were given some weight when deciding the siting of the last two drill holes) do not exist. (It is appropriate to note here that it is desirable for such maps to at least show data points if not data values; such a step would have highlighted the error in the V_s map, since there are no data points between the two closures.)

The corrected V_p map (Figure 5) shows a near-perfect concentric ring pattern with the maximum value to the south of the drill hole and offset some 15m to the east of the surface projection of the electrode. The chargeability contour plan (Figure 6) gives a minor high (>30mv/v) in a localised area between the two intersections of mineralisation and apart from some 'odd' readings in the northeast corner of the grid, the chargeabilities show little significant variation across the grid. The V_s pattern (Figure 7) is similar to the concentric circles of the V_p plan.

SP readings were made concurrently with the applied potential measurements on three of the lines and a well defined, apparently consistent anomaly was defined (Figure 8). An attempt to extend these results during the second applied potential survey (described below) failed to reproduce the original data and no anomaly was recorded (data given in brackets in Figure 8). This may be due to the much wetter conditions of the second survey.

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Daly (1962) gives some examples of SP surveys in the Northern Territory where well defined SP anomalies (of up to 200mV) recorded in the dry season, disappeared during the wet season.

SP anomalies are usually negative but the recorded values for this survey were positive. It is possible that the input wires were crossed, although the contractor's habit of placing the stationary potential electrode within the grid (at 600E/720N) requires great care with the polarity. In Figure 8, the anomaly is shown as negative.



Down hole IP surveys were carried out down Fed 20 to 23 in 1982 and the results have been presented by Howland-Rose (1982): Fed 20 was surveyed by a 1.5m 3-array only, as was Fed 21. 1.5m and 20m 3-array surveys were conducted down Fed 22. Fed 23 was surveyed by 2m, 25m and 50m 3-array surveys and two 50m 2-array surveys.

The Fed 20 survey started in mineralisation and showed high chargeability (50-100mv/v) and low resistivities (10-100 ohm-m) to 63m, although 'mineralisation' was noted in the core to nearly 100m. The log of Fed 21 also started in mineralisation (at 45m) and it shows high, but spikey, chargeabilities to 68m (a maximum of 90mv/v) with corresponding slightly lower resistivities around 250 ohm-m, ie the mineralisation intersected by Fed 21 is more resistive than that in Fed 20.

The 1.5m survey of Fed 22 showed moderate chargeabilities between 140 and 170m (>50mv/v): no corresponding response was recorded by the 20m survey, however this survey is suspect, with chargeabilities of 85mv/v at 75m and -40mv/v at 100m. A similarly doubtful survey was carried out in Fed 23 where the 50m 3-array survey recorded a single chargeability high (of 35mv/v in a background of <10mv/v) at 165m. This was associated with a coincident resistivity rise, however these features were not recorded by a repeat survey using a 2-array (pole-pole configuration) with a 50m spacing; ie, no response was detected down Fed 23.

A magnetic survey was carried out over the northern part of the Agnew grid (in 1981). Deposits such as Agnew 1 are often magnetically 'quiet' areas (Bishop, 1982), however the technique is not likely to be of assistance for detailing and no magnetic measurements have been made over the Agnew 1 infill lines.

1983 GEOPHYSICAL SURVEYS

In January and February, 1983, an applied potential survey was carried out with two electrodes down Fed 21: the upper electrode, at 45.5m, was in a mineralised section of the hole, while the lower electrode, at 100m, was in unaltered granite. Two sets of measurements were made at each location: one for each energised electrode. This procedure was adopted for the following reason: the response pattern from the lower electrode should very largely reflect the structure of the granite. Thus the 'true' effect from the mineralisation should be better understood by a comparison with the pattern of the country rock.

The Up results from the deeper electrode (Figure 9) gave a rather 'blocky' outline, certainly less circular than the 'Fed 20' survey. This pattern was also evident in the Up contours from the electrode in the mineralisation (Figure 10), where the maximum value was up-hole: about 20m (grid) south of the surface projection of the electrode. This discrepancy is due to the steep rise in topography to the (grid) north of Fed 21; that is, the maximum recorded value is at the shortest distance to the electrode and

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there is no 'offset'. (A true offset between the surface projection of the electrode and the highest values shows that the method has worked and is (usually) indicating the location of the bulk of the mineralisation.) The distortion in the 800mV contour is not considered to reflect mineralisation; nor is the extension to the west. These effects may be due to the station locations (as can be seen from the figures, the infill lines were badly cut and are poorly spaced for an applied potential survey). The distortions may also have been caused by shifts in potential between lines; there were some changes in the current when the upper electrode was energised (this problem was tackled by taking several repeated readings and calculating proportionality factors. See also comments in Appendix 1).

The chargeability parameter appears to be of little (direct) use in an applied potential survey; the chargeabilities from both electrode positions show a gradual increase to the east; there are no anomalies over the deposit (Figures 11 and 12). However the secondary potentials are calculated from the chargeability ($V_s = M \times V_p / 1000$) and this parameter may be a better indication of polarisation. (But Sumner, the author of the only (western) textbook on IP, writes; applied potential "polarisation effects can be quite peculiar...interpretation (of the M and V_s parameters) must be approached with caution".) The V_s values of the lower electrode have been over-contoured (at a 0.5mv interval) and the resulting shape reflects this; however the shift of the 'high' to the (grid) northeast of the drill hole is real and not a result of the contouring or topography (Figure 13). The V_s results from the electrode in mineralisation (Figure 14) show a similar pattern to the V_p contours, but an extension of the mineralisation to the east (to 725E) is indicated.

Some of the down hole applied potential sections (from Howland-Rose, 1982) have been altered (by the addition of other drill holes which pass through the section) and all are presented in this report; these are V_p and V_s only. A brief description of the results (with Fed 20 energised) is given below.

The Fed 20 sections (for V_p and V_s) have had the intersection of Fed 24 added (Figures 15a & 15b); the Fed 24 parameters require only minor adjustments to Howland-Rose's (1982) figures and thus they tend to confirm the original contouring, which shows them closed off at depth. However the alternative interpretation of a conductor extending to depth beneath Fed 20 (referred to by Howland-Rose, 1982 and sketched by Roberts (unpublished)) may still occur.

The Fed 21 sections have been unaltered (Figures 16a & 16b); Fed 22 does intersect the plane, but at too deep a distance to be of influence. Fed 25 also intersects, but this hole was not surveyed with Fed 20 energised. The intersection of Fed 21 has been added to the Fed 22 plans (this should have been on the original drawings); this confirms the closure of the contours at depth, ie Fed 22 passed beneath mineralisation (Figures 17a & 17b). The addition of Fed 21 has altered the pattern of the secondary



potential contours (V_s), so that the evidence for the westerly dip invoked by Howland-Rose (1982) has largely disappeared.

The results from Fed 24 complete the suite of holes surveyed with Fed 20 energised. Although sulphides were intersected in this hole (between 70 and 115m), the V_p contours (Figure 18a) suggest that the hole has passed beneath the bulk of the sulphide mineralisation. A similar pattern is shown in the V_s contours (Figure 18b) and it seems unlikely that Fed 24 has intersected the 'feeder' zone. (Unless the bulk of the sulphides are distributed in a crescent shape around the southern edge of a tin rich core -see Conclusions below.)

The results from the down hole applied potential surveys with Fed 21 energised are briefly described below. The same two electrodes (one at 45.5m and the other at 100m) were used as for the surface survey, however the data from the deeper electrode (in unaltered granite) did not assist the interpretation of the down hole surveys and the results have not been included in this report (the undrafted originals are stored with the data cards). The chargeabilities were also plotted and found to be non-diagnostic (these too, are stored with the data cards).

The Fed 20 results show maximum values at about 80m down the hole (Figures 19a & 19b). The intersection of Fed 25 is too far away to influence the contouring and Fed 24, which also intersects this plane was not surveyed when Fed 21 was energised. Thus there are no constraints on the contour shapes at Fed 20. The Fed 21 values are of course dominated by the electrode at 45.5m: again the intersection of Fed 25 is too far away to influence the contouring and thus the section gives no indication of the extent of the mineralisation (Figures 20a & 20b).

The shape of the Fed 22 contours has been somewhat constrained by Fed 25: the section suggests that Fed 22 passes beneath the mineralisation but it does not reveal any other information about its distribution around Fed 21. It was noted that the down hole 1.5m IP survey of Fed 22 showed some scattered chargeability responses between 140m and 170m. The applied potential results confirm the 20m IP survey in suggesting that the sulphides causing these responses are not connected to the 'main' mineralisation in Fed 21.

The V_p values from Fed 23 give the highest values at 150m down hole (Figure 22a), which is approximately the closest point to the electrode; ie, there has been no distortion of the equipotentials. The V_s contours show little variation (Figure 22b), and the maximum value is also close to the shortest distance from the electrode. Thus the survey has given no indication of Fed 23's proximity to mineralisation.

As was stated above, Fed 24 was not surveyed with Fed 21 energised (but this is recommended for completeness, if further work is carried out over the area, as is the surveying of Fed 25 with Fed 20 energised). The results for Fed 25 are shown in

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Figures 23a and 23b: a value for Fed 24 on the section might have been informative, particularly since that hole intersected mineralisation. However since the applied potential contours down Fed 24 showed little sign of the mineralisation in that hole, it seems unlikely that it would be seen with the less conductive Fed 21 mineralisation energised. The Vs contours have been elongated sub-parallel to Fed 25 because of the little variation in values down the drill hole, however the down hole IP (described below) saw no sign of mineralisation within (about) 20m of the hole.

The down hole IP surveys were completed with the surveying of Feds 24 and 25 in March, 1983. The 2m and 20m surveys of Fed 24 are an excellent example of the use of down hole IP surveys: a small, local disturbance was recorded at 80m on the 2m survey and this was shown to 'bulk out' on the 20m survey, ie, a larger volume of sulphides within about 20m of the hole are inferred between 60 and 110m (Fed 24 intersected 'mineralisation' between 70 and 110m). There were no changes in resistivity associated with the mineralisation (values around 500ohm-m for the 20m survey) but both the 2m and the 20m surveys recorded an increase near 130m, perhaps indicating a change into unaltered granite. A 50m survey of Fed 24 was attempted but only a few points were read at the bottom of the hole.

A similar sequence of surveys was conducted down Fed 25: a noisy chargeability record from the 2m survey was shown to be due to local 'stringers' of mineralisation by the 20m survey (ie, there was no bulk to the sulphides). The resistivities for Fed 25 (>1000ohm-m) were higher than Fed 24, suggesting that the latter intersected more altered rock.

DISCUSSION

The above descriptions of the applied potential surveys assume that the mineralisation is sufficiently conductive to distort the current paths and hence the equipotential lines. However the ratio of the resistivities (country rock to mineralisation) in Fed 24 is 1:1 and probably no more than 4:1 in Fed 21. In the most conductive section of Fed 20, it is at least 10:1. Thus the method is unlikely to map mineralisation of the 'quality' of Fed 24 and possibly not that of Fed 21. However one would expect a ratio of 10:1 to be quite sufficient to permit the extent and geometry of the Fed 20 mineralisation to be determined.

Despite this expectation, the survey results have not been very definitive, suggesting that either the amount of conductive (type Fed 20) mineralisation is very limited or it is not sufficiently conductive to use the method. I would tend to the first alternative.

Despite the limitations of the applied potential survey, one would expect the IP method to provide a considerable amount of information about this disseminated sulphide body. However no IP responses were recorded over the northern ends of lines 600E,

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650E and 700E where a rock chip sampling program revealed high base metal values; sulphides were visible in some of the samples. I suggest that this lack of response is because the mineralisation occurs as a shallow sheet in which the sulphides have weathered sufficiently to insulate the grains; or alternatively, the sphalerite occurs as a coating over the other sulphides. The second suggestion seems less likely (and may be easily checked), but the first implies that the sheet is thin (ie, there are no sulphides below the depth of weathering).

Nevertheless the area was located by IP, and drilling has shown this to reflect (I believe) the outline of the bulk of the deposit. Since an aim of future drilling is to locate the source of the mineralisation; a re-examination of the dipole-dipole results (which give better depth resolution than those of the gradient array), and integration of the drilling results so far, should suggest likely targets. Figures 26, 27 & 28 show the results of the IP surveys together with sections showing interpretations and alternatives. The drill hole intersections on the pseudosections were positioned by overlaying the topographic profiles on the IP results; it can be seen that the steep topography introduces considerable distortion to the results.

CONCLUSIONS AND RECOMMENDATIONS

This report is concerned primarily with determining the extent and shape of the Agnew 1 deposit: this has been attempted by evaluation of the recently acquired applied potential data and by re-evaluation of the older data in the light of the drilling results.

The applied potential surveys have not been very useful, and while the down hole IP surveys have confirmed the drill holes' hits, near hits and misses; they too, have not located a source for the deposit. While possible source locations are suggested below from the dipole-dipole IP surveys, the best insight into the likely shape of the body is provided by a scale model (at 1:500 scale) made by the project geologist (A. Cartwright); this was largely constructed from the drill logs. The model shows a central core of tin-rich mineralisation with an outer halo of base metal sulphides. If this is correct, then the best geophysical responses will be obtained from the halo and not from the feeder. Cartwright's preferred interpretation is for the feeder to pass beneath Fed 21 and this produces a steeply dipping 'carrot' shaped body.

The various alternative positions for the source are again best seen in the model, but may also be envisaged from any of the 1:1000 contour plans (eg, Figure 1). These show that there are four broad possibilities: (1). A south-eastern exit between Fed 22 and Fed 25 (eg, beneath Fed 21, as in the scale model). (2). A southern exit between Fed 22 and Fed 20. (3). A north-western exit, either side of Fed 24; and (4). A north-eastern exit outside of Fed 21 and Fed 25.

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The dipole-dipole results were originally interpreted as showing a block shaped body beneath 600E (ie, of limited depth extent) and steeply dipping tabular bodies beneath 650E and 700E. Combining the three lines, the source was likened to an inverted gum boot with the toe facing west. The negative results from Fed 22 showed that this was not so and that the size of the 'leg' must be much more limited. Thus, if the interpretations are still substantially correct and the results from 650E and 700E do indicate bodies of significant depth extent, then one or both are showing lateral effects with the source displaced to one side of the section(s). Therefore, some of the drilling recommendations made below, intersect the lines at a high angle (instead of the more usual practice of drilling along the line).

The most anomalous dipole-dipole results are from 650E; however, as was suggested above, the best geophysical targets may only define the poly-metallic zone of the deposit rather than the tin-rich feeder (eg note the down hole 2m IP results from Fed 24 (Figure 24) which has given the best tin results so far; and note the intersection of Fed 20, which has given the highest base metal results, on 650E (Figure 27)). Therefore recommendations for drilling targets on purely geophysical grounds may be misleading. With this proviso, the following holes are suggested to locate the feeder (see Figure 29). They are in order of priority; that is, the drilling of each hole is dependent upon the failure of the preceding hole to intersect mineralisation. The lack of precise topographic data means that these holes may be at least 10 to 20m away from their intended target. Detailed and accurate surveying is essential for exploration of the (relatively) small and 'difficult' shaped targets such as occur here and (e.g.) at Sweeneys.

Proposed holes:

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| <p>A.
collar position: Fed 21.
bearing: 300 deg. (AMG).
dip: 80 deg.
length: 140m.</p> | <p>comment: to test the area below Fed 21.</p> |
| <p>B.
collar position: Fed 21.
bearing: 272 deg. (AMG).
dip: 45 deg.
length: 130m.</p> | <p>comment: to test the 'southern exit'. See Figs 26, 27 for proposed intersections across 600E & 650E.</p> |
| <p>C.
collar position: Fed 20.
bearing: 346 deg. (AMG).
dip: 57 deg.
length: 125m.</p> | <p>comment: to test the western half of the 'north-western exit' See Fig. 26 for proposed intersection.</p> |



REFERENCES

- Bishop, J.R., 1981. An evaluation of geophysical surveys over the Federation grid, Heemskirk Granite, E.L. 11/76. Mitre Geophysics report MG81/10 for Renison Ltd.
- Bishop, J.R., 1982. An evaluation of geophysical surveys over the Agnew grid, Heemskirk Granite, E.L. 11/76. Mitre Geophysics report MG82/03 for Renison Ltd.
- Daly, J., 1962. Some examples of self-potential surveys. BMR record 1962/8.
- Fraser, D.C., 1981. Contour map presentation of dipole-dipole induced polarisation data. Geoph. Prosp. v 29, no 4
- Howland-Rose, A.W., 1981a. A report on reconnaissance gradient array electrical induced polarisation survey, Agnew grid. Scintrex report Tas-081B for Renison Ltd.
- Howland-Rose, A.W., 1981b. A report on detailed gradient and dipole-dipole electrical induced polarisation surveys, Agnew grid. Scintrex report Tas-093A for Renison Ltd.
- Howland-Rose, A.W., 1982. Report on down-hole three-array and applied potential surveys Mt. Agnew, near Zeehan, Tasmania. Scintrex report Tas-097A for Renison Ltd.
- Sumner, J.S., 1979. The induced polarisation exploration method. In: Geophysics and geochemistry in the search for metallic ores; ed: P.J. Hood. Geol. Surv. Can. econ geol rpt no 31.

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APPENDIX 1

Survey Details

Reconnaissance gradient array IP survey; Jan., 1981. See Howland-Rose, 1981a (report no. Tas-081B).

Detailed gradient array IP survey; Dec., 1981. See Bishop, 1982 (report no. MG82/03) or Howland-Rose, 1981b (report no. Tas-093A).

Dipole-dipole IP surveys; Dec., 1981. See Bishop, 1982 (report no. MG82/03) or Howland-Rose, 1981b (report no. Tas-093A).

Applied potential surveys; Feb., 1982. Fed 20 energised; lines 500E to 800E, holes Fed 20 to 22. See Howland-Rose, 1982 (report no. Tas-097A).

Down hole IP surveys; Feb., 1982. Fed 20 to 23. See Howland-Rose, 1982 (report no. Tas-097A).

Applied potential surveys; Jan.-Feb., 1983. Fed 21 energised (at 45.5m & 100m); lines 500E to 800E, holes Fed 20 to 23. This report (MG83/03).

Applied potential surveys; March, 1983. Fed 20 energised (at 51.8m); Fed 24. Fed 21 energised (at 45.5m & 100m); Fed 25. This report (MG83/03).

Down hole IP surveys; March, 1983. Fed 24 & 25; 2m, 20m & 50m spacings. This report (MG83/03).

For the 1983 applied potential surveys, two remote current, and two remote potential electrodes were used. The current electrodes were on 700E at 1610N and 10N; the potential electrodes were at 750E/870N and 600E/570N. The lines, pegged at 30m intervals, were read every 15m. The same remote current electrodes were used for the down hole IP surveys. The surveys were conducted by J. Bishop and Gold Fields personnel A. Blanks, W. Hudson and R. Whitehouse.

For any future applied potential surveys on the Heemskirk granite, it is suggested that only the V_p parameter be recorded; this would significantly increase production, and chargeability and secondary potential have not been useful at Agnew 1 which, as a chargeable rather than conductive deposit, might have been expected to best show the application of the M and V_s parameters. The Agnew 1 survey has also shown that the 'background effect' from an electrode in unaltered rock indicates a fairly homogeneous granite, and it is therefore also suggested that only one electrode, in the most conductive mineralisation, be used for future surveys. Finally, it is recommended that the measured parameter, V_p , be normalised by the energising current (ie, the plotted parameter should be mV/A); this would allow any further surveying to be readily integrated with the original results.

017



503018

APPENDIX 2

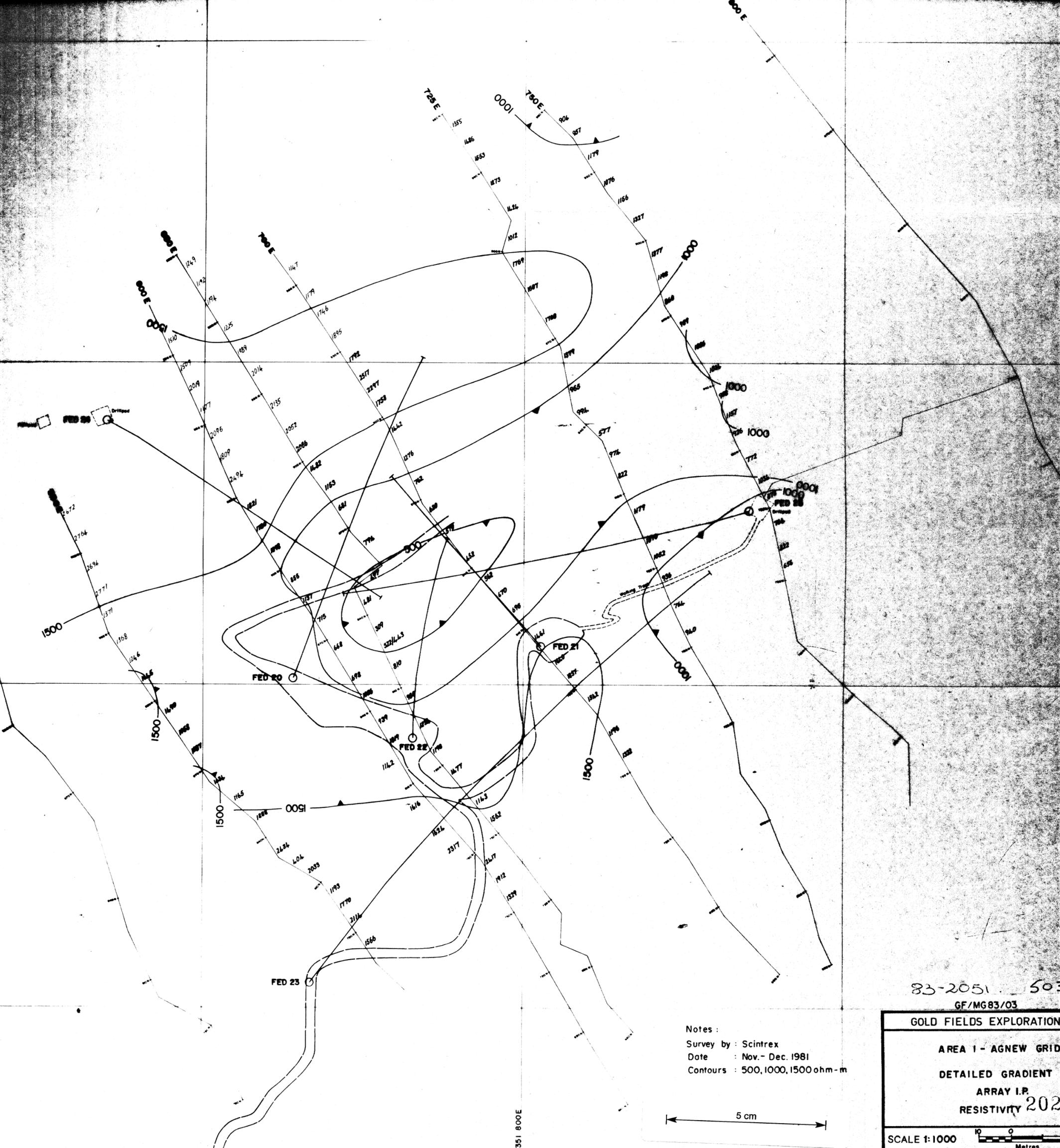
Petrophysical Measurements

SAMPLE No.	LOCATION	DESCRIPTION	PERCENT FREQUENCY EFFECT (30 - 300Hz)	RESISTIVITY (Ω -m)	MAGNETIC SUSCEPTIBILITY ($\times 10^{-5}$ cgs units)	DENSITY (gm/c.c.)
12/1	Fed 24 collar	altered granite, visible sulphides.	3%	338.	0.08	2.72
12/2	"	"	2%	322.	0.10	2.71
12/3	"	"	3%	812.	0.13	2.77
12/4	Fed 25 collar	granite	2%	1,744.	0.04	2.60
12/5	"	"	1%	1,889.	0.05	2.61

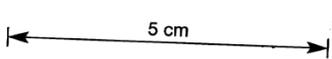
* To convert to the (approximately) equivalent chargeability, multiply by 5.

Note:
 The measured IP effects confirm the field survey: the lack of laboratory response may be due to a weathered layer insulating the sulphide grains. The lack of a response in the field suggests that the subcropping sulphides around Fed 24 are shallow.

S 358 700N

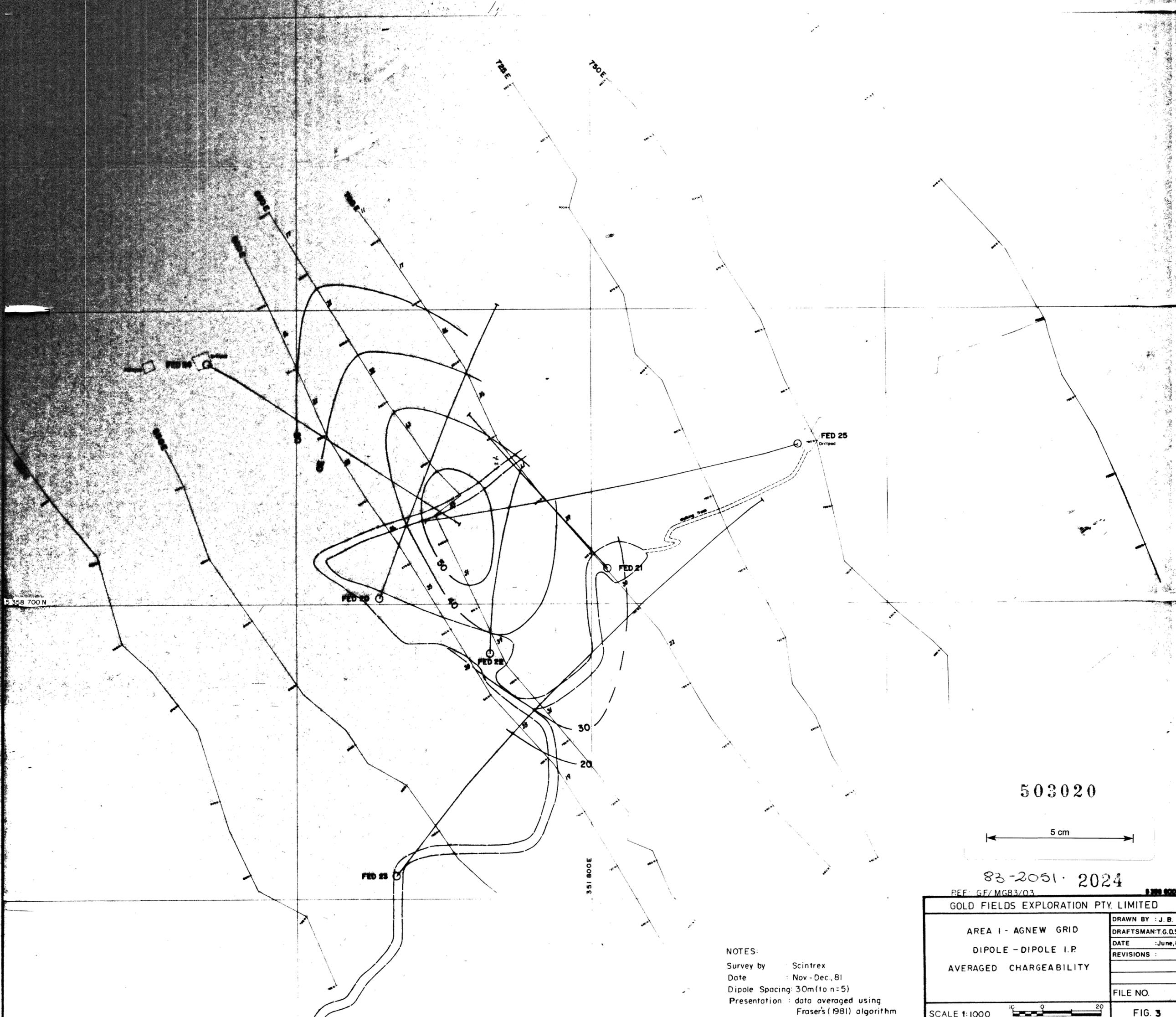


Notes:
 Survey by : Scintrex
 Date : Nov. - Dec. 1981
 Contours : 500, 1000, 1500 ohm-m



83-2051 503019A
 GF/MG83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA 1 - AGNEW GRID	DRAWN BY: J. B.
DETAILED GRADIENT	DRAFTSMAN: T. G. S.
ARRAY I.P.	DATE: June 1982
RESISTIVITY 2023	REVISIONS:
SCALE 1:1000	FILE NO:
	FIG.:



503020

5 cm

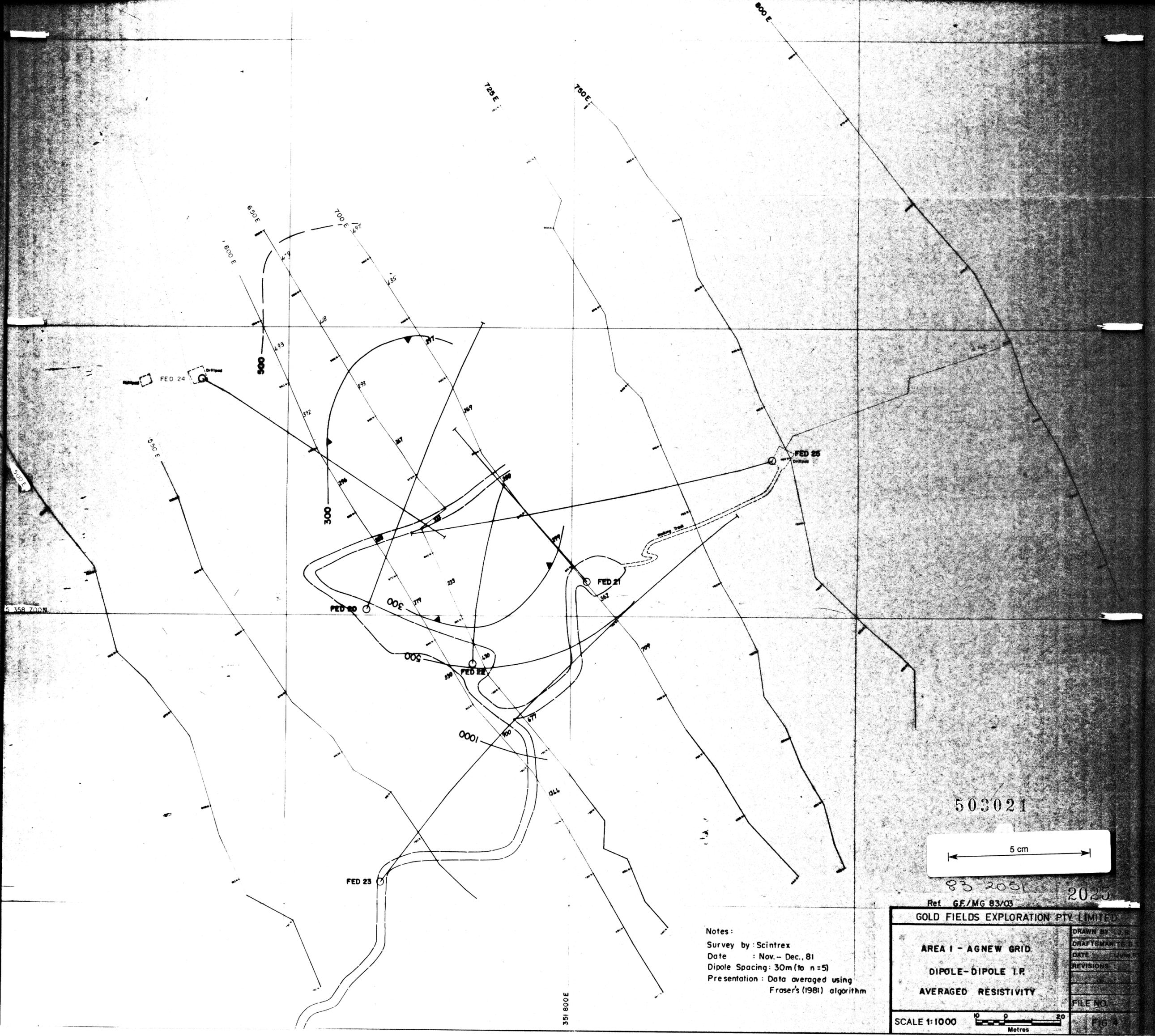
83-2051-2024

REF: GF/MG83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA 1 - AGNEW GRID	DRAWN BY : J. B.
DIPOLE - DIPOLE I.P.	DRAFTSMAN: G.D.S.
AVERAGED CHARGEABILITY	DATE : June, 83
	REVISIONS :
	FILE NO.
SCALE 1:1000	FIG. 3

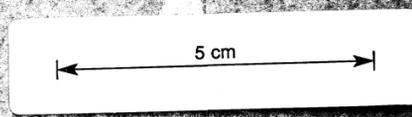
NOTES:
 Survey by : Scintrex
 Date : Nov - Dec, 81
 Dipole Spacing: 30m (to n=5)
 Presentation : data averaged using
 Fraser's (1981) algorithm

Metres



S 358 700N

503021

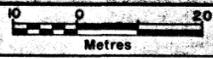


83-2051 2025
Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY LIMITED

Notes:
Survey by: Scintrex
Date : Nov. - Dec., 81
Dipole Spacing: 30m (to n=5)
Presentation: Data averaged using
Fraser's (1981) algorithm

AREA 1 - AGNEW GRID	DRAWN BY
DIPOLE-DIPOLE I.P.	DRAFTSMAN T.E.D.
AVERAGED RESISTIVITY	DATE
	REVISIONS
	FILE NO.
SCALE 1:1000	FIG.

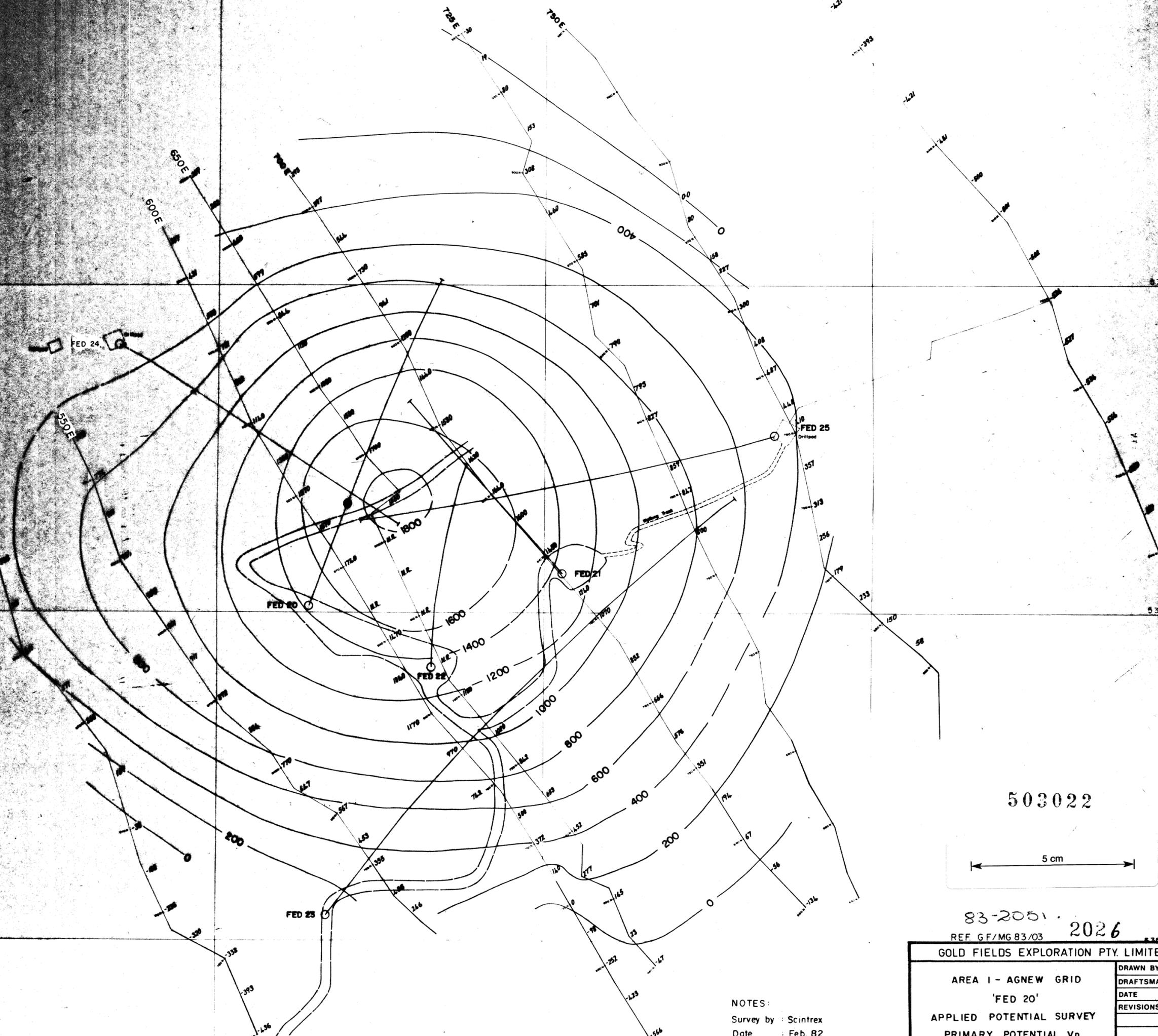


351 800 E

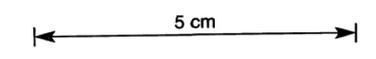
5358900N

5358900N

500E



503022



83-2051
 REF. GF/MG 83/03 2026

GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA I - AGNEW GRID	DRAWN BY : J.B.
'FED 20'	DRAFTSMAN: T.G.D.S.
APPLIED POTENTIAL SURVEY	DATE : June. 83
PRIMARY POTENTIAL, Vp	REVISIONS :
	FILE NO.
SCALE 1:1000	FIG. 5

NOTES:
 Survey by : Scintrex
 Date : Feb. 82
 ● Surface projection
 of electrode

351 700 E

351 800 E

351 900 E



358 900N

358 900 N

358 800 N

358 800 N

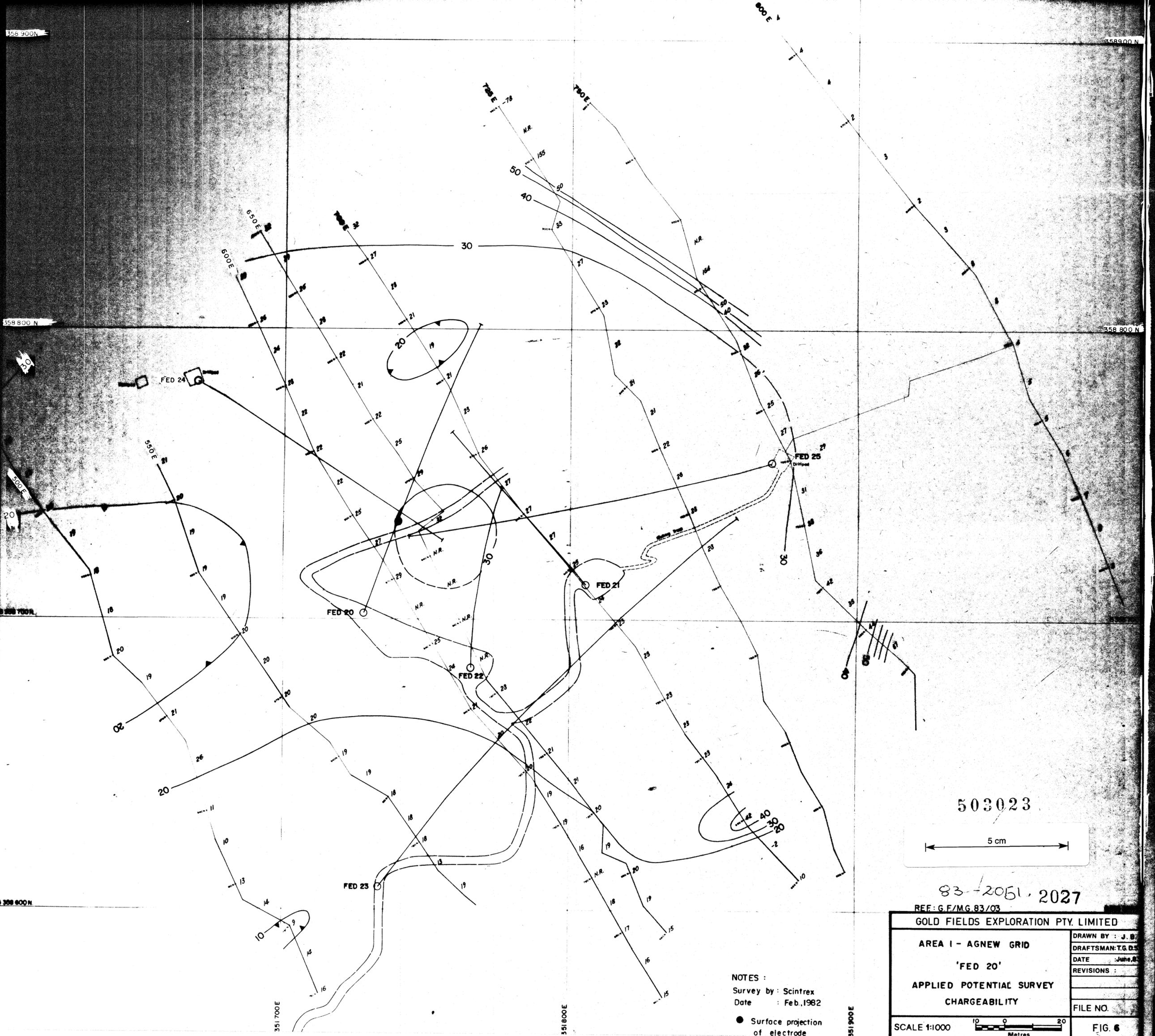
358 700 N

358 600 N

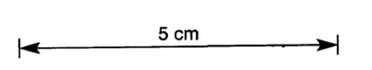
351 700E

351 800E

351 900E



503023



83-2051.2027

REF: G.F./M.G.83/03

GOLD FIELDS EXPLORATION PTY. LIMITED

AREA I - AGNEW GRID
 'FED 20'
 APPLIED POTENTIAL SURVEY
 CHARGEABILITY

DRAWN BY : J. B.
 DRAFTSMAN: T.G. D.S.
 DATE : June, 83
 REVISIONS :
 FILE NO.

NOTES :
 Survey by : Scintrex
 Date : Feb. 1982

● Surface projection of electrode

SCALE 1:1000

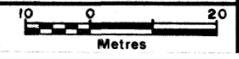
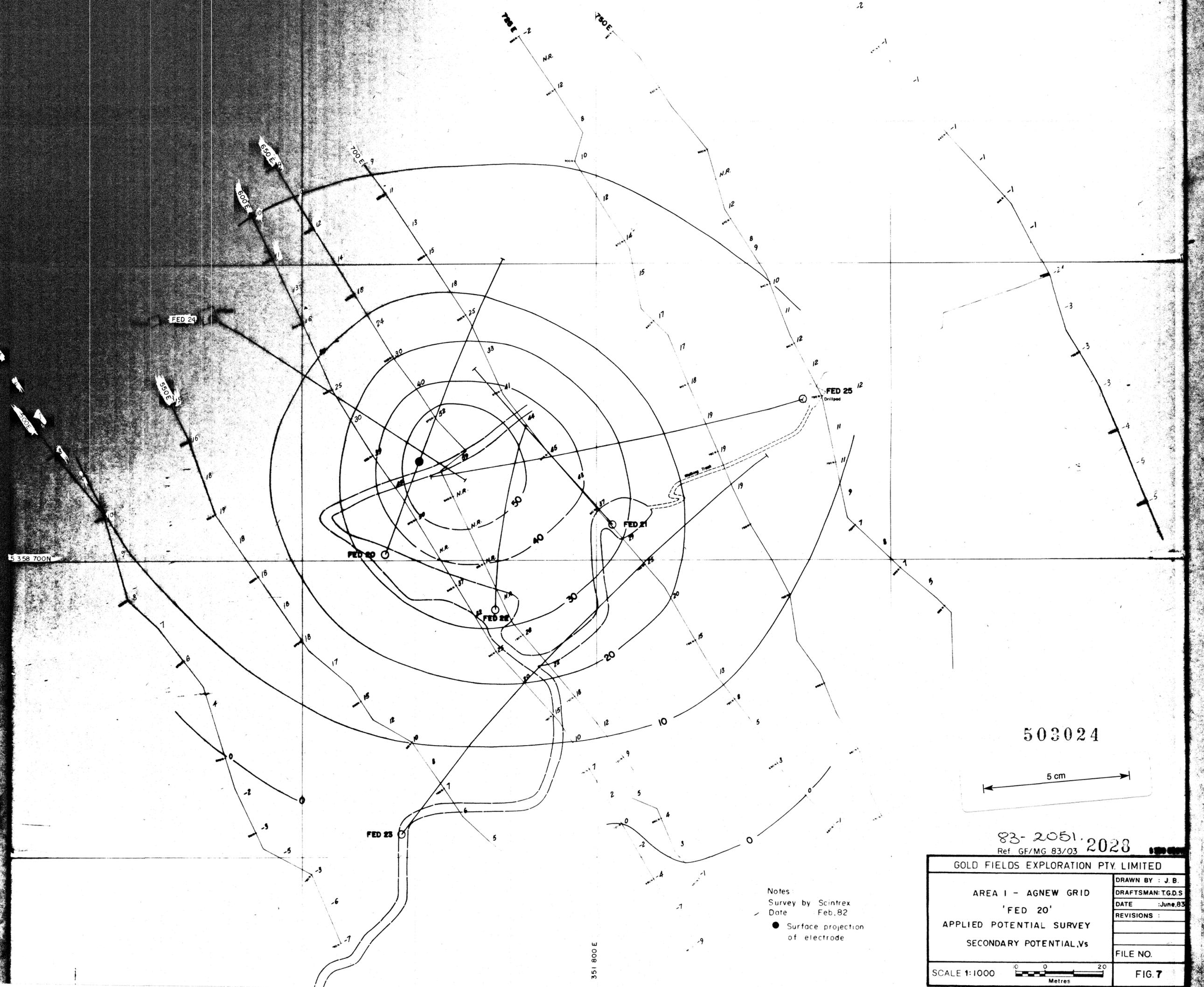
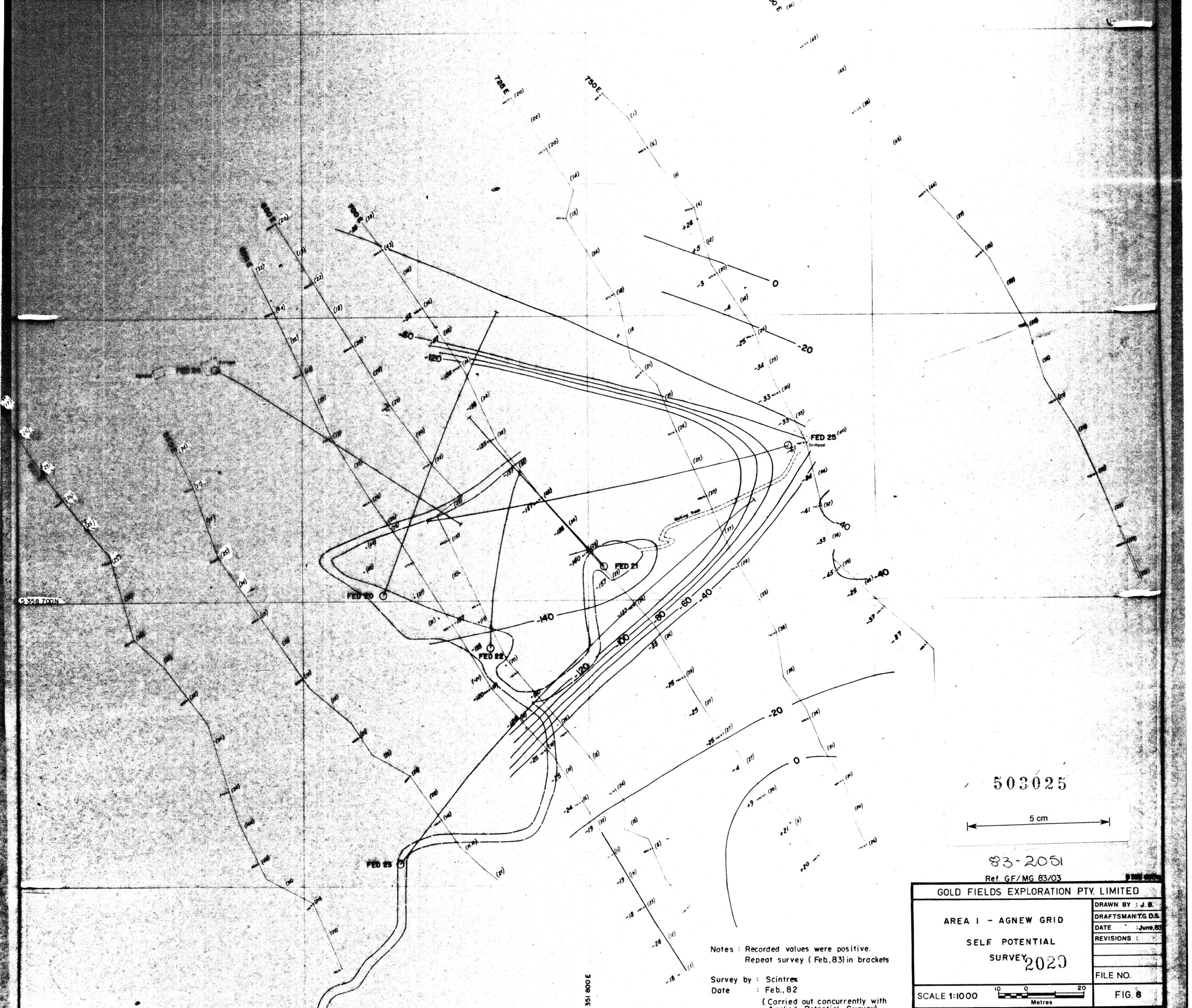


FIG. 6

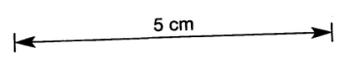


Notes
 Survey by Scintrex
 Date Feb. 82
 ● Surface projection
 of electrode

83-2051.2023 Ref GF/MG 83/03	
GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA 1 - AGNEW GRID 'FED 20' APPLIED POTENTIAL SURVEY SECONDARY POTENTIAL, V _s	DRAWN BY : J. B. DRAFTSMAN: T.G.D.S DATE : June.83 REVISIONS : FILE NO.
SCALE 1:1000	 Metres
FIG. 7	



503025



83-2051

Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED

AREA I - AGNEW GRID

SELF POTENTIAL

SURVEY 2020

DRAWN BY : J. B.
DRAFTSMAN: T.G.D.S.
DATE : June, 83
REVISIONS :
FILE NO.

Notes : Recorded values were positive.
Repeat survey (Feb.83) in brackets

Survey by : Scintrex
Date : Feb. 82

(Carried out concurrently with
Applied Potential Survey)

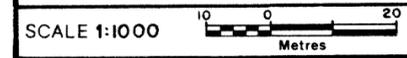
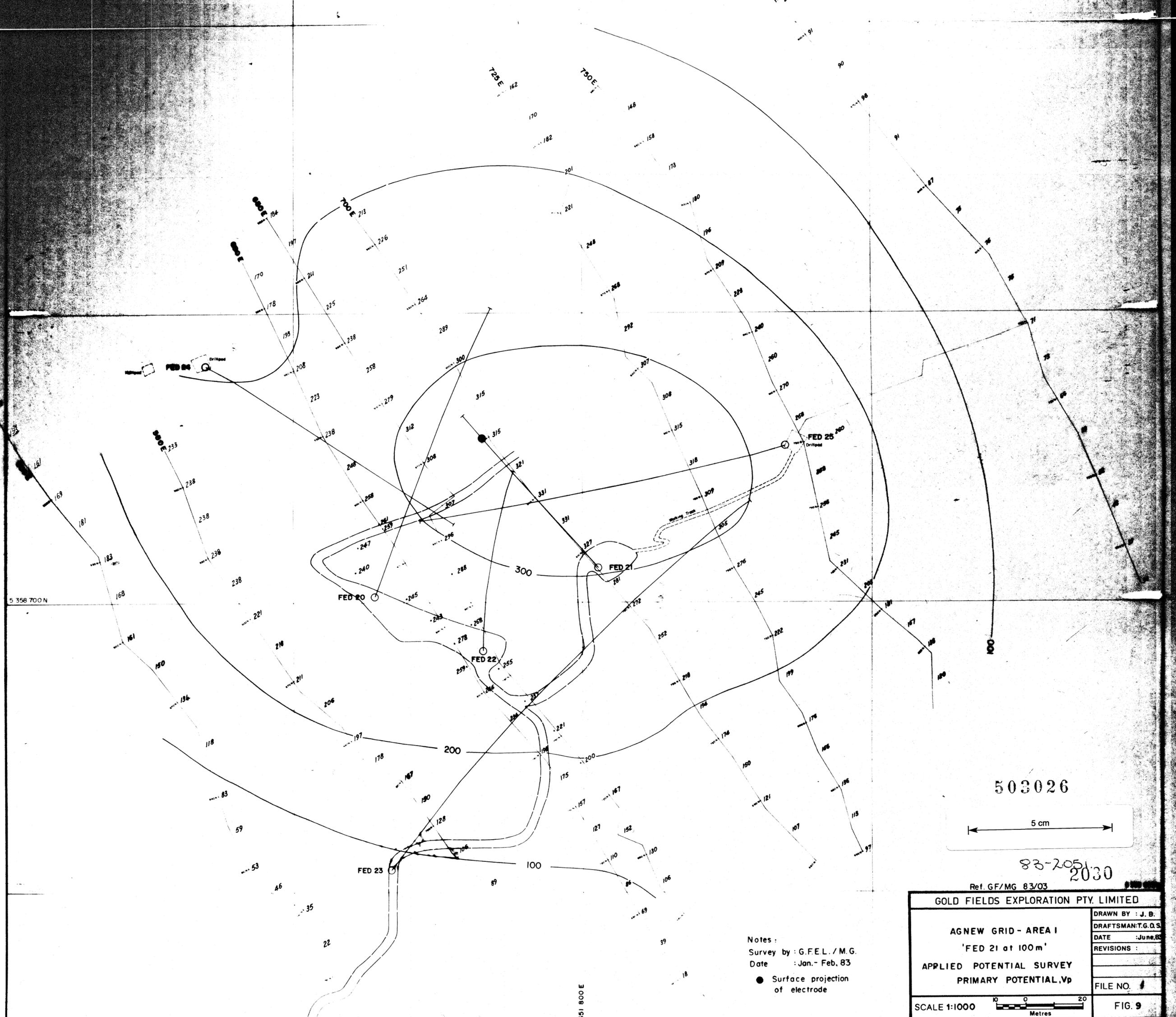
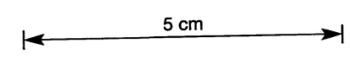


FIG. 8



503026

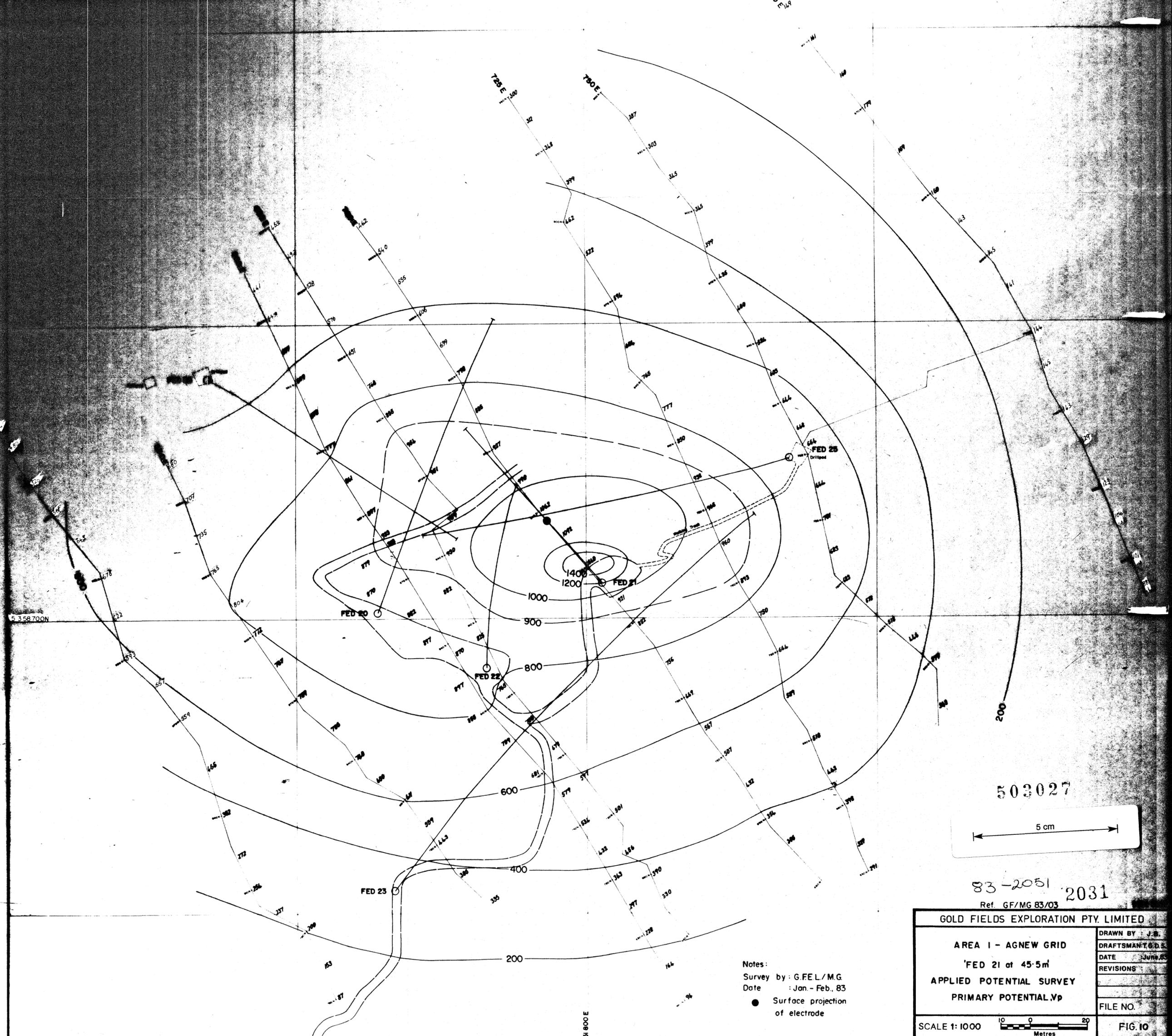


83-205
2030

Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
AGNEW GRID - AREA I 'FED 21 at 100 m'	DRAWN BY : J. B. DRAFTSMAN: T.G.O.S. DATE : June, 83 REVISIONS : FILE NO. #
APPLIED POTENTIAL SURVEY PRIMARY POTENTIAL, Vp	FIG. 9
SCALE 1:1000	

Notes:
 Survey by : G.F.E.L. / M.G.
 Date : Jan. - Feb. 83
 ● Surface projection of electrode



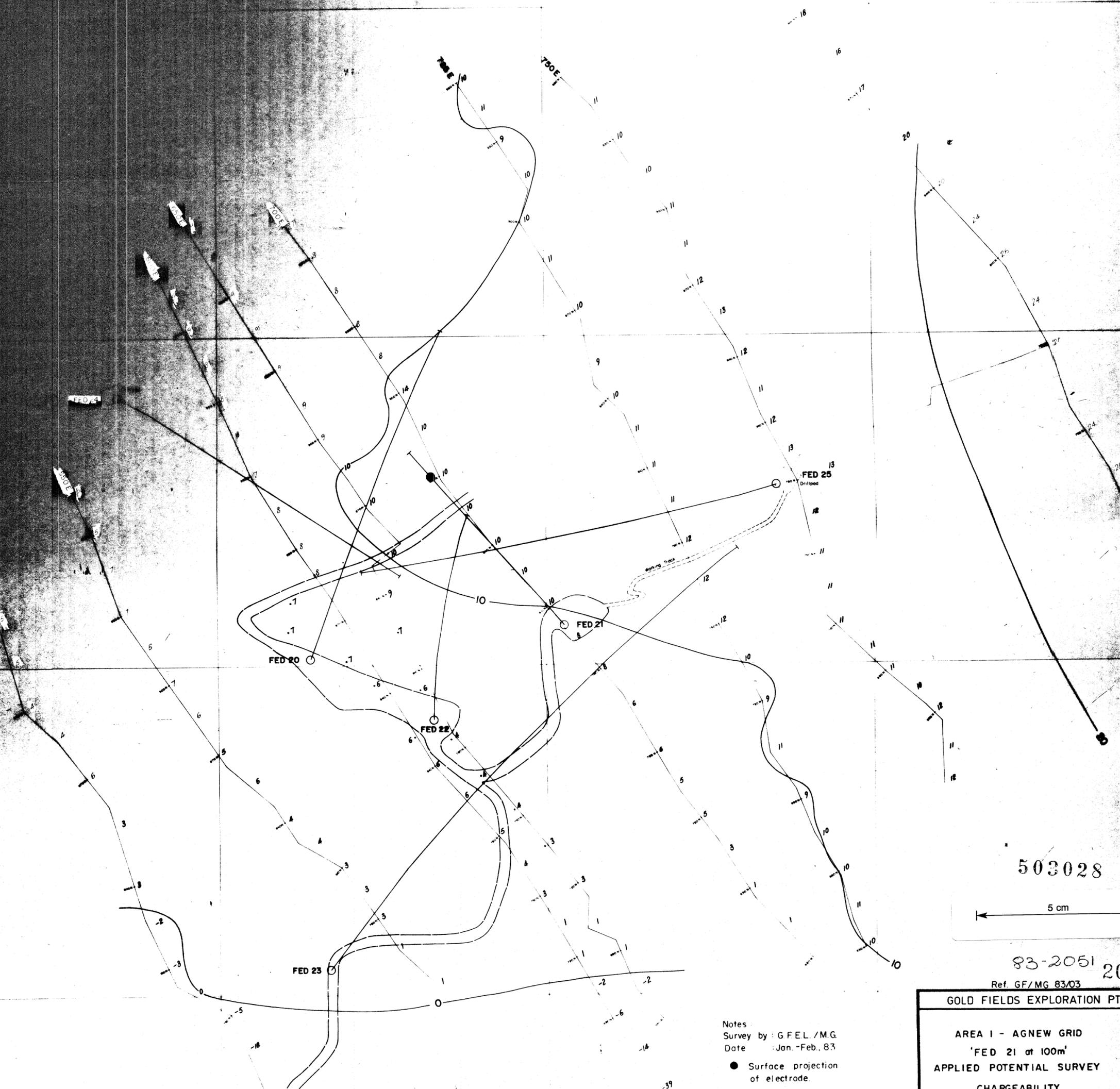
Notes:
 Survey by : G.FEL/M.G
 Date : Jan - Feb, 83
 ● Surface projection
 of electrode

503027
 5 cm

83-2051 2031
 Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA 1 - AGNEW GRID	DRAWN BY : J.B.
'FED 21 at 45.5m'	DRAFTSMAN: G.D.S.
APPLIED POTENTIAL SURVEY	DATE : JUN 85
PRIMARY POTENTIAL V_p	REVISIONS :
	FILE NO.
SCALE 1:1000	FIG. 10





Notes
 Survey by : G.F.E.L./M.G.
 Date : Jan.-Feb. 83
 ● Surface projection of electrode.

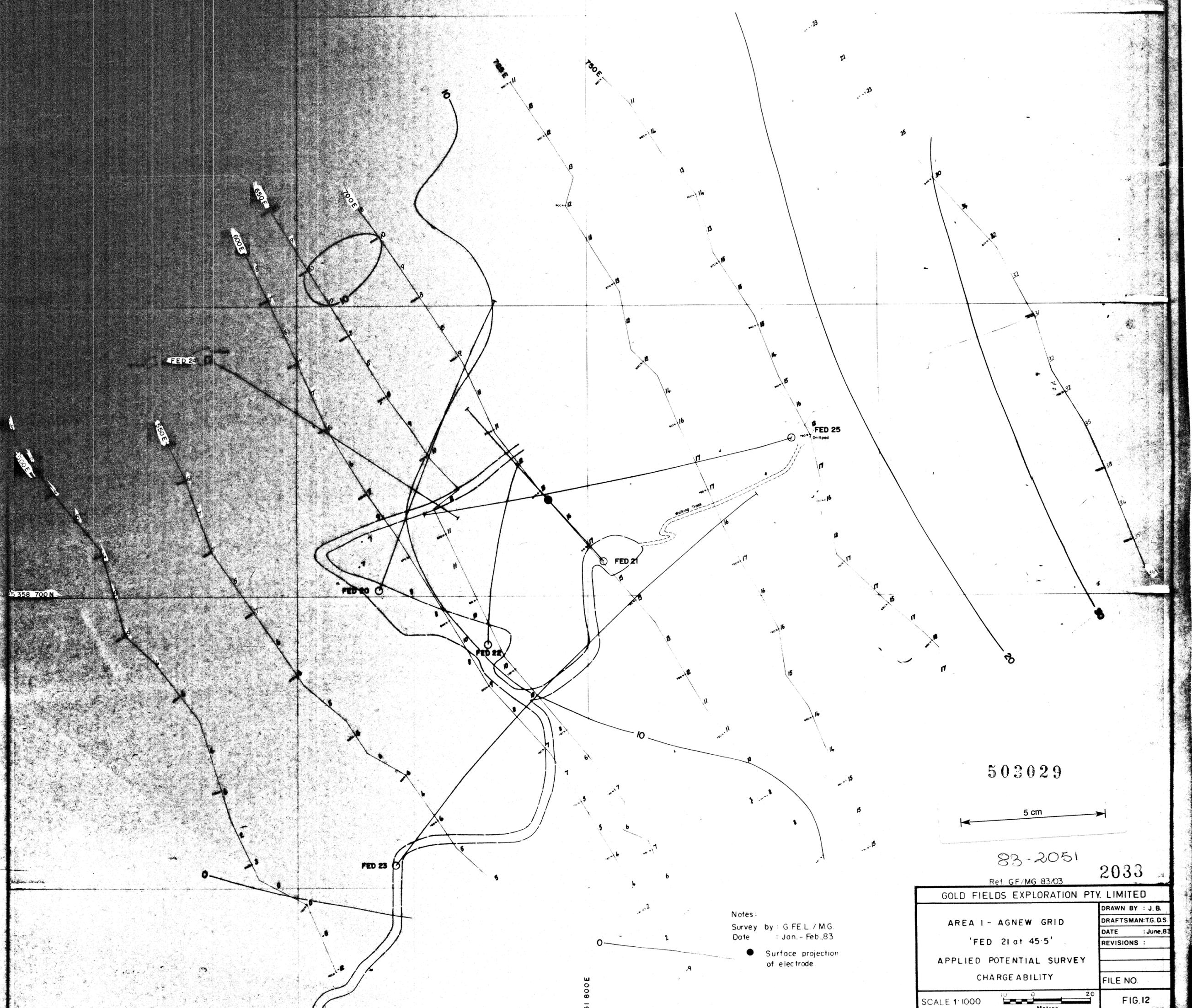
503028

83-2051 2032
 Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED

AREA 1 - AGNEW GRID 'FED 21 at 100m' APPLIED POTENTIAL SURVEY CHARGEABILITY	DRAWN BY : J.S. DRAFTSMAN : G.D.S. DATE : Jan 83 REVISIONS : FILE NO :
SCALE 1:1000 	FIG 11

351 800E

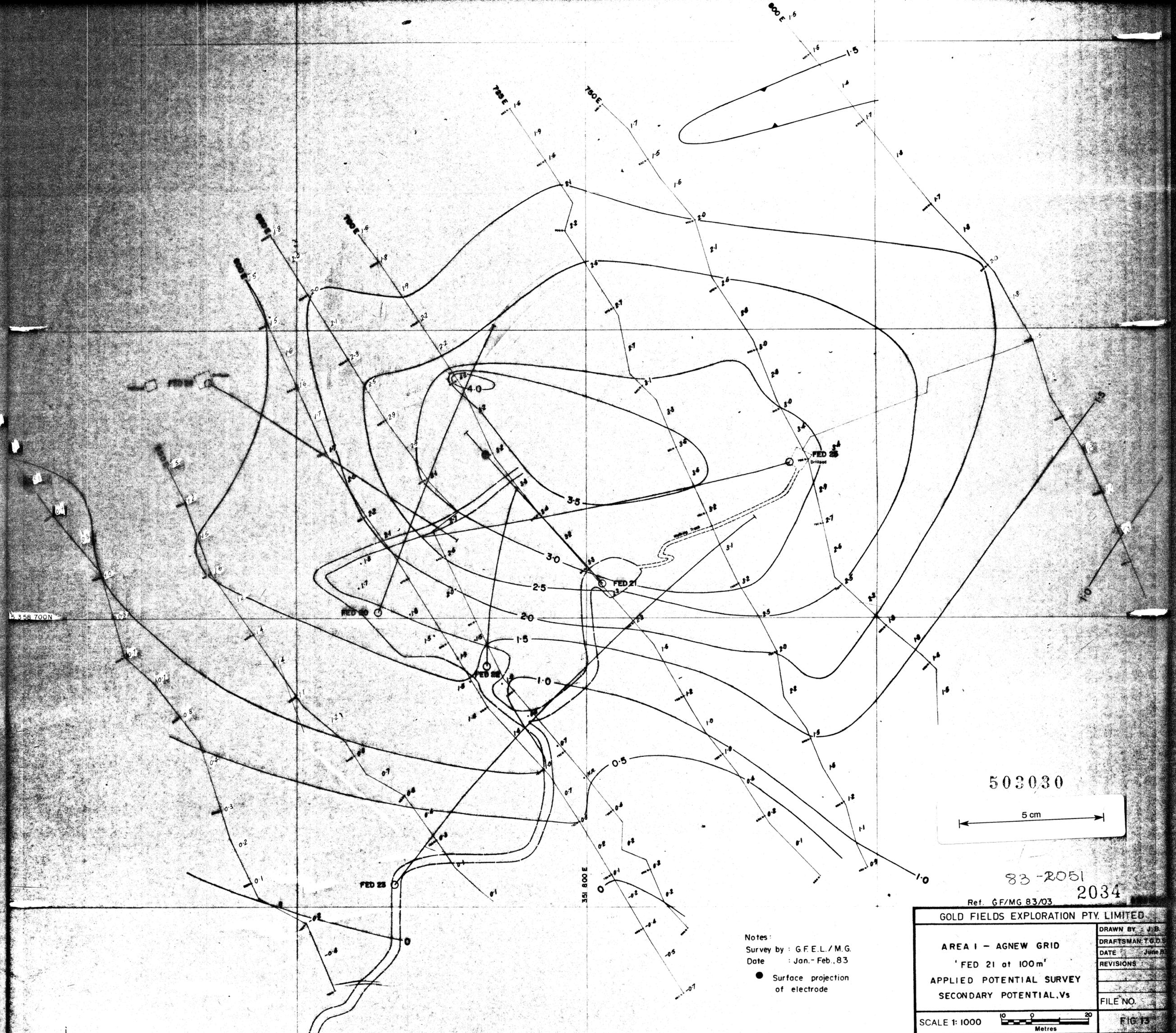


Notes:
 Survey by: G.F.E.L./M.G.
 Date: Jan. - Feb. 83
 ● Surface projection of electrode

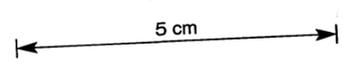
503029
 5 cm

83-2051
 2033
 Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
AREA 1 - AGNEW GRID	DRAWN BY: J. B.
'FED 21 at 45.5'	DRAFTSMAN: G. D.S.
APPLIED POTENTIAL SURVEY	DATE: June, 83
CHARGEABILITY	REVISIONS:
SCALE 1:1000	FILE NO.
Metres	FIG. 12



503030



83-2051
2034

Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED

Notes:
Survey by : G.F.E.L./M.G.
Date : Jan.-Feb., 83
● Surface projection
of electrode

AREA I - AGNEW GRID
'FED 21 at 100m'
APPLIED POTENTIAL SURVEY
SECONDARY POTENTIAL, Vs

DRAWN BY	J.B.
DRAFTSMAN	T.G.D.
DATE	June 83
REVISIONS	
FILE NO.	

SCALE 1:1000

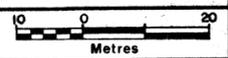
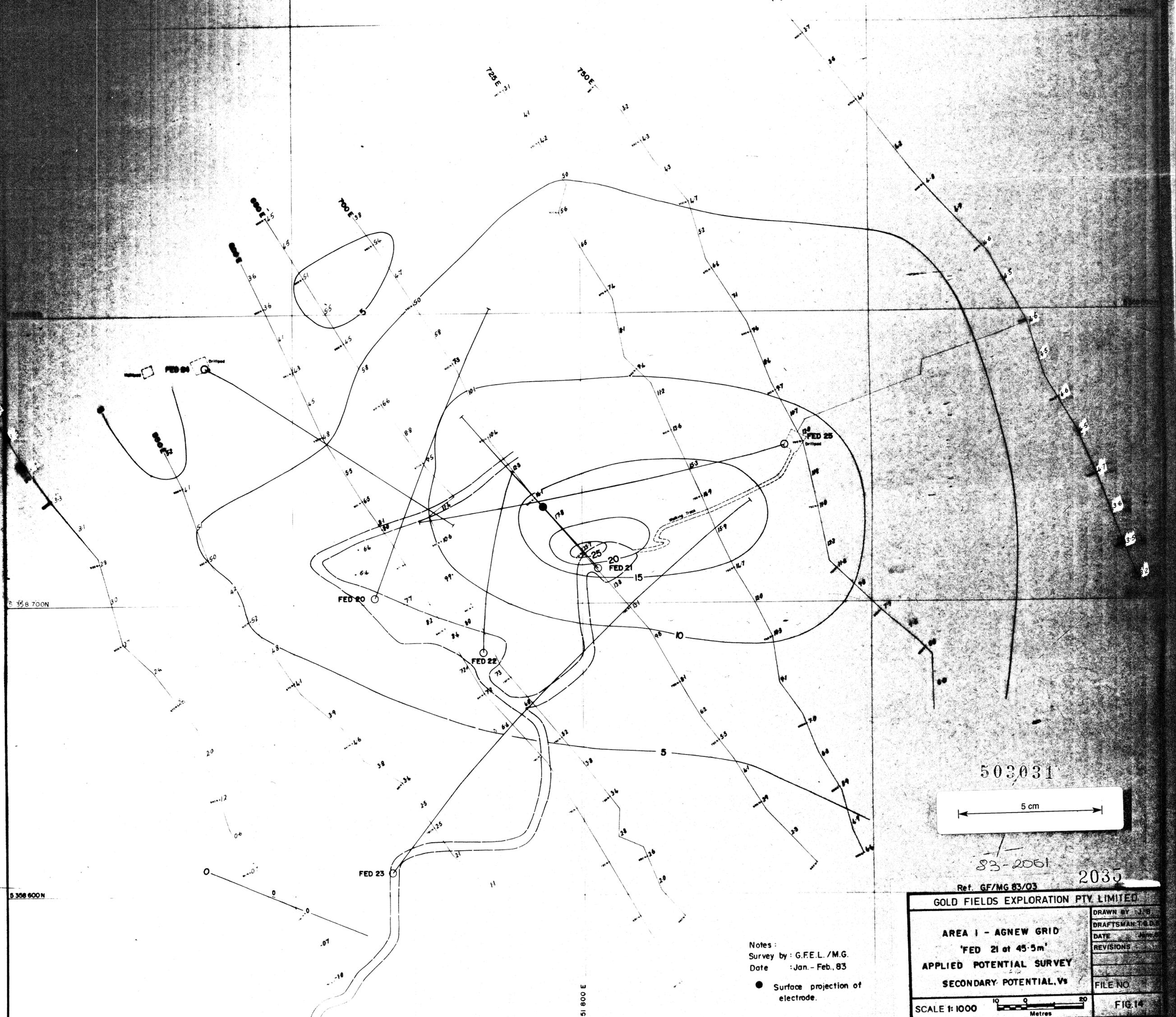
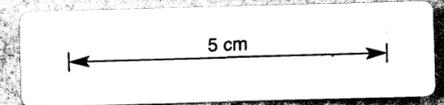


FIG. 13



Notes:
 Survey by: G.F.E.L./M.G.
 Date: Jan. - Feb. 83

● Surface projection of electrode.



503031

83-2061

2035

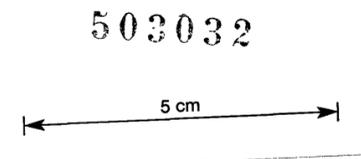
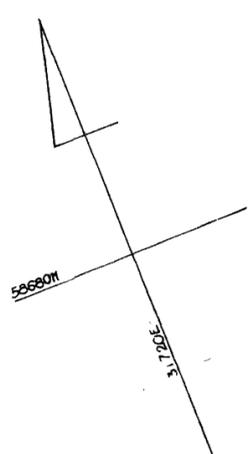
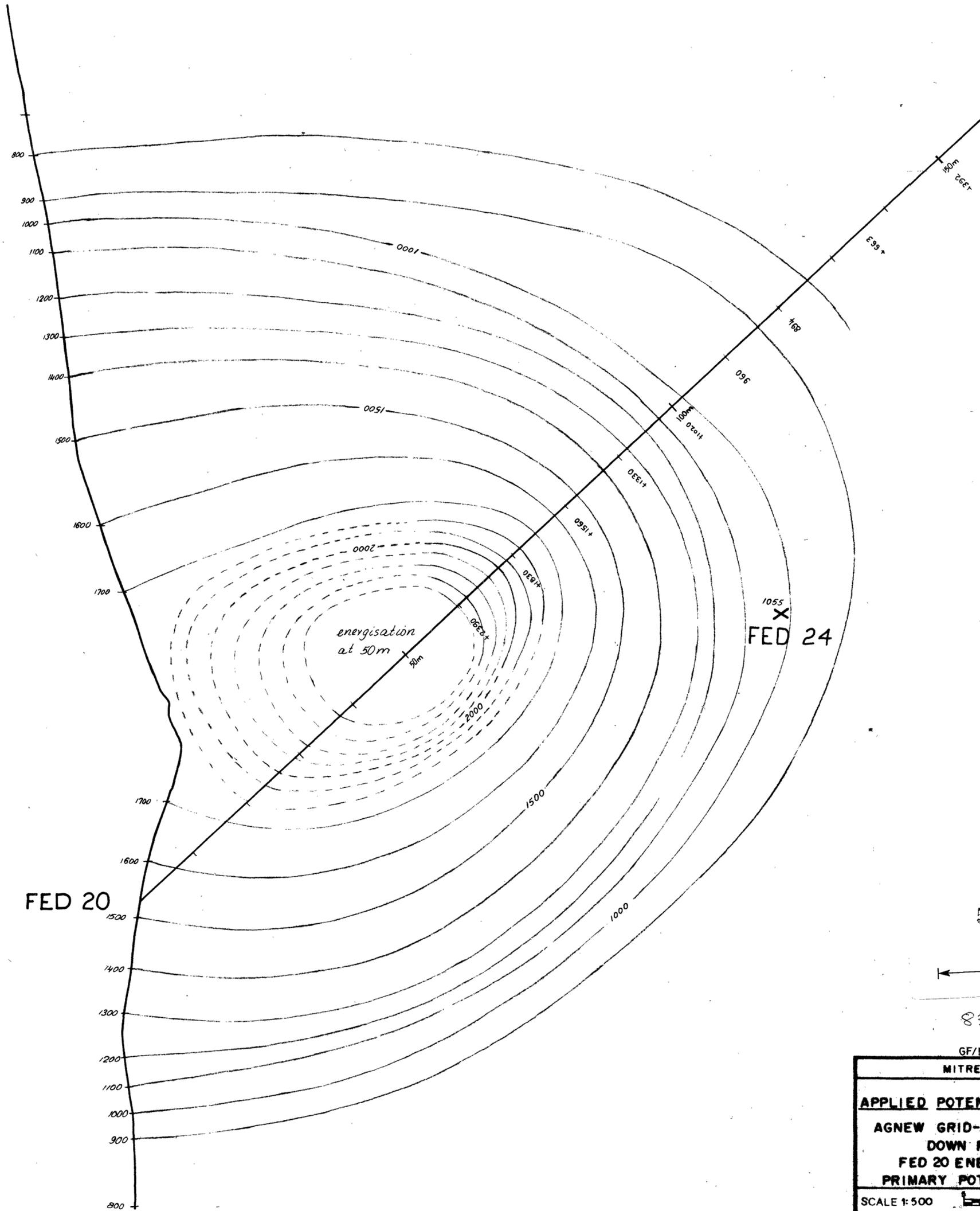
Ref. GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED

AREA 1 - AGNEW GRID 'FED 21 at 45.5m' APPLIED POTENTIAL SURVEY SECONDARY POTENTIAL V_s	DRAWN BY: J.S.B. DRAFTSMAN: T.S.D.
	DATE: June 83
	REVISIONS:
	FILE NO:

SCALE 1:1000

FIG. 14



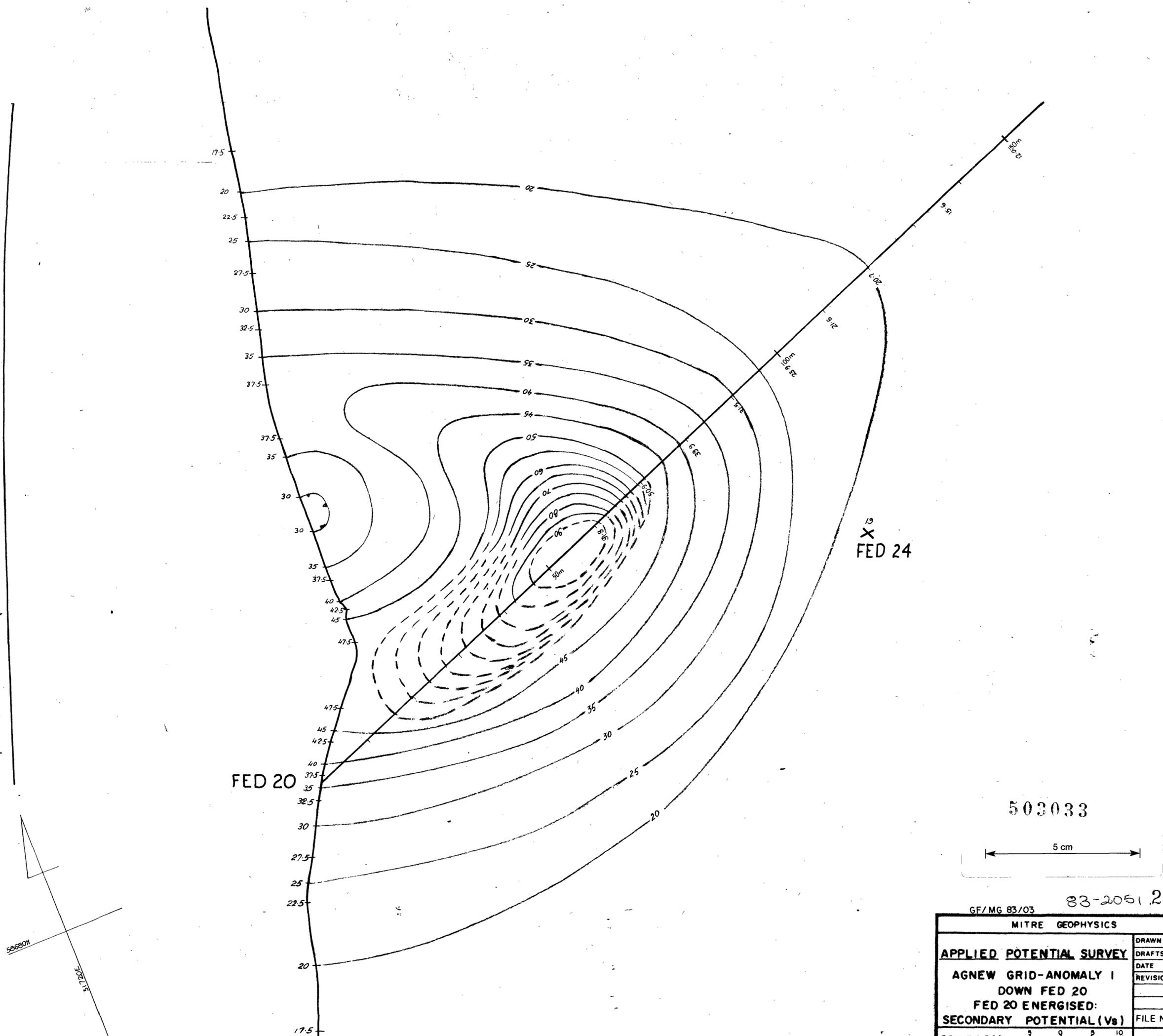
503032

83-2051

2036

GF/MG 83/03

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY: J.B.
AGNEW GRID-ANOMALY I	DRAFTSMAN: S.F.
DOWN FED 20	DATE: Aug 83
FED 20 ENERGISED:	REVISIONS:
PRIMARY POTENTIAL (Vp)	FILE NO:
SCALE 1:500	Metres
FIG. 150	

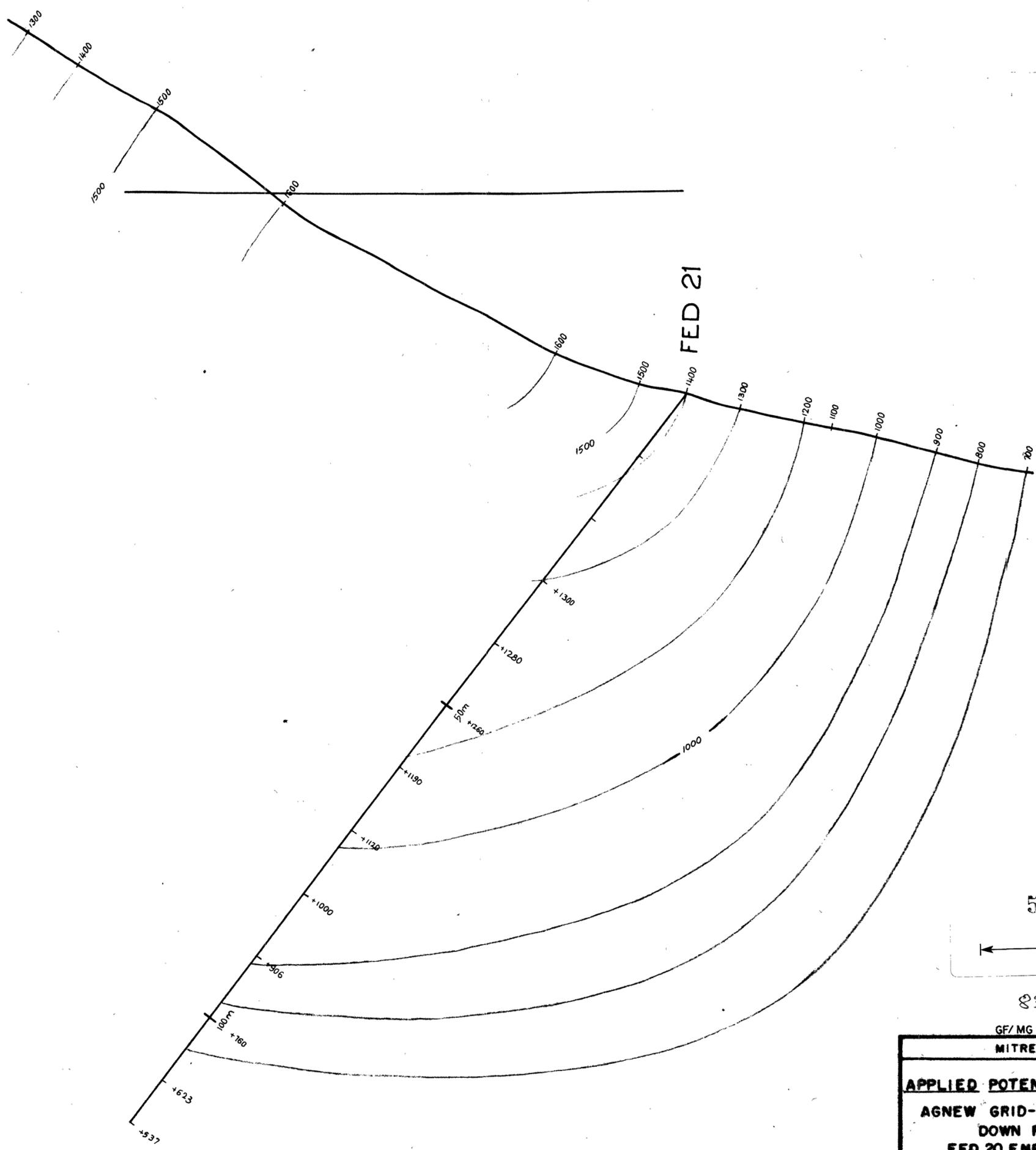
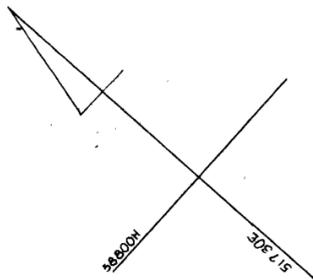


503033

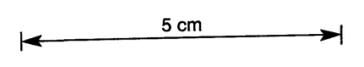
5 cm

GF/MG 83/03 83-2051.2037

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY: J B
AGNEW GRID-ANOMALY I	DRAFTSMAN: S F
DOWN FED 20	DATE: Aug. 83
FED 20 ENERGISED:	REVISIONS:
SECONDARY POTENTIAL (V_g)	FILE NO.:
SCALE 1:500	FIG. 15b

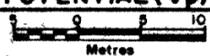


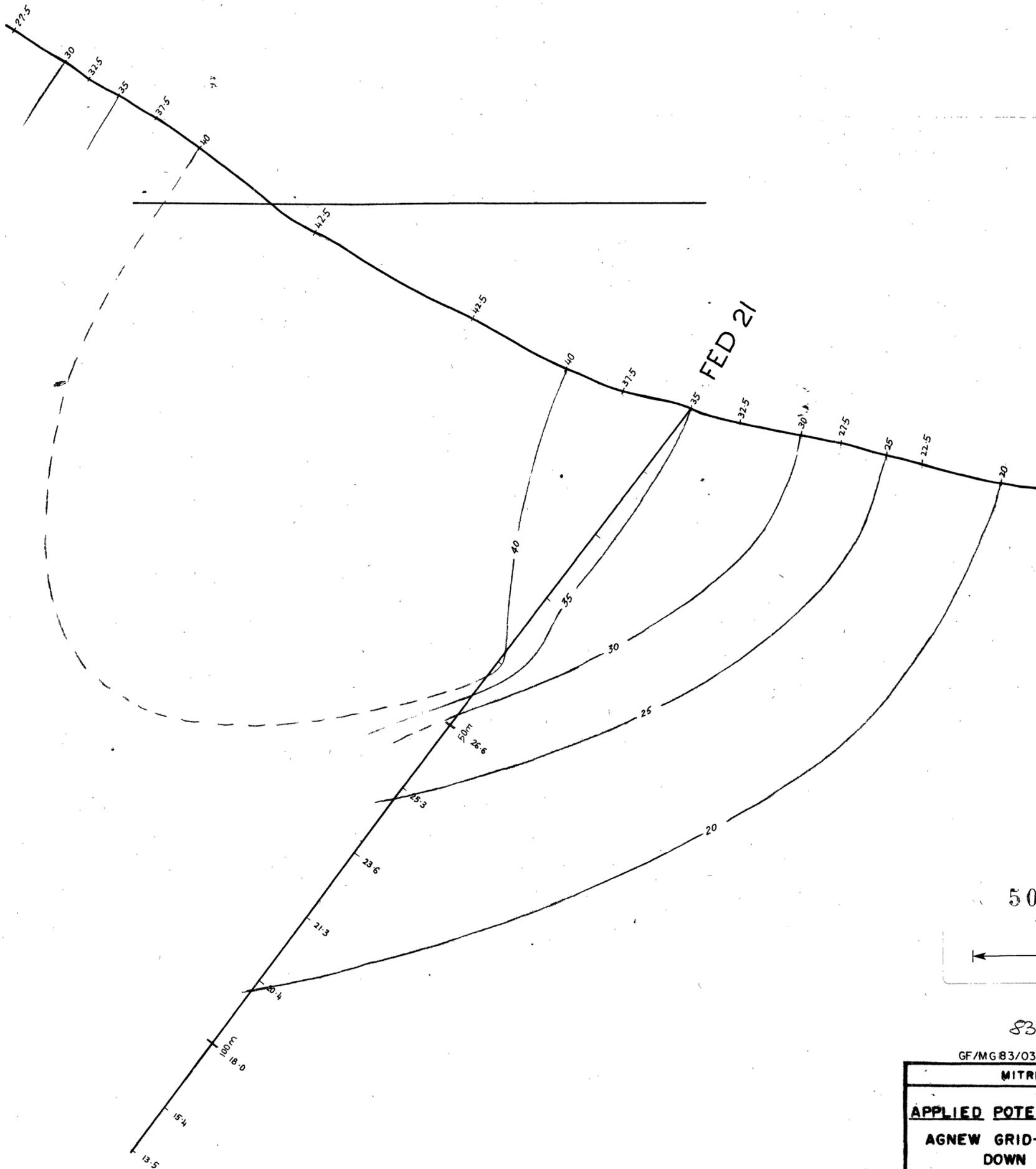
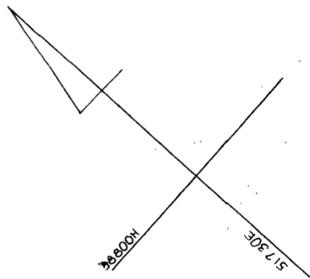
503034



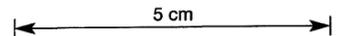
83-2051 2038

GF/MG 83/03

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY : J.B.
AGNEW GRID-ANOMALY I	DRAFTSMAN: S.F.
DOWN FED 21	DATE : Aug 83
FED 20 ENERGISED:	REVISIONS :
PRIMARY POTENTIAL (Vp)	FILE NO.
SCALE 1:500 	FIG. 16a



503035

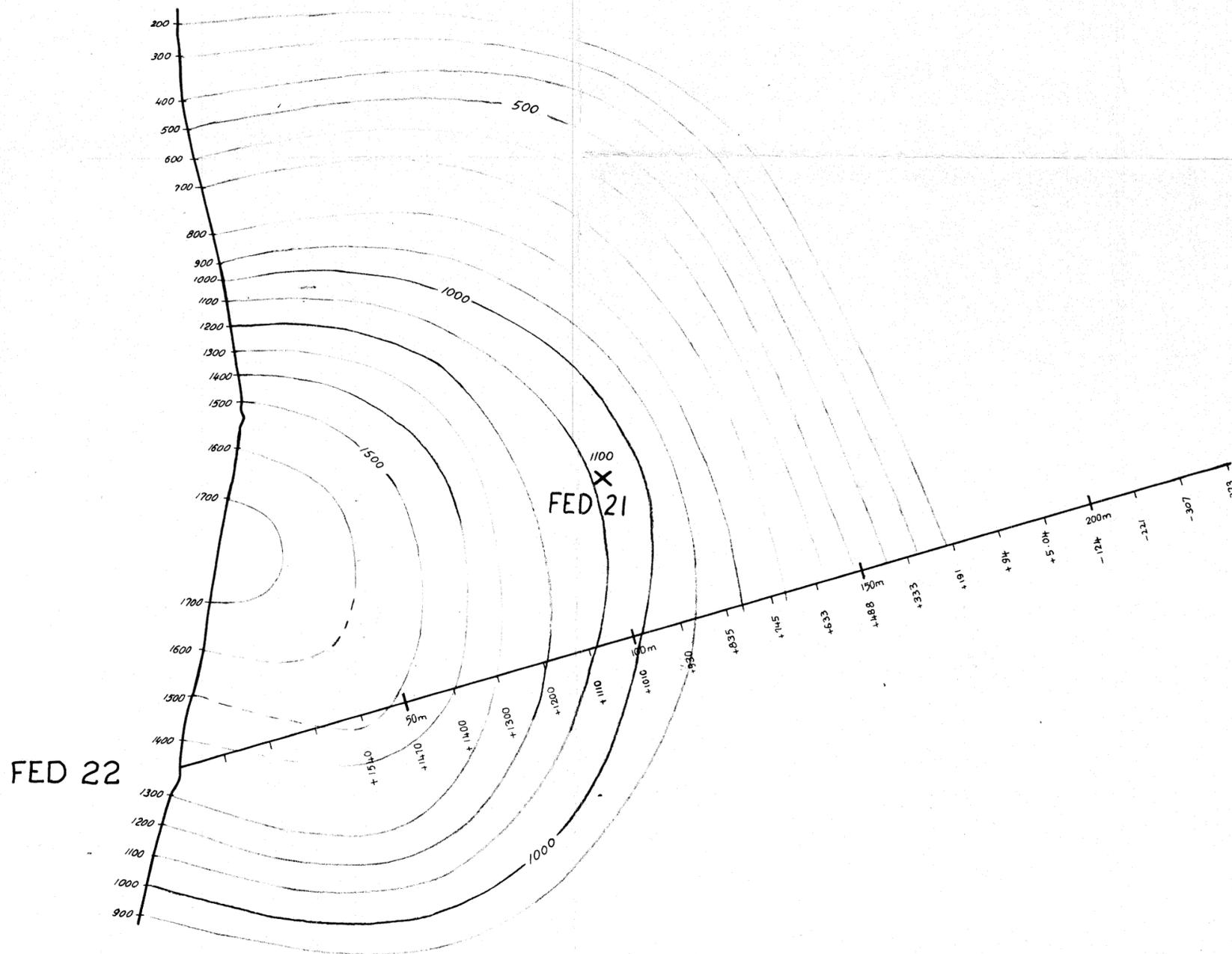


83-2061

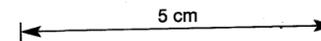
2039

GF/MG 83/03

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY : J.B.
AGNEW GRID-ANOMALY I	DRAFTSMAN: S.F.
DOWN FED 21	DATE : Aug. 85
FED 20 ENERGISED:	REVISIONS :
SECONDARY POTENTIAL (V_s)	FILE NO.
SCALE 1:500	FIG. 16b



503036



83-2061

2040

GF/MG 83/03

MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY

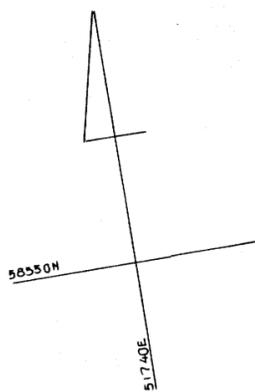
AGNEW GRID-ANOMALY 1
DOWN FED 22
FED 20 ENERGISED:
PRIMARY POTENTIAL (Vp)

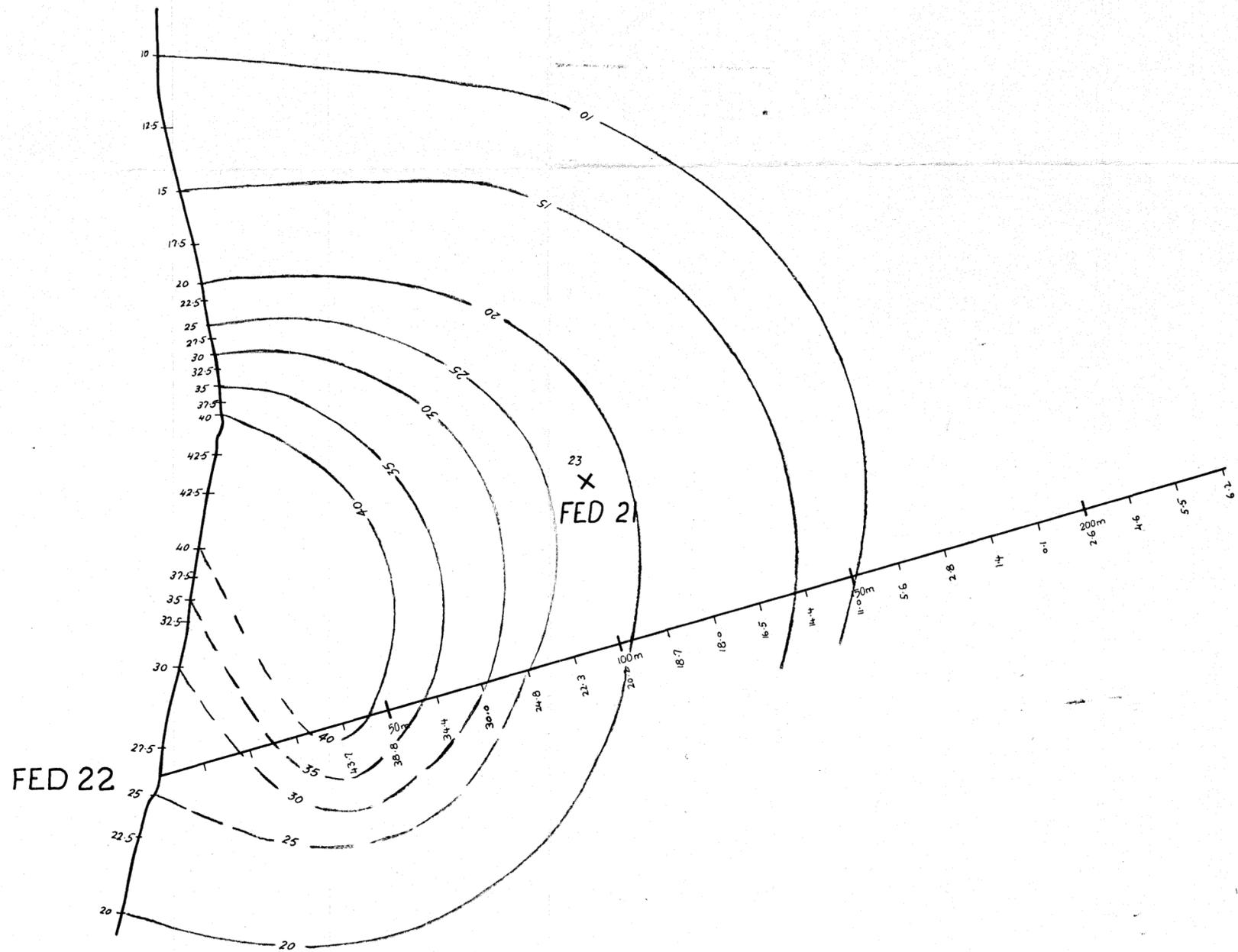
DRAWN BY : J B
 DRAFTSMAN : S F
 DATE : Aug. 83
 REVISIONS :
 FILE NO

SCALE 1:1000

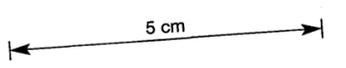
 Metres

FIG 17a





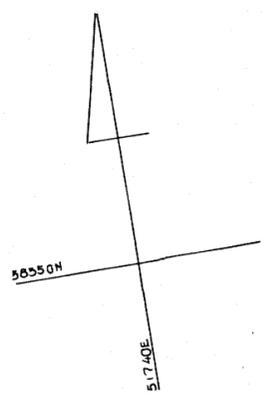
503037



83-2051

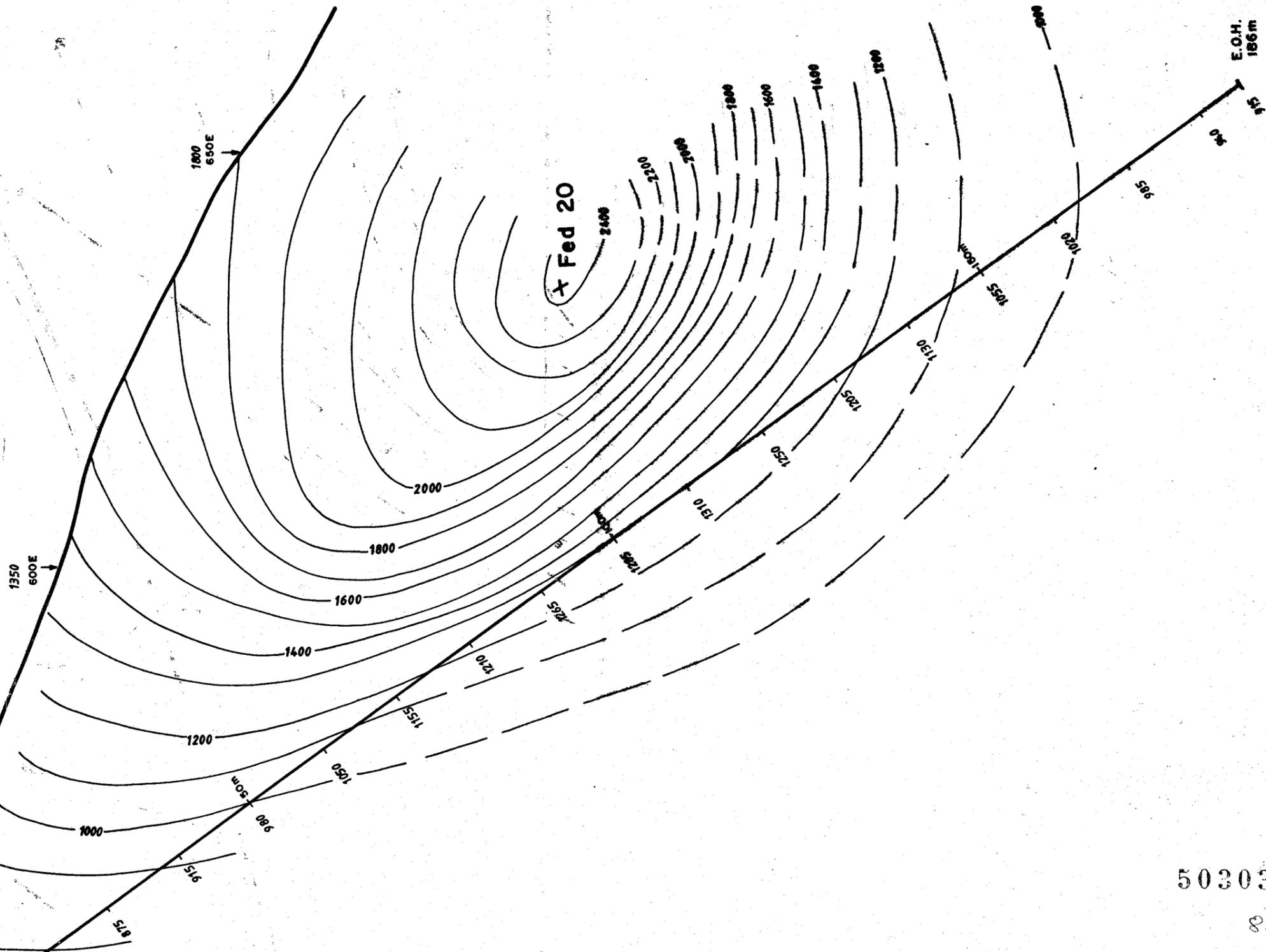
GF/MG 83/03

2041



MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY : J.B.
AGNEW GRID-ANOMALY I	DRAFTSMAN: S.F.
DOWN FED 22	DATE : Aug. 85
FED 20 ENERGISED:	REVISIONS :
SECONDARY POTENTIAL (V _s)	FILE NO.
SCALE 1:1000	FIG. 17b

S.E.



503038

83-2051

2042

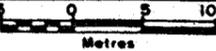
GF/MG83/03

MITRE GEOPHYSICS

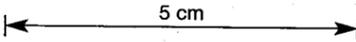
APPLIED POTENTIAL SURVEY

AGNEW GRID-ANOMALY I
 DOWN FED 24
 FED 20 ENERGISED:
 PRIMARY POTENTIAL (Vp)

SCALE 1:500



DRAWN BY	J.B.
DRAFTSMAN	S.F.
DATE	Aug.85
REVISIONS	
FILE NO	
FIG.	18a



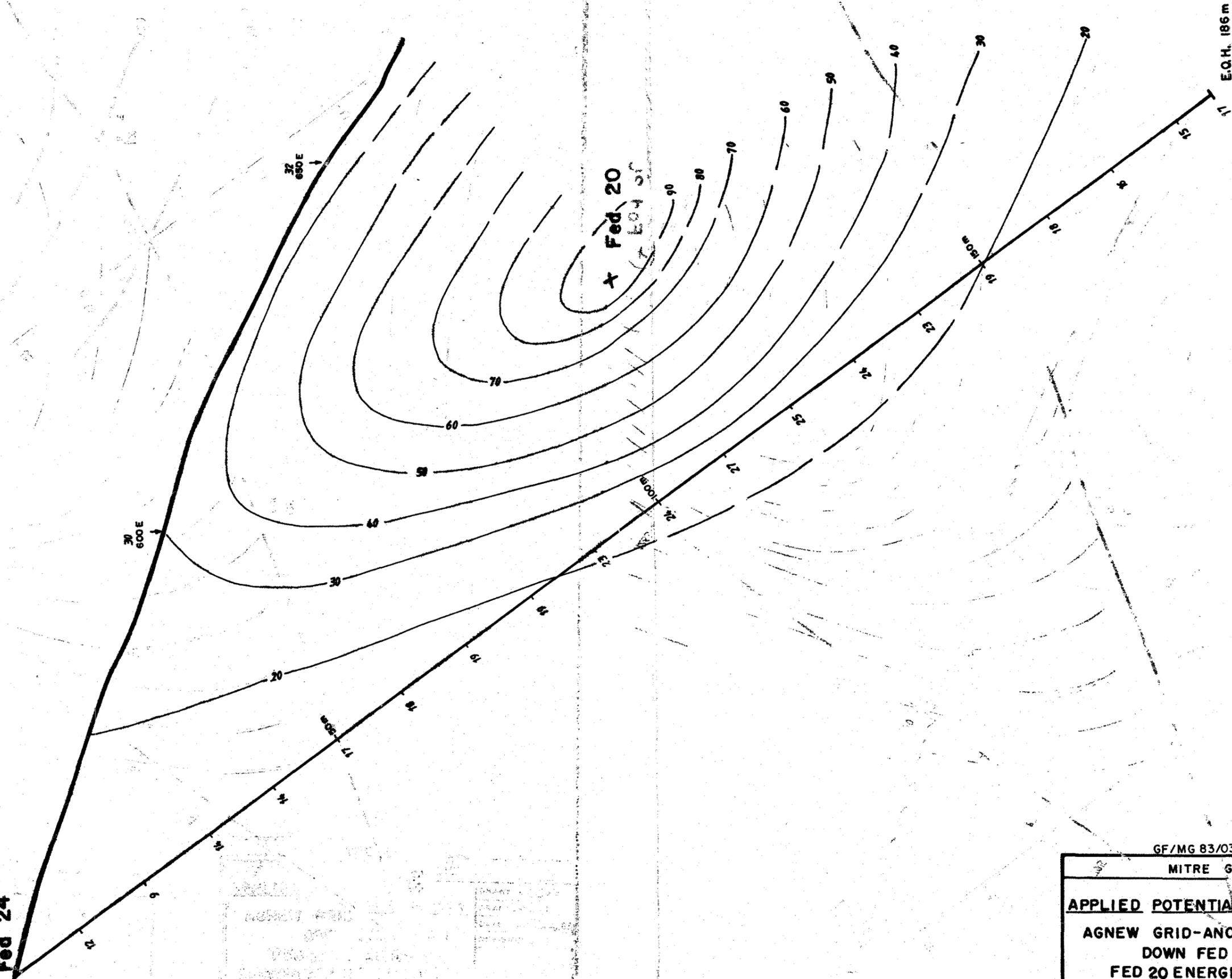
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300

Feb 24

N.W.

S.E.

N.W. Fed 24



503039

83-2051

2043

GF/MG 83/03

MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY

AGNEW GRID-ANOMALY I
 DOWN FED 24
 FED 20 ENERGISED:
 SECONDARY POTENTIAL (V_s)

DRAWN BY J.B.
 DRAFTSMAN S.F.
 DATE Aug. 83
 REVISIONS
 FILE NO

SCALE 1:500

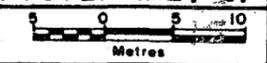
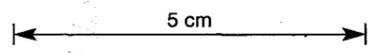
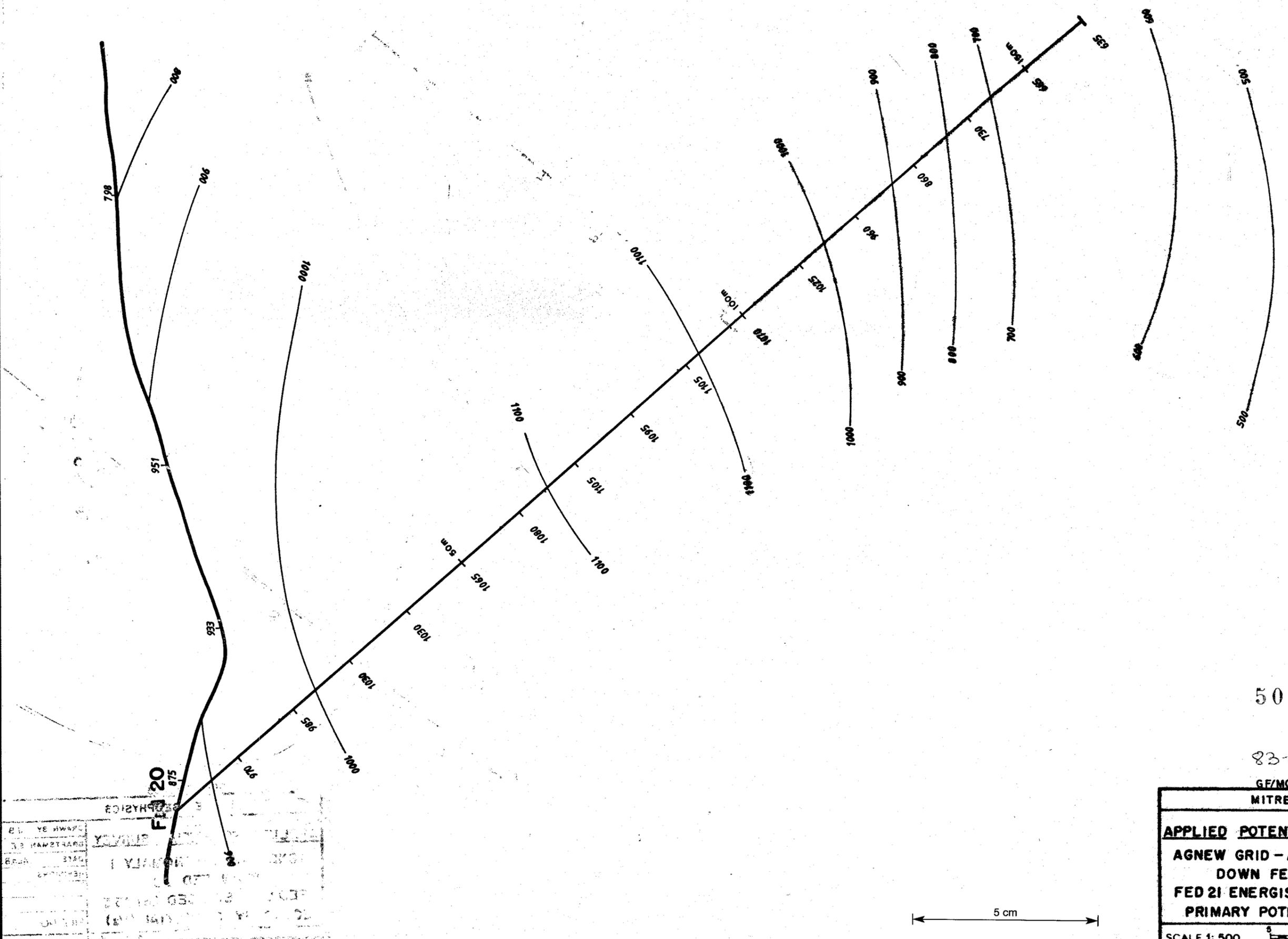


FIG. 18b





35 X Fed 25

503040

83-2051 2044

GF/MG 83/03

MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY
AGNEW GRID - ANOMALY 1
DOWN FED 20
FED 21 ENERGISED (at 45.5m)
PRIMARY POTENTIAL (Vp)

DRAWN BY	J.B.
DRAFTSMAN	S.F.
DATE	Aug.83
REVISIONS	
FILE NO	
FIG.	19e

SCALE 1: 500

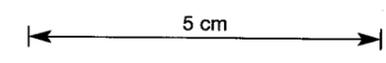
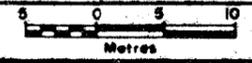
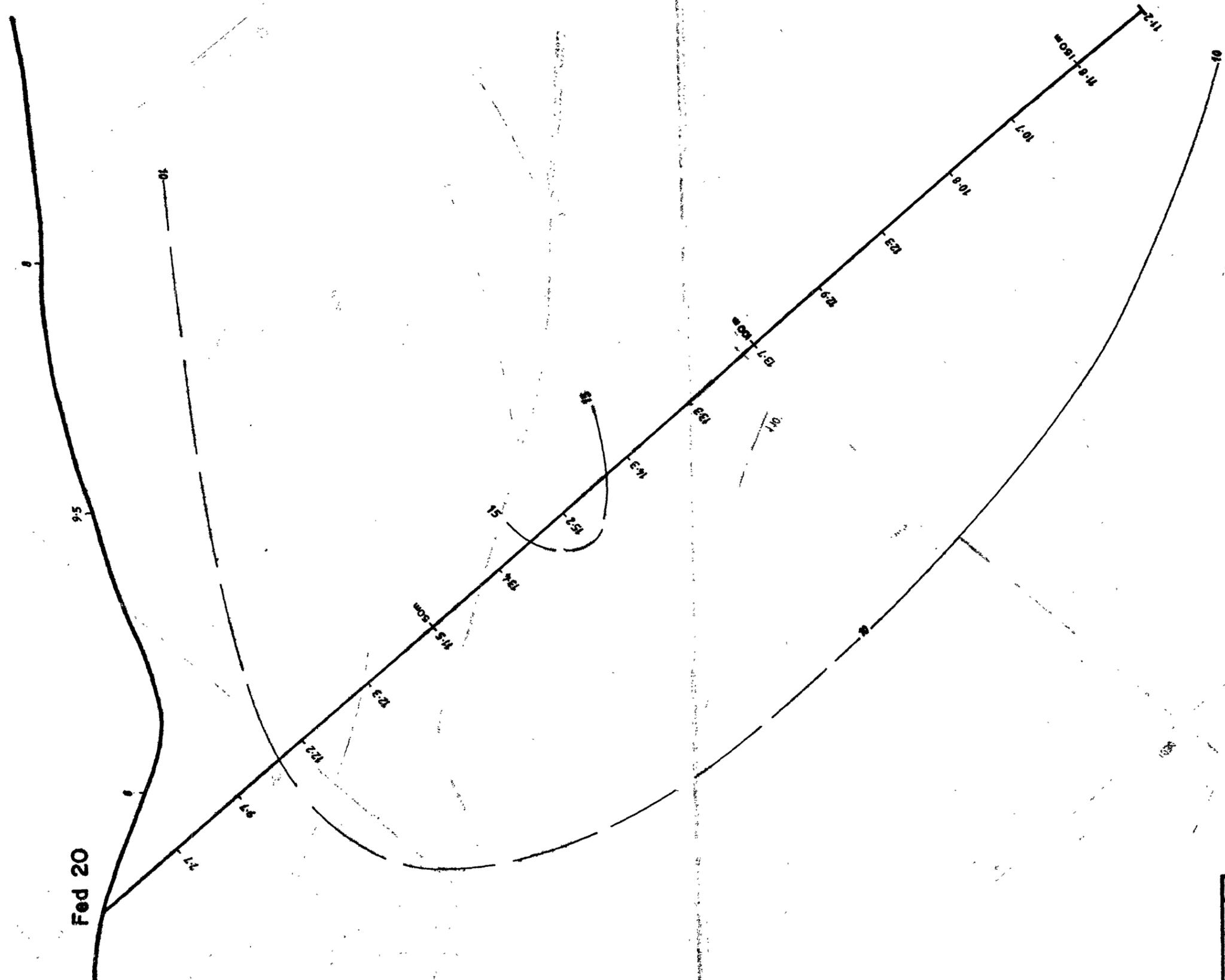


FIG 20
 875
 933
 976
 995
 1000
 1030
 1050
 1065
 1080
 1095
 1100
 1000
 1025
 1050
 1075
 1100
 1000
 900
 800
 700
 600
 500
 400
 798
 806
 808
 951
 933
 976
 995
 1000
 1030
 1050
 1065
 1080
 1095
 1100
 1000
 1025
 1050
 1075
 1100
 1000
 900
 800
 700
 600
 500
 400



X Fed 25

503041

83-2051

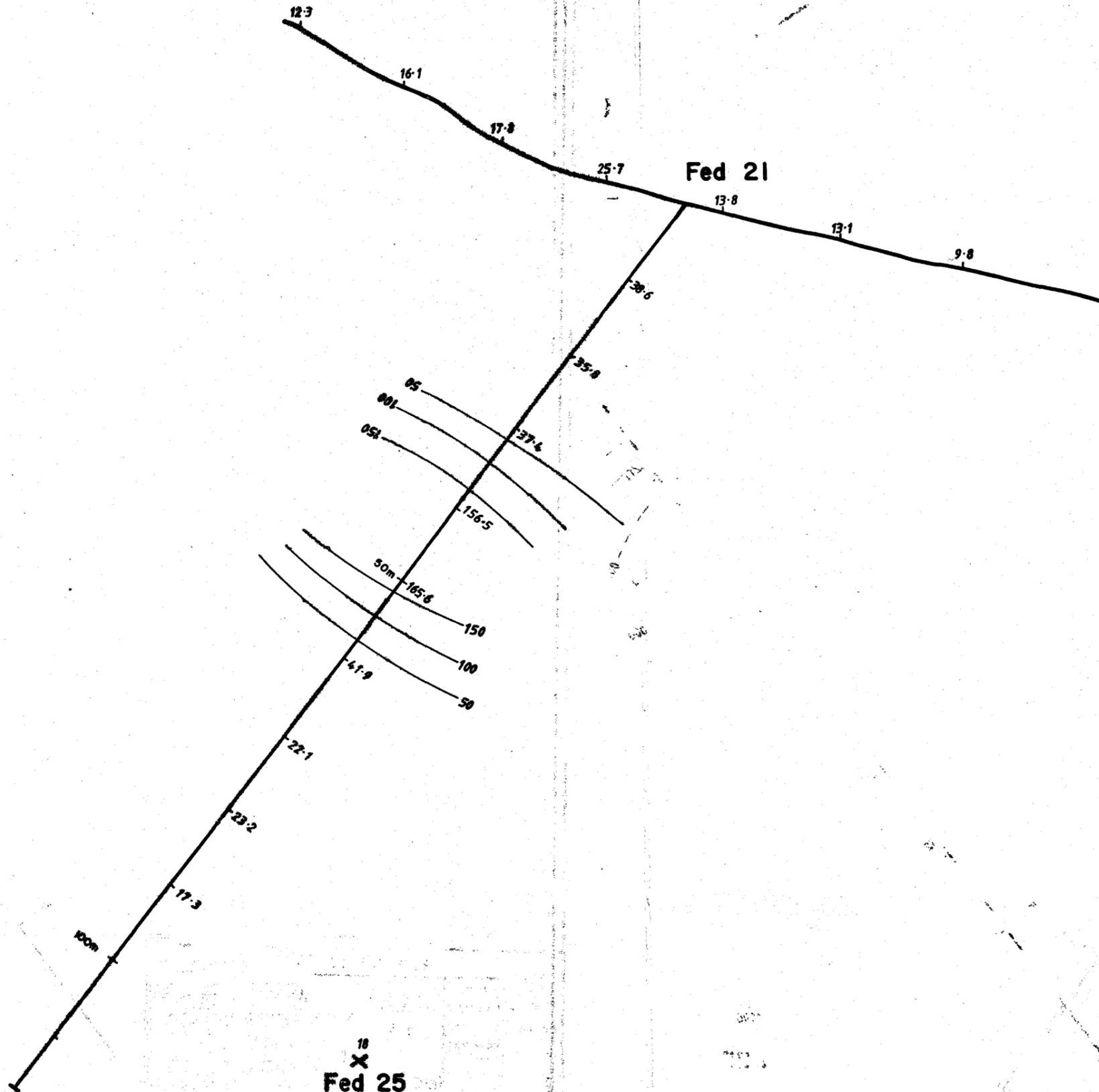
2045

GF/ MG 83/03

MITRE PHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY J.B.
AGNEW GRID - ANALY 1	DRAFTSMAN S.F.
DOWN FED 20	DATE Aug 83
FED 21 ENERGISED (at 45.5m)	REVISIONS
SECONDARY POTENTIAL (Vs)	FILE NO
SCALE 1: 500	FIG 19b

5 cm

Metres



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2047

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MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY

**AGNEW GRID - ANOMALY 1
DOWN FED 21
FED 21 ENERGISED (at 45.5m)
SECONDARY POTENTIAL (Vs)**

DRAWN BY	J.B.
DRAFTSMAN	S.F.
DATE	Aug. 83
REVISIONS	
FILE NO	

SCALE 1: 500

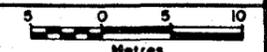
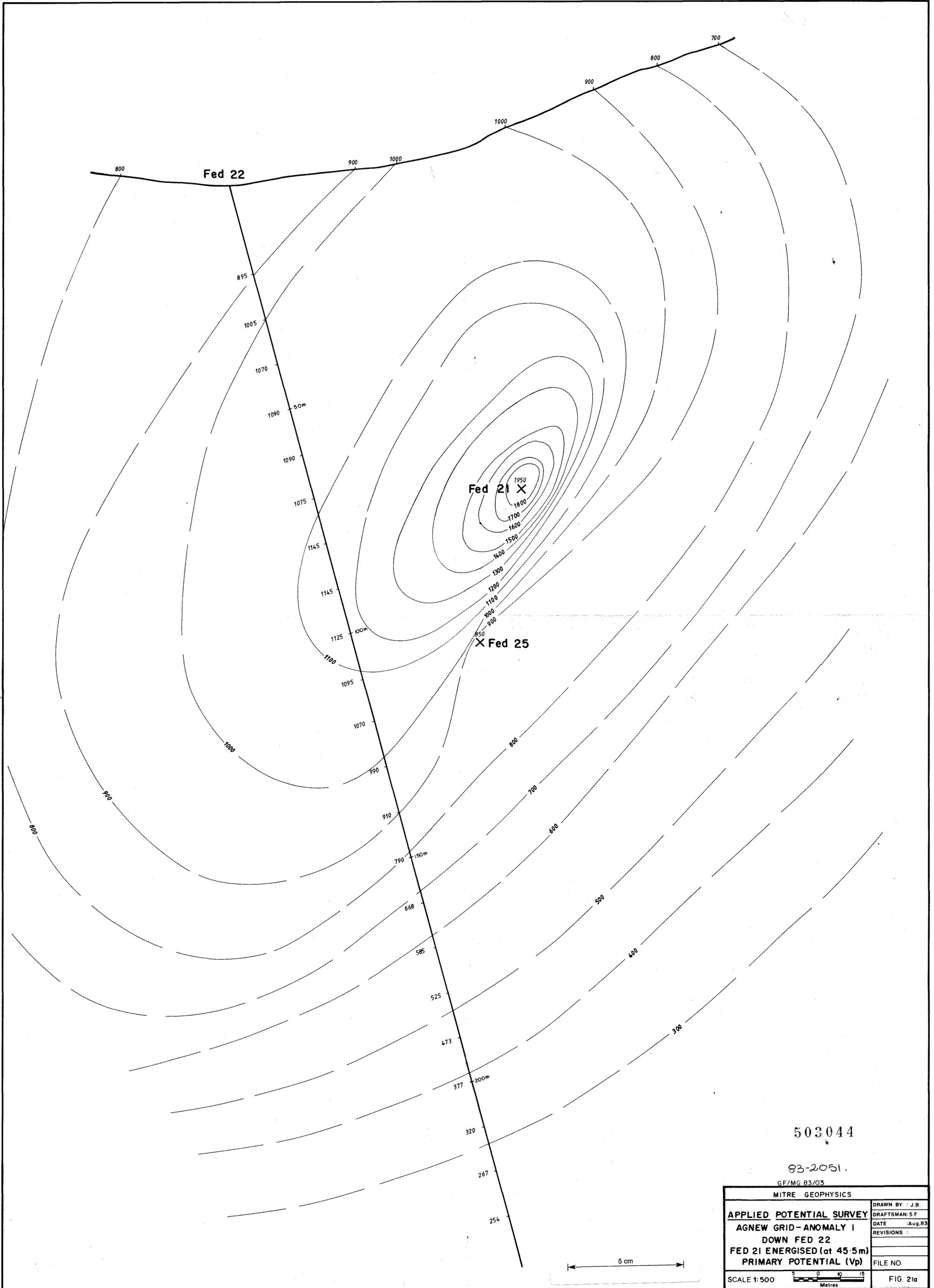
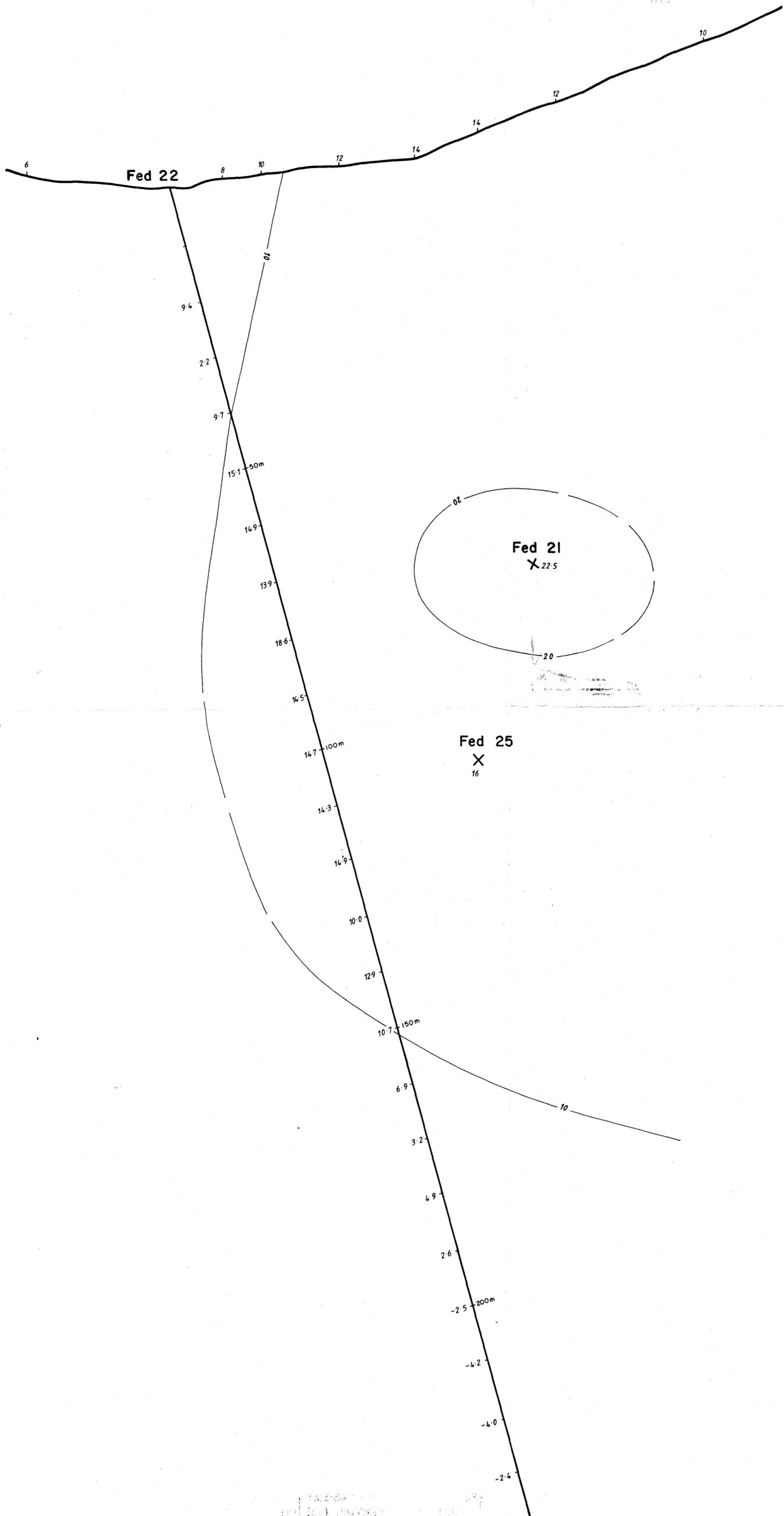


FIG 20b



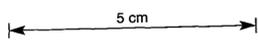


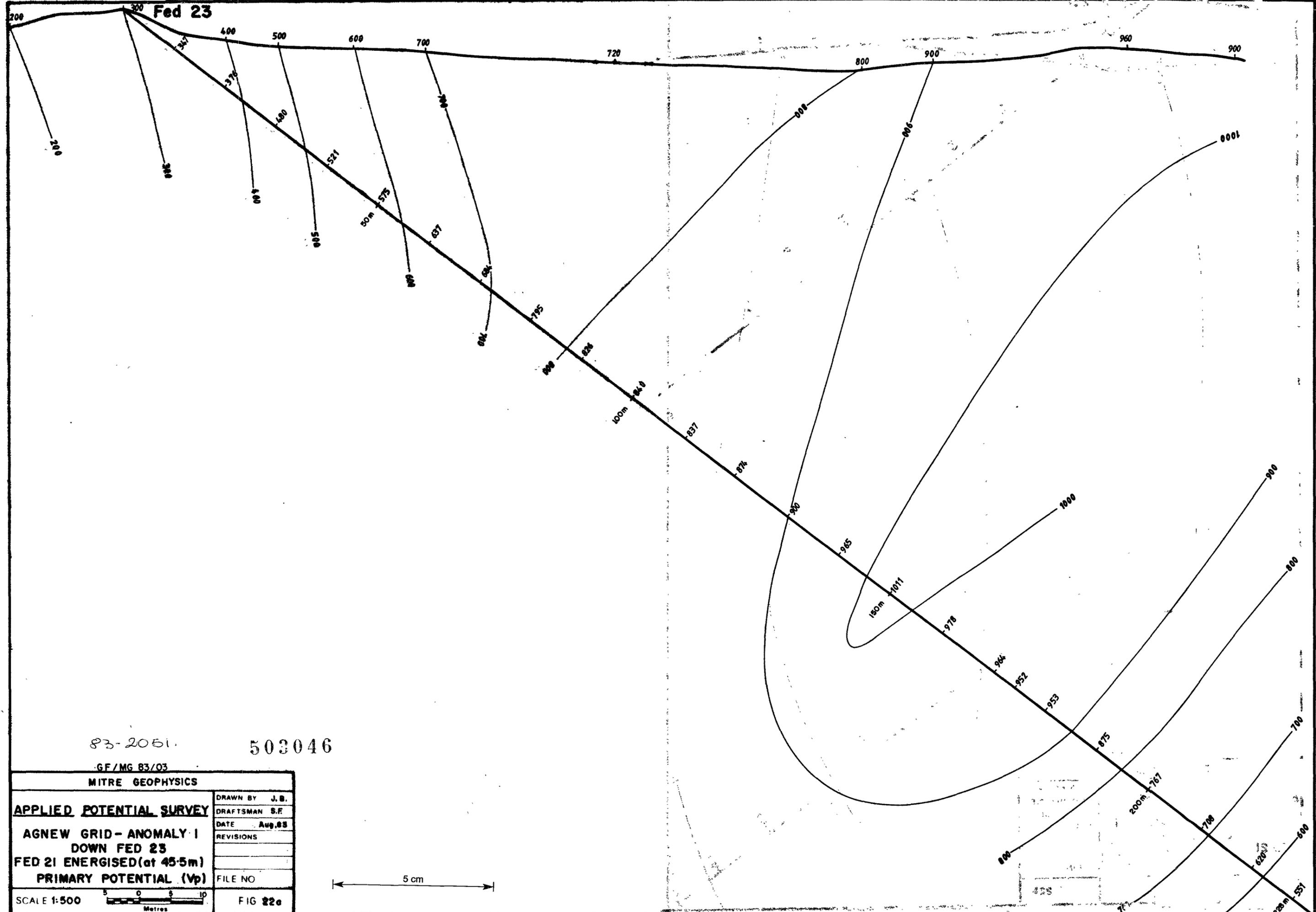
503045

83-2051

GF/MG 83/03

GOLD FIELDS EXPLORATION PTY. LIMITED	
APPLIED POTENTIAL SURVEY	DRAWN BY : J.B.
AGNEW GRID-ANOMALY I	DRAFTSMAN: S.F.
DOWN FED 22	DATE : Aug.83
FED 21 ENERGISED (at 45.5m)	REVISIONS :
SECONDARY POTENTIAL (Vs)	FILE NO.
SCALE 1:500	FIG.21b





83-2051

503046

GF/MG 83/03

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY J.B.
AGNEW GRID - ANOMALY I	DRAFTSMAN S.F.
DOWN FED 23	DATE Aug. 83
FED 21 ENERGISED (at 45.5m)	REVISIONS
PRIMARY POTENTIAL (Vp)	FILE NO
SCALE 1:500	FIG 22e

5 cm

2050

Fed 23

17

4

6

8

10

12

14

36

41

50m 4.0 (3.6)

4.3 (6.2)

4.2 (6.6)

4.7

7.4

100m 8.6 (8.4)

10.3 (9.2)

8.7 (9.8)

11.7

11.6

180m 17.6

13.9

17.0 (15.3)

17.1

17.5

200m 14.3

13.9

10.1

9.9

83-2051

503047

GF/MG 83/03

MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY

DRAWN BY J.B.

DRAFTSMAN S.F.

DATE AUG, 83

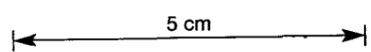
REVISIONS

FILE NO

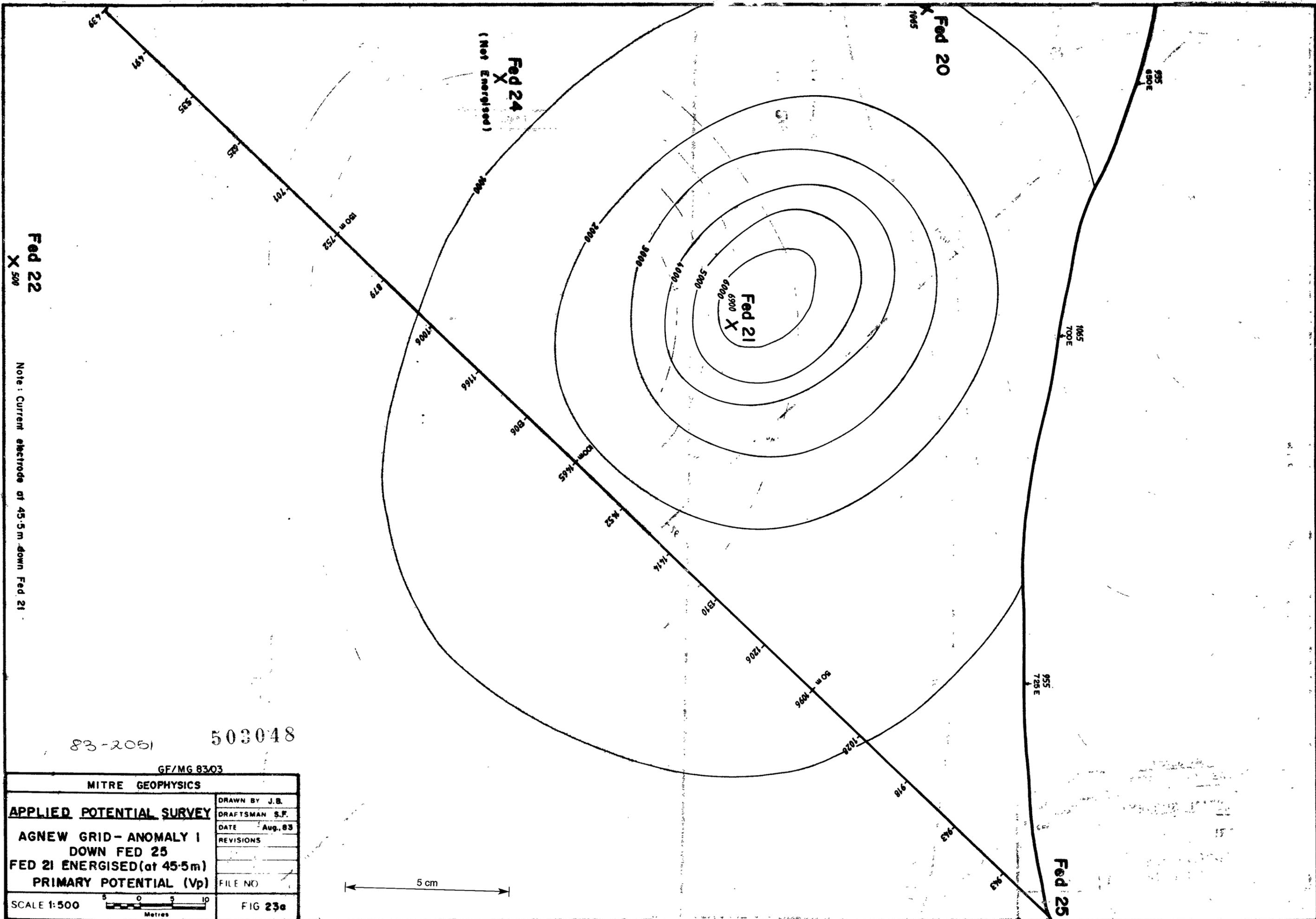
FIG 22b

AGNEW GRID - ANOMALY I
DOWN FED 23
FED 21 ENERGISED (at 45.5m)
SECONDARY POTENTIAL (Vs)

SCALE 1:500



2051



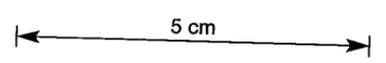
Fed 22
X 500

Note: Current electrode at 45.5m down Fed 21

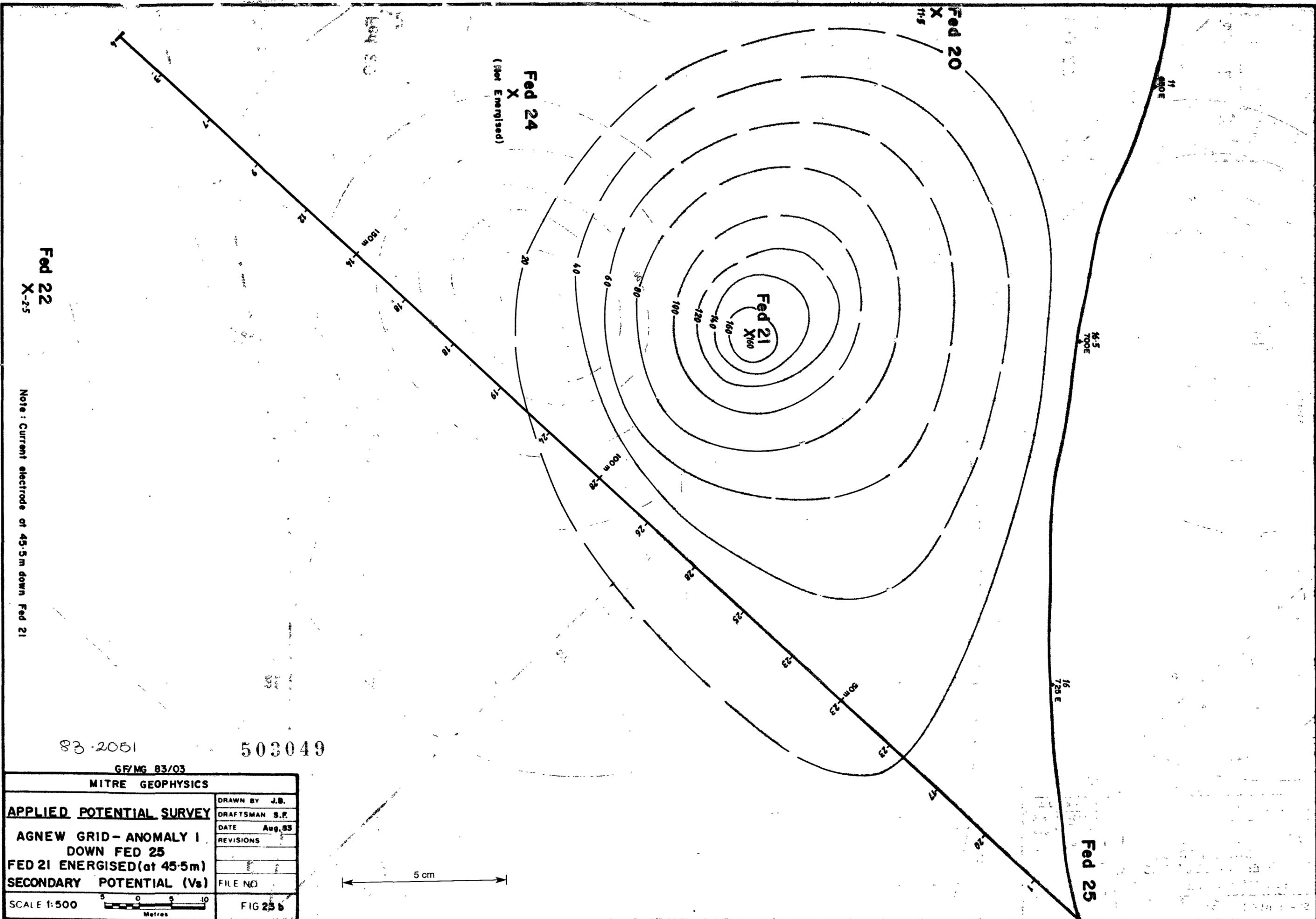
83-2051 503048

GF/MG 8303

MITRE GEOPHYSICS	
APPLIED POTENTIAL SURVEY	DRAWN BY J.B.
AGNEW GRID - ANOMALY I	DRAFTSMAN S.F.
DOWN FED 25	DATE Aug. 83
FED 21 ENERGISED (at 45.5m)	REVISIONS
PRIMARY POTENTIAL (Vp)	FILE NO
SCALE 1:500	FIG 23a



2052



Fed 22
X-25

Note: Current electrode at 45.5m down Fed 21

83-2051

503049

GF/MG 83/03

MITRE GEOPHYSICS

APPLIED POTENTIAL SURVEY

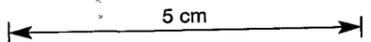
AGNEW GRID - ANOMALY I
DOWN FED 25
FED 21 ENERGISED (at 45.5m)
SECONDARY POTENTIAL (Vs)

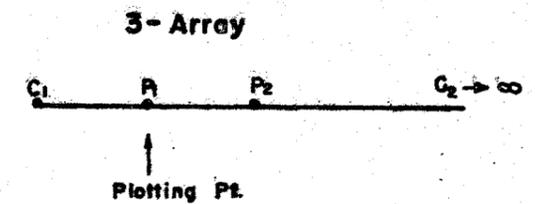
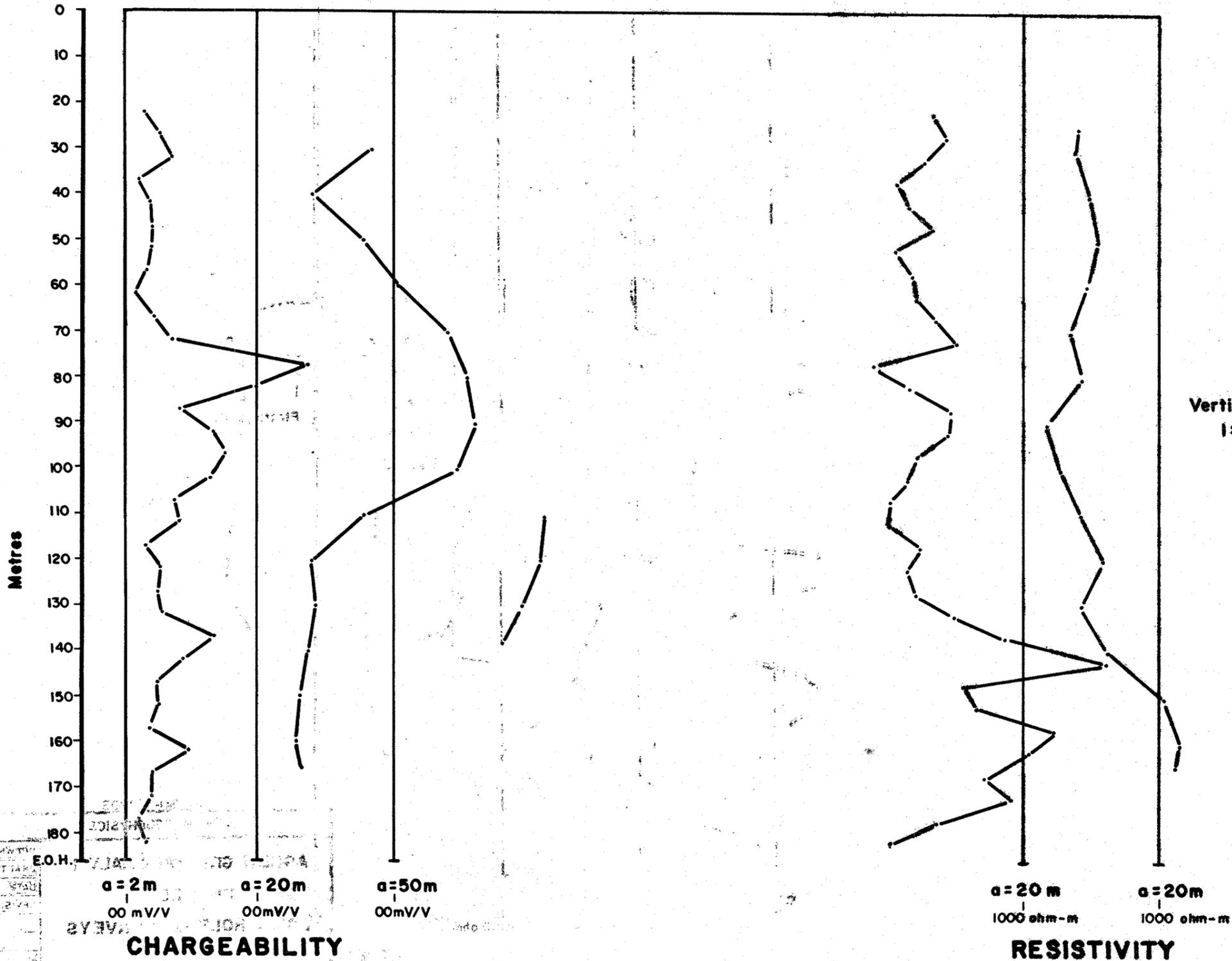
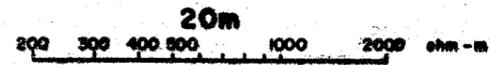
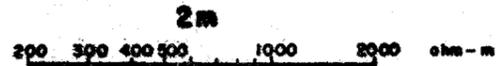
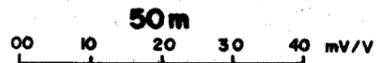
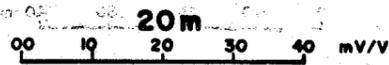
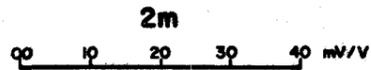
DRAWN BY	J.B.
DRAFTSMAN	S.P.
DATE	Aug. 83
REVISIONS	
FILE NO	

SCALE 1:500

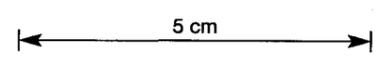


FIG 25 b





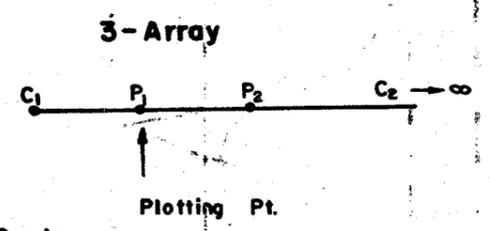
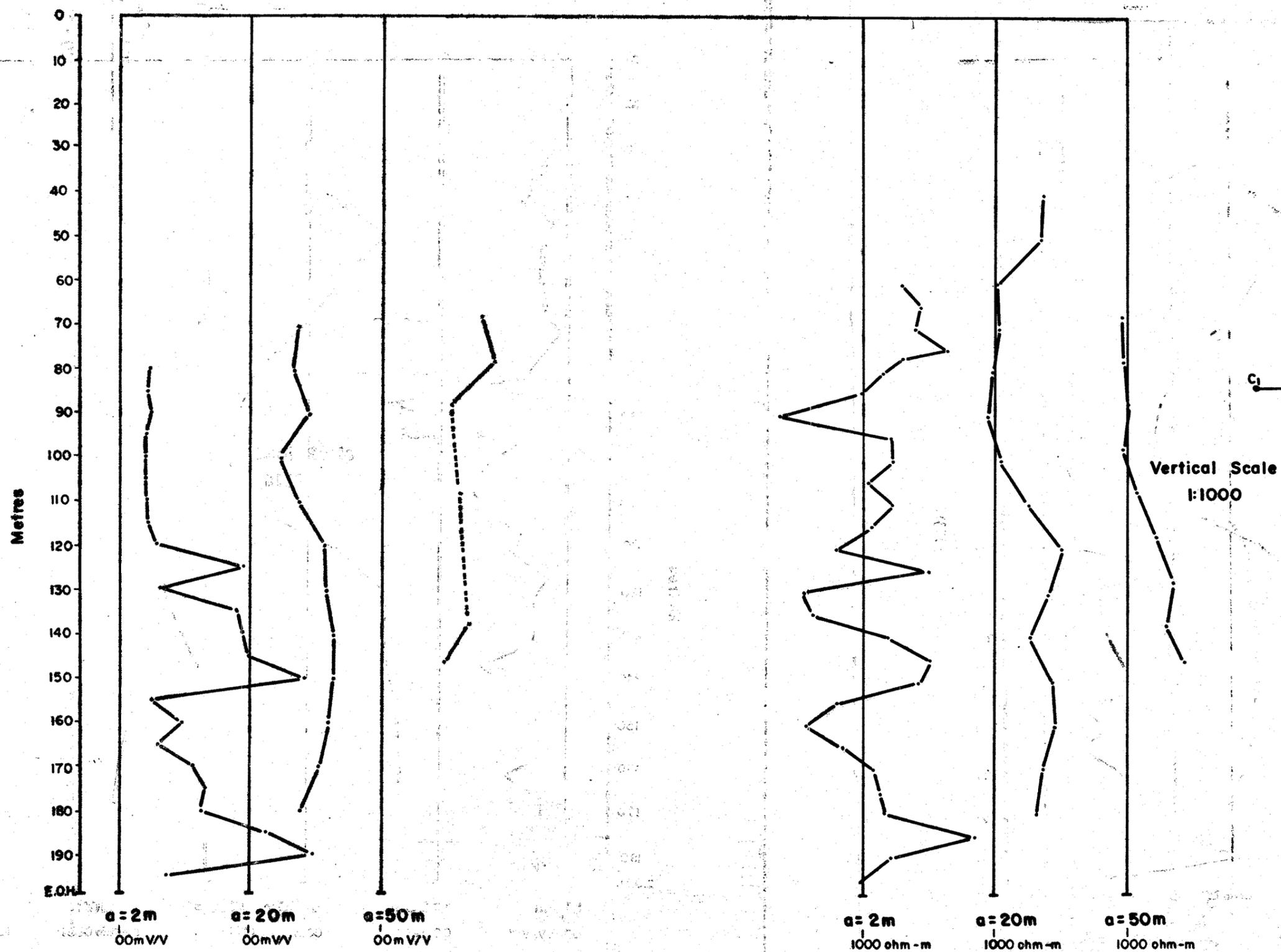
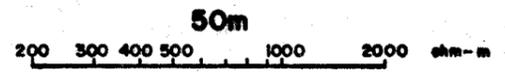
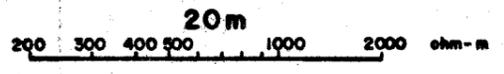
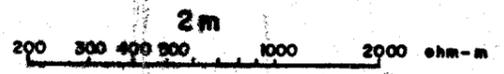
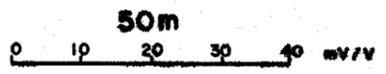
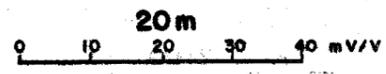
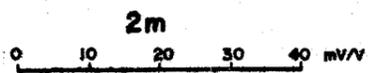
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83-2051

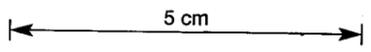
GF/MG 83/03
MITRE GEOPHYSICS

AGNEW GRID - ANOMALY I FED 24 DOWN HOLE I.P. SURVEYS	DRAWN BY : J.B.
	DRAFTSMAN: S.F.
	DATE : Aug. 83
	REVISIONS :
	FILE NO.
SCALE 1:1000	FIG 24



Vertical Scale
1:1000

503051

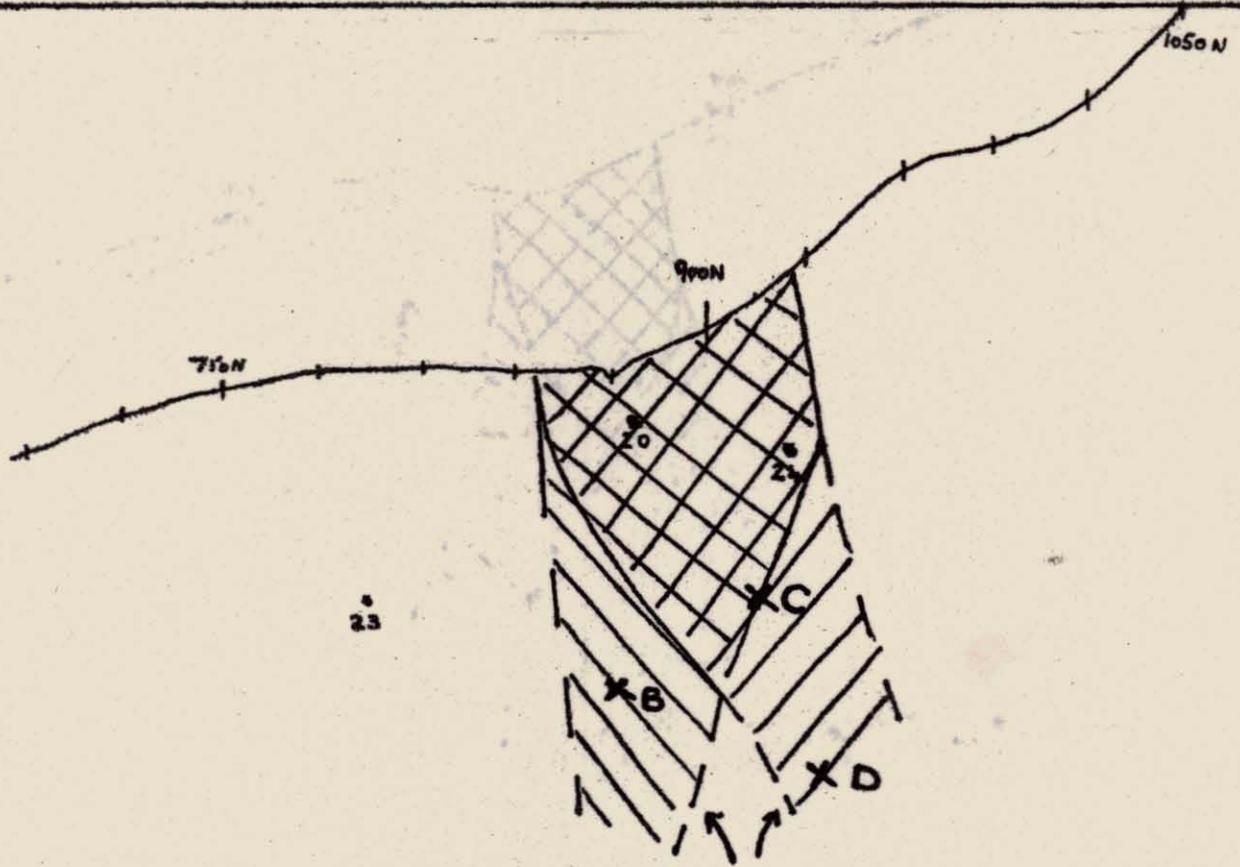


83-2051

GF/MG 83/03

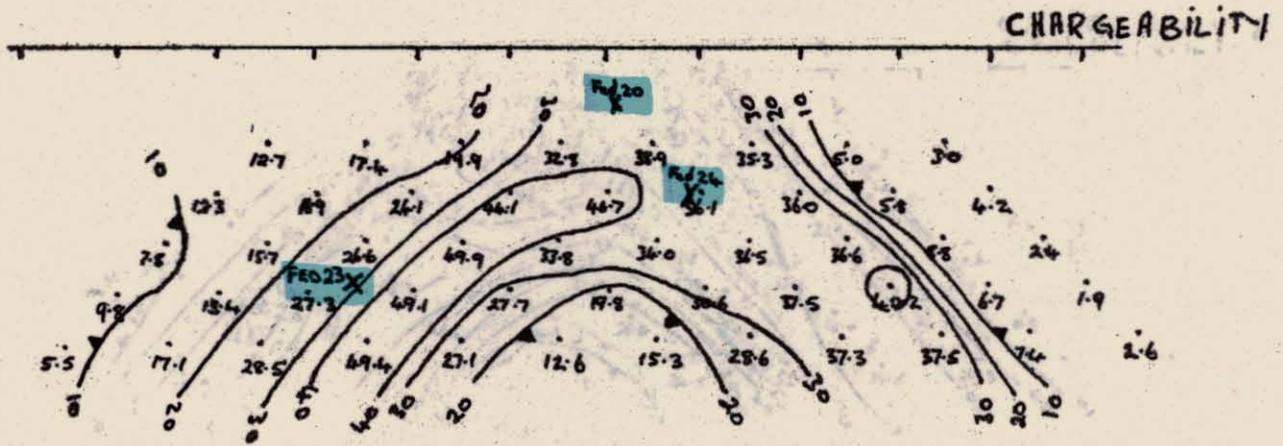
MITRE GEOPHYSICS	
AGNEW GRID-ANOMALY I	DRAWN BY: J.B.
FED 25	DRAFTSMAN: S.F.
DOWN HOLE I.P. SURVEYS	DATE: Aug. 83
	REVISIONS:
	FILE NO.
SCALE 1:1000	FIG. 25





X : proposed hole
 • : drilled hole

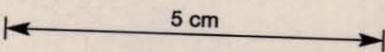
Sulphides
 (alternative interpretations)



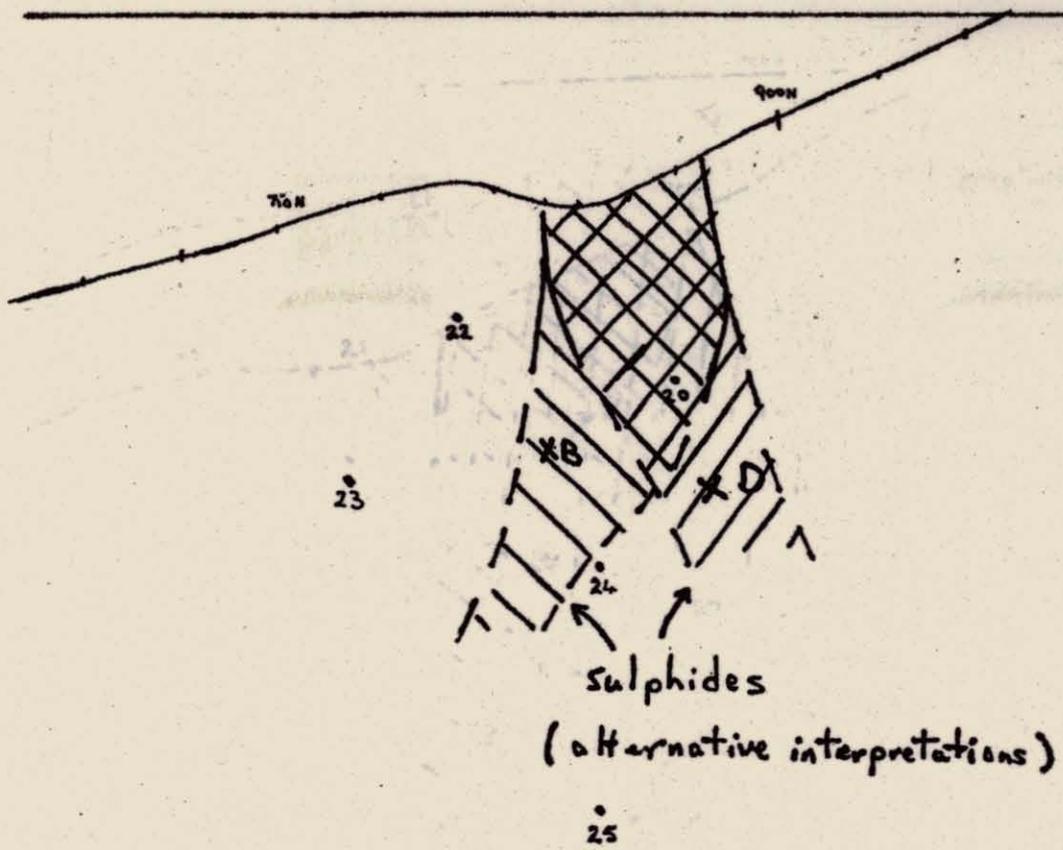
503052 83-2051

X : approx position
 of drilled hole

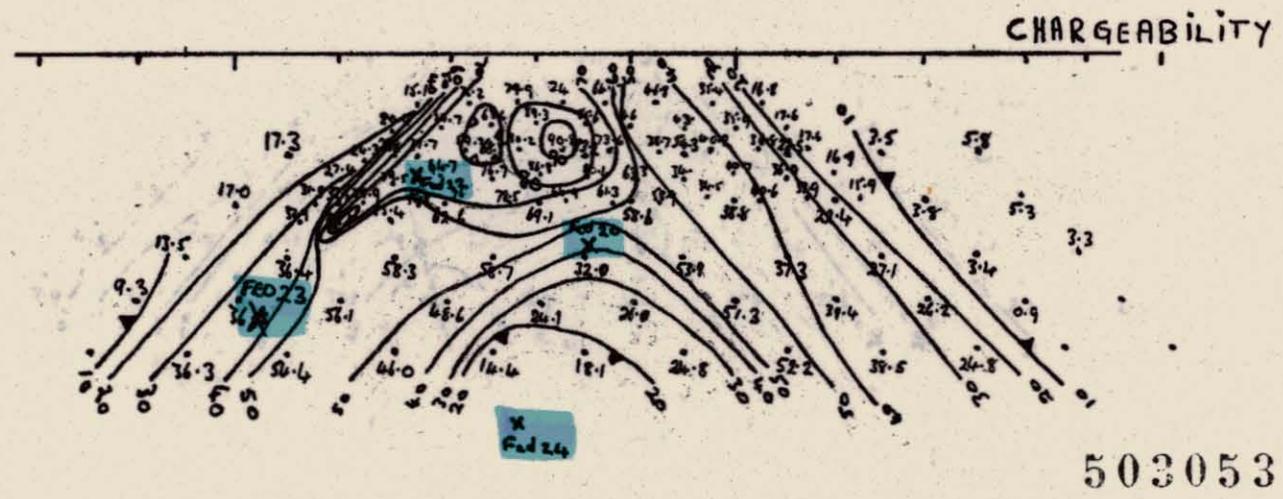
Survey by: Scintrex
 date: Dec., 1981
 dipole spacing: 30 m.



MITRE GEOPHYSICS	
AGNEW 1	
Dipole - Dipole IP	
LINE 600E	
Date: 15-8-83	FIG 26
Ref: GF/MG83/03	Scale 1:2000



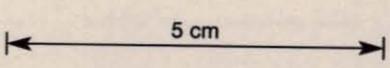
X : proposed hole
 • : drilled hole



X : approx position
 of drilled hole

Fad 25
 X

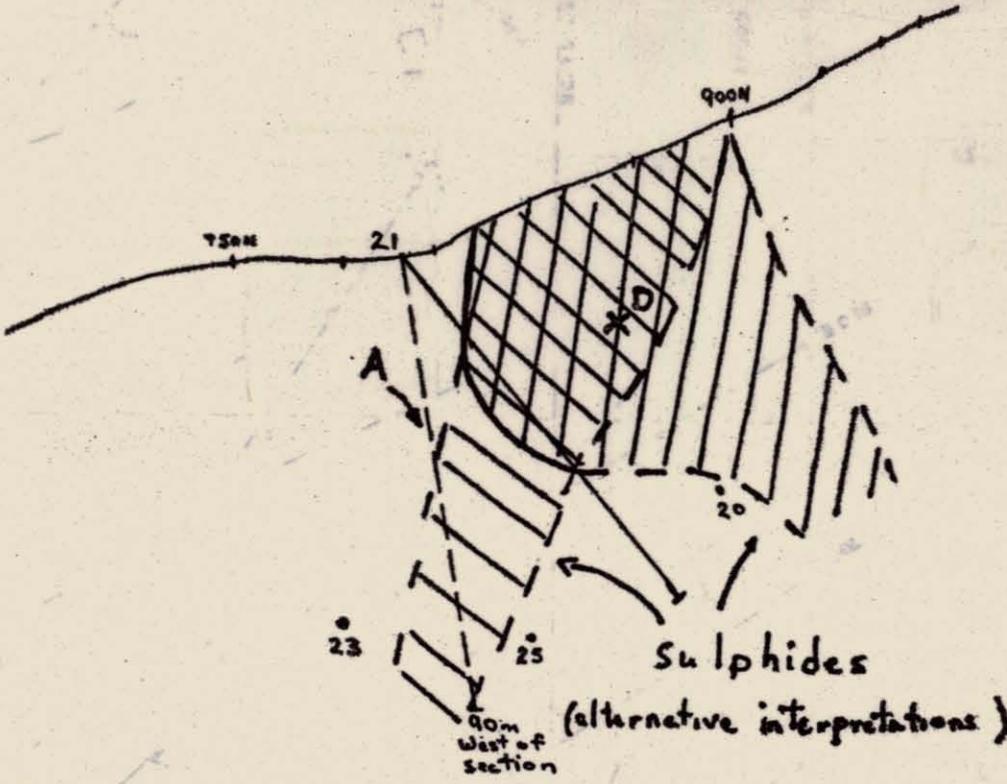
Survey by: Scintrex
 date: Dec, 1981
 dipole spacing: 30m, 15m.



Ref: GF/M683/03

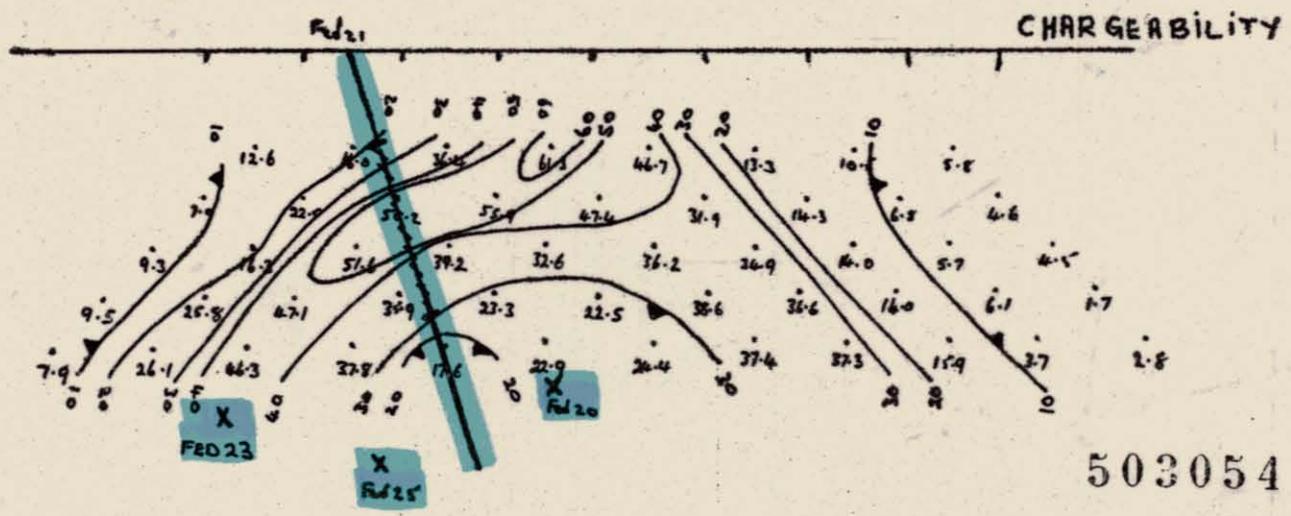
83-2061

MITRE GEOPHYSICS	
AGNEW 1	
Dipole - Dipole IP	
LINE 650E	
date: 18-8-83	FIG 27
scale 1:2000	



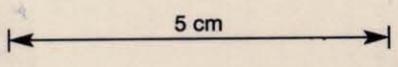
A : proposed hole
 • : drilled hole

22



X : approx position
 of drilled hole

Survey by : Scintrex
 date : Dec., 1981
 dipole spacing : 30 m.



MITRE GEOPHYSICS	
RNEW 1	
Dipole - Dipole IP	
LINE 700E	
Date 18-8-83	FIG 28
Ref. GF/MG83/03 Scale 1:2000	

83-2051.

