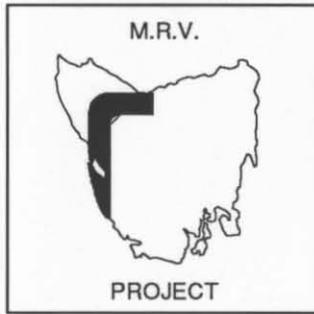


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Mt Read Volcanics Project  
Geophysical Report 10

1988

# Geophysical signatures of Western Tasmanian mineralisation

Volume 2

## Electrical properties of Western Tasmanian materials

J. R. BISHOP and R. J. G. LEWIS



TASMANIA DEPARTMENT OF MINES

**MOUNT READ VOLCANICS PROJECT**

**GEOPHYSICAL SIGNATURES OF WESTERN TASMANIAN MINERALIZATION**

**VOLUME II**

**ELECTRICAL PROPERTIES of WESTERN TASMANIAN MATERIALS**

by

J.R. Bishop & R.J.G. Lewis

December, 1988

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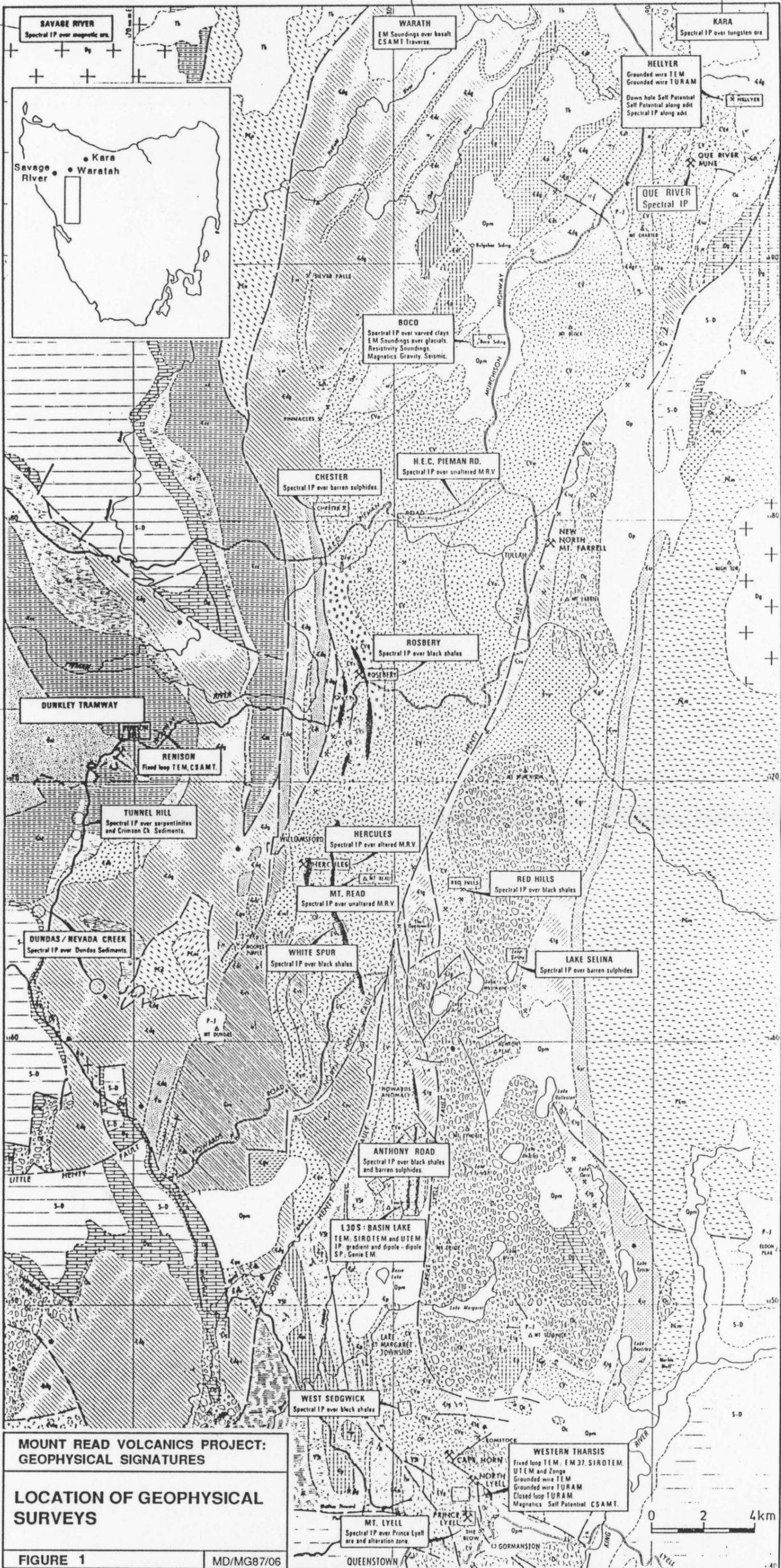
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**MOUNT READ VOLCANICS PROJECT:  
GEOPHYSICAL SIGNATURES**

**LOCATION OF GEOPHYSICAL  
SURVEYS**

**FIGURE 1** MD/MG87/06

INTRODUCTION

A part of the Signatures Project was the collection of in situ time domain resistivity and induced polarization data from numerous locations spanning not only the Mt. Read Volcanics as such but most geological environments of current or possible economic significance in Western Tasmania (Figure 1). Spectral IP parameters were fitted to this data using a Cole-Cole model (Pelton et al, 1978). Pelton's notation is followed here. Such data is of use not only in designing geophysical surveys by providing reasonable parameters for models but also enables the possible use of spectral IP techniques for material discrimination to be investigated. Spectral methods are known to be able to discriminate economic targets in at least one locality in the Mt. Read belt using large scale IP surveys (as distinct from the small scale surveys used for in situ measurements).

The Cole-Cole model assumes that the resistivity  $\rho$  varies as a function of angular frequency  $\omega$  in a manner described by four parameters:

$$\rho(\omega) = R_0 \left[ 1 - m \left\{ 1 - \frac{1}{1 + (i\omega\tau)^c} \right\} \right]$$

The parameters are known as:

- R<sub>0</sub> - DC resistivity
- $\tau$  - Time constant
- c - Frequency dependence
- m - Chargeability. To avoid confusion with the conventional parameter of this name we always refer merely to m or 'spectral chargeability'.

METHOD

All sites where measurements were made had to fit stringent criteria. To be considered a site had to meet the following requirements:

- (a) The geology/nature of the material had to be well established.
- (b) The material must outcrop or be exposed in quarries or workings so that true in situ measurements could be made.
- (c) There must be a sufficient volume of the material so that the measurements made truly reflected one rock type.

These requirements ruled out some interesting sites e.g. the ore at Hercules would have been an interesting material but the accessible sites did not meet criterion (c) above.

Data was obtained using standard time domain IP equipment with a Hunttec Mark IV receiver. This equipment is capable of a full waveform recording or a partial waveform recording where the peak voltage and the voltages over 10 windows on the decay curve are recorded. A mixture of modes was recorded but only the partial waveform data has been analysed here. It is important to know exactly what was measured and the arrangement of windows is shown in Figure 2. The Dipole-Dipole electrode array was used with dipole lengths of 1 to 3m and a dipole separation equal to the dipole length.

Data commissioned specifically for the MRV project was universally recorded with a time delay of 50ms and windows of 150ms. Data was recorded on digital cassettes in the field and is now available on both standard 9 track computer tape and floppy disks. As such it represents a uniform and consistent set of comparable data. In addition data was available from two other sources. Bishop & Lewis (1984) had collected data on the Rosebery deposit and Mather (1985) had collected data in the Que River - Hellyer region. Both of these collections include underground measurements. However, they are not on the same uniform timebase as the specific MRV data as they were obtained in part to examine sampling schemes, nor is the field data format consistent with the later work. All the Rosebery data was written into field notebooks and while the Que - Hellyer data was recorded on cassette the cassettes do not contain all the required data. Mathers results have been completely recalculated for this report.

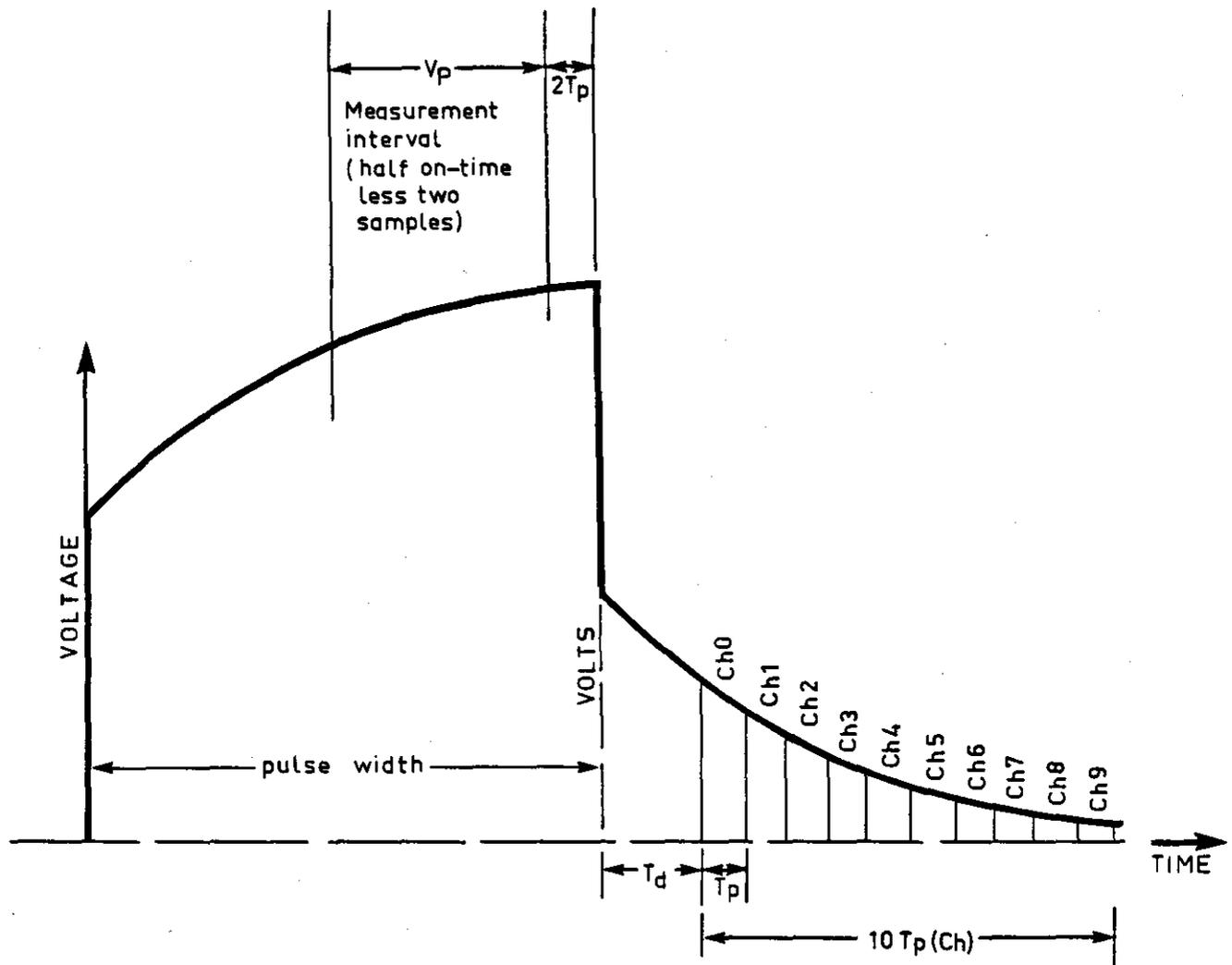


Figure 2. The arrangement of measurement windows with the Hunttec Mark IV receiver used for spectral IP measurements. All data obtained specifically for the MRV Signatures Project used a pulse width of 2s,  $T_d = 50$  ms,  $T_p = 150$  ms.

### ANALYSIS

In addition to some elementary statistics, an analysis of the spectral IP parameters was made using a modification of the method described by Lewis (1985). No EM coupling removal was used as it seemed unnecessary with small electrode spreads. To be specific, the method consisted of least squares fitting of a Cole-Cole model to the observed waveform. The process used bears the same relationship to the algorithm of Brown & Dennis (1972) (on which it is based) as does that of Jupp & Vozoff (1975) to the algorithm of Marquardt (1963). All data was analysed, the only rejections being occasioned by obvious data inconsistencies (e.g. zero resistivity, manifest operator error, etc), a change in sign during the decay or physically impossible spectral properties ( $c$  or  $m > 1$ , etc.). There has been no selection of the spectral data on the goodness of fit of the model as we are interested in practical measurements with all their defects.

### ORGANIZATION OF THIS REPORT

The report consists of two sections, the first being a discussion and synthesis of selected results, and the second a compendium of data which is given in a separate appendix.

The compendium is organised by geographic locality. This is clearly not ideal for many purposes so an index by rock type is provided at the front. Lists of localities ordered in ascending values of the 6 IP parameters are provided at the end of the body of the main report.

In the compendium the results are presented in the following way:

- (a) For each site there is a page showing the range, mean and standard deviation of all quantities measured. The average chargeabilities in the decay are also tabulated. Where, as for example, in the Rosebery data, there are different estimates of chargeability for different time gate structures, an entry appears for each gate structure. For some of the Que - Hellyer data there are many more spectral estimates than ordinary measurements due to problems with recovering Mather's files. Each page header contains a notation of the form MRVXXXX which is an index into the data files. The numbers in these indices are not contiguous.

- (b) For each site with spectral data there are variation plots showing the results as plots of pairs of spectral parameters. These are more revealing than simple means and ranges.

## RESULTS

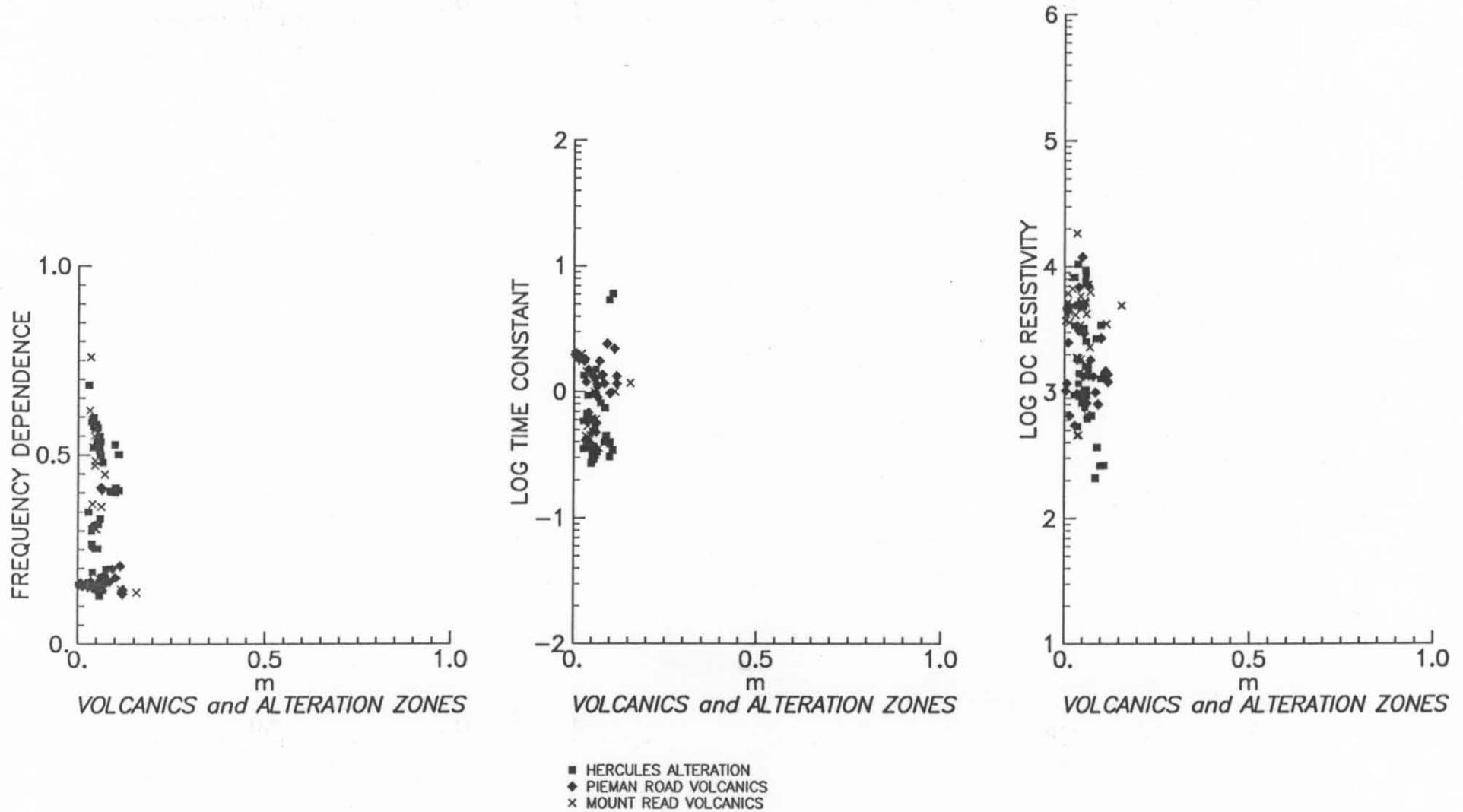
### **VOLCANICS AND ALTERATION ZONES**

Geological advice is to the effect that all of the Mount Read Volcanics are altered to some extent. However, it is apparent that there are more intense alteration zones associated with mineralization in some cases and a study of the possibility of discriminating such alteration zones is of interest as it might provide a guide to mineralization. Also, the background properties of the volcanics are of interest in constructing models for geophysical exploration or interpretation.

Four localities were investigated specifically for the Signatures Project. Sites along the Pieman Road at Tullah and on Mount Read were taken as typical of relatively unaltered volcanics while the alteration zone at the Hercules mine provided 3 sites for altered material. A further set of measurements were made in the decline to the Hellyer Mine which should reflect a good sample of volcanics about a major massive sulphide body. A set of resistivity only (apparently due to transmitter problems) is also available for the massive pyroclastics underground at Rosebery.

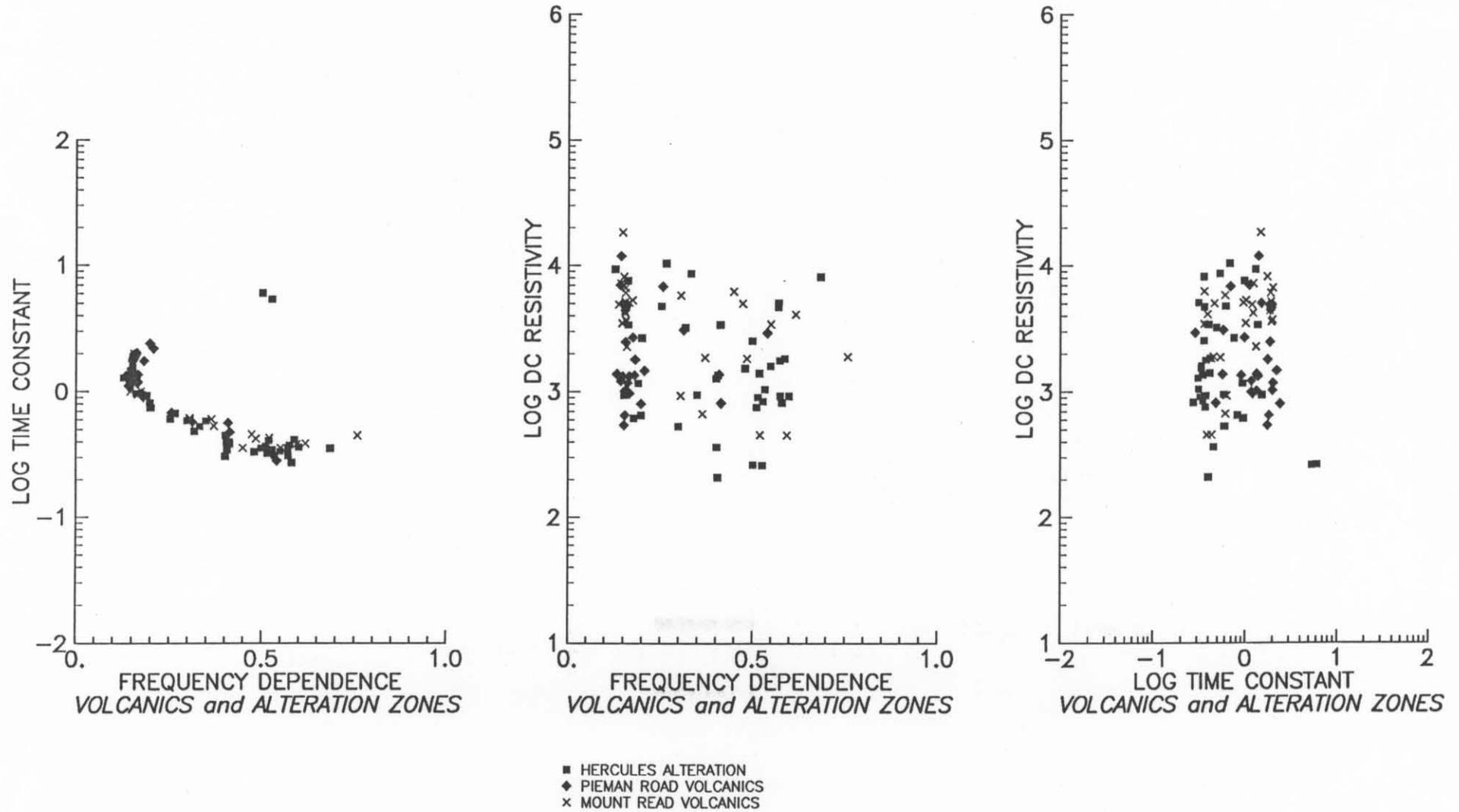
Results for the Hercules, Pieman Road and Mount Read areas are shown in Figures 3-4. It is apparent that the sites do not separate well in any of the parameter variation diagrams and accordingly it is not possible to distinguish alteration zones using the current data. However, in  $c-\tau$  space (Figure 4) there is a quite remarkable grouping of values along a curved path. Figures 5 and 6 contain results from the Hellyer decline in addition to the other sites. It is apparent that the Hellyer data contains some samples with much higher  $m$  values ( $>0.5$ ) and a few very low resistivities. These probably represent the margin of mineralization and are not included in subsequent discussion. The Hellyer data has somewhat lower resistivities than the other sites although there is considerable overlap. It is again apparent (Figure 6) that the locus observed previously in  $c-\tau$  space contains most of the Hellyer data.

It may well be that although we are unable to discriminate between our different sites, the locus in  $c-\tau$  space may be useful for such purposes. It may be hypothesised that the sites are not sufficiently homogenous and that detailed studies of the alteration might correlate with position on the locus. Testing this hypothesis would require detailed alteration studies beyond the scope of the Signatures Project.



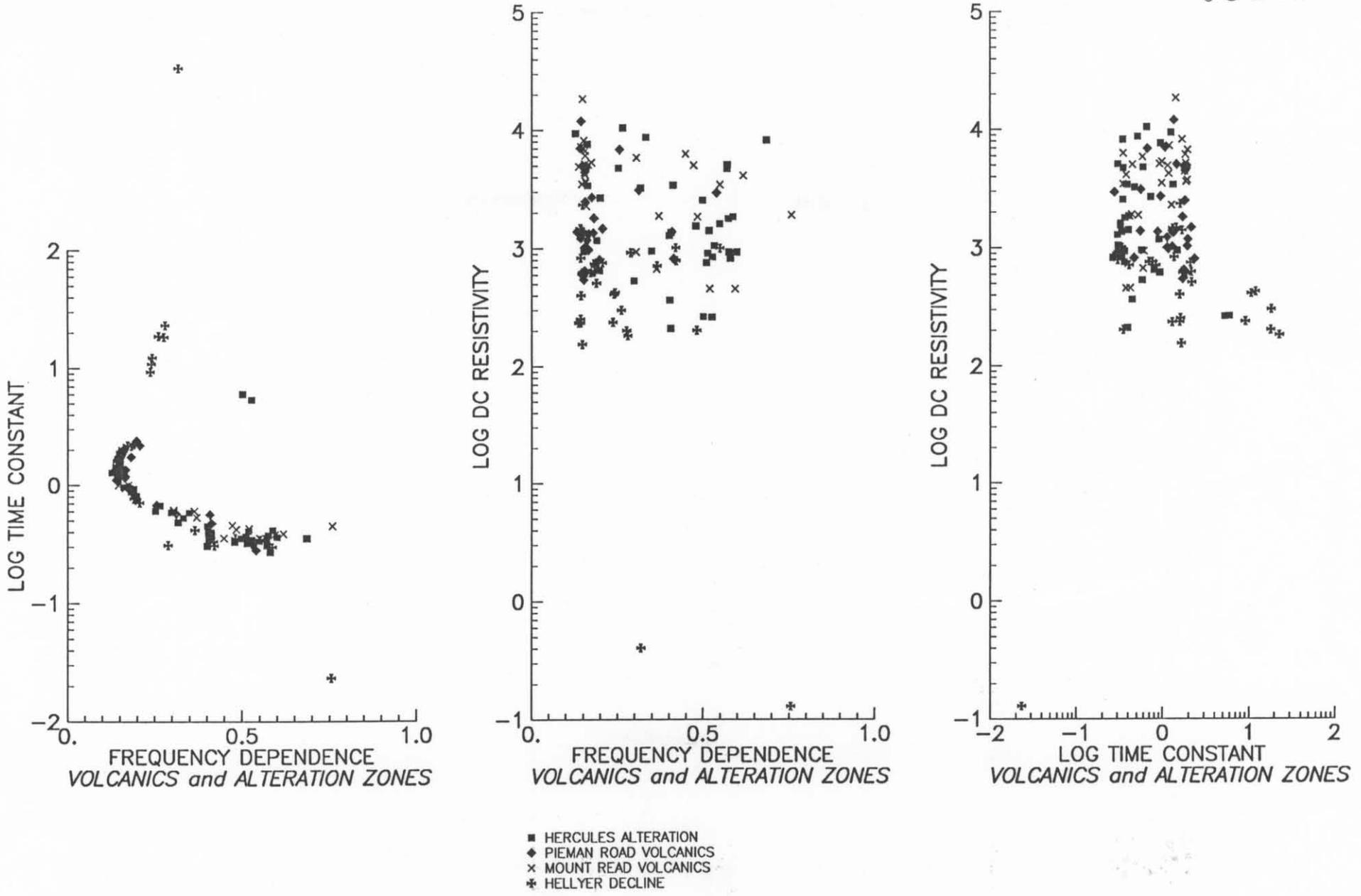
ALTVOLC

Figure 3. Spectral IP parameter variation for volcanics from the Mount Read, the Pieman Road and Hercules Mine areas. The Hercules site is part of a large alteration zone.



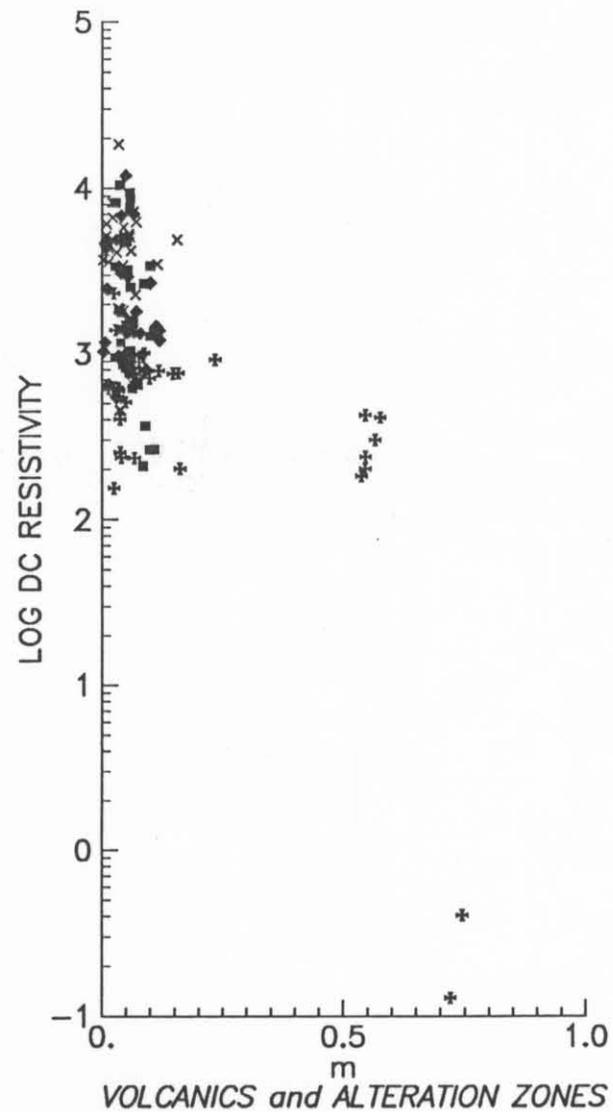
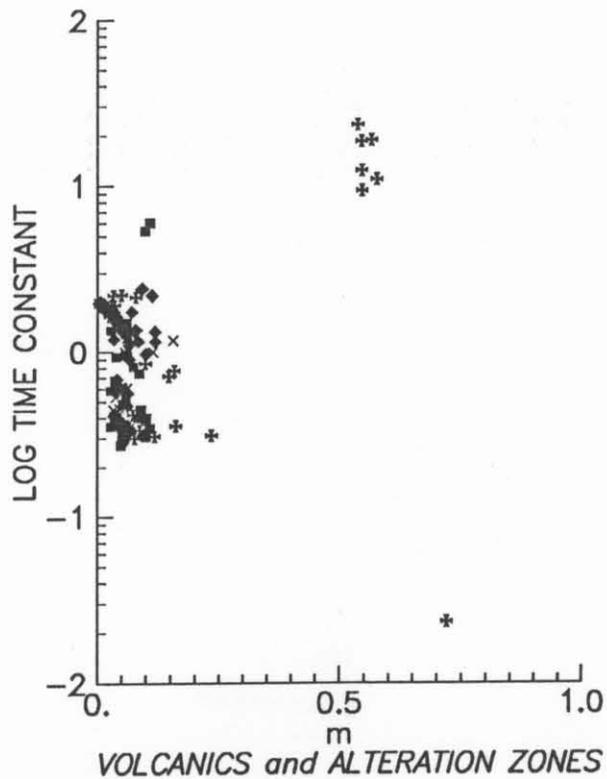
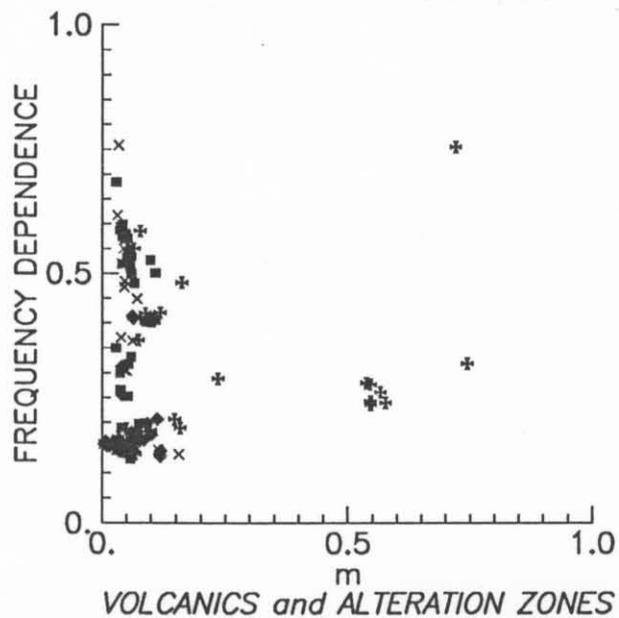
ALTVOLC

Figure 4. Spectral IP parameter variation for volcanics from the Mount Read, the Pieman Road and Hercules Mine areas. The Hercules site is part of a large alteration zone.



ALLVOLC

Figure 5. Spectral IP parameters for the volcanics from Mount Read, the Pieman Road, Hercules Mine and the Hellyer Mine Decline. The Hellyer decline site contains some values quite different from the other volcanics. These are associated with sulphides.



- HERCULES ALTERATION
- ◆ PIEMAN ROAD VOLCANICS
- × MOUNT READ VOLCANICS
- \* HELLYER DECLINE

ALLVOLC

Figure 6. Spectral IP parameters for the volcanics from Mount Read, the Pieman Road, Hercules Mine and the Hellyer Mine Decline. The Hellyer decline site contains some values quite different from the other volcanics. These are associated with sulphides.

**PYRITE DEPOSITS**

Five sites comprise this group. The Chester Mine is an example of a massive volcanogenic barren pyrite body, mined in the past for both flux and the manufacture of sulphuric acid. The Selina Pyrite Zone, sampled at Lake Selina, has been a prolific source of EM, IP and magnetic anomalies and can be traced under cover using IP methods. At Hellyer there is a zone of pyritised pillow lavas which produces a strong IP response. At both the Anthony Road and on Bradshaws Road there are zones of pyritic material producing geophysical anomalies.

The results of our surveys are shown in Figures 7 and 8 and should be compared with the mean conventional (field) IP parameters (ordered by increasing resistivity):

| Resistivity<br>( $\Omega\text{m}$ ) | Chargeability<br>(ms) | Site                         |
|-------------------------------------|-----------------------|------------------------------|
| 123.                                | 39.4                  | Chester Mine                 |
| 546.                                | 13.5                  | Anthony Road                 |
| 645.                                | 11.5                  | Bradshaws Road               |
| 833.                                | 63.4                  | Selina Pyrite Zone           |
| 2740.                               | 25.8                  | Pyritised pillows at Hellyer |

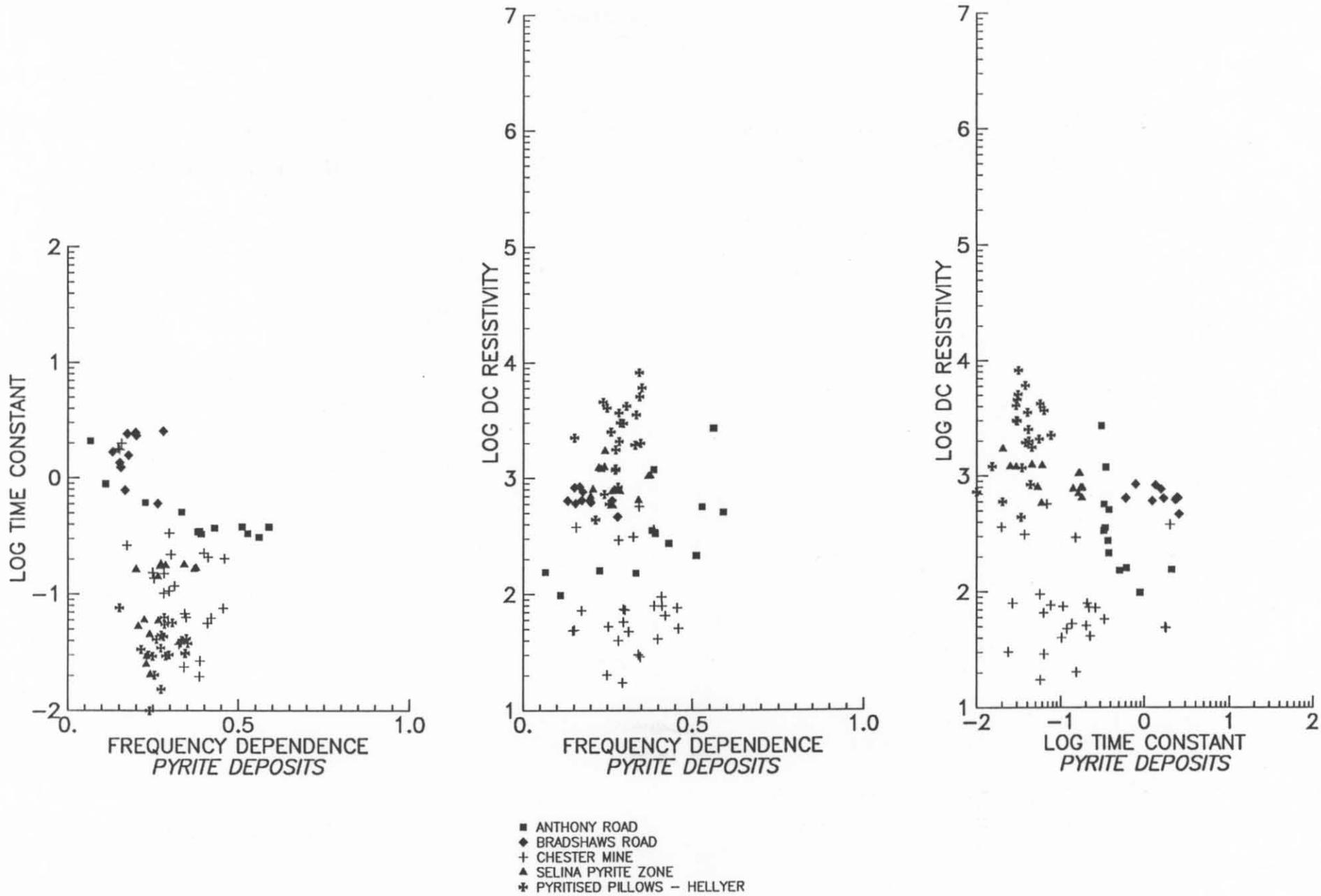
It is obvious why IP so successfully delineates the Selina pyrites. In fact, the chargeability is very close to that found for the S lens at Que River Mine.

In spectral parameter space the most striking features are the short time constants (all less than 3s) and how low the  $m$  ('spectral chargeability) values are for many of the sites. The only site where  $m$  exceeds 0.7 is at Selina and this is associated with short time constants of less than 0.5s. The spectral DC resistivity ranking is the same as that above.

It is apparent from a comparison with the results from economic deposits below, that the pyrites and pyrite zones are quite distinct on the basis of spectral properties having both shorter  $\tau$  and smaller  $m$  values than the massive sulphides. In general the pyrites show a decreasing  $\tau$  with increasing  $m$  (the 'Chester Trend') which is the opposite effect to that seen with massive sulphides.

Two other pyritic materials should also be mentioned here although they were not actually included in the surveys as such. These are the S lens at Que River and some of the pyritic host rocks at Rosebery. These materials had the lowest mean resistivities (2.13, 2.47  $\Omega\text{m}$  respectively) of all the materials measured. This explains the good EM response of the S lens and suggests that parts of Rosebery might also be good EM targets. The pyritic host at Rosebery has very low chargeability (7.4 ms) and is not likely to be mistaken for massive sulphide on its spectral properties. The S lens on the other hand, has a

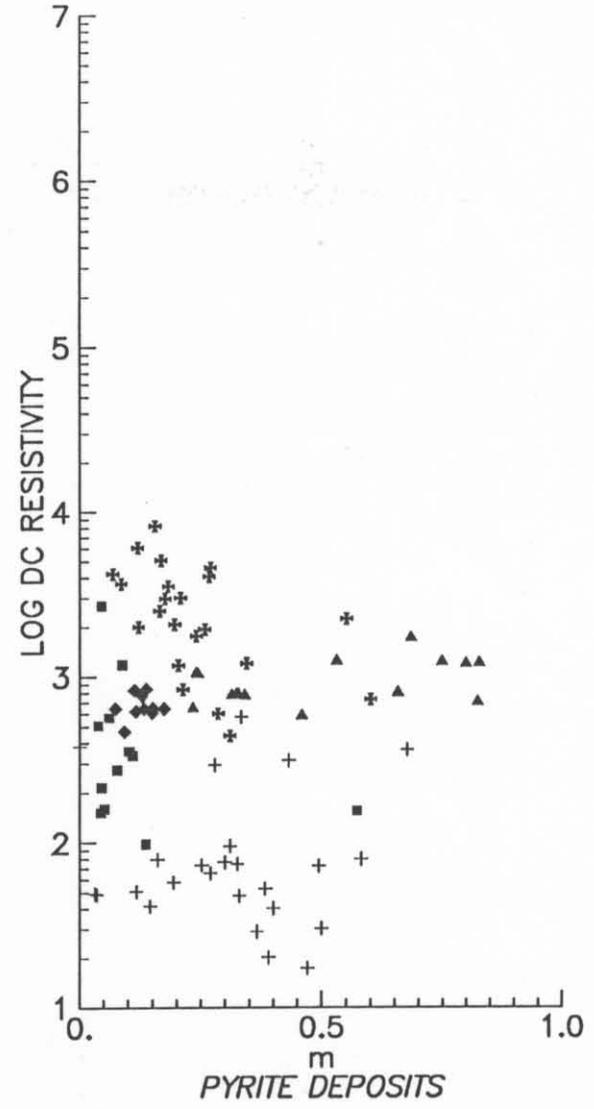
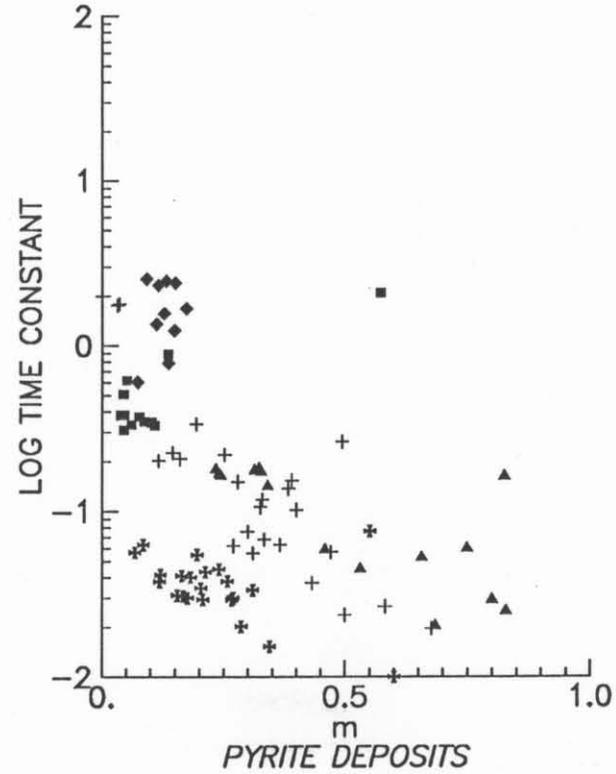
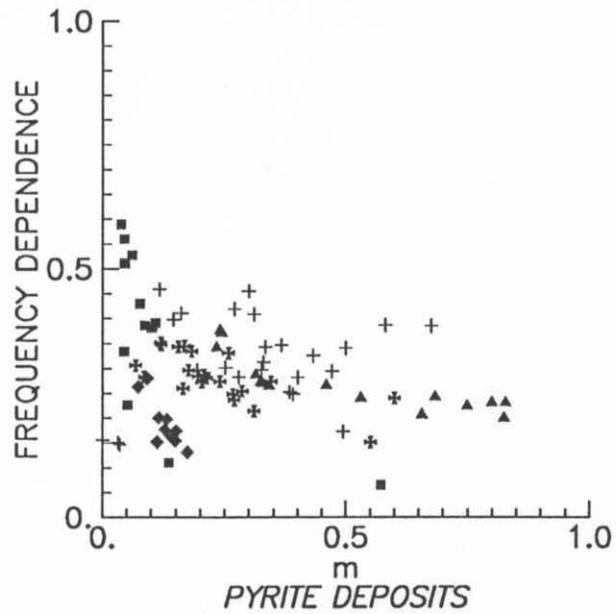
high chargeability (68.5 ms) and on conventional parameters is a prime target. Examination of the spectral parameters for Que River and Hellyer (Figures 11, 12) suggests that this is a more difficult target to discriminate than the other pyrite bodies. One would need a criterion such as  $m > 0.7$ ,  $\tau > 10$  s to select massive sulphides and only part of the high grade parts of the PQ lens would be found to be of interest. Even so, this might be regarded as satisfactory, or, if not, having the S lens as the only exception to the discrimination of pyrites also seems acceptable.



PYRITES

Figure 7. Spectral IP parameters for the massive pyrite at the Chester Mine, the pyrite zones on the Anthony Road, Bradshaws Road and Lake Selina and pyritised pillow lavas at Hellyer.

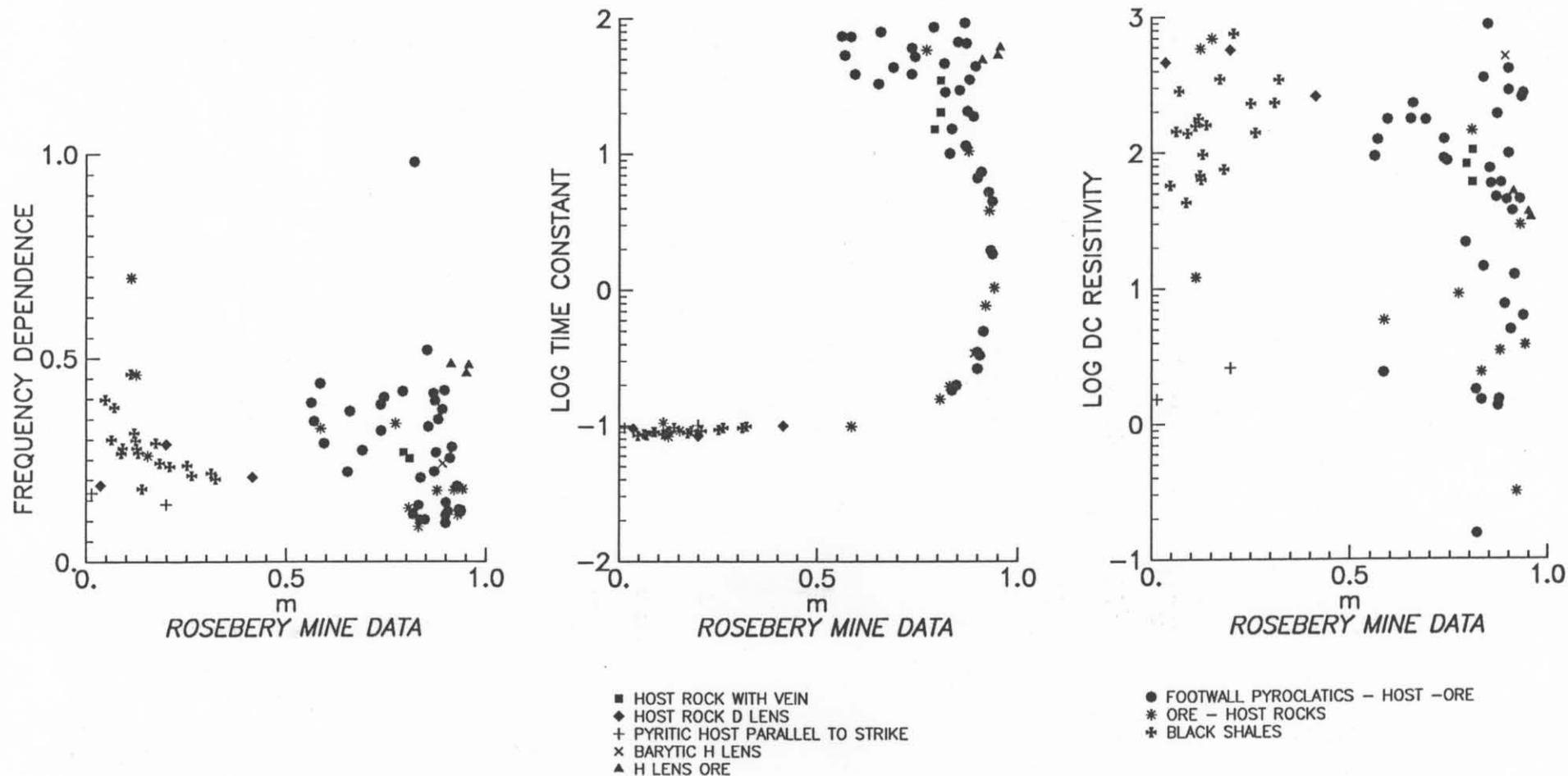
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- ANTHONY ROAD
- ◆ BRADSHAW'S ROAD
- + CHESTER MINE
- ▲ SELINA PYRITE ZONE
- \* PYRITISED PILLOWS - HELLYER

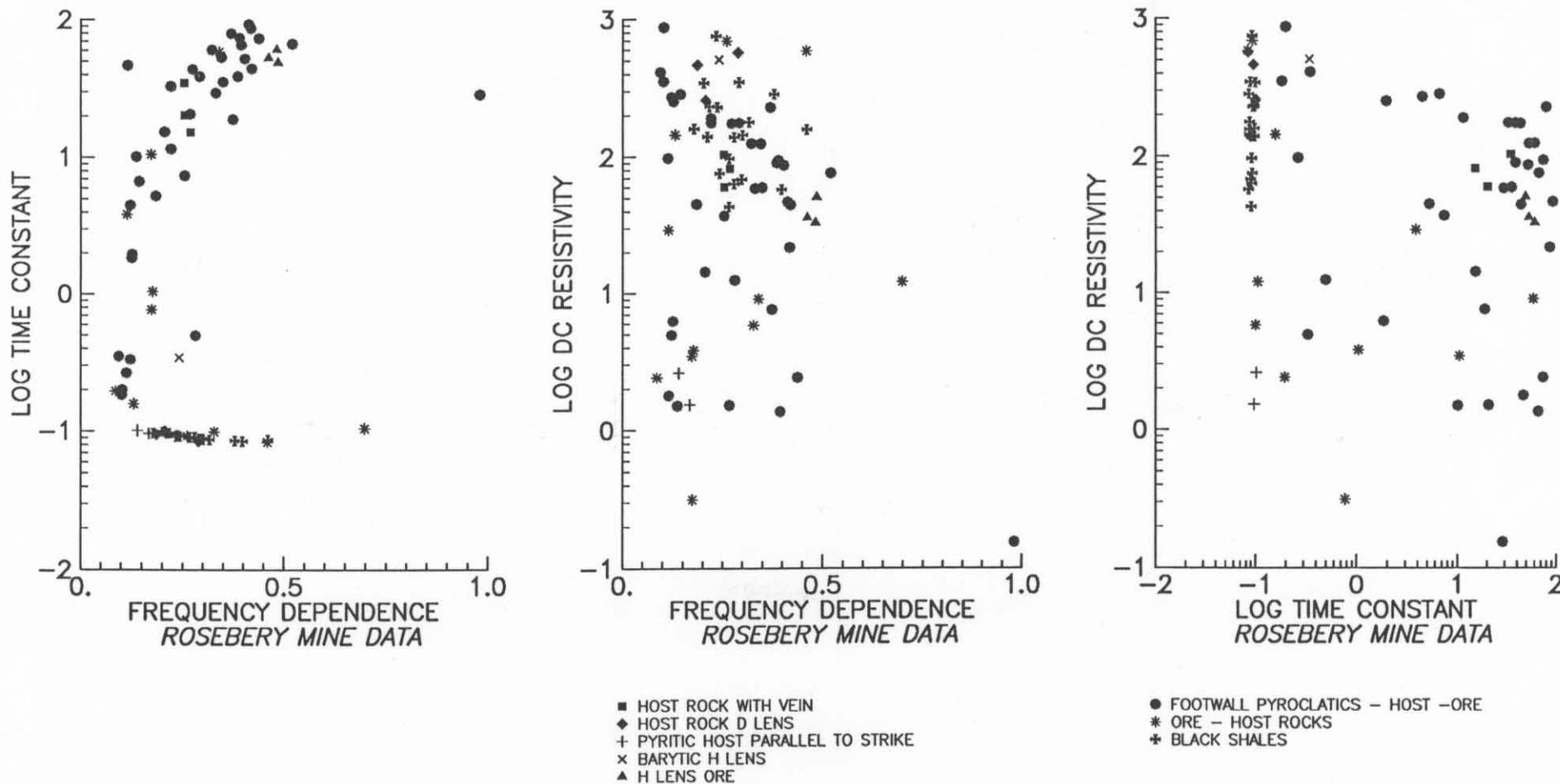
PYRITES

Figure 8. Spectral IP parameters for the massive pyrite at the Chester Mine, the pyrite zones on the Anthony Road, Bradshaws Road and Lake Selina and pyritised pillow lavas at Hellyer.



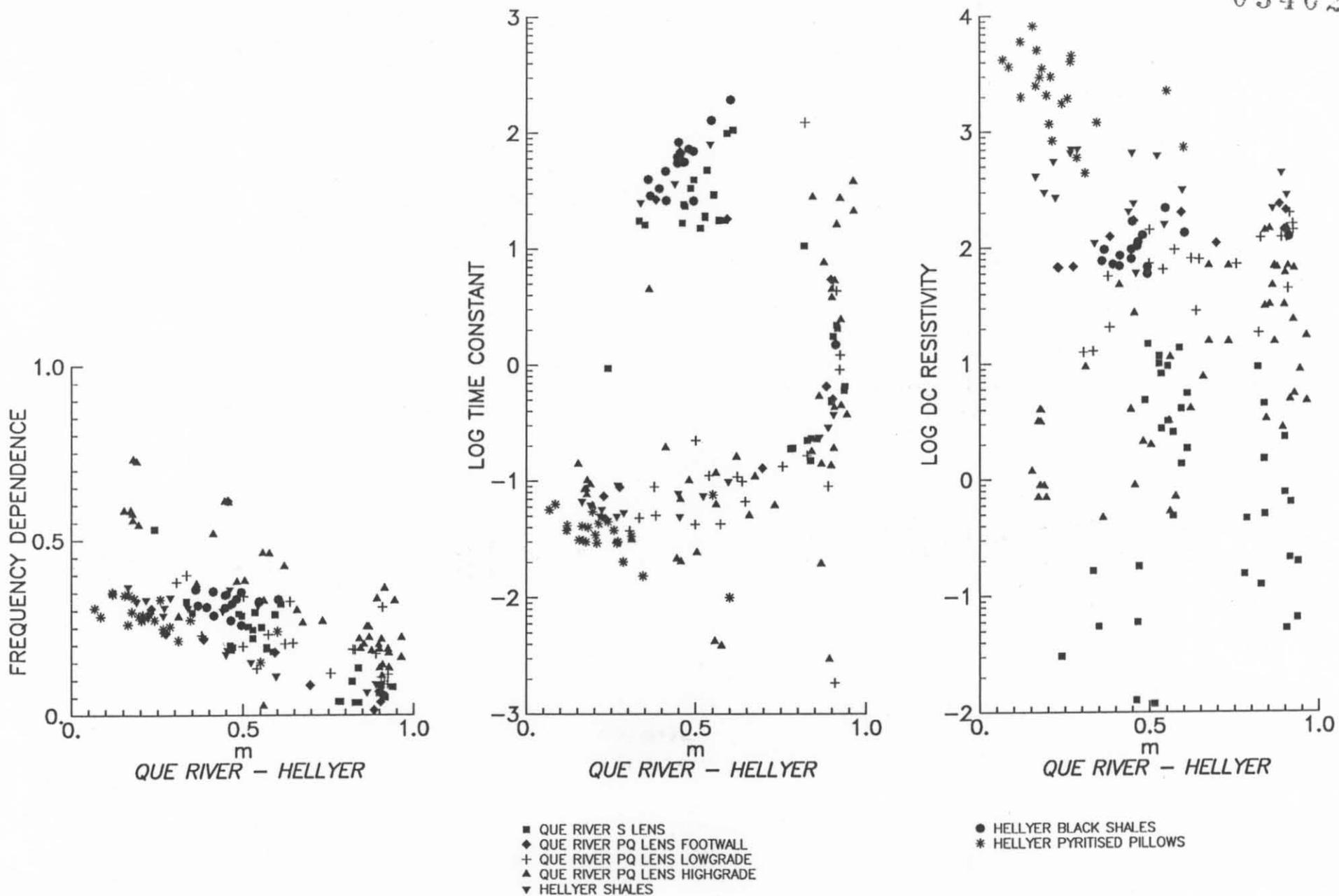
ROSE

Figure 9. Spectral parameter diagrams for the Rosebery Mine. Data is from underground locations except for the black shales which are from the open cut. Data is from Bishop & Lewis (1984).



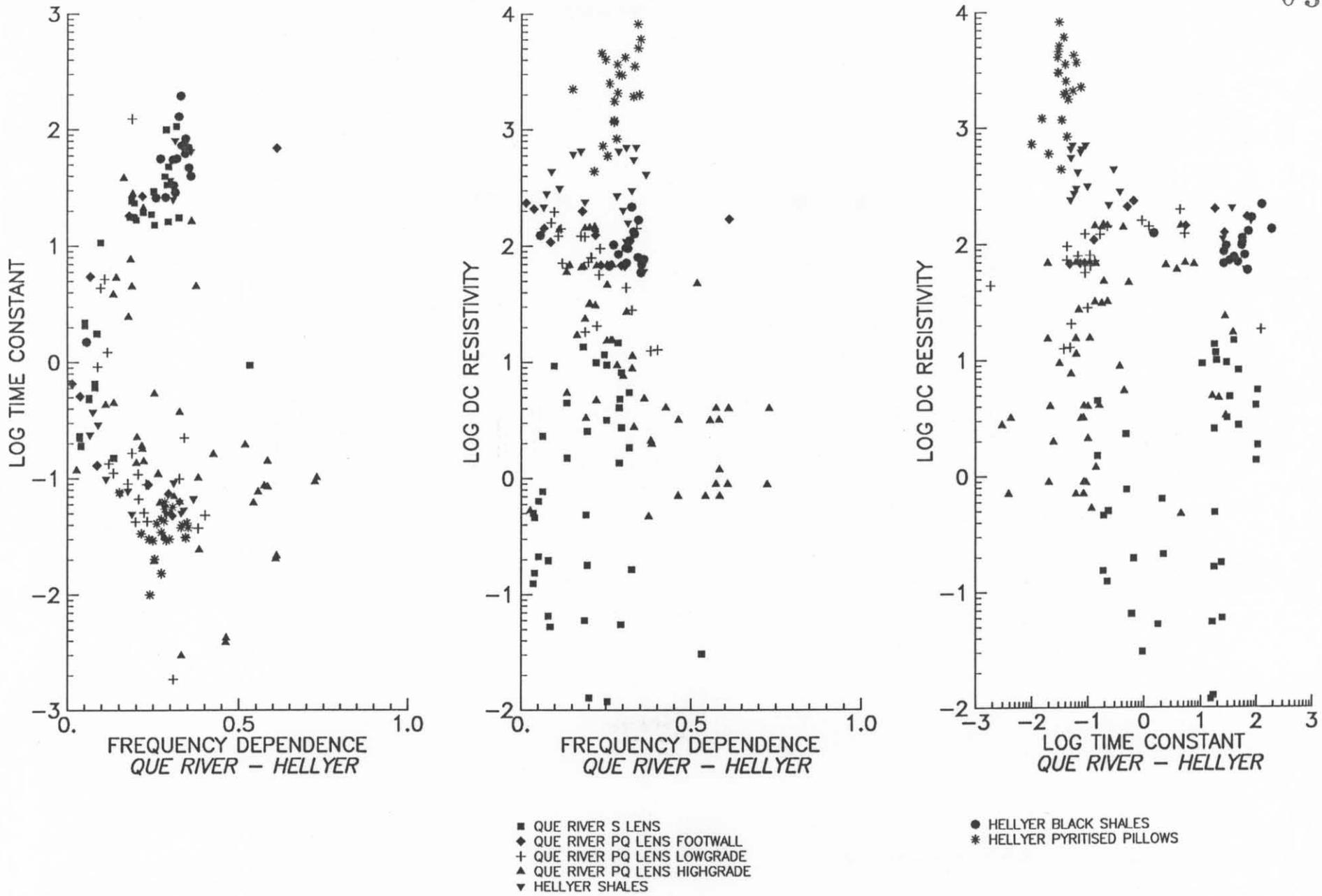
ROSE

Figure 10. Spectral parameter diagrams for the Rosebery Mine. Data is from underground locations except for the black shales which are from the open cut. Data is from Bishop & Lewis (1984).



QH

Figure 11. Spectral parameter diagrams for the Que River - Hellyer area. All data was taken by Mather (1985) at the surface except for the PQ Lens data which is from drive 306 in the Que River Mine.



QH

Figure 12. Spectral parameter diagrams for the Que River - Hellyer area. All data was taken by Mather (1985) at the surface except for the PQ Lens data which is from drive 306 in the Que River Mine.

**ECONOMIC SULPHIDE DEPOSITS**

Measurements were attempted at four sites in this category, namely on the 14th level in the Prince Lyell body and the decline, underground at Rosebery, the PQ lens underground at Que River and in the decline to the Hellyer mine. The resistivities in the ore at Hellyer were too low to permit measurement. Hellyer on this basis is anomalous and perhaps considerable caution is needed in using the TEM response of Hellyer in the design of exploration programs in other areas. Satisfactory data was obtained from the other locations.

Spectral results are shown in Figures 9,10 for Rosebery, 11,12 for Que River and the Hellyer environment and 13,14 for Mount Lyell. A striking feature of the Rosebery data (Figure 9) is the locus or trend ('the Rosebery Trend') shown in  $m$ - $\tau$  space. This is reminiscent of a petrological variation diagram and may have genetic significance. The same trend is clearly apparent in the Que River - Hellyer data in Figure 11. The distribution of data from Mount Lyell is altogether different and this is of interest from two points of view. Firstly it shows that the 'Rosebery Trend' is not a mathematical artefact and secondly, if one accepts the genetic implication of the Rosebery Trend, it suggests a different depositional setting at Mount Lyell. This seems quite reasonable.

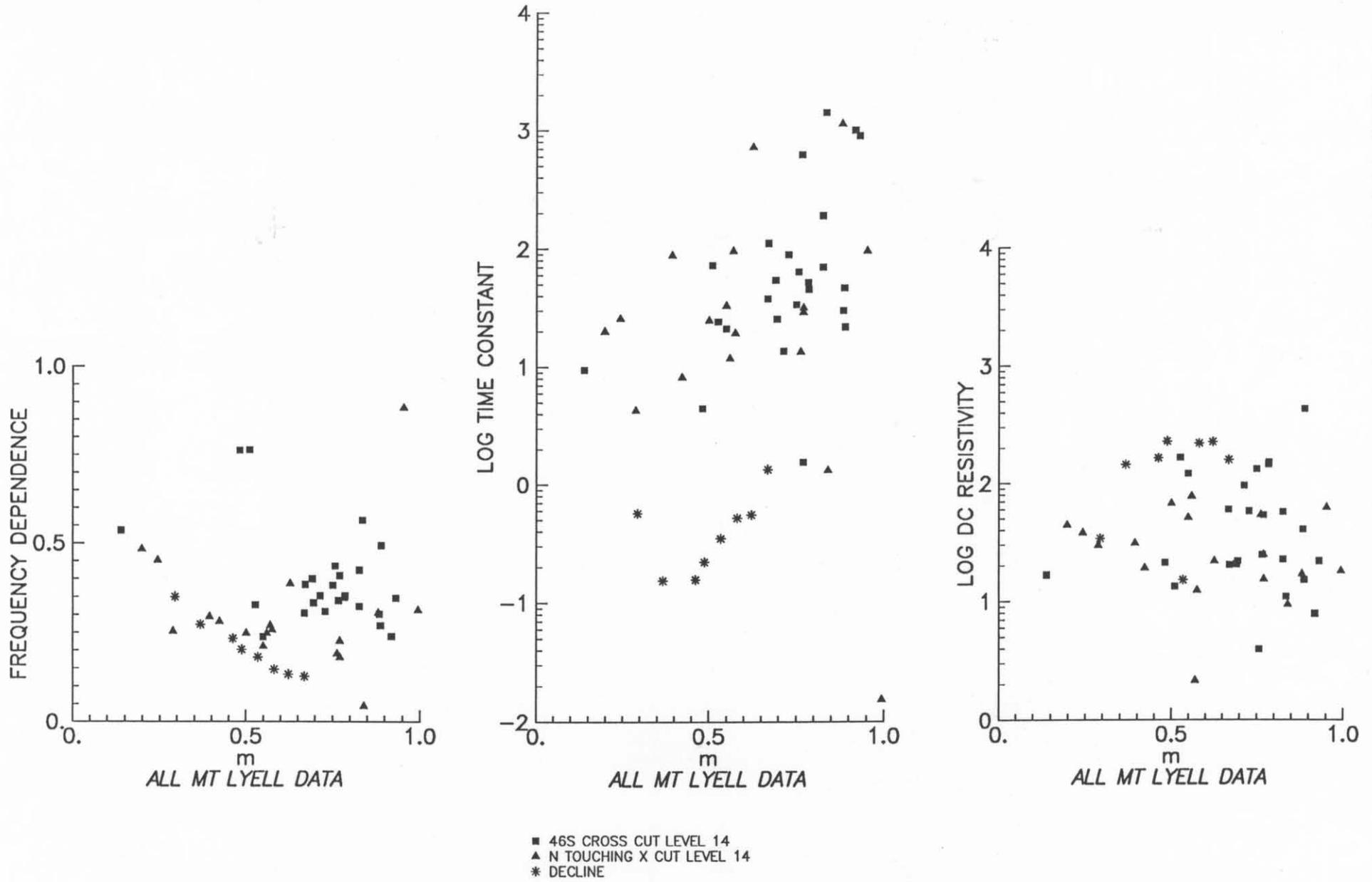
The similarity of Que River and Rosebery extends even further in that both have very conductive pyritic parts e.g. the S Lens at Que River and some pyritic host material at Rosebery. The general relationships for these areas are shown in Figure 15.

The black shales from the Rosebery suite of data show a very tight range of  $\tau$  values about 0.1s. Also, they are not very chargeable so further measurements were undertaken and are discussed under Black shales below. If one adopts a discrimination criterion of  $\tau > 3s$ ,  $m > 0.5$  then all the excluded materials are of no interest, however, not all that passes is of ore grade. Examination of the  $c$ - $m$  plot in Figure 9 shows that discrimination is possible on  $m$  alone. Many non targets are eliminated by the criterion  $m > 0.5$ .

The Que River Hellyer data is somewhat more complicated, perhaps because there is much more of it. Again high  $m$  values are of interest the great majority of observations with  $m > 0.65$  are of interest and selection might be improved by adding the constraint  $\tau > 3s$ . The principal problem with discrimination here is a group of results from the Que River S lens and black shales at long time constants but lower  $m$  than the ores. The mean  $m$  for the black shales is 0.48 while that for the high grade PQ lens ore is 0.65. It is thus apparent that the criterion above also removes about half of the PQ lens results of interest.

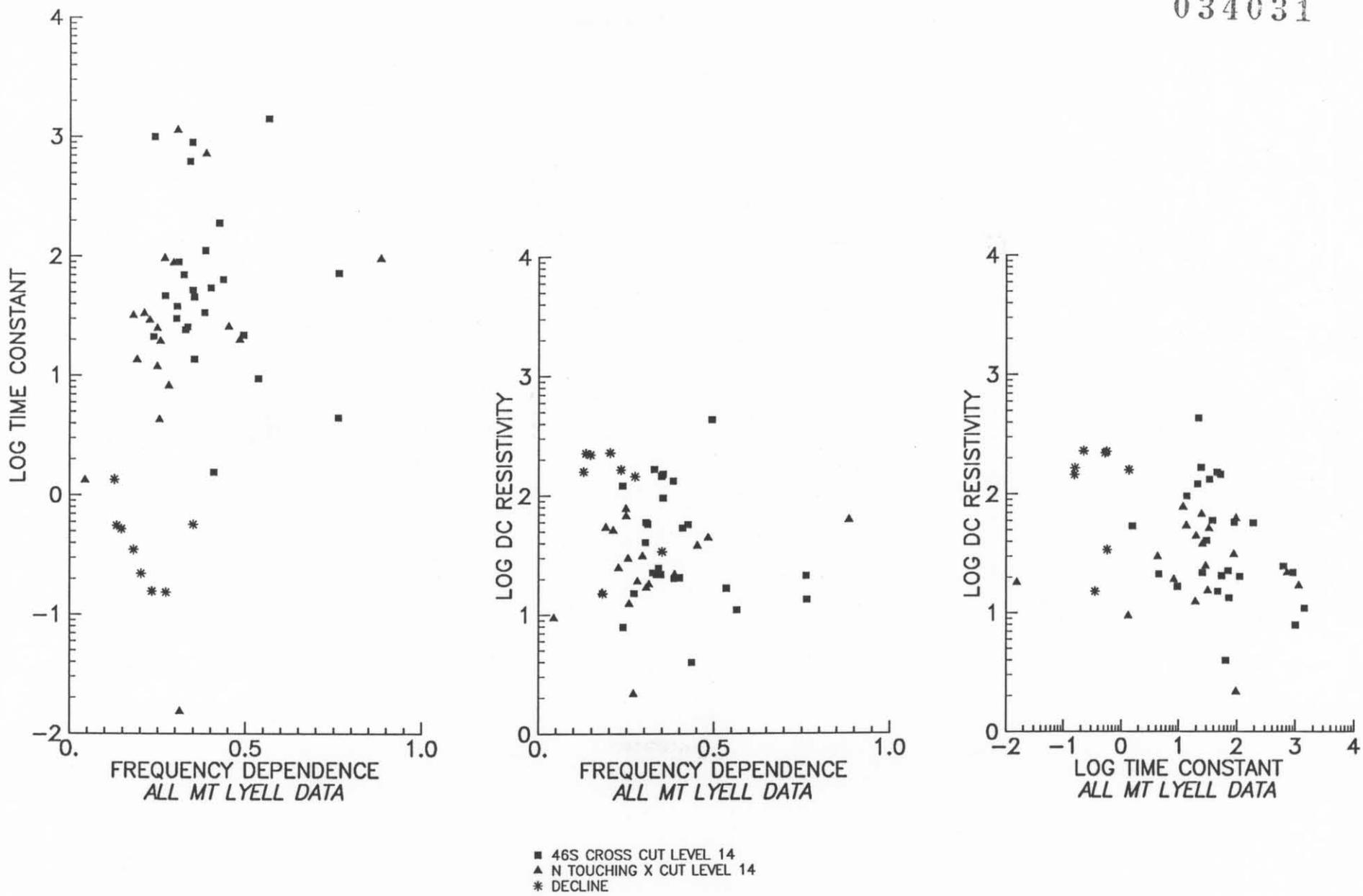
The Mount Lyell data shows separation of the Decline and Prince Lyell results in that the Decline has shorter time constants and higher resistivities than the Prince Lyell body. Much of the Prince Lyell material is very chargeable in both the conventional and spectral sense

and has the highest mean  $\tau$  values of all the sulphide mineralization although this may be biased by a few very high readings.



LYELL

Figure 13. Spectral parameters for the mineralization at Mount Lyell. Data is from the Decline and on the 14 Level of the Prince Lyell body.



LYELL

Figure 14. Spectral parameters for the mineralization at Mount Lyell. Data is from the Decline and on the 14 Level of the Prince Lyell body.

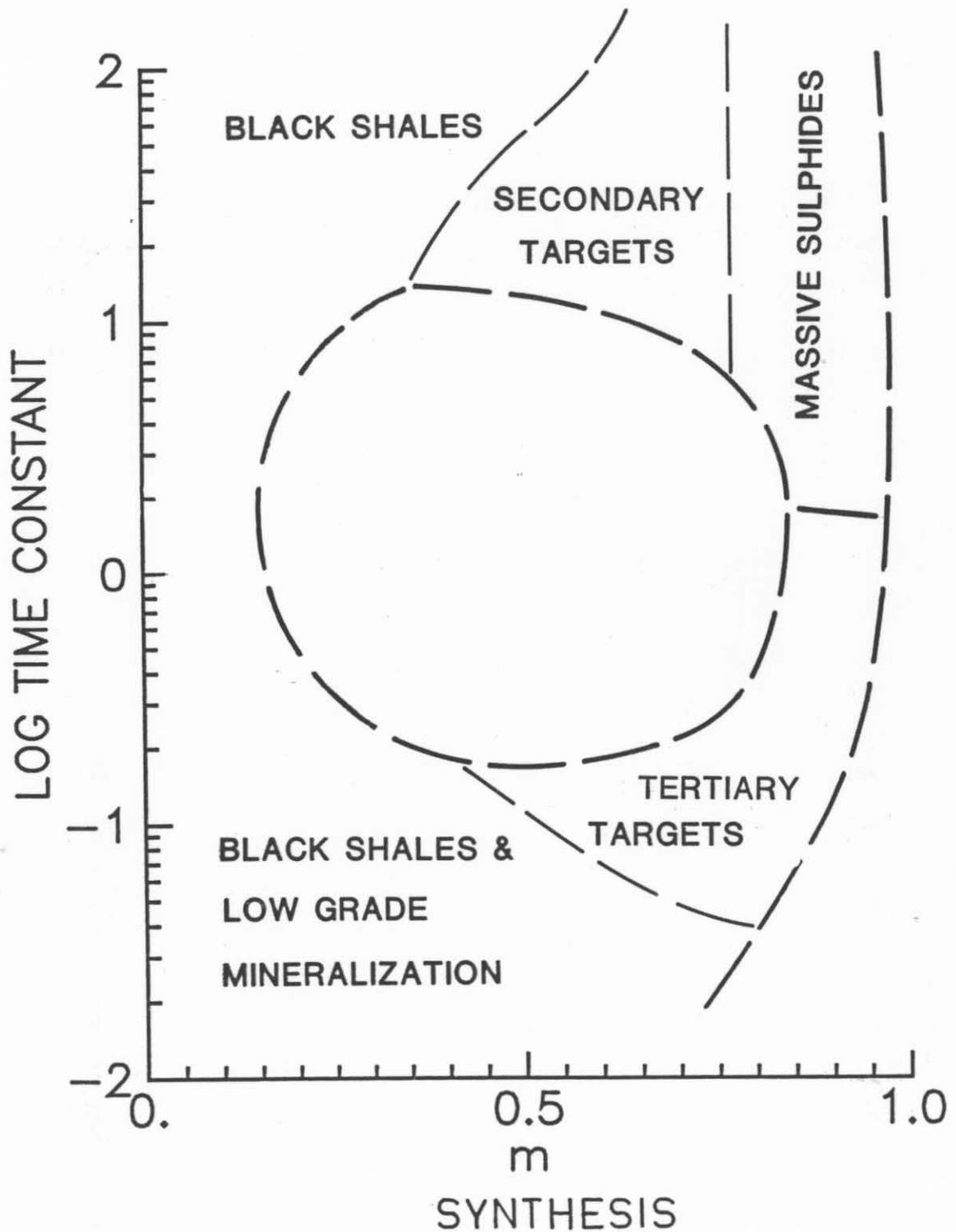
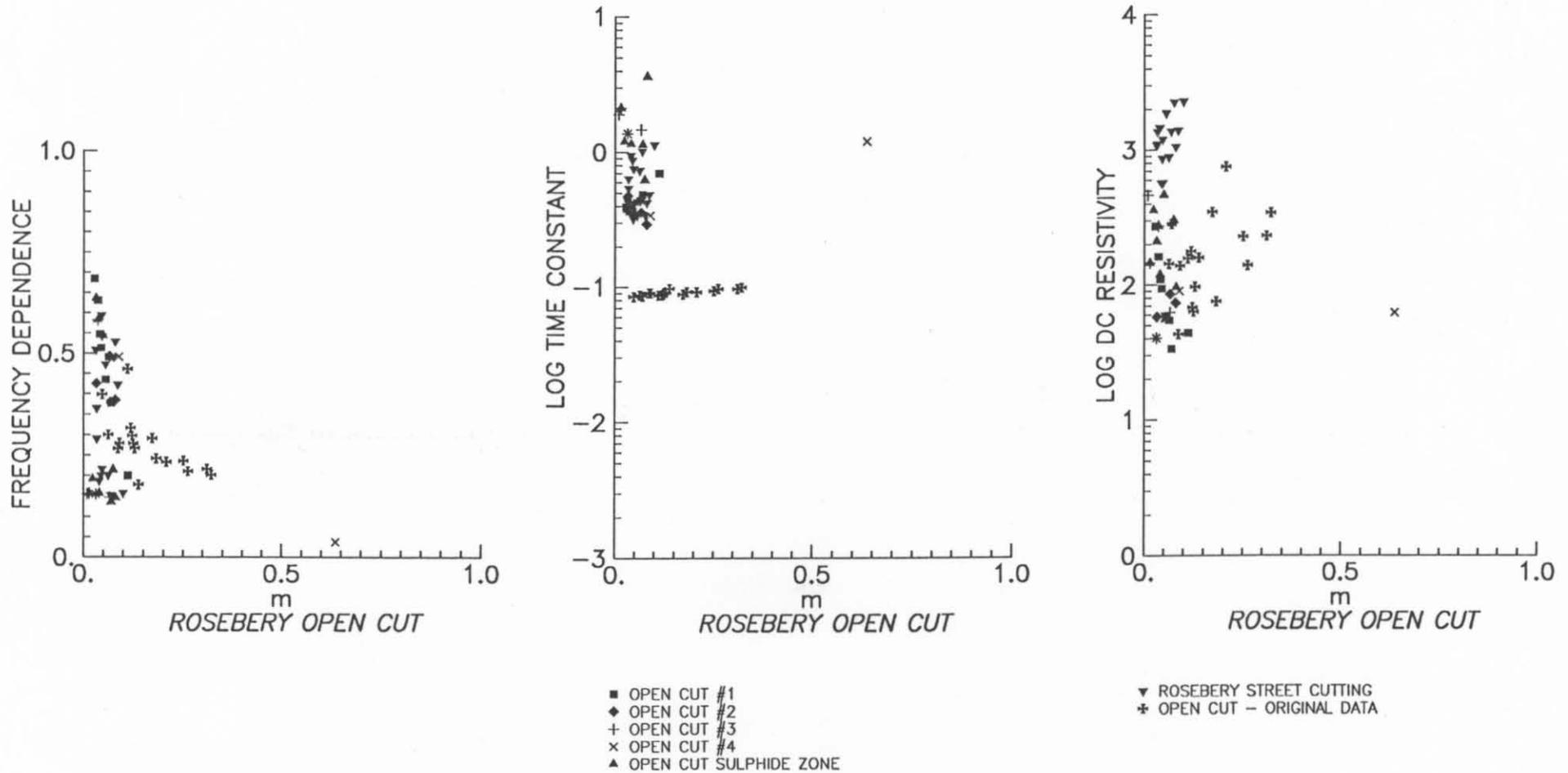
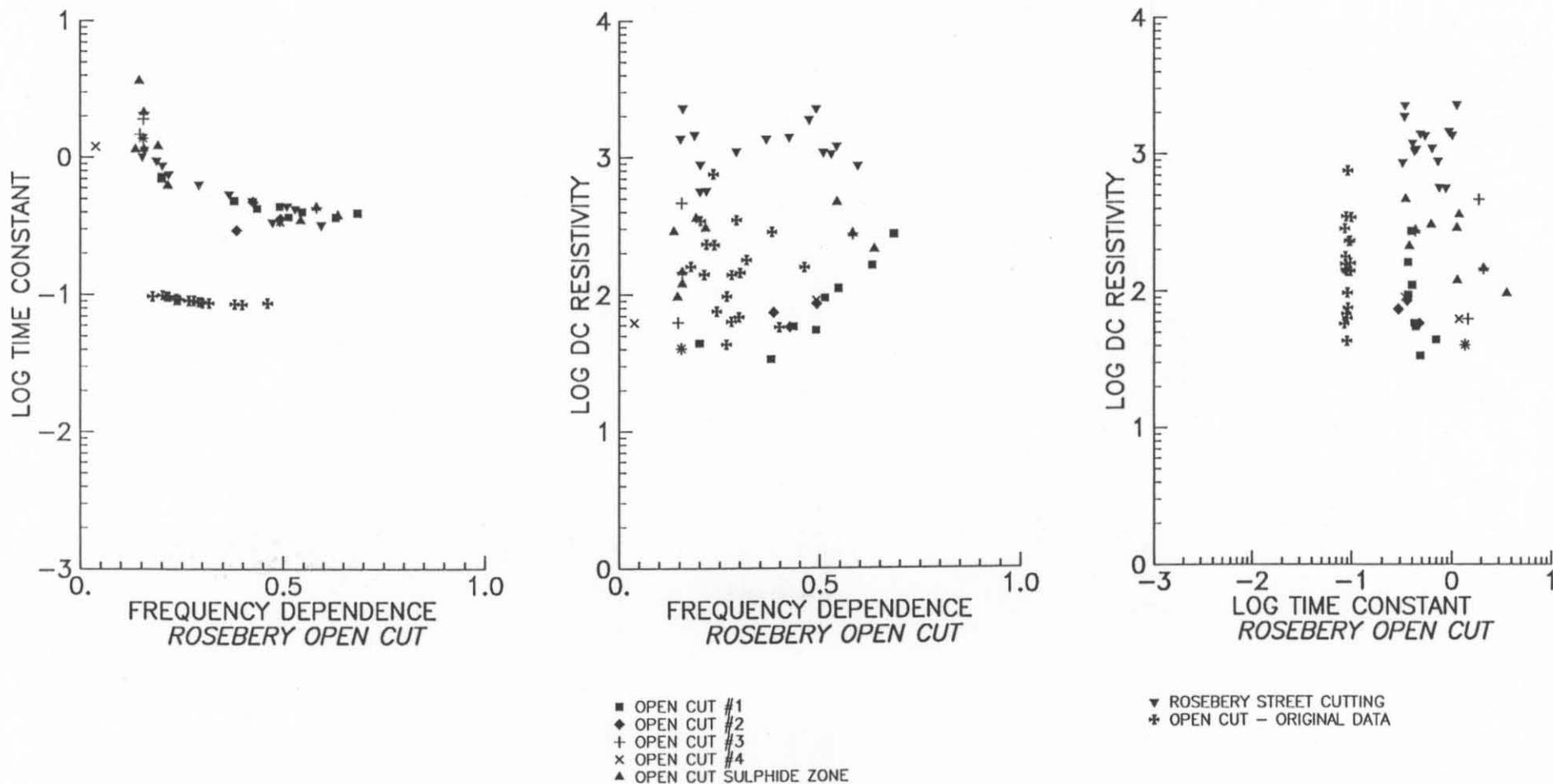


Figure 15. A synthesis of the general arrangement of spectral parameters found in the Rosebery/ Que River style of mineralization. This is schematic only and detailed results should be consulted before its application to exploration.



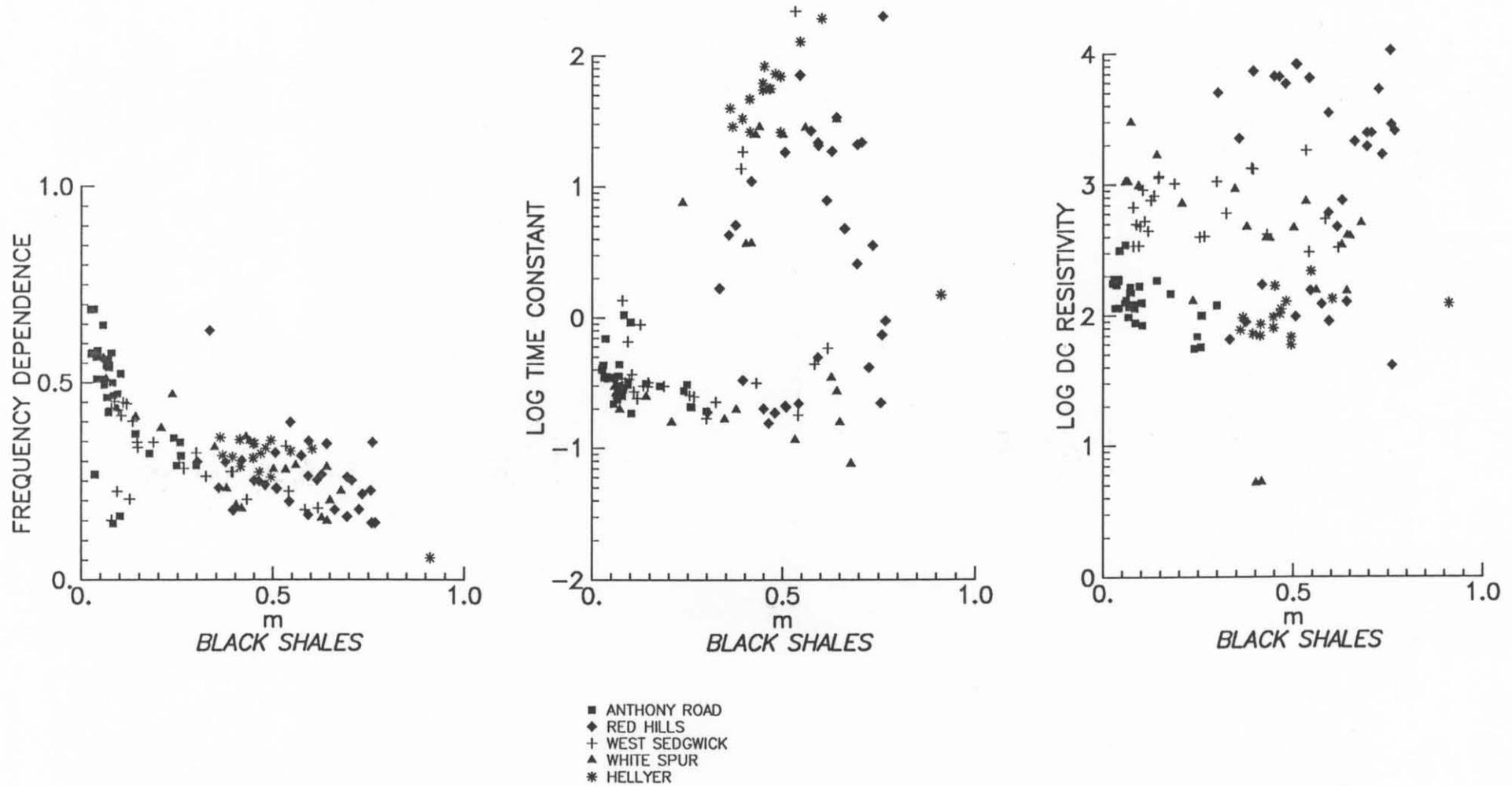
ROSEOC

Figure 16. Spectral parameters for sites in the Rosebery Open Cut and the township of Rosebery. The materials studied are black shales together with the residual sulphide in the Open Cut. All the materials are distinct from the massive ores.



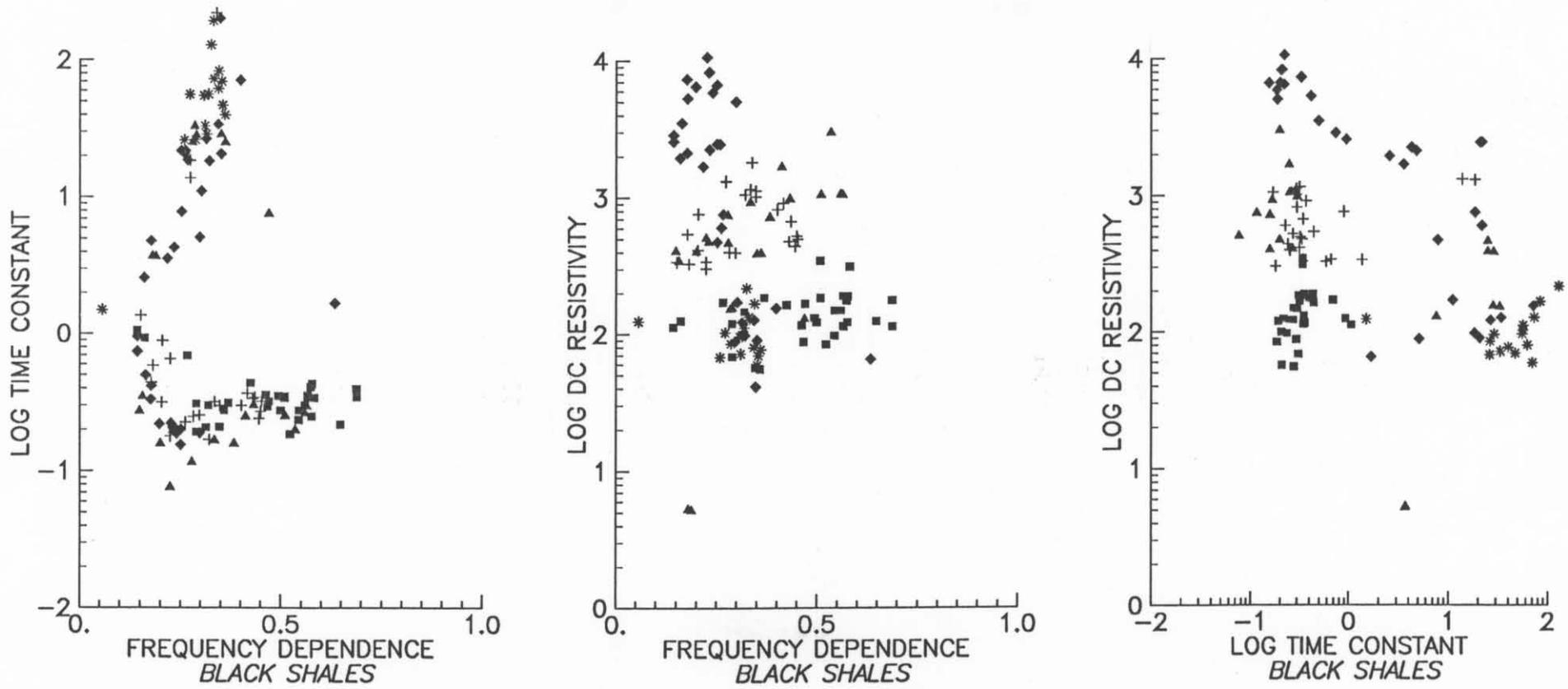
ROSEOC

Figure 17. Spectral parameters for sites in the Rosebery Open Cut and the township of Rosebery. The materials studied are black shales together with the residual sulphide in the Open Cut. All the materials are distinct from the massive ores.



BLACK

Figure 18. Spectral parameters from black shales. These locations were selected for rocks known to produce IP effects. The black shales at Hellyer overly the ore body. The rock at West Sedgwick contains abundant visible pyrite.



BLACK

Figure 19. Spectral parameters from black shales. These locations were selected for rocks known to produce IP effects. The black shales at Hellyer overly the ore body. The rock at West Sedgwick contains abundant visible pyrite.

**BLACK SHALES**

The studies of black shales fall into two parts. Following early studies at Rosebery a much more detailed study of the black shales in the Rosebery Open Cut and environs was undertaken to check the possibility of discriminating the black shales from sulphides. A more extensive survey of black shales known to produce good IP responses forms the second part with sites at the Anthony Road, Red Hills, West Sedgwick, White Spur and Hellyer.

The extra data from the Rosebery Open Cut and Rosebery township differ slightly from the earliest data in that the time constant  $\tau$  is somewhat larger but most of the newer values have even lower  $m$  values than indicated by the original measurements. The sulphide remaining in the open cut appears to fit the criteria for a low grade material of no interest. The general criteria for discrimination at Rosebery remain unchanged by the new data.

The data from a wide range of black shales are shown in Figures 18 to 19. There is a clear trend to lower frequency dependence with increasing  $m$  over the whole group (Figure 18). The conventional mean IP parameters for these sites are:

| Resistivity<br>( $\Omega m$ ) | Chargeability<br>(ms) | Site           |
|-------------------------------|-----------------------|----------------|
| 66.9                          | 76.8                  | Hellyer Site 2 |
| 139.                          | 19.1                  | Anthony Road   |
| 622.                          | 54.7                  | White Spur     |
| 641.                          | 35.7                  | West Sedgwick  |
| 2380.                         | 91.4                  | Red Hills      |

For purposes of comparison the properties of the PQ Lens at Que River are:

| Resistivity<br>( $\Omega m$ ) | Chargeability<br>(ms) | Site                         |
|-------------------------------|-----------------------|------------------------------|
| 18.1                          | 122.                  | Que River PQ Lens High Grade |
| 58.2                          | 71.7                  | Que River PQ Lens Low Grade  |

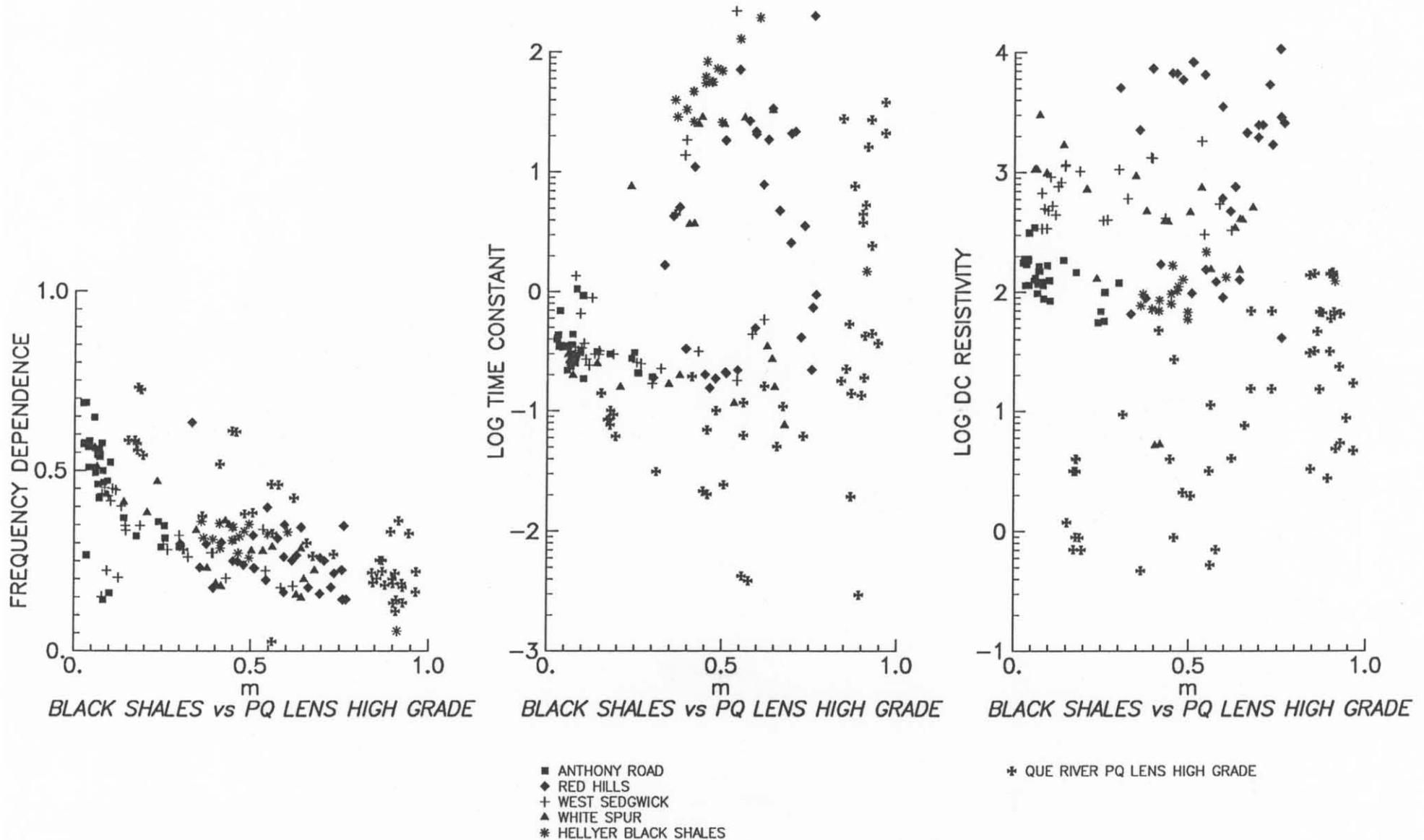
It is immediately apparent that the shales at Hellyer, Red Hills and White Spur in particular present first class chargeability targets for IP and that the Hellyer material has relatively low resistivity as well. It is not surprising that IP surveys at Hellyer failed to detect ore beneath a cover of this material. Further, the properties of the lower grade material in the PQ lens are very similar to the black shales nearby at Hellyer. However, the resistivity of the high grade parts of the PQ Lens is considerably lower than any of the black shale resistivities.

It is apparent from the discussion of the massive sulphides above that if discrimination on simple spectral parameters is used the most likely candidates are  $m$  and  $\tau$ . Examination of Figure 19 shows that relatively few of the black shales have an  $m$  value above 0.6 and none are above 0.75 so that on this basis significant discrimination of at

least some of the massive sulphides should be possible. Also, the long time constant (large  $\tau$ ) shales, e.g. Hellyer, have lower  $m$  values than the long time constant massive sulphides

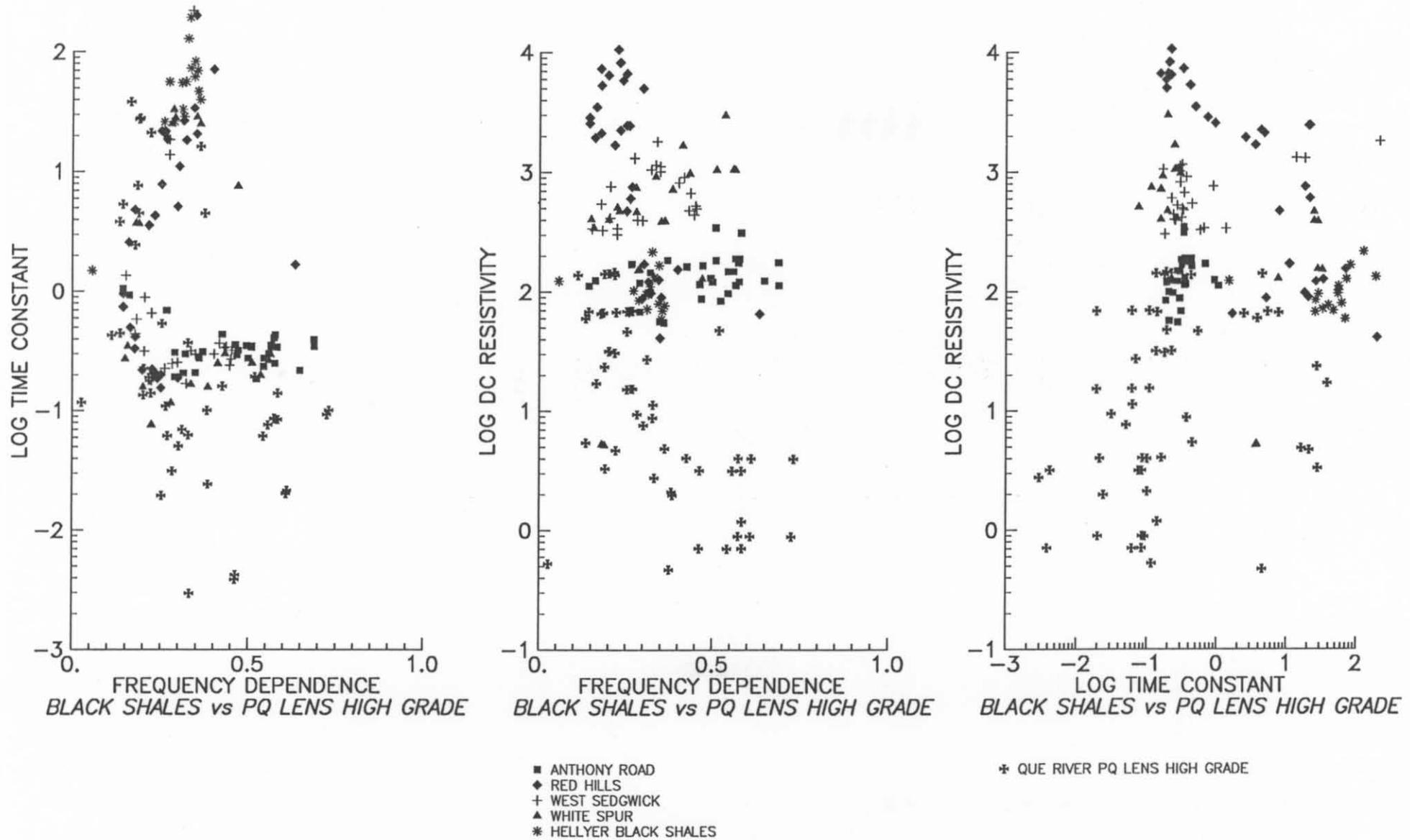
A good test of any scheme for discriminating ore from black shales is to compare the properties of all the black shale sites with an economic sulphide such as the PQ Lens at Que River. The parameters are shown in Figures 20 - 21. There is a large spread of values and examination of the figures suggests two approaches. Firstly, minimal black shale data have  $m > 0.85$  so that high spectral chargeability ( $m$ ) values should be diagnostic. Secondly the  $R_0$  values for the ore are, as for ordinary resistivity, much lower (Figure 20). It should be pointed out that  $R_0$  may differ significantly from the ordinary (field) resistivity as with long time constant (large  $\tau$ ) rocks, the pulses of current do not fully charge the ground and the DC resistivity is underestimated. In the case of the PQ Lens the difference is nearly 100% and cases of up to 600% are known. It is also worth noting that the White Spur and West Sedgwick results are so well separated in  $R_0$  from the PQ Lens that they need not be considered a problem. In practice, of course, the problem at Que River -Hellyer involves discrimination of sulphides from only one type of black shale.

These results are quite encouraging and can be generalised somewhat: e.g. the H lens at Rosebery is not greatly different in resistivity from the PQ Lens. The requirement is to accurately determine the DC resistivity of the material and if it has at least parts with  $m > .85$  that is even more diagnostic. The current data suggests that  $R_0$  values  $< 40\Omega m$  are preferred for massive sulphide search. That being so, the relative merits of EM/TEM versus IP amount to choosing the technique that can best resolve these parameters for realistic bodies in structures containing black shales. We know of no definitive work on this topic, but experience with simple structures such as layered grounds suggests that the methods may complement one another.



PQBLACK

Figure 20. The spectral properties of the Que River PQ Lens compared with the collection of problem black shale data. The sulphide has lower R0 and parts have higher m values than the black shales.



PQBLACK

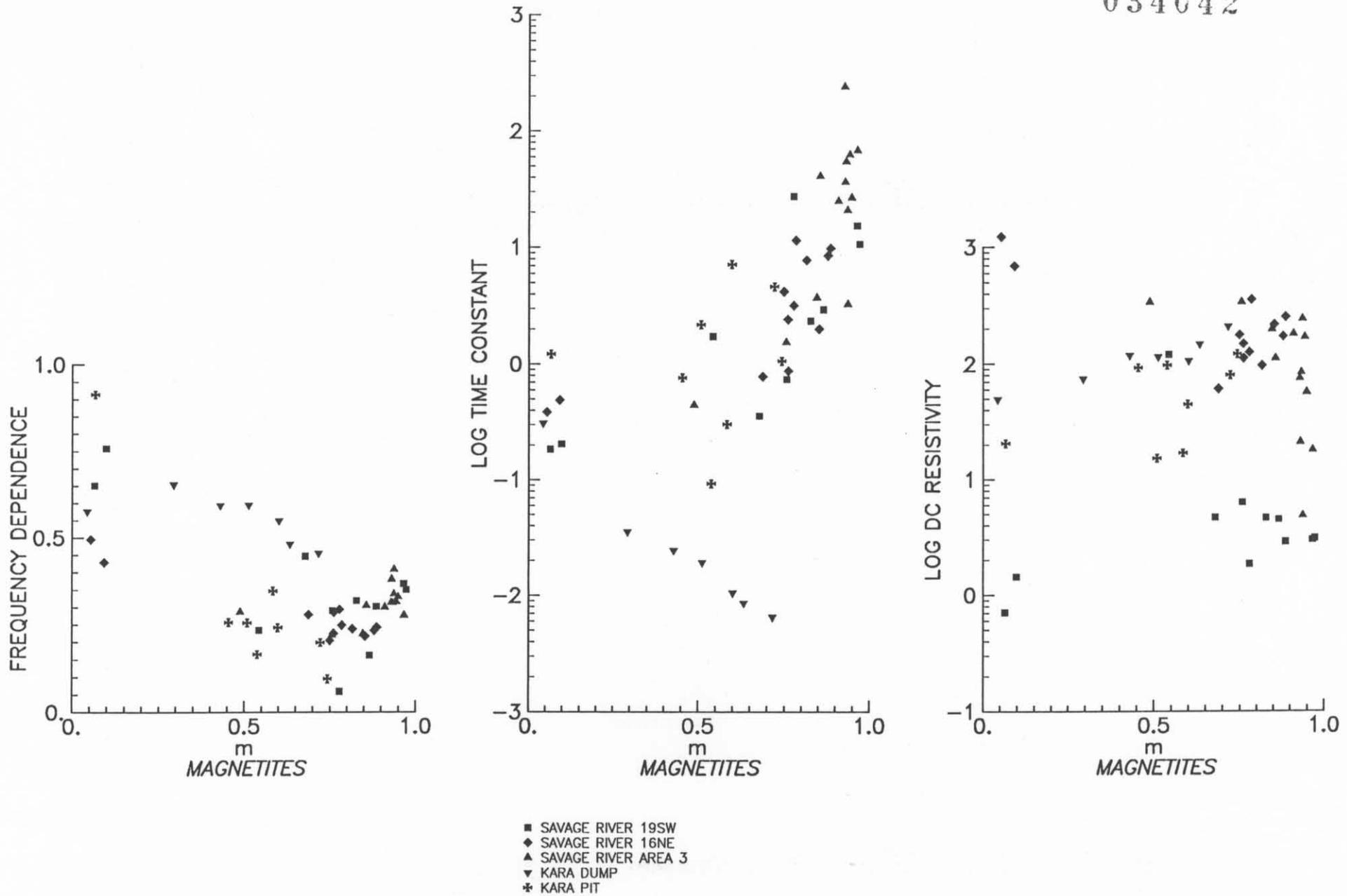
Figure 21. The spectral properties of the Que River PQ Lens compared with the collection of problem black shale data. The sulphide has lower R0 and parts have higher m values than the black shales.

**MAGNETITES**

034041

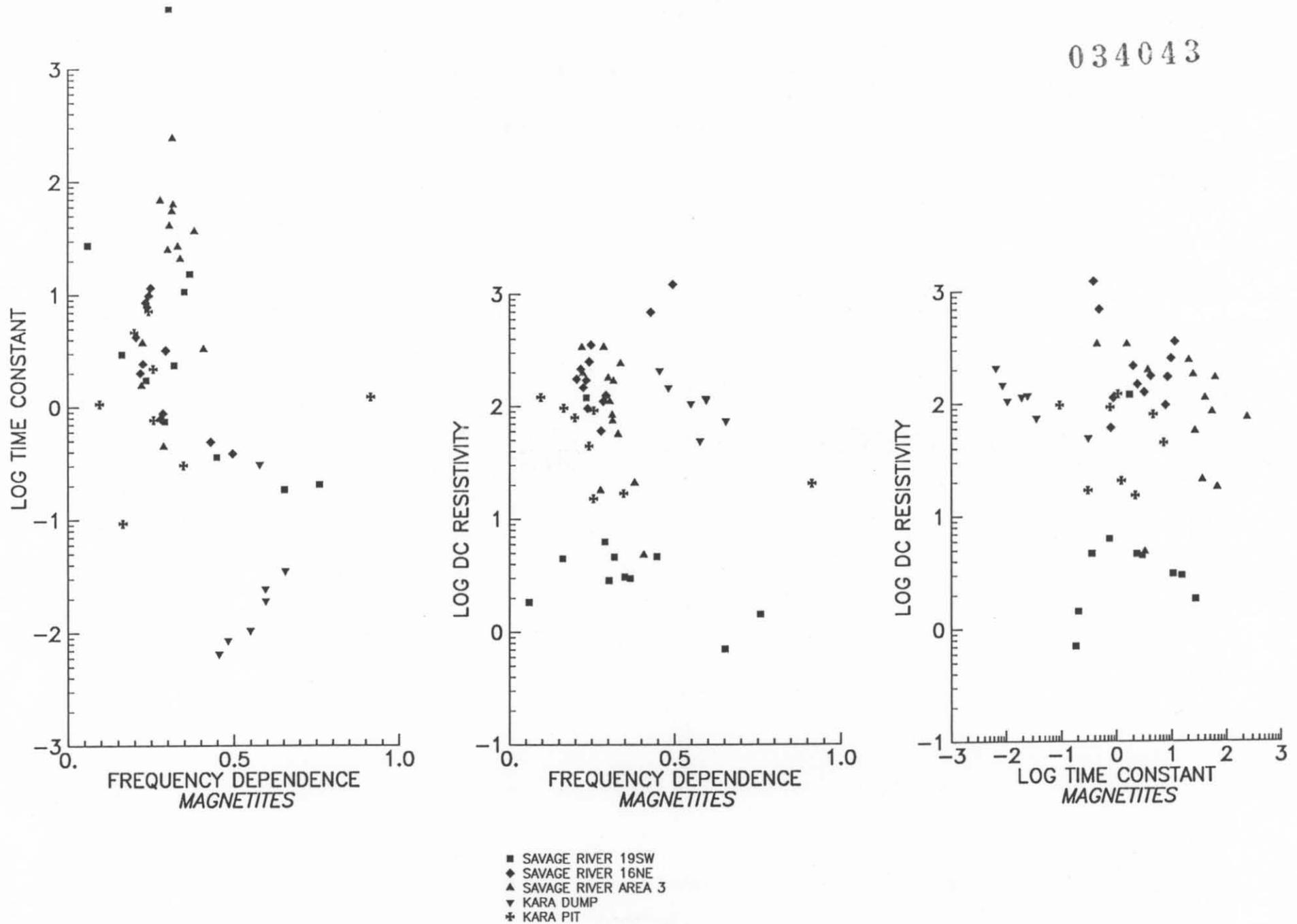
Magnetites occur in economic quantities at Savage River and elsewhere associated with skarn deposits such as those at Kara. While magnetite is not likely to be confused with sulphides at high concentrations, the electrical properties are of some interest. The Savage River Mine area contains magnetites of several different types and three sites in the mine excavations were selected for measurements. These were located in the NE and SW areas of the mine grid and at the locality known as Area 3. Measurements were also made in the Kara pit and on the dump to compare results from in situ and excavated material. The results are shown in Figures 22 and 23. The magnetites are amongst the most chargeable of materials examined with mean chargeabilities ranging from 134 to 277 ms for the Savage River sites. The magnetite at Kara is less chargeable with a mean of 76 ms in the pit. Spectral parameters show a wide range of  $\tau$  and many very high  $m$  values reminiscent of high grade massive sulphides. These results show that an IP response associated with a magnetic anomaly does not necessarily indicate the presence of sulphides.

A comparison of the pit with dump material at Kara shows that the excavated material has smaller  $\tau$ , larger  $c$  and higher  $R_0$  than the in situ material. This may reflect a reduction in particle size or change in texture and illustrates the advantages of in situ measurements.



MAGNETI

Figure 22. Spectral IP parameters for magnetites from Savage River and Kara mines. Many of the IP parameters resemble those of massive sulphides.

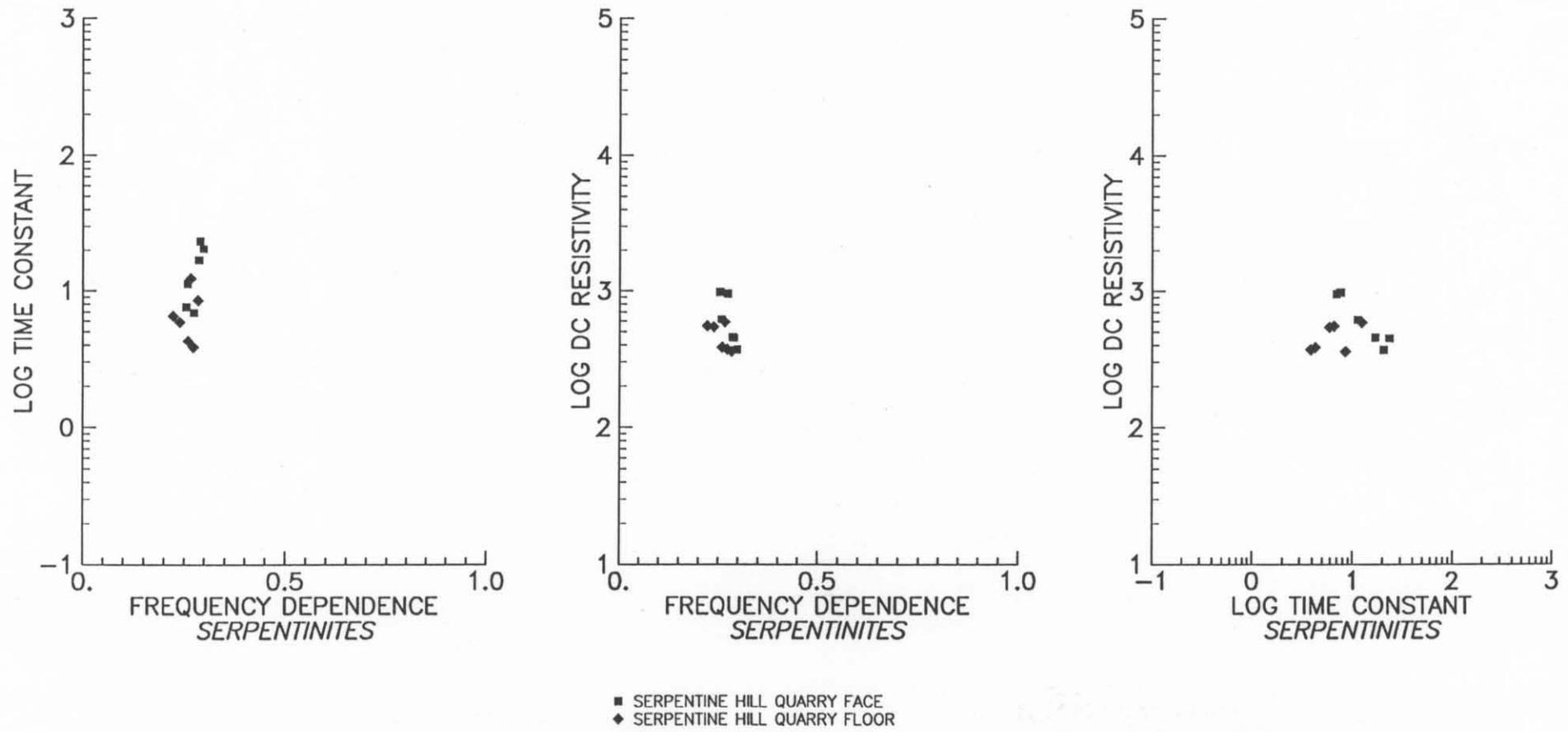


MAGNETI

Figure 23. Spectral IP parameters for magnetites from Savage River and Kara mines. Many of the IP parameters resemble those of massive sulphides.

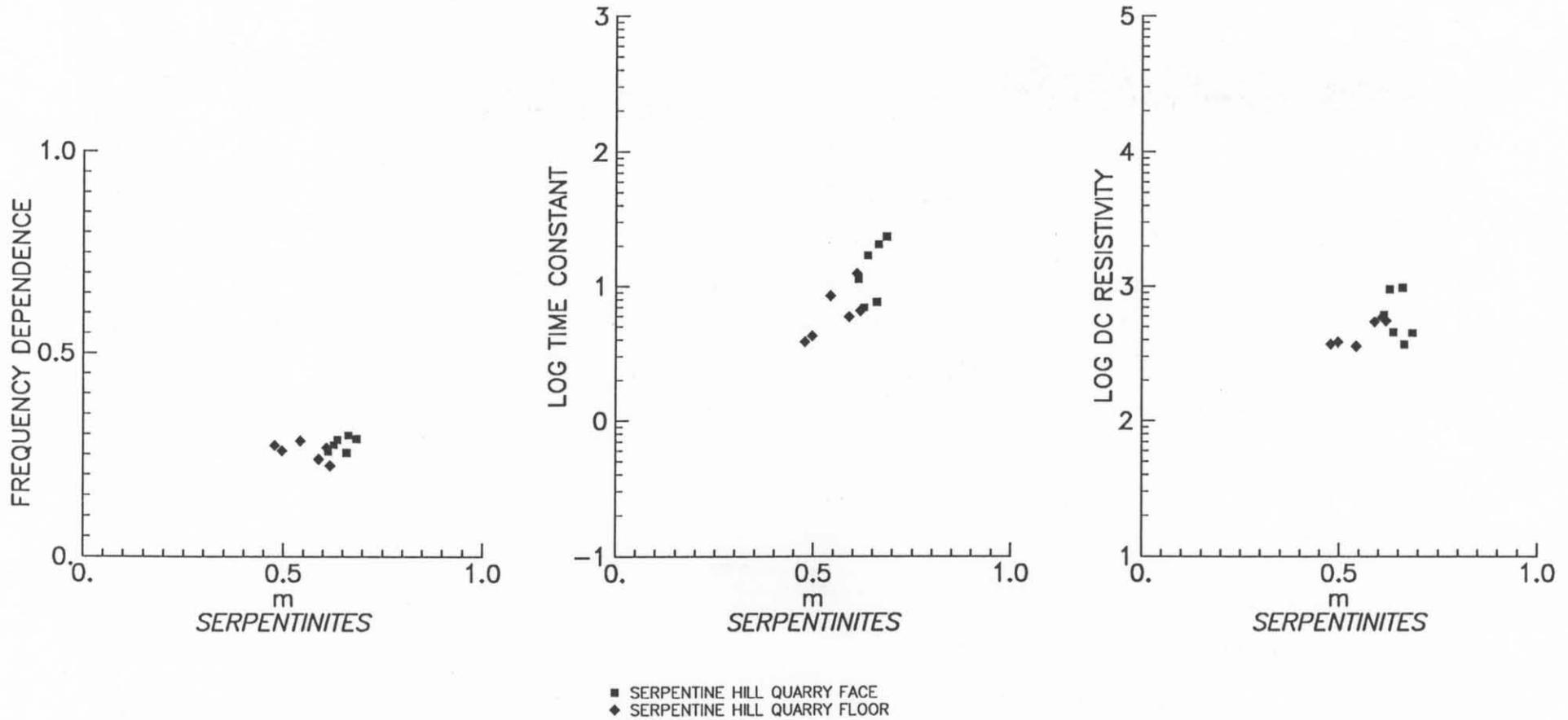
**SERPENTINITES**

Two sites in serpentinite on Serpentine Hill were selected for measurements. One is a quarry face, the other set of measurements was made through debris on the quarry floor. The serpentinite is rich in magnetite and this may be the chief source of its IP properties. The results are shown in Figures 24 - 25. The serpentinites, like the magnetites, are amongst the highest chargeability materials found with a quarry face value of 129 ms. Here the effects of the debris on the quarry floor are minimal, perhaps because the debris is fairly fresh serpentinite.



SERPENT

Figure 24. Spectral IP parameters from Serpentine Hill. The sites differ only in that one is for in situ material, the other measurements are through debris on the quarry floor.



SERPENT

Figure 25. Spectral IP parameters from Serpentine Hill. The sites differ only in that one is for in situ material, the other measurements are through debris on the quarry floor.

**OTHER SEDIMENTS**

The properties of various sediments were also measured to provide background values. The materials include varved glacial clays from Boco Siding, formations within the Dundas Group, shales from Hellyer and the Crimson Creek Formation at Tunnel Hill. These results are not discussed in detail but can be accessed through the Rock Type or Geographic indices.

CONCLUSIONS

Electrical and spectral IP parameters have been measured for some 67 sites in western Tasmania. On the basis of those measurements the following conclusions can be drawn:

(a) Alteration zones in the volcanics cannot be simply distinguished on electrical properties. However, because of the distribution of spectral parameters in  $c-\tau$  space there remains the possibility that further work in conjunction with detailed geological studies might produce a discrimination method.

(b) Good discrimination of pyrite zones and massive pyrites is possible on the basis of electrical properties. If large scale measurements can adequately determine the electrical properties of materials this should eliminate much ultimately fruitless exploration at an early stage.

(c) The Que River and Rosebery deposits are remarkably similar in electrical properties and on the basis of their parameter variation diagrams they are quite different from the Mount Lyell style of mineralization. The similarity extends to having extremely conductive pyritic parts (at Que River, the S Lens). The ore at Hellyer is much more conductive than the other deposits and hence its TEM response should be treated with caution in planning exploration for other bodies.

(d) It is possible to distinguish massive sulphides as typified by the PQ Lens at Que River from all the measured black shales on the basis of DC resistivity and  $m$  (spectral chargeability). The application of this result requires surveys which can accurately measure such properties. It would seem that the simulation of various EM/ TEM/ electrical techniques using realistic models might provide valuable information for use in practical exploration. If new techniques were developed as a result the Hellyer area would be a good demonstration site bearing in mind the abnormally low resistivity of the body and problems with HEC power lines.

There are also areas where the separation of black shales and ores appears particularly simple on the basis of spectral parameters. Rosebery is the example.

J.R. Bishop



R.J.G. Lewis

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SITES in ORDER OF ASCENDING MEAN (FIELD) RESISTIVITY

| $\Omega m$ | Site  | Reference |
|------------|---|-----------|
| 2.13       | ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 2.47       | QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 7.77       | ROSEBERY SITE 5 (H LENS ORE)                      | MRV0069   |
| 9.17       | MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |
| 17.00      | MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 18.10      | QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |
| 30.90      | MINERALIZATION at PRINCE LYELL                    | MRV0024   |
| 36.40      | ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 44.30      | MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 57.10      | ROSEBERY OPEN CUT                                 | MRV0009   |
| 58.20      | QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 60.50      | ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 66.90      | HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 71.40      | ROSEBERY OPEN CUT                                 | MRV0007   |
| 71.50      | MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 88.60      | QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 98.00      | ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 103.00     | ROSEBERY MINE OPEN CUT                            | MRV0006   |
| 114.00     | MAGNETITE at KARA MINE DUMP                       | MRV0030   |
| 116.00     | MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 123.00     | PYRITE at CHESTER MINE                            | MRV0038   |
| 139.00     | BLACK SHALES on the ANTHONY ROAD                  | MRV0000   |
| 183.00     | ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 199.00     | ROSEBERY OPEN CUT                                 | MRV0008   |
| 237.00     | MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 266.00     | ROSEBERY OPEN CUT                                 | MRV0010   |
| 283.00     | BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 320.00     | SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 327.00     | ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |
| 344.00     | HELLYER SITE 1 - SHALES                           | MRV0062   |
| 391.00     | SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 497.00     | ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 546.00     | PYRITE on ANTHONY ROAD                            | MRV0001   |
| 618.00     | HELLYER MINE DECLINE                              | MRV0057   |
| 622.00     | BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 641.00     | BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 645.00     | PYRITE ZONE - BRADSHAW ROAD                       | MRV0035   |
| 833.00     | PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 847.00     | TUNNEL RIDGE at RENISON BELL                      | MRV0044   |
| 896.00     | TUNNEL RIDGE at RENISON BELL                      | MRV0043   |
| 897.00     | TUNNEL RIDGE at RENISON BELL                      | MRV0023   |
| 904.00     | TUNNEL RIDGE at RENISON BELL                      | MRV0022   |
| 913.00     | TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 948.00     | VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 1060.00    | ALTERATION ZONE SITE 2 at HERCULES MINE           | MRV0003   |

SITES in ORDER OF ASCENDING MEAN (FIELD) RESISTIVITY (ctd)

| $\Omega\text{m}$ | Site   | Reference |
|------------------|--|-----------|
| 1070.00          | 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ  | MRV0020   |
| 1070.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0012   |
| 1080.00          | ALTERATION ZONE SITE 3 at HERCULES MINE      | MRV0004   |
| 1150.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0014   |
| 1200.00          | TUNNEL RIDGE at RENISON BELL                 | MRV0046   |
| 1270.00          | BLACK SHALES at ROSEBERY ROAD CUTTING        | MRV0021   |
| 1300.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0015   |
| 1980.00          | BREWERY JUNCTION at DUNDAS                   | MRV0047   |
| 2110.00          | BREWERY JUNCTION at DUNDAS                   | MRV0048   |
| 2380.00          | BLACK SHALES at RED HILLS                    | MRV0039   |
| 2580.00          | TUNNEL RIDGE at RENISON BELL                 | MRV0042   |
| 2740.00          | HELLYER SITE 3 - PYRITISED PILLOWS           | MRV0064   |
| 3510.00          | 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ  | MRV0019   |
| 3720.00          | BREWERY JUNCTION at DUNDAS                   | MRV0049   |
| 3800.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0011   |
| 3860.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0013   |
| 4560.00          | ALTERATION ZONE SITE 1 at HERCULES MINE      | MRV0002   |
| 4800.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0016   |
| 5030.00          | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0017   |
| 5340.00          | 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ  | MRV0018   |
| 6380.00          | ROSEBERY SITE 6 (MASSIVE PYROCLASTICS)       | MRV0070   |
| 15300.00         | FERNFLOW FORMATION at DUNDAS                 | MRV0034   |

SITES in ORDER OF ASCENDING MEAN (FIELD) CHARGEABILITY

| ms    | Site  | Reference |
|-------|---|-----------|
| 1.52  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0016   |
| 1.54  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0011   |
| 2.90  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0014   |
| 3.00  | BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 3.59  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0017   |
| 3.90  | VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 4.07  | ROSEBERY OPEN CUT                                 | MRV0008   |
| 5.79  | 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ       | MRV0019   |
| 6.99  | 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ       | MRV0018   |
| 7.37  | ROSEBERY OPEN CUT                                 | MRV0010   |
| 7.40  | ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 8.05  | 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ       | MRV0020   |
| 8.30  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0013   |
| 8.47  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0015   |
| 8.83  | BREWERY JUNCTION at DUNDAS                        | MRV0048   |
| 9.04  | ALTERATION ZONE SITE 3 at HERCULES MINE           | MRV0004   |
| 9.52  | BREWERY JUNCTION at DUNDAS                        | MRV0049   |
| 9.55  | BLACK SHALES at ROSEBERY ROAD CUTTING             | MRV0021   |
| 9.72  | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0012   |
| 11.00 | ROSEBERY MINE OPEN CUT                            | MRV0006   |
| 11.30 | TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 11.50 | PYRITE ZONE - BRADSHAW'S ROAD                     | MRV0035   |
| 11.90 | ROSEBERY OPEN CUT                                 | MRV0007   |
| 12.10 | ALTERATION ZONE SITE 1 at HERCULES MINE           | MRV0002   |
| 12.20 | TUNNEL RIDGE at RENISON BELL                      | MRV0043   |
| 12.30 | ALTERATION ZONE SITE 2 at HERCULES MINE           | MRV0003   |
| 12.50 | TUNNEL RIDGE at RENISON BELL                      | MRV0046   |
| 12.90 | TUNNEL RIDGE at RENISON BELL                      | MRV0022   |
| 13.10 | ROSEBERY OPEN CUT                                 | MRV0009   |
| 13.40 | BREWERY JUNCTION at DUNDAS                        | MRV0047   |
| 13.50 | PYRITE on ANTHONY ROAD                            | MRV0001   |
| 13.80 | TUNNEL RIDGE at RENISON BELL                      | MRV0023   |
| 13.80 | TUNNEL RIDGE at RENISON BELL                      | MRV0044   |
| 16.10 | ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 19.10 | BLACK SHALES on the ANTHONY ROAD                  | MRV0000   |
| 19.40 | TUNNEL RIDGE at RENISON BELL                      | MRV0042   |
| 20.20 | FERNFLOW FORMATION at DUNDAS                      | MRV0034   |
| 25.80 | HELLYER SITE 3 - PYRITISED PILLOWS                | MRV0064   |
| 26.20 | HELLYER MINE DECLINE                              | MRV0057   |
| 29.30 | MAGNETITE at KARA MINE DUMP                       | MRV0030   |
| 29.90 | ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 35.70 | BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 39.40 | PYRITE at CHESTER MINE                            | MRV0038   |
| 43.40 | QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 46.60 | HELLYER SITE 1 - SHALES                           | MRV0062   |

SITES in ORDER OF ASCENDING MEAN (FIELD) CHARGEABILITY (ctd)

| ms     | Site  | Reference |
|--------|---|-----------|
| 54.60  | MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 54.70  | BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 63.40  | PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 68.50  | QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 70.70  | ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 71.70  | QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 73.90  | ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 76.00  | MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 76.80  | HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 91.40  | BLACK SHALES at RED HILLS                         | MRV0039   |
| 94.80  | SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 121.00 | MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 122.00 | QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |
| 129.00 | SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 134.00 | MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 141.00 | ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |
| 154.00 | MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |
| 170.00 | ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 189.00 | MINERALIZATION at PRINCE LYELL                    | MRV0024   |
| 277.00 | MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 476.00 | ROSEBERY SITE 5 (H LENS ORE)                      | MRV0069   |

SITES in ORDER OF ASCENDING MEAN R<sub>0</sub>

| Qm      | Site  | Reference |
|---------|---|-----------|
| 2.07    | ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 2.98    | QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 3.31    | MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |
| 28.10   | MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 34.30   | QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |
| 39.80   | ROSEBERY SITE 5 (H LENS ORE)                      | MRV0069   |
| 61.00   | MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 64.40   | ROSEBERY OPEN CUT                                 | MRV0009   |
| 69.40   | MINERALIZATION at PRINCE LYELL                    | MRV0024   |
| 72.30   | ROSEBERY OPEN CUT                                 | MRV0007   |
| 81.90   | ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 83.20   | QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 104.00  | ROSEBERY MINE OPEN CUT                            | MRV0006   |
| 106.00  | HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 117.00  | MAGNETITE at KARA MINE DUMP                       | MRV0030   |
| 121.00  | PYRITE at CHESTER MINE                            | MRV0038   |
| 124.00  | ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 135.00  | ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 139.00  | QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 140.00  | MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 143.00  | BLACK SHALES on the ANTHONY ROAD                  | MRV0000   |
| 149.00  | MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 195.00  | ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 197.00  | ROSEBERY OPEN CUT                                 | MRV0008   |
| 224.00  | ROSEBERY OPEN CUT                                 | MRV0010   |
| 288.00  | BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 302.00  | MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 386.00  | HELLYER SITE 1 - SHALES                           | MRV0062   |
| 431.00  | ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 466.00  | SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 508.00  | ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |
| 559.00  | PYRITE on ANTHONY ROAD                            | MRV0001   |
| 638.00  | SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 653.00  | HELLYER MINE DECLINE                              | MRV0057   |
| 683.00  | BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 686.00  | PYRITE ZONE - BRADSHAW ROAD                       | MRV0035   |
| 736.00  | BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 857.00  | TUNNEL RIDGE at RENISON BELL                      | MRV0044   |
| 901.00  | TUNNEL RIDGE at RENISON BELL                      | MRV0043   |
| 909.00  | TUNNEL RIDGE at RENISON BELL                      | MRV0023   |
| 909.00  | TUNNEL RIDGE at RENISON BELL                      | MRV0022   |
| 937.00  | TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 964.00  | VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 979.00  | PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 1060.00 | ALTERATION ZONE SITE 2 at HERCULES MINE           | MRV0003   |
| 1080.00 | ALTERATION ZONE SITE 3 at HERCULES MINE           | MRV0004   |

SITES in ORDER OF ASCENDING MEAN R0 (ctd)

| <u>Qm</u> | <u>Site</u>                                  | <u>Reference</u> |
|-----------|--|------------------|
| 1090.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0014          |
| 1090.00   | 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ  | MRV0020          |
| 1110.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0012          |
| 1210.00   | TUNNEL RIDGE at RENISON BELL                 | MRV0046          |
| 1290.00   | BLACK SHALES at ROSEBERRY ROAD CUTTING       | MRV0021          |
| 1350.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0015          |
| 2020.00   | BREWERY JUNCTION at DUNDAS                   | MRV0047          |
| 2160.00   | BREWERY JUNCTION at DUNDAS                   | MRV0048          |
| 2860.00   | HELLYER SITE 3 - PYRITISED PILLOWS           | MRV0064          |
| 3080.00   | BLACK SHALES at RED HILLS                    | MRV0039          |
| 3510.00   | 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ  | MRV0019          |
| 3560.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0011          |
| 3730.00   | BREWERY JUNCTION at DUNDAS                   | MRV0049          |
| 3890.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0013          |
| 4590.00   | ALTERATION ZONE SITE 1 at HERCULES MINE      | MRV0002          |
| 4750.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0016          |
| 5090.00   | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH | MRV0017          |
| 5310.00   | 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ  | MRV0018          |
| 15400.00  | FERNFLOW FORMATION at DUNDAS                 | MRV0034          |
| 17900.00  | TUNNEL RIDGE at RENISON BELL                 | MRV0042          |

| s    | Site  | Reference |
|------|---|-----------|
| 0.04 | HELLYER SITE 3 - PYRITISED PILLOWS                | MRV0064   |
| 0.06 | MAGNETITE at KARA MINE DUMP                       | MRV0030   |
| 0.09 | ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 0.09 | ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 0.10 | ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 0.10 | PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 0.33 | PYRITE at CHESTER MINE                            | MRV0038   |
| 0.33 | TUNNEL RIDGE at RENISON BELL                      | MRV0044   |
| 0.34 | ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |
| 0.35 | BLACK SHALES on the ANTHONY ROAD                  | MRV0000   |
| 0.37 | ROSEBERY OPEN CUT                                 | MRV0007   |
| 0.38 | TUNNEL RIDGE at RENISON BELL                      | MRV0043   |
| 0.39 | TUNNEL RIDGE at RENISON BELL                      | MRV0046   |
| 0.39 | TUNNEL RIDGE at RENISON BELL                      | MRV0022   |
| 0.40 | FERNFLOW FORMATION at DUNDAS                      | MRV0034   |
| 0.45 | ROSEBERY MINE OPEN CUT                            | MRV0006   |
| 0.47 | ALTERATION ZONE SITE 2 at HERCULES MINE           | MRV0003   |
| 0.49 | MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 0.49 | TUNNEL RIDGE at RENISON BELL                      | MRV0042   |
| 0.50 | TUNNEL RIDGE at RENISON BELL                      | MRV0023   |
| 0.57 | BREWERY JUNCTION at DUNDAS                        | MRV0047   |
| 0.58 | PYRITE on ANTHONY ROAD                            | MRV0001   |
| 0.60 | 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ       | MRV0020   |
| 0.61 | BREWERY JUNCTION at DUNDAS                        | MRV0048   |
| 0.63 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0013   |
| 0.63 | BLACK SHALES at ROSEBERY ROAD CUTTING             | MRV0021   |
| 0.67 | ALTERATION ZONE SITE 3 at HERCULES MINE           | MRV0004   |
| 0.70 | BREWERY JUNCTION at DUNDAS                        | MRV0049   |
| 0.92 | TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 0.97 | ROSEBERY OPEN CUT                                 | MRV0009   |
| 1.00 | 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ       | MRV0018   |
| 1.09 | 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ       | MRV0019   |
| 1.15 | ALTERATION ZONE SITE 1 at HERCULES MINE           | MRV0002   |
| 1.19 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0015   |
| 1.24 | VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 1.33 | ROSEBERY OPEN CUT                                 | MRV0010   |
| 1.38 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0017   |
| 1.46 | ROSEBERY OPEN CUT                                 | MRV0008   |
| 1.49 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0012   |
| 1.52 | BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 1.61 | PYRITE ZONE - BRADSHAW ROAD                       | MRV0035   |
| 1.64 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0014   |
| 1.88 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0016   |
| 1.90 | 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0011   |
| 2.18 | MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 2.79 | QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |

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SITES in ORDER OF ASCENDING MEAN  $\tau$  (ctd)

| s      | Site  | Reference |
|--------|---|-----------|
| 3.89   | HELLYER MINE DECLINE                              | MRV0057   |
| 4.34   | MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 6.84   | QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 6.90   | SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 6.90   | ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 7.17   | BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 10.90  | BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 11.70  | HELLYER SITE 1 - SHALES                           | MRV0062   |
| 12.10  | QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 14.40  | SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 16.20  | BLACK SHALES at RED HILLS                         | MRV0039   |
| 22.90  | QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 23.60  | ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 32.10  | ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 45.10  | MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 54.50  | ROSEBERY SITE 5 (H LENS ORE)                      | MRV0069   |
| 61.40  | HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 146.00 | MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 200.00 | MINERALIZATION at PRINCE LYELL                    | MRV0024   |
| 352.00 | MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |

SITES in ORDER OF ASCENDING MEAN c

| Site   | Reference |
|--|-----------|
| 0.15 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0017   |
| 0.15 BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 0.15 ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 0.16 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0014   |
| 0.16 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0011   |
| 0.16 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0016   |
| 0.16 VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 0.19 PYRITE ZONE - BRADSHAW ROAD                       | MRV0035   |
| 0.19 QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 0.20 QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 0.21 MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 0.21 QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 0.21 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0015   |
| 0.23 ROSEBERY OPEN CUT                                 | MRV0009   |
| 0.23 ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 0.24 ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |
| 0.24 ROSEBERY OPEN CUT                                 | MRV0008   |
| 0.24 HELLYER SITE 1 - SHALES                           | MRV0062   |
| 0.25 HELLYER MINE DECLINE                              | MRV0057   |
| 0.25 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0012   |
| 0.26 BLACK SHALES at RED HILLS                         | MRV0039   |
| 0.26 SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 0.26 ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 0.27 ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 0.27 PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 0.28 ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 0.28 MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 0.28 SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 0.28 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ       | MRV0019   |
| 0.28 ROSEBERY OPEN CUT                                 | MRV0010   |
| 0.28 HELLYER SITE 3 - PYRITISED PILLOWS                | MRV0064   |
| 0.29 ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 0.30 HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 0.31 BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 0.31 MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 0.31 MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 0.31 MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 0.31 PYRITE at CHESTER MINE                            | MRV0038   |
| 0.32 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ       | MRV0018   |
| 0.32 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0013   |
| 0.34 BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 0.34 BREWERY JUNCTION at DUNDAS                        | MRV0048   |
| 0.34 QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |
| 0.36 TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 0.36 BLACK SHALES at ROSEBERY ROAD CUTTING             | MRV0021   |
| 0.37 MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |

SITES in ORDER OF ASCENDING MEAN c (ctd)

| Site   | Reference |
|--|-----------|
| 0.37 BREWERY JUNCTION at DUNDAS                  | MRV0047   |
| 0.38 PYRITE on ANTHONY ROAD                      | MRV0001   |
| 0.38 ALTERATION ZONE SITE 3 at HERCULES MINE     | MRV0004   |
| 0.38 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ | MRV0020   |
| 0.40 MINERALIZATION at PRINCE LYELL              | MRV0024   |
| 0.41 ALTERATION ZONE SITE 1 at HERCULES MINE     | MRV0002   |
| 0.42 TUNNEL RIDGE at RENISON BELL                | MRV0042   |
| 0.43 ROSEBERY OPEN CUT                           | MRV0007   |
| 0.43 ALTERATION ZONE SITE 2 at HERCULES MINE     | MRV0003   |
| 0.44 BREWERY JUNCTION at DUNDAS                  | MRV0049   |
| 0.45 TUNNEL RIDGE at RENISON BELL                | MRV0046   |
| 0.45 BLACK SHALES on the ANTHONY ROAD            | MRV0000   |
| 0.48 ROSEBERY MINE OPEN CUT                      | MRV0006   |
| 0.48 ROSEBERY SITE 5 (H LENS ORE)                | MRV0069   |
| 0.48 TUNNEL RIDGE at RENISON BELL                | MRV0044   |
| 0.48 FERNFLOW FORMATION at DUNDAS                | MRV0034   |
| 0.48 TUNNEL RIDGE at RENISON BELL                | MRV0022   |
| 0.49 TUNNEL RIDGE at RENISON BELL                | MRV0043   |
| 0.49 TUNNEL RIDGE at RENISON BELL                | MRV0023   |
| 0.56 MAGNETITE at KARA MINE DUMP                 | MRV0030   |

SITES in ORDER OF ASCENDING MEAN m

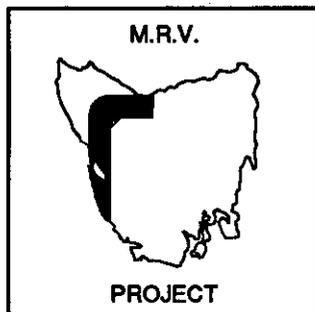
| Site   | Reference |
|--|-----------|
| 0.01 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0011   |
| 0.02 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0016   |
| 0.03 ROSEBERY OPEN CUT                                 | MRV0008   |
| 0.04 BREWERY JUNCTION at DUNDAS                        | MRV0049   |
| 0.04 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0017   |
| 0.04 BREWERY JUNCTION at DUNDAS                        | MRV0050   |
| 0.04 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0014   |
| 0.04 VARVED CLAYS at BOCO SIDING                       | MRV0005   |
| 0.04 'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ       | MRV0019   |
| 0.05 'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ       | MRV0018   |
| 0.05 'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ       | MRV0020   |
| 0.05 ROSEBERY OPEN CUT                                 | MRV0010   |
| 0.06 TUNNEL RIDGE at RENISON BELL                      | MRV0046   |
| 0.06 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0013   |
| 0.06 ROSEBERY OPEN CUT                                 | MRV0007   |
| 0.06 ALTERATION ZONE SITE 1 at HERCULES MINE           | MRV0002   |
| 0.06 ALTERATION ZONE SITE 3 at HERCULES MINE           | MRV0004   |
| 0.06 BLACK SHALES at ROSEBERY ROAD CUTTING             | MRV0021   |
| 0.06 TUNNEL RIDGE at RENISON BELL                      | MRV0043   |
| 0.06 ALTERATION ZONE SITE 2 at HERCULES MINE           | MRV0003   |
| 0.06 ROSEBERY MINE OPEN CUT                            | MRV0006   |
| 0.07 BREWERY JUNCTION at DUNDAS                        | MRV0048   |
| 0.07 TUNNEL RIDGE at RENISON BELL                      | MRV0023   |
| 0.07 TUNNEL RIDGE at RENISON BELL                      | MRV0044   |
| 0.08 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0012   |
| 0.08 TUNNEL RIDGE at RENISON BELL                      | MRV0045   |
| 0.08 TUNNEL RIDGE at RENISON BELL                      | MRV0022   |
| 0.09 'UNALTERED' VOLCANICS on PIEMAN ROAD, TULLAH      | MRV0015   |
| 0.09 BREWERY JUNCTION at DUNDAS                        | MRV0047   |
| 0.10 FERNFLOW FORMATION at DUNDAS                      | MRV0034   |
| 0.11 TUNNEL RIDGE at RENISON BELL                      | MRV0042   |
| 0.11 ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE) | MRV0067   |
| 0.11 PYRITE on ANTHONY ROAD                            | MRV0001   |
| 0.11 BLACK SHALES on the ANTHONY ROAD                  | MRV0000   |
| 0.13 PYRITE ZONE - BRADSHAW ROAD                       | MRV0035   |
| 0.16 ROSEBERY SITE 9 (BLACK SHALES)                    | MRV0073   |
| 0.19 HELLYER MINE DECLINE                              | MRV0057   |
| 0.22 ROSEBERY SITE 2 (HOST ROCK, D LENS)               | MRV0066   |
| 0.24 HELLYER SITE 3 - PYRITISED PILLOWS                | MRV0064   |
| 0.25 ROSEBERY OPEN CUT                                 | MRV0009   |
| 0.26 BLACK SHALES at WEST SEDGWICK                     | MRV0040   |
| 0.31 PYRITE at CHESTER MINE                            | MRV0038   |
| 0.37 BLACK SHALES at WHITE SPUR                        | MRV0041   |
| 0.45 HELLYER SITE 1 - SHALES                           | MRV0062   |
| 0.46 MAGNETITE at KARA MINE DUMP                       | MRV0030   |

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SITES in ORDER OF ASCENDING MEAN m (ctd)

| Site   | Reference |
|--|-----------|
| 0.48 HELLYER SITE 2 - BLACK SHALES                     | MRV0063   |
| 0.50 MINERALIZATION at PRINCE LYELL                    | MRV0026   |
| 0.52 PYRITE MINERALIZATION at LAKE SELINA              | MRV0056   |
| 0.53 MAGNETITE in KARA MINE PIT                        | MRV0031   |
| 0.55 QUE RIVER MINE - PQ LENS FOOTWALL                 | MRV0059   |
| 0.56 SERPENTINITE below QUARRY FACE at SERPENTINE HILL | MRV0037   |
| 0.57 BLACK SHALES at RED HILLS                         | MRV0039   |
| 0.61 MINERALIZATION at PRINCE LYELL                    | MRV0025   |
| 0.64 ROSEBERY SITE 8 (ORE/HOST ROCKS)                  | MRV0072   |
| 0.65 QUE RIVER MINE - PQ LENS HIGH GRADE ORE           | MRV0061   |
| 0.65 SERPENTINITE at QUARRY on SERPENTINE HILL         | MRV0036   |
| 0.65 QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)  | MRV0058   |
| 0.66 QUE RIVER MINE - PQ LENS LOW GRADE ORE            | MRV0060   |
| 0.68 MAGNETITE at SAVAGE RIVER MINE                    | MRV0028   |
| 0.69 MAGNETITE at SAVAGE RIVER MINE                    | MRV0027   |
| 0.72 MINERALIZATION at PRINCE LYELL                    | MRV0024   |
| 0.80 ROSEBERY SITE 1 (HOST ROCK WITH VEIN)             | MRV0065   |
| 0.81 ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)  | MRV0071   |
| 0.88 MAGNETITE at SAVAGE RIVER MINE                    | MRV0029   |
| 0.89 ROSEBERY SITE 4 (H LENS - BARYTIC)                | MRV0068   |

034062



Mt Read Volcanics Project  
Geophysical Report 10

1988

# Geophysical signatures of Western Tasmanian mineralisation

Volume 2

## Electrical properties of Western Tasmanian materials

### Appendix: Data listing

J. R. BISHOP and R. J. G. LEWIS



TASMANIA DEPARTMENT OF MINES

LIST of FIGURES

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| A1. Locality map for Hellyer sites 1 and 2   | D11 |
| A2. Locality map for PQ Lens at Que River    | D28 |
| A3. Locality map for the S lens at Que River | D32 |
| A4. Locality maps for ores at Rosebery       | D41 |

## Electrical Properties - Western Tasmania

D1

BLACK SHALES on the ANTHONY ROAD

MRV0000

The black shales on the Anthony Road are considered to be a typical example from the Central Volcanic Sequence of the Mount Read belt.

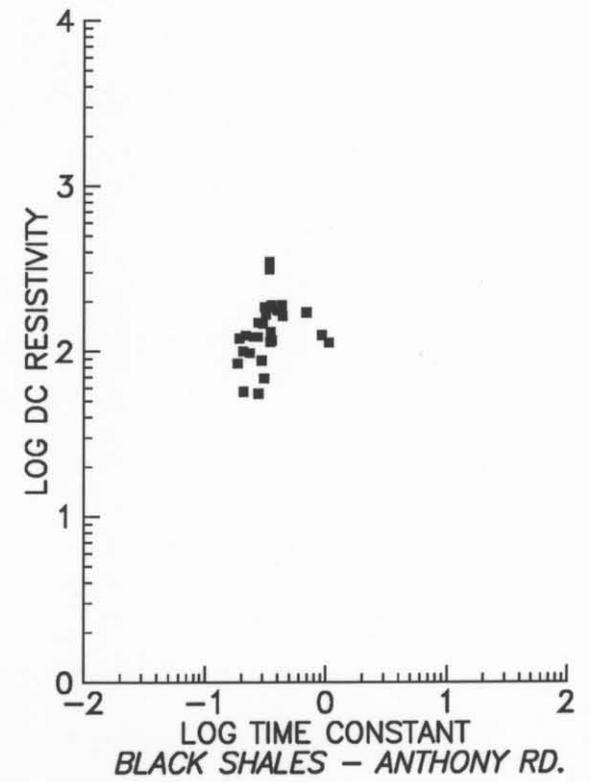
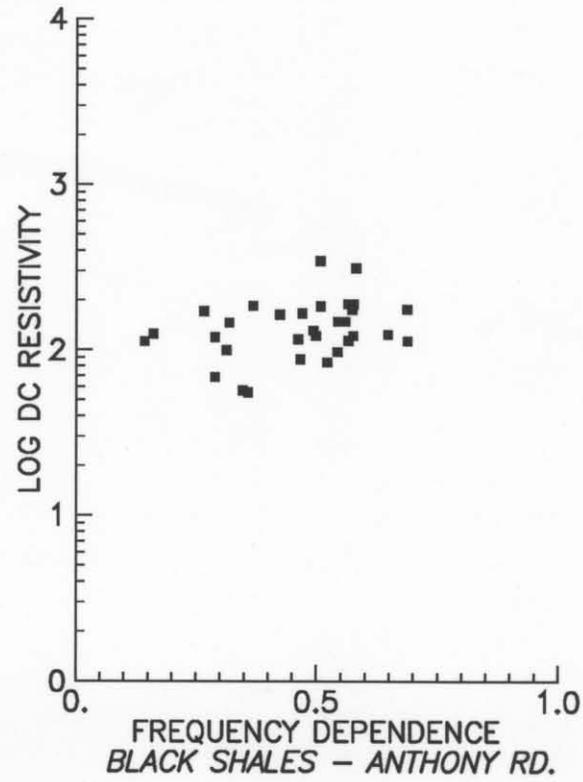
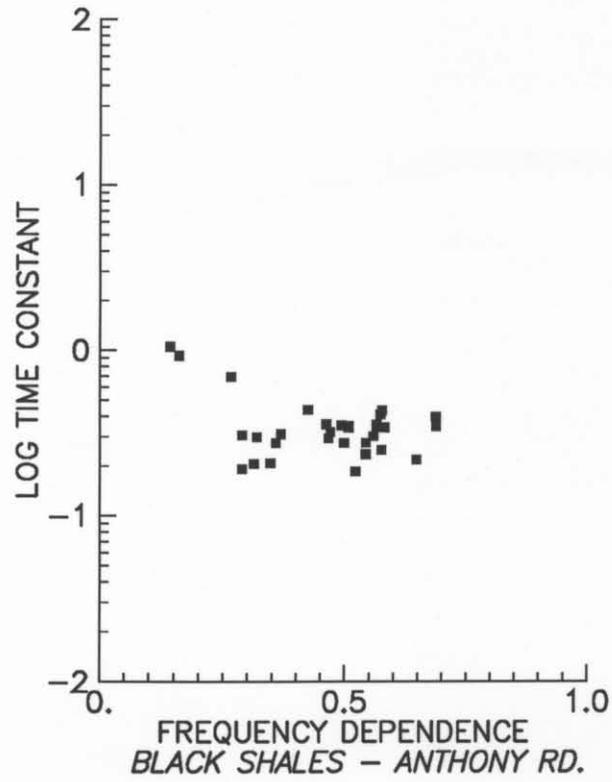
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .516E+02 | .343E+03 | .139E+03 | .608E+02              |
| Chargeability | .552E+01 | .417E+02 | .191E+02 | .120E+02              |
| R0            | .555E+02 | .347E+03 | .143E+03 | .604E+02              |
| $\tau$        | .185E+00 | .106E+01 | .353E+00 | .189E+00              |
| c             | .14      | .69      | .45      | .14                   |
| m             | .03      | .30      | .11      | .09                   |

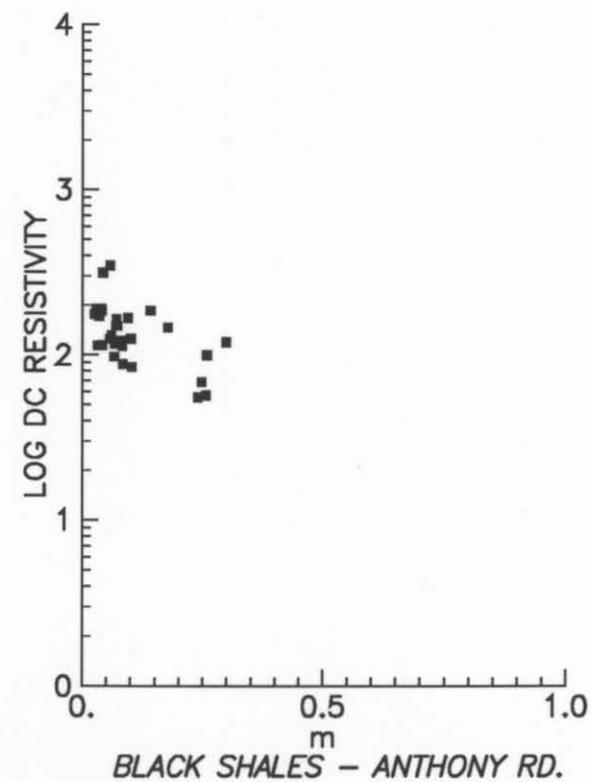
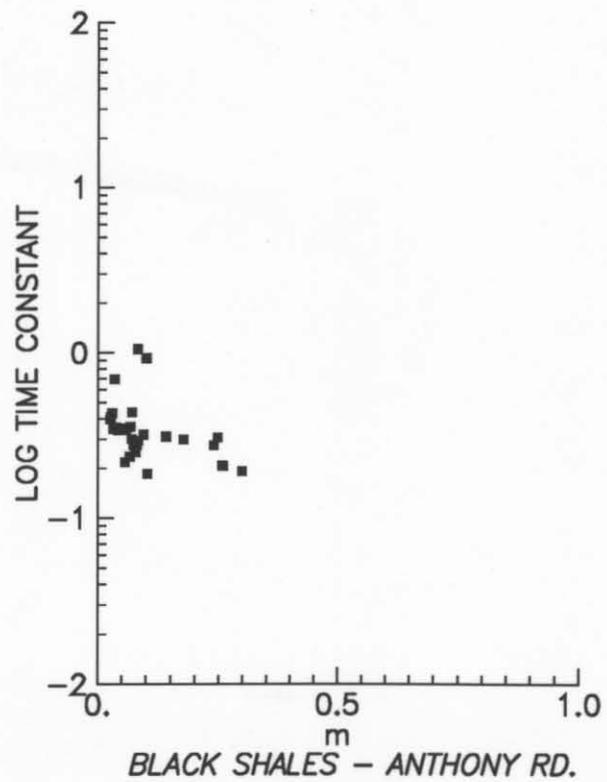
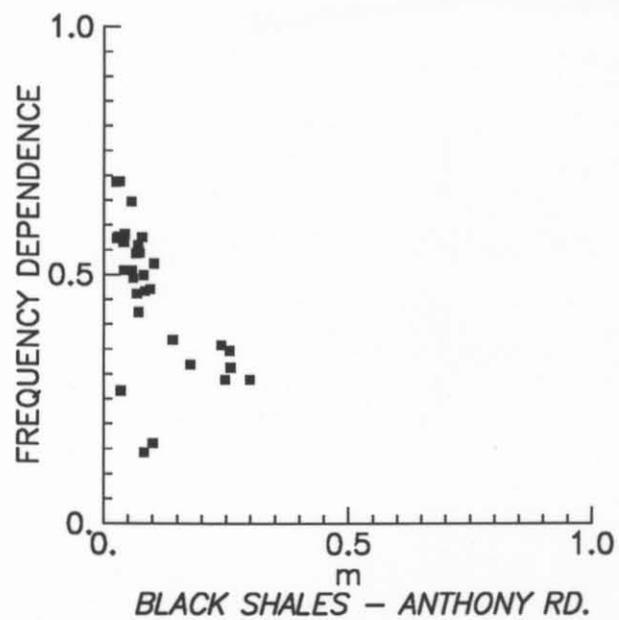
Data from 33 cases. Spectral data from 33 cases. ( 33 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9   | 10  |
|------|------|------|------|------|------|------|------|-----|-----|
| 4.60 | 3.03 | 2.35 | 1.92 | 1.62 | 1.39 | 1.22 | 1.09 | .98 | .88 |





## Electrical Properties - Western Tasmania

D2

PYRITE on ANTHONY ROAD

MRV0001

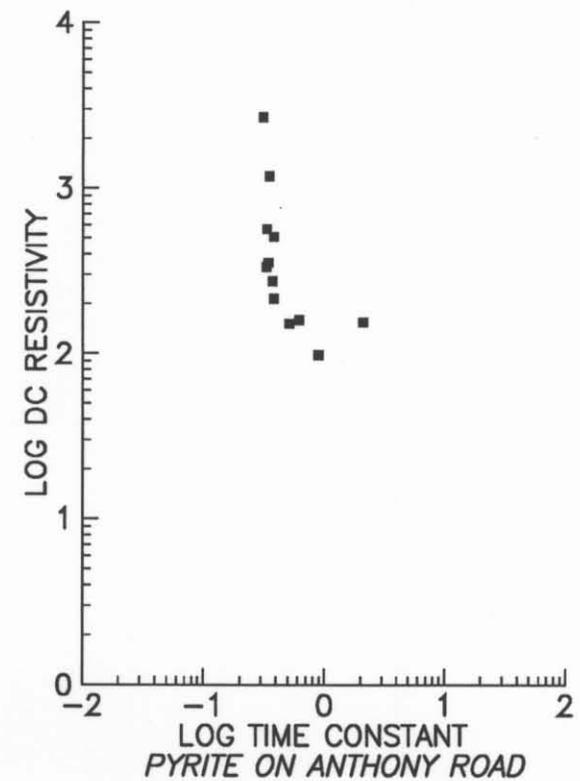
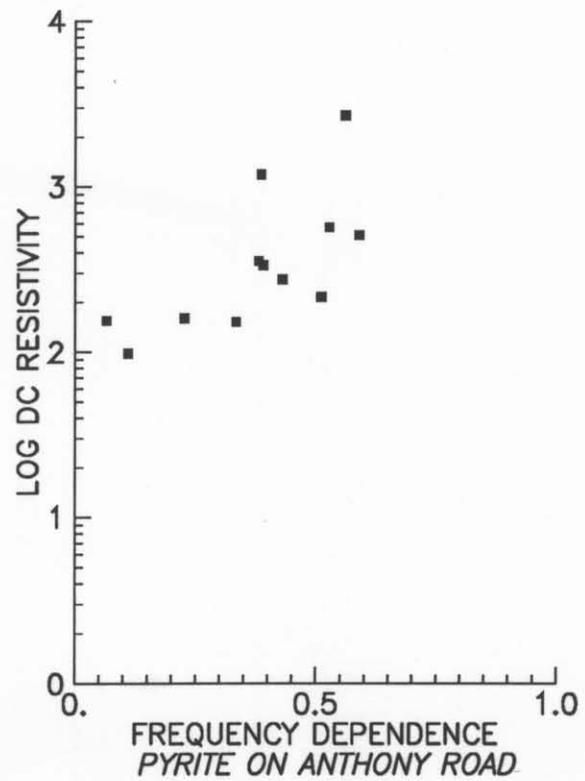
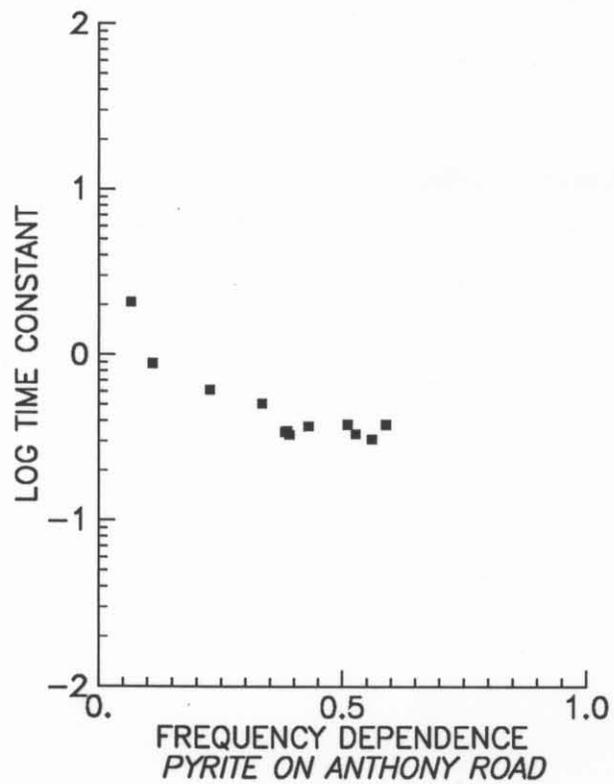
A belt of pyrite in strongly sheared volcanics outcrops on the Anthony Road. It appears to closely resemble the pyritic style of the Mt. Lyell field.

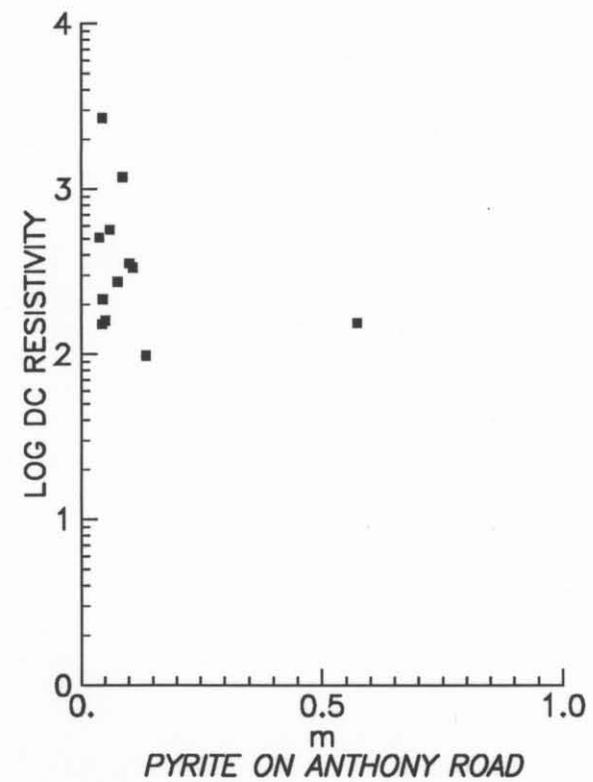
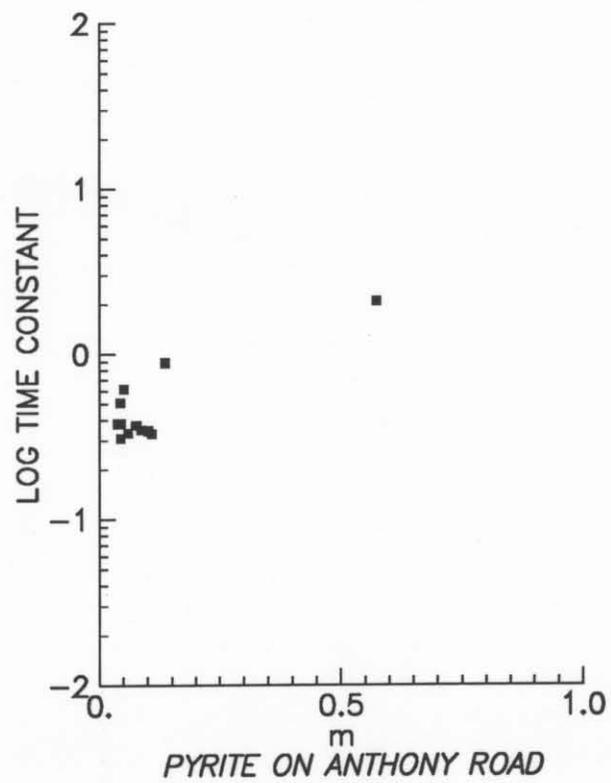
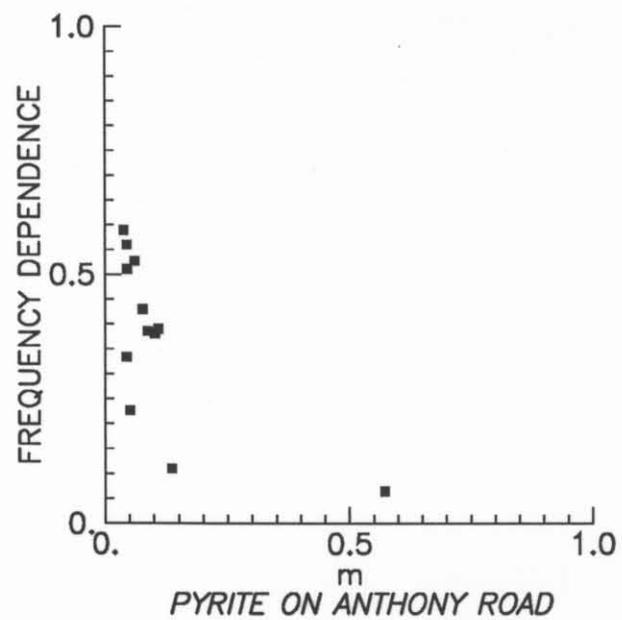
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .916E+02 | .268E+04 | .546E+03 | .702E+03              |
| Chargeability | .625E+01 | .270E+02 | .135E+02 | .575E+01              |
| R0            | .979E+02 | .270E+04 | .559E+03 | .705E+03              |
| $\tau$        | .311E+00 | .209E+01 | .575E+00 | .483E+00              |
| c             | .07      | .59      | .38      | .16                   |
| m             | .04      | .57      | .11      | .14                   |

Data from 12 cases. Spectral data from 12 cases. ( 12 Sites measured).

Time Delay = 50. ms Window Width = 150. ms  
Average Window Chargeabilities

|      |      |      |      |      |     |     |     |     |     |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
| 3.43 | 2.08 | 1.59 | 1.30 | 1.11 | .97 | .86 | .78 | .71 | .65 |





## Electrical Properties - Western Tasmania

D3

VARVED CLAYS at BOCO SIDING

MRV0005

The Boco Siding area was selected to study the geophysical properties of glacial cover. Among the materials present are varved clays well exposed in a road cutting. Other results in Volume 1 show that there are other materials of very different properties present in the cover.

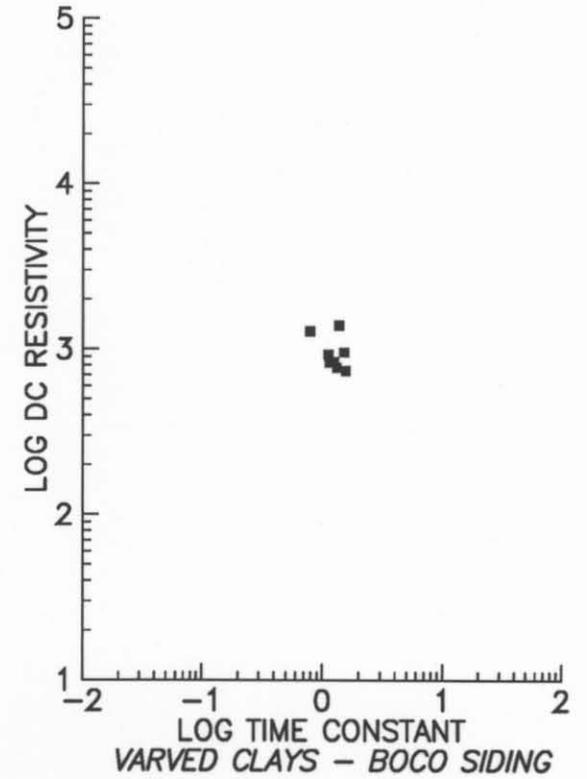
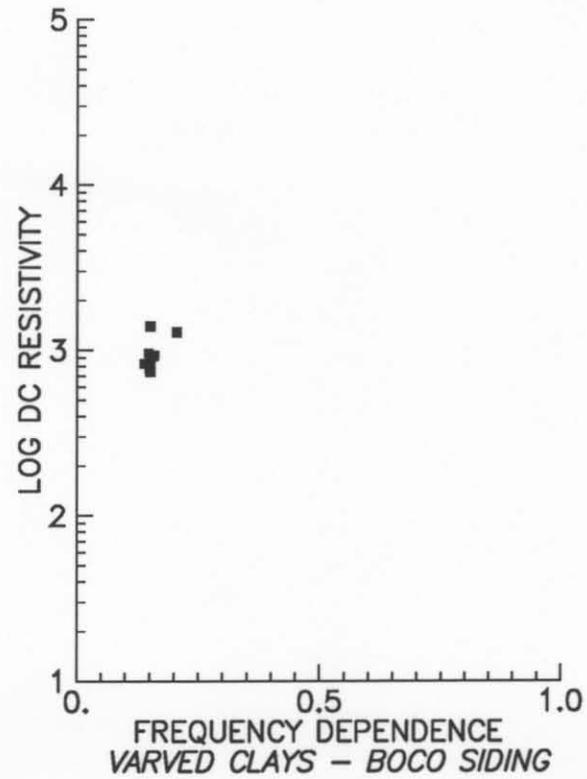
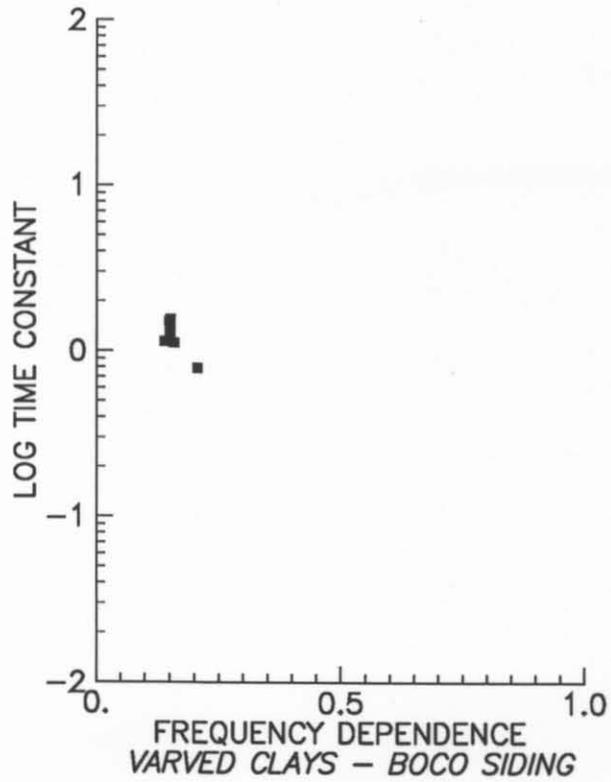
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .731E+03 | .138E+04 | .948E+03 | .211E+03              |
| Chargeability | .293E+01 | .540E+01 | .390E+01 | .727E+00              |
| R0            | .740E+03 | .140E+04 | .964E+03 | .214E+03              |
| $\tau$        | .790E+00 | .155E+01 | .124E+01 | .219E+00              |
| c             | .14      | .21      | .16      | .02                   |
| m             | .03      | .05      | .04      | .01                   |

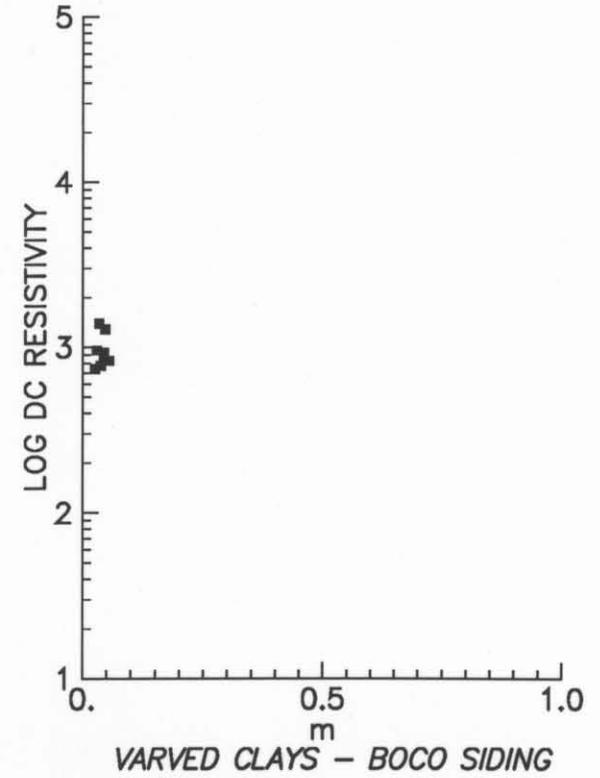
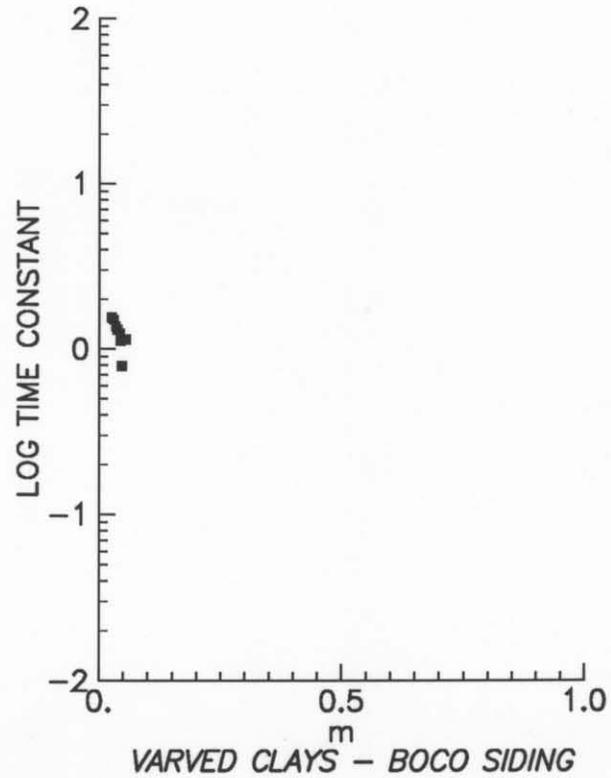
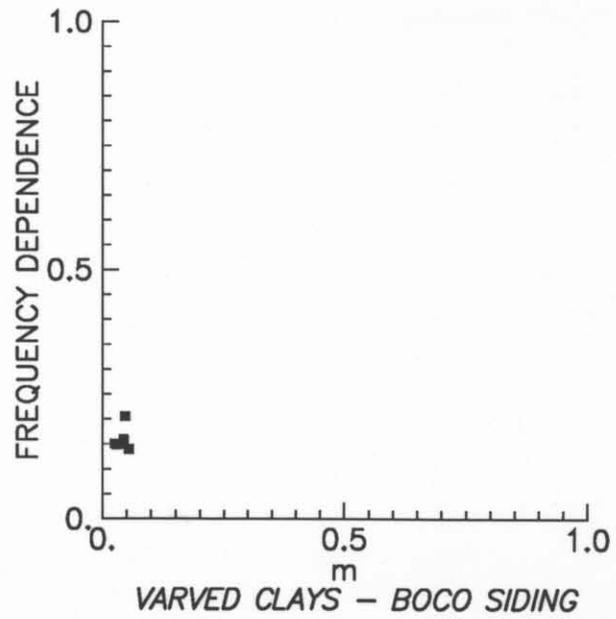
Data from 9 cases. Spectral data from 9 cases. ( 9 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.16 | .68 | .49 | .37 | .30 | .24 | .20 | .17 | .15 | .12 |





## Electrical Properties - Western Tasmania

D4

PYRITE ZONE - BRADSHAW ROAD

MRV0035

Results from the pyrite zone on Bradshaws Road.

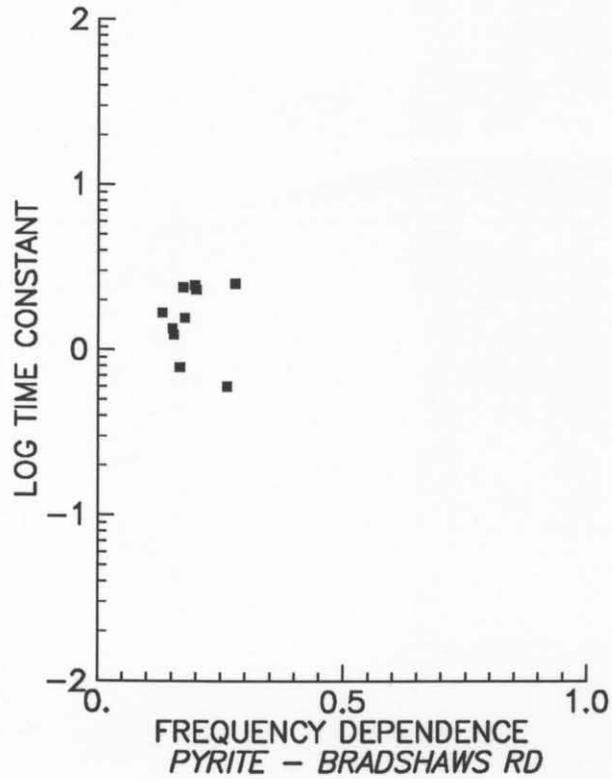
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .446E+03 | .792E+03 | .645E+03 | .107E+03              |
| Chargeability | .849E+01 | .132E+02 | .115E+02 | .136E+01              |
| R0            | .467E+03 | .843E+03 | .686E+03 | .114E+03              |
| $\tau$        | .602E+00 | .253E+01 | .161E+01 | .693E+00              |
| c             | .13      | .28      | .19      | .04                   |
| m             | .07      | .17      | .13      | .03                   |

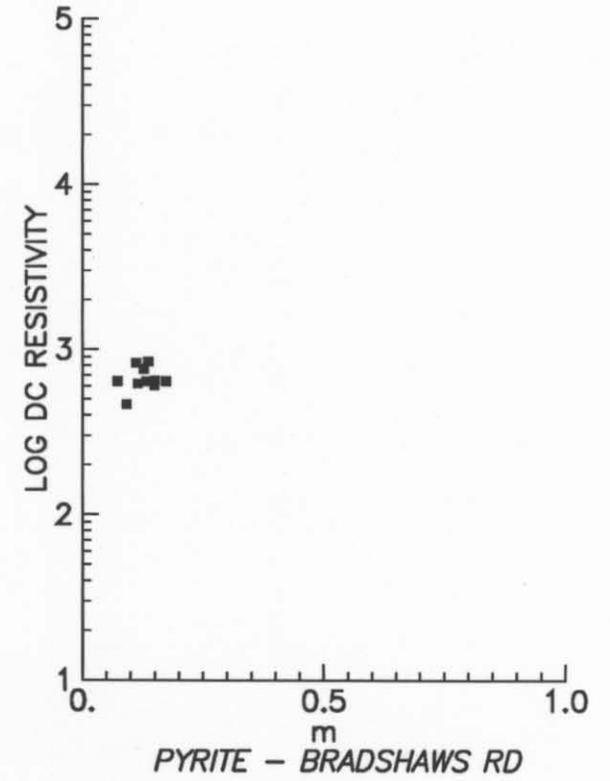
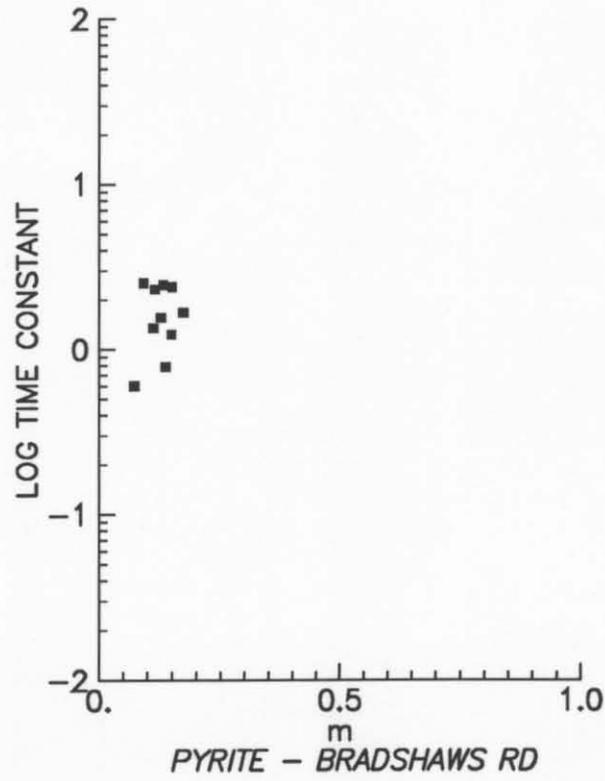
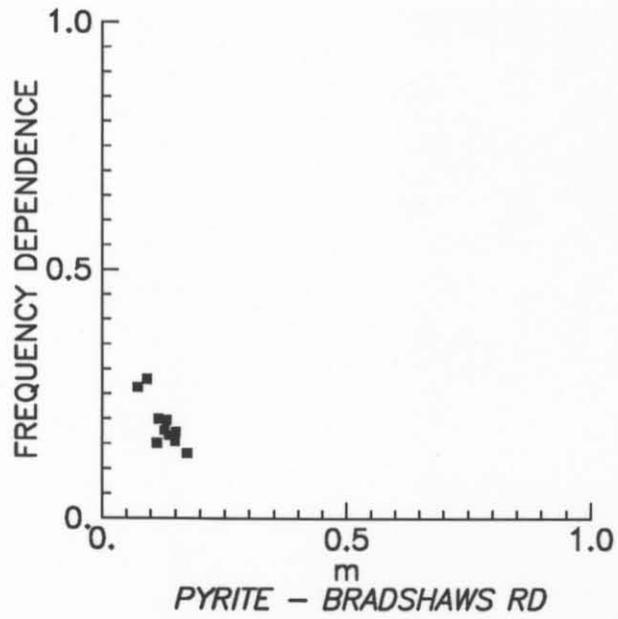
Data from 11 cases. Spectral data from 11 cases. ( 11 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 2.47 | 1.74 | 1.40 | 1.17 | 1.02 | .90 | .80 | .72 | .66 | .60 |





## Electrical Properties - Western Tasmania

D5

PYRITE at CHESTER MINE

MRV0038

The Chester Mine is in a body of barren pyrite and as such provides an interesting comparison with the volcanogenic massive sulphide bodies elsewhere in the Mt. Read Volcanics.

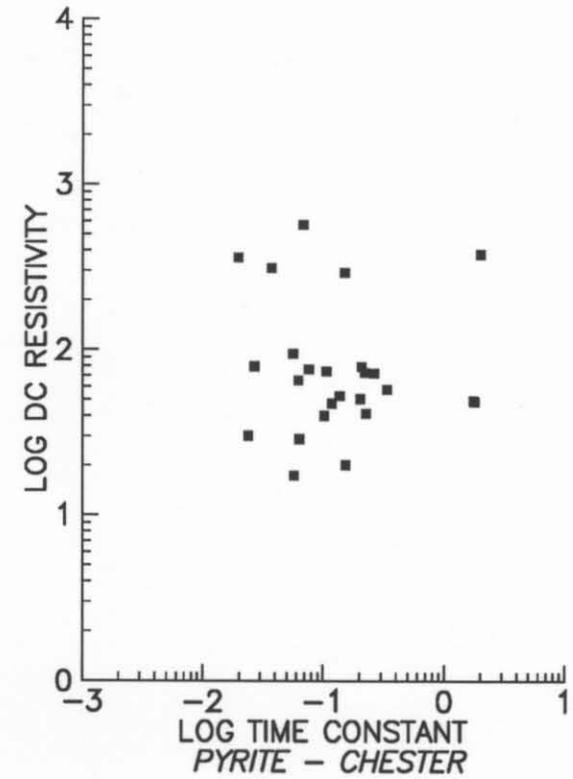
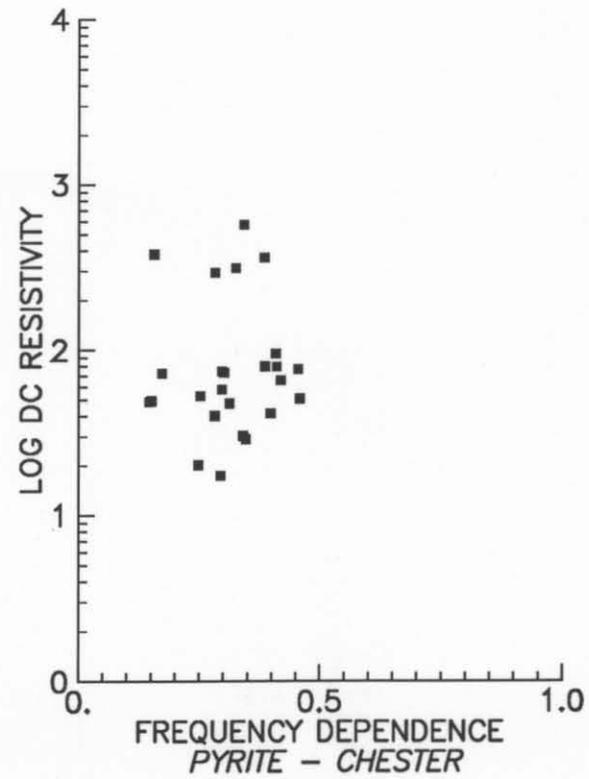
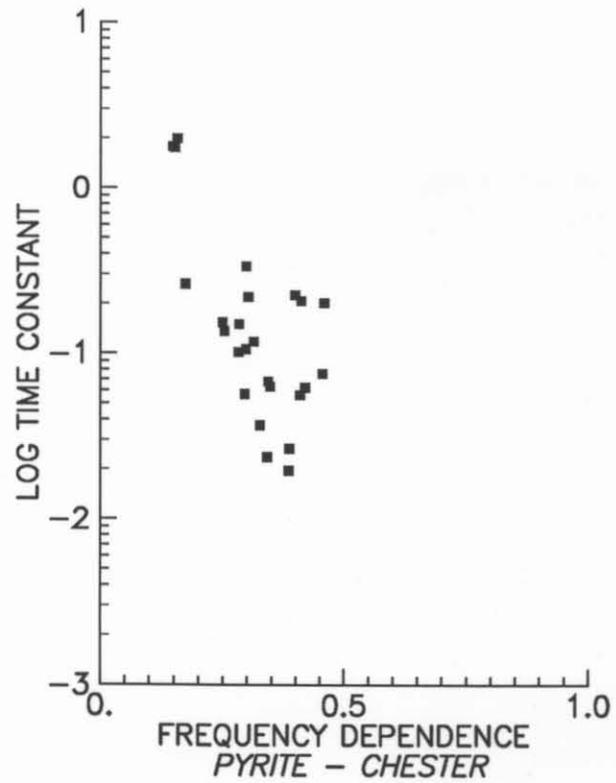
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .154E+02 | .603E+03 | .123E+03 | .156E+03              |
| Chargeability | .114E+00 | .694E+02 | .394E+02 | .178E+02              |
| R0            | .174E+02 | .572E+03 | .121E+03 | .140E+03              |
| $\tau$        | .197E-01 | .199E+01 | .330E+00 | .566E+00              |
| c             | .15      | .46      | .31      | .09                   |
| m             | .00      | .68      | .31      | .17                   |

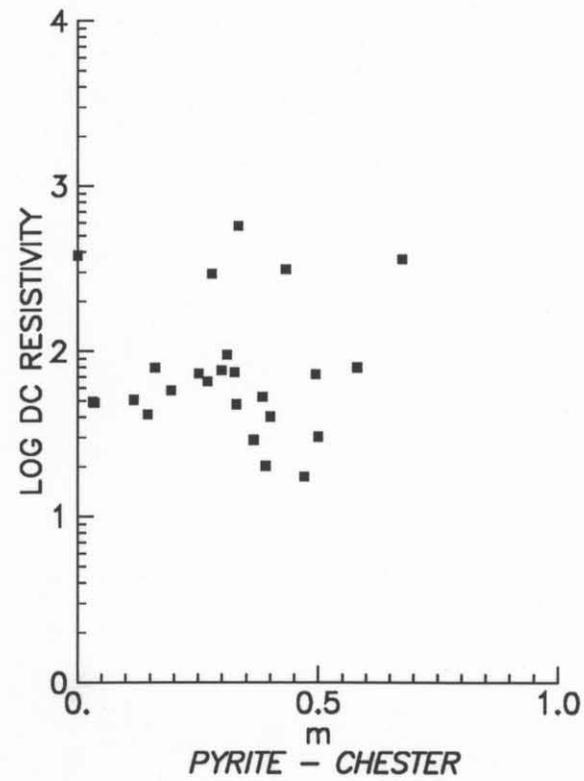
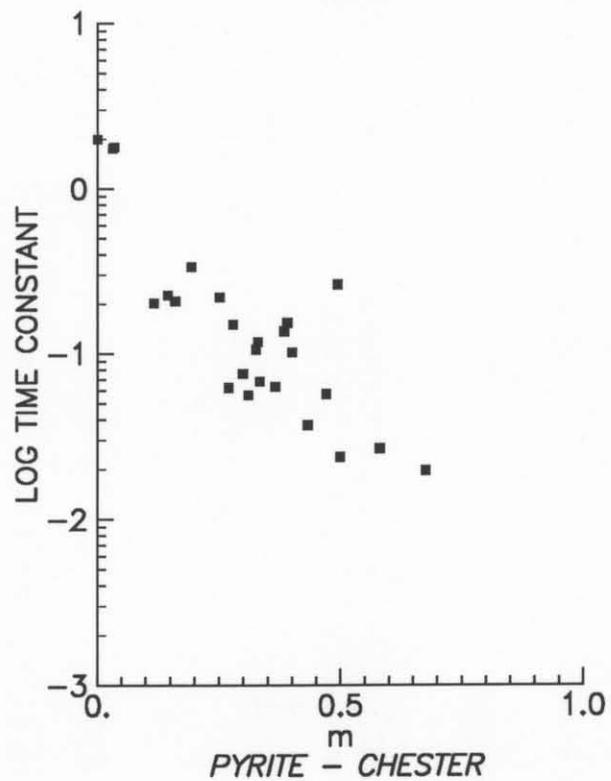
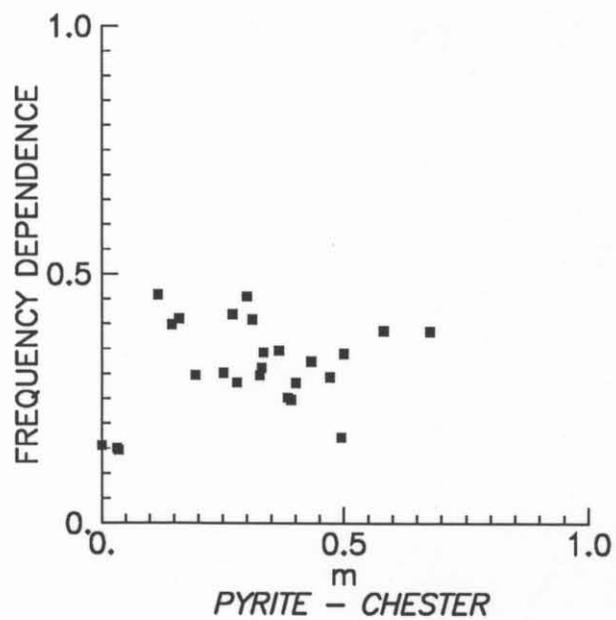
Data from 25 cases. Spectral data from 25 cases. ( 25 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 9.57 | 6.23 | 4.79 | 3.91 | 3.30 | 2.86 | 2.52 | 2.25 | 2.03 | 1.84 |





## Electrical Properties - Western Tasmania

D6

BREWERY JUNCTION at DUNDAS

MRV0047

These results are from a quarry in the Dundas Group at Brewery Junction on the Dundas Road.

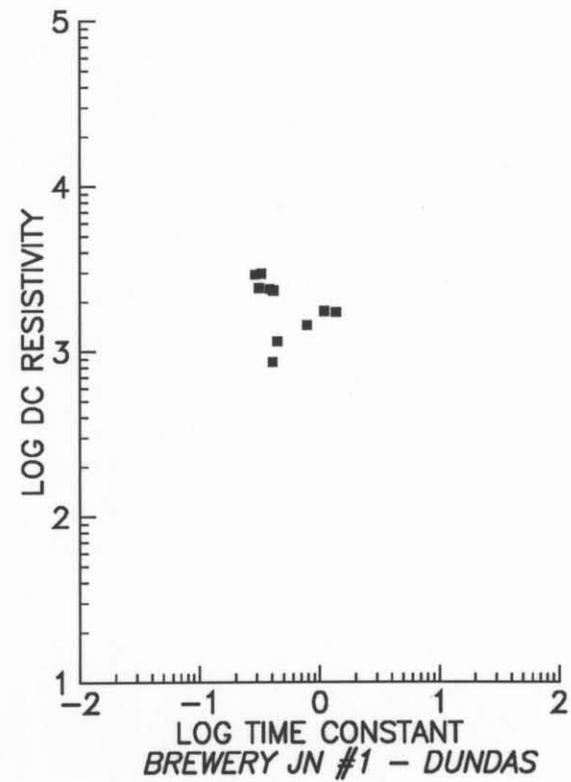
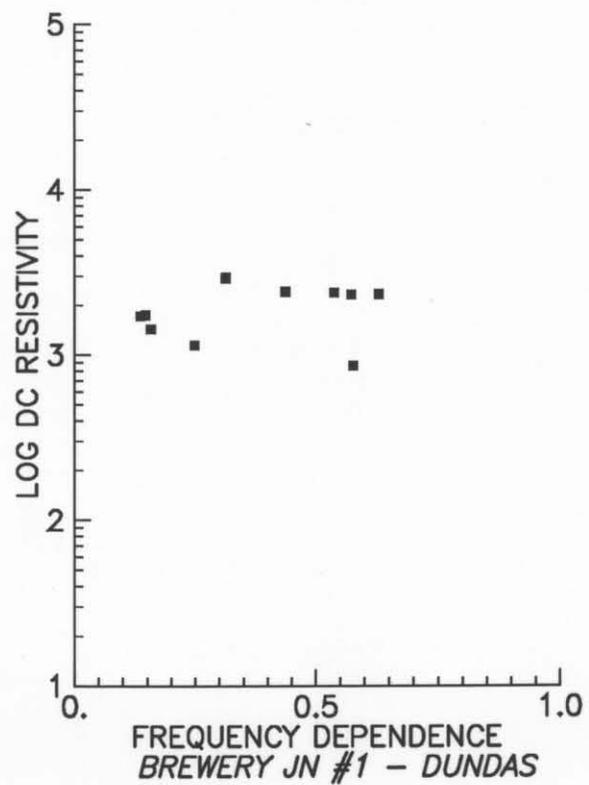
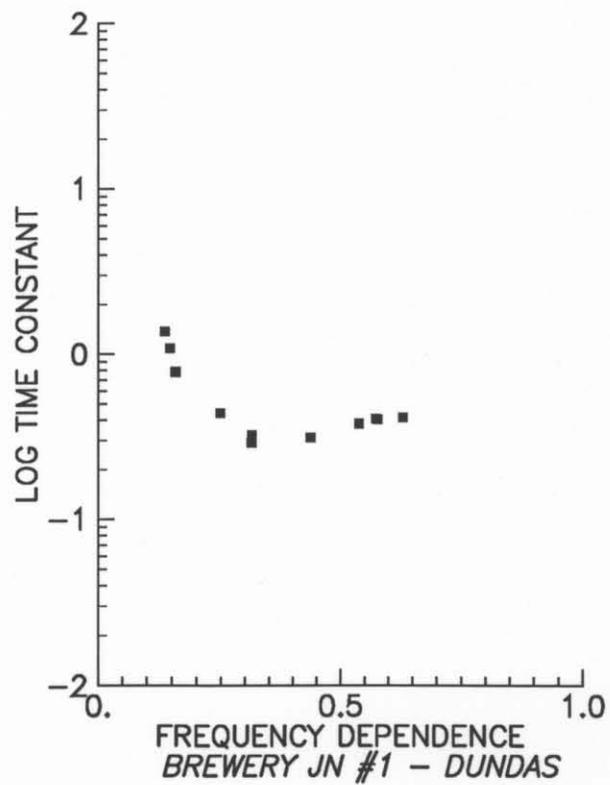
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .868E+03 | .280E+04 | .198E+04 | .633E+03              |
| Chargeability | .510E+01 | .266E+02 | .134E+02 | .739E+01              |
| R0            | .862E+03 | .295E+04 | .202E+04 | .655E+03              |
| $\tau$        | .291E+00 | .137E+01 | .565E+00 | .343E+00              |
| c             | .14      | .63      | .37      | .18                   |
| m             | .03      | .18      | .09      | .05                   |

Data from 11 cases. Spectral data from 11 cases. ( 11 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7   | 8   | 9   | 10  |
|------|------|------|------|------|------|-----|-----|-----|-----|
| 3.16 | 2.09 | 1.64 | 1.34 | 1.15 | 1.00 | .89 | .79 | .70 | .64 |





## Electrical Properties - Western Tasmania

D7

BREWERY JUNCTION at DUNDAS

MRV0048

These results are from a quarry in the Dundas Group at Brewery Junction on the Dundas Road.

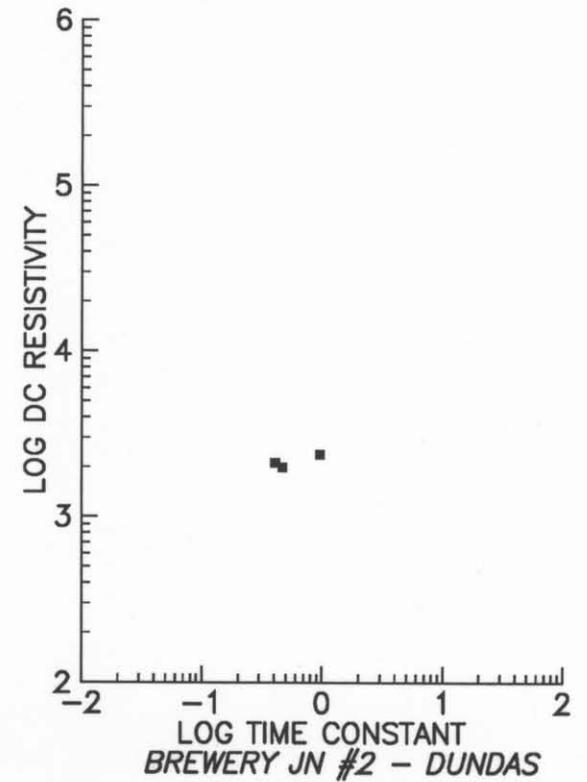
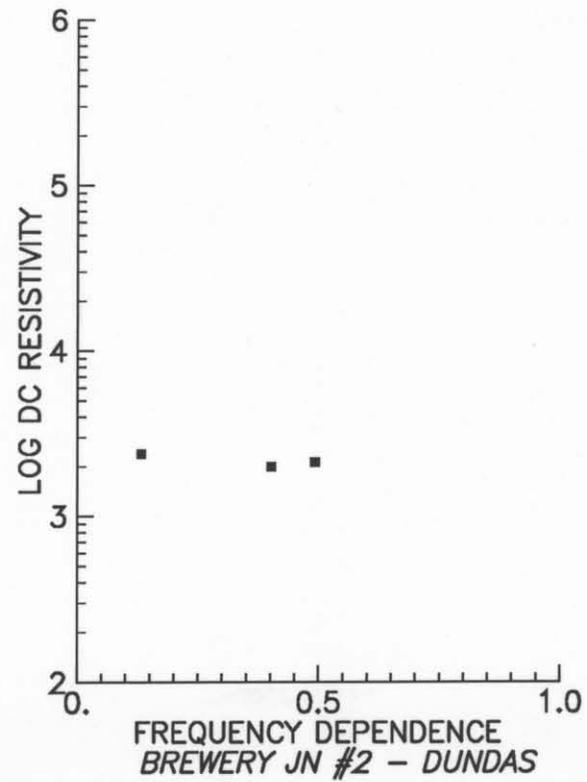
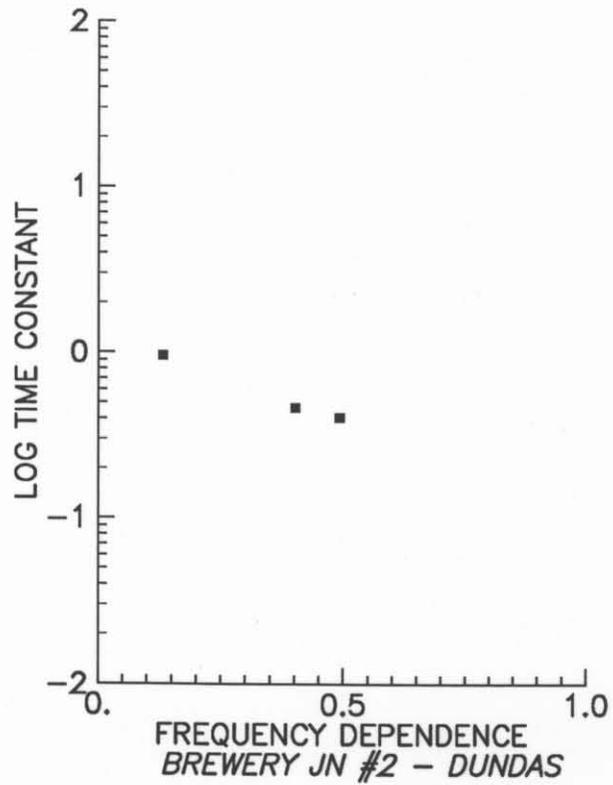
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .197E+04 | .226E+04 | .211E+04 | .117E+03              |
| Chargeability | .769E+01 | .989E+01 | .883E+01 | .899E+00              |
| R0            | .199E+04 | .239E+04 | .216E+04 | .166E+03              |
| $\tau$        | .407E+00 | .959E+00 | .611E+00 | .248E+00              |
| c             | .13      | .49      | .34      | .15                   |
| m             | .04      | .13      | .07      | .04                   |

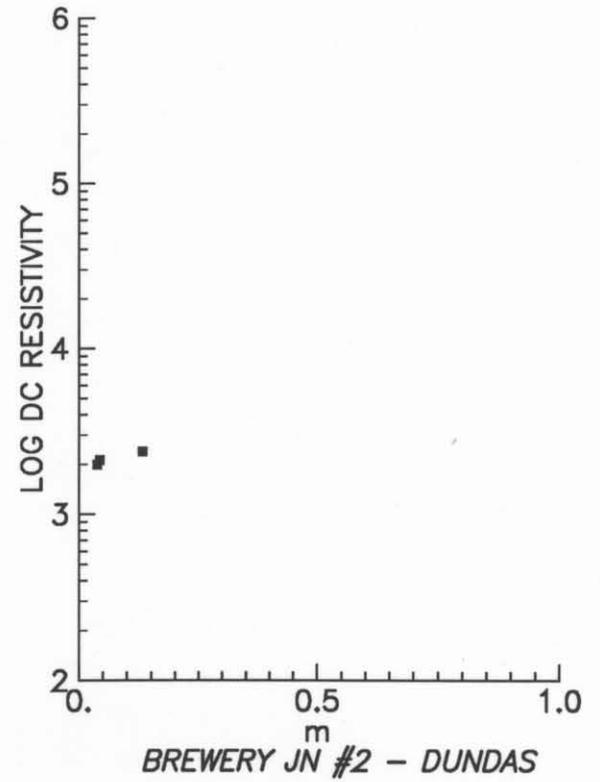
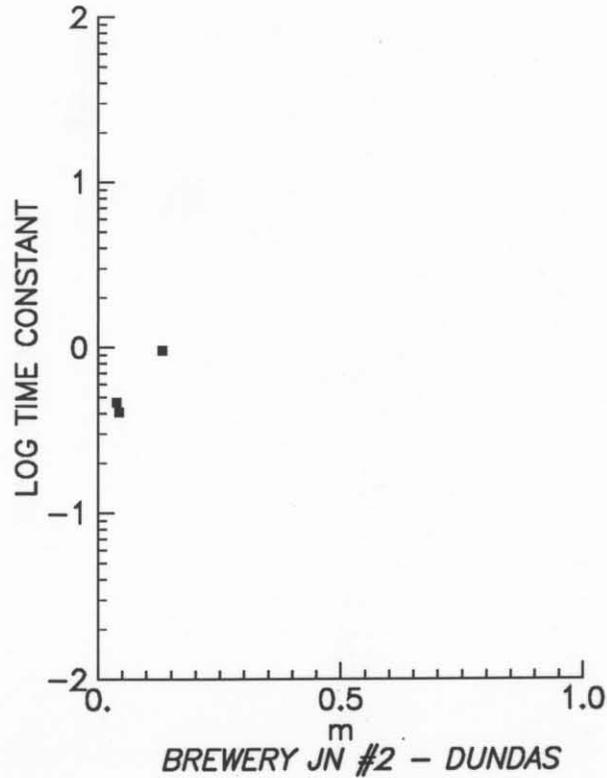
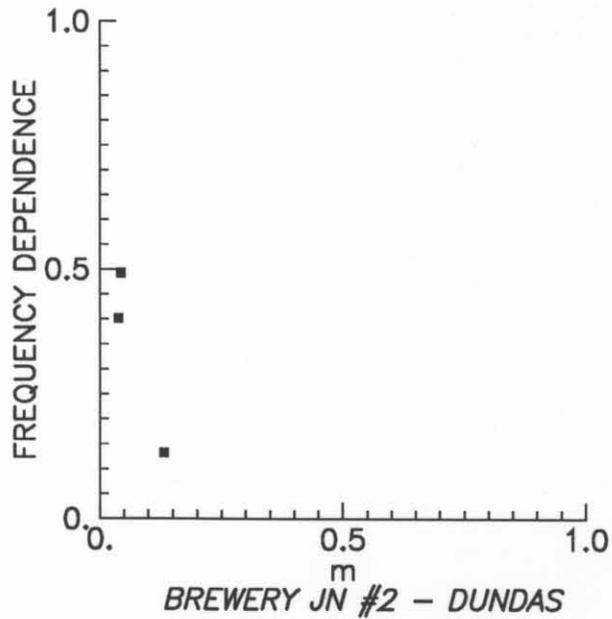
Data from 3 cases. Spectral data from 3 cases. ( 3 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.14 | 1.40 | 1.09 | .88 | .75 | .64 | .56 | .48 | .45 | .42 |





## Electrical Properties - Western Tasmania

D8

BREWERY JUNCTION at DUNDAS

MRV0049

These results are from a quarry in the Dundas Group at Brewery Junction on the Dundas Road.

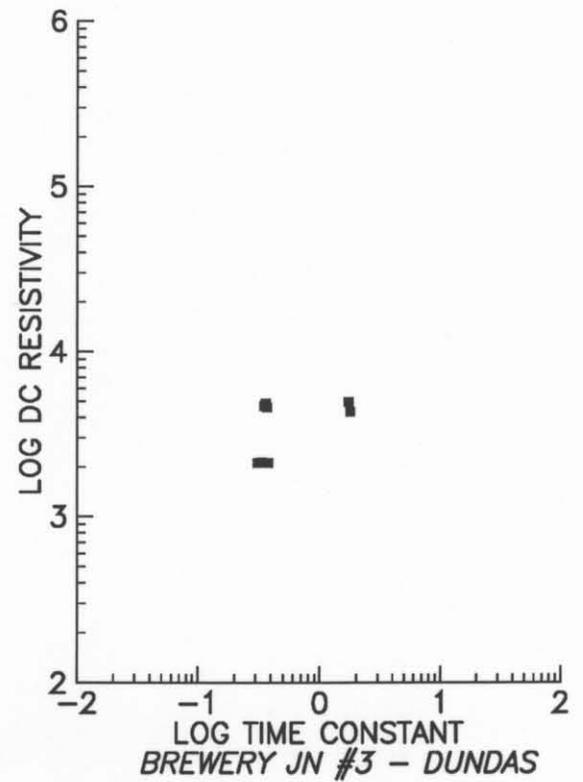
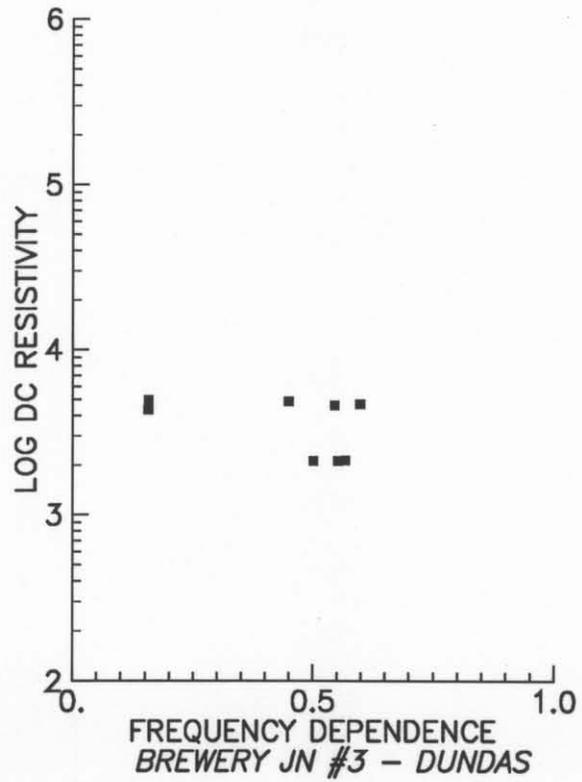
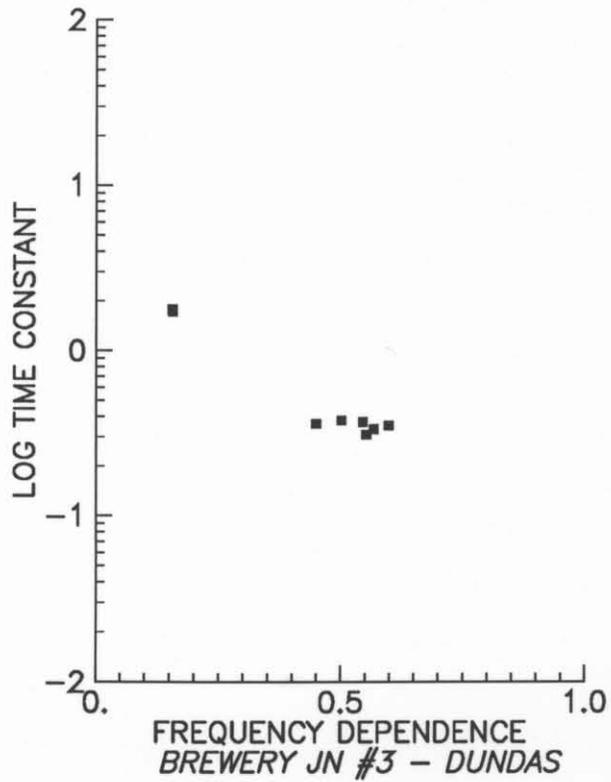
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .210E+04 | .494E+04 | .372E+04 | .125E+04              |
| Chargeability | .304E+01 | .134E+02 | .952E+01 | .376E+01              |
| R0            | .212E+04 | .495E+04 | .373E+04 | .125E+04              |
| $\tau$        | .311E+00 | .178E+01 | .700E+00 | .606E+00              |
| c             | .16      | .60      | .44      | .17                   |
| m             | .01      | .07      | .04      | .02                   |

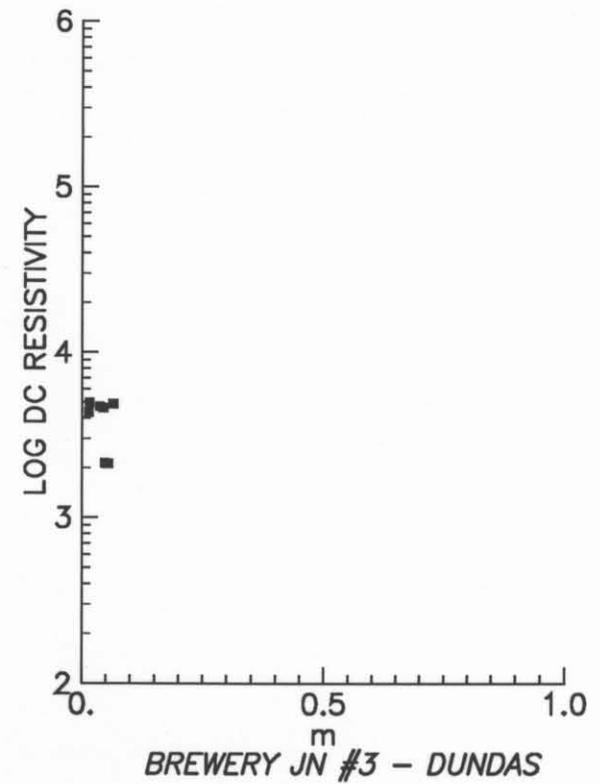
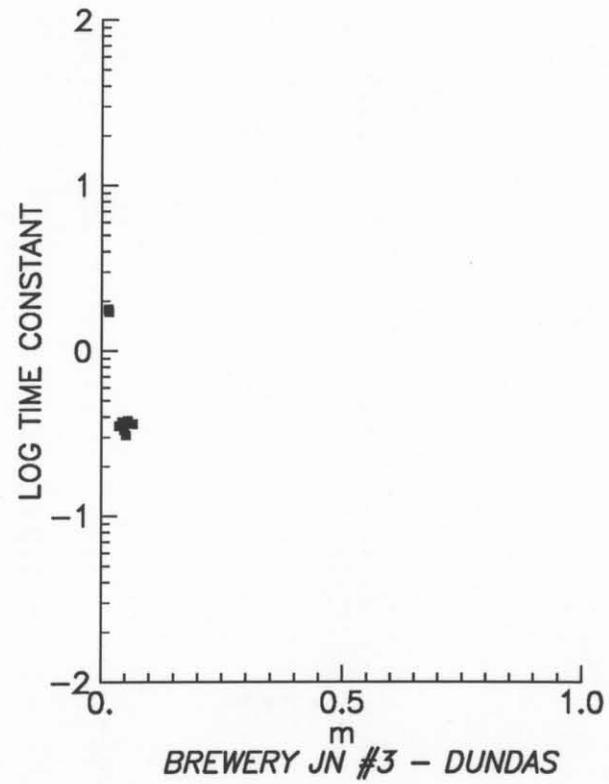
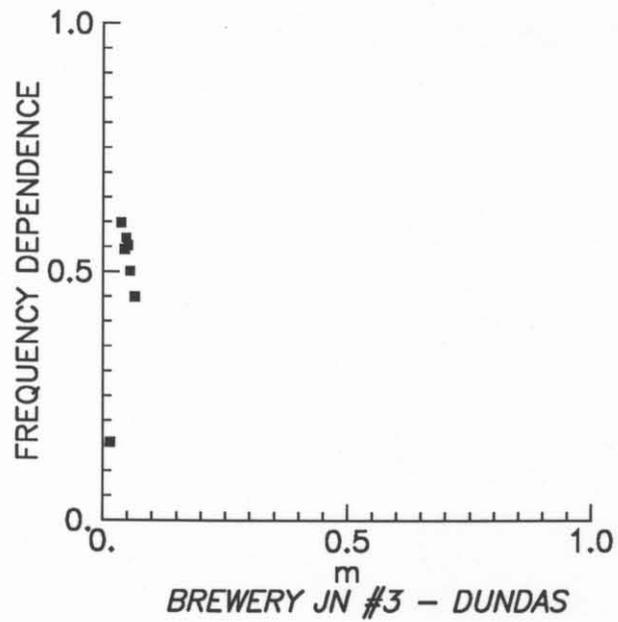
Data from 8 cases. Spectral data from 8 cases. ( 10 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.47 | 1.57 | 1.18 | .94 | .78 | .66 | .57 | .50 | .44 | .39 |





## Electrical Properties - Western Tasmania

D9

BREWERY JUNCTION at DUNDAS

MRV0050

These results are from a quarry in the Dundas Group at Brewery Junction on the Dundas Road.

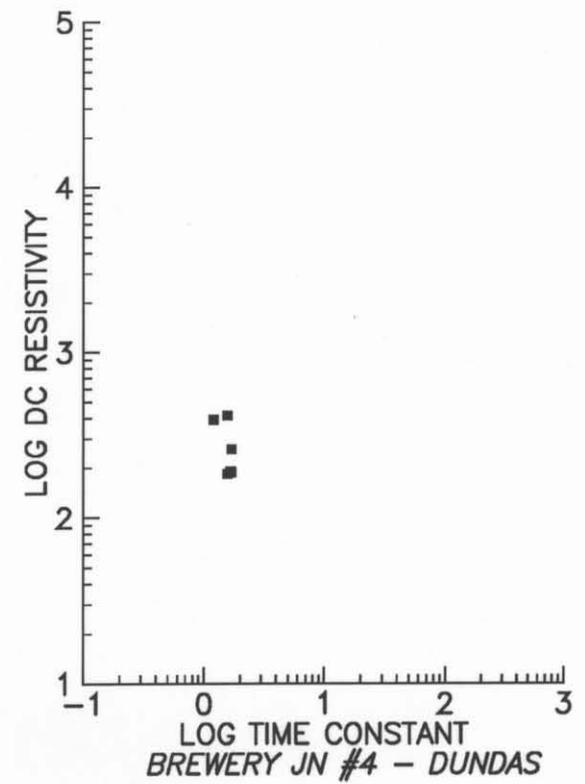
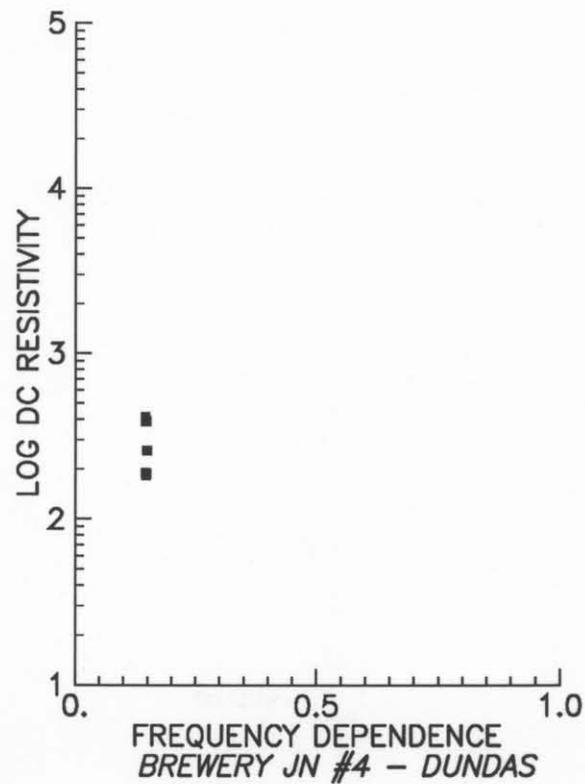
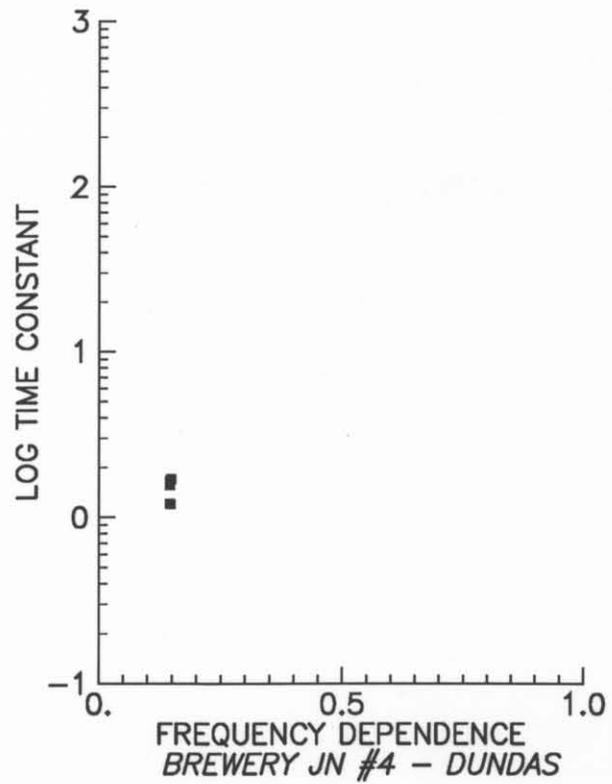
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .181E+03 | .408E+03 | .283E+03 | .961E+02              |
| Chargeability | .220E+01 | .421E+01 | .300E+01 | .758E+00              |
| R0            | .184E+03 | .413E+03 | .288E+03 | .984E+02              |
| $\tau$        | .120E+01 | .170E+01 | .152E+01 | .202E+00              |
| c             | .15      | .15      | .15      | .00                   |
| m             | .03      | .05      | .04      | .01                   |

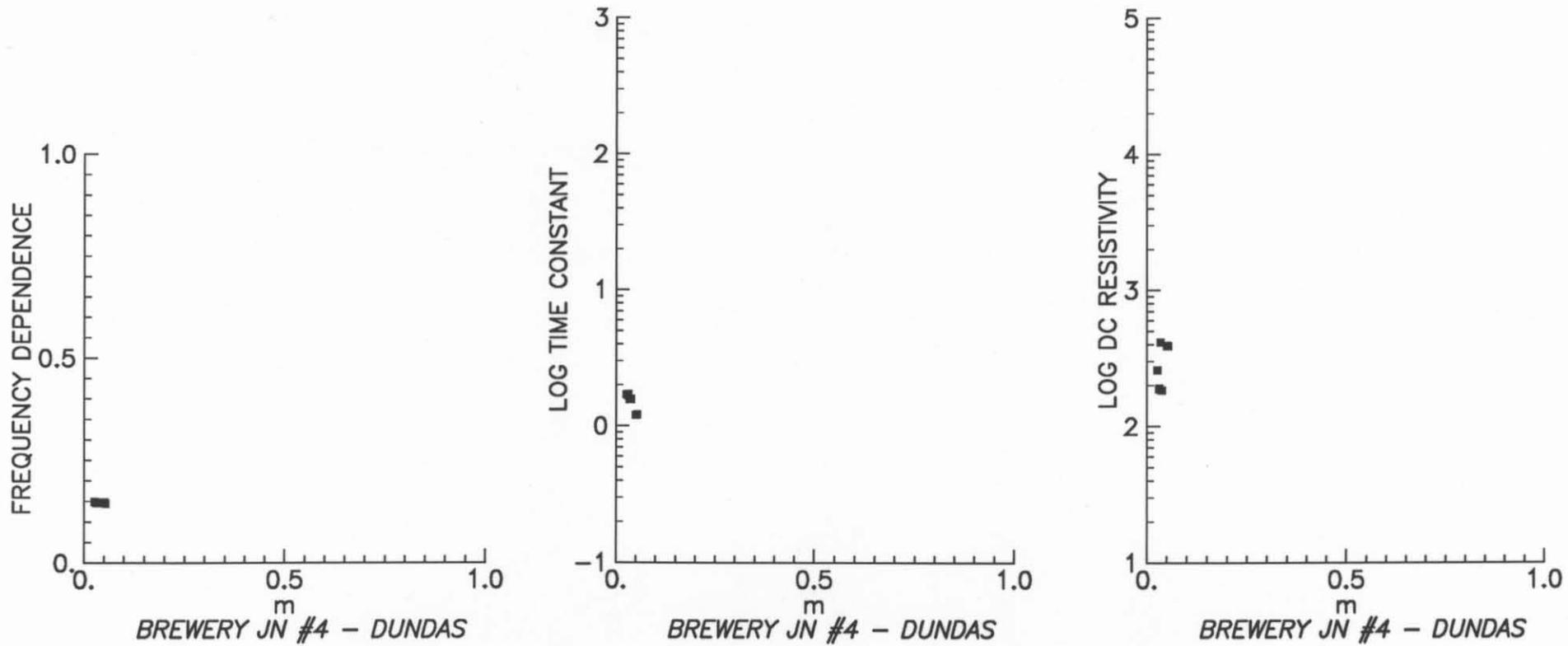
Data from 7 cases. Spectral data from 7 cases. ( 7 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .78 | .50 | .38 | .30 | .25 | .21 | .18 | .15 | .13 | .12 |





## Electrical Properties - Western Tasmania

D10

FERNFLOW FORMATION at DUNDAS

MRV0034

The Fernflow Formation is part of the Dundas Group of sediments and these results relate to sites at Dundas.

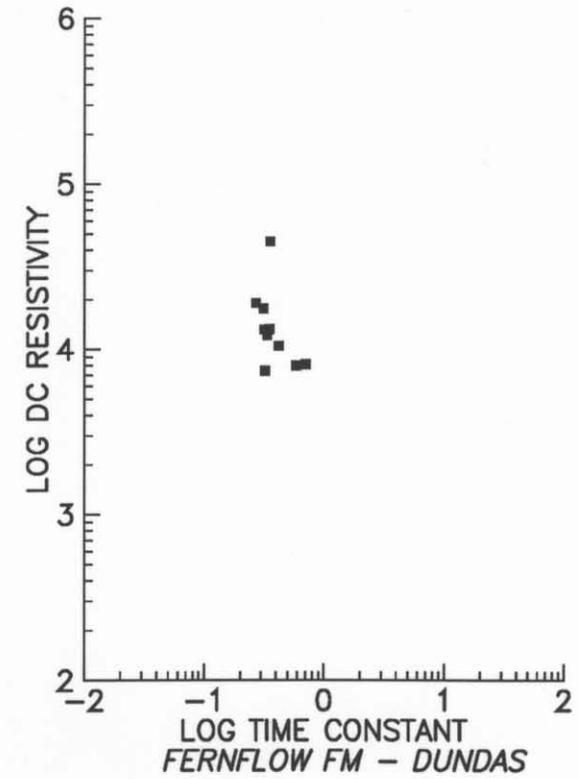
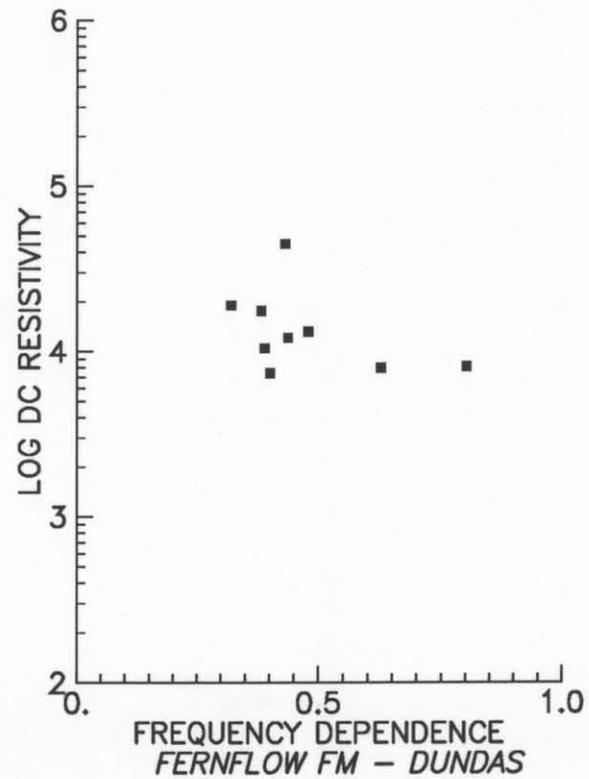
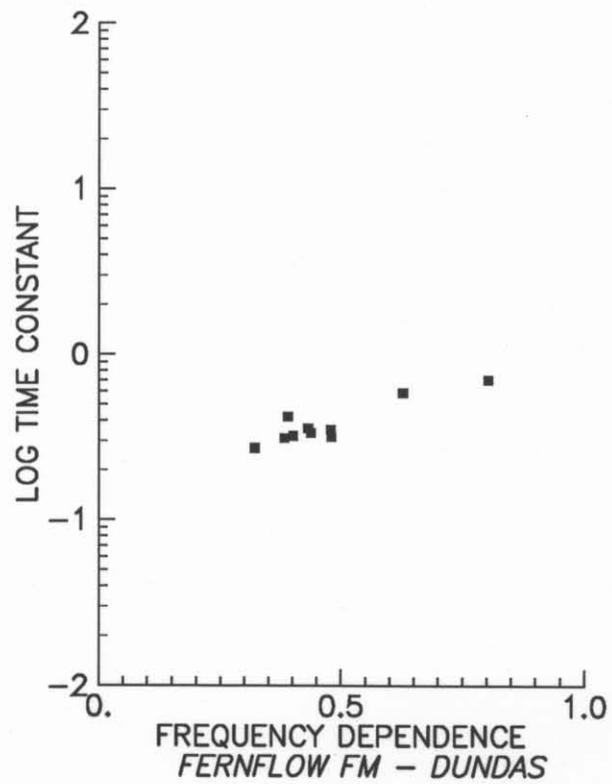
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .723E+04 | .459E+05 | .153E+05 | .108E+05              |
| Chargeability | .189E+02 | .234E+02 | .202E+02 | .126E+01              |
| R0            | .742E+04 | .450E+05 | .154E+05 | .105E+05              |
| $\tau$        | .272E+00 | .705E+00 | .399E+00 | .132E+00              |
| c             | .32      | .80      | .48      | .13                   |
| m             | .05      | .14      | .10      | .03                   |

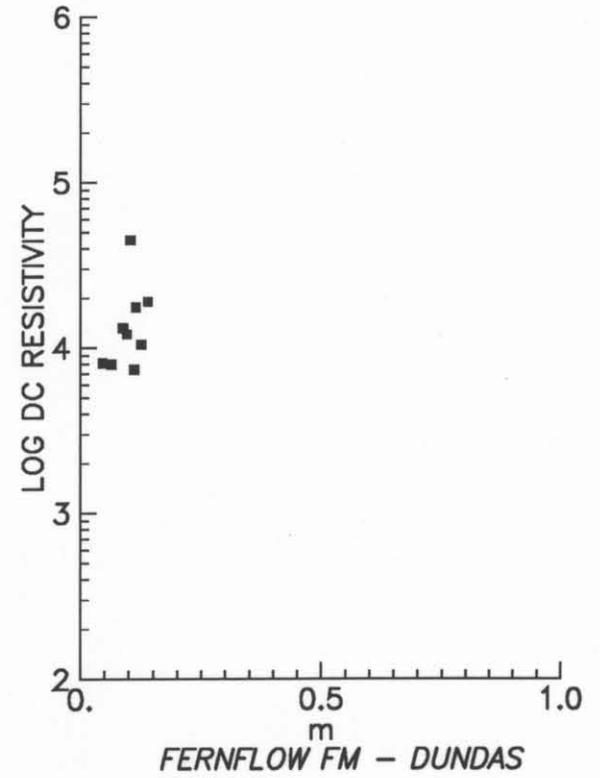
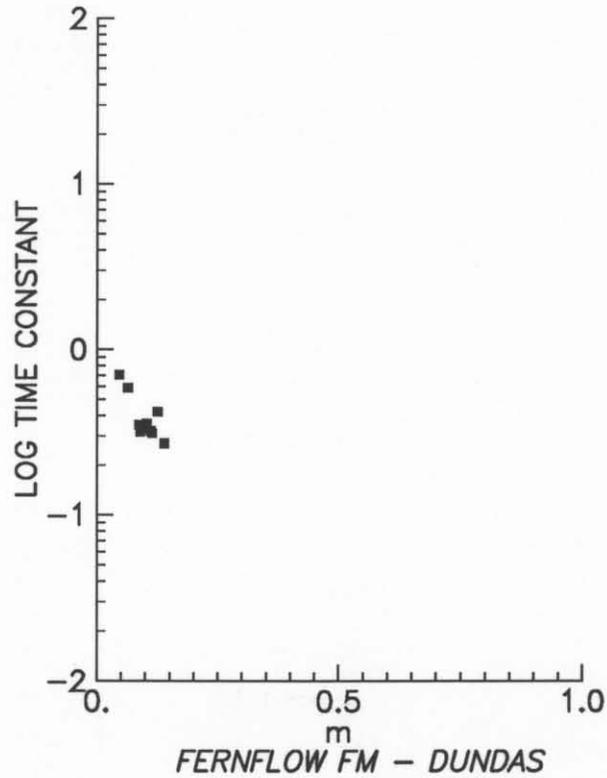
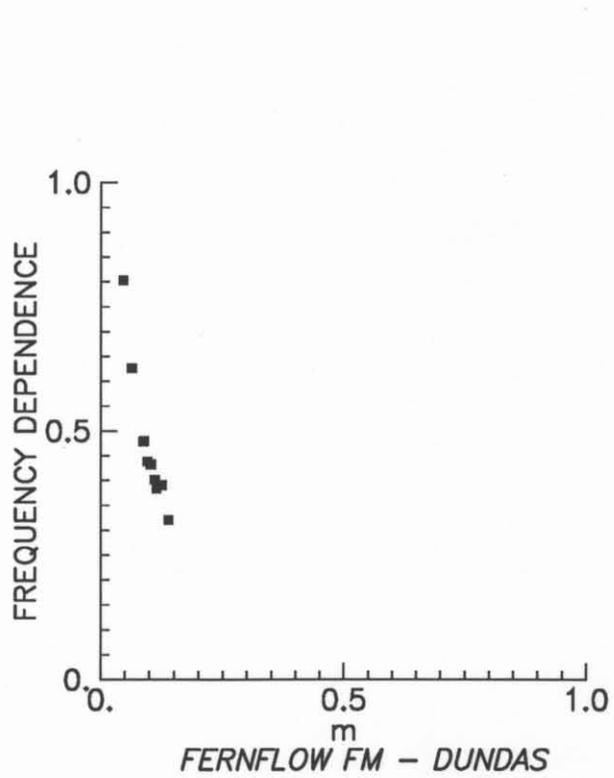
Data from 10 cases. Spectral data from 10 cases. ( 10 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |      |      |      |      |      |     |
|------|------|------|------|------|------|------|------|------|-----|
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10  |
| 4.72 | 3.16 | 2.46 | 2.05 | 1.72 | 1.52 | 1.35 | 1.20 | 1.06 | .91 |





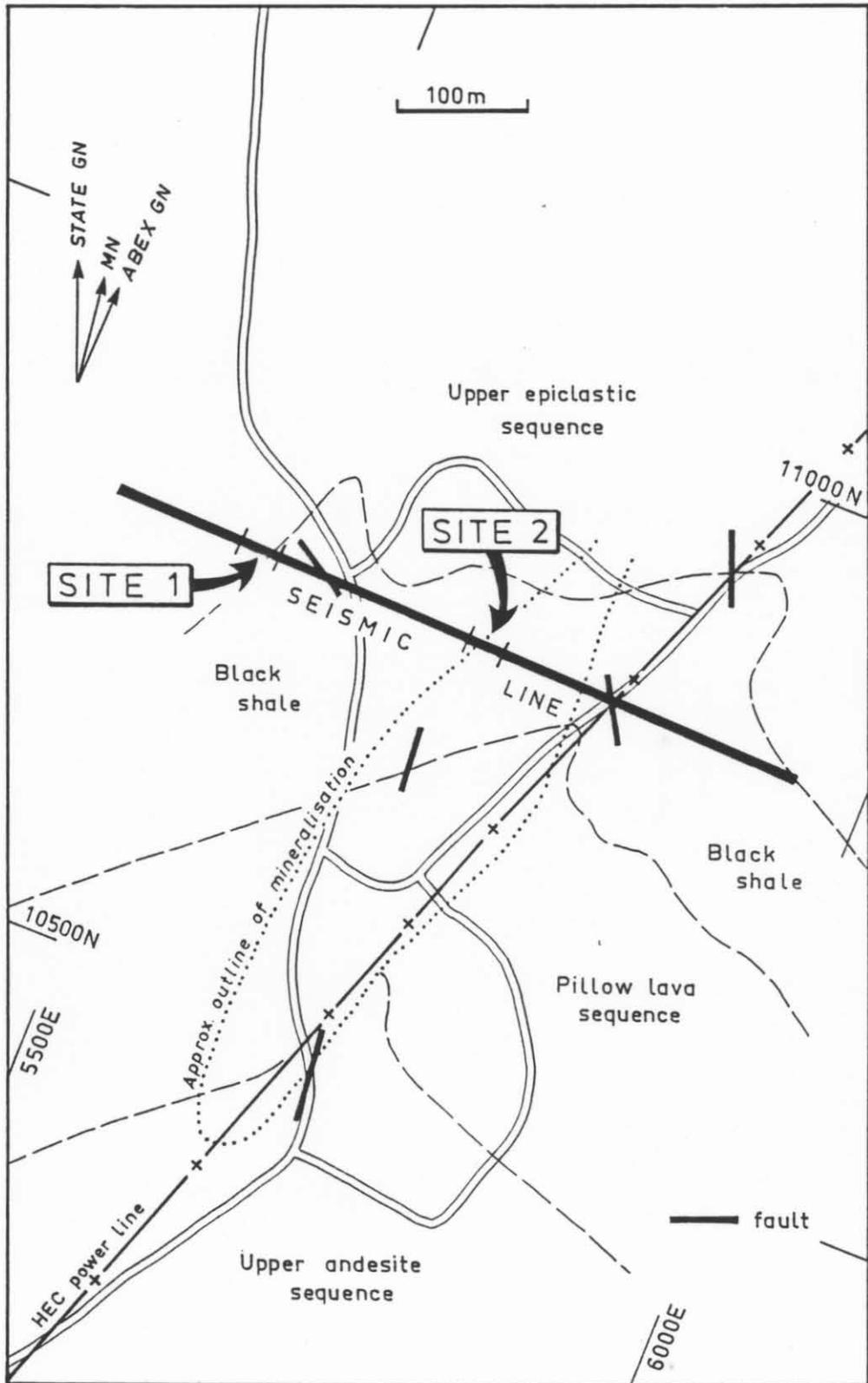


Figure A1. Locality Map for sites 1 and 2 at Hellyer. After Mather (1985)

## Electrical Properties - Western Tasmania

D12

HELLYER SITE 1 - SHALES

MRV0062

These results are from data obtained by Mather (1985) from shales in the Que River - Hellyer area. See Figure 26 for detailed location.

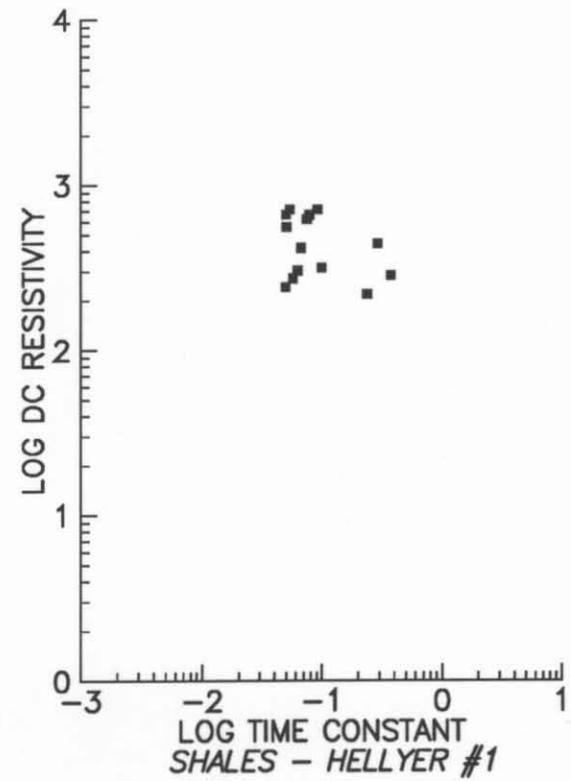
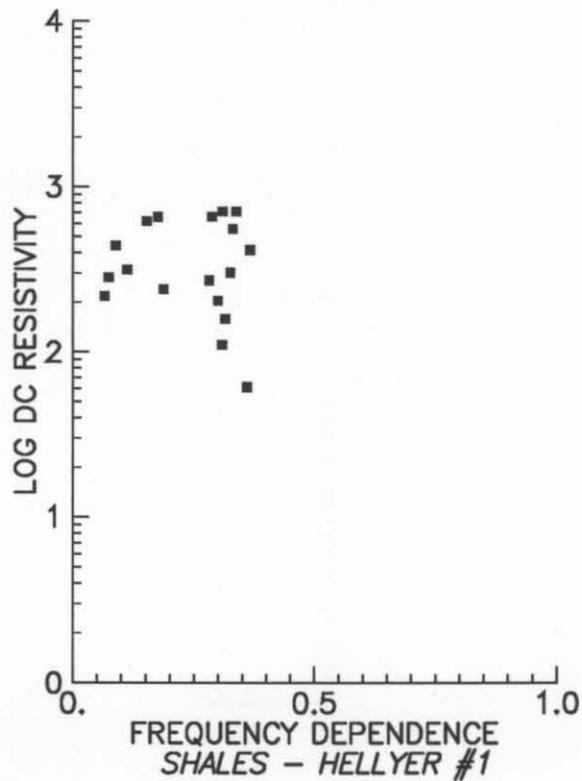
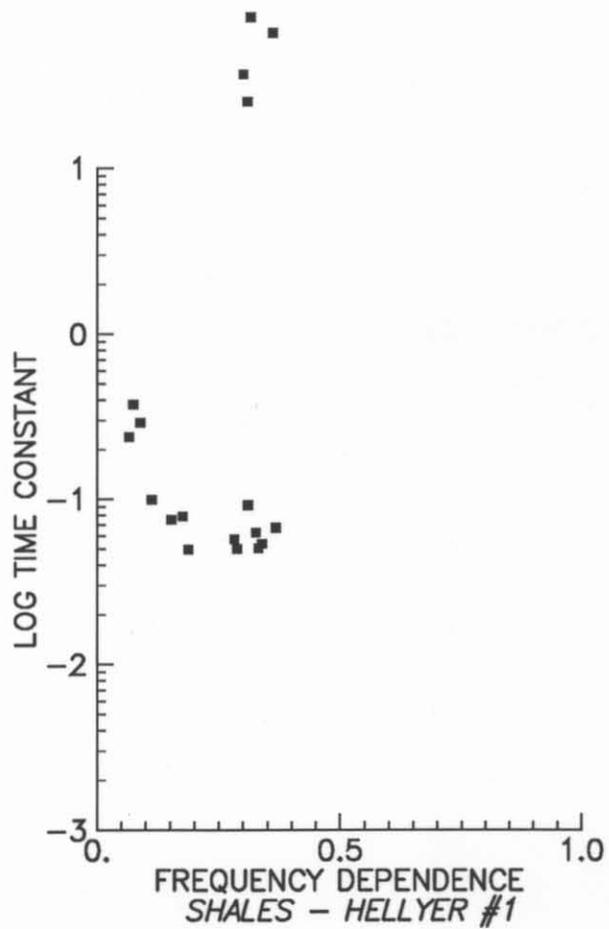
| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|-------------|----------|----------|----------|--------------------|
| Resistivity | .386E+02 | .666E+03 | .344E+03 | .210E+03           |
| R0          | .612E+02 | .712E+03 | .386E+03 | .211E+03           |
| $\tau$      | .497E-01 | .810E+02 | .117E+02 | .240E+02           |
| c           | .07      | .37      | .24      | .10                |
| m           | .16      | .90      | .45      | .23                |

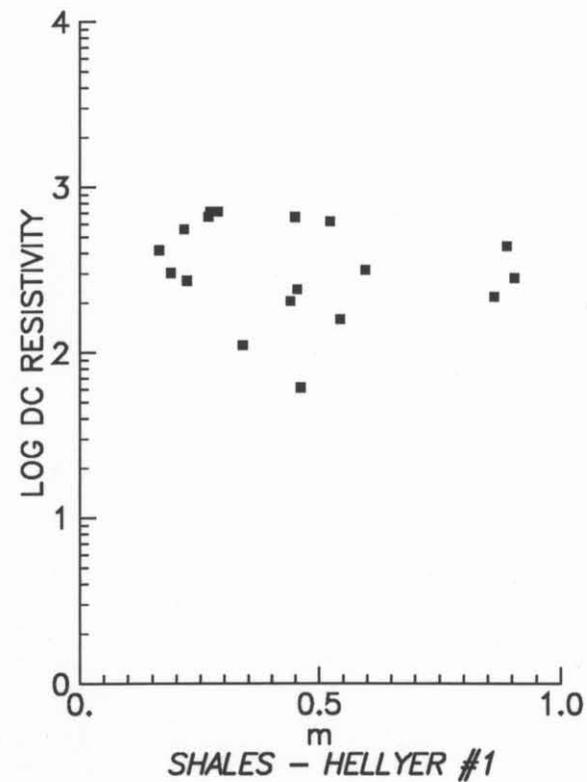
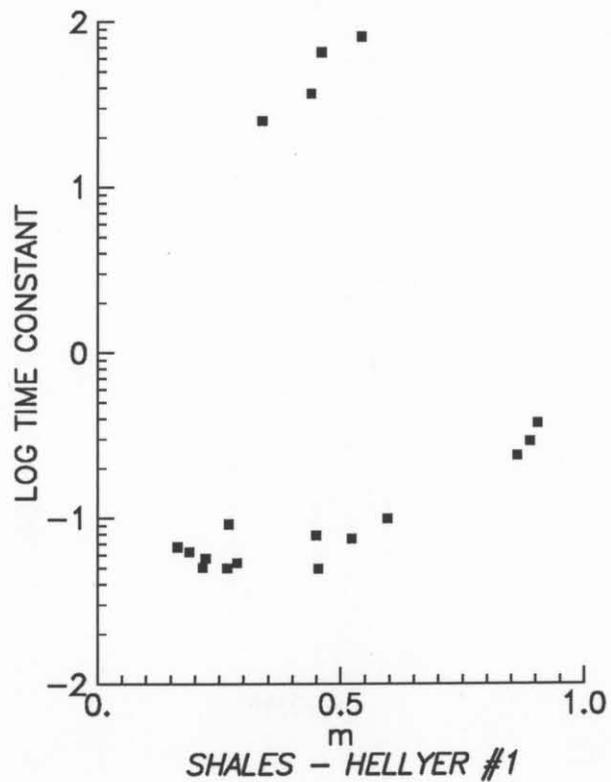
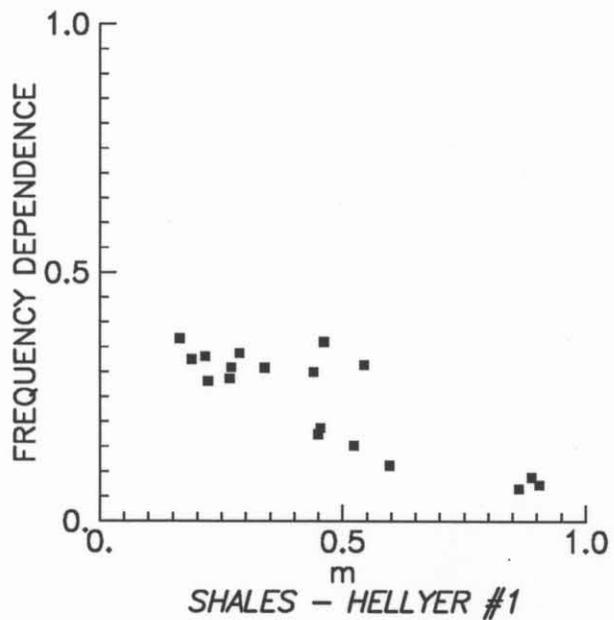
Data from 20 cases. Spectral data from 18 cases. ( 20 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

| PARAMETER                      | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |      |      |      |      |      |      |
|--------------------------------|----------|----------|----------|--------------------|------|------|------|------|------|------|
| Chargeability                  | .217E+02 | .951E+02 | .466E+02 | .201E+02           |      |      |      |      |      |      |
| Average Window Chargeabilities |          |          |          |                    |      |      |      |      |      |      |
|                                | 1        | 2        | 3        | 4                  | 5    | 6    | 7    | 8    | 9    | 10   |
|                                | 9.86     | 6.95     | 5.61     | 4.75               | 4.14 | 3.67 | 3.31 | 3.00 | 2.77 | 2.56 |

Data from 17 cases.





## Electrical Properties - Western Tasmania

D13

HELLYER SITE 2 - BLACK SHALES

MRV0063

These results are from the data of Mather (1985) and relate to the black shale overlying the Hellyer deposit. See Figure 26 for detailed location. These shales appear to prevent detection of the Hellyer deposit with conventional IP.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .359E+02 | .121E+03 | .669E+02 | .202E+02              |
| Chargeability | .465E+02 | .108E+03 | .768E+02 | .132E+02              |
| R0            | .595E+02 | .218E+03 | .106E+03 | .404E+02              |
| $\tau$        | .150E+01 | .194E+03 | .614E+02 | .445E+02              |
| c             | .06      | .36      | .30      | .07                   |
| m             | .36      | .91      | .48      | .13                   |

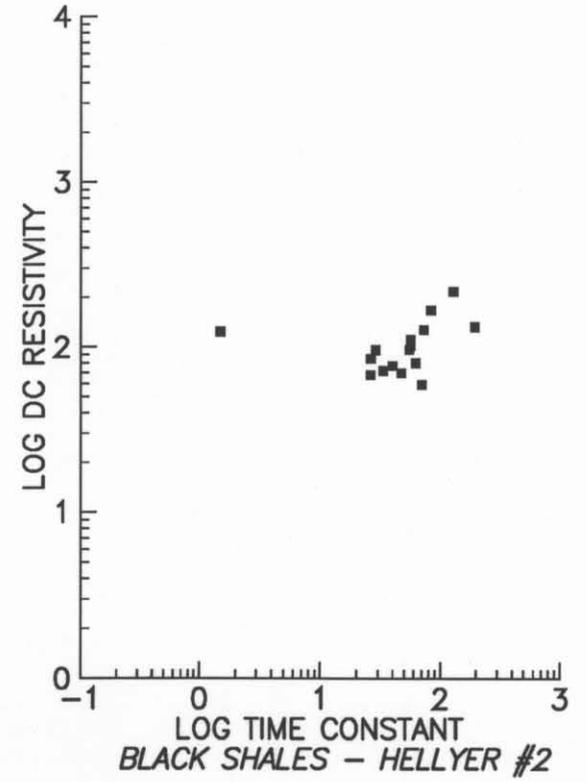
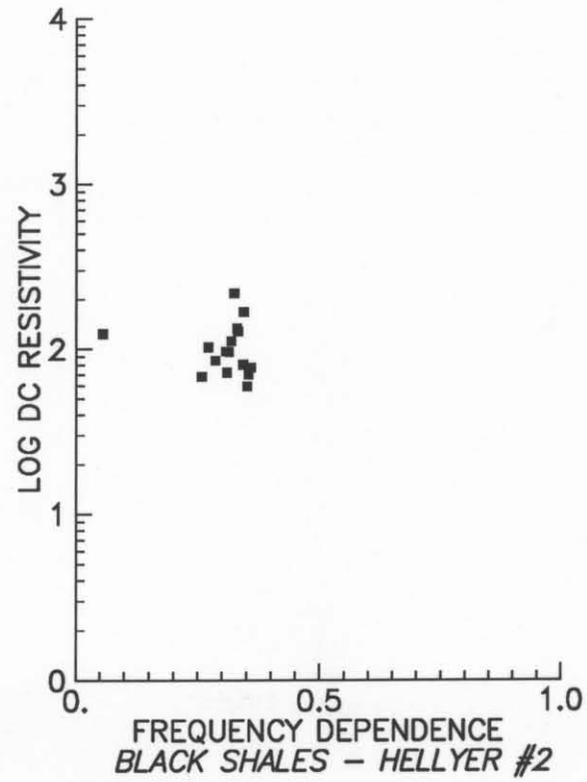
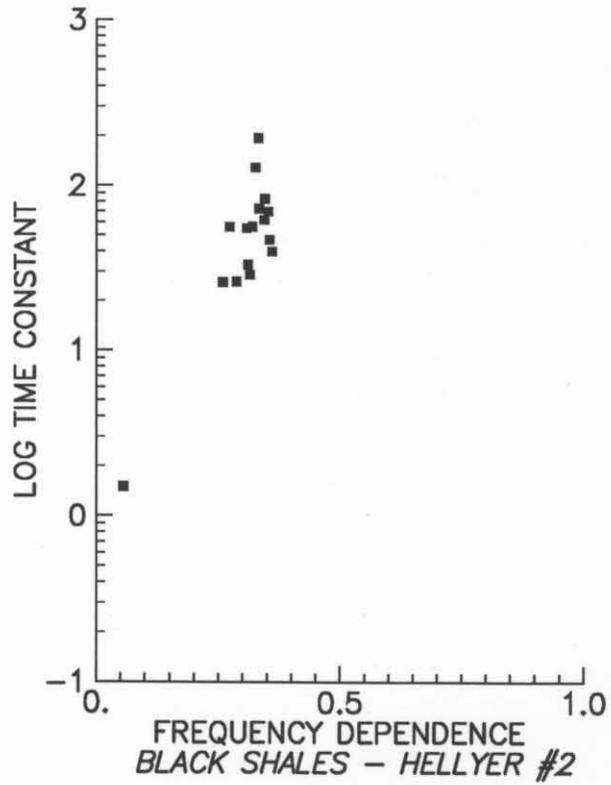
Data from 18 cases. Spectral data from 16 cases. ( 18 Sites measured).

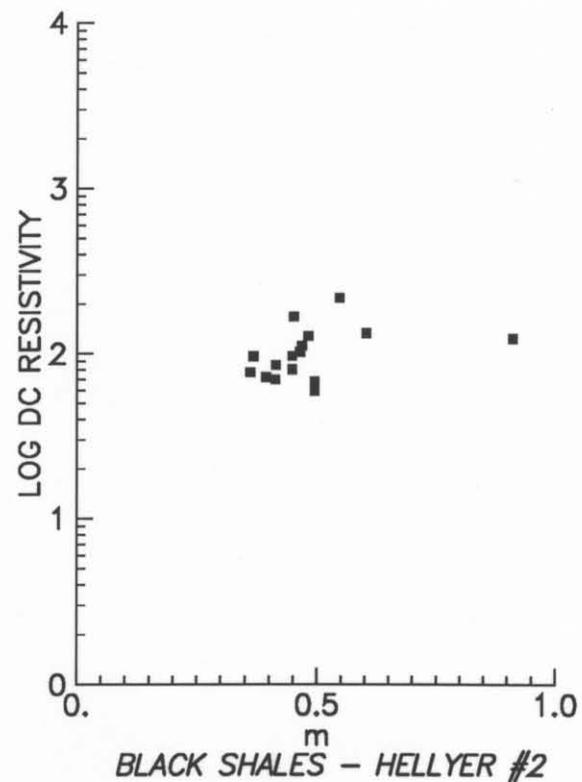
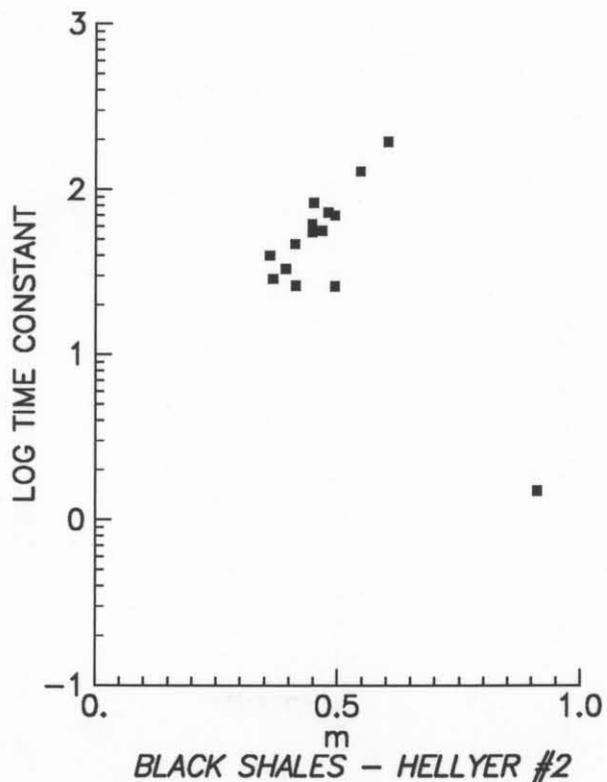
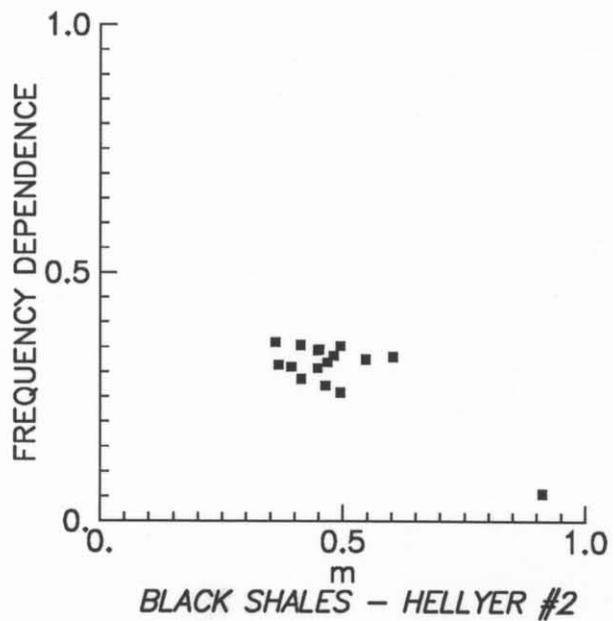
Time Delay = 5. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|-------|------|------|------|------|------|------|------|------|
| 15.71 | 10.93 | 9.01 | 7.79 | 6.88 | 6.20 | 5.68 | 5.23 | 4.85 | 4.52 |

Data from 18 cases.





## Electrical Properties - Western Tasmania

D14

HELLYER SITE 3 - PYRITISED PILLOWS

MRV0064

Results from data of Mather (1985). This area of pyritised pillow lavas produces a good IP response.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .383E+03 | .799E+04 | .274E+04 | .186E+04              |
| Chargeability | .906E+01 | .609E+02 | .258E+02 | .115E+02              |
| R0            | .440E+03 | .823E+04 | .286E+04 | .191E+04              |
| $\tau$        | .100E-01 | .761E-01 | .378E-01 | .148E-01              |
| c             | .15      | .35      | .28      | .05                   |
| m             | .07      | .60      | .24      | .13                   |

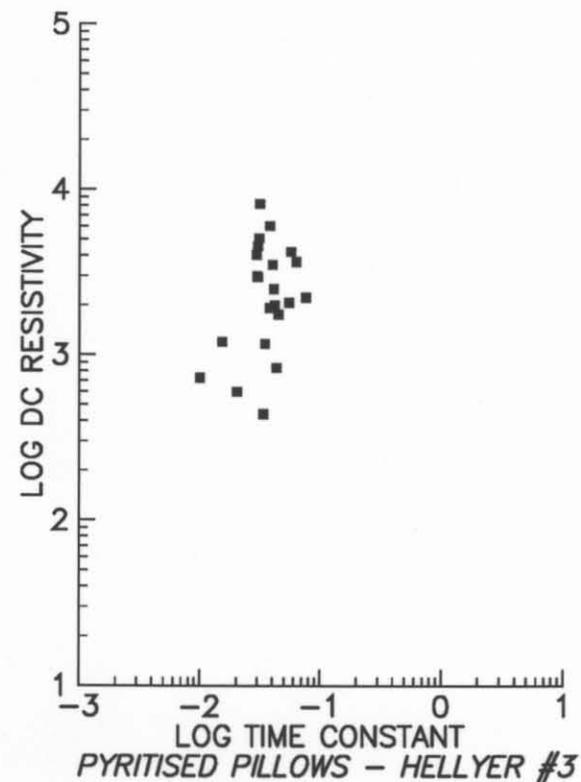
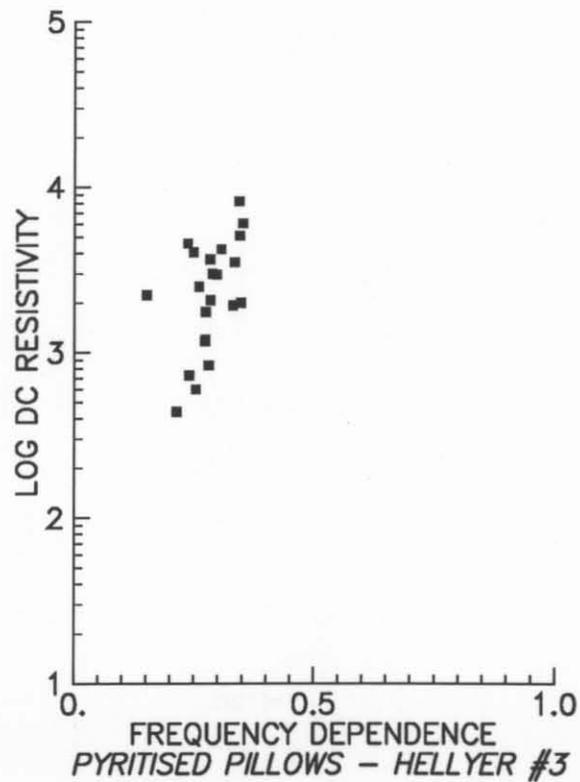
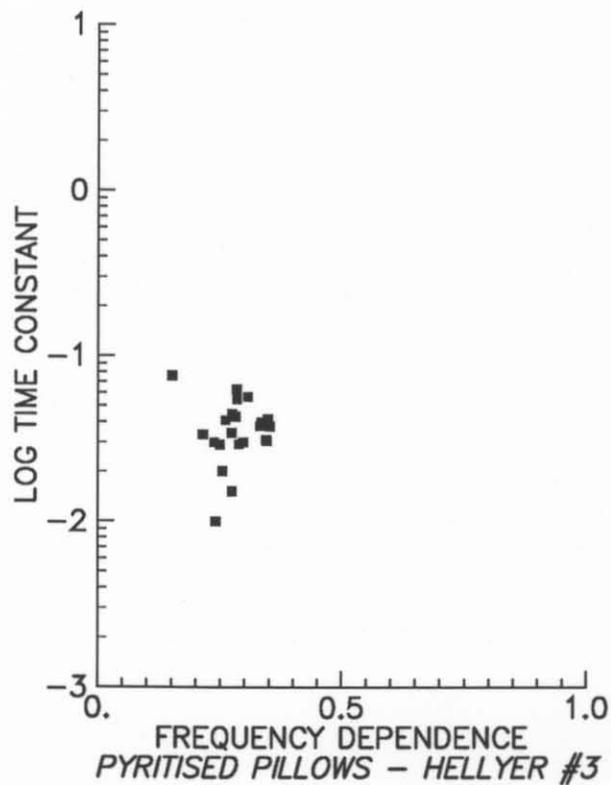
Data from 22 cases. Spectral data from 22 cases. ( 25 Sites measured).

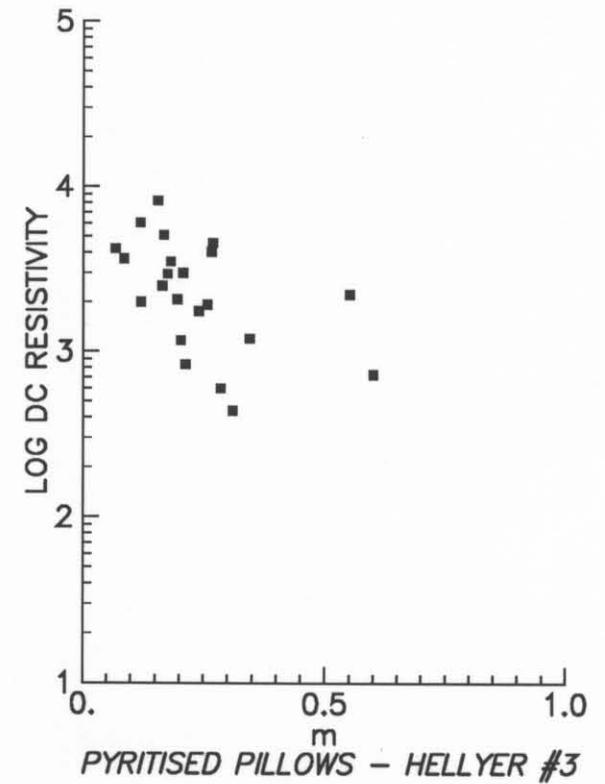
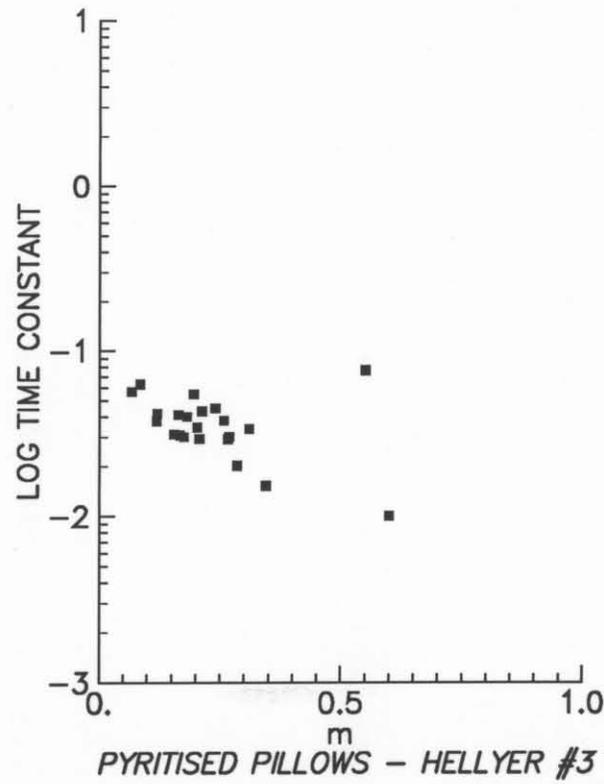
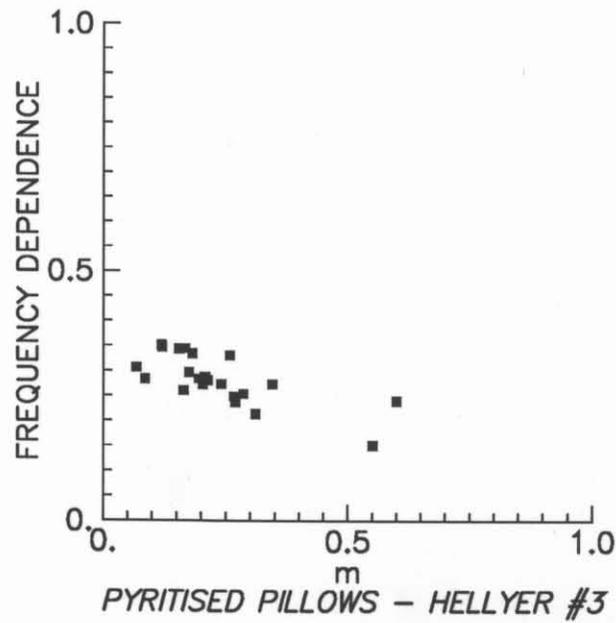
Time Delay = 5. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 7.10 | 3.93 | 2.99 | 2.44 | 2.07 | 1.79 | 1.58 | 1.42 | 1.28 | 1.16 |

Data from 25 cases.





## Electrical Properties - Western Tasmania

D15

HELLYER MINE DECLINE

MRV0057

These results relate to the lavas exposed in the decline to the Hellyer Mine. The measurements stop short of the main mineralization.

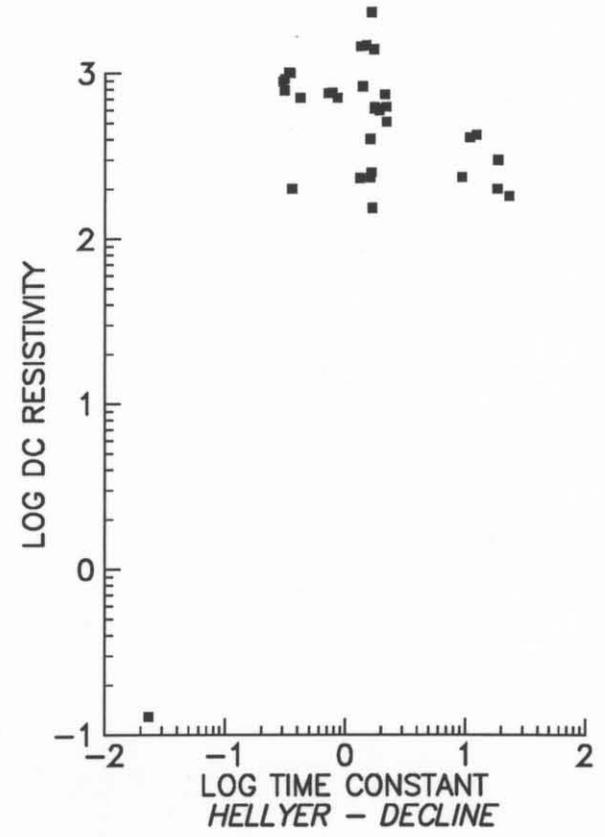
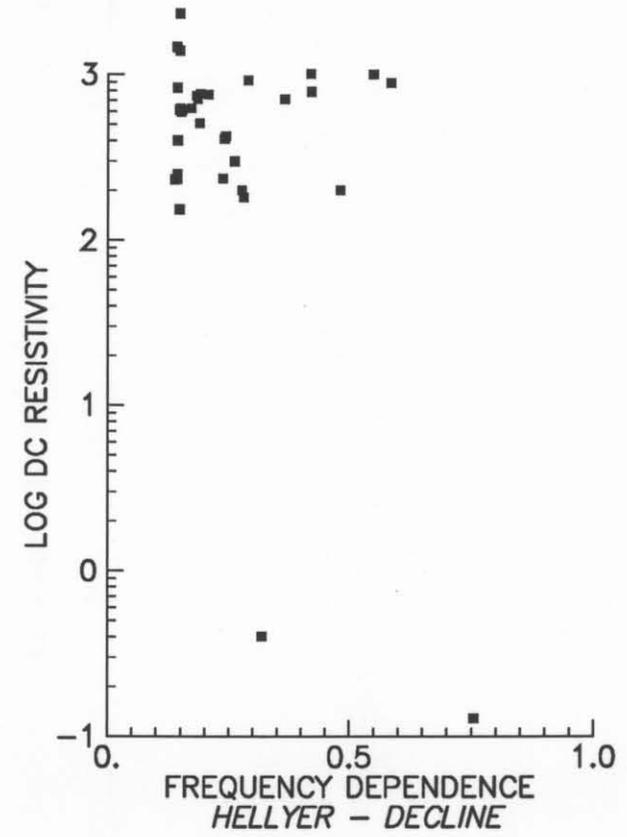
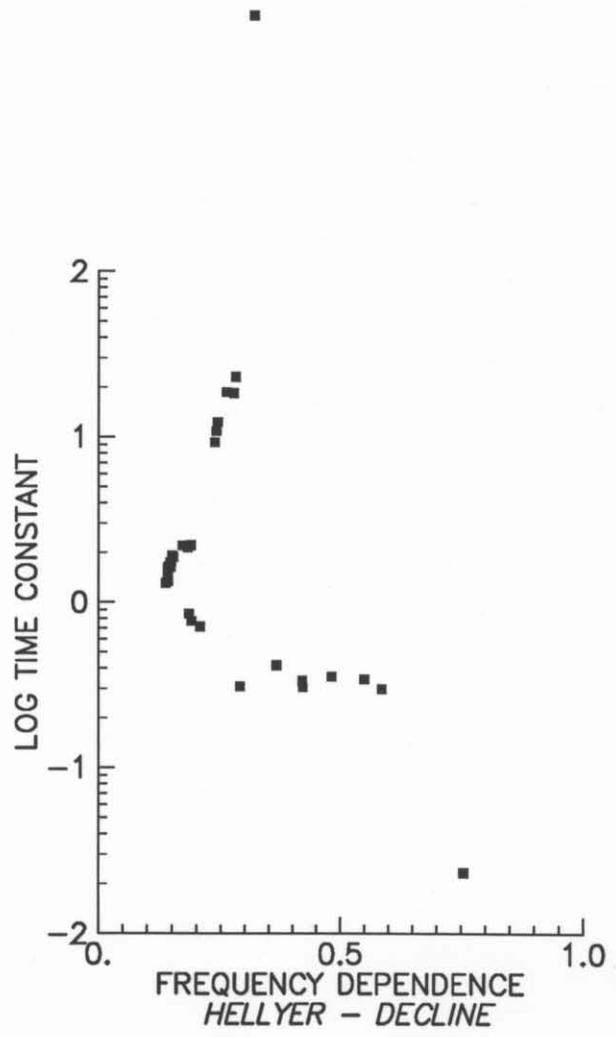
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .128E+00 | .230E+04 | .618E+03 | .473E+03              |
| Chargeability | .133E+01 | .977E+02 | .262E+02 | .339E+02              |
| R0            | .129E+00 | .233E+04 | .653E+03 | .467E+03              |
| $\tau$        | .233E-01 | .231E+02 | .389E+01 | .584E+01              |
| c             | .14      | .76      | .25      | .15                   |
| m             | .01      | .72      | .19      | .22                   |

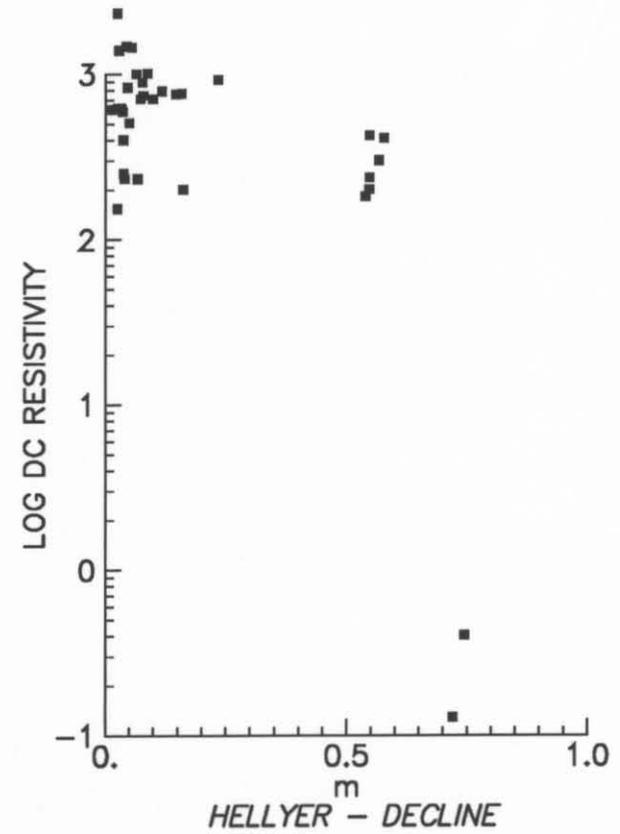
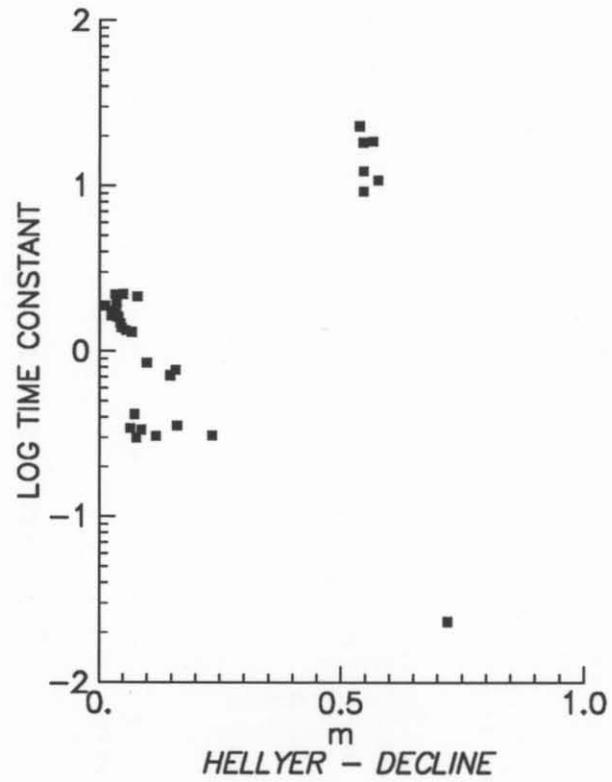
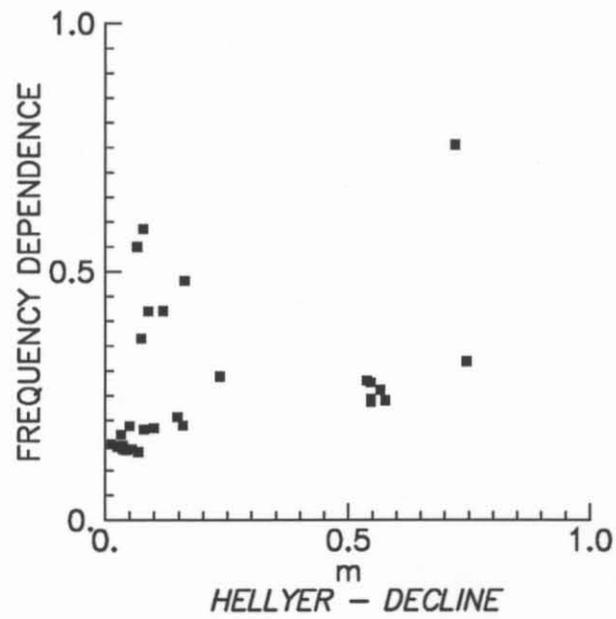
Data from 35 cases. Spectral data from 35 cases. ( 37 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|------|------|------|------|------|------|------|------|------|------|
| 5.69 | 3.96 | 3.14 | 2.66 | 2.31 | 2.04 | 1.82 | 1.66 | 1.52 | 1.40 |





## Electrical Properties - Western Tasmania

D16

ALTERATION ZONE SITE 1 at HERCULES MINE

MRV0002

The volcanics about the mineralization at the Hercules Mine are more altered than many in the Mt. Read belt but contain negligible sulphides. They are considered to be an example of the alteration halo in barren volcanics about a massive sulphide deposit.

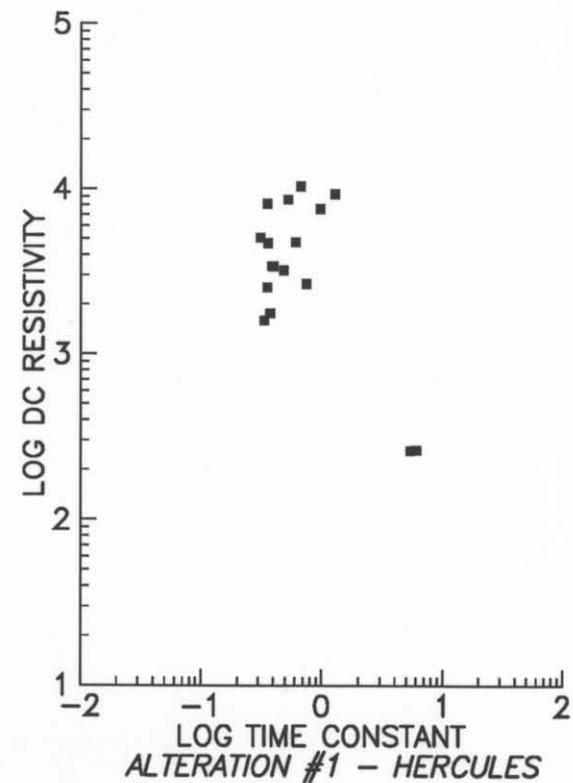
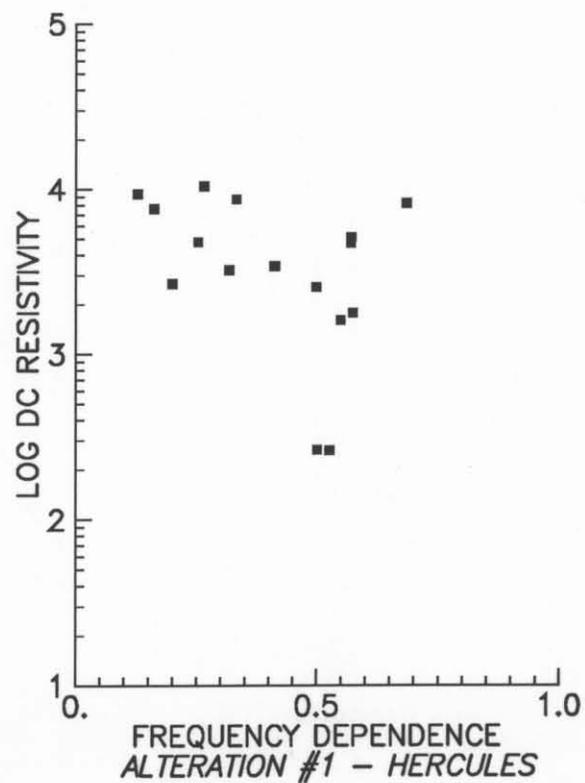
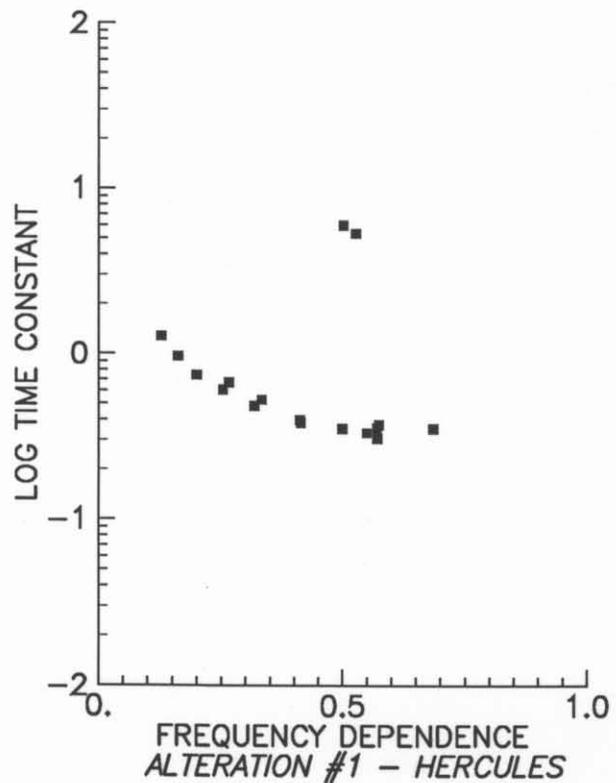
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .247E+03 | .104E+05 | .456E+04 | .310E+04              |
| Chargeability | .423E+01 | .249E+02 | .121E+02 | .616E+01              |
| R0            | .262E+03 | .104E+05 | .459E+04 | .310E+04              |
| $\tau$        | .309E+00 | .602E+01 | .115E+01 | .168E+01              |
| c             | .13      | .68      | .41      | .16                   |
| m             | .03      | .11      | .06      | .02                   |

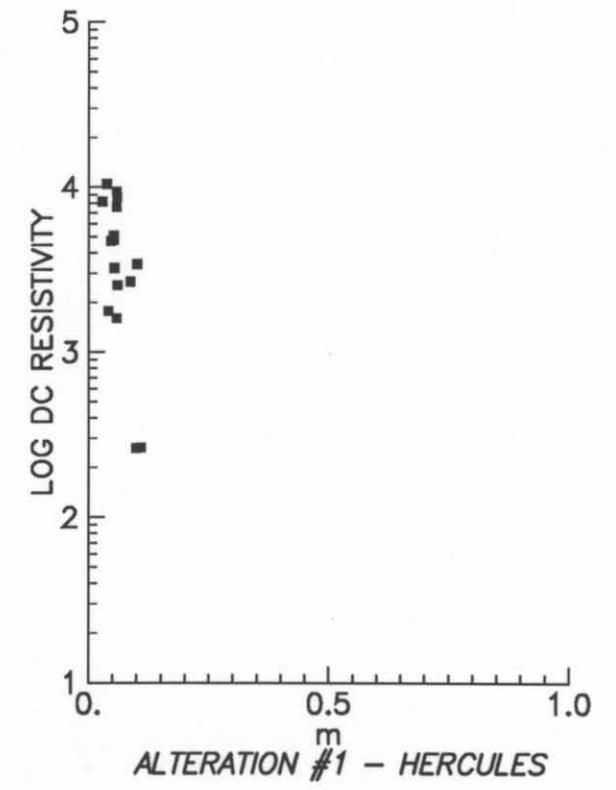
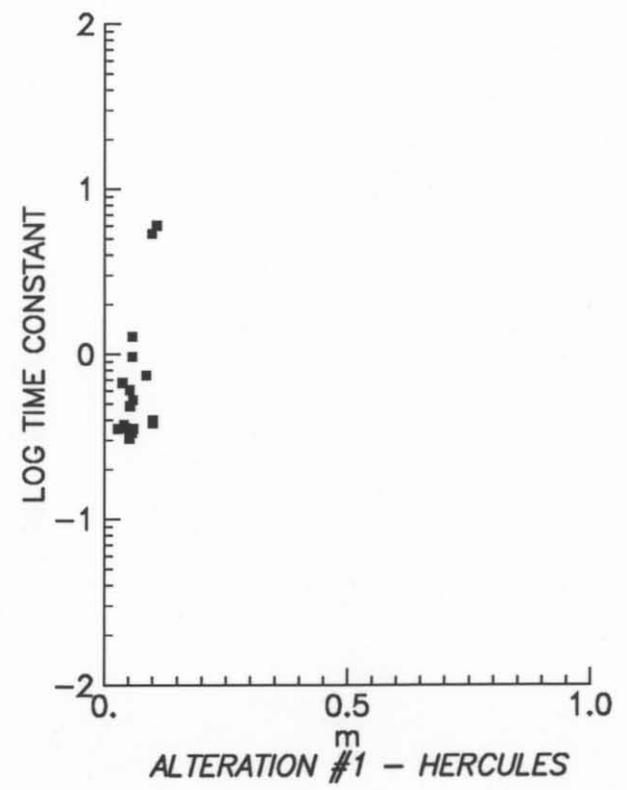
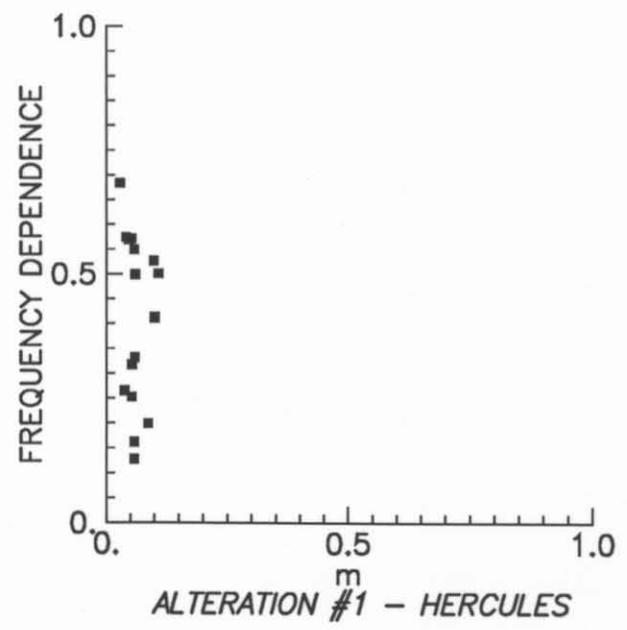
Data from 17 cases. Spectral data from 17 cases. ( 17 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 2.80 | 1.89 | 1.48 | 1.22 | 1.04 | .90 | .80 | .72 | .65 | .59 |





Electrical Properties - Western Tasmania

034110  
D17

ALTERATION ZONE SITE 2 at HERCULES MINE

MRV0003

The volcanics about the mineralization at the Hercules Mine are more altered than many in the Mt. Read belt but contain negligible sulphides. They are considered to be an example of the alteration halo in barren volcanics about a massive sulphide deposit.

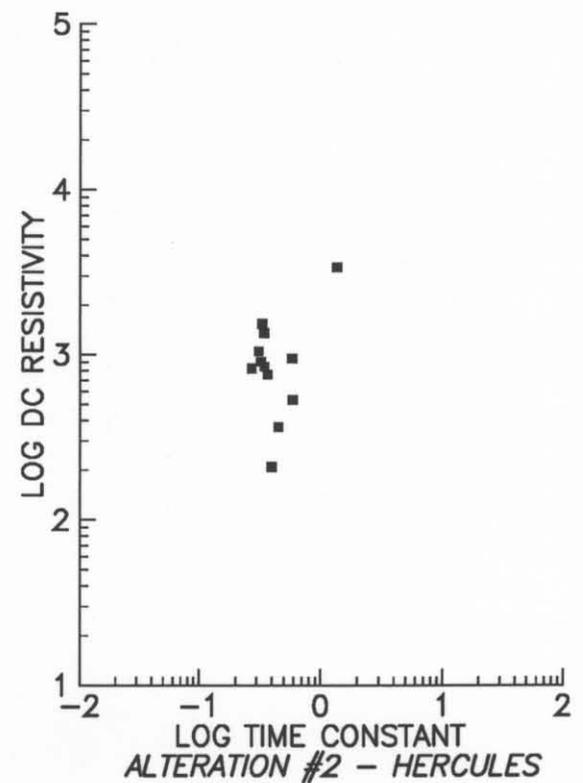
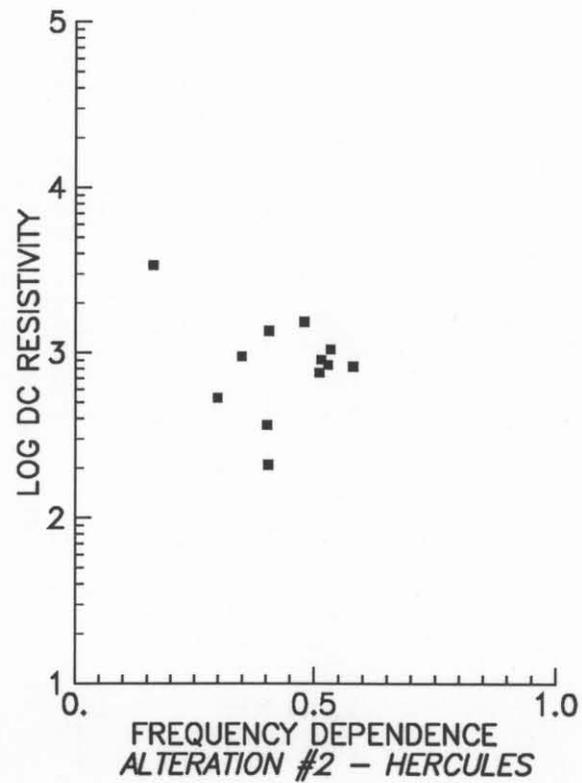
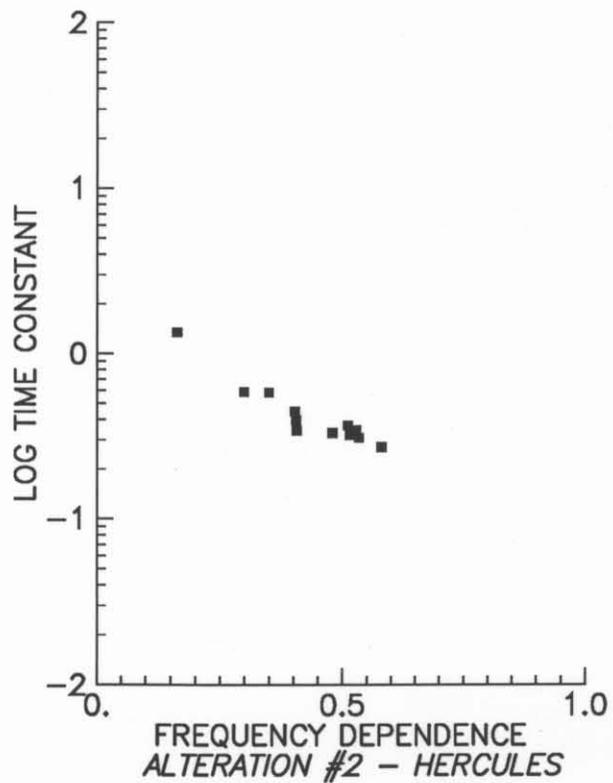
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Resistivity   | .205E+03 | .340E+04 | .106E+04 | .791E+03           |
| Chargeability | .497E+01 | .204E+02 | .123E+02 | .448E+01           |
| R0            | .209E+03 | .340E+04 | .106E+04 | .791E+03           |
| $\tau$        | .272E+00 | .135E+01 | .472E+00 | .283E+00           |
| c             | .16      | .58      | .43      | .11                |
| m             | .03      | .11      | .06      | .02                |

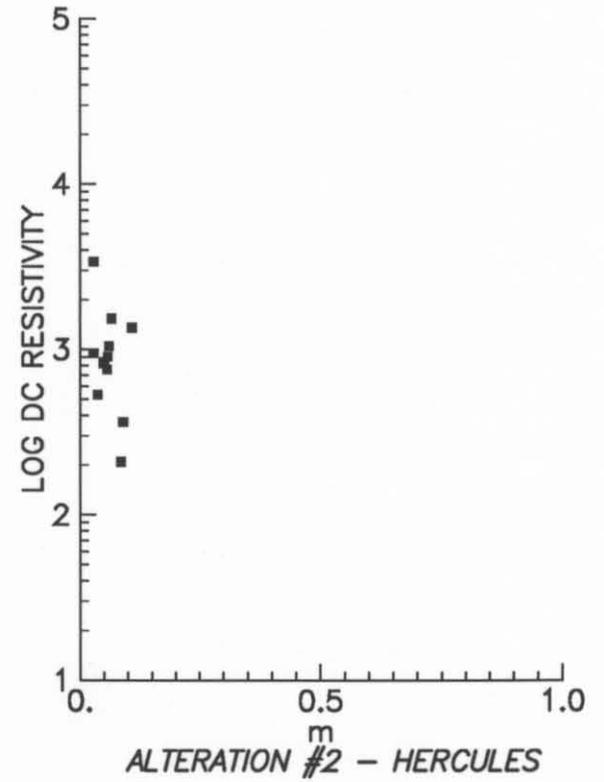
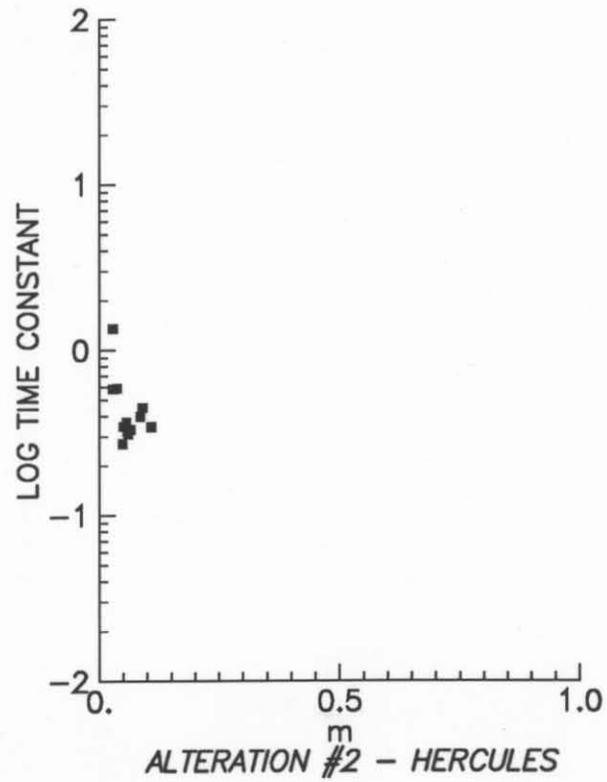
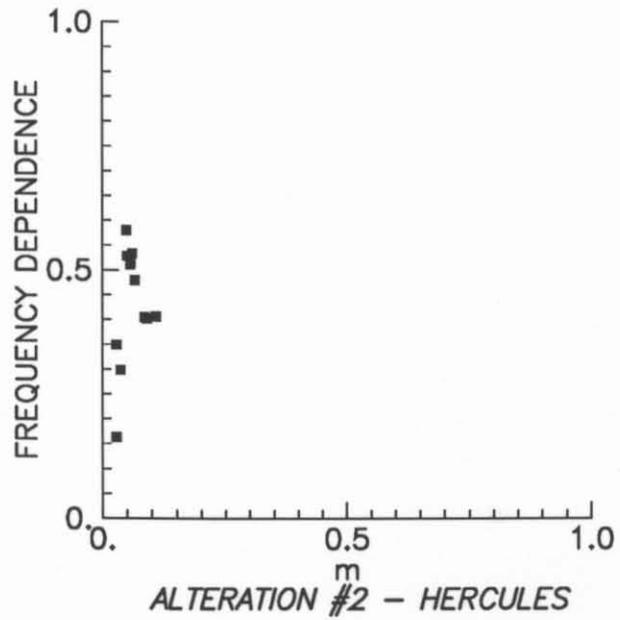
Data from 12 cases. Spectral data from 12 cases. ( 12 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 3.07 | 2.00 | 1.53 | 1.23 | 1.03 | .88 | .76 | .67 | .60 | .54 |





## Electrical Properties - Western Tasmania

D18

ALTERATION ZONE SITE 3 at HERCULES MINE

MRV0004

The volcanics about the mineralization at the Hercules Mine are more altered than many in the Mt. Read belt but contain negligible sulphides. They are considered to be an example of the alteration halo in barren volcanics about a massive sulphide deposit.

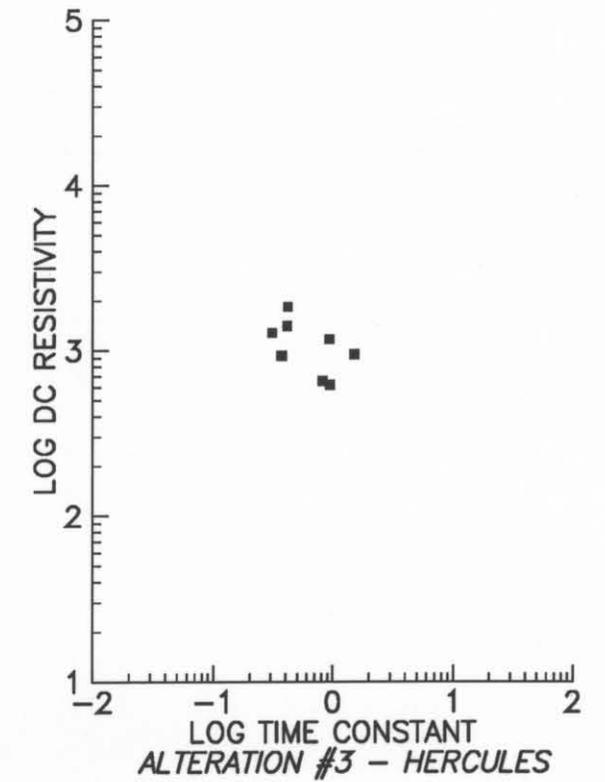
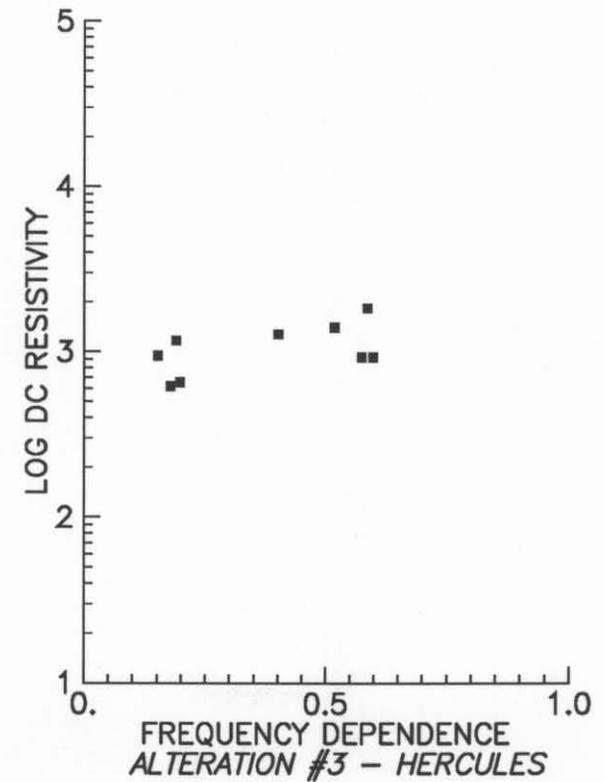
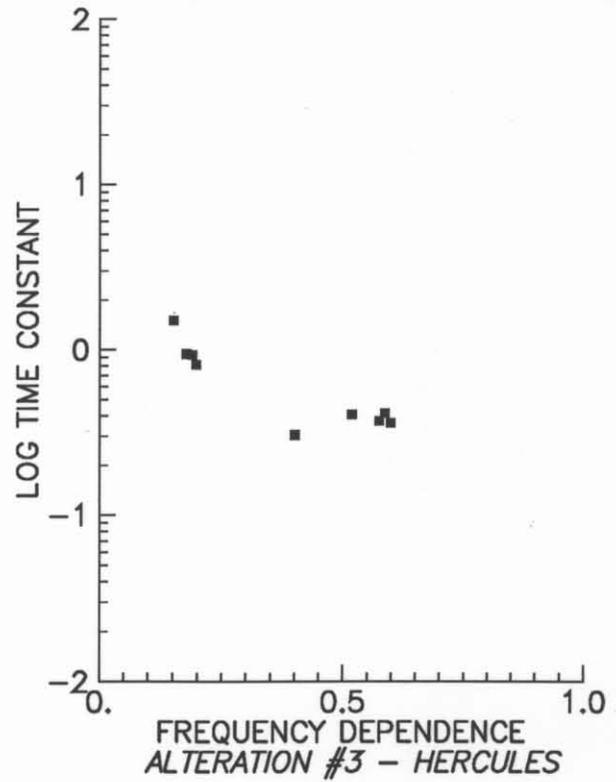
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .605E+03 | .184E+04 | .108E+04 | .368E+03              |
| Chargeability | .462E+01 | .182E+02 | .904E+01 | .398E+01              |
| R0            | .619E+03 | .184E+04 | .108E+04 | .363E+03              |
| $\tau$        | .306E+00 | .151E+01 | .674E+00 | .382E+00              |
| c             | .15      | .60      | .38      | .19                   |
| m             | .04      | .10      | .06      | .02                   |

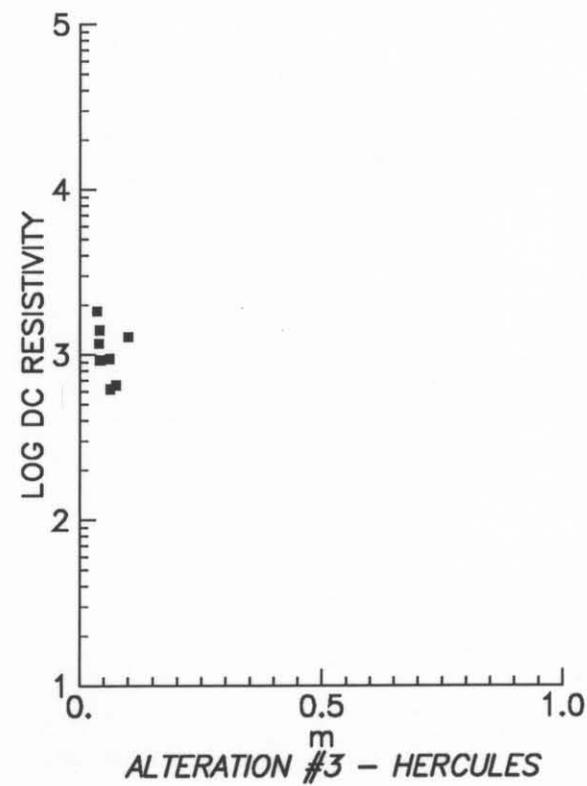
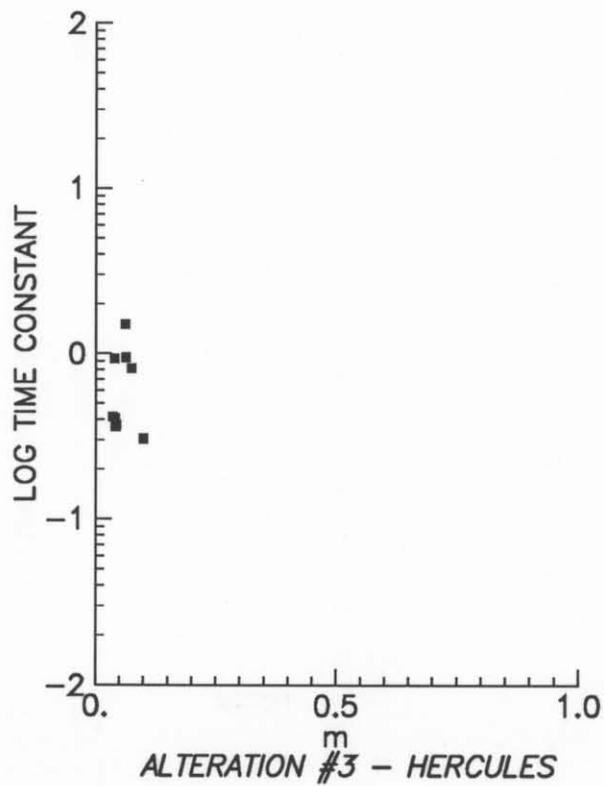
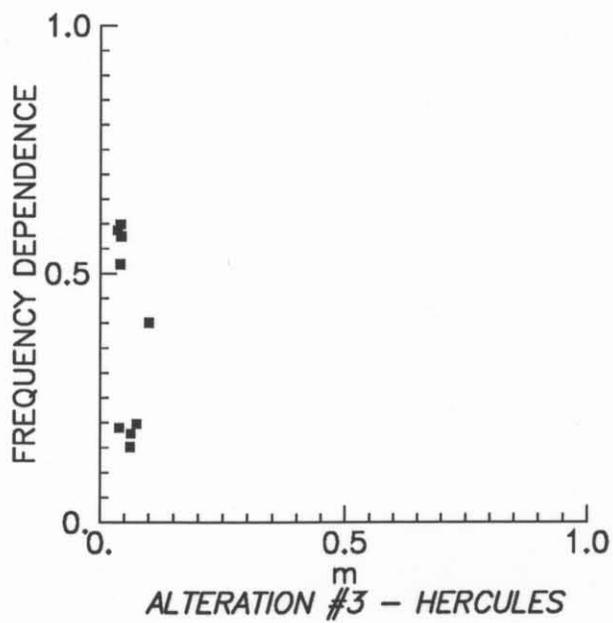
Data from 9 cases. Spectral data from 9 cases. ( 9 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.19 | 1.46 | 1.13 | .92 | .76 | .65 | .57 | .50 | .44 | .39 |





## Electrical Properties - Western Tasmania

D19

MAGNETITE at KARA MINE DUMP

MRV0030

The mineralization at Kara forms part of a magnetite skarn.  
These results are from material in the Kara dump.

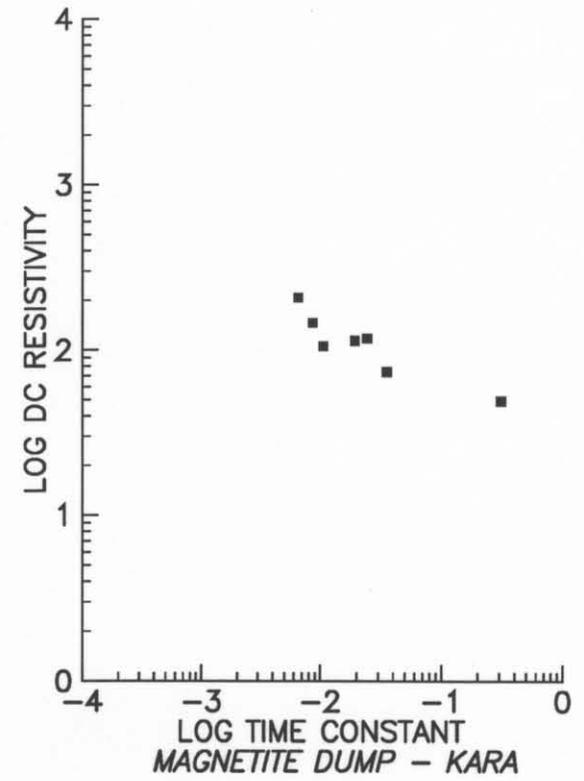
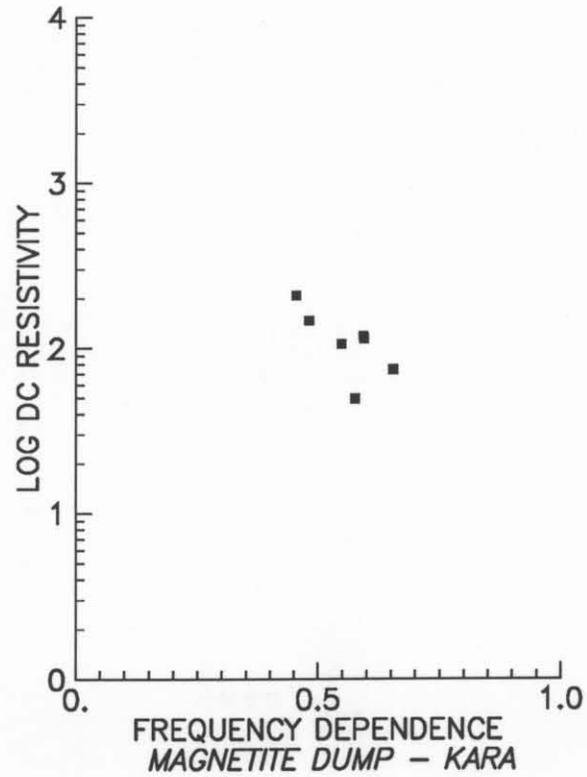
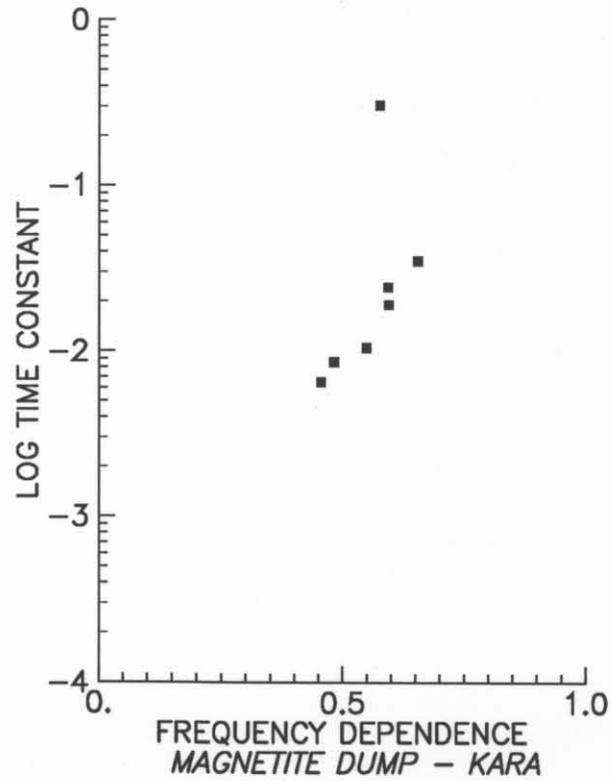
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .493E+02 | .201E+03 | .114E+03 | .453E+02              |
| Chargeability | .105E+02 | .415E+02 | .293E+02 | .953E+01              |
| R0            | .494E+02 | .208E+03 | .117E+03 | .474E+02              |
| $\tau$        | .653E-02 | .309E+00 | .591E-01 | .103E+00              |
| c             | .45      | .65      | .56      | .06                   |
| m             | .04      | .72      | .46      | .21                   |

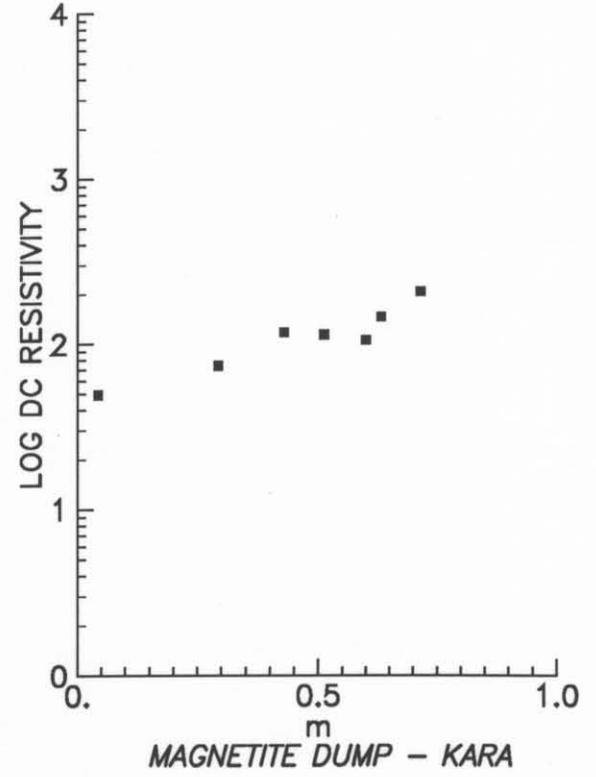
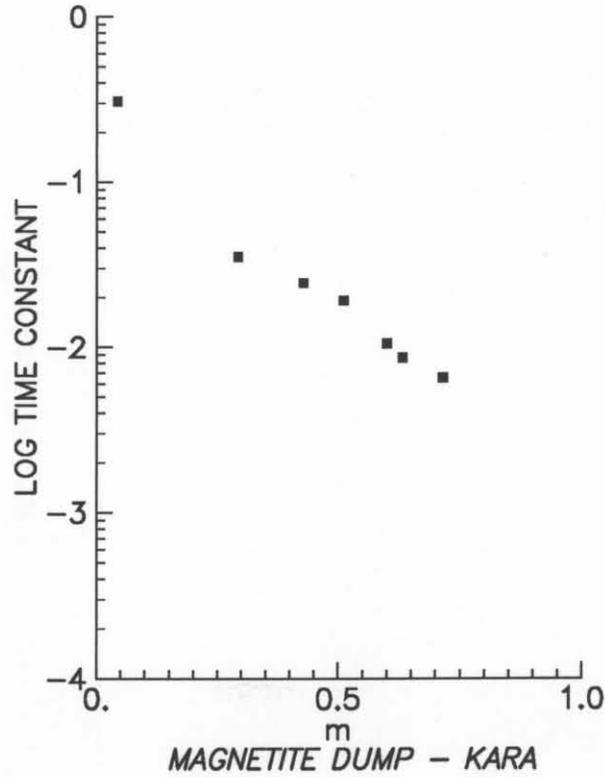
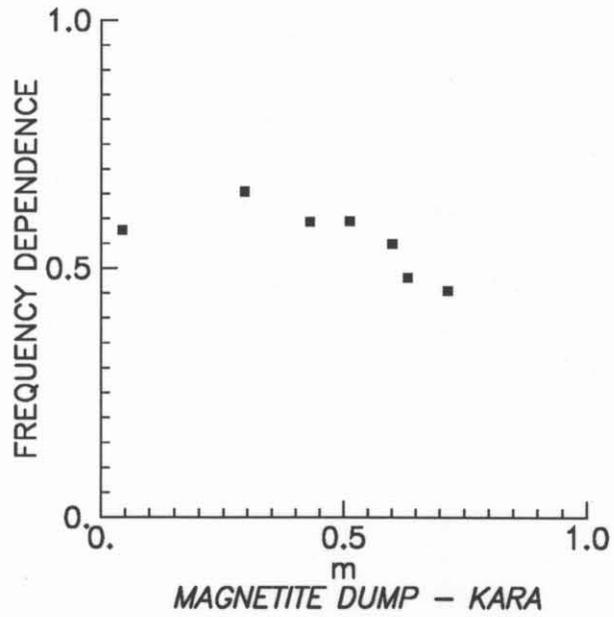
Data from 7 cases. Spectral data from 7 cases. ( 7 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 9.53 | 4.93 | 3.43 | 2.61 | 2.09 | 1.74 | 1.47 | 1.28 | 1.13 | 1.00 |





## Electrical Properties - Western Tasmania

D20

MAGNETITE in KARA MINE PIT

MRV0031

These results are from magnetite in the Kara Mine pit.

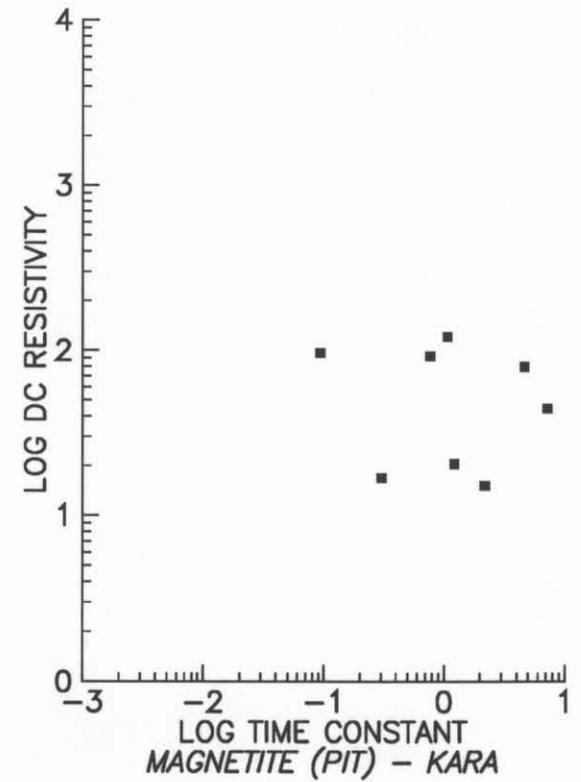
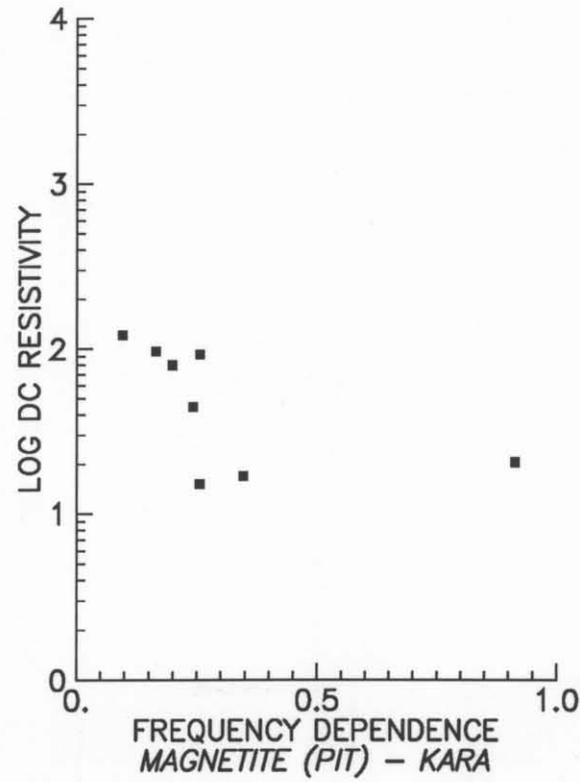
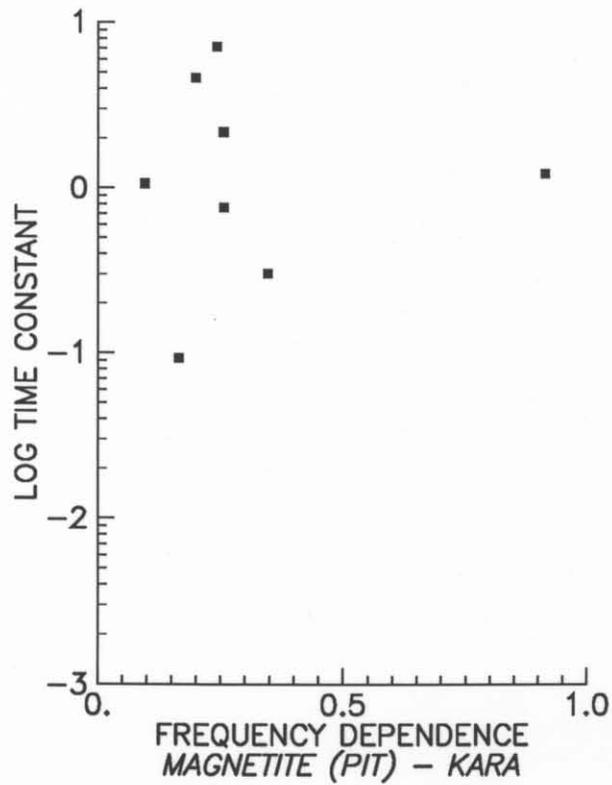
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .114E+02 | .779E+02 | .443E+02 | .274E+02              |
| Chargeability | .376E+02 | .111E+03 | .760E+02 | .267E+02              |
| R0            | .152E+02 | .121E+03 | .610E+02 | .390E+02              |
| $\tau$        | .932E-01 | .719E+01 | .218E+01 | .232E+01              |
| c             | .10      | .91      | .31      | .24                   |
| m             | .07      | .74      | .53      | .20                   |

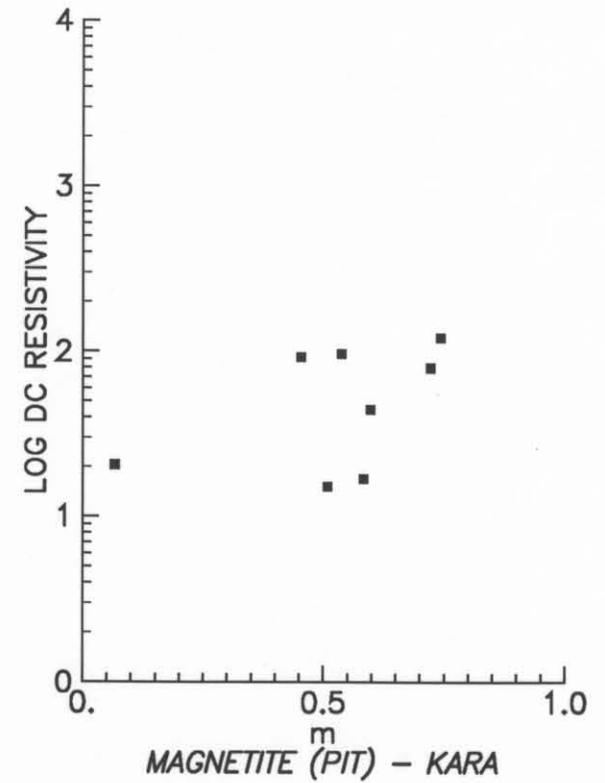
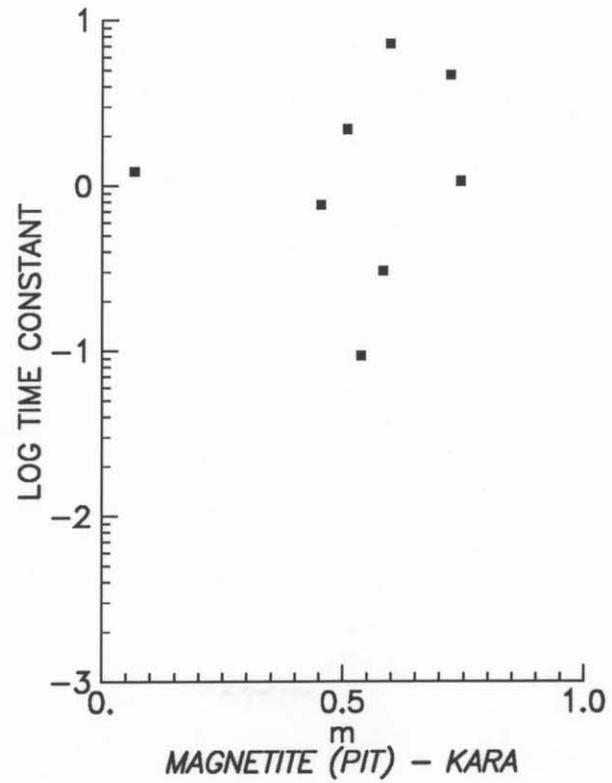
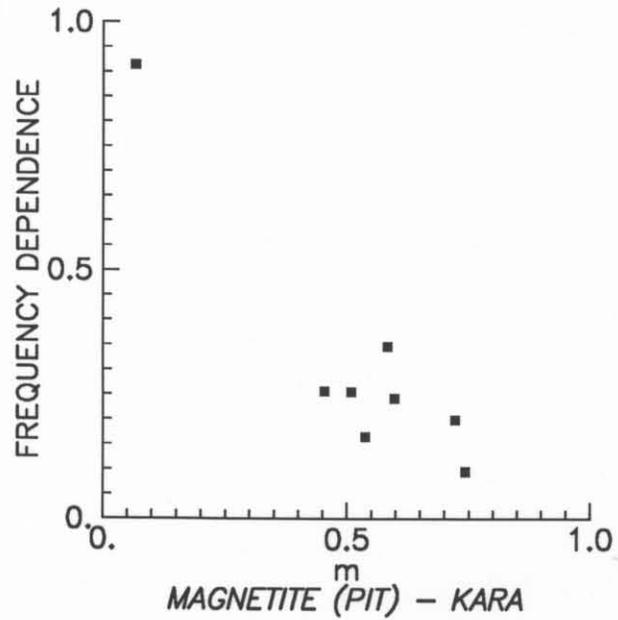
Data from 8 cases. Spectral data from 8 cases. ( 8 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|-------|------|------|------|------|------|------|------|------|
| 16.11 | 11.47 | 9.23 | 7.79 | 6.76 | 5.96 | 5.33 | 4.82 | 4.39 | 4.02 |





## Electrical Properties - Western Tasmania

D21

## PYRITE MINERALIZATION at LAKE SELINA

MRV0056

The Selina pyrite zone is a very extensive area of alteration and pyritisation in the Mt. Read Volcanics. It is readily delineated using IP. The measurements are from the area of old workings on the eastern side of Lake Selina.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .489E+03 | .145E+04 | .833E+03 | .240E+03              |
| Chargeability | .360E+02 | .106E+03 | .634E+02 | .231E+02              |
| R0            | .579E+03 | .171E+04 | .979E+03 | .291E+03              |
| $\tau$        | .204E-01 | .181E+00 | .104E+00 | .657E-01              |
| c             | .20      | .38      | .27      | .05                   |
| m             | .23      | .83      | .52      | .23                   |

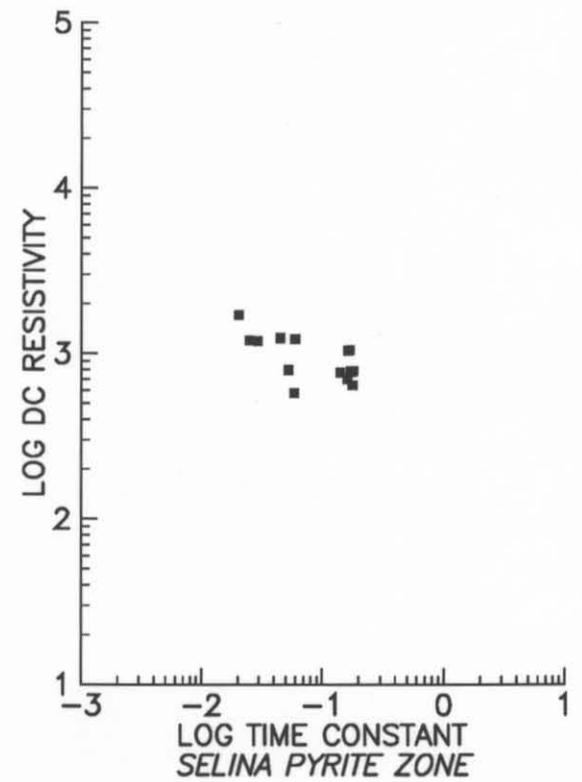
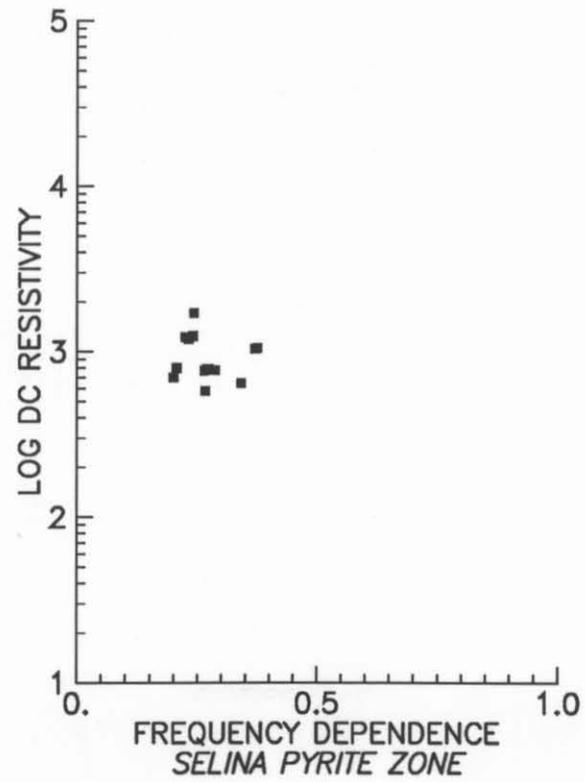
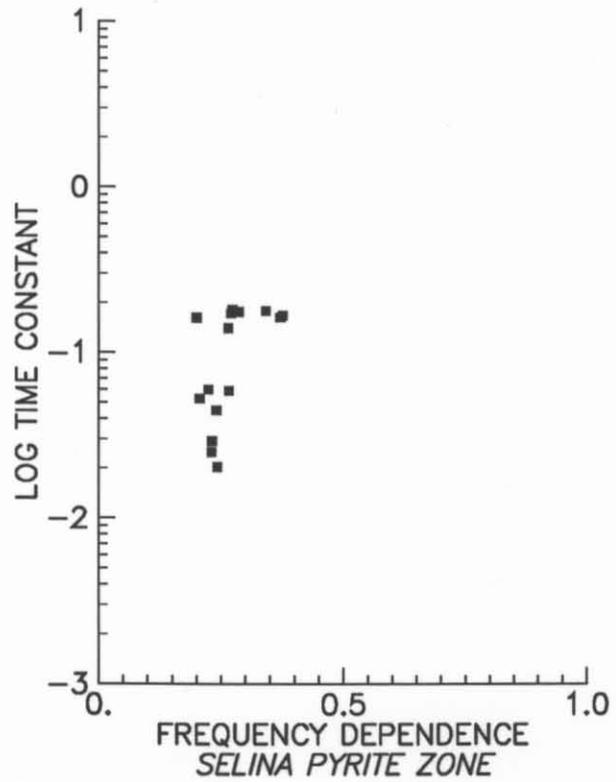
Data from 16 cases. Spectral data from 16 cases. ( 16 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

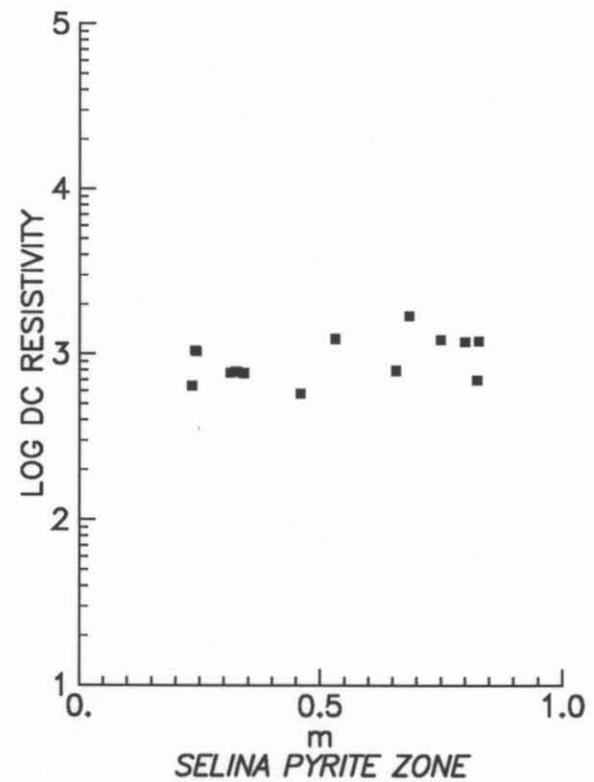
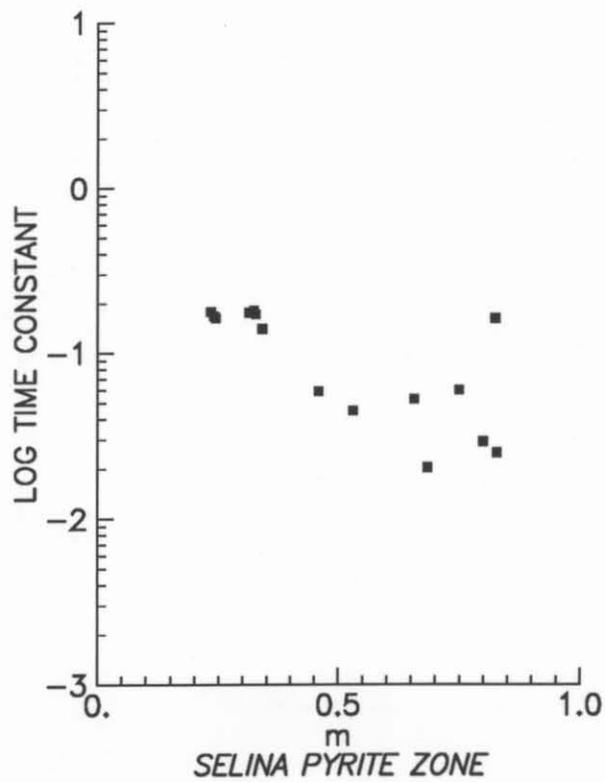
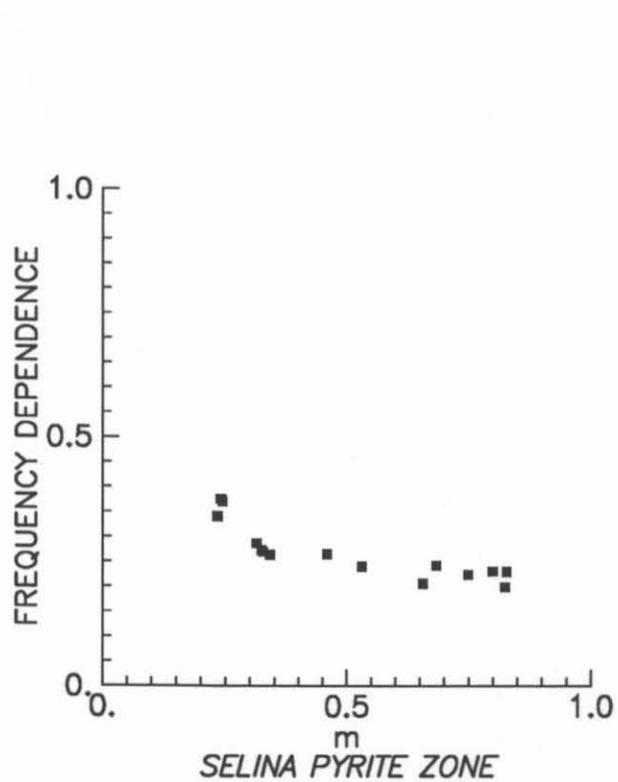
Average Window Chargeabilities

| 1     | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|------|------|------|------|------|------|------|------|------|
| 14.70 | 9.63 | 7.65 | 6.41 | 5.45 | 4.73 | 4.19 | 3.79 | 3.46 | 3.15 |

034123



MRV0056



Electrical Properties - Western Tasmania

D22

MINERALIZATION at PRINCE LYELL

MRV0024

The Lyell field contains several styles of mineralization, the most important at the present time being the Prince Lyell body. These data represent a section through the Prince Lyell body on the 14th level along the 46S cross cut and as such represent a section through the Prince Lyell body.

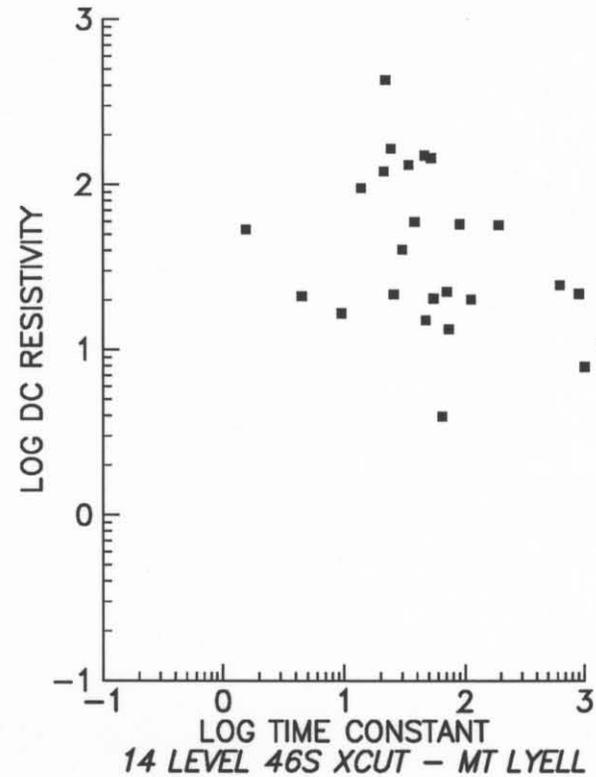
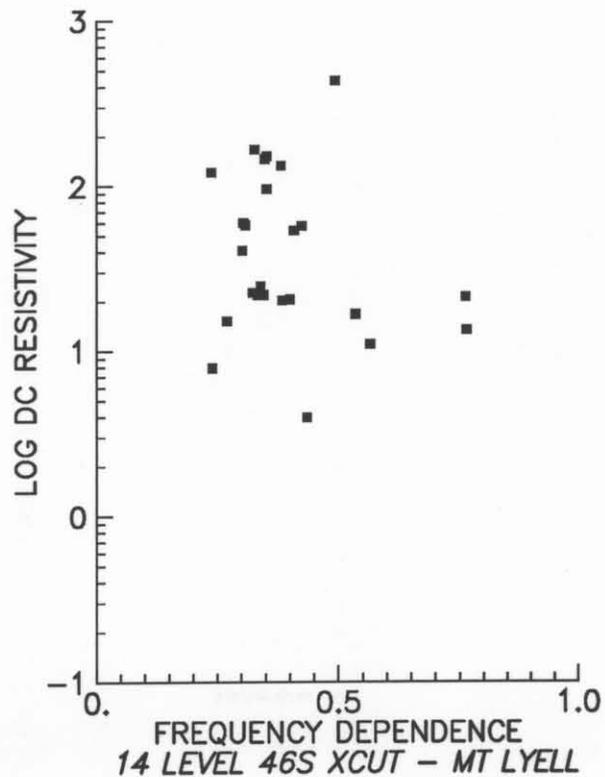
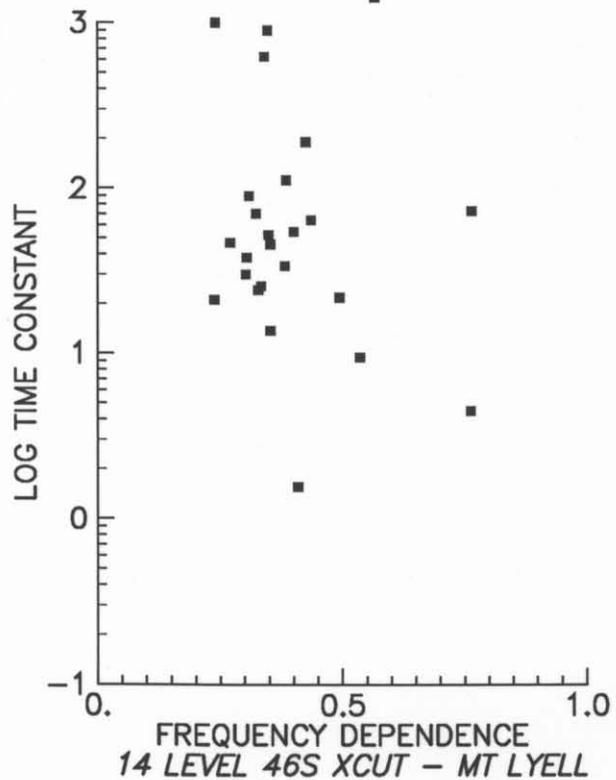
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Resistivity   | .149E+01 | .136E+03 | .309E+02 | .345E+02           |
| Chargeability | .308E+02 | .423E+03 | .189E+03 | .818E+02           |
| R0            | .396E+01 | .432E+03 | .694E+02 | .891E+02           |
| $\tau$        | .156E+01 | .142E+04 | .200E+03 | .366E+03           |
| c             | .24      | .76      | .40      | .13                |
| m             | .14      | .93      | .72      | .17                |

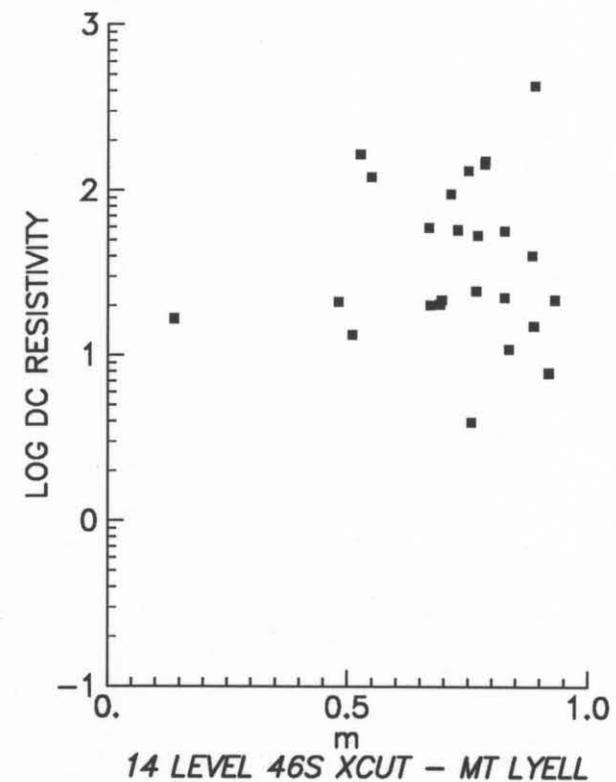
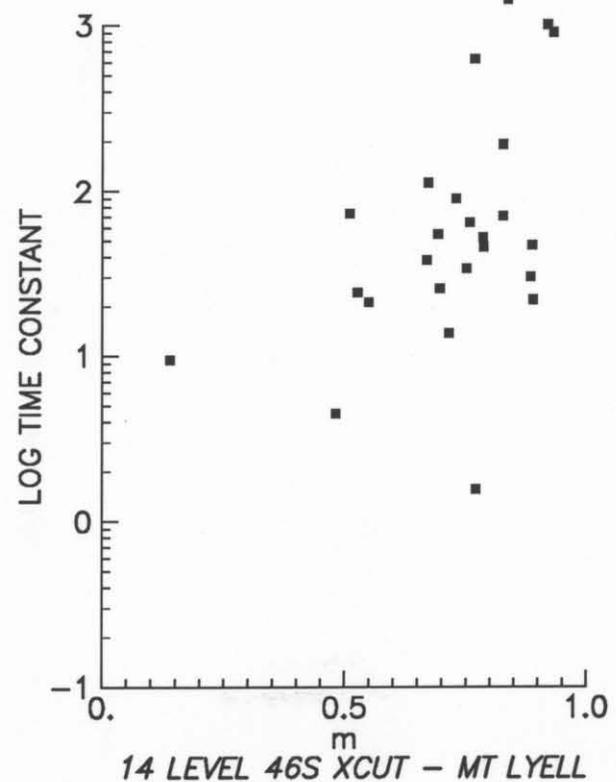
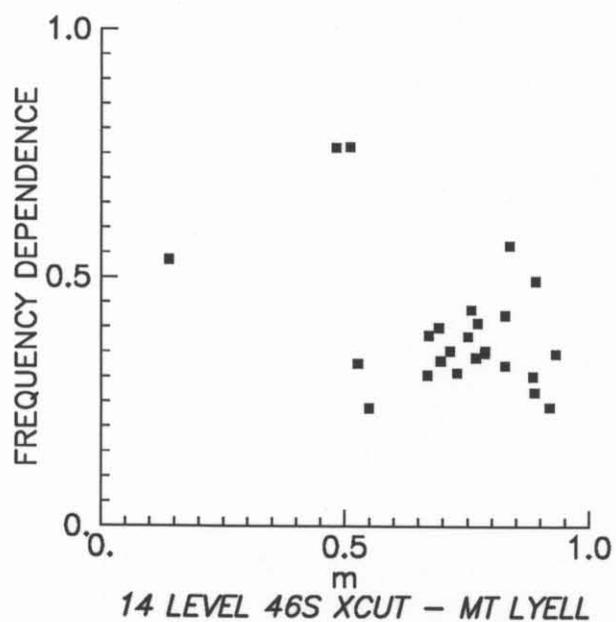
Data from 25 cases. Spectral data from 25 cases. ( 25 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 34.14 | 26.34 | 22.35 | 19.54 | 17.48 | 15.91 | 14.68 | 13.66 | 12.80 | 12.05 |





## Electrical Properties - Western Tasmania

D23

## MINERALIZATION at PRINCE LYELL

MRV0025

The Lyell field contains several styles of mineralization, the most important at the present time being the Prince Lyell body. These data are from the Prince Lyell body on the 14th level in the North Touching cross cut.

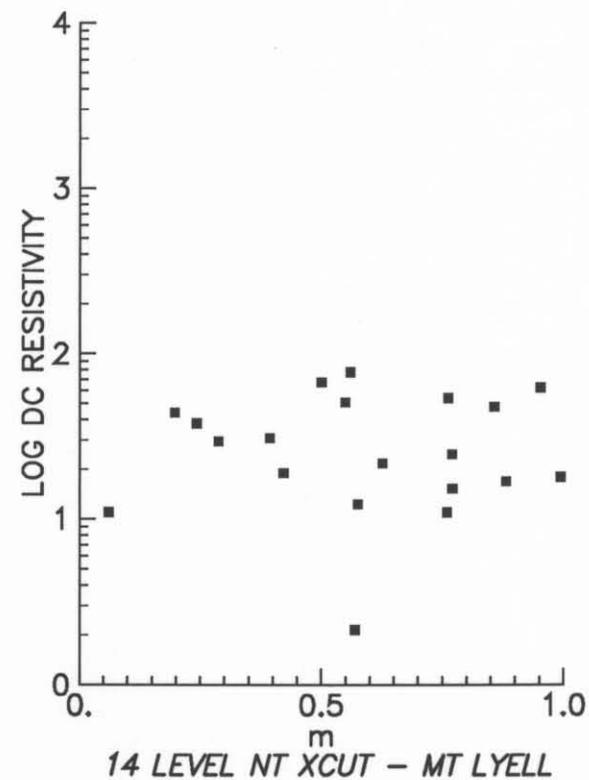
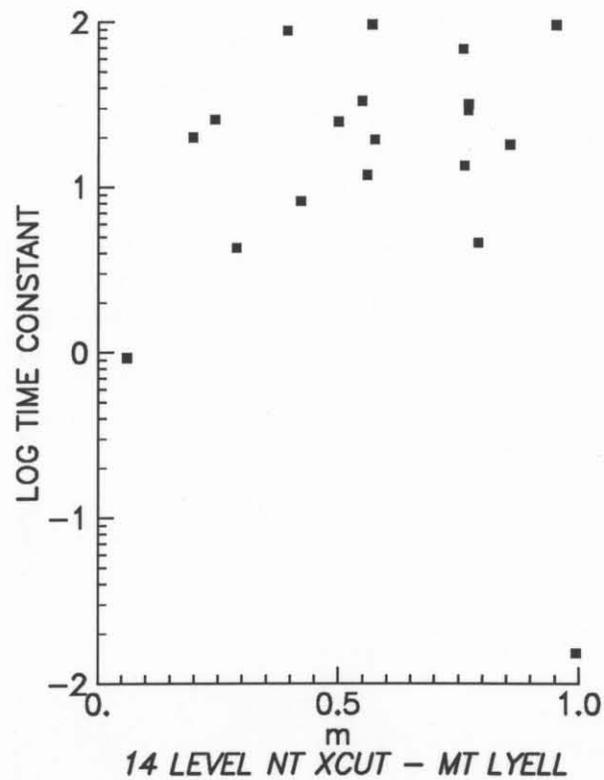
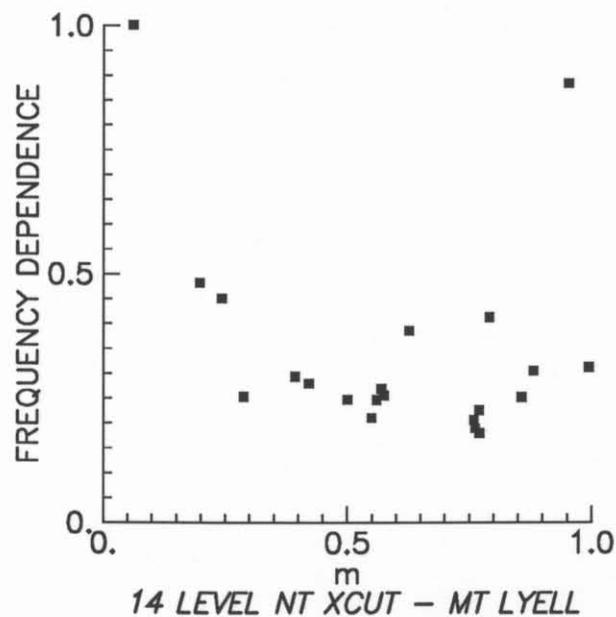
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .790E+00 | .457E+02 | .170E+02 | .128E+02              |
| Chargeability | .359E+02 | .388E+03 | .121E+03 | .874E+02              |
| R0            | .215E+01 | .624E+02 | .281E+02 | .168E+02              |
| $\tau$        | .153E-01 | .114E+04 | .146E+03 | .308E+03              |
| c             | .04      | .88      | .31      | .18                   |
| m             | .20      | .99      | .61      | .25                   |

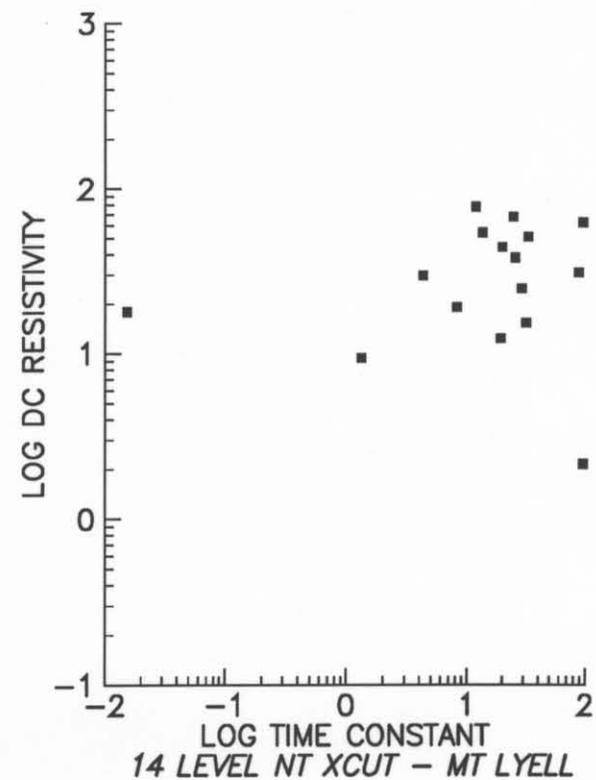
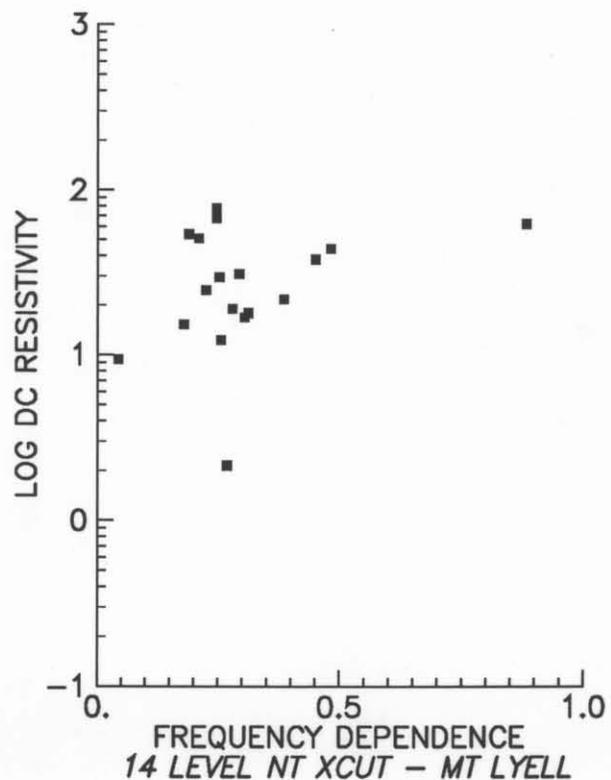
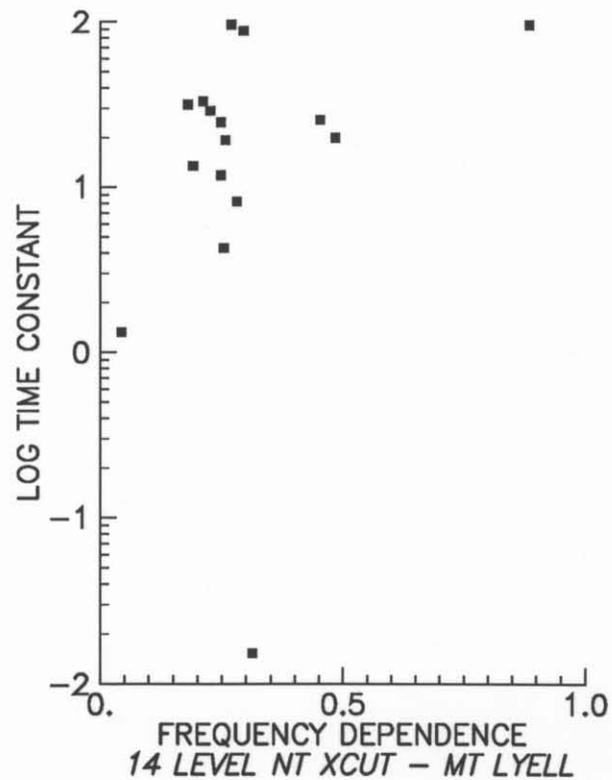
Data from 18 cases. Spectral data from 16 cases. ( 22 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |       |      |      |      |      |
|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7    | 8    | 9    | 10   |
| 23.74 | 17.72 | 14.66 | 12.54 | 10.97 | 10.22 | 9.66 | 9.42 | 8.88 | 8.47 |





## Electrical Properties - Western Tasmania

D24

MINERALIZATION at PRINCE LYELL

MRV0026

These results are from mineralization in the decline.

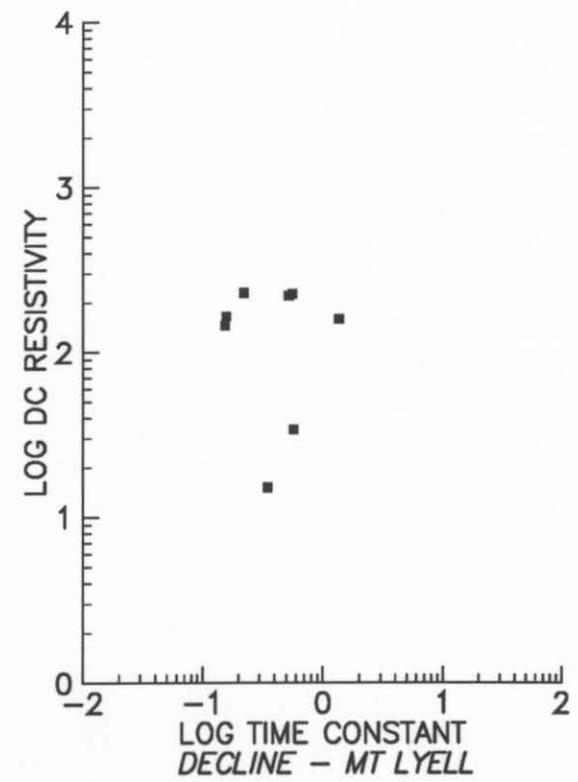
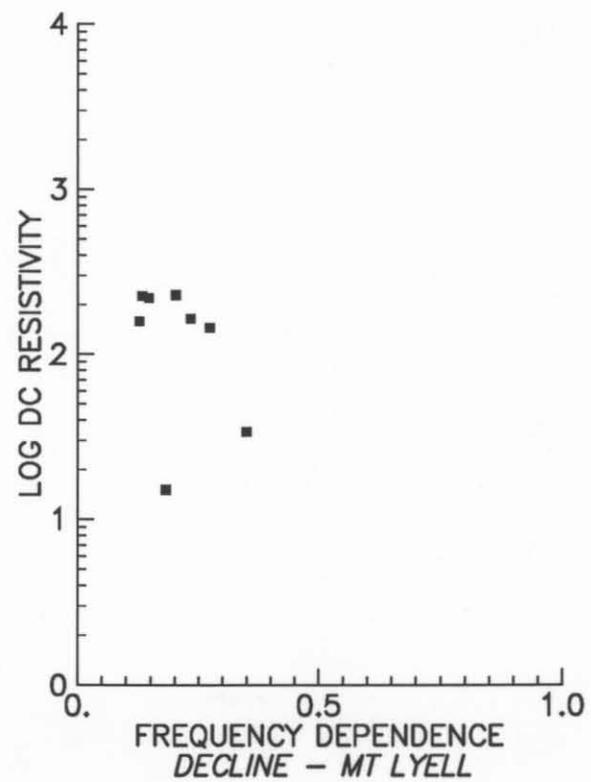
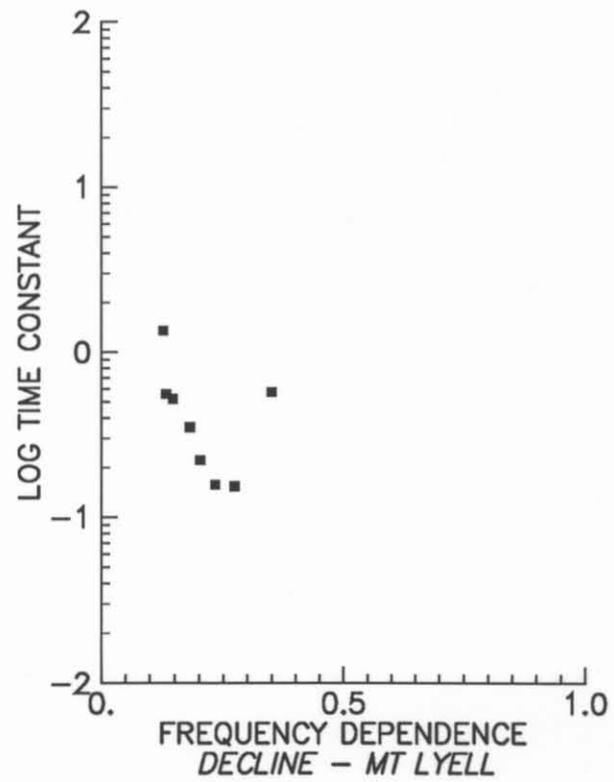
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .118E+02 | .187E+03 | .116E+03 | .595E+02              |
| Chargeability | .489E+02 | .585E+02 | .546E+02 | .276E+01              |
| R0            | .151E+02 | .229E+03 | .149E+03 | .781E+02              |
| $\tau$        | .154E+00 | .135E+01 | .486E+00 | .366E+00              |
| c             | .13      | .35      | .21      | .07                   |
| m             | .29      | .67      | .50      | .12                   |

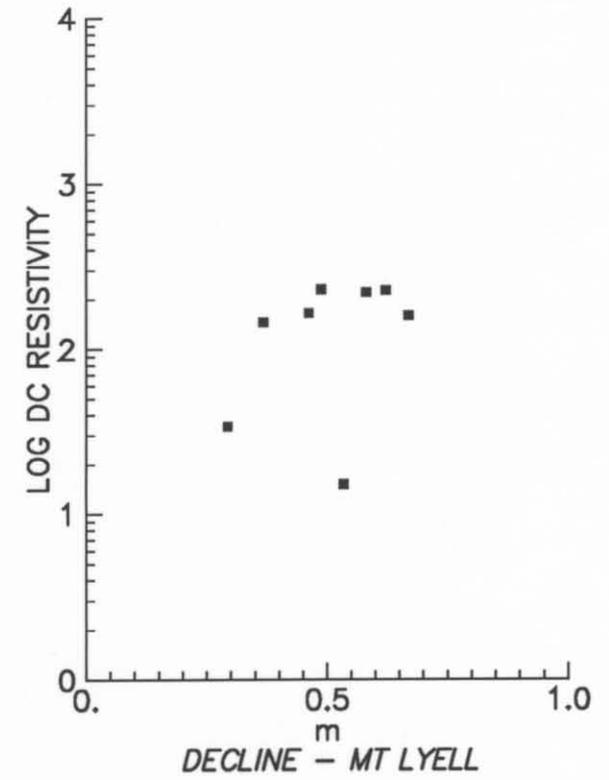
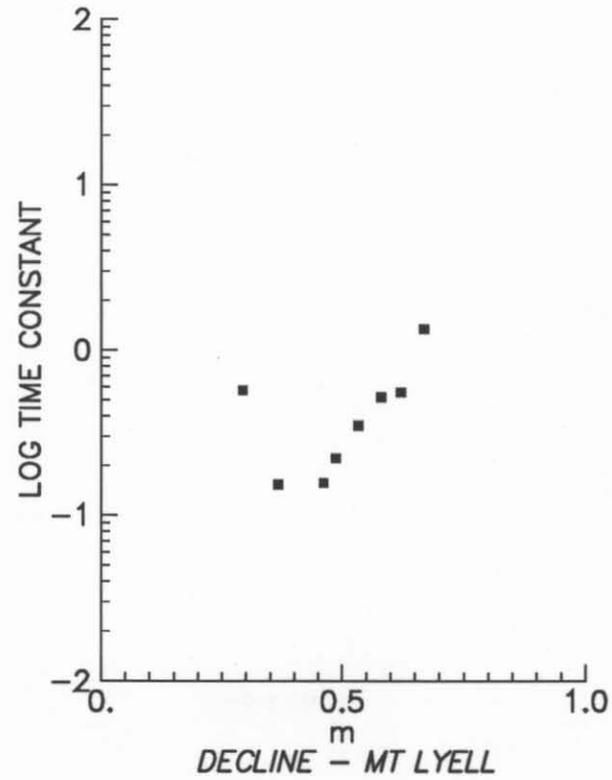
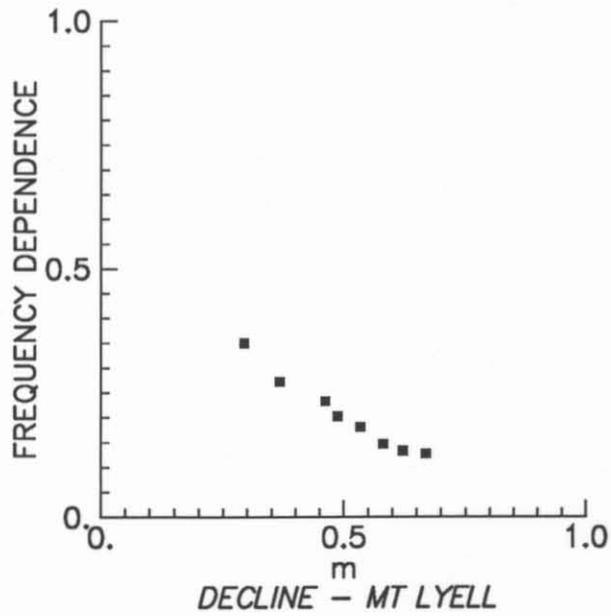
Data from 8 cases. Spectral data from 8 cases. ( 8 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|------|------|------|------|------|------|------|------|------|
| 11.96 | 8.31 | 6.63 | 5.55 | 4.79 | 4.21 | 3.76 | 3.39 | 3.09 | 2.84 |





## Electrical Properties - Western Tasmania

D25

'UNALTERED' VOLCANICS - SITE 1 - MOUNT READ

MRV0018

Mount Read itself exposes relatively unaltered volcanics used to determine background values.

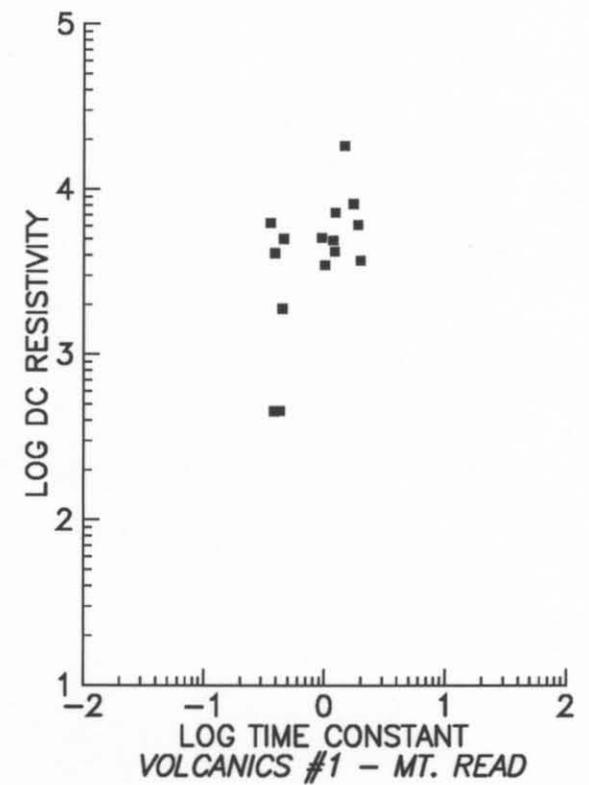
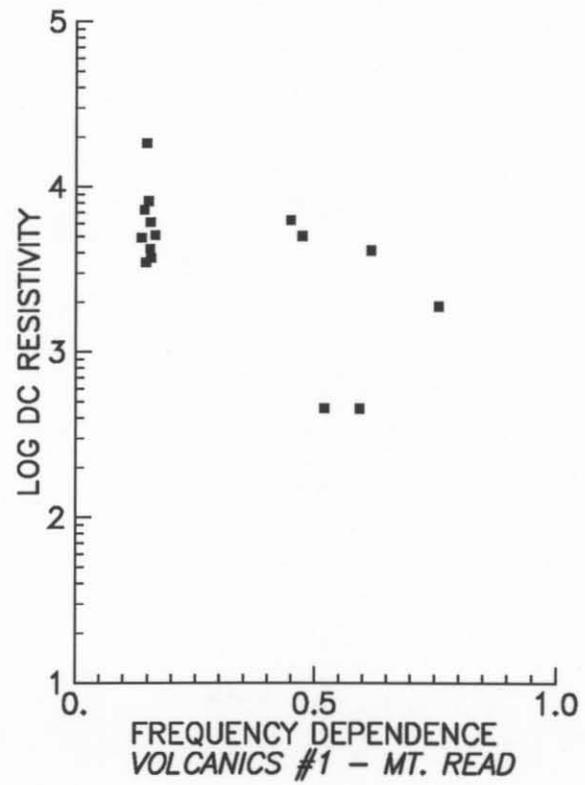
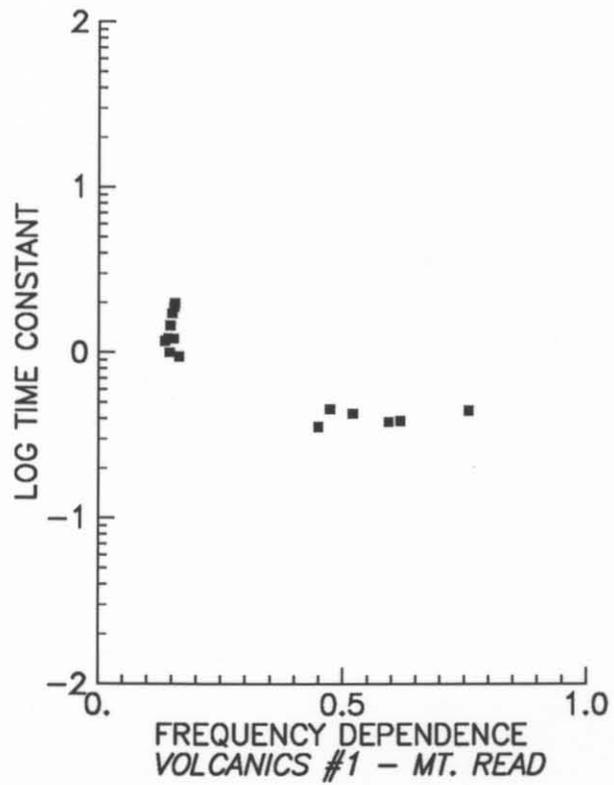
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .451E+03 | .181E+05 | .534E+04 | .403E+04              |
| Chargeability | .687E+00 | .145E+02 | .699E+01 | .405E+01              |
| R0            | .454E+03 | .184E+05 | .531E+04 | .410E+04              |
| $\tau$        | .356E+00 | .198E+01 | .100E+01 | .560E+00              |
| c             | .14      | .76      | .32      | .22                   |
| m             | .00      | .16      | .05      | .04                   |

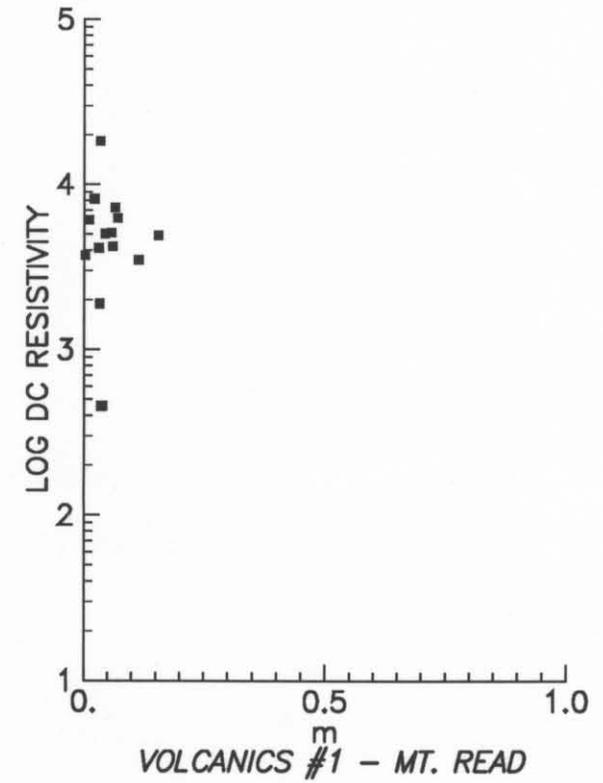
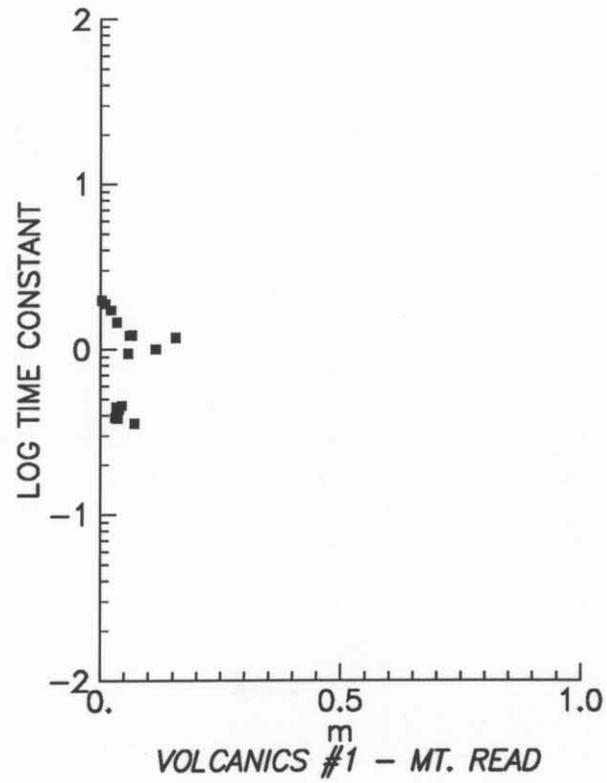
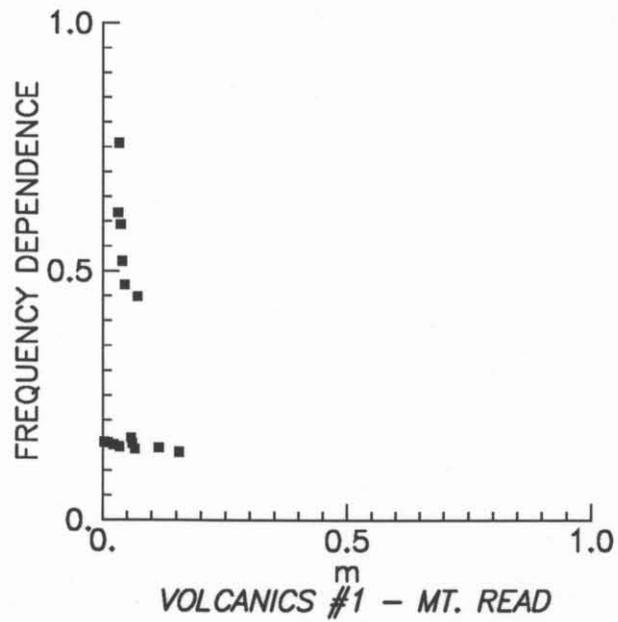
Data from 15 cases. Spectral data from 15 cases. ( 16 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |     |     |     |     |     |     |     |     |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1    | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
| 1.69 | 1.12 | .89 | .76 | .58 | .50 | .43 | .38 | .34 | .30 |





## Electrical Properties - Western Tasmania

D26

'UNALTERED' VOLCANICS - SITE 2 - MOUNT READ

MRV0019

Mount Read itself exposes relatively unaltered volcanics used to determine background values. These data are from Bold Hill on the South side of the road.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .657E+03 | .665E+04 | .351E+04 | .194E+04              |
| Chargeability | .108E+01 | .109E+02 | .579E+01 | .360E+01              |
| R0            | .671E+03 | .669E+04 | .351E+04 | .192E+04              |
| $\tau$        | .356E+00 | .200E+01 | .109E+01 | .632E+00              |
| c             | .15      | .55      | .28      | .14                   |
| m             | .01      | .07      | .04      | .02                   |

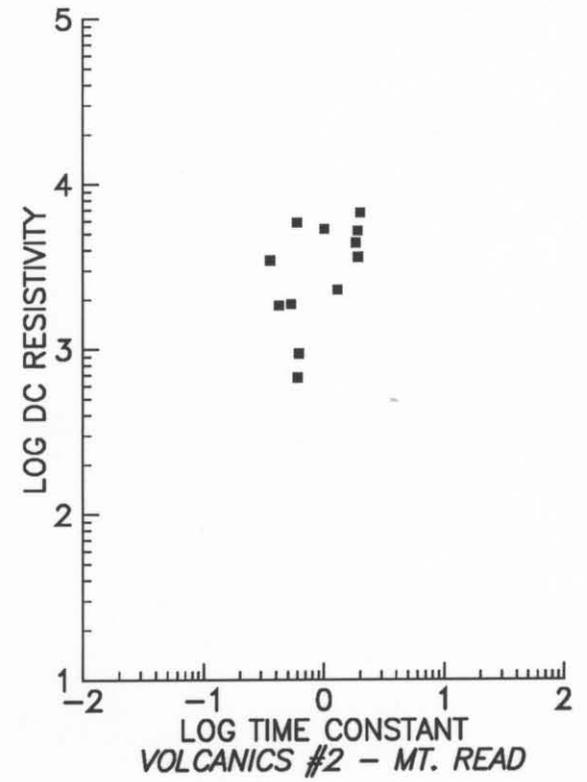
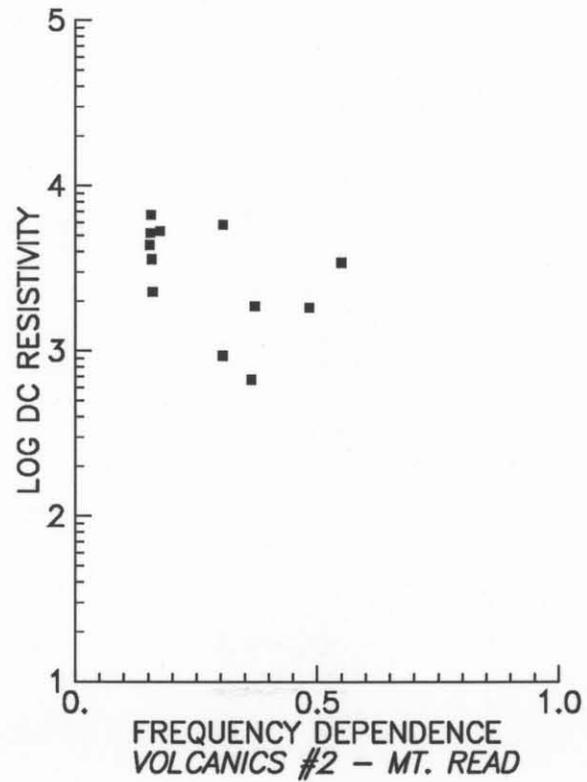
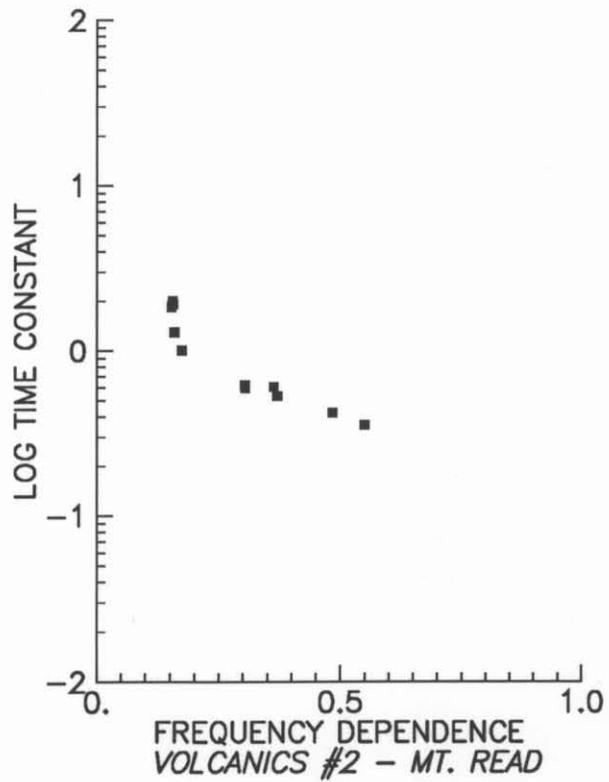
Data from 12 cases. Spectral data from 12 cases. ( 12 Sites measured).

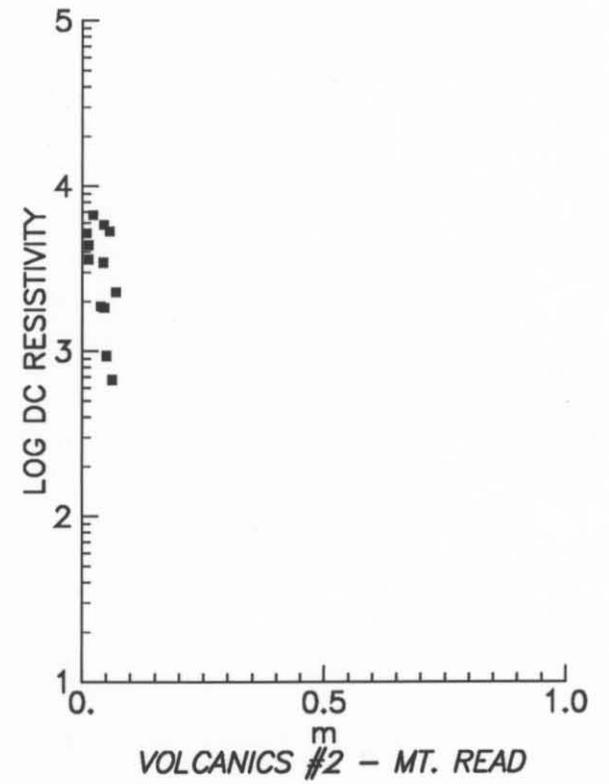
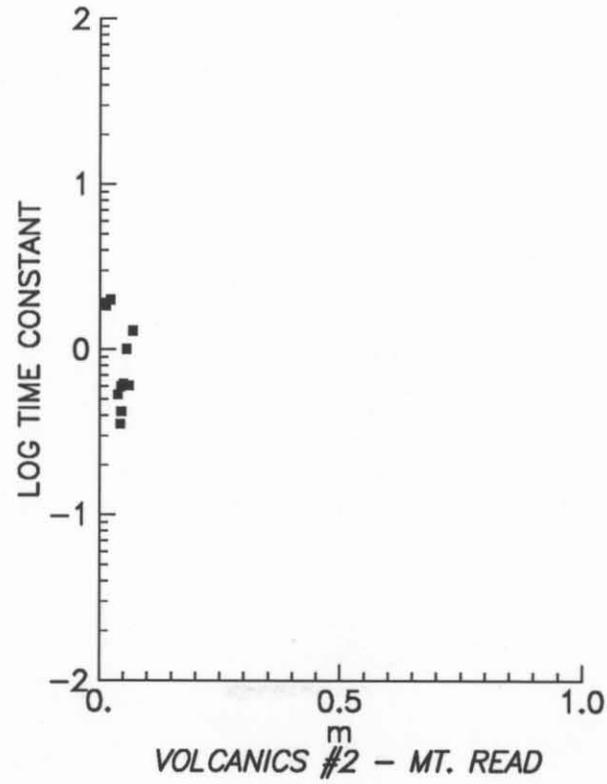
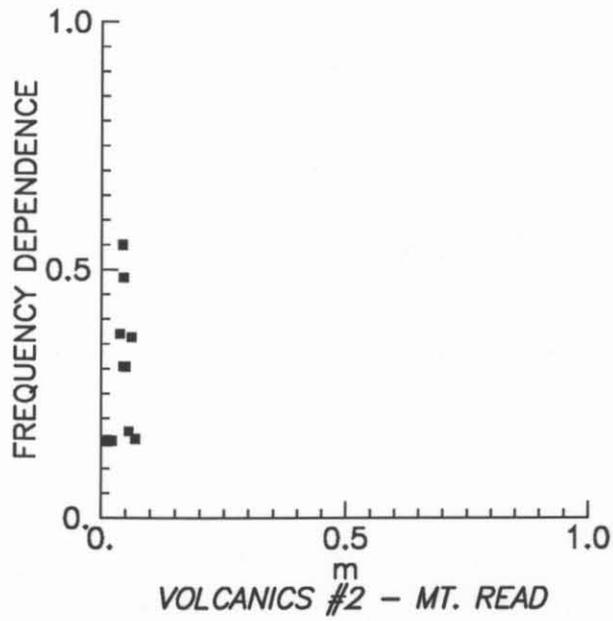
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.36 | .95 | .73 | .59 | .50 | .42 | .37 | .32 | .28 | .26 |

034138





## Electrical Properties - Western Tasmania

D27

'UNALTERED' VOLCANICS - SITE 3 - MOUNT READ

MRV0020

Mount Read itself exposes relatively unaltered volcanics used to determine background values. These data are from Bold Hill on the South side of the road.

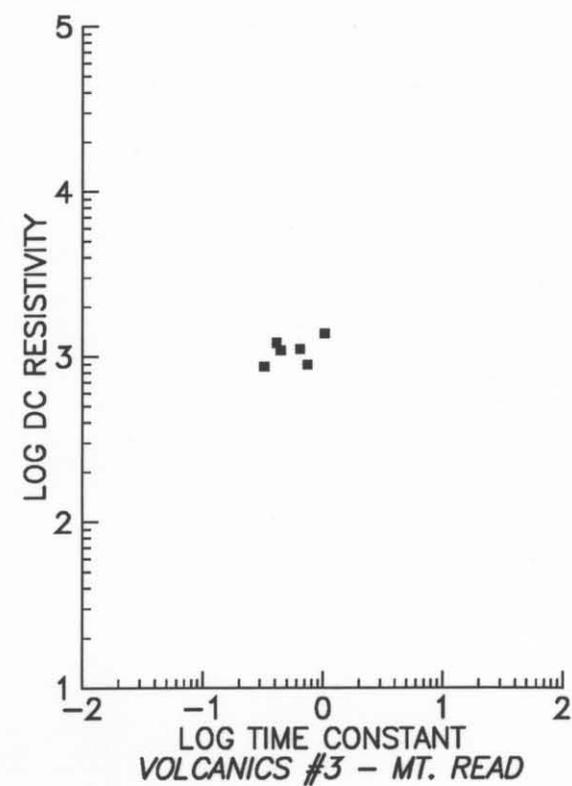
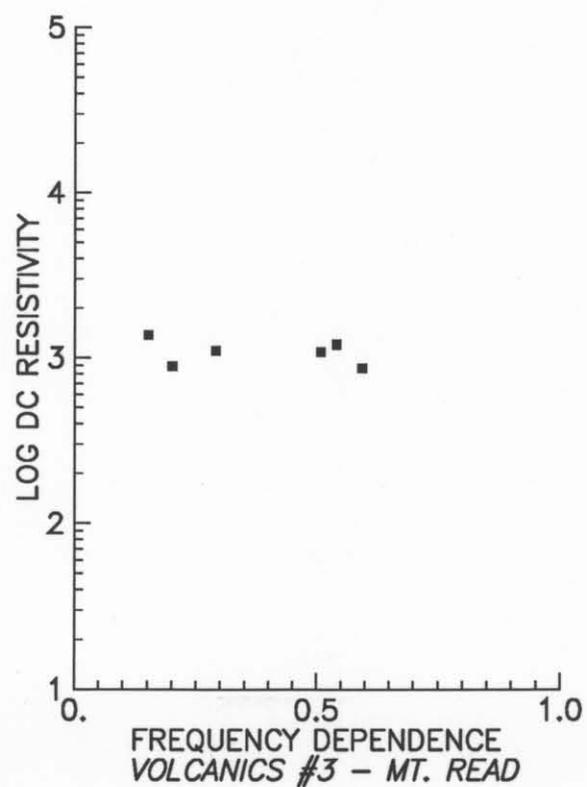
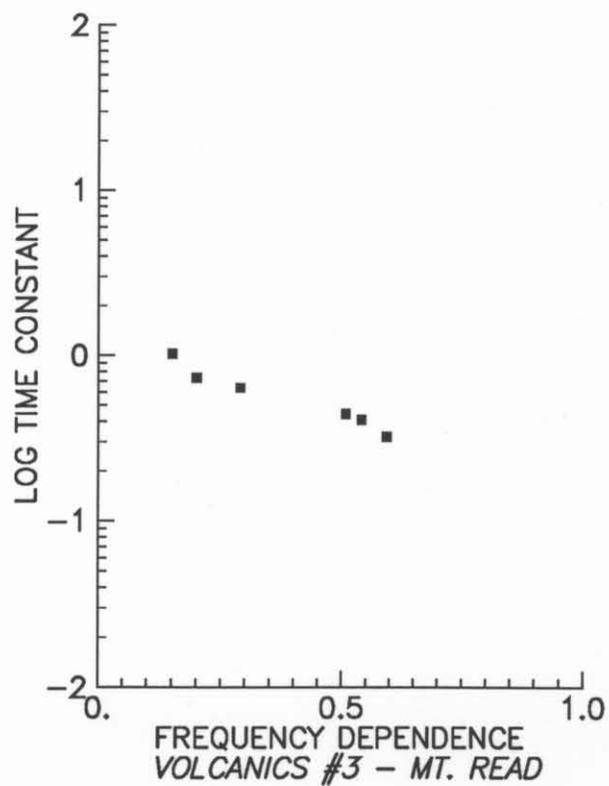
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .865E+03 | .134E+04 | .107E+04 | .168E+03              |
| Chargeability | .542E+01 | .115E+02 | .805E+01 | .248E+01              |
| R0            | .870E+03 | .138E+04 | .109E+04 | .175E+03              |
| $\tau$        | .323E+00 | .102E+01 | .596E+00 | .237E+00              |
| c             | .15      | .59      | .38      | .17                   |
| m             | .03      | .07      | .05      | .01                   |

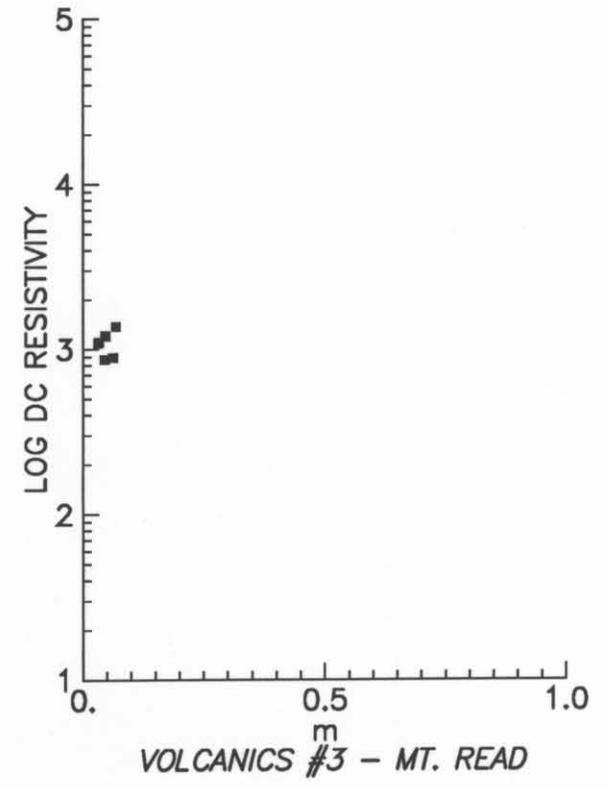
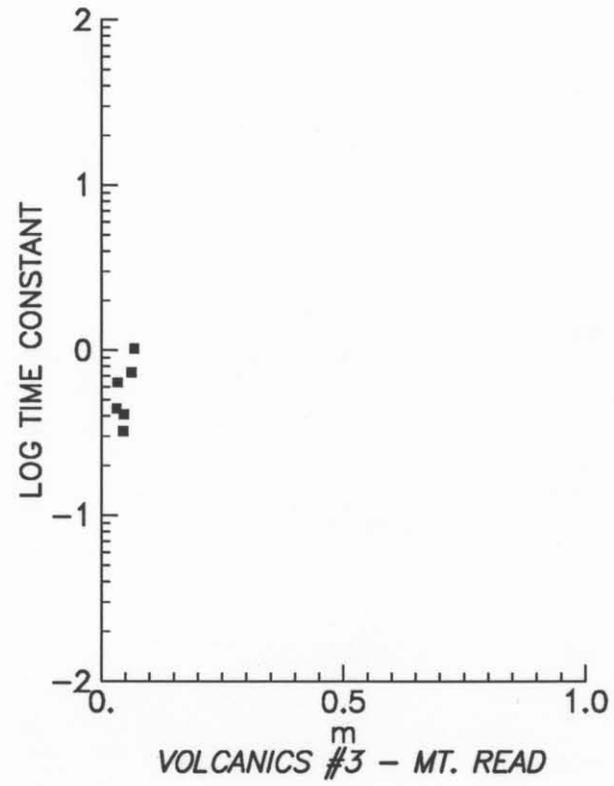
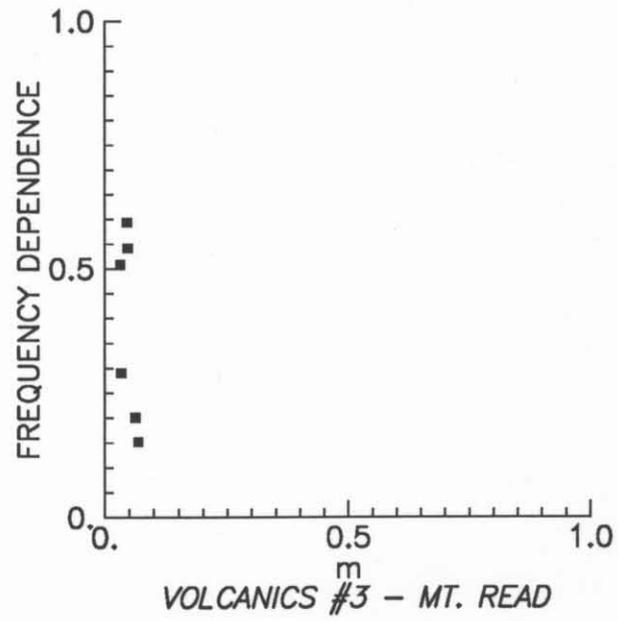
Data from 6 cases. Spectral data from 6 cases. ( 6 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.04 | 1.34 | 1.01 | .80 | .66 | .56 | .49 | .43 | .38 | .33 |





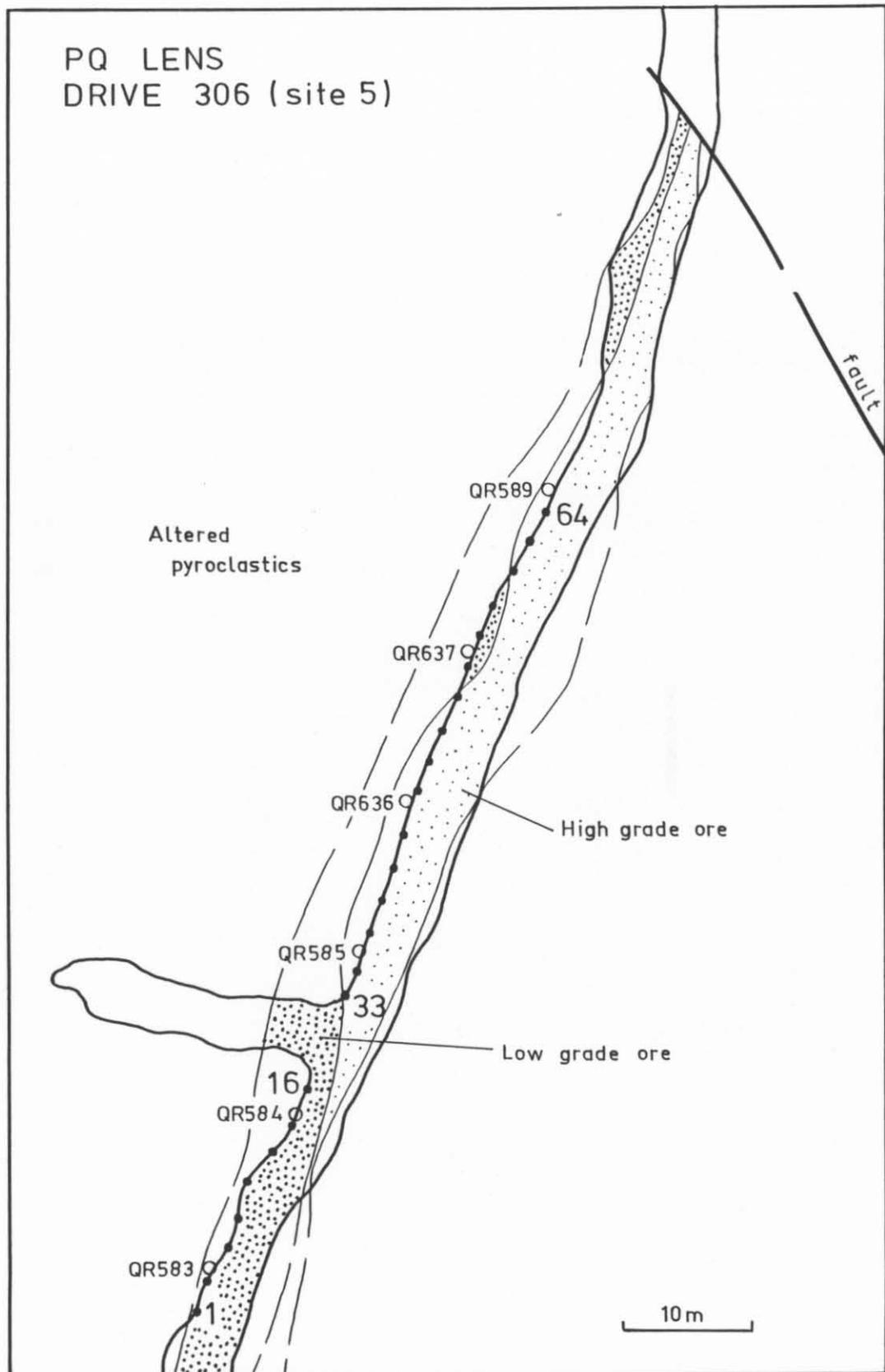


Figure A2. Locality map for observations in the PQ Lens at the Que River Mine. From Mather (1985).

QUE RIVER MINE - PQ LENS FOOTWALL

MRV0059

Results from the data of Mather (1985). These measurements were made underground in the Que River mine - see Figure 27 for details.

034144

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|-------------|----------|----------|----------|--------------------|
| Resistivity | .626E+02 | .132E+03 | .886E+02 | .255E+02           |
| R0          | .678E+02 | .235E+03 | .139E+03 | .590E+02           |
| $\tau$      | .478E-01 | .693E+02 | .121E+02 | .210E+02           |
| c           | .01      | .61      | .20      | .17                |
| m           | .23      | .90      | .55      | .26                |

Data from 11 cases. Spectral data from 10 cases. ( 11 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

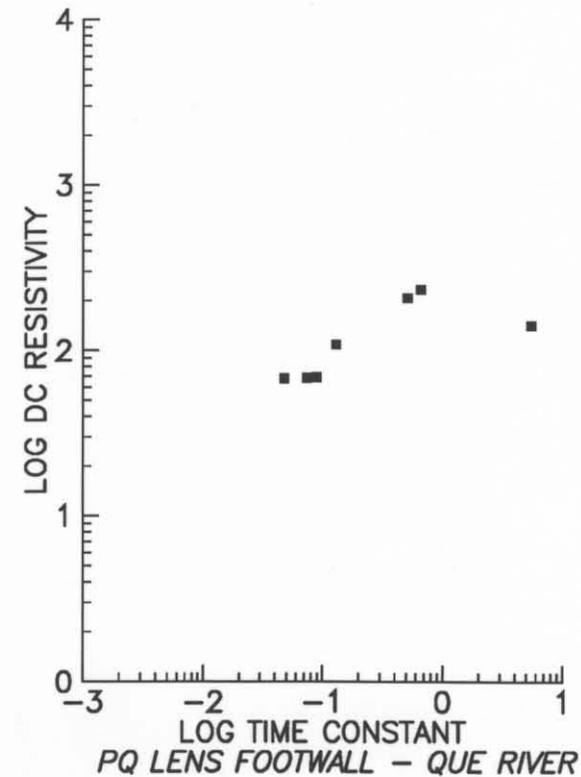
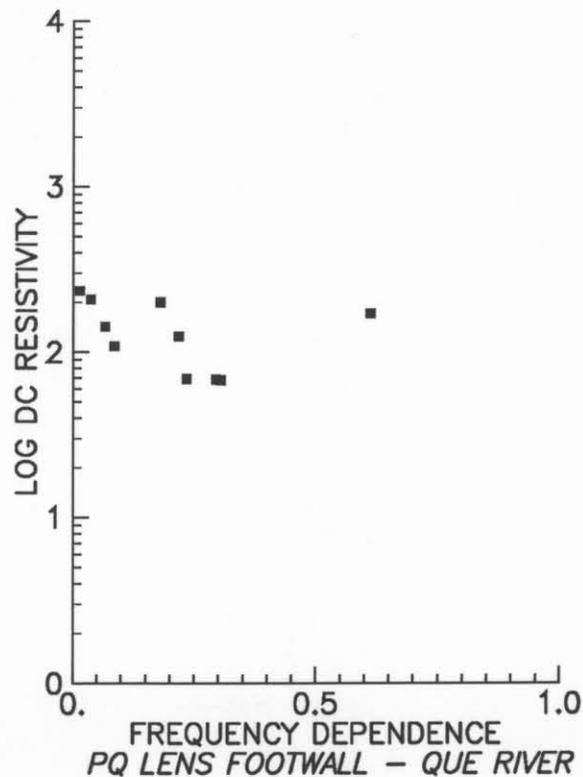
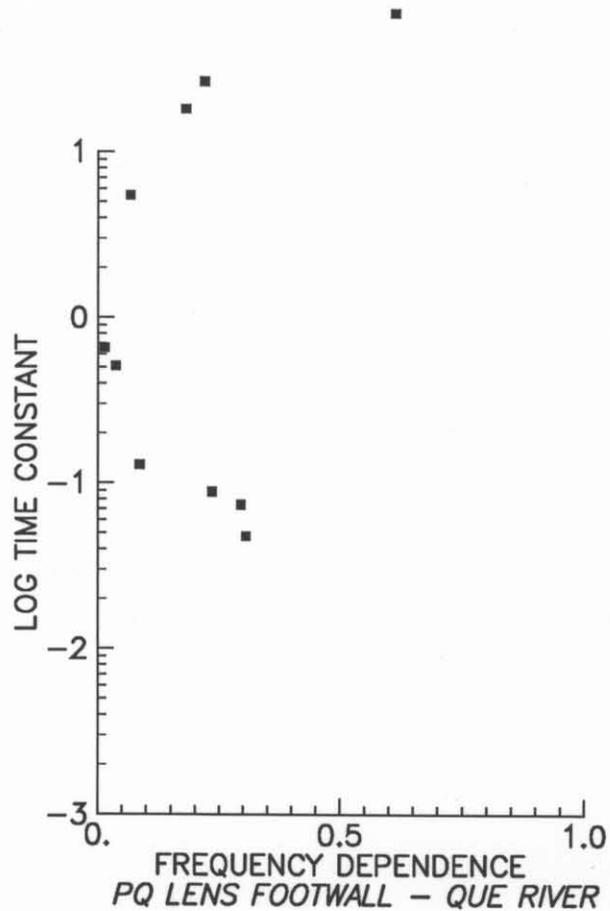
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .121E+02 | .739E+02 | .434E+02 | .199E+02           |

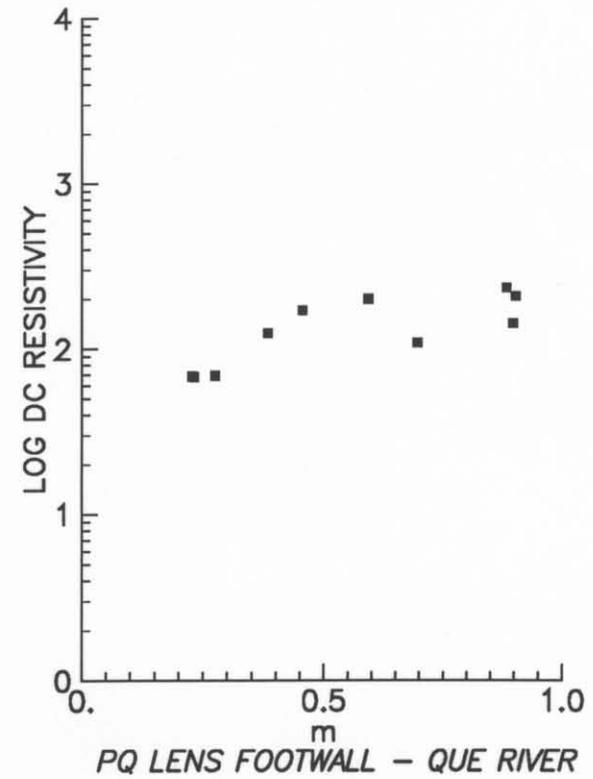
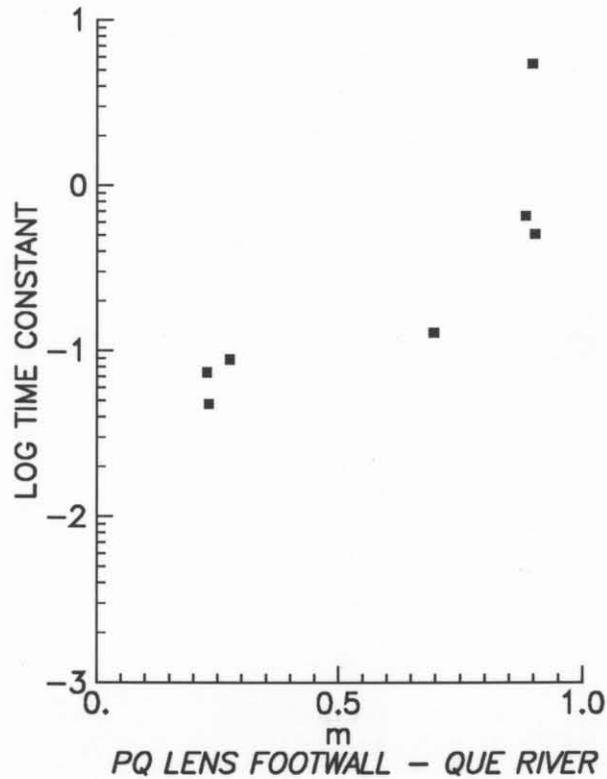
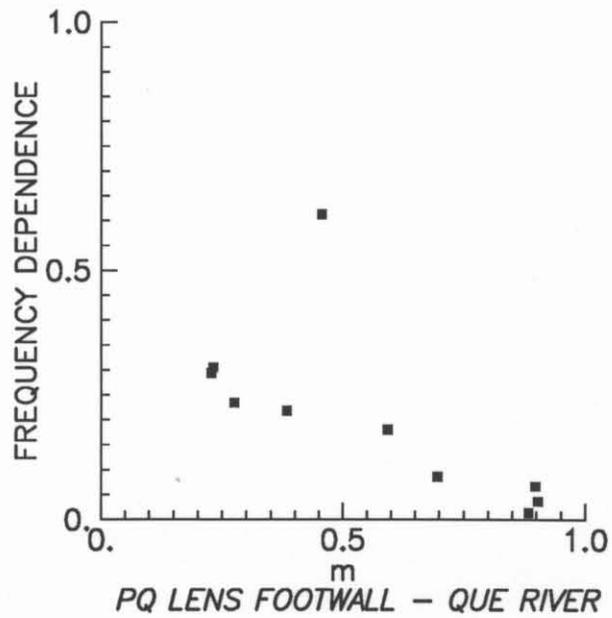
Data from 7 cases.

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|------|------|------|------|------|------|------|------|------|------|
| 7.97 | 6.04 | 5.14 | 4.48 | 4.00 | 3.62 | 3.34 | 3.11 | 2.92 | 2.74 |

Data from 7 cases.





## Electrical Properties - Western Tasmania

D30

QUE RIVER MINE - PQ LENS HIGH GRADE ORE

MRV0061

Results from the data of Mather (1985). These measurements were made underground in the Que River mine - see Figure 27 for details.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .315E+00 | .963E+02 | .181E+02 | .239E+02              |
| Chargeability | .152E+02 | .443E+03 | .122E+03 | .884E+02              |
| R0            | .470E+00 | .147E+03 | .343E+02 | .458E+02              |
| $\tau$        | .295E-02 | .383E+02 | .279E+01 | .759E+01              |
| c             | .03      | .73      | .34      | .17                   |
| m             | .15      | .96      | .65      | .27                   |

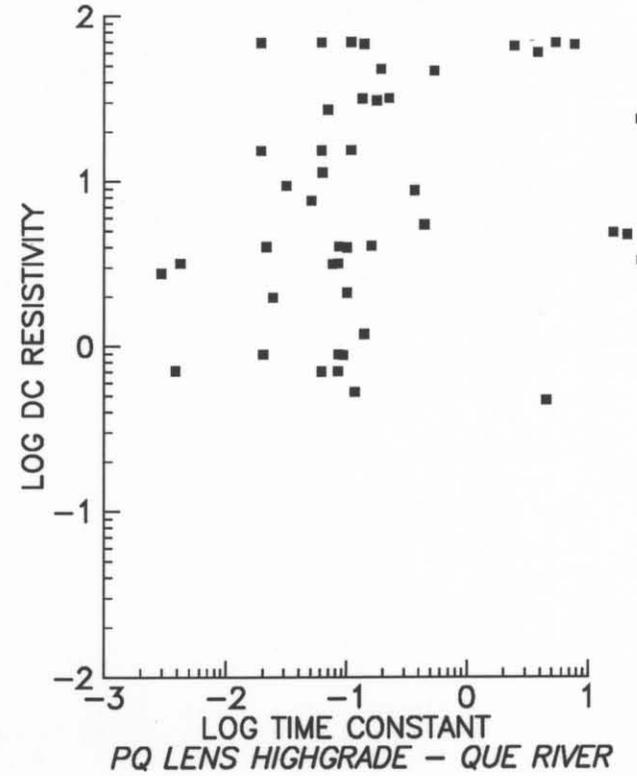
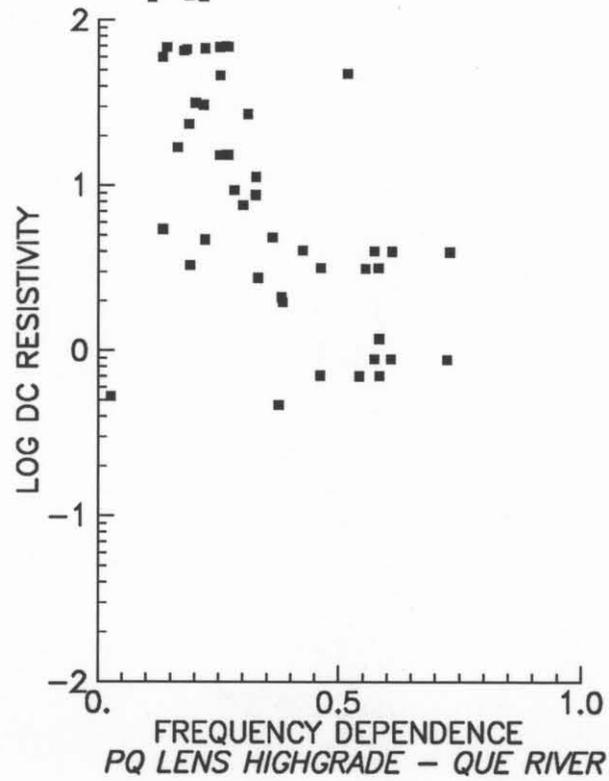
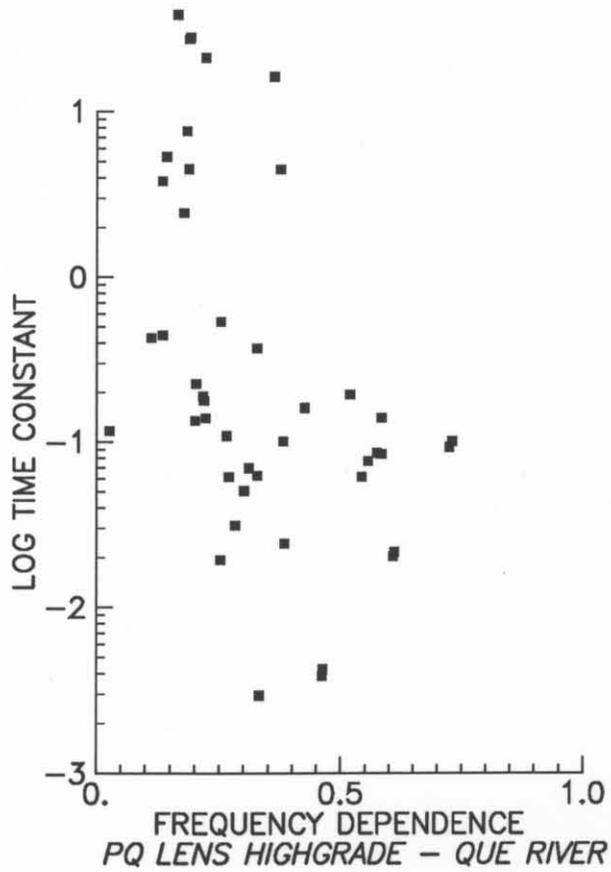
Data from 37 cases. Spectral data from 20 cases. ( 37 Sites measured).

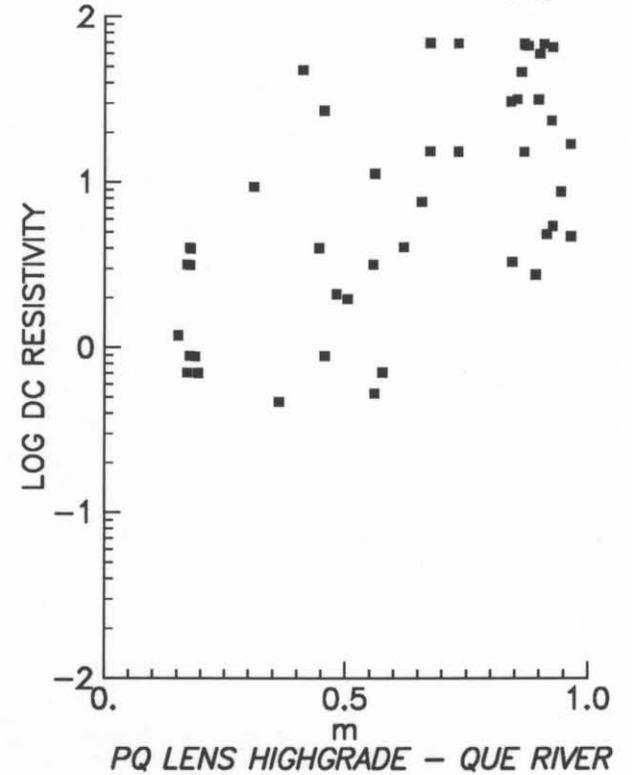
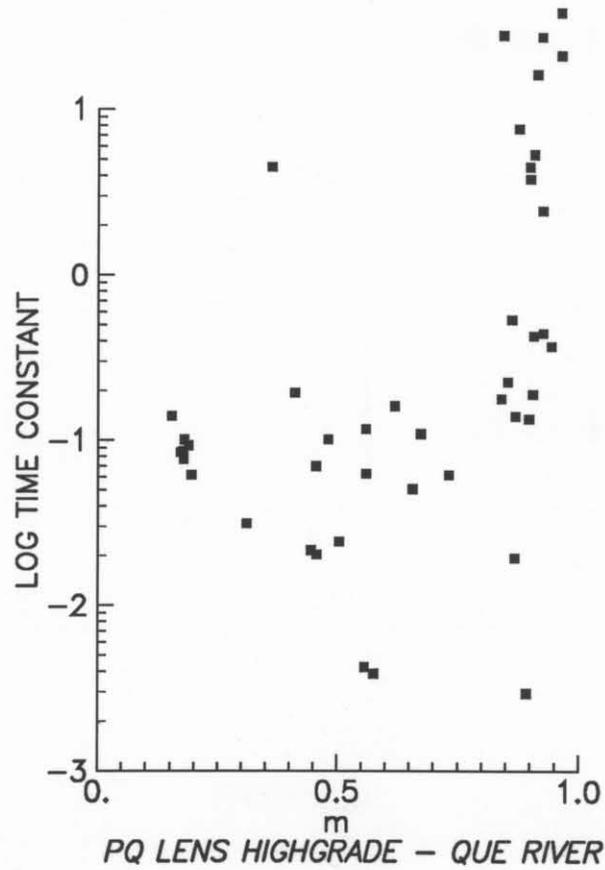
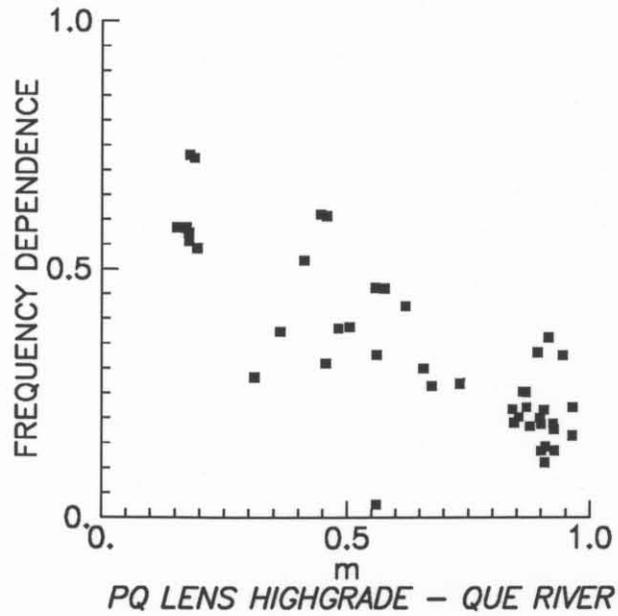
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |      |      |      |      |      |
|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1     | 2     | 3     | 4     | 5     | 6    | 7    | 8    | 9    | 10   |
| 24.51 | 19.00 | 15.13 | 12.66 | 10.92 | 9.63 | 8.60 | 7.80 | 7.11 | 6.55 |

Data from 37 cases.





## Electrical Properties - Western Tasmania

D31

QUE RIVER MINE - PQ LENS LOW GRADE ORE

MRV0060

Results from the data of Mather (1985). These measurements were made underground in the Que River mine - see Figure 27 for details.

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|-------------|----------|----------|----------|-----------------------|
| Resistivity | .788E+01 | .119E+03 | .582E+02 | .290E+02              |
| R0          | .126E+02 | .197E+03 | .832E+02 | .520E+02              |
| $\tau$      | .186E-02 | .124E+03 | .684E+01 | .269E+02              |
| c           | .09      | .40      | .21      | .09                   |
| m           | .30      | .92      | .66      | .21                   |

Data from 23 cases. Spectral data from 59 cases. ( 59 Sites measured).

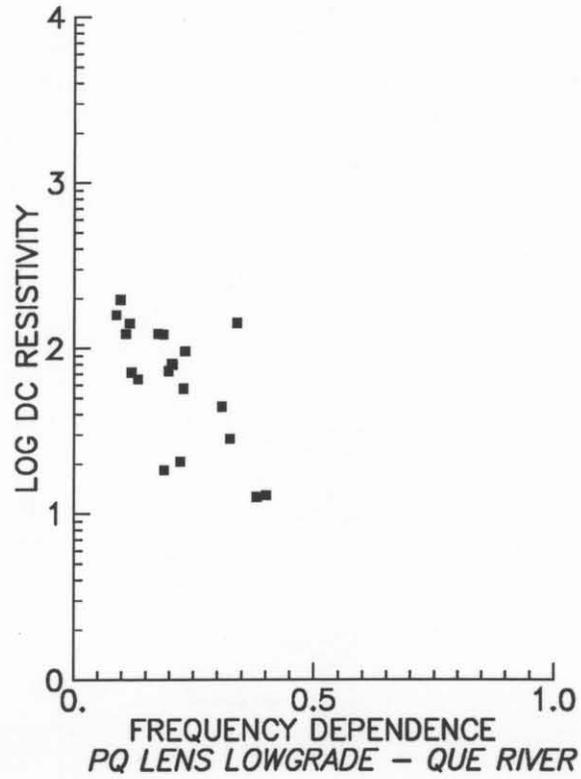
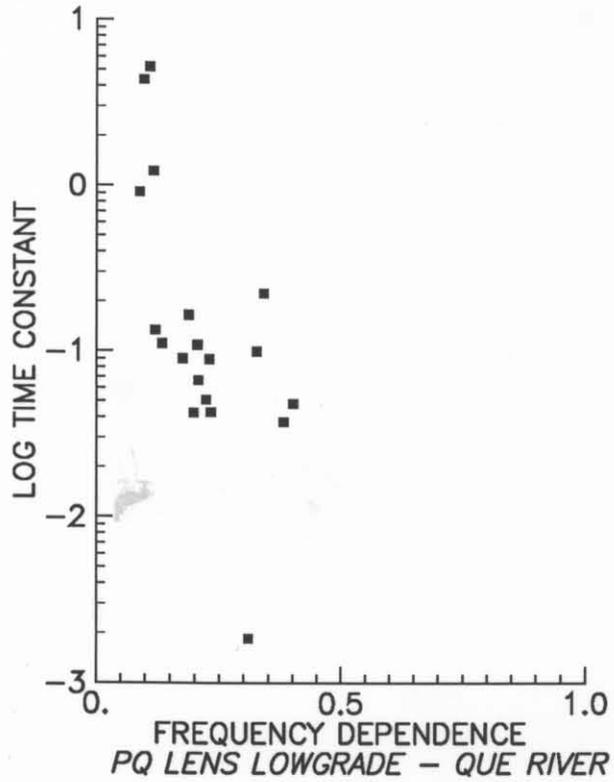
Time Delay = 50. ms Window Width = 150. ms

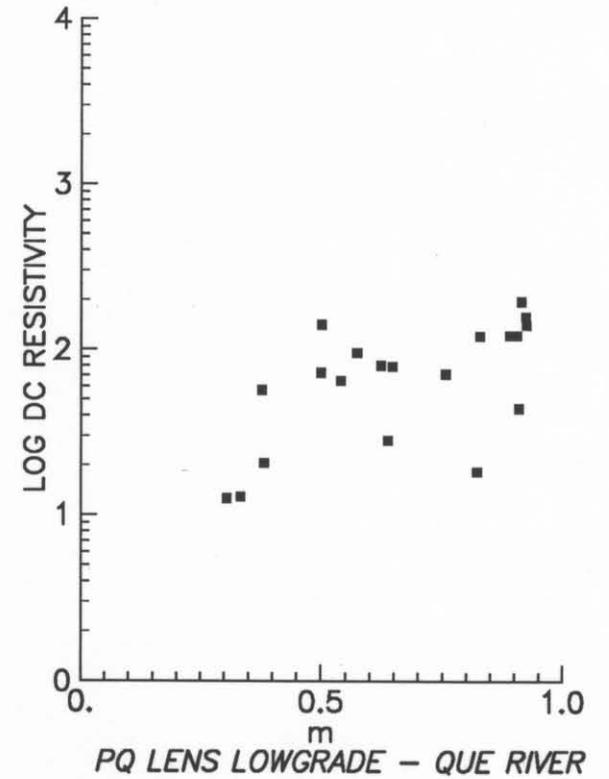
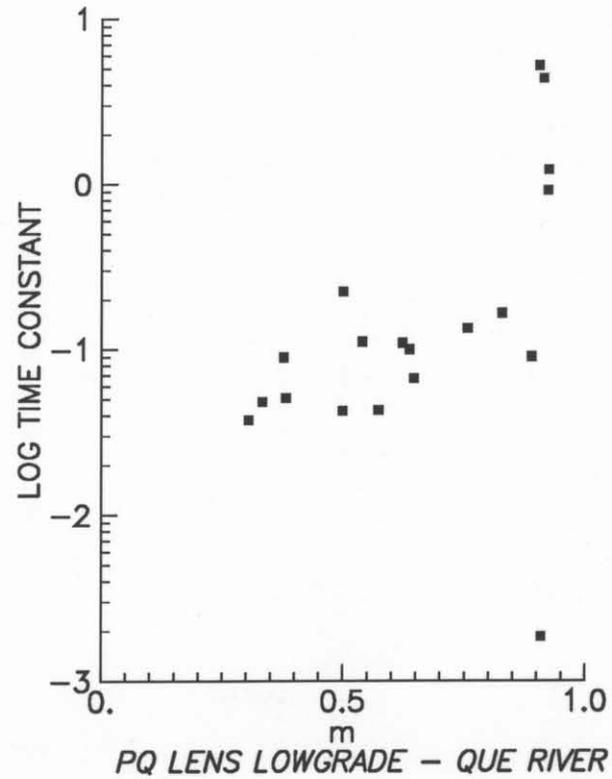
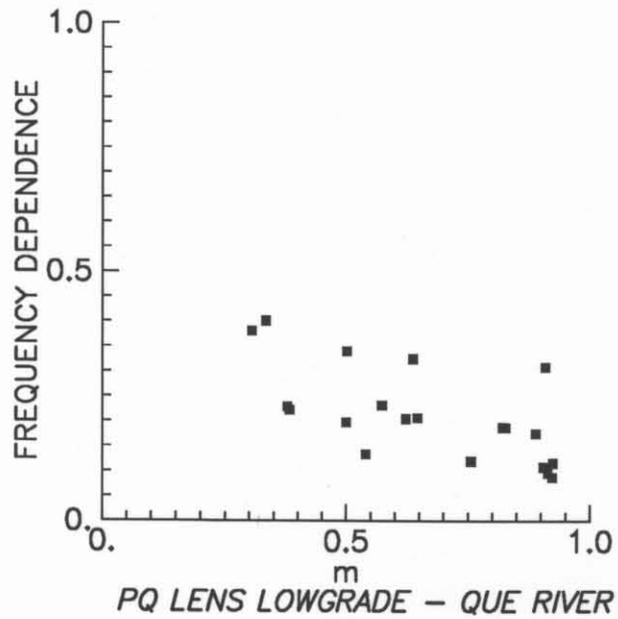
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Chargeability | .361E+02 | .142E+03 | .717E+02 | .272E+02              |

Average Window Chargeabilities

|  |       |       |      |      |      |      |      |      |      |      |
|--|-------|-------|------|------|------|------|------|------|------|------|
|  | 1     | 2     | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|  | 16.13 | 10.99 | 8.69 | 7.19 | 6.24 | 5.48 | 4.89 | 4.41 | 4.03 | 3.69 |

Data from 17 cases.





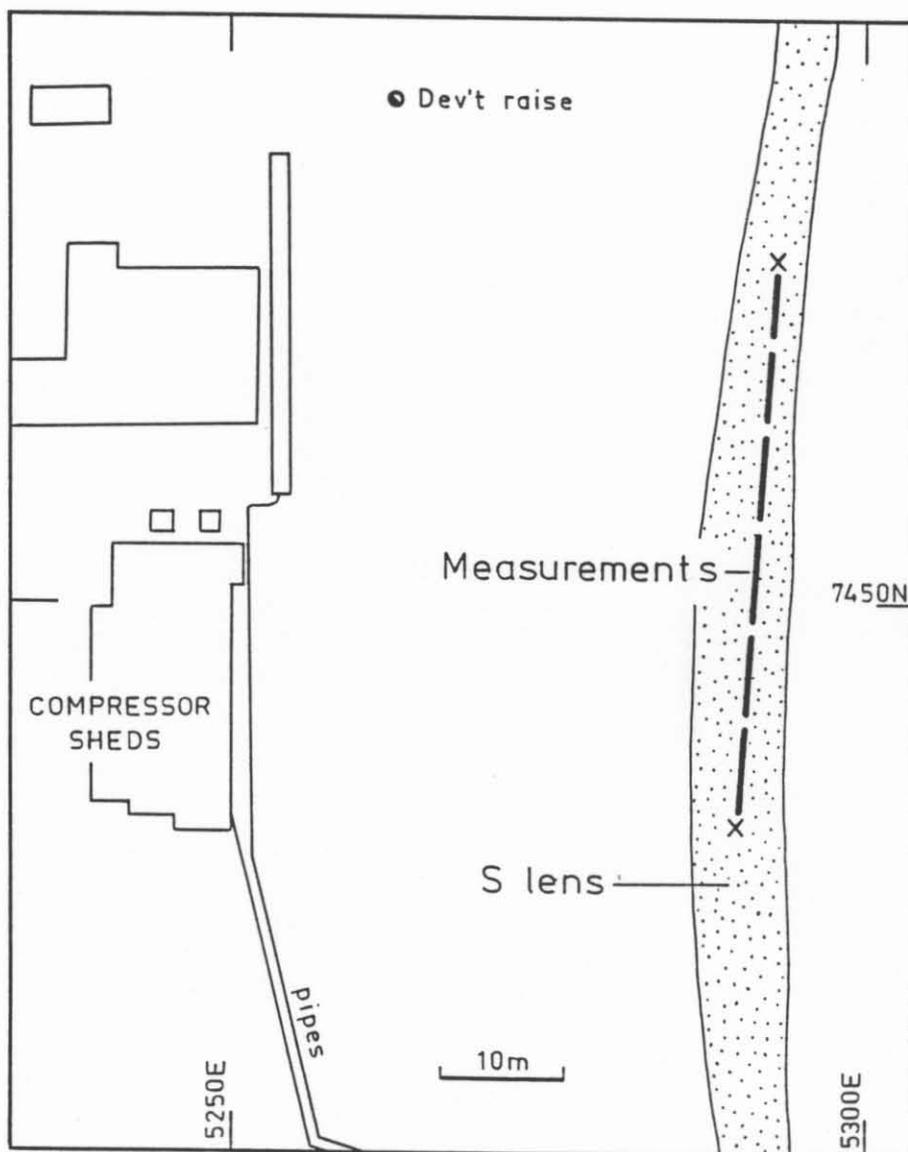


Figure A3. Locality map for measurements on the S Lens at Que River Mine. After Mather (1985).

## Electrical Properties - Western Tasmania

D33

QUE RIVER MINE - S LENS MINERALIZATION (OUTCROP)

MRV0058

Results from the data of Mather (1985). These are surface measurements on the outcrop of the S lens. See Figure 28 for details.

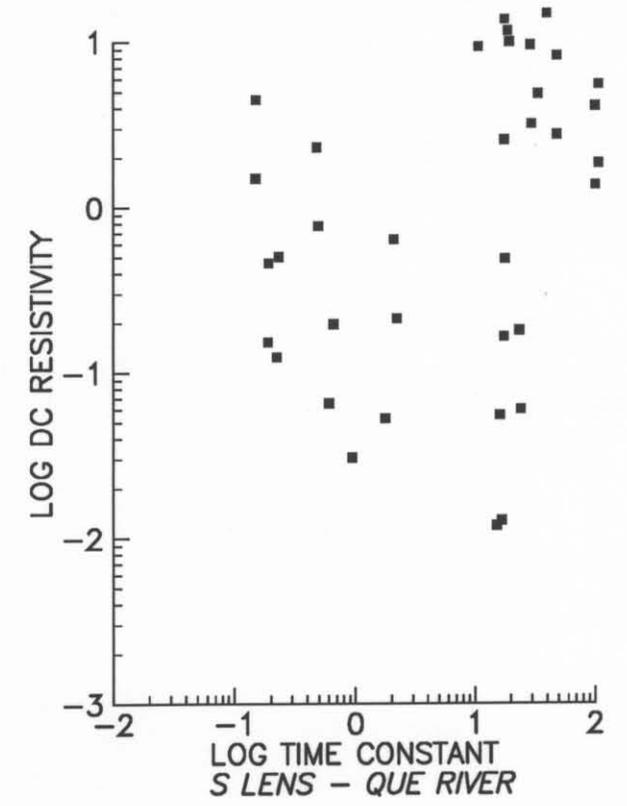
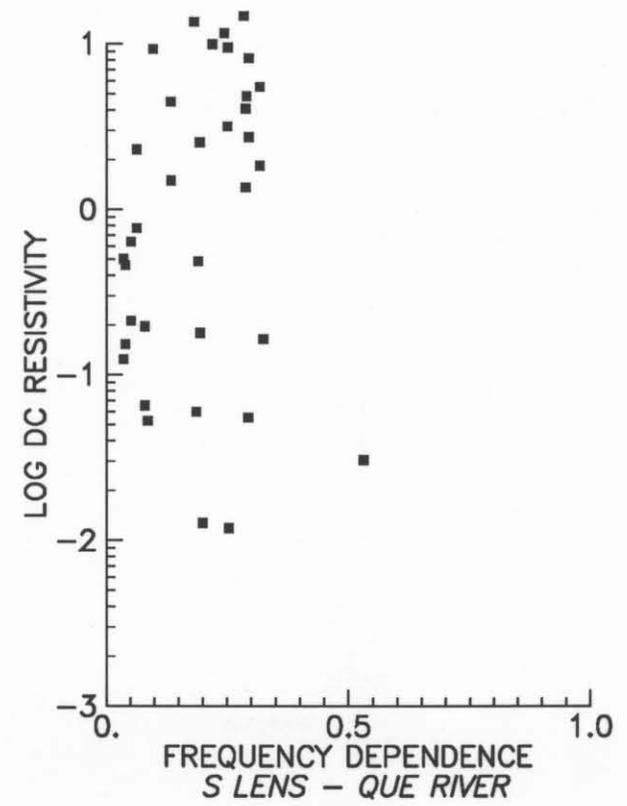
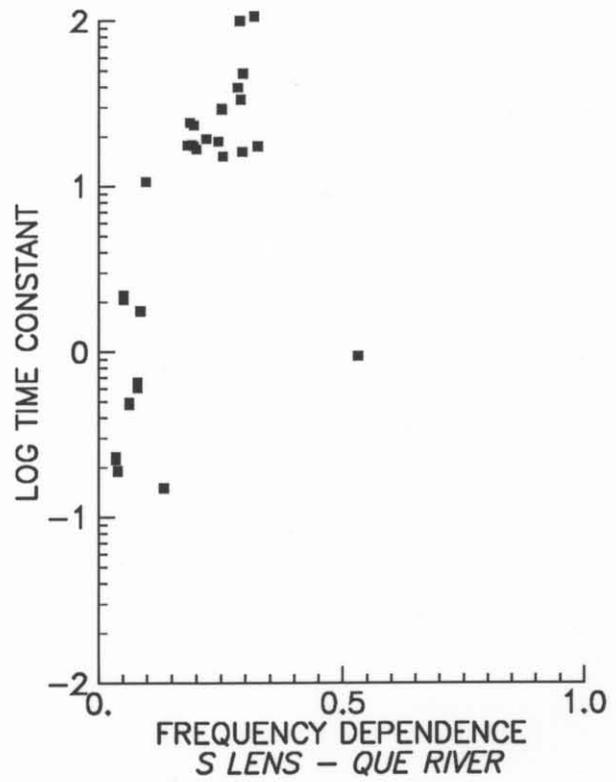
| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|-------------|----------|----------|----------|-----------------------|
| Resistivity | .100E-01 | .951E+01 | .247E+01 | .306E+01              |
| R0          | .119E-01 | .148E+02 | .298E+01 | .410E+01              |
| $\tau$      | .150E+00 | .107E+03 | .229E+02 | .300E+02              |
| c           | .04      | .53      | .19      | .11                   |
| m           | .24      | .94      | .65      | .20                   |

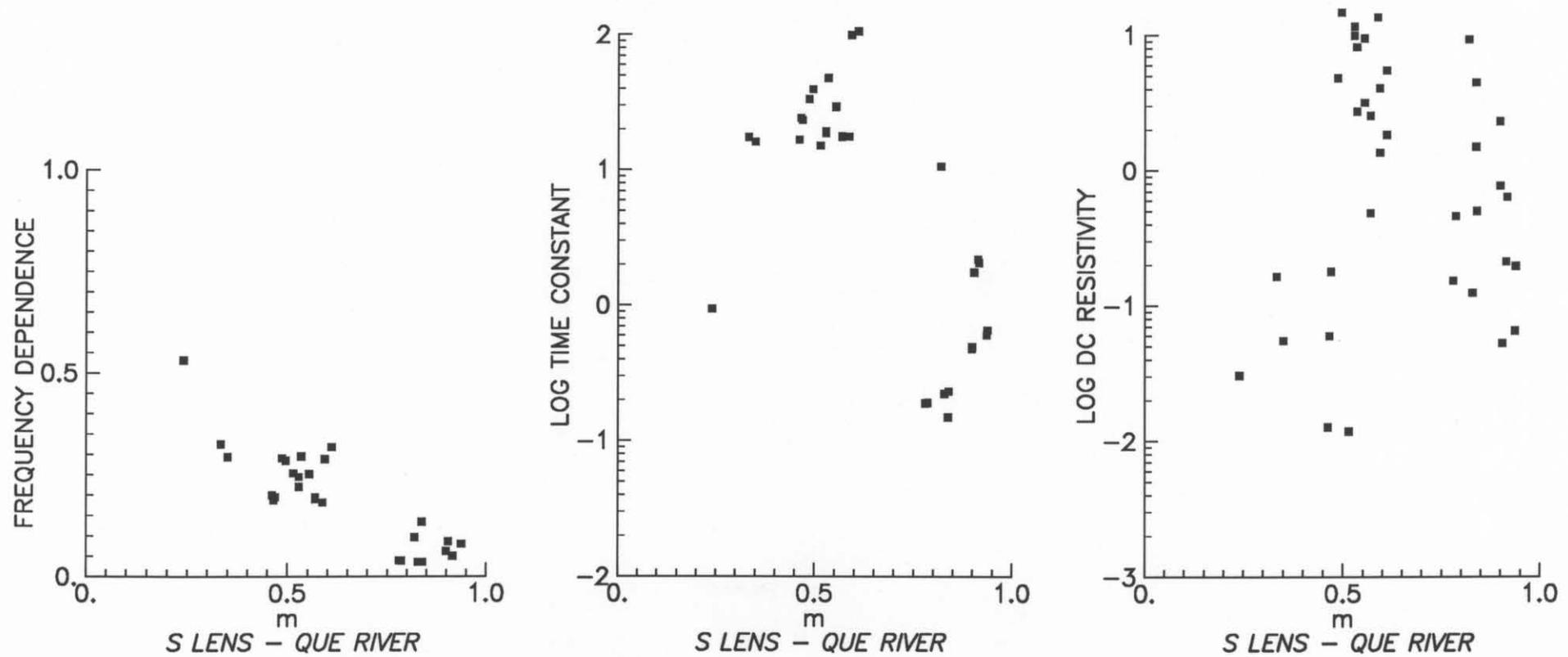
Data from 22 cases. Spectral data from 40 cases. ( 40 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

| PARAMETER                      | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |      |      |      |      |      |
|--------------------------------|----------|----------|----------|-----------------------|------|------|------|------|------|
| Chargeability                  | .227E+02 | .114E+03 | .685E+02 | .240E+02              |      |      |      |      |      |
| Average Window Chargeabilities |          |          |          |                       |      |      |      |      |      |
| 1                              | 2        | 3        | 4        | 5                     | 6    | 7    | 8    | 9    | 10   |
| 13.66                          | 10.05    | 8.26     | 7.03     | 6.17                  | 5.48 | 5.08 | 4.64 | 4.23 | 3.94 |

Data from 20 cases.





## Electrical Properties - Western Tasmania

D34

BLACK SHALES at RED HILLS

MRV0039

The black shales at the Red Hills provide excellent IP anomalies and are an example of a black shale that can clearly provide problems in exploration.

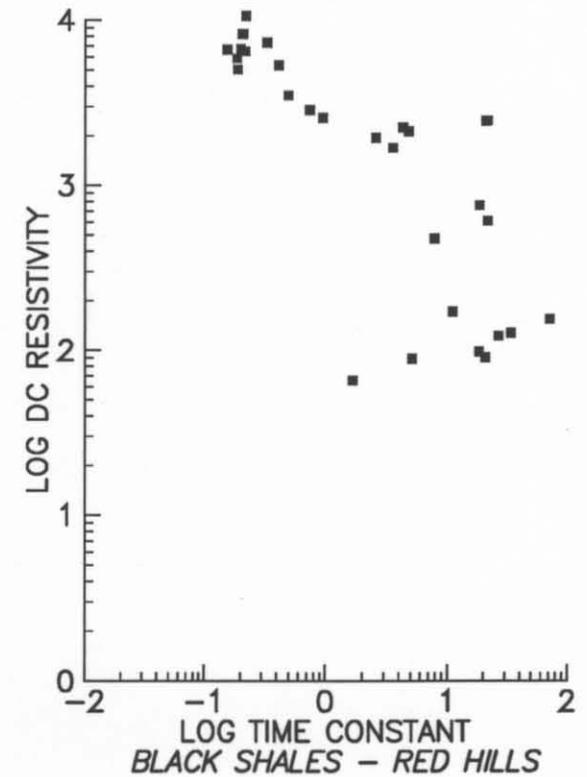
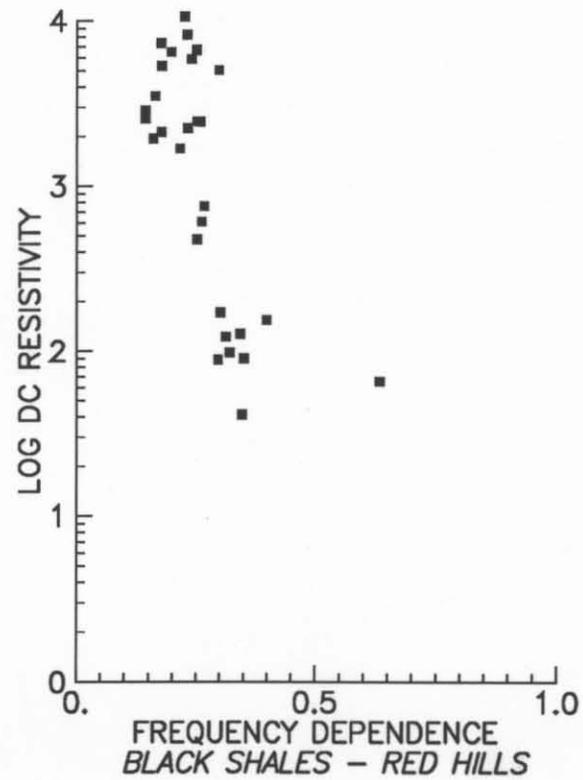
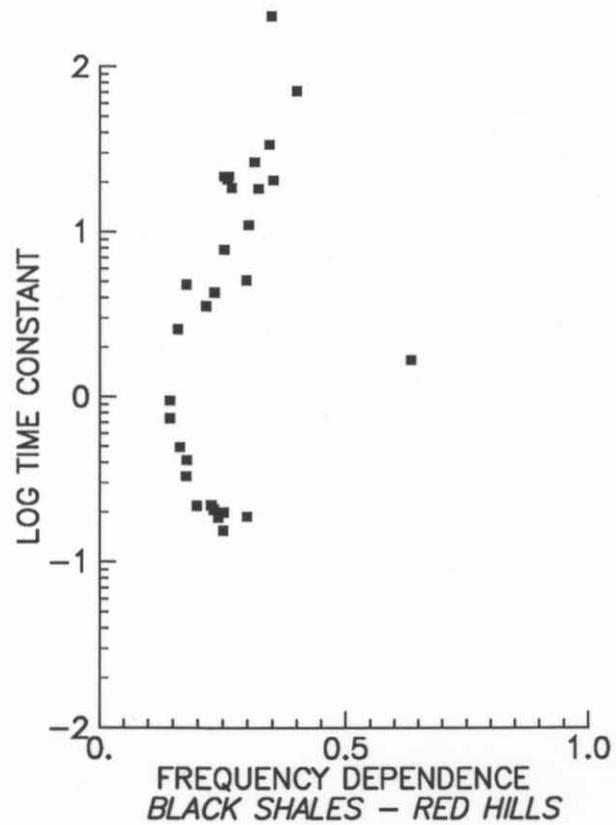
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .152E+02 | .781E+04 | .238E+04 | .250E+04              |
| Chargeability | .383E+02 | .171E+03 | .914E+02 | .333E+02              |
| R0            | .413E+02 | .106E+05 | .308E+04 | .305E+04              |
| $\tau$        | .155E+00 | .202E+03 | .162E+02 | .370E+02              |
| c             | .14      | .63      | .26      | .09                   |
| m             | .30      | .77      | .57      | .14                   |

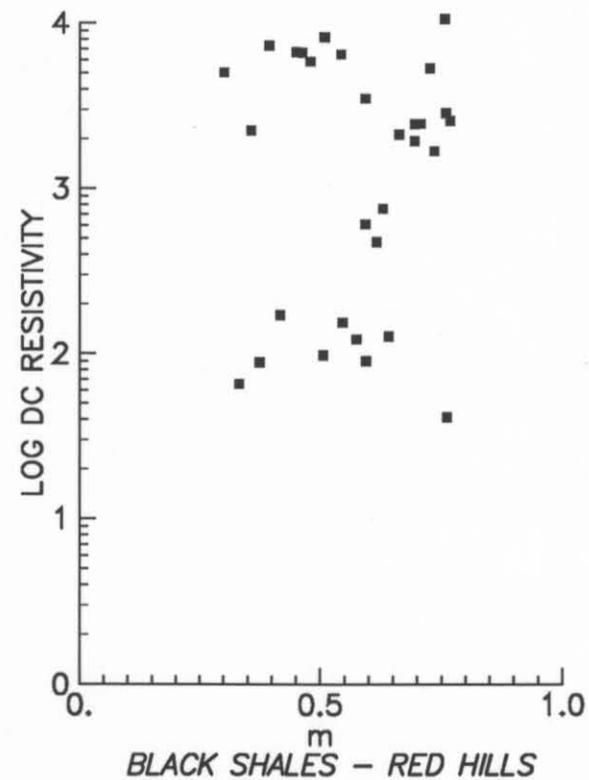
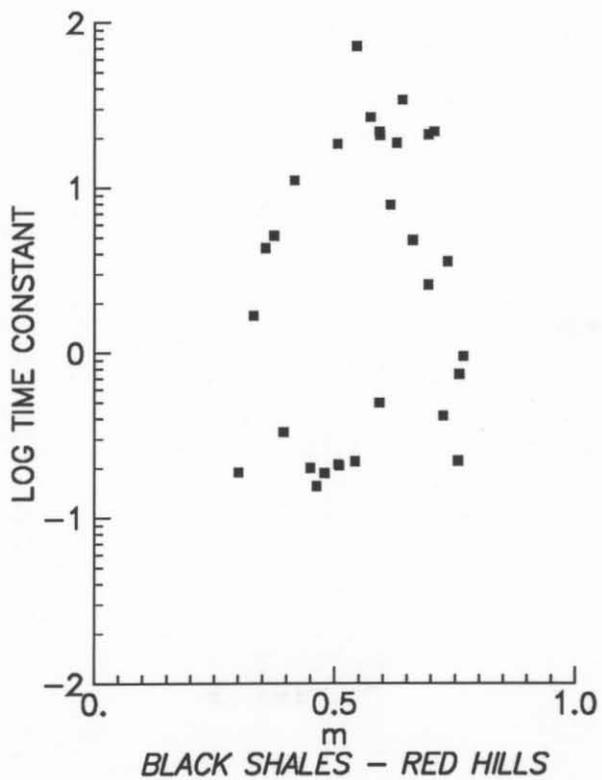
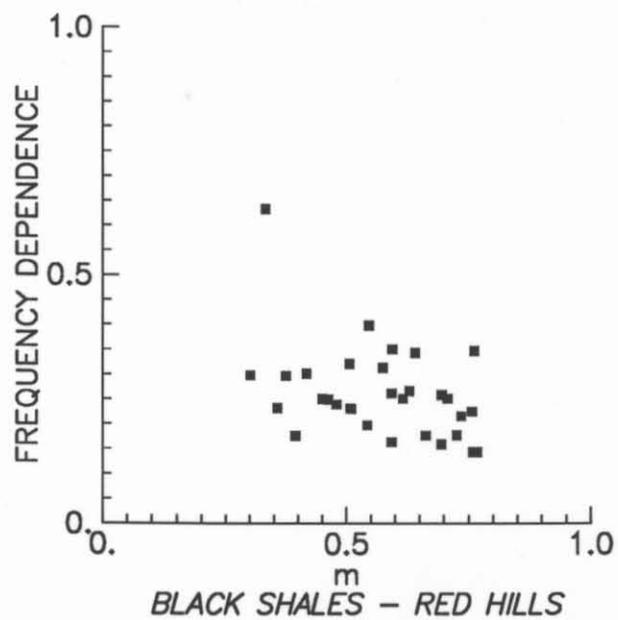
Data from 31 cases. Spectral data from 31 cases. ( 31 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |      |      |      |      |      |      |      |
|-------|-------|-------|------|------|------|------|------|------|------|
| 1     | 2     | 3     | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 18.42 | 13.54 | 11.04 | 9.45 | 8.21 | 7.32 | 6.62 | 6.04 | 5.55 | 5.14 |





## Electrical Properties - Western Tasmania

D35

ROSEBERY SITE 1 (HOST ROCK WITH VEIN)

MRV0065

Underground measurement on a vein and its host rock at the Rosebery mine.

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|-------------|----------|----------|----------|--------------------|
| Resistivity | .270E+02 | .460E+02 | .364E+02 | .726E+01           |
| R0          | .603E+02 | .104E+03 | .819E+02 | .176E+02           |
| $\tau$      | .154E+02 | .350E+02 | .236E+02 | .834E+01           |
| c           | .25      | .27      | .26      | .01                |
| m           | .79      | .81      | .80      | .01                |

Data from 5 cases. Spectral data from 3 cases. ( 5 Sites measured).

Time Delay = 450. ms Window Width = 65. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .707E+02 | .707E+02 | .707E+02 | .000E+00           |

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|------|------|------|------|------|------|------|------|------|------|
| 8.94 | 8.38 | 7.89 | 7.46 | 7.09 | 6.75 | 6.44 | 6.17 | 5.92 | 5.69 |

Data from 1 case.

Time Delay = 25. ms Window Width = 120. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .174E+03 | .174E+03 | .174E+03 | .950E-01           |

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 34.25 | 24.85 | 20.60 | 17.78 | 15.80 | 14.27 | 13.02 | 12.00 | 11.15 | 10.41 |

Data from 2 cases.

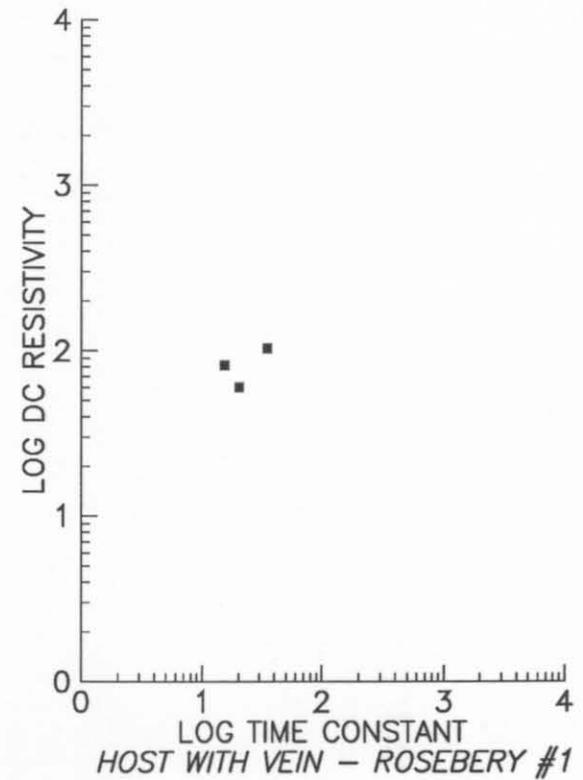
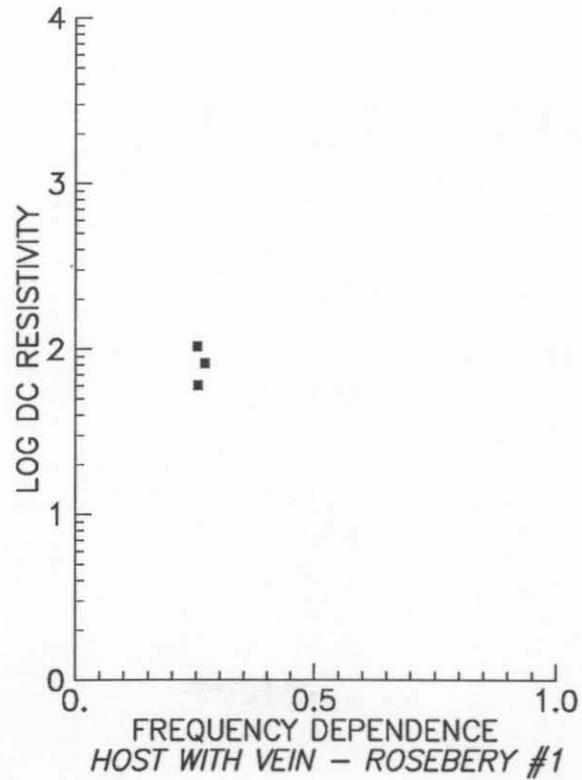
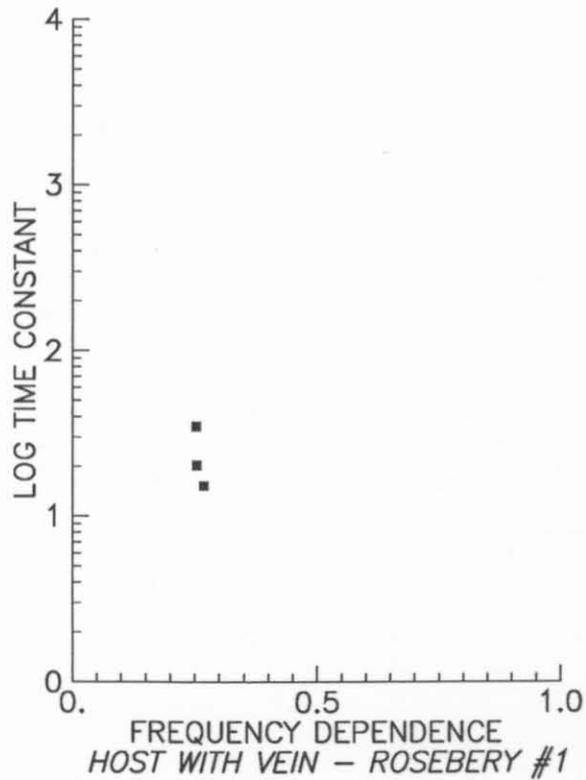
Time Delay = 100. ms Window Width = 150. ms

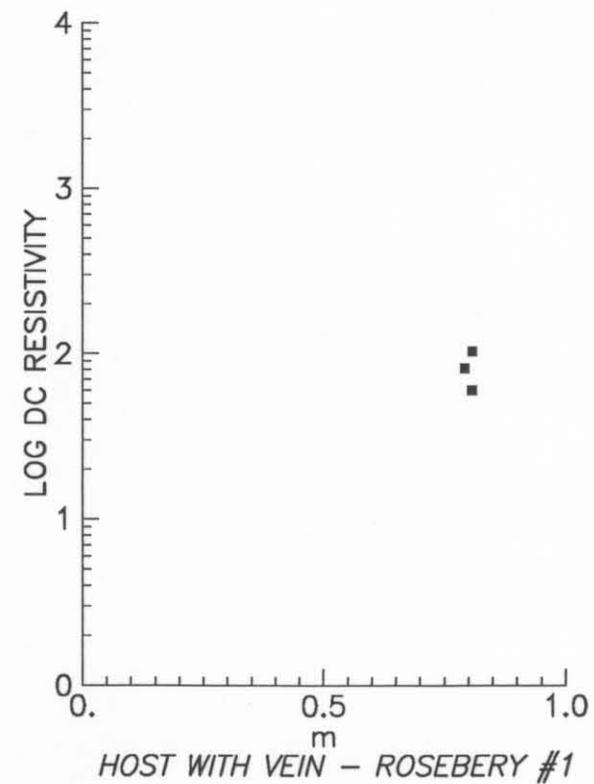
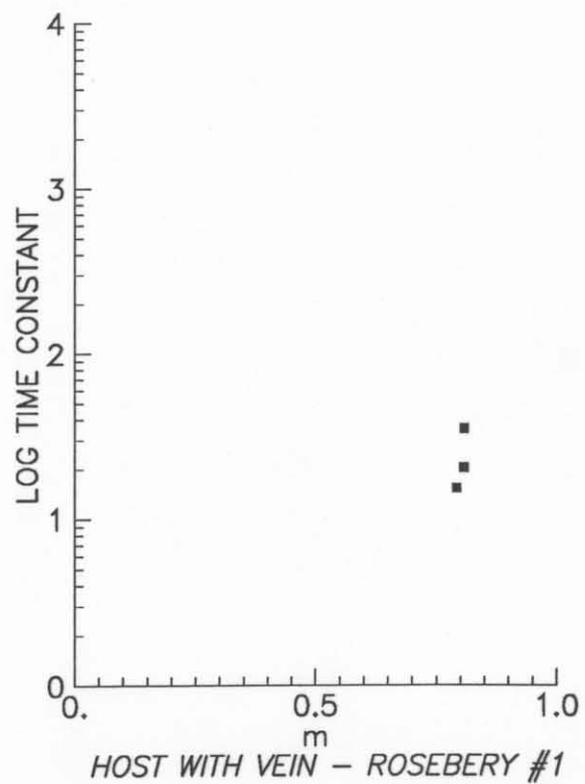
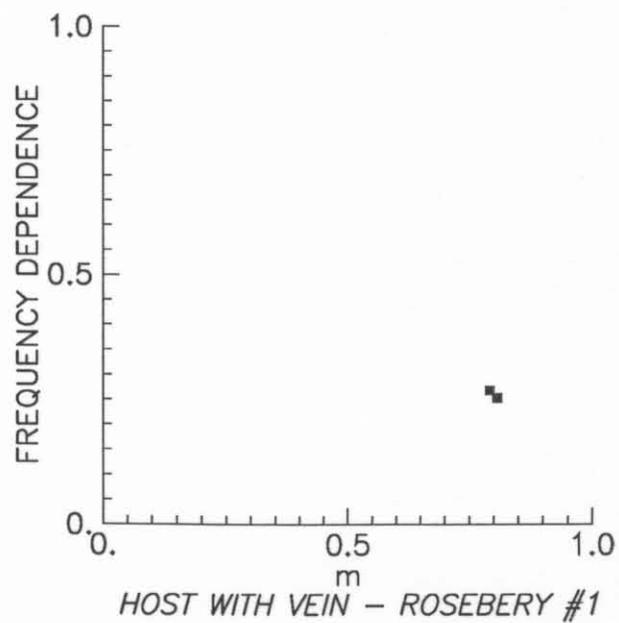
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .174E+03 | .181E+03 | .177E+03 | .322E+01           |

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 33.05 | 25.45 | 21.25 | 18.47 | 16.38 | 14.76 | 13.45 | 12.38 | 11.47 | 10.68 |

Data from 2 cases.





## Electrical Properties - Western Tasmania

D36

ROSEBERY SITE 2 (HOST ROCK, D LENS)

MRV0066

Measurements on the host rocks of the D lens.

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|-------------|----------|----------|----------|-----------------------|
| Resistivity | .218E+03 | .757E+03 | .497E+03 | .212E+03              |
| R0          | .258E+03 | .571E+03 | .431E+03 | .130E+03              |
| $\tau$      | .843E-01 | .100E+00 | .933E-01 | .665E-02              |
| c           | .19      | .29      | .23      | .04                   |
| m           | .04      | .41      | .22      | .16                   |

Data from 6 cases. Spectral data from 3 cases. ( 6 Sites measured).

Time Delay = 25. ms Window Width = 120. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Chargeability | .149E+02 | .416E+02 | .299E+02 | .114E+02              |

Average Window Chargeabilities

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| 6.84 | 4.47 | 3.58 | 2.99 | 2.60 | 2.28 | 2.05 | 1.85 | 1.73 | 1.56 |

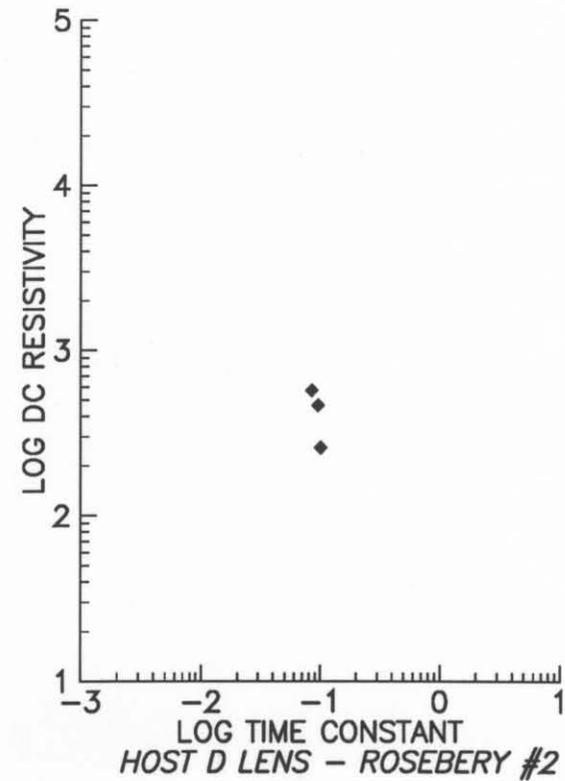
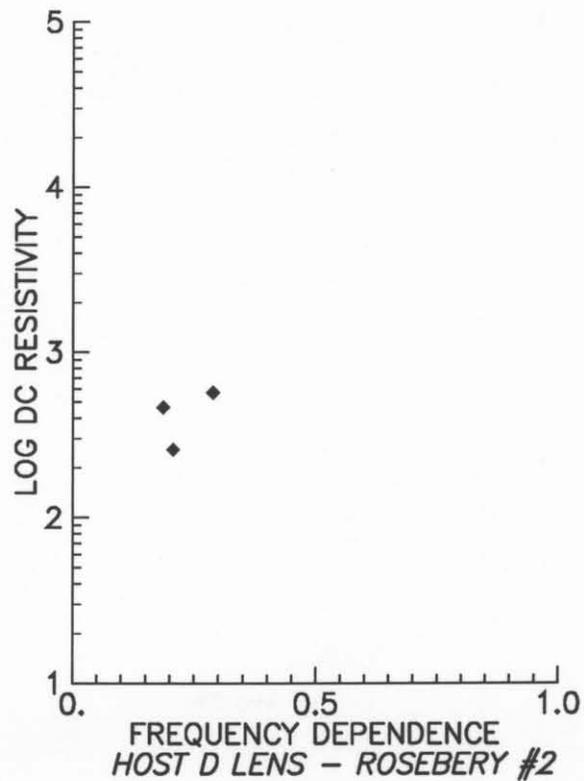
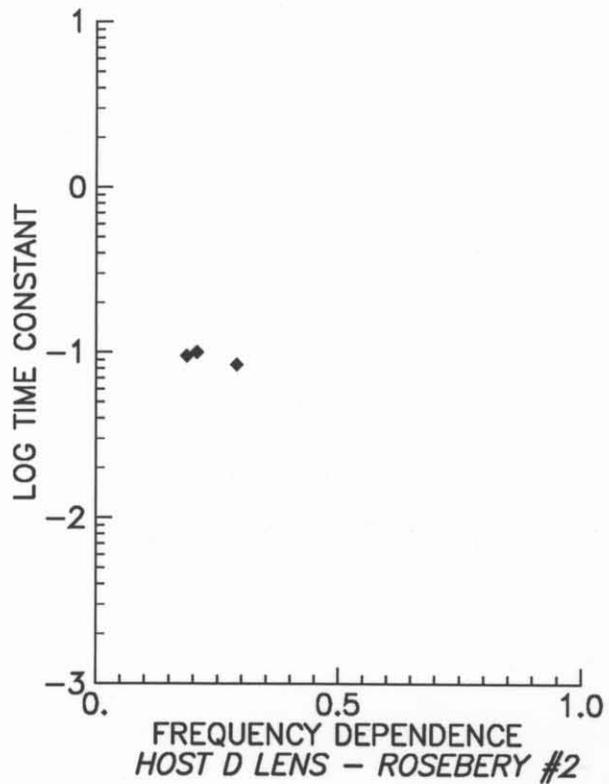
Data from 4 cases.

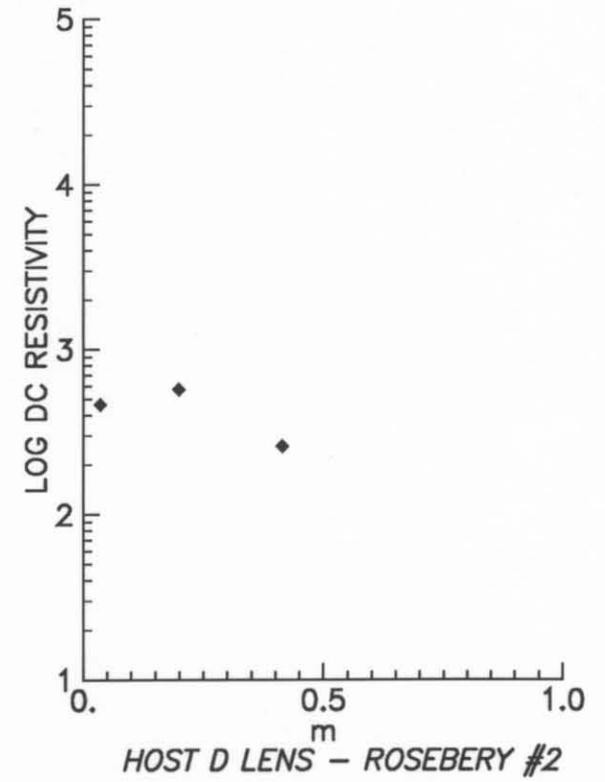
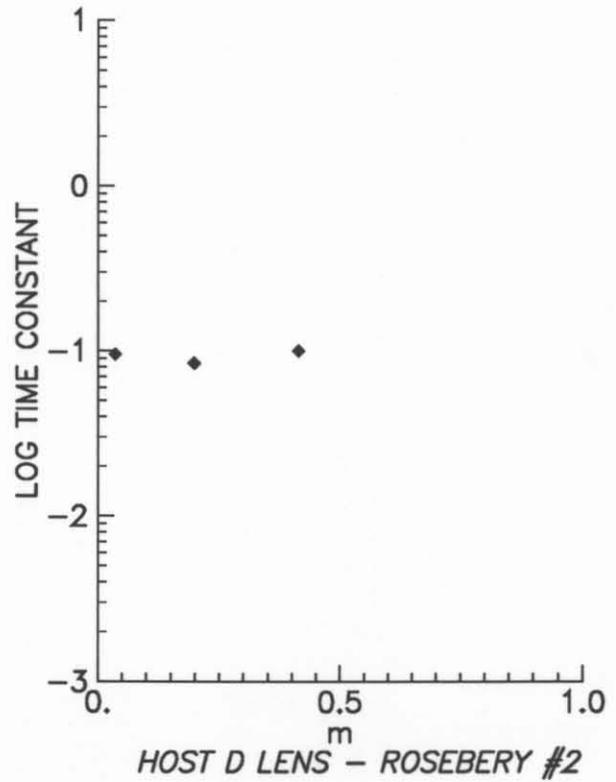
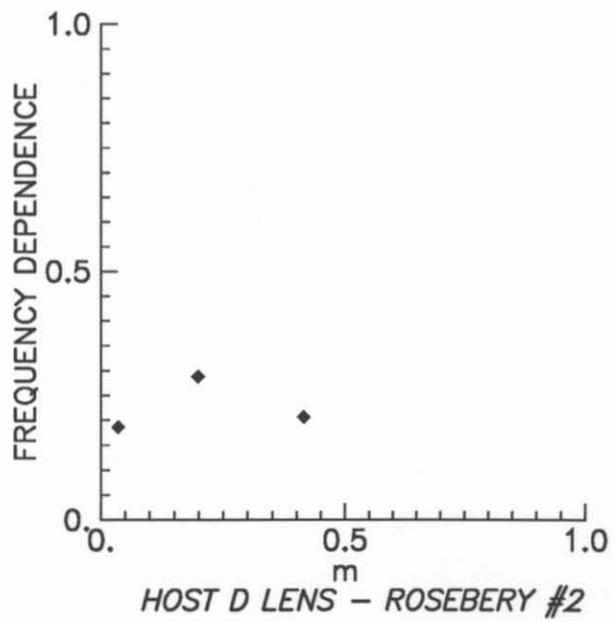
Time Delay = 100. ms Window Width = 150. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Chargeability | .726E+01 | .223E+02 | .148E+02 | .752E+01              |

|      |      |      |      |      |      |     |     |     |     |
|------|------|------|------|------|------|-----|-----|-----|-----|
| 1    | 2    | 3    | 4    | 5    | 6    | 7   | 8   | 9   | 10  |
| 3.55 | 2.45 | 1.87 | 1.53 | 1.28 | 1.05 | .94 | .78 | .70 | .62 |

Data from 2 cases.





## Electrical Properties - Western Tasmania

D37

ROSEBERY SITE 3 (PYRITIC HOST PARALLEL TO STRIKE)

MRV0067

Measurements on pyritic host rocks with the electrode array oriented along strike.

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|-------------|----------|----------|----------|--------------------|
| Resistivity | .160E+01 | .240E+01 | .213E+01 | .377E+00           |
| R0          | .153E+01 | .261E+01 | .207E+01 | .538E+00           |
| $\tau$      | .969E-01 | .102E+00 | .993E-01 | .234E-02           |
| c           | .14      | .17      | .15      | .01                |
| m           | .01      | .20      | .11      | .09                |

Data from 3 cases. Spectral data from 2 cases. ( 3 Sites measured).

Time Delay = 25. ms Window Width = 120. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .126E+01 | .135E+02 | .740E+01 | .614E+01           |

Average Window Chargeabilities

| 1    | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.65 | 1.04 | .90 | .64 | .65 | .59 | .53 | .49 | .47 | .44 |

Data from 2 cases.

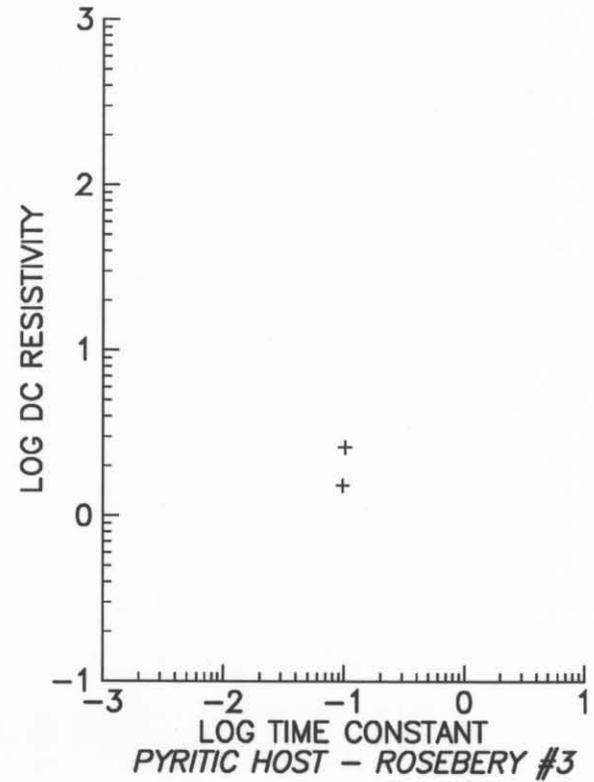
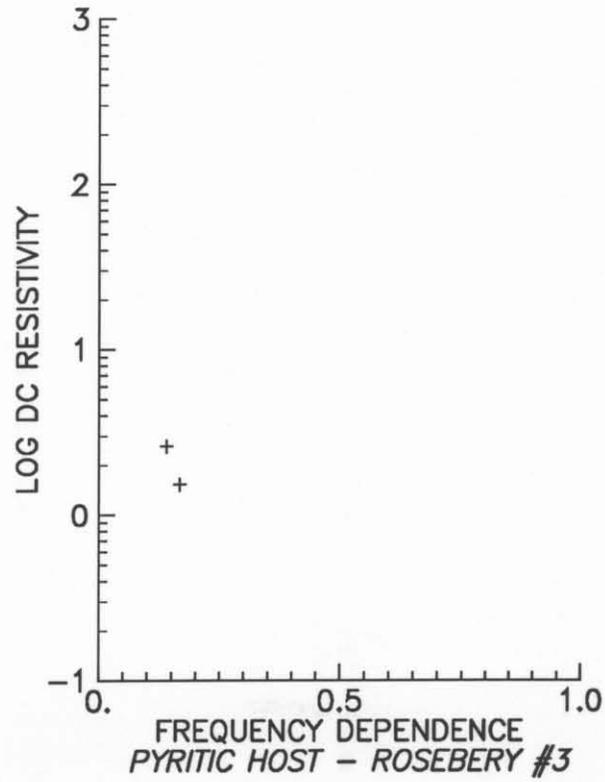
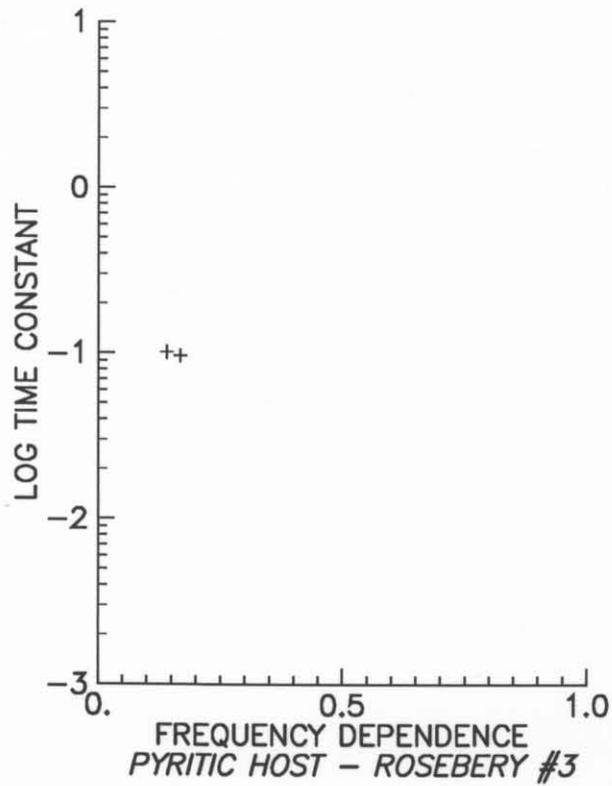
Time Delay = 100. ms Window Width = 150. ms

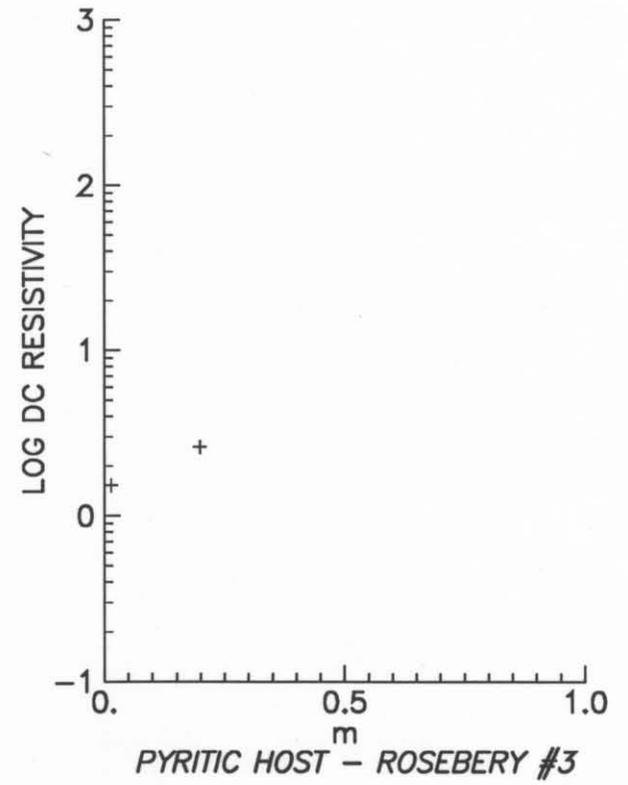
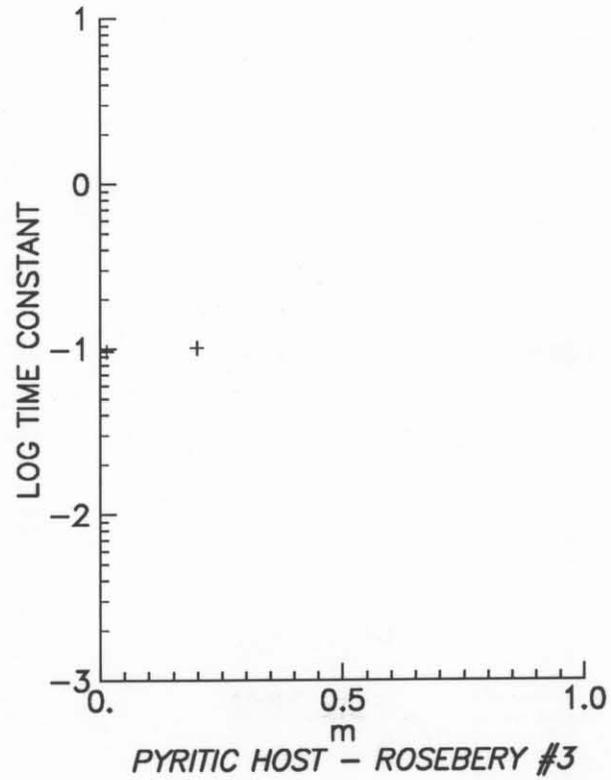
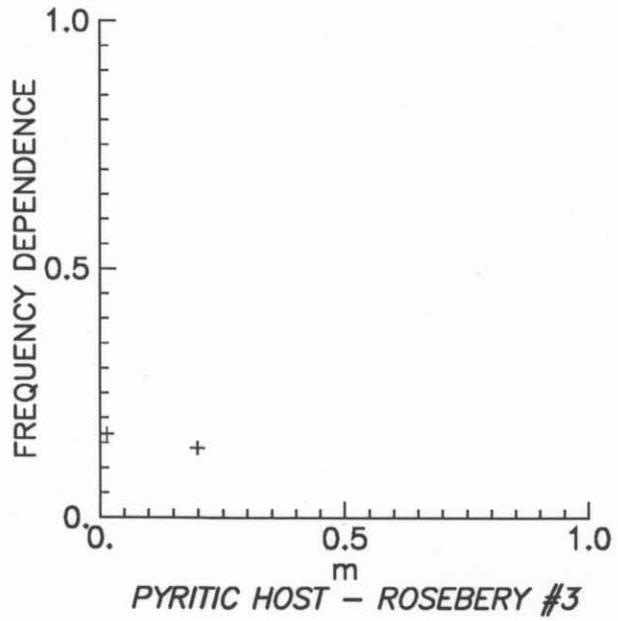
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .130E+02 | .130E+02 | .130E+02 | .000E+00           |

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7   | 8   | 9   | 10  |
|------|------|------|------|------|------|-----|-----|-----|-----|
| 2.70 | 2.00 | 1.14 | 1.43 | 1.27 | 1.10 | .99 | .93 | .79 | .68 |

Data from 1 case.





## Electrical Properties - Western Tasmania

D38

ROSEBERY SITE 4 (H LENS - BARYTIC)

MRV0068

Measurements on the barytic part of the H lens mineralization. Baryte seems to be a common associate of massive volcanic sulphides in the Mt. Read volcanics.

| PARAMETER   | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|-------------|----------|----------|----------|--------------------|
| Resistivity | .319E+03 | .335E+03 | .327E+03 | .800E+01           |
| R0          | .508E+03 | .508E+03 | .508E+03 | .000E+00           |
| $\tau$      | .344E+00 | .344E+00 | .344E+00 | .000E+00           |
| c           | .24      | .24      | .24      | .00                |
| m           | .89      | .89      | .89      | .00                |

Data from 2 cases. Spectral data from 1 case. ( 2 Sites measured).

Time Delay = 100. ms Window Width = 150. ms

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .141E+03 | .141E+03 | .141E+03 | .000E+00           |

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8    | 9    | 10   |
|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 28.30 | 21.20 | 17.76 | 14.66 | 12.70 | 11.30 | 10.10 | 9.20 | 8.40 | 7.70 |

Data from 1 case.

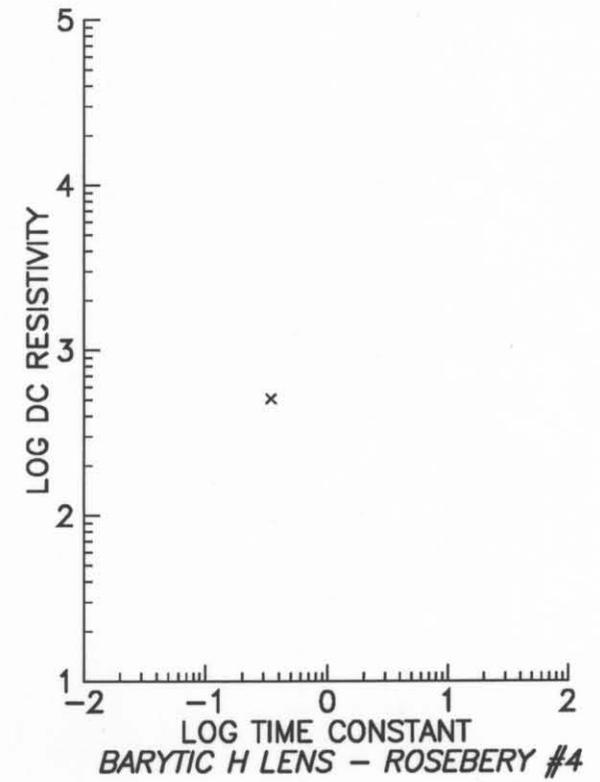
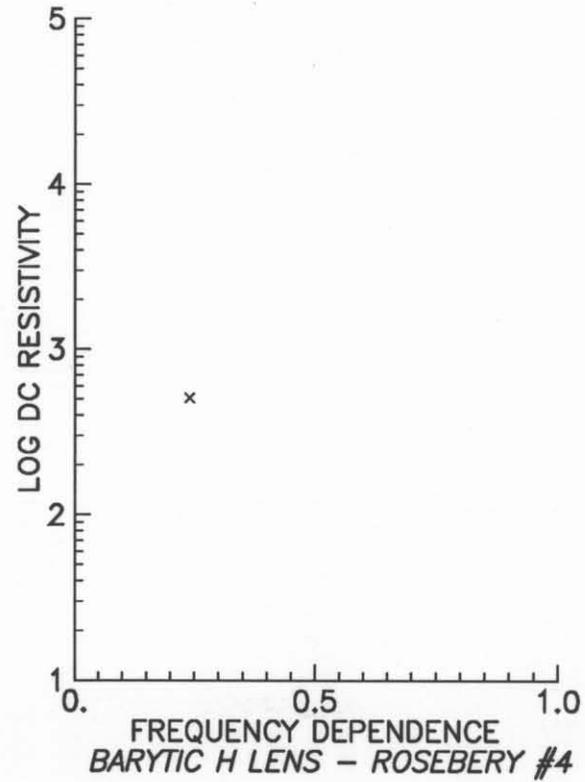
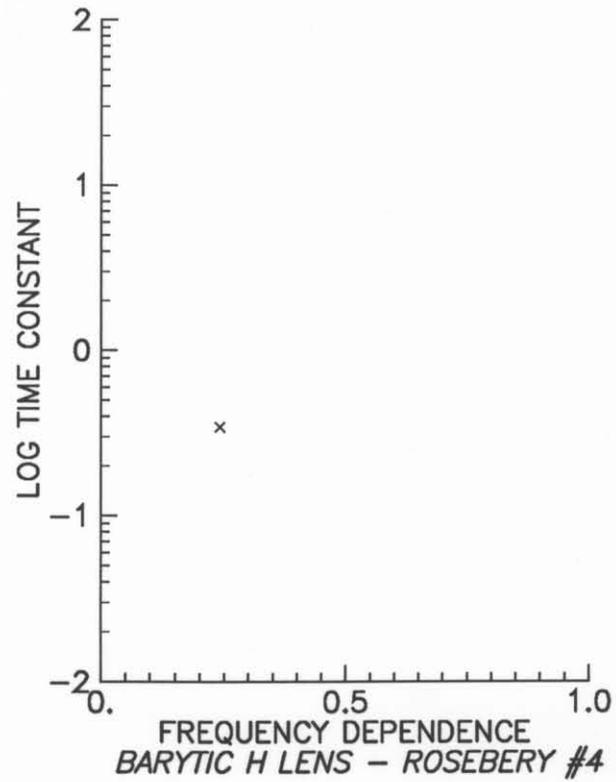
Time Delay = 25. ms Window Width = 120. ms

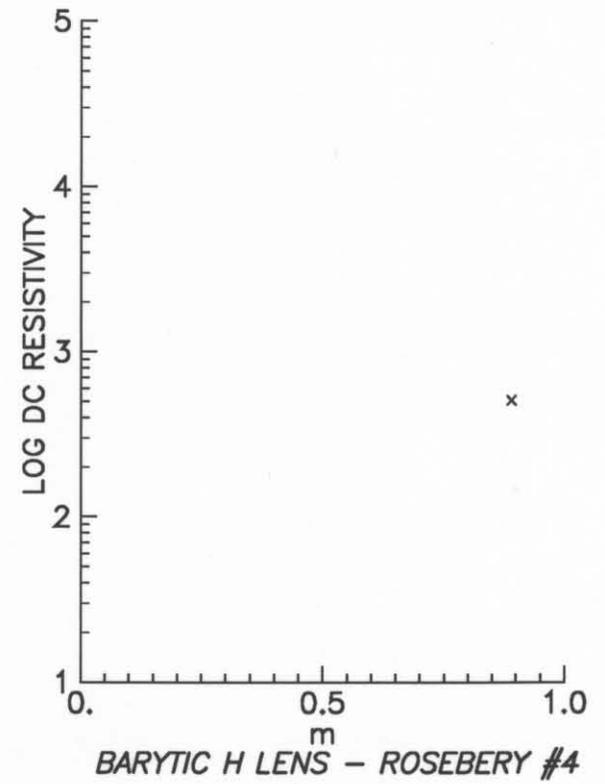
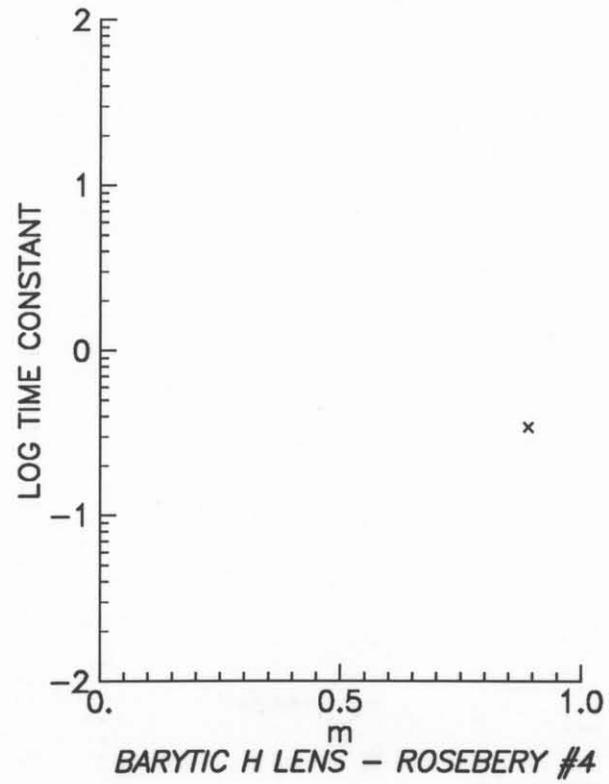
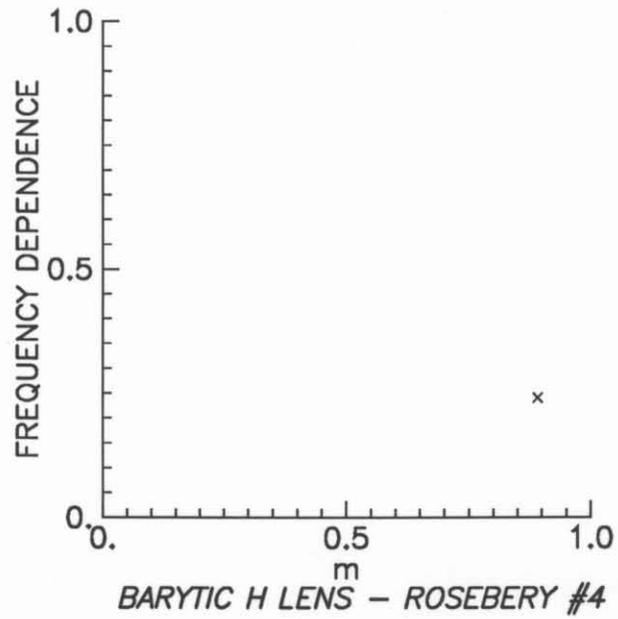
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Chargeability | .143E+03 | .143E+03 | .143E+03 | .000E+00           |

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8    | 9    | 10   |
|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 30.30 | 21.30 | 17.20 | 14.60 | 12.70 | 11.20 | 10.10 | 9.20 | 8.40 | 7.70 |

Data from 1 case.





## Electrical Properties - Western Tasmania

D39

ROSEBERY SITE 5 (H LENS ORE)

MRV0069

Measurements on the ore of the H lens.

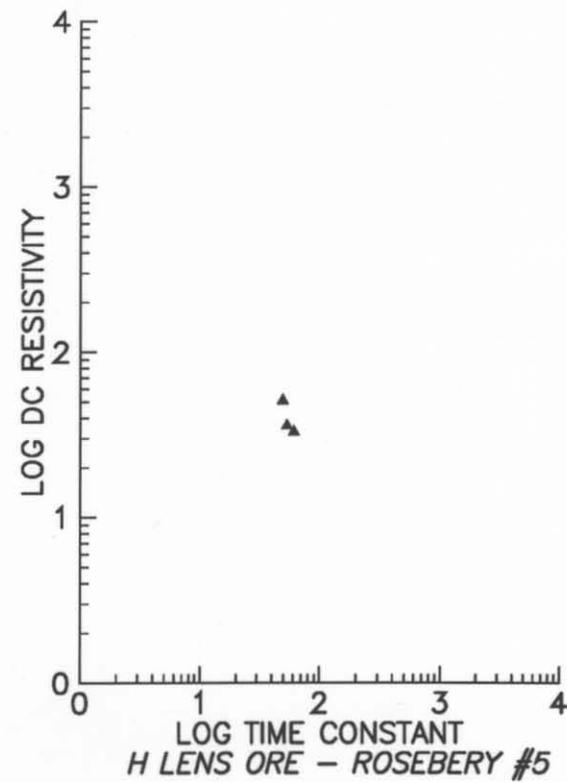
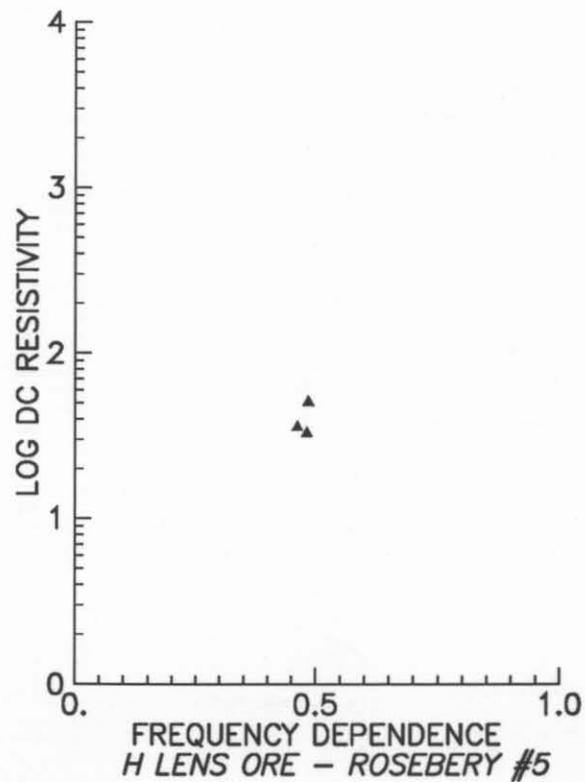
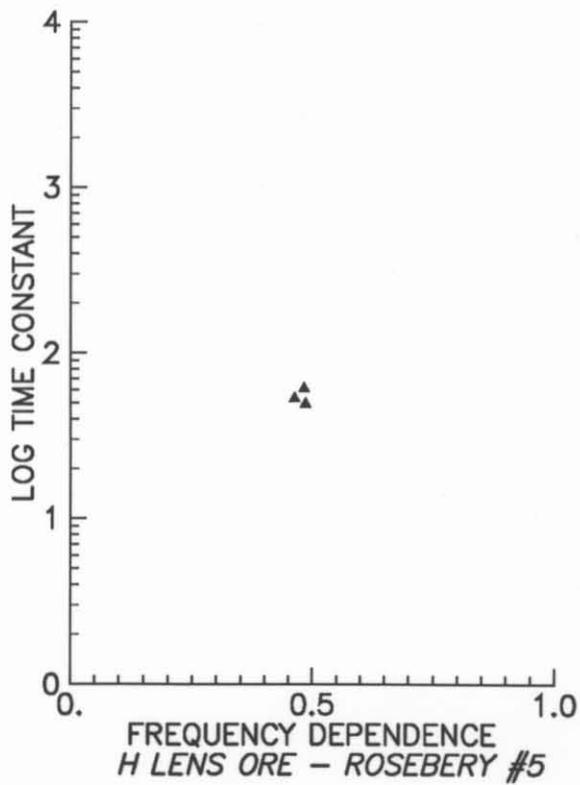
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .550E+01 | .110E+02 | .777E+01 | .235E+01              |
| Chargeability | .416E+03 | .523E+03 | .476E+03 | .448E+02              |
| R0            | .328E+02 | .507E+02 | .398E+02 | .783E+01              |
| $\tau$        | .493E+02 | .610E+02 | .545E+02 | .485E+01              |
| c             | .46      | .48      | .48      | .01                   |
| m             | .91      | .96      | .94      | .02                   |

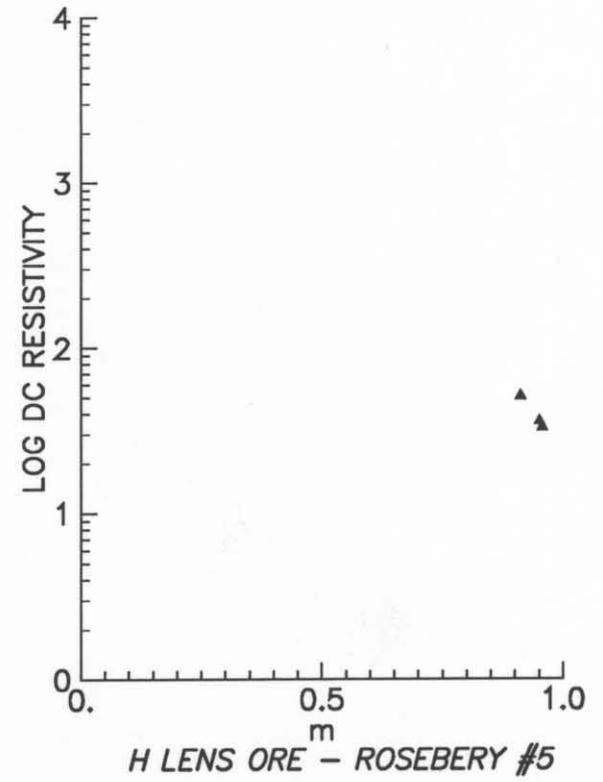
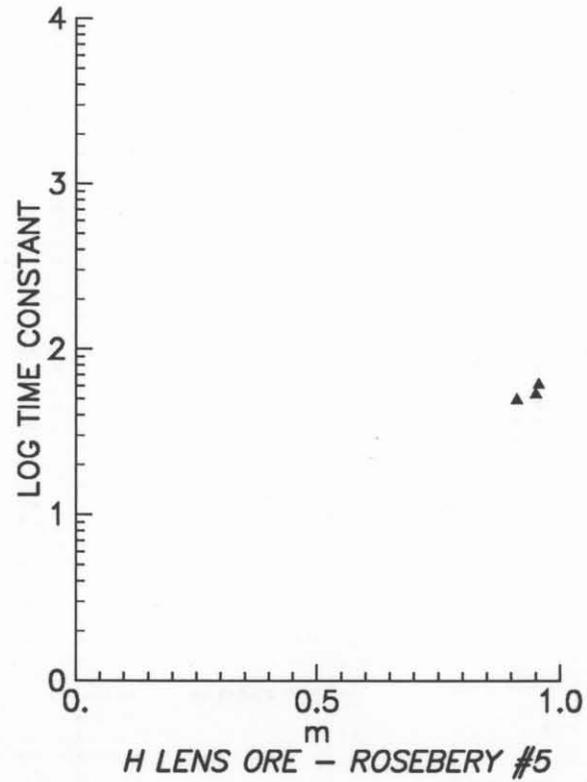
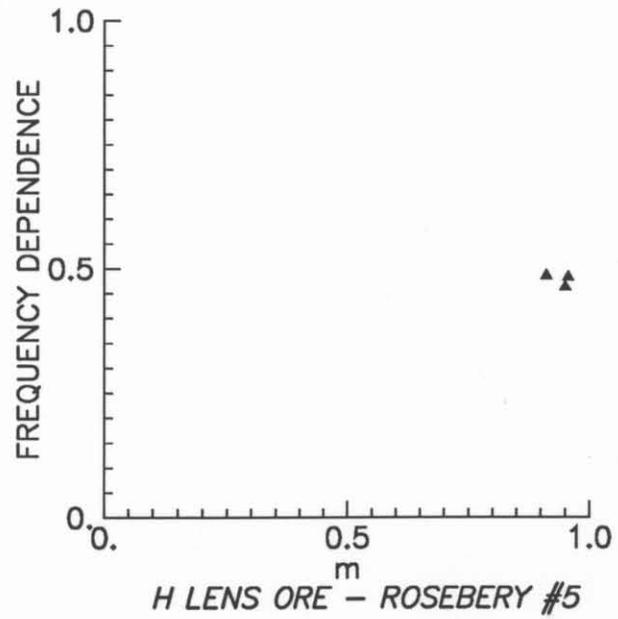
Data from 3 cases. Spectral data from 3 cases. ( 3 Sites measured).

Time Delay = 25. ms Window Width = 120. ms

Average Window Chargeabilities

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| 75.93 | 61.60 | 55.13 | 49.60 | 45.67 | 42.37 | 39.87 | 37.20 | 35.27 | 33.43 |





## Electrical Properties - Western Tasmania

D40

ROSEBERY SITE 6 (MASSIVE PYROCLASTICS)

MRV0070

Measurements from massive pyroclastics underground. It is thought that the transmitter had problems with the high resistivities so there is no spectral data.

| PARAMETER                      | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|--------------------------------|----------|----------|----------|-----------------------|
| Resistivity                    | .614E+04 | .663E+04 | .638E+04 | .244E+03              |
| Resistivity data from 2 cases. |          |          |          |                       |

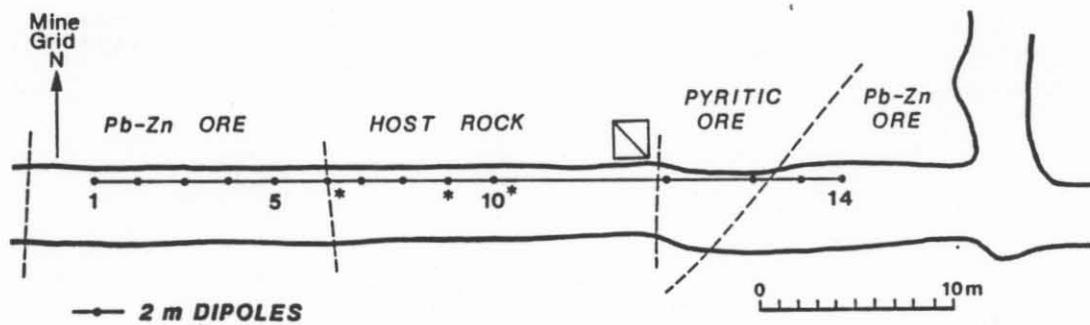
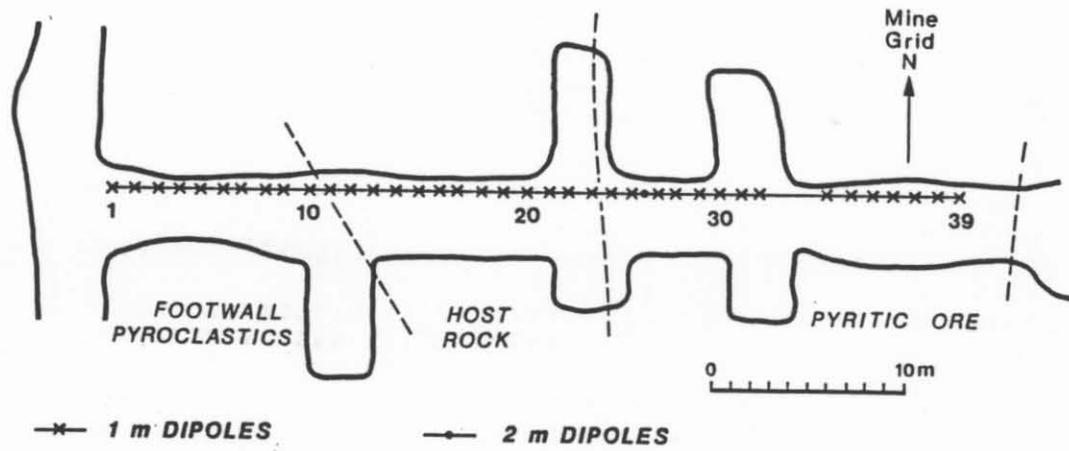


Figure A4. Locality maps for sites 7 (top) and 8 in the Rosebery Mine. Both are on the 16 Level. Site 7 is in the No 1 sub, S-5N crosscut east. Site 8 is in the No 1 sub, S-6N crosscut east. From Bishop & Lewis (1984).

## Electrical Properties - Western Tasmania

D42

ROSEBERY SITE 7 (FOOTWALL PYROCLASTICS/HOST/ORE)

MRV0071

These results are for a section through pyritic footwall pyroclastics, host rocks and ore. For details see Figure 29.

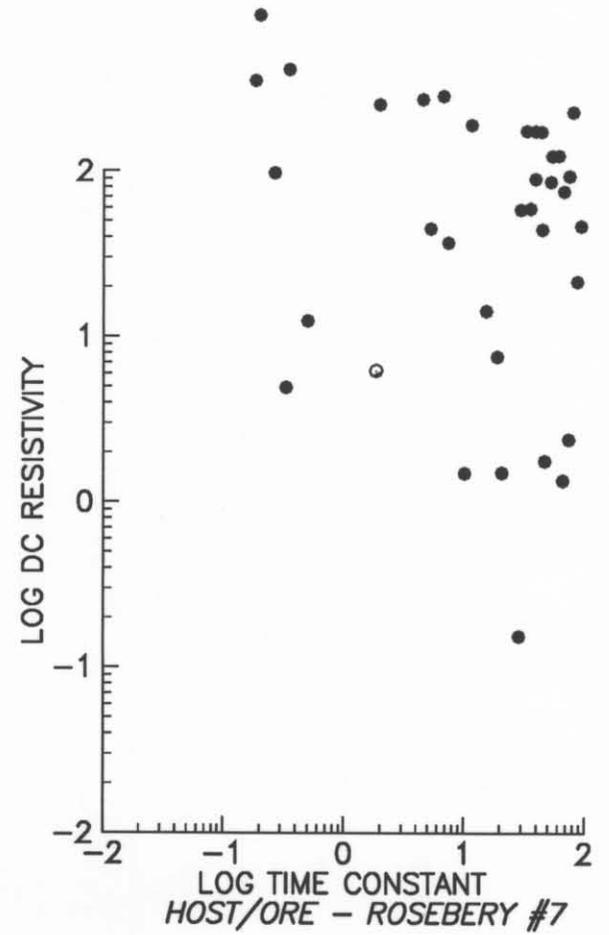
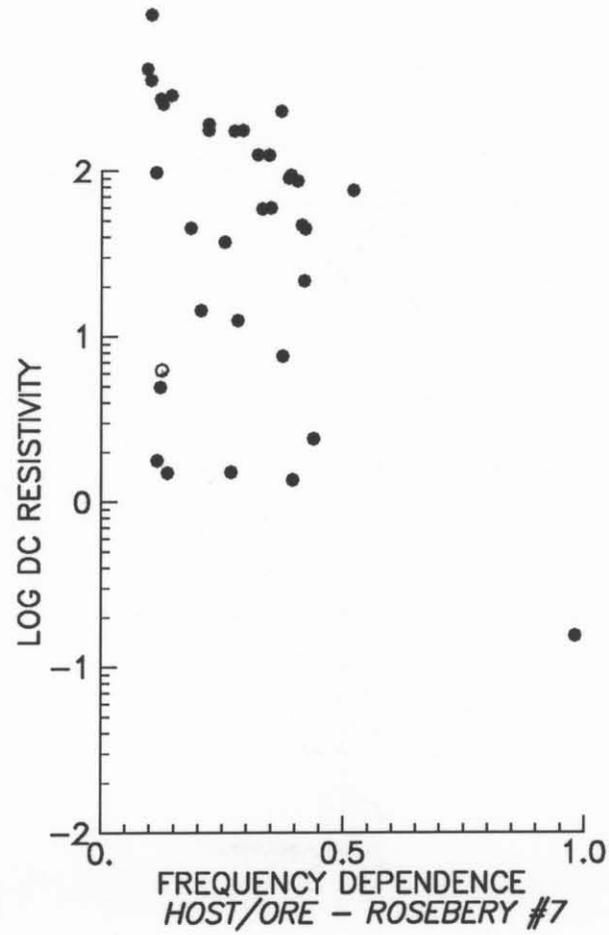
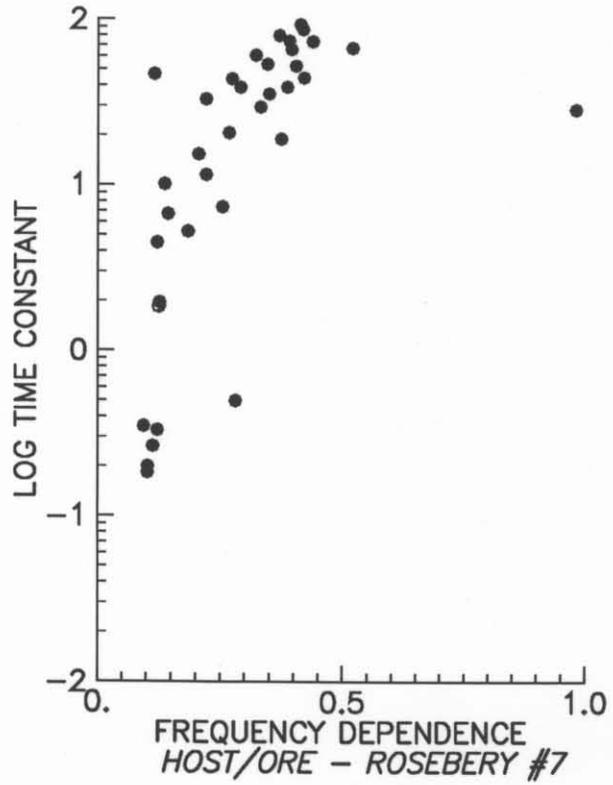
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .300E-01 | .544E+03 | .605E+02 | .988E+02              |
| Chargeability | .591E+02 | .382E+03 | .170E+03 | .903E+02              |
| R0            | .155E+00 | .873E+03 | .124E+03 | .166E+03              |
| $\tau$        | .184E+00 | .932E+02 | .321E+02 | .286E+02              |
| c             | .09      | .98      | .29      | .17                   |
| m             | .56      | .94      | .81      | .11                   |

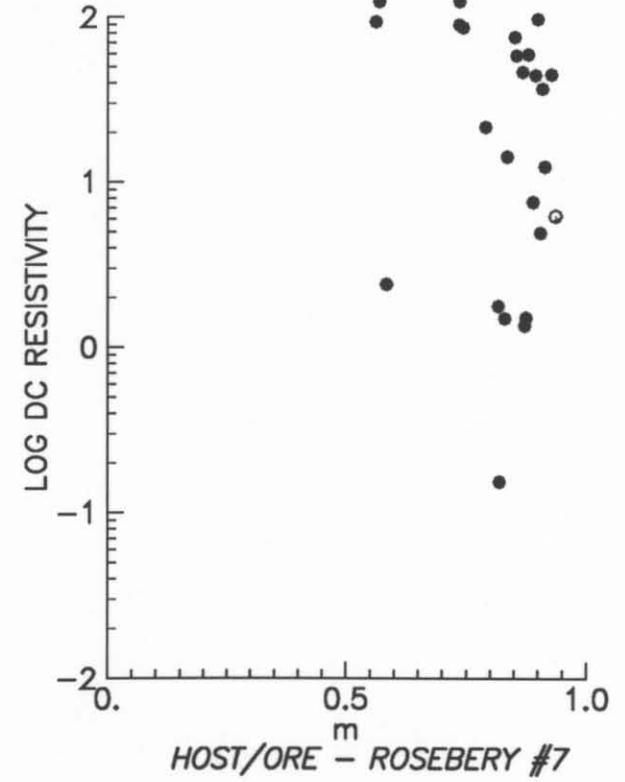
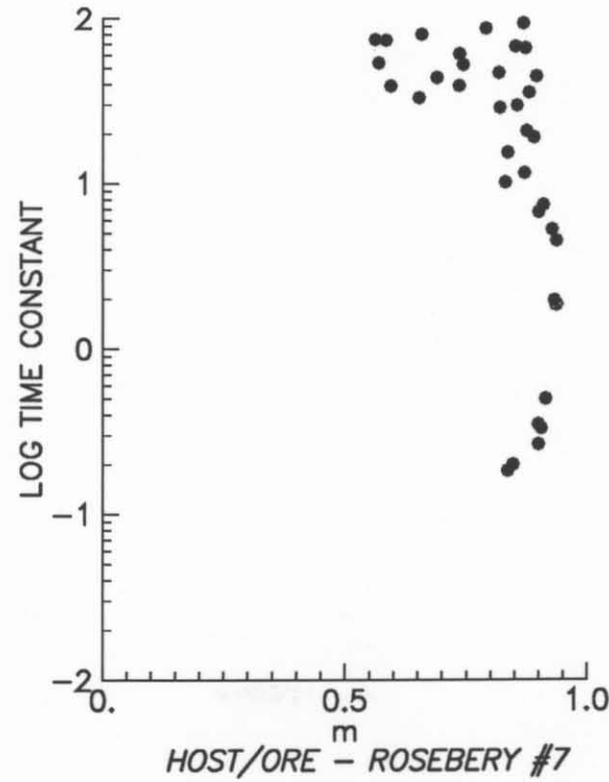
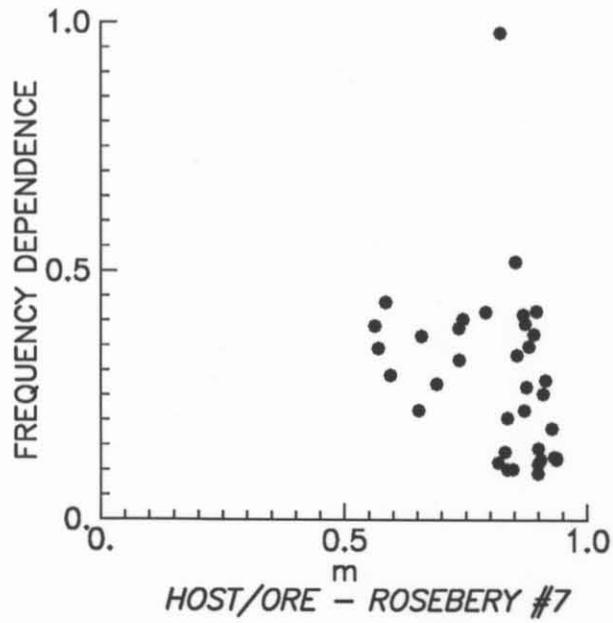
Data from 36 cases. Spectral data from 36 cases. ( 39 Sites measured).

Time Delay = 100. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 29.59 | 23.58 | 20.01 | 17.62 | 15.92 | 14.56 | 13.51 | 12.51 | 11.61 | 10.79 |





## Electrical Properties - Western Tasmania

D43

ROSEBERY SITE 8 (ORE/HOST ROCKS)

MRV0072

These results are for a suite of ores and host rocks. See Figure 29 for details.

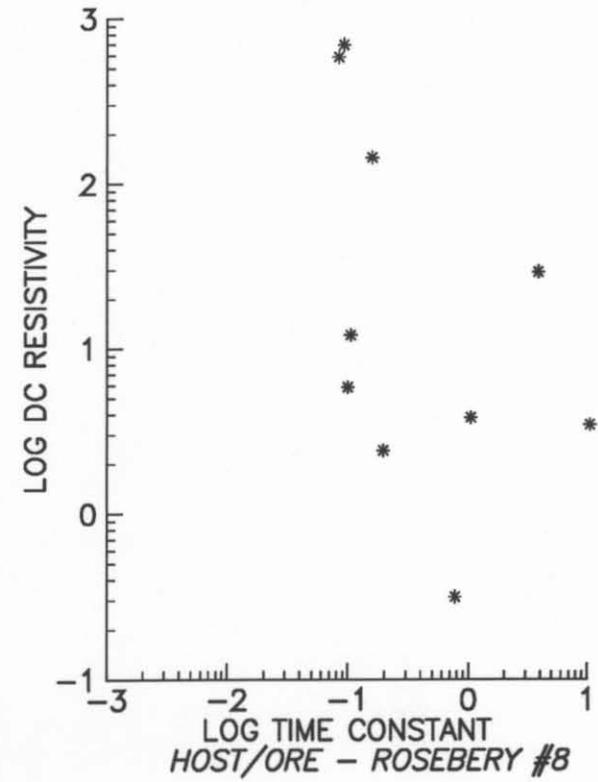
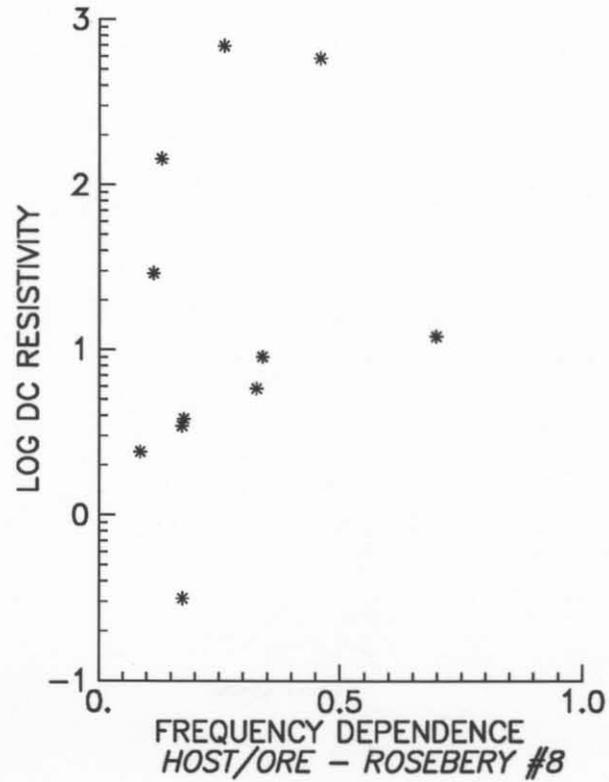
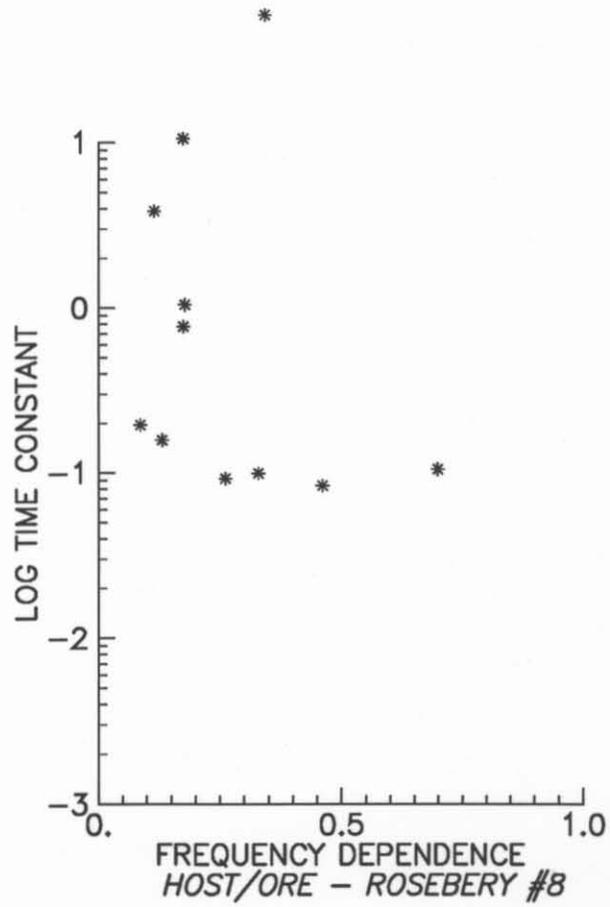
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .180E+00 | .661E+03 | .980E+02 | .214E+03              |
| Chargeability | .137E+02 | .202E+03 | .739E+02 | .541E+02              |
| R0            | .314E+00 | .694E+03 | .135E+03 | .242E+03              |
| $\tau$        | .837E-01 | .589E+02 | .690E+01 | .167E+02              |
| c             | .09      | .70      | .27      | .17                   |
| m             | .11      | .94      | .64      | .33                   |

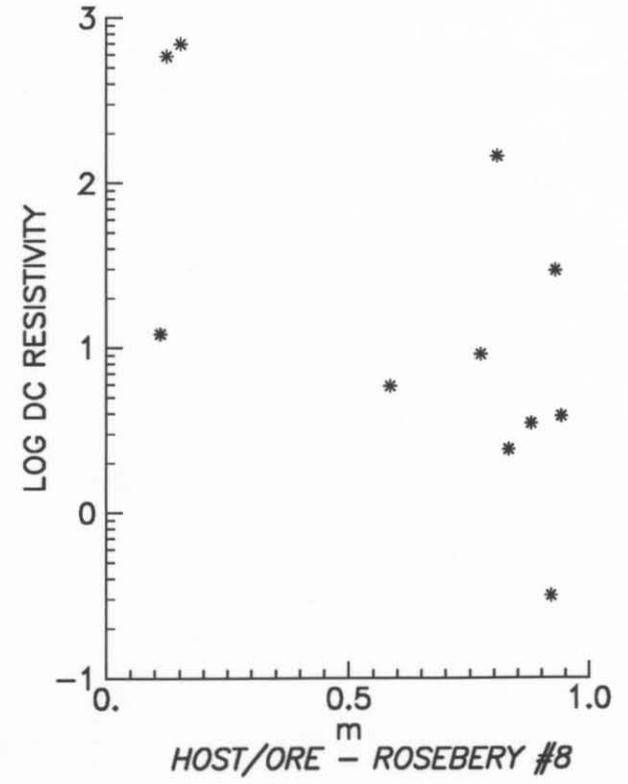
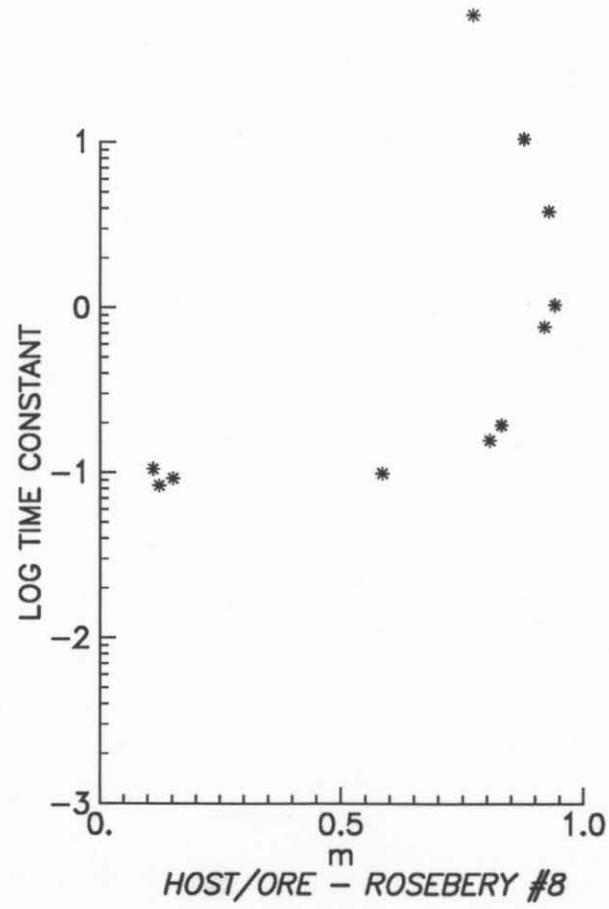
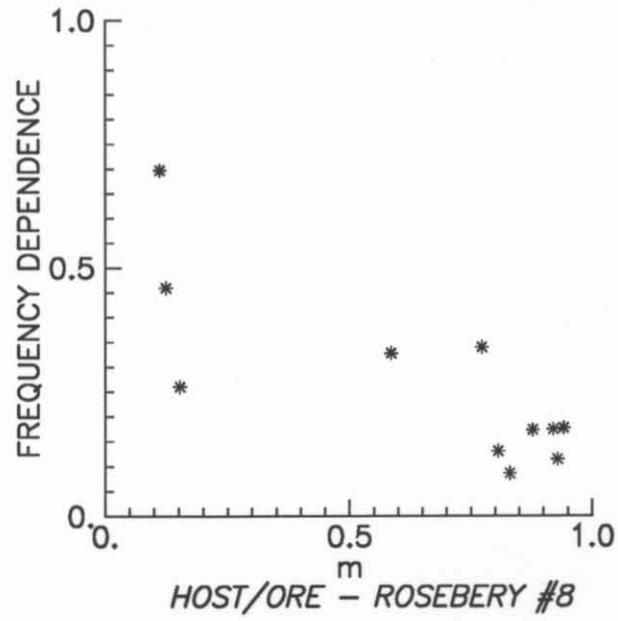
Data from 14 cases. Spectral data from 11 cases. ( 14 Sites measured).

Time Delay = 100. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|-------|------|------|------|------|------|------|------|------|
| 14.90 | 11.05 | 8.95 | 7.64 | 6.66 | 5.93 | 5.33 | 4.88 | 4.41 | 4.14 |





## Electrical Properties - Western Tasmania

D44

ROSEBERY SITE 9 (BLACK SHALES)

MRV0073

These measurements were made in the Rosebery Mine open cut. The shales are both graphitic and pyritic.

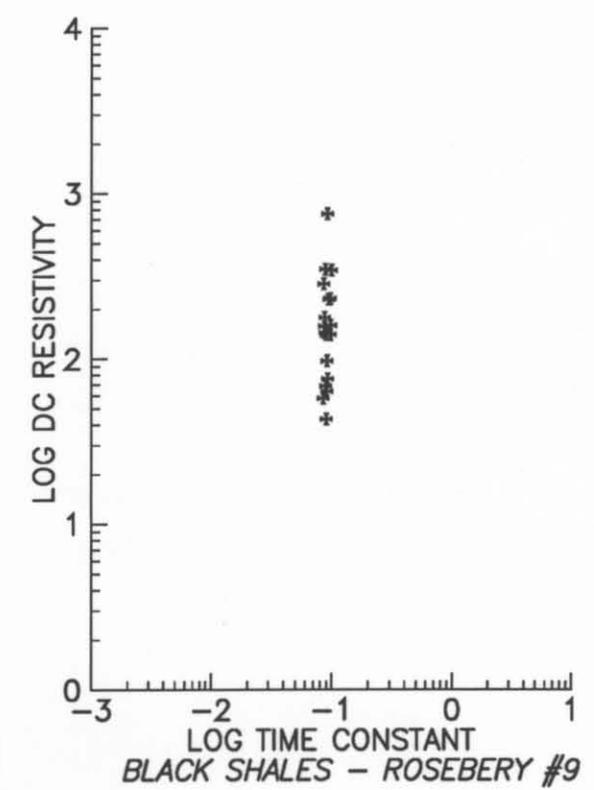
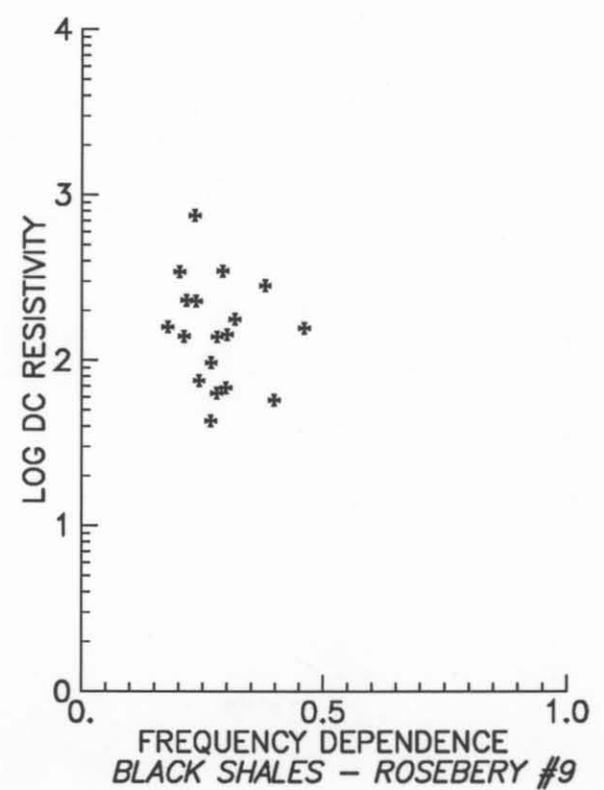
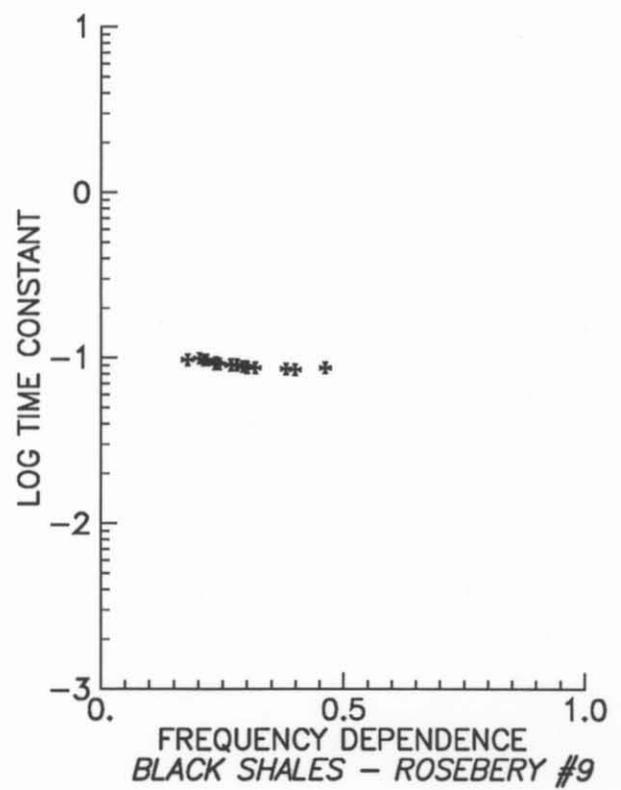
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .420E+02 | .701E+03 | .183E+03 | .151E+03              |
| Chargeability | .604E+01 | .302E+02 | .161E+02 | .730E+01              |
| R0            | .431E+02 | .753E+03 | .195E+03 | .163E+03              |
| $\tau$        | .849E-01 | .994E-01 | .912E-01 | .417E-02              |
| c             | .18      | .46      | .28      | .07                   |
| m             | .05      | .32      | .16      | .08                   |

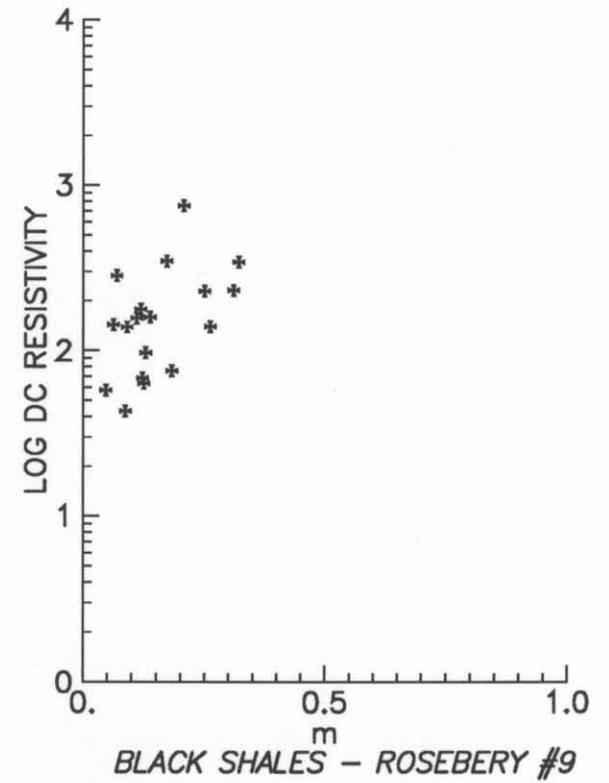
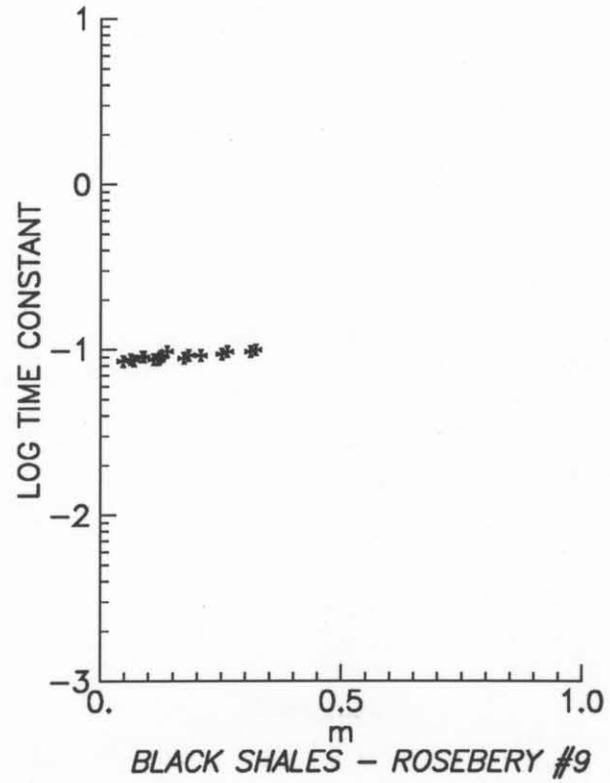
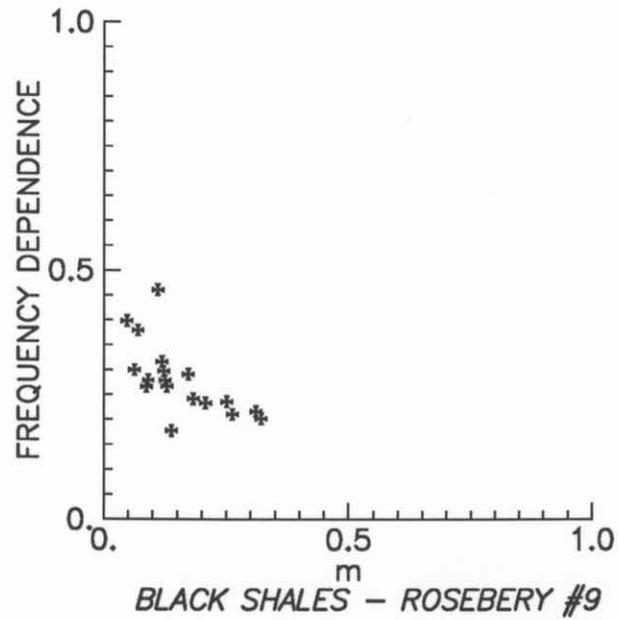
Data from 18 cases. Spectral data from 18 cases. ( 18 Sites measured).

Time Delay = 100. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9   | 10  |
|------|------|------|------|------|------|------|------|-----|-----|
| 3.45 | 2.46 | 1.98 | 1.65 | 1.42 | 1.28 | 1.11 | 1.00 | .91 | .83 |





## Electrical Properties - Western Tasmania

D45

ROSEBERY MINE OPEN CUT

MRV0006

The open cut at the Rosebery Mine exposes a suite of materials ranging from volcanics through ore and black shales. This data is for black shales.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .329E+02 | .273E+03 | .103E+03 | .755E+02              |
| Chargeability | .806E+01 | .145E+02 | .110E+02 | .181E+01              |
| R0            | .337E+02 | .272E+03 | .104E+03 | .748E+02              |
| $\tau$        | .367E+00 | .699E+00 | .447E+00 | .102E+00              |
| c             | .20      | .68      | .48      | .14                   |
| m             | .03      | .11      | .06      | .02                   |

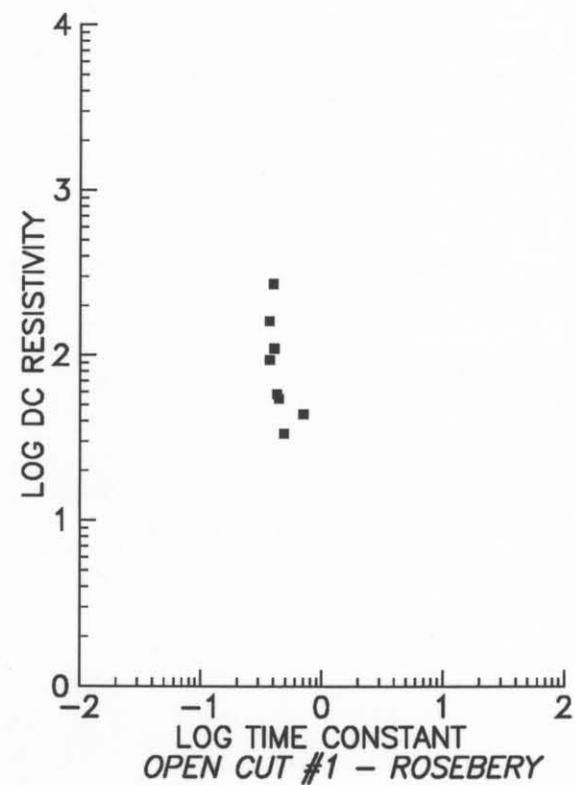
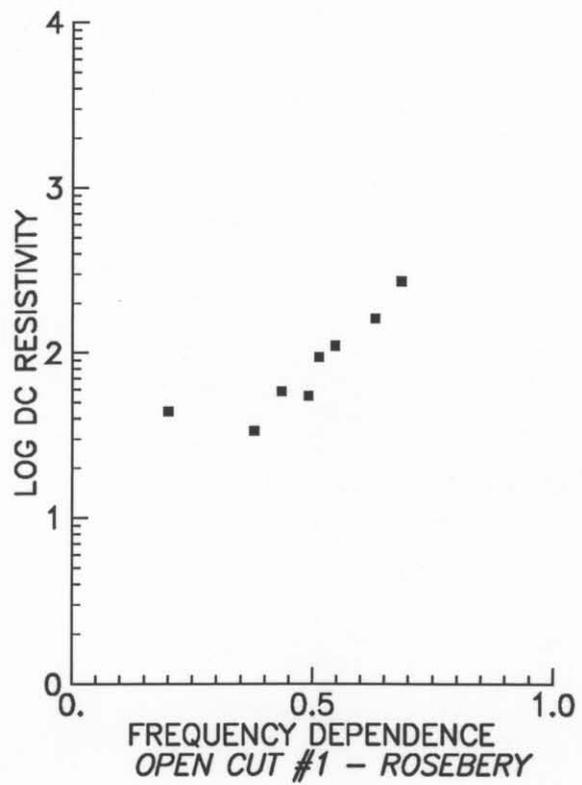
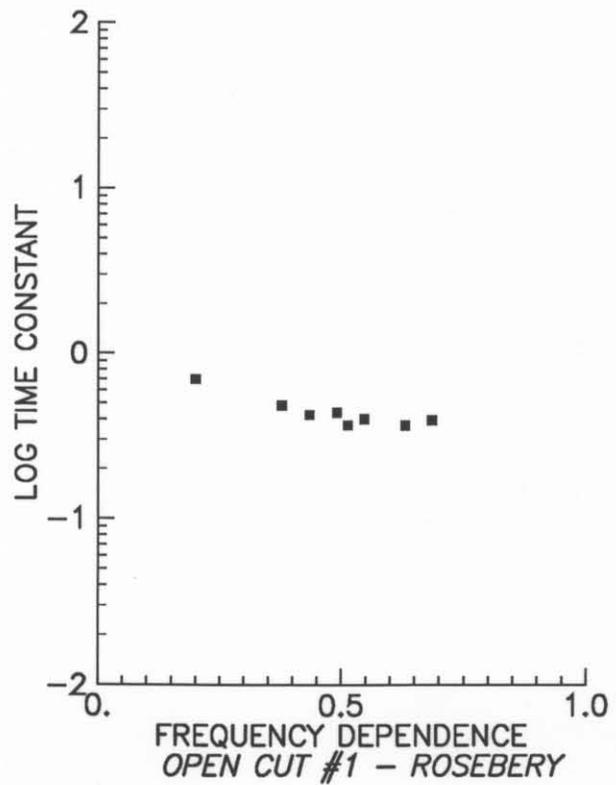
Data from 8 cases. Spectral data from 8 cases. ( 8 Sites measured).

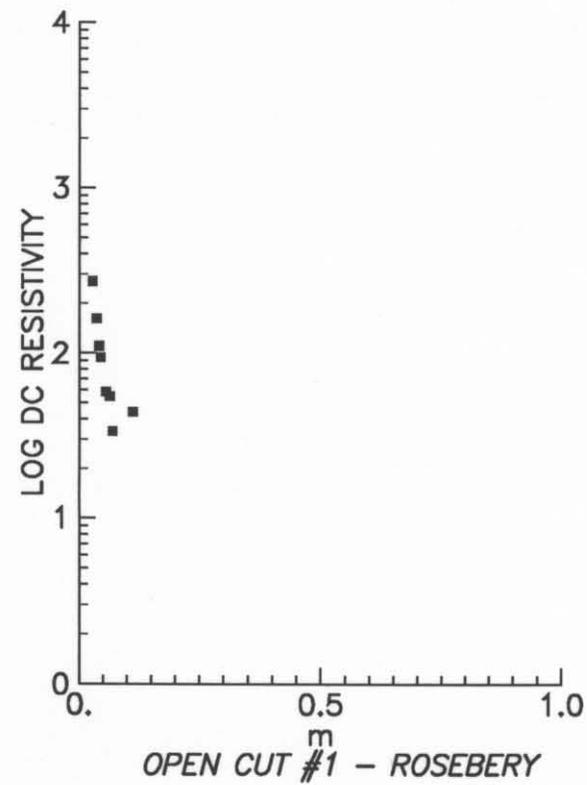
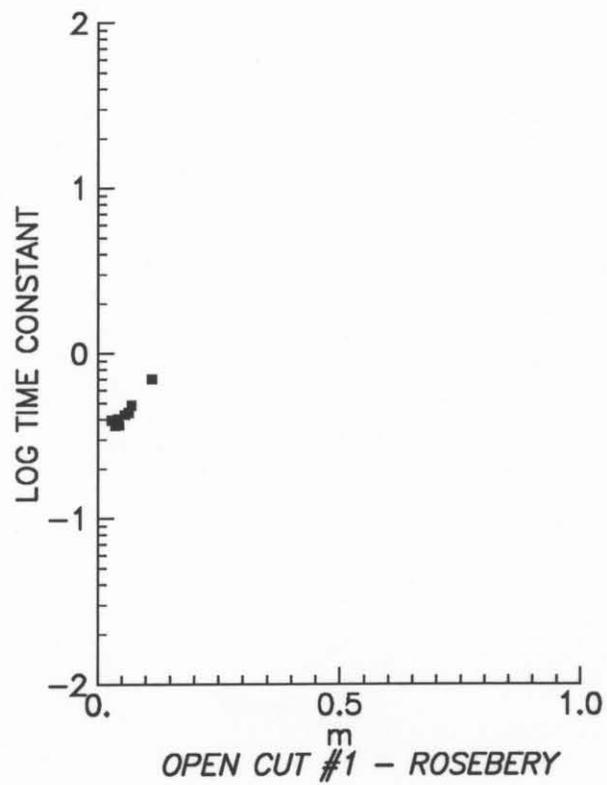
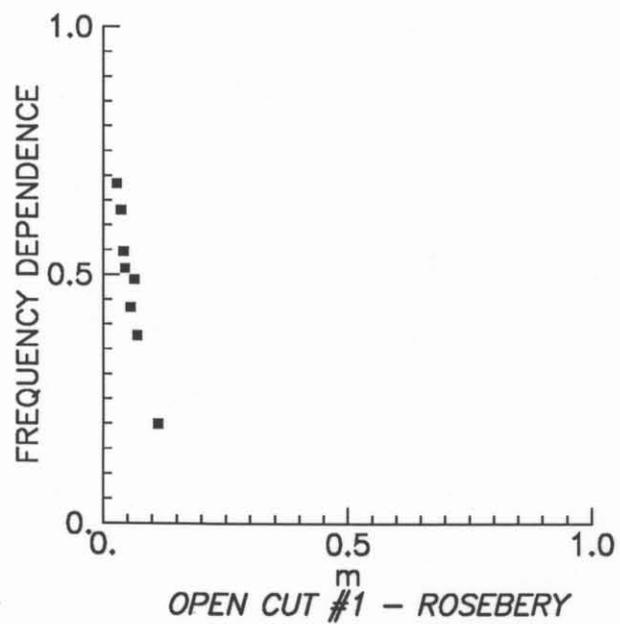
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |     |     |     |     |     |     |
|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 1    | 2    | 3    | 4    | 5   | 6   | 7   | 8   | 9   | 10  |
| 2.61 | 1.76 | 1.37 | 1.12 | .94 | .79 | .71 | .63 | .56 | .50 |

top





## Electrical Properties - Western Tasmania

D46

ROSEBERY OPEN CUT

MRV0007

The open cut at the Rosebery Mine exposes a suite of materials ranging from volcanics through ore and black shales. This data is for black shales.

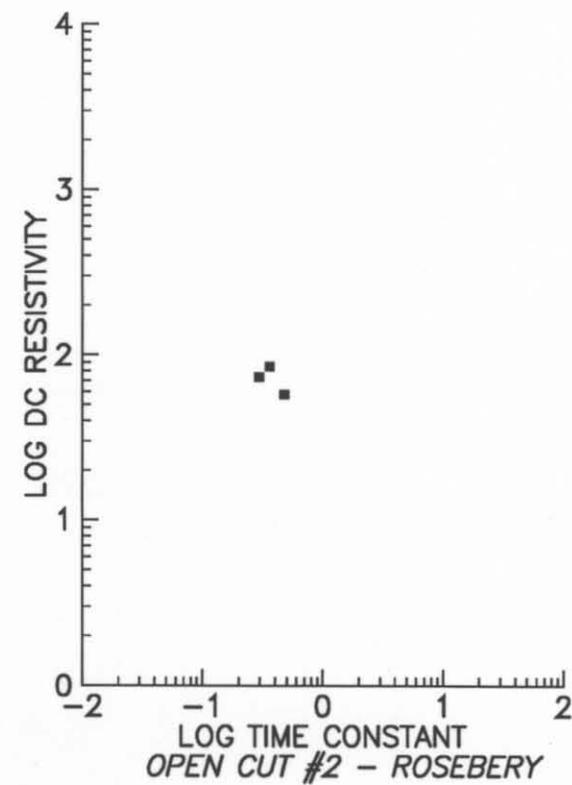
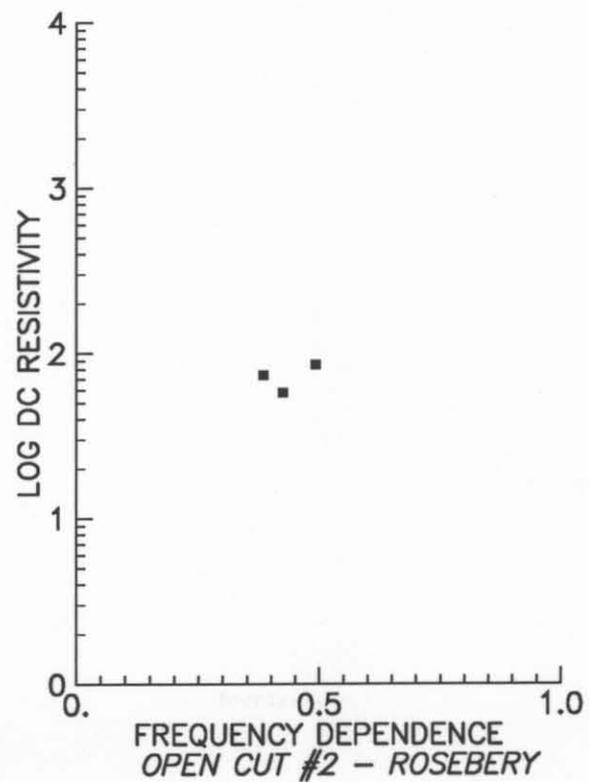
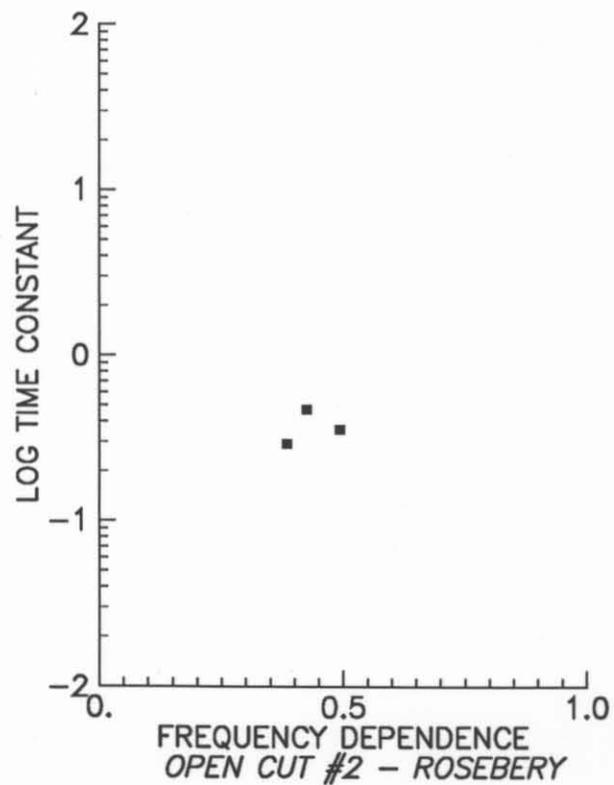
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .573E+02 | .845E+02 | .714E+02 | .111E+02              |
| Chargeability | .714E+01 | .146E+02 | .119E+02 | .340E+01              |
| R0            | .579E+02 | .853E+02 | .723E+02 | .113E+02              |
| $\tau$        | .293E+00 | .475E+00 | .375E+00 | .751E-01              |
| c             | .38      | .49      | .43      | .04                   |
| m             | .03      | .08      | .06      | .02                   |

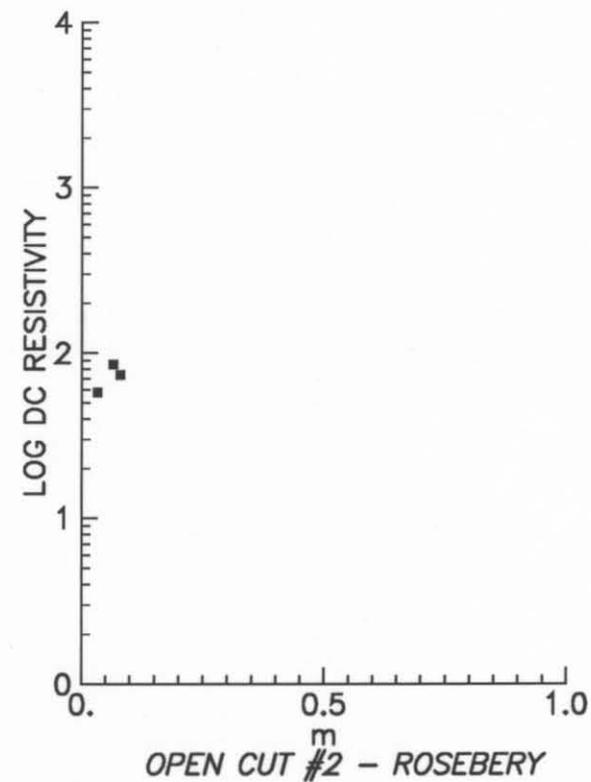
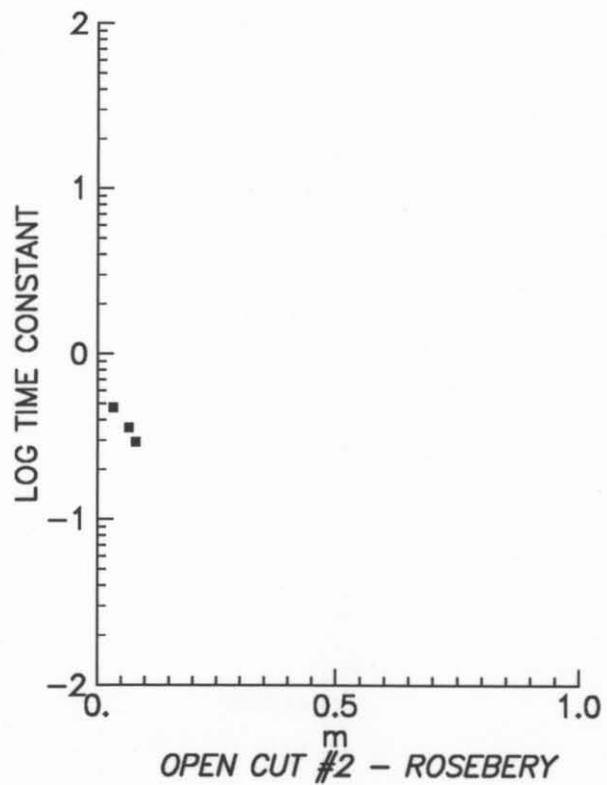
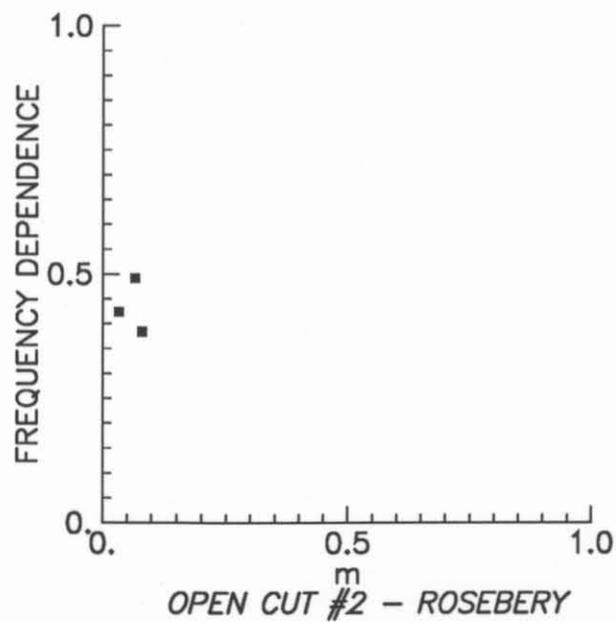
Data from 3 cases. Spectral data from 3 cases. ( 3 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 2.88 | 1.92 | 1.49 | 1.21 | 1.01 | .76 | .79 | .69 | .61 | .55 |





## Electrical Properties - Western Tasmania

D47

ROSEBERY OPEN CUT

MRV0008

The open cut at the Rosebery Mine exposes a suite of materials ranging from volcanics through ore and black shales. This data is for black shales.

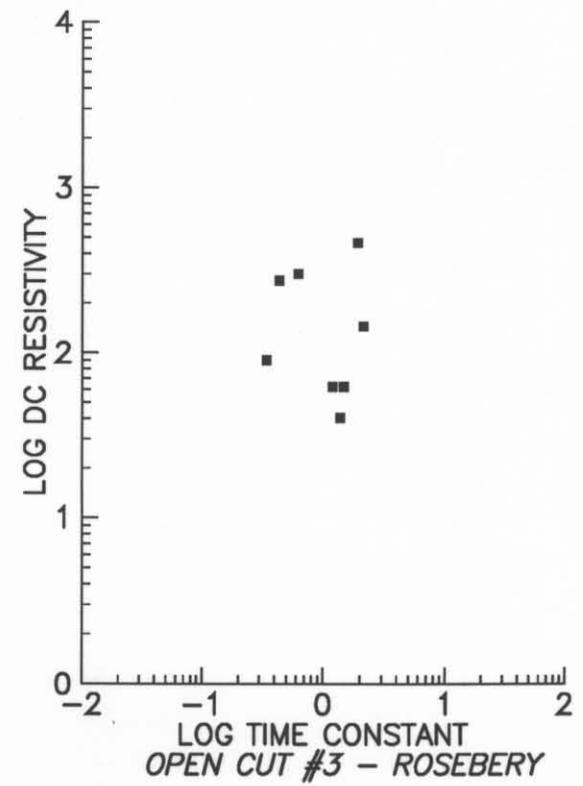
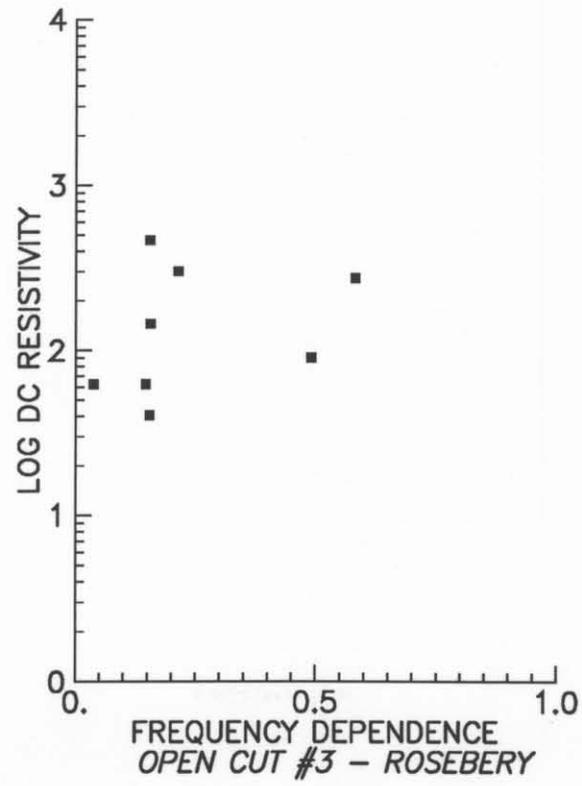
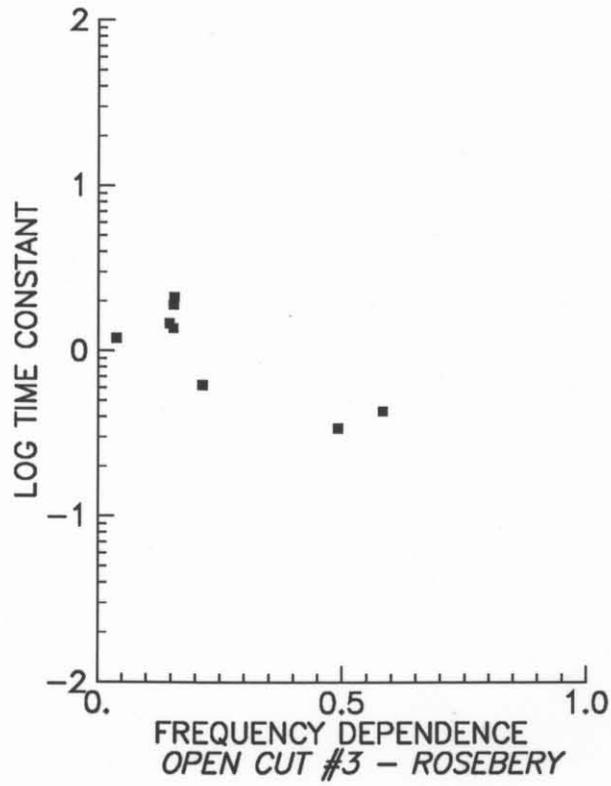
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .398E+02 | .478E+03 | .199E+03 | .162E+03              |
| Chargeability | .112E+01 | .961E+01 | .407E+01 | .305E+01              |
| R0            | .404E+02 | .464E+03 | .197E+03 | .157E+03              |
| $\tau$        | .434E+00 | .212E+01 | .146E+01 | .583E+00              |
| c             | .15      | .58      | .24      | .17                   |
| m             | .01      | .07      | .03      | .02                   |

Data from 5 cases. Spectral data from 5 cases. ( 5 Sites measured).

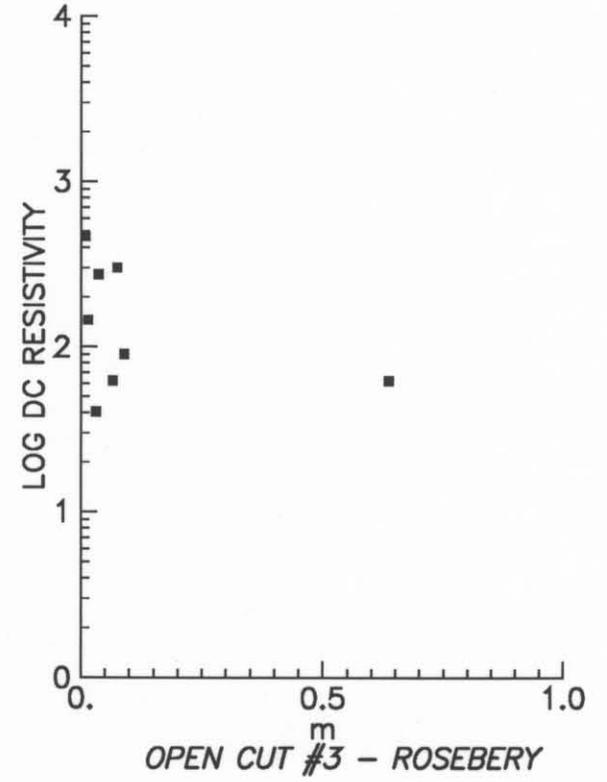
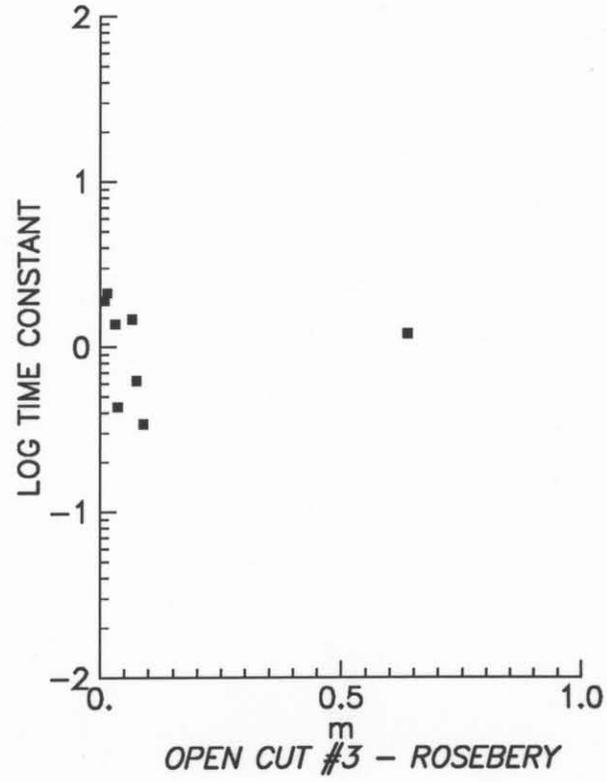
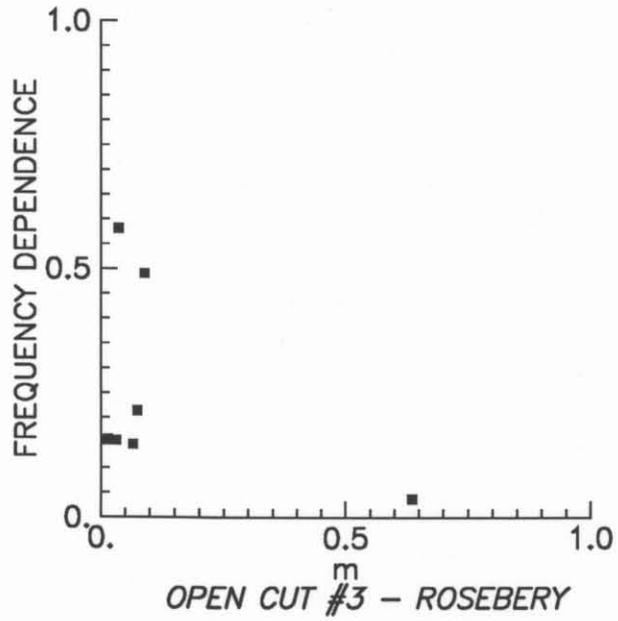
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .98 | .64 | .49 | .40 | .42 | .28 | .25 | .22 | .19 | .18 |



034194



## Electrical Properties - Western Tasmania

D48

ROSEBERY OPEN CUT

MRV0009

The open cut at the Rosebery Mine exposes a suite of materials ranging from volcanics through ore and black shales. This data is for black shales.

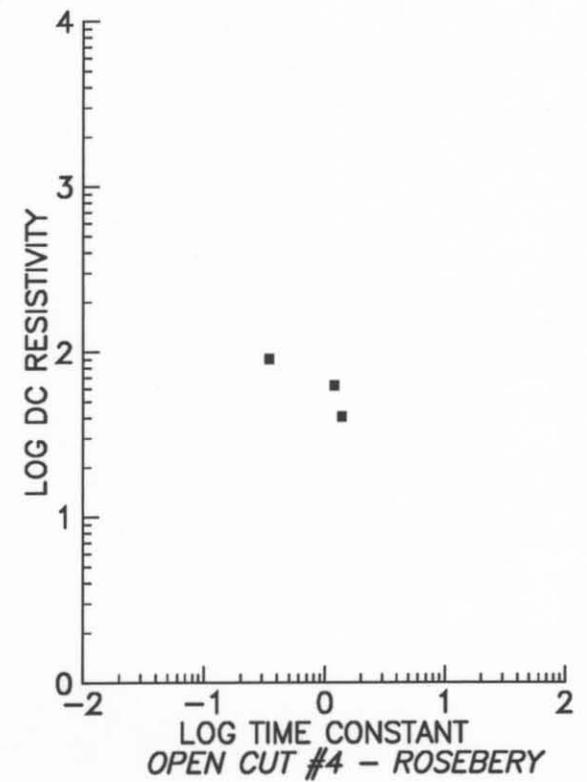
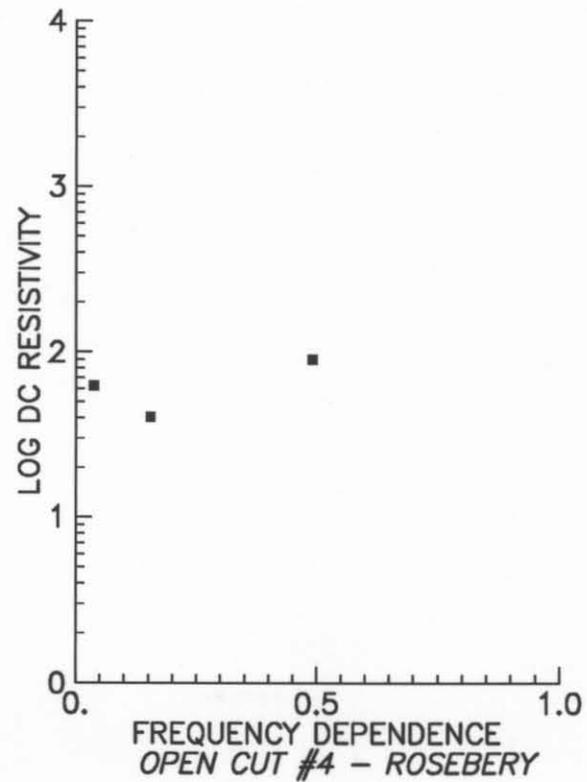
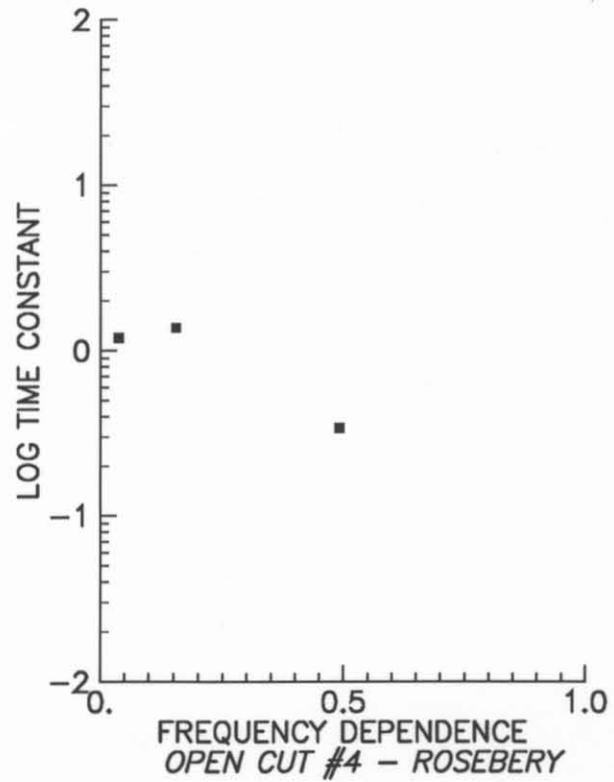
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .398E+02 | .885E+02 | .571E+02 | .223E+02              |
| Chargeability | .304E+01 | .196E+02 | .131E+02 | .720E+01              |
| R0            | .404E+02 | .903E+02 | .644E+02 | .204E+02              |
| $\tau$        | .341E+00 | .138E+01 | .972E+00 | .452E+00              |
| c             | .04      | .49      | .23      | .19                   |
| m             | .03      | .64      | .25      | .27                   |

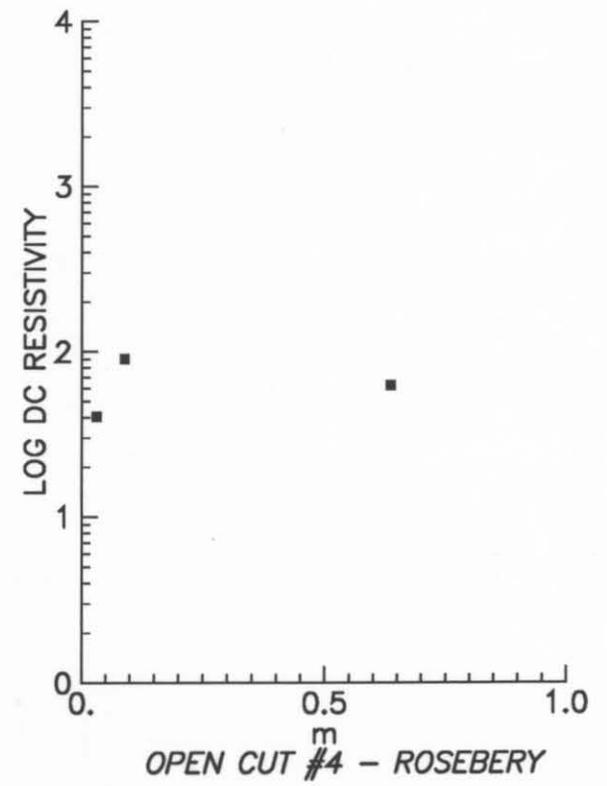
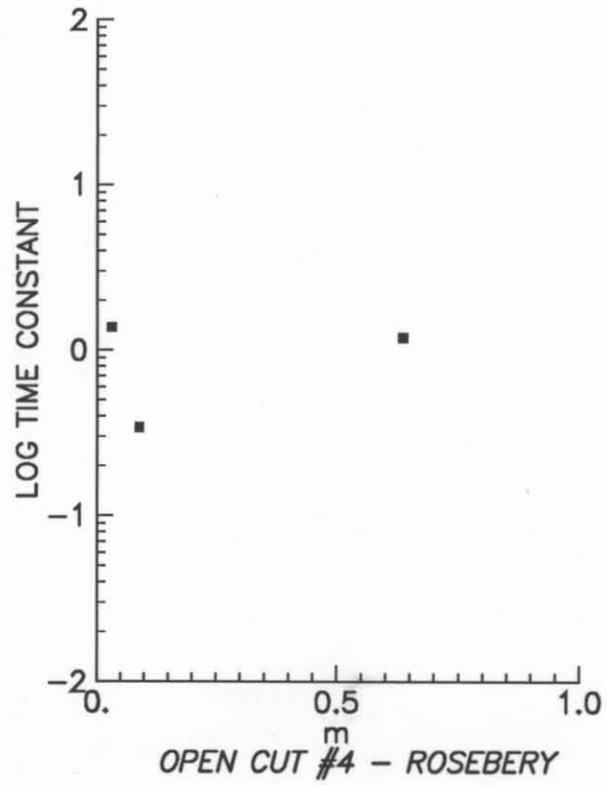
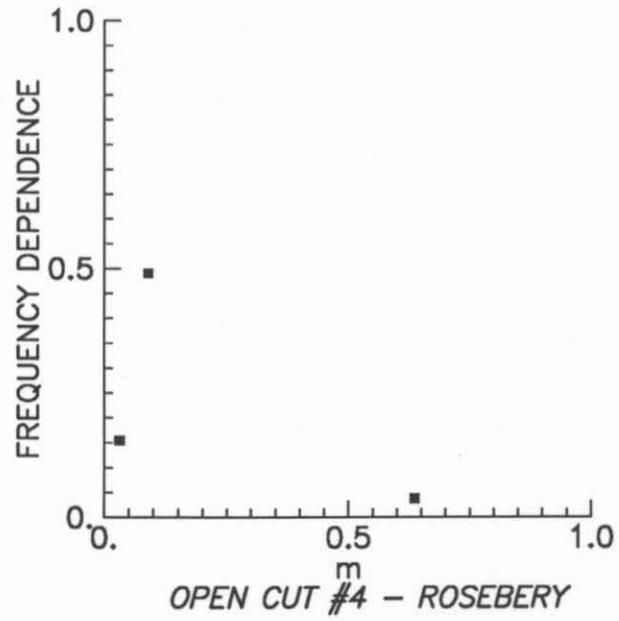
Data from 3 cases. Spectral data from 3 cases. ( 3 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 3.09 | 2.08 | 1.62 | 1.30 | 1.08 | .92 | .80 | .78 | .73 | .65 |





## Electrical Properties - Western Tasmania

D49

ROSEBERY OPEN CUT

MRV0010

The open cut at the Rosebery Mine exposes a suite of materials ranging from volcanics through ore and black shales. This data is for sulphides.

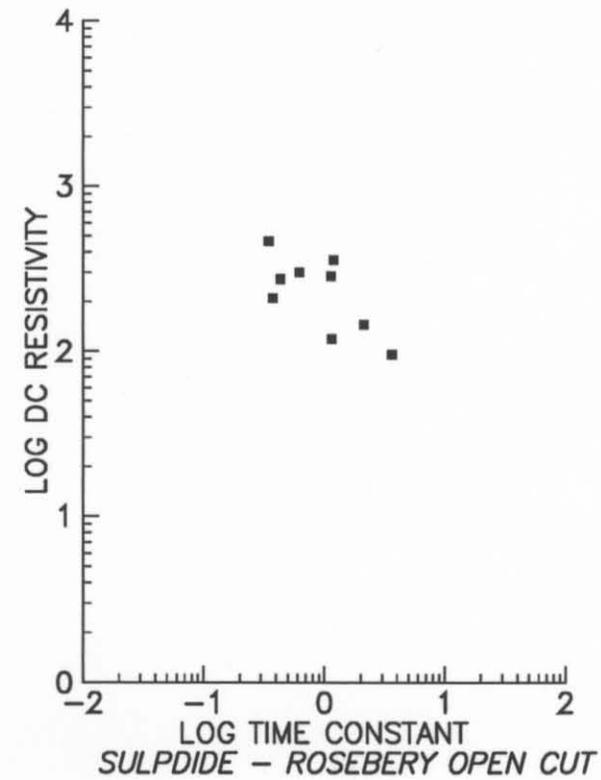
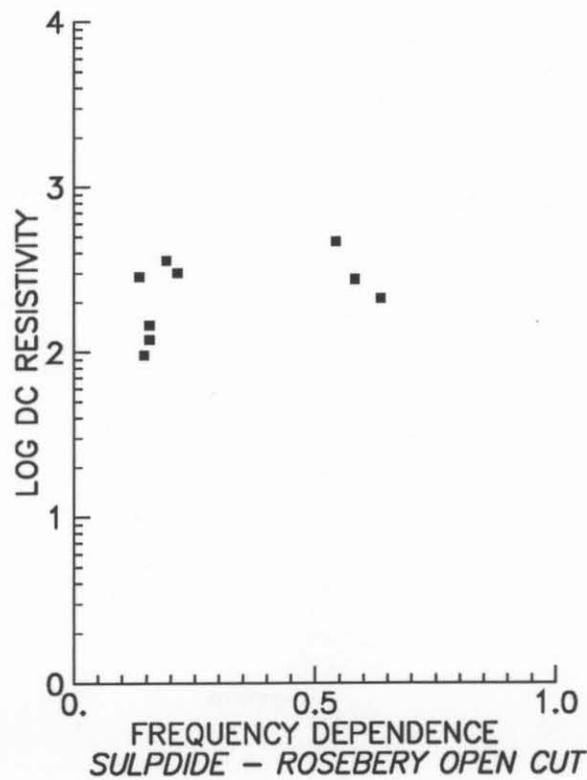
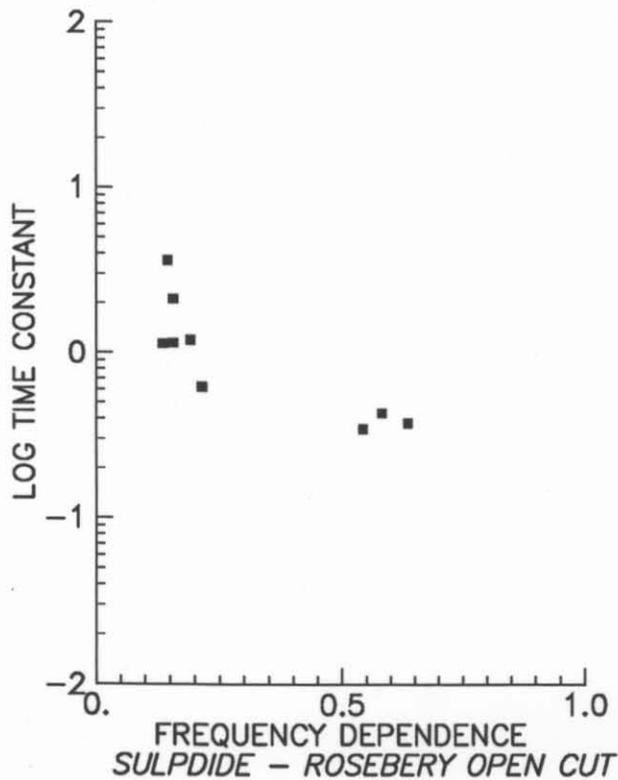
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .920E+02 | .461E+03 | .266E+03 | .122E+03              |
| Chargeability | .174E+01 | .118E+02 | .737E+01 | .290E+01              |
| R0            | .958E+02 | .357E+03 | .224E+03 | .895E+02              |
| $\tau$        | .377E+00 | .363E+01 | .133E+01 | .101E+01              |
| c             | .14      | .64      | .28      | .19                   |
| m             | .01      | .08      | .05      | .02                   |

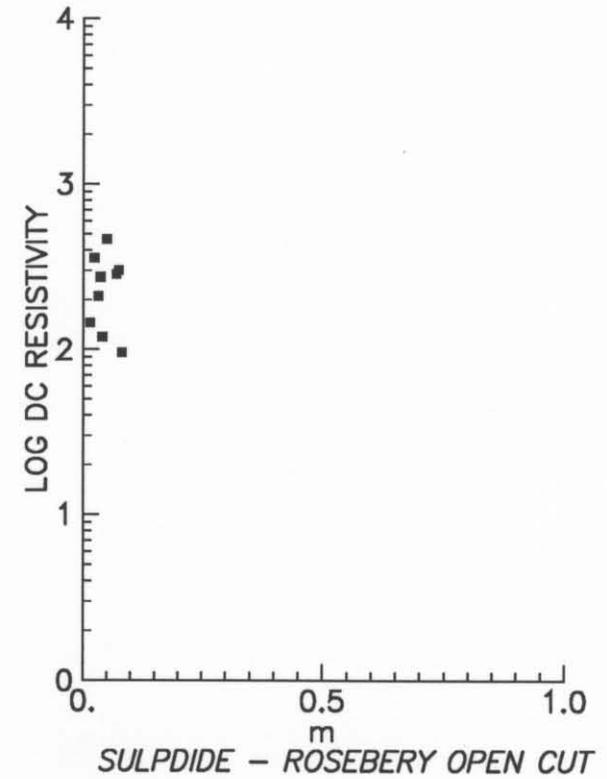
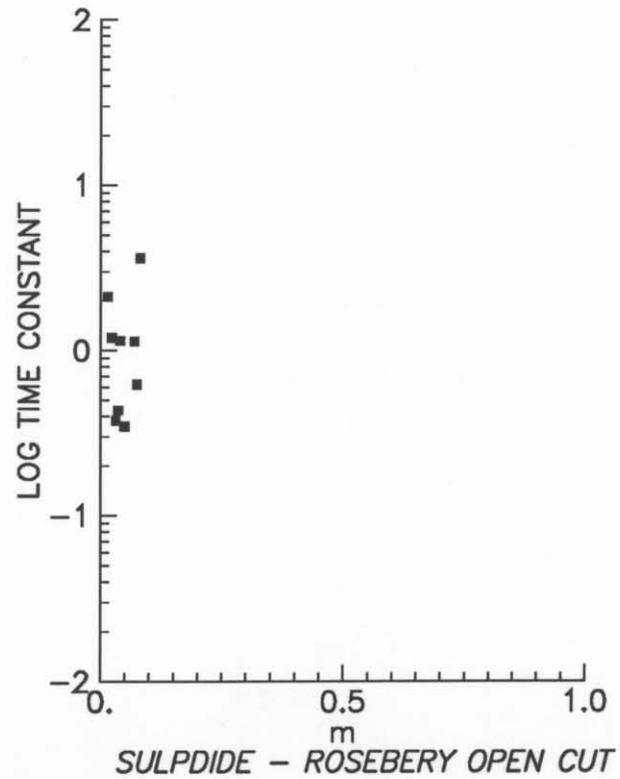
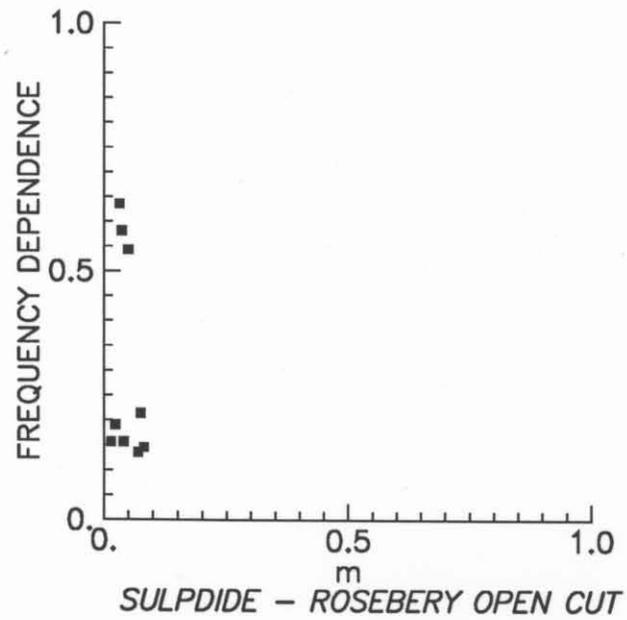
Data from 9 cases. Spectral data from 8 cases. ( 11 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |     |     |     |     |     |     |     |     |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1    | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
| 1.75 | 1.11 | .85 | .67 | .65 | .48 | .42 | .36 | .30 | .27 |





## Electrical Properties - Western Tasmania

D50

BLACK SHALES at ROSEBERY ROAD CUTTING

MRV0021

The Rosebery area outside the mine site contains outcrops of black shale, some of which are reputedly more chargeable than those in the mine area. This data is from such an outcrop.

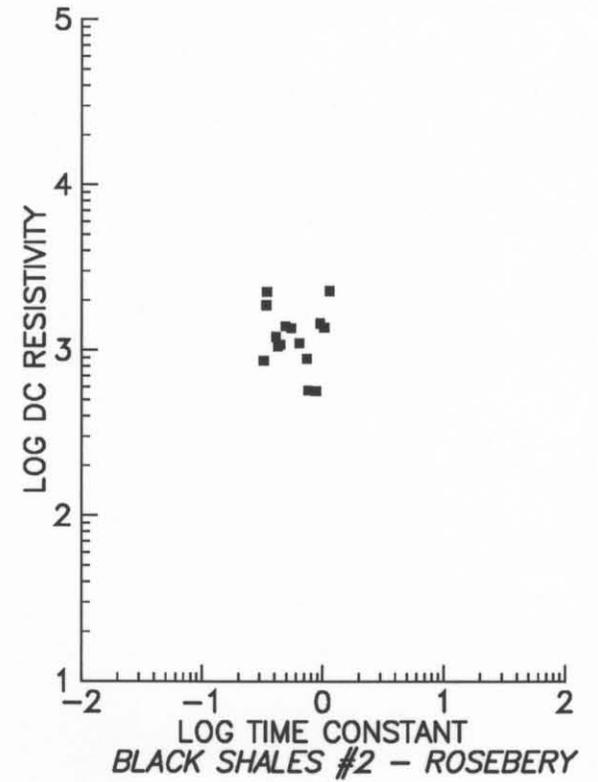
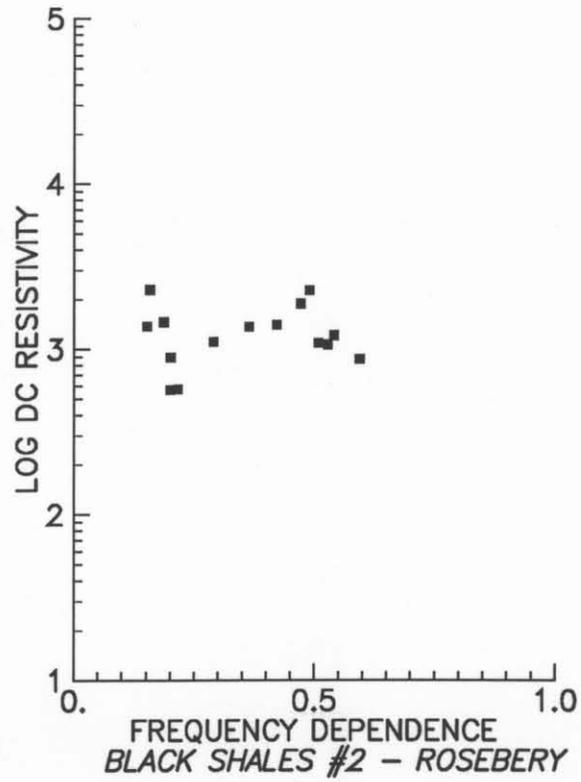
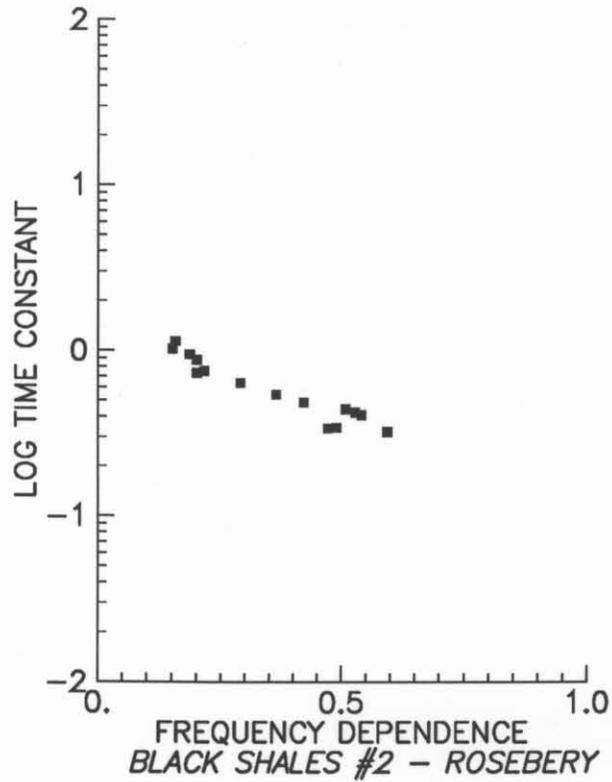
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .564E+03 | .223E+04 | .127E+04 | .491E+03              |
| Chargeability | .455E+01 | .195E+02 | .955E+01 | .478E+01              |
| R0            | .567E+03 | .229E+04 | .129E+04 | .507E+03              |
| $\tau$        | .323E+00 | .114E+01 | .629E+00 | .261E+00              |
| c             | .15      | .59      | .36      | .16                   |
| m             | .03      | .10      | .06      | .02                   |

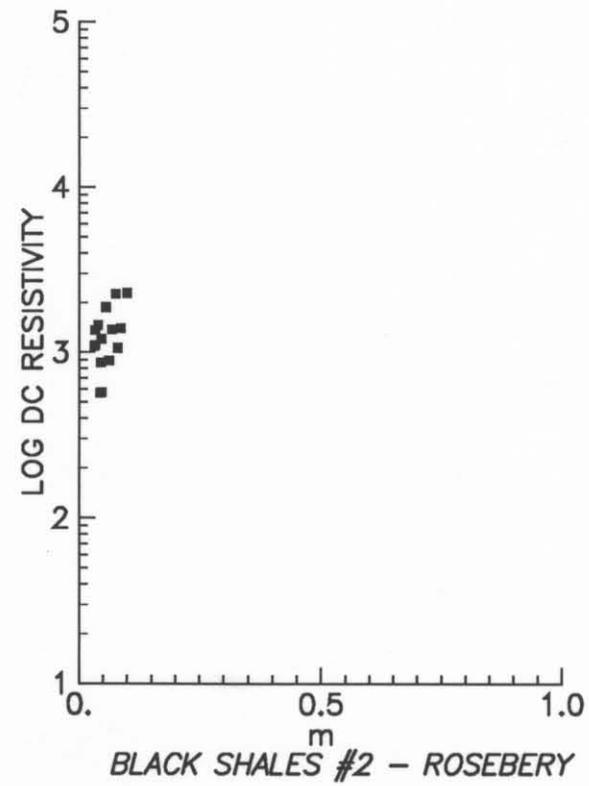
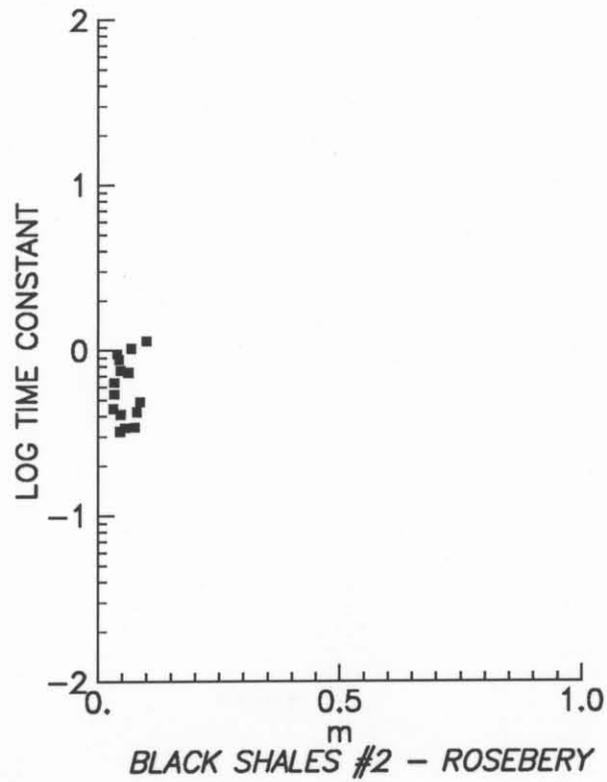
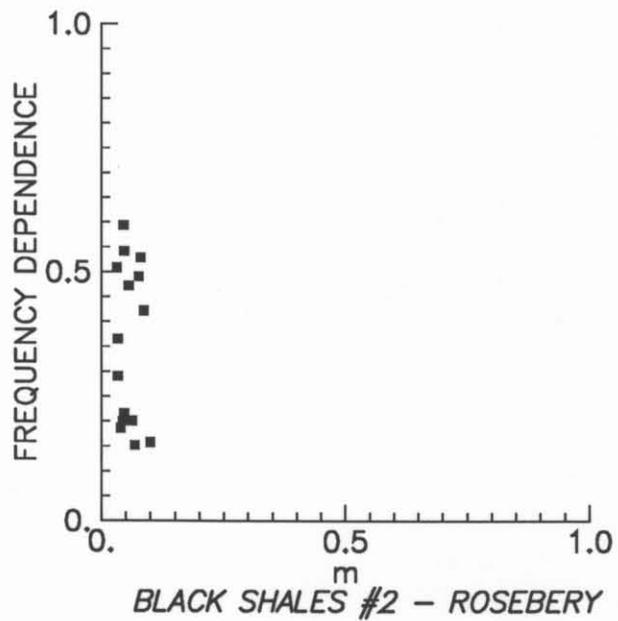
Data from 15 cases. Spectral data from 15 cases. ( 16 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.32 | 1.56 | 1.20 | .97 | .81 | .68 | .59 | .52 | .46 | .41 |





## Electrical Properties - Western Tasmania

D51

MAGNETITE at SAVAGE RIVER MINE

MRV0027

The magnetite deposits at Savage River contain several different ore types in different areas. These results are from the 19SW area on the mine grid.

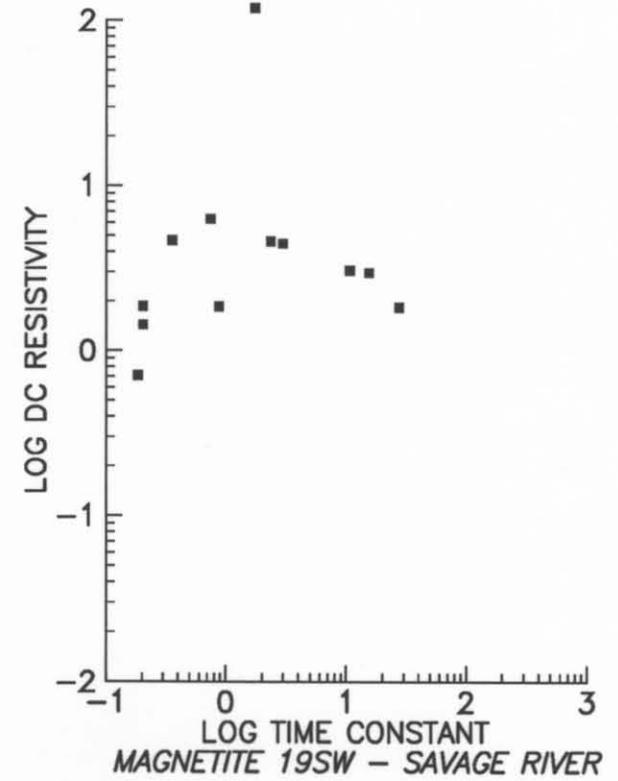
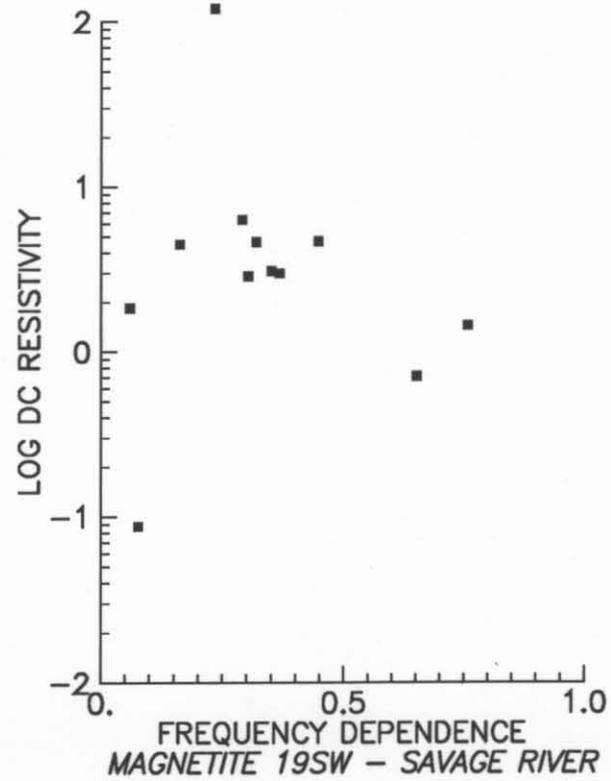
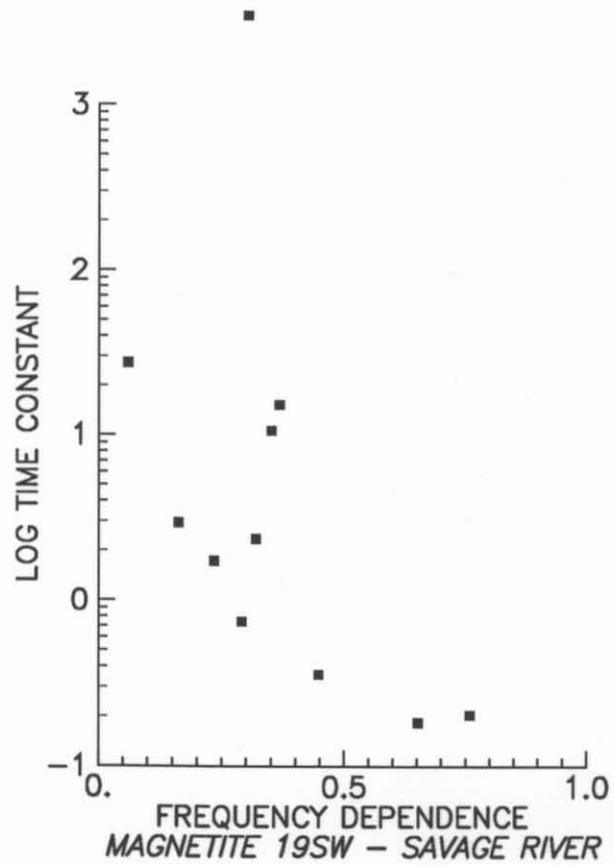
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .566E+00 | .887E+02 | .917E+01 | .240E+02              |
| Chargeability | .212E+02 | .401E+03 | .154E+03 | .122E+03              |
| R0            | .707E+00 | .634E+01 | .331E+01 | .164E+01              |
| $\tau$        | .184E+00 | .346E+04 | .352E+03 | .104E+04              |
| c             | .06      | .76      | .37      | .20                   |
| m             | .06      | .97      | .69      | .32                   |

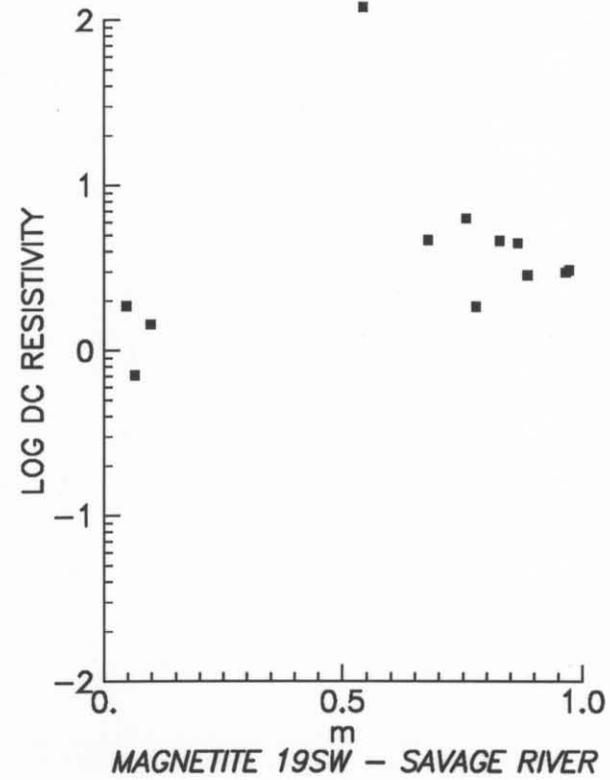
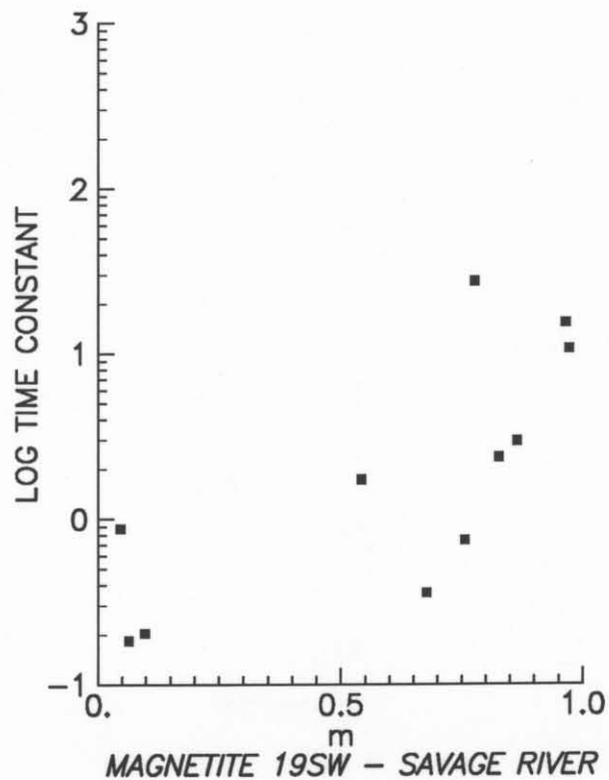
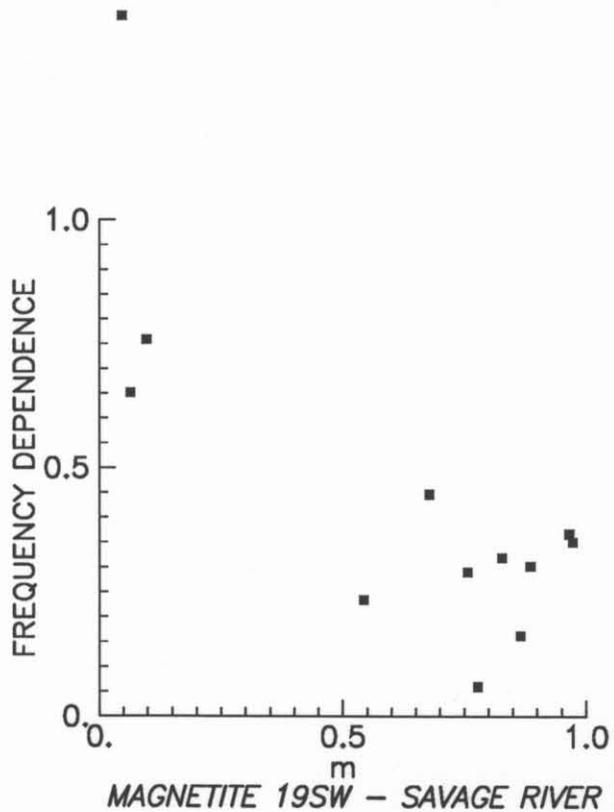
Data from 11 cases. Spectral data from 10 cases. ( 14 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |       |       |       |      |      |
|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9    | 10   |
| 32.73 | 23.71 | 19.20 | 16.33 | 14.33 | 12.86 | 11.66 | 10.49 | 9.86 | 9.44 |





MAGNETITE at SAVAGE RIVER MINE

MRV0028

The magnetite deposits at Savage River contain several different ore types in different areas. These results are from the 16NE area on the mine grid.

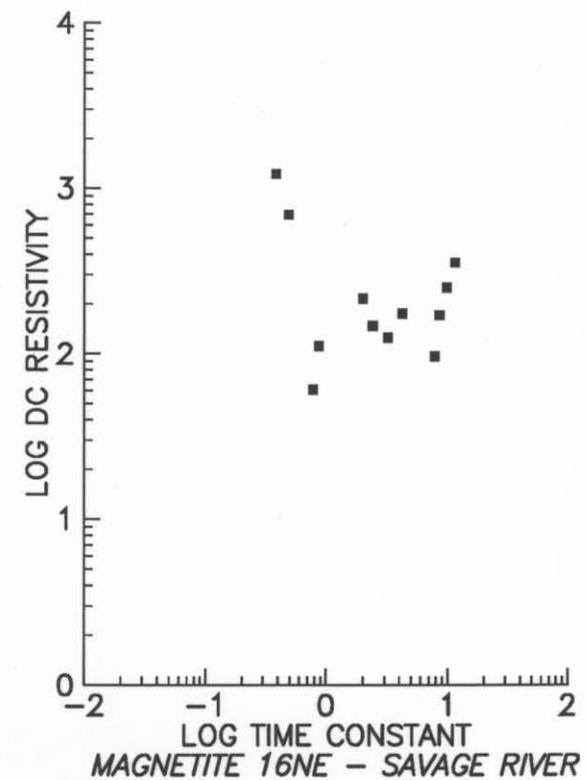
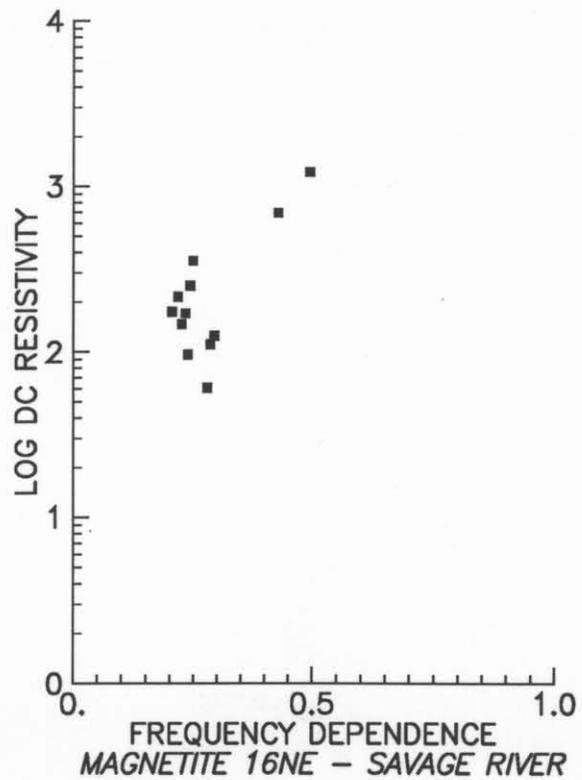
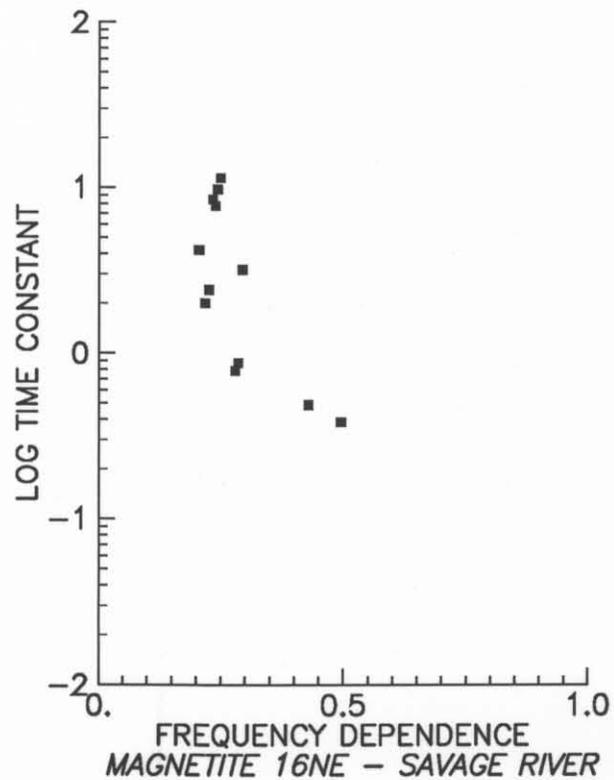
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .435E+02 | .121E+04 | .237E+03 | .336E+03              |
| Chargeability | .121E+02 | .201E+03 | .134E+03 | .579E+02              |
| R0            | .607E+02 | .123E+04 | .302E+03 | .322E+03              |
| $\tau$        | .386E+00 | .115E+02 | .434E+01 | .384E+01              |
| c             | .21      | .49      | .28      | .09                   |
| m             | .05      | .89      | .68      | .27                   |

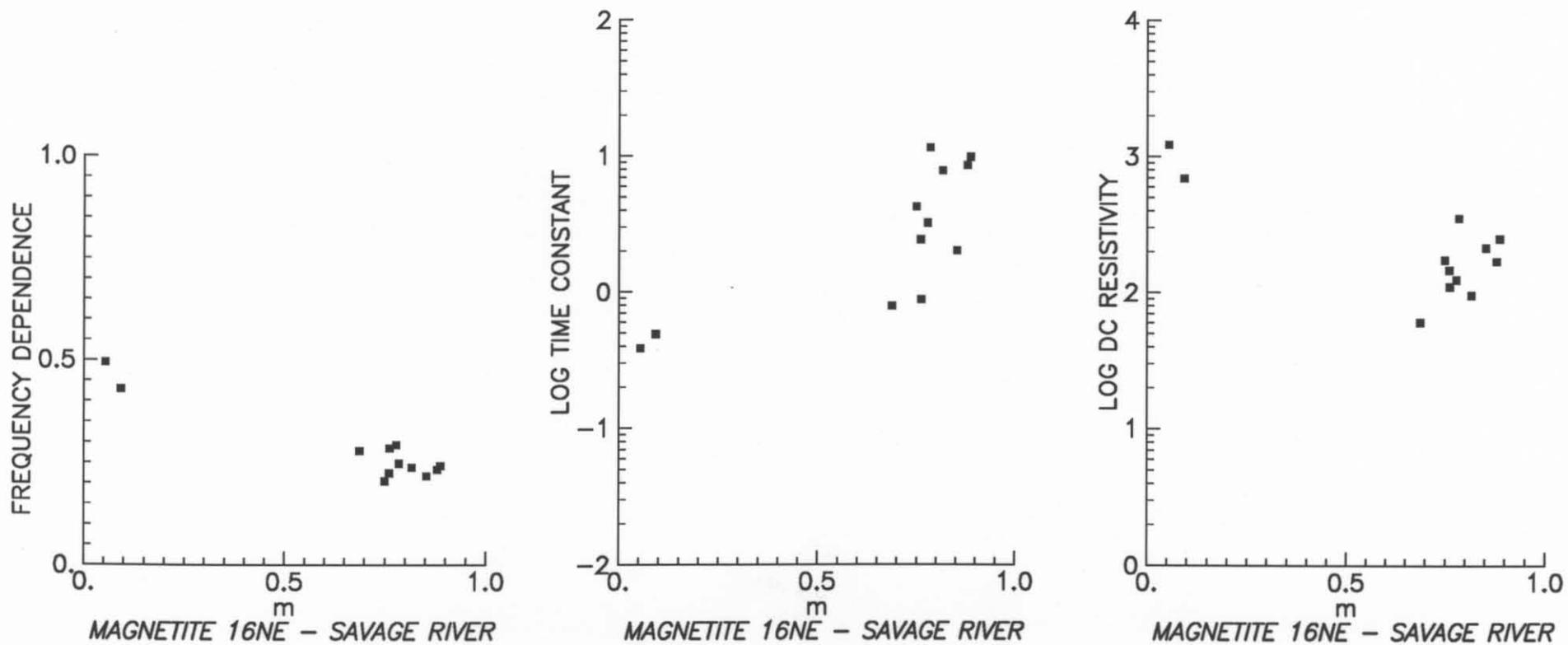
Data from 12 cases. Spectral data from 12 cases. ( 12 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |       |      |      |      |      |
|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7    | 8    | 9    | 10   |
| 27.72 | 20.04 | 16.28 | 13.80 | 11.90 | 10.58 | 9.51 | 8.63 | 7.89 | 7.26 |





## Electrical Properties - Western Tasmania

D53

MAGNETITE at SAVAGE RIVER MINE

MRV0029

The magnetite deposits at Savage River contain several different ore types in different areas. These results are from the NE7N area on the mine grid in the deposit known as Area 3.

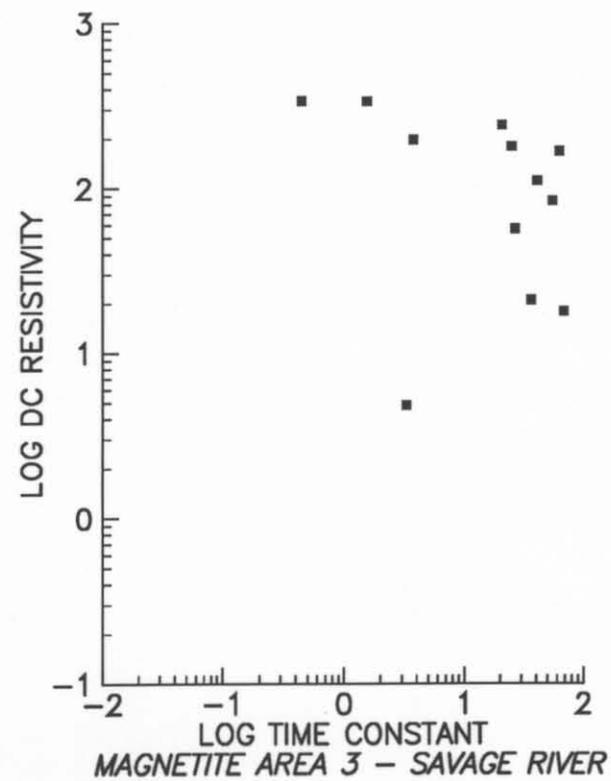
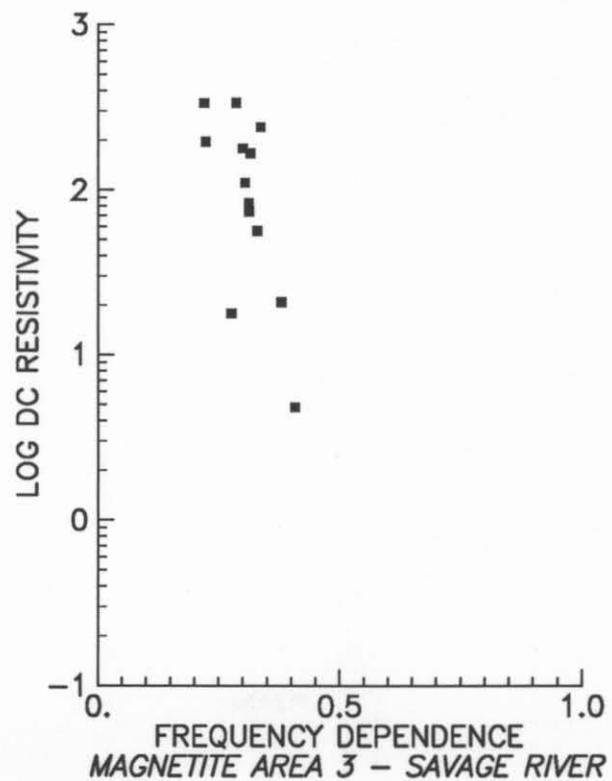
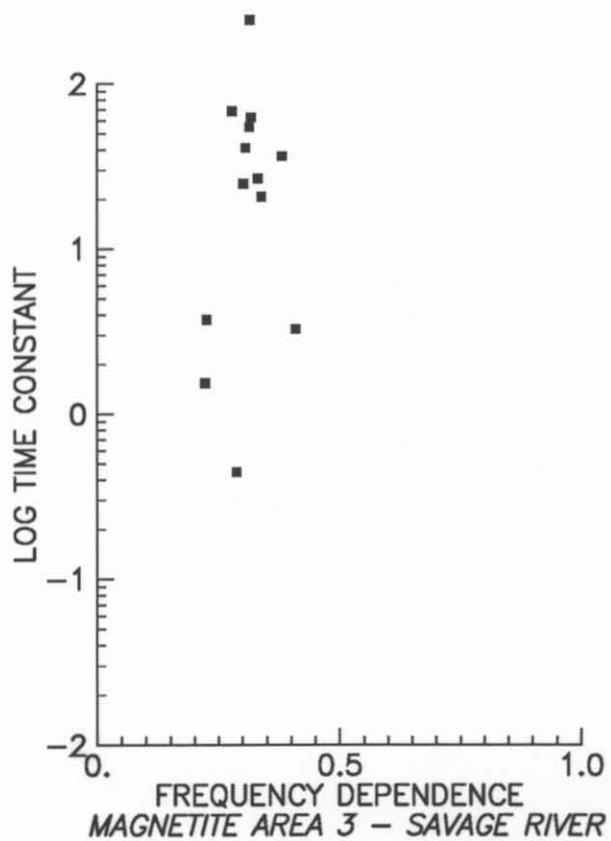
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .241E+01 | .277E+03 | .715E+02 | .818E+02              |
| Chargeability | .793E+02 | .383E+03 | .277E+03 | .937E+02              |
| R0            | .482E+01 | .338E+03 | .140E+03 | .110E+03              |
| $\tau$        | .445E+00 | .242E+03 | .451E+02 | .610E+02              |
| c             | .22      | .41      | .31      | .05                   |
| m             | .49      | .97      | .88      | .12                   |

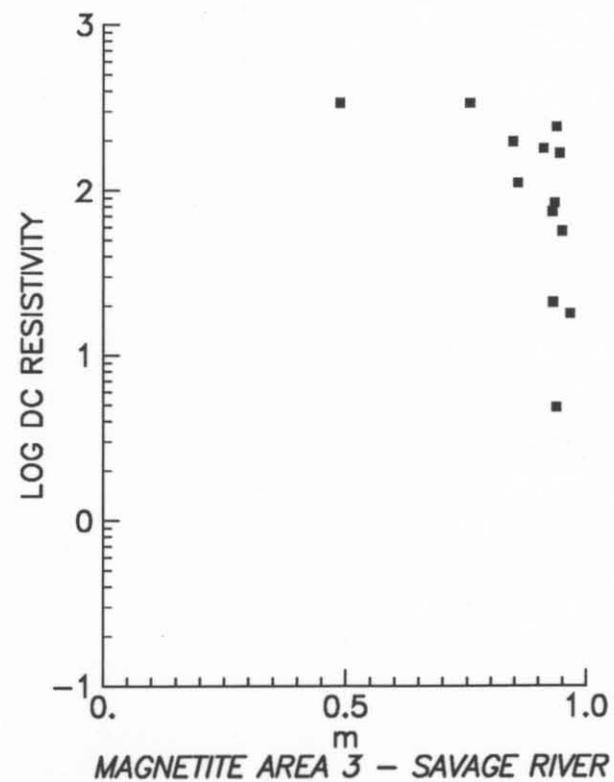
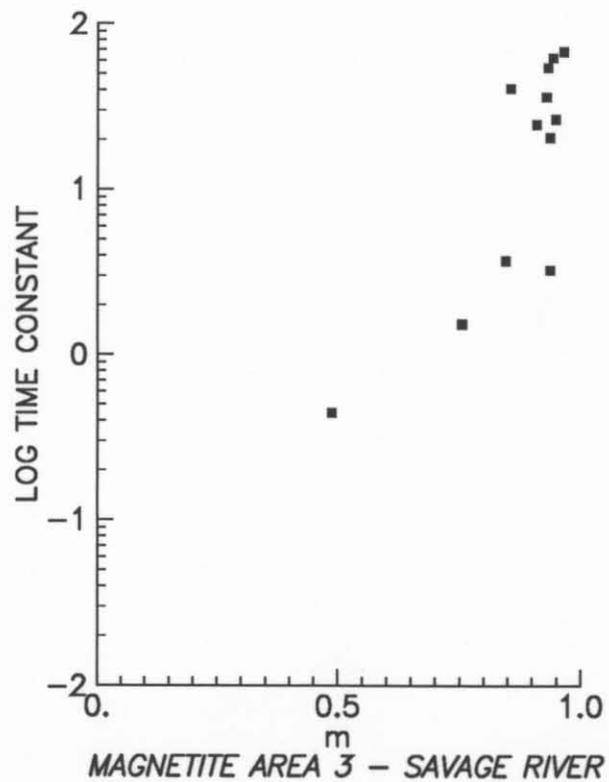
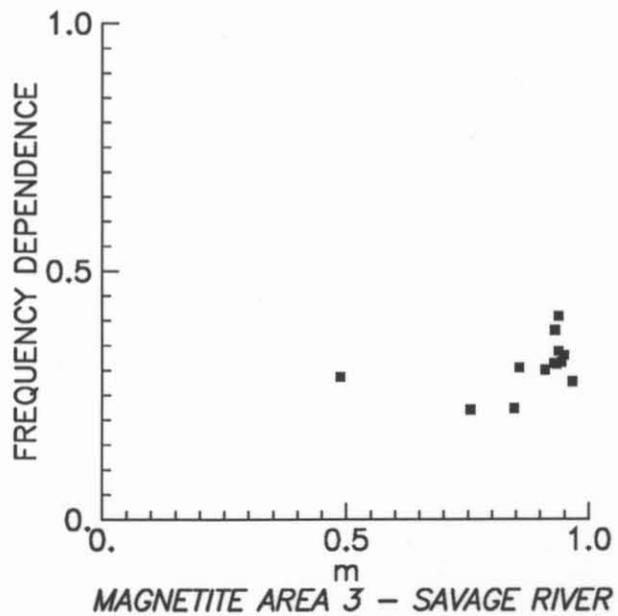
Data from 13 cases. Spectral data from 13 cases. ( 13 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| 52.73 | 39.96 | 33.29 | 28.76 | 25.44 | 22.83 | 20.77 | 19.08 | 17.68 | 16.45 |





## Electrical Properties - Western Tasmania

D54

SERPENTINITE at QUARRY on SERPENTINE HILL

MRV0036

This serpentinite is part of the large ultramafic mass at Serpentine Hill on the Murchison Highway. It contains abundant magnetite and minor stichtite.

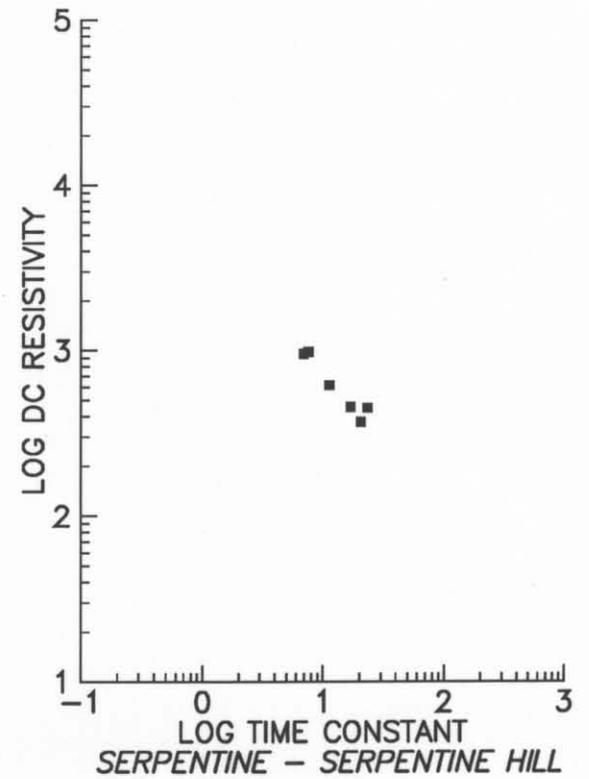
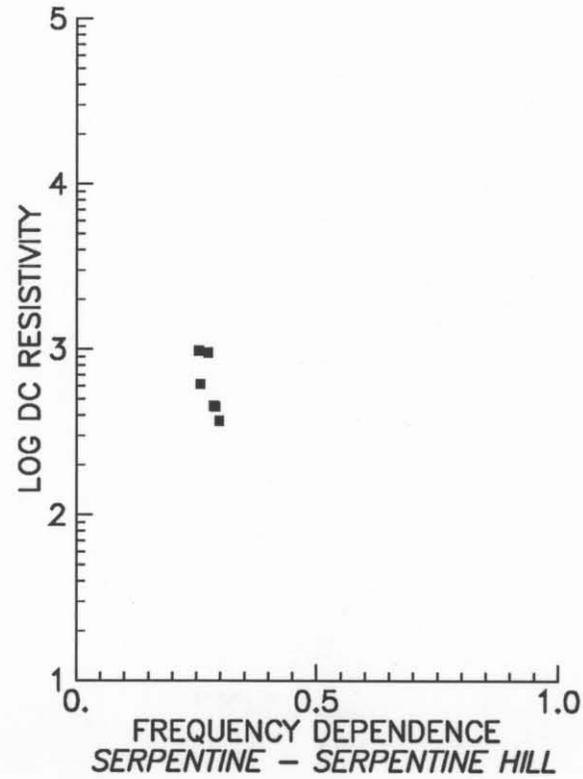
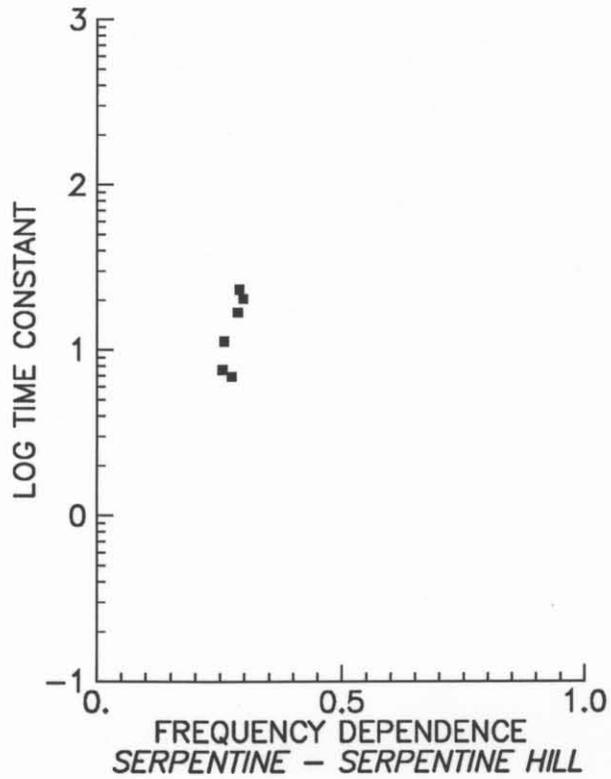
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .208E+03 | .615E+03 | .391E+03 | .168E+03              |
| Chargeability | .110E+03 | .146E+03 | .129E+03 | .124E+02              |
| R0            | .369E+03 | .982E+03 | .638E+03 | .245E+03              |
| $\tau$        | .693E+01 | .233E+02 | .144E+02 | .625E+01              |
| c             | .25      | .30      | .28      | .02                   |
| m             | .61      | .68      | .65      | .02                   |

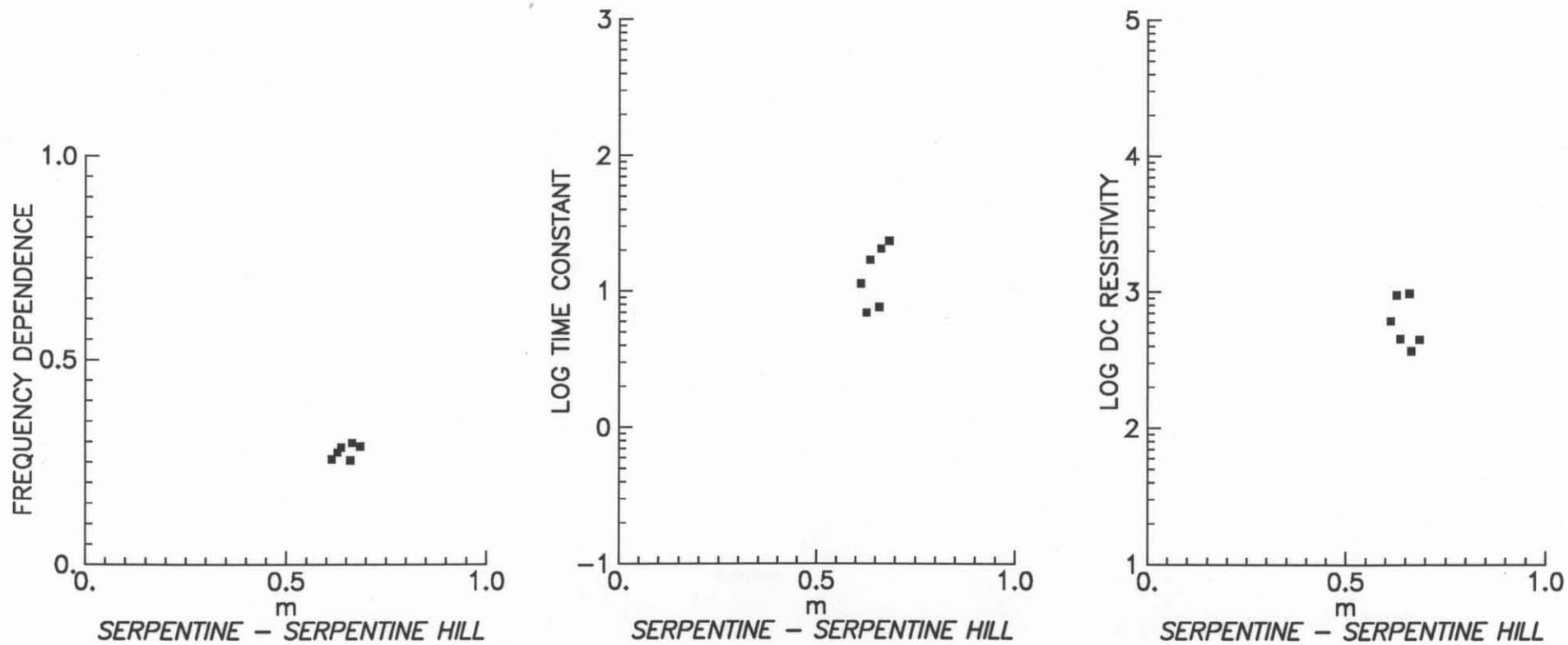
Data from 6 cases. Spectral data from 6 cases. ( 6 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|       |       |       |       |       |       |      |      |      |      |
|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1     | 2     | 3     | 4     | 5     | 6     | 7    | 8    | 9    | 10   |
| 25.47 | 18.89 | 15.56 | 13.32 | 11.68 | 10.43 | 9.43 | 8.61 | 7.92 | 7.33 |





## Electrical Properties - Western Tasmania

D55

SERPENTINITE below QUARRY FACE at SERPENTINE HILL

MRV0037

These results are from the serpentine quarry by the Murchison Highway at Serpentine Hill. The other results are from measurements in solid rock, these are through debris on the quarry floor.

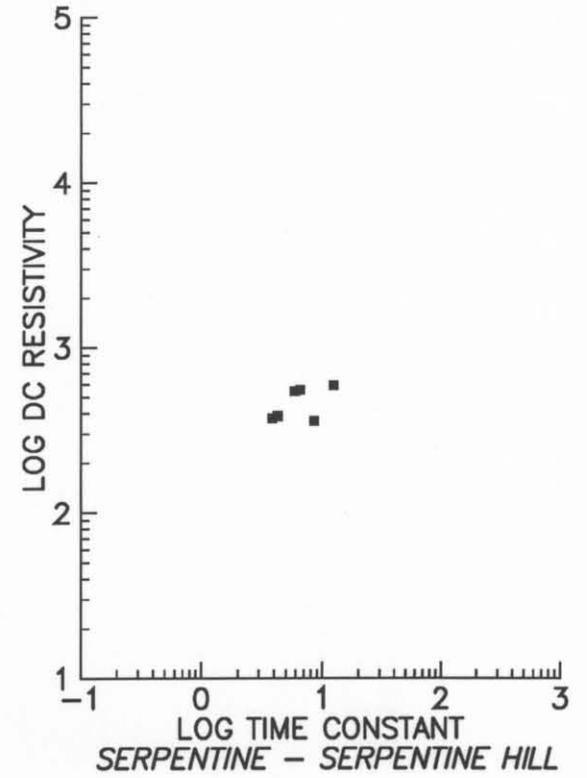
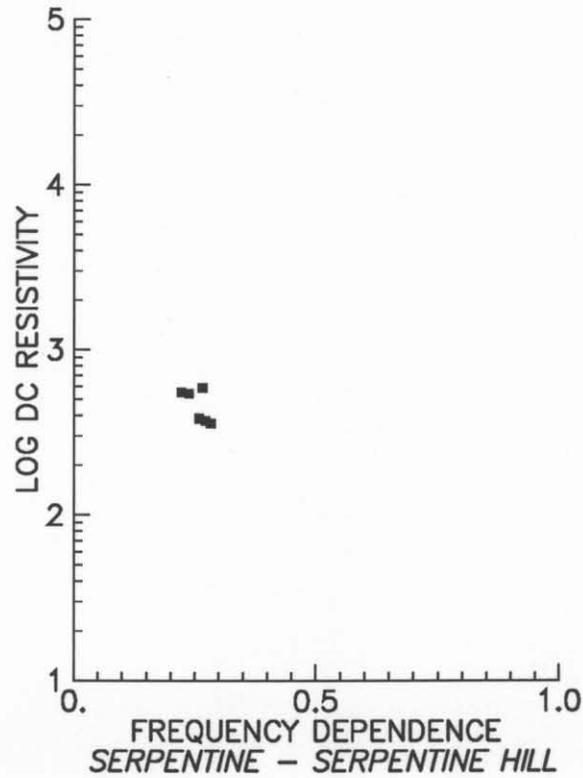
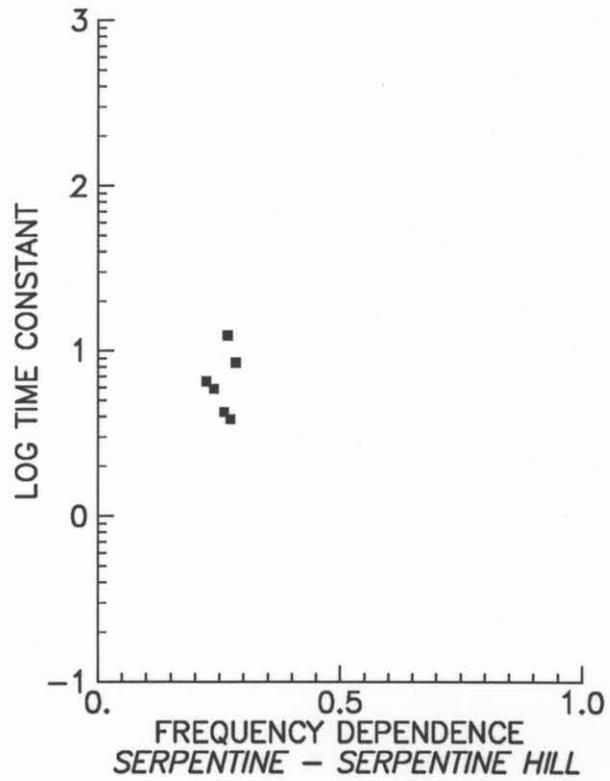
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .247E+03 | .373E+03 | .320E+03 | .508E+02              |
| Chargeability | .815E+02 | .113E+03 | .948E+02 | .109E+02              |
| R0            | .358E+03 | .589E+03 | .466E+03 | .965E+02              |
| $\tau$        | .385E+01 | .124E+02 | .690E+01 | .289E+01              |
| c             | .22      | .28      | .26      | .02                   |
| m             | .48      | .62      | .56      | .05                   |

Data from 6 cases. Spectral data from 6 cases. ( 6 Sites measured).

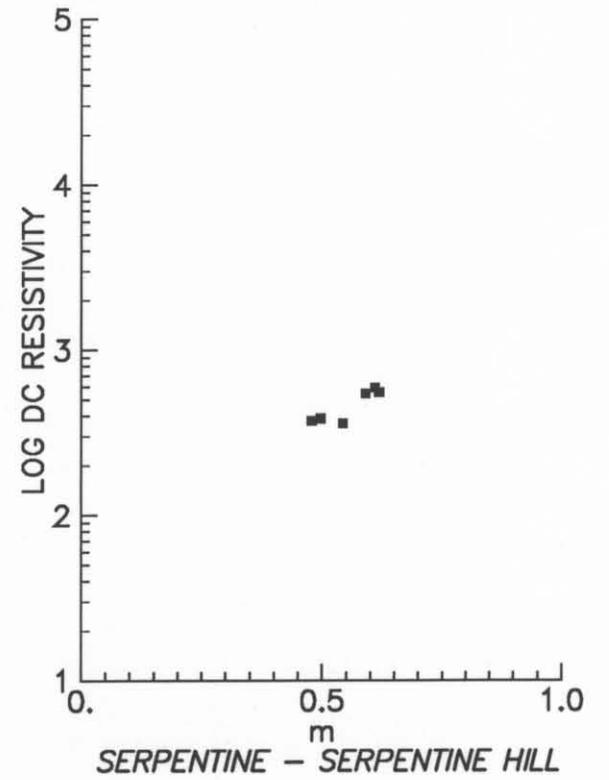
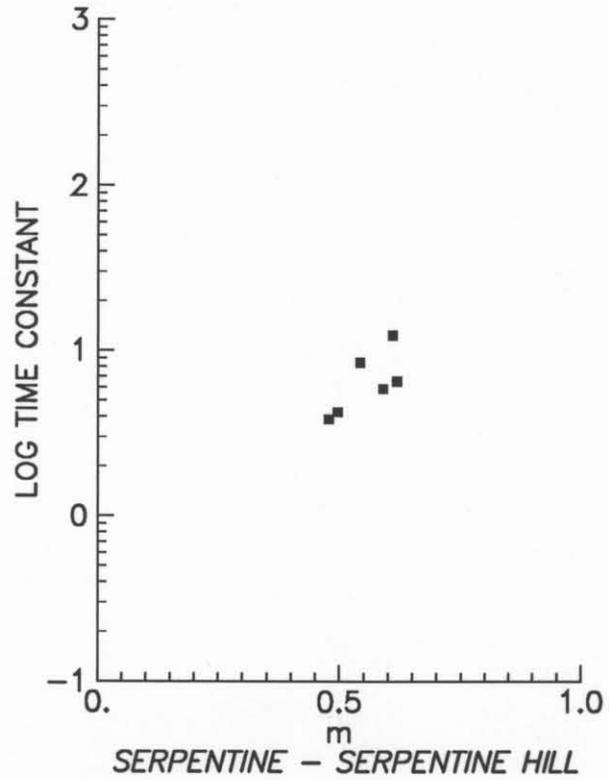
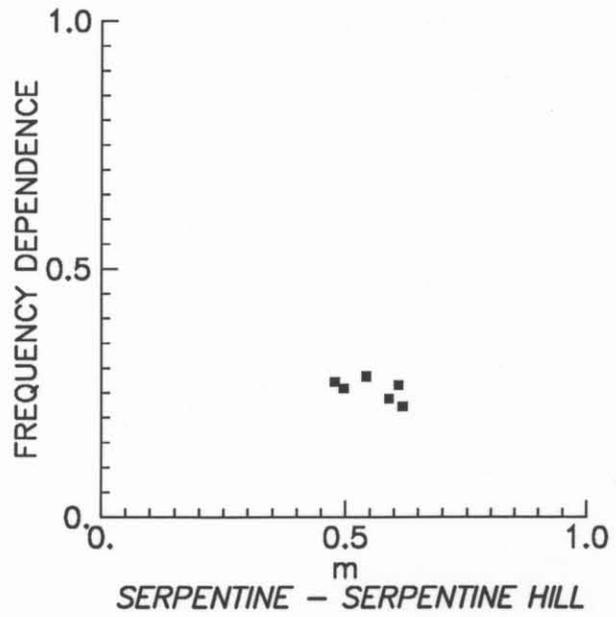
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2     | 3     | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|-------|-------|------|------|------|------|------|------|------|
| 19.25 | 14.08 | 11.50 | 9.78 | 8.54 | 7.59 | 6.83 | 6.20 | 5.70 | 5.26 |



034218



## Electrical Properties - Western Tasmania

D56

'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0011

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

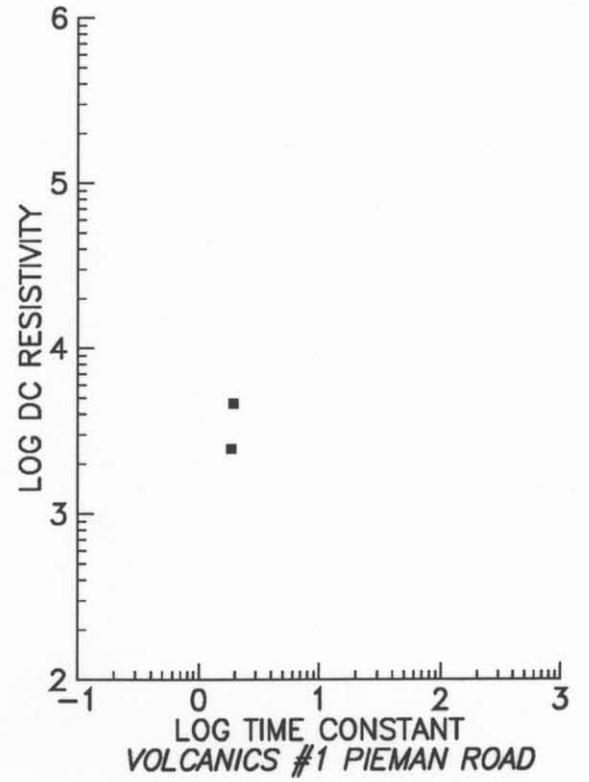
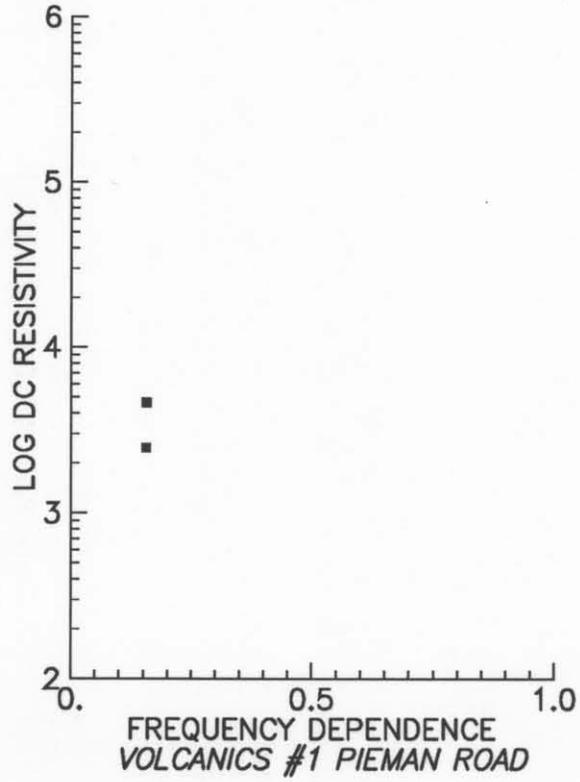
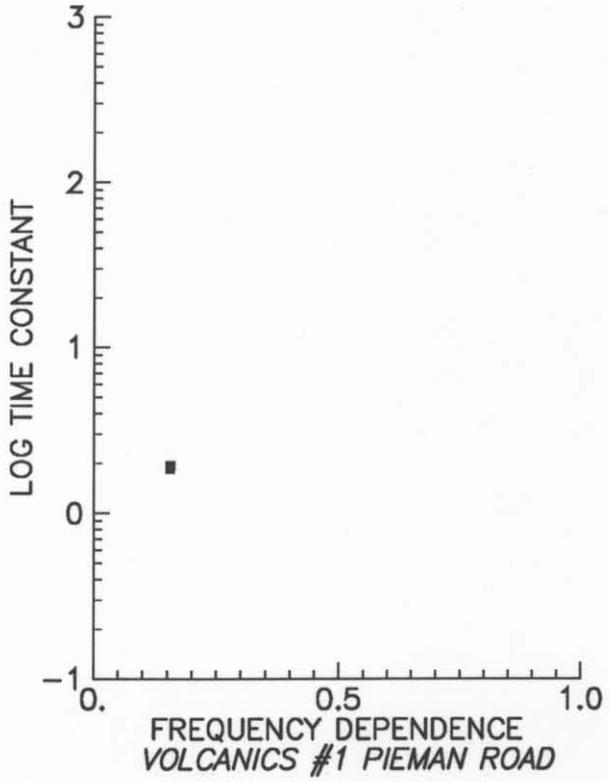
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD DEVIATION |
|---------------|----------|----------|----------|--------------------|
| Resistivity   | .246E+04 | .513E+04 | .380E+04 | .133E+04           |
| Chargeability | .119E+01 | .190E+01 | .154E+01 | .355E+00           |
| R0            | .248E+04 | .464E+04 | .356E+04 | .108E+04           |
| $\tau$        | .186E+01 | .194E+01 | .190E+01 | .410E-01           |
| c             | .16      | .16      | .16      | .00                |
| m             | .01      | .01      | .01      | .00                |

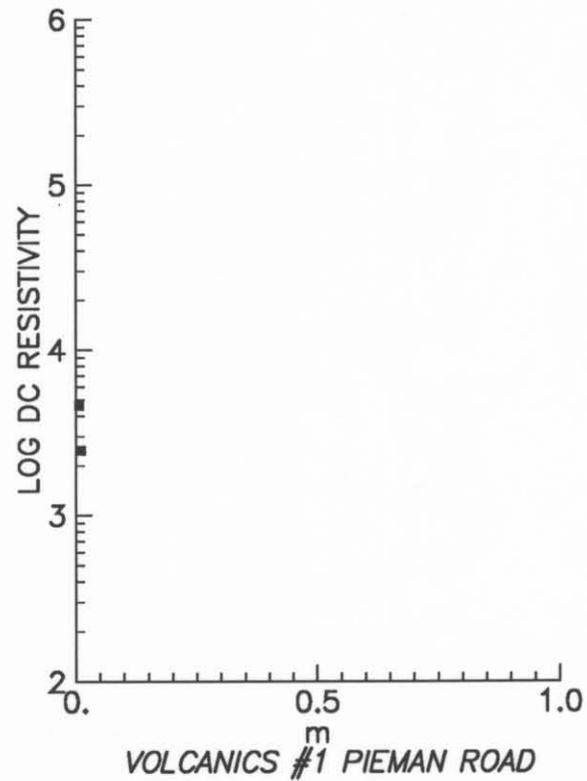
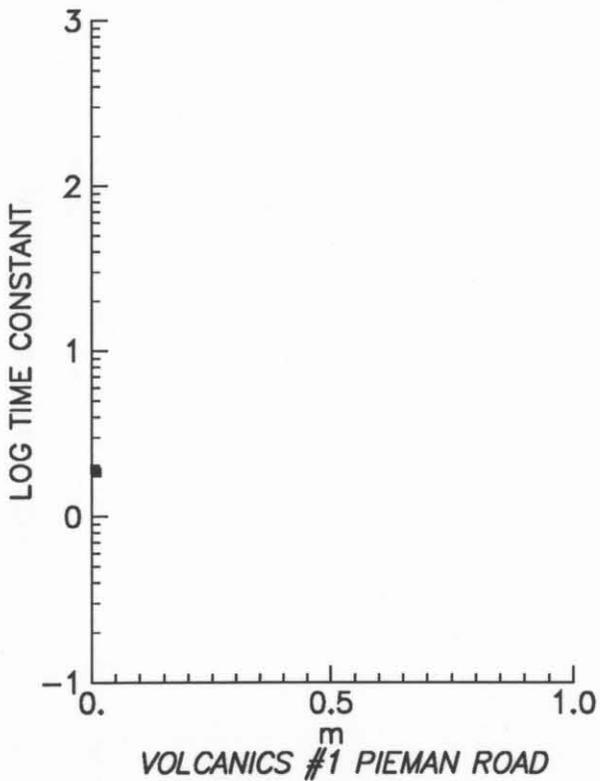
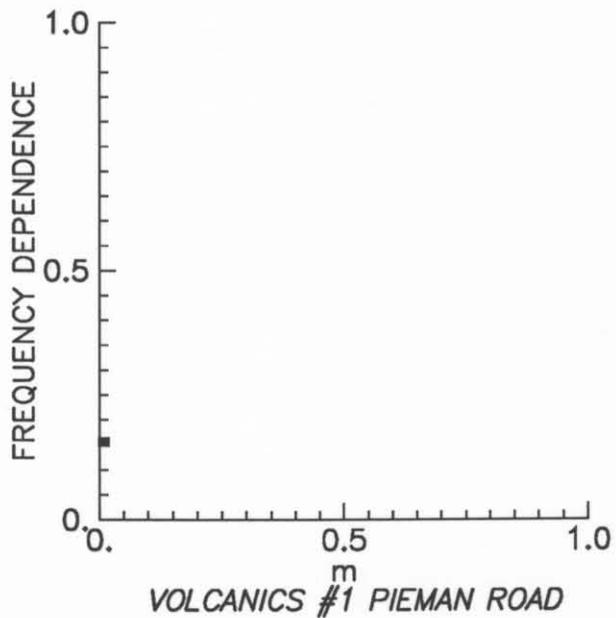
Data from 2 cases. Spectral data from 2 cases. ( 6 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .54 | .31 | .20 | .14 | .11 | .08 | .06 | .04 | .03 | .02 |





'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0012

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

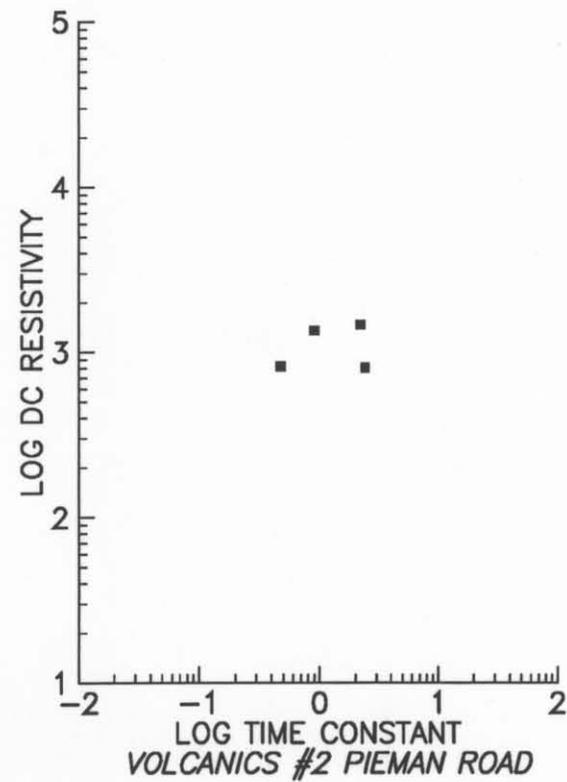
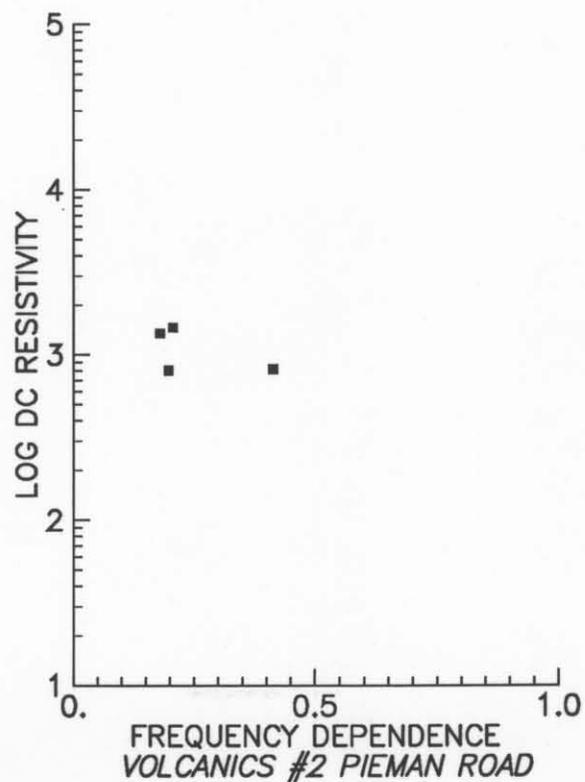
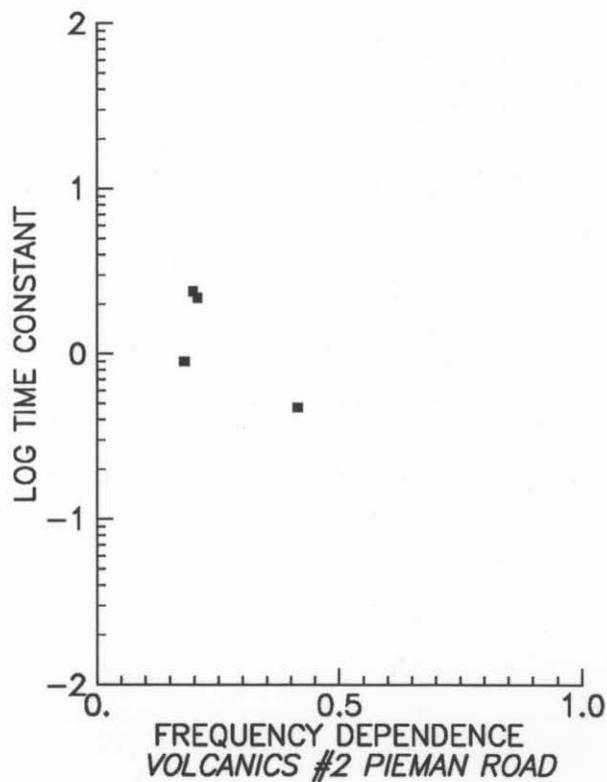
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .769E+03 | .139E+04 | .107E+04 | .285E+03              |
| Chargeability | .613E+01 | .122E+02 | .972E+01 | .240E+01              |
| R0            | .803E+03 | .147E+04 | .111E+04 | .303E+03              |
| $\tau$        | .475E+00 | .240E+01 | .149E+01 | .821E+00              |
| c             | .18      | .41      | .25      | .10                   |
| m             | .06      | .11      | .08      | .02                   |

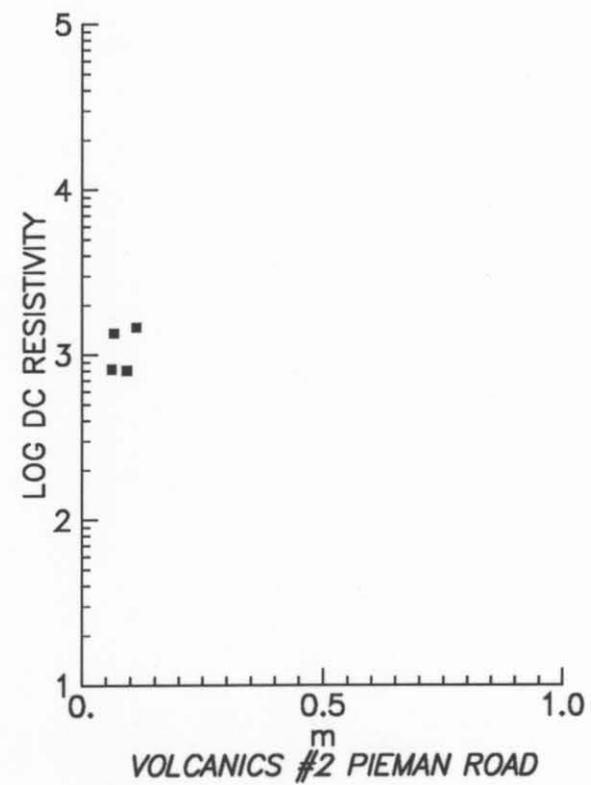
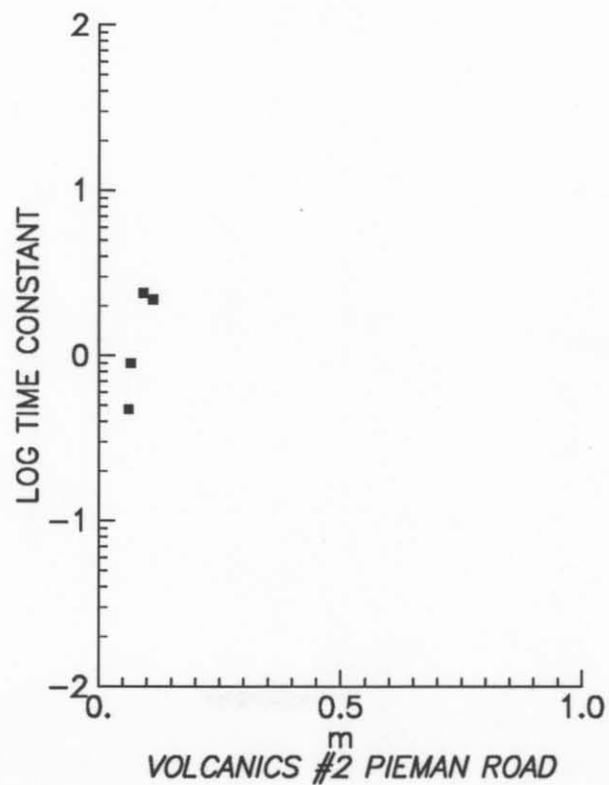
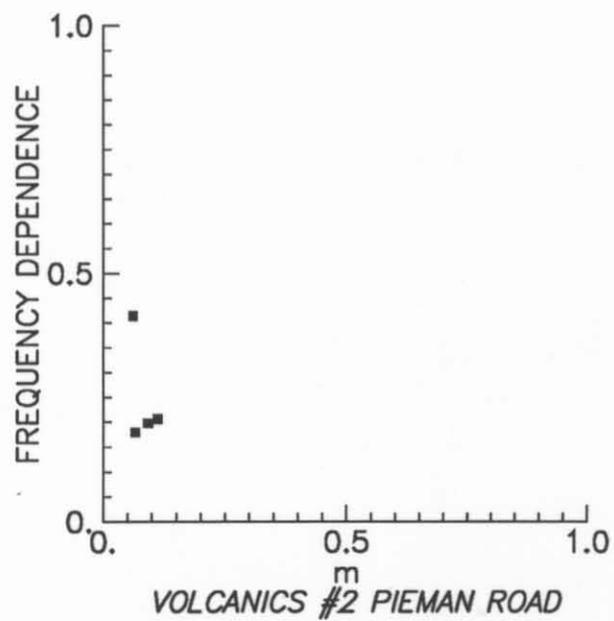
Data from 4 cases. Spectral data from 4 cases. ( 4 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.13 | 1.49 | 1.19 | .99 | .86 | .75 | .67 | .59 | .54 | .49 |





## Electrical Properties - Western Tasmania

D58

'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0013

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

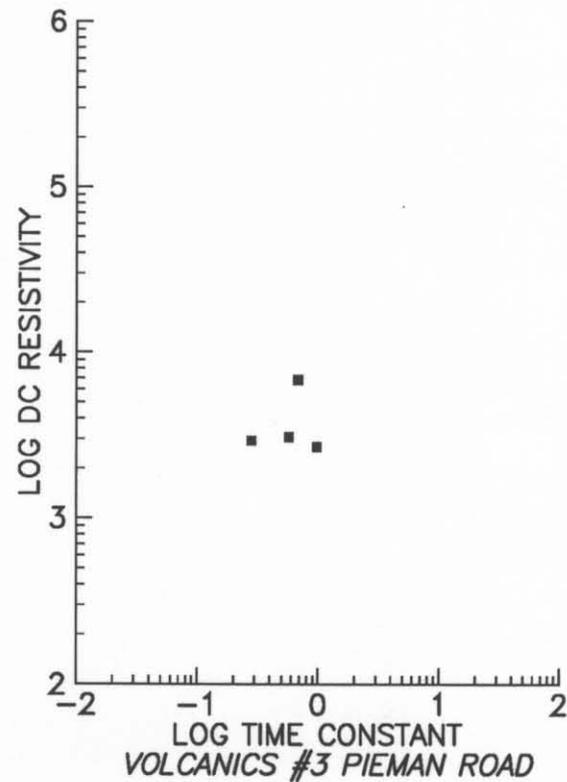
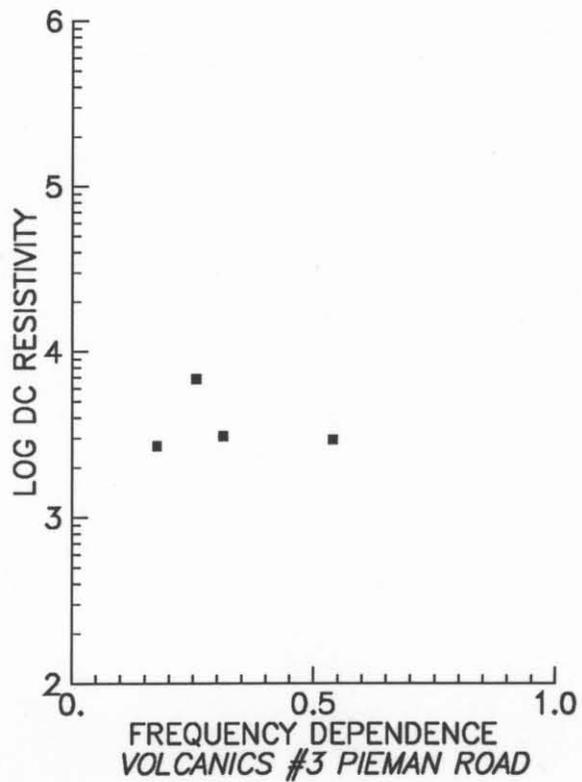
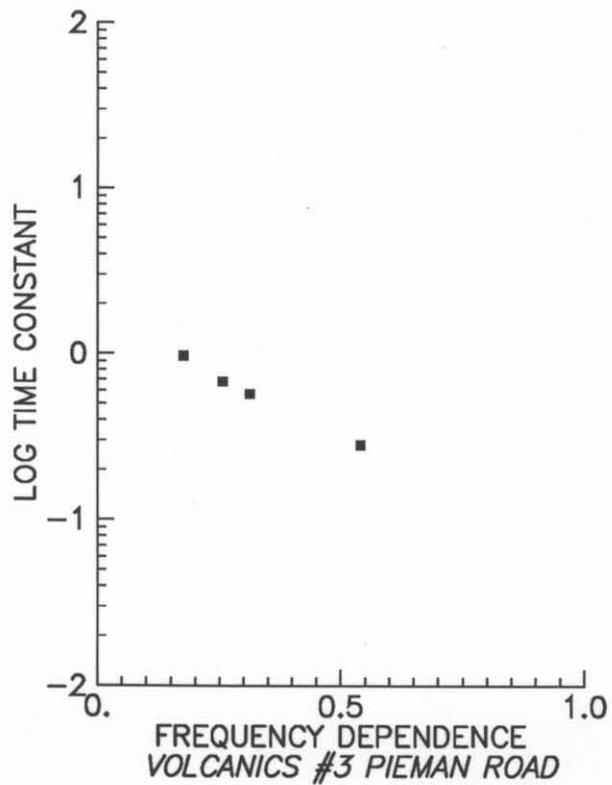
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .262E+04 | .678E+04 | .386E+04 | .169E+04              |
| Chargeability | .577E+01 | .121E+02 | .830E+01 | .245E+01              |
| R0            | .270E+04 | .684E+04 | .389E+04 | .171E+04              |
| $\tau$        | .282E+00 | .971E+00 | .627E+00 | .247E+00              |
| c             | .18      | .54      | .32      | .14                   |
| m             | .04      | .10      | .06      | .02                   |

Data from 4 cases. Spectral data from 4 cases. ( 5 Sites measured).

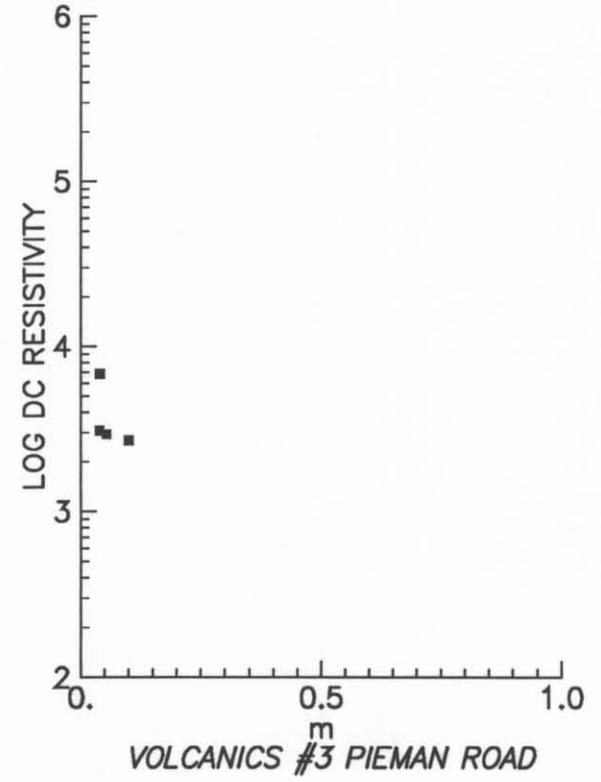
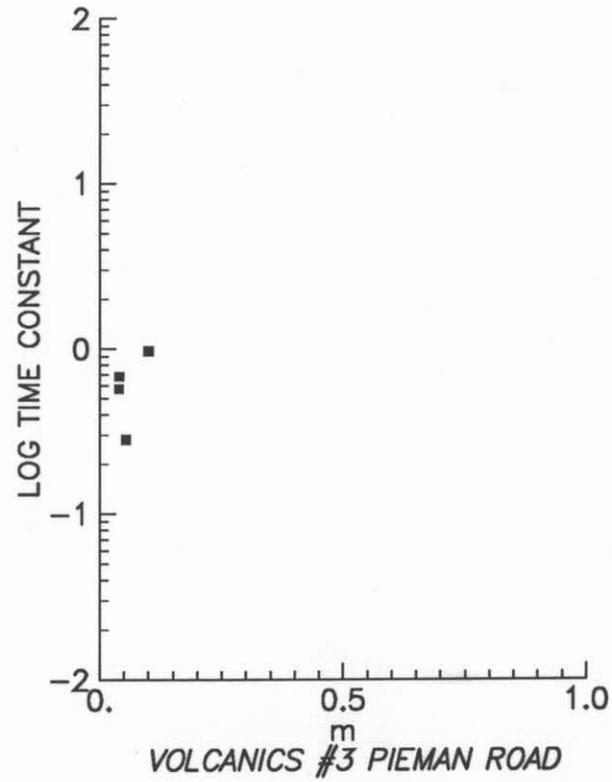
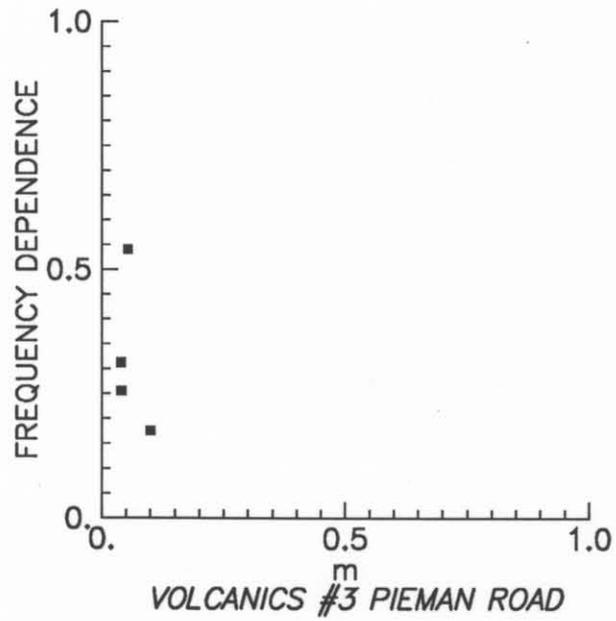
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 2.09 | 1.36 | 1.04 | .83 | .69 | .59 | .51 | .44 | .40 | .36 |



034227



MRV0013

## Electrical Properties - Western Tasmania

D59

'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0014

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .643E+03 | .135E+04 | .115E+04 | .254E+03              |
| Chargeability | .481E+00 | .657E+01 | .290E+01 | .221E+01              |
| R0            | .651E+03 | .133E+04 | .109E+04 | .231E+03              |
| $\tau$        | .132E+01 | .201E+01 | .164E+01 | .299E+00              |
| c             | .15      | .17      | .16      | .01                   |
| m             | .00      | .08      | .04      | .03                   |

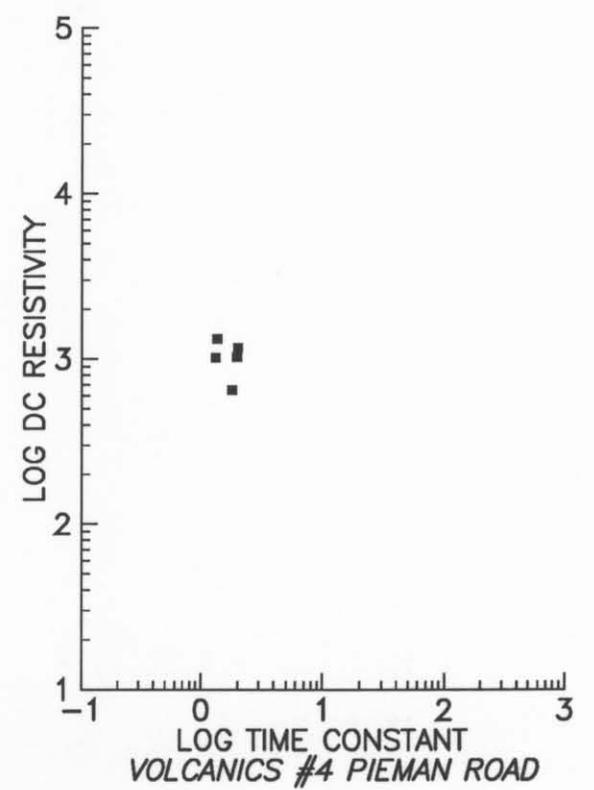
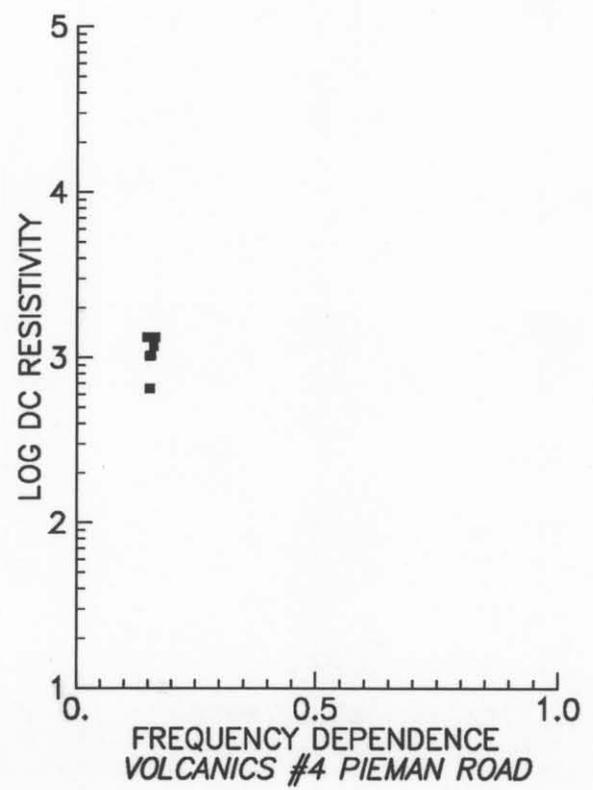
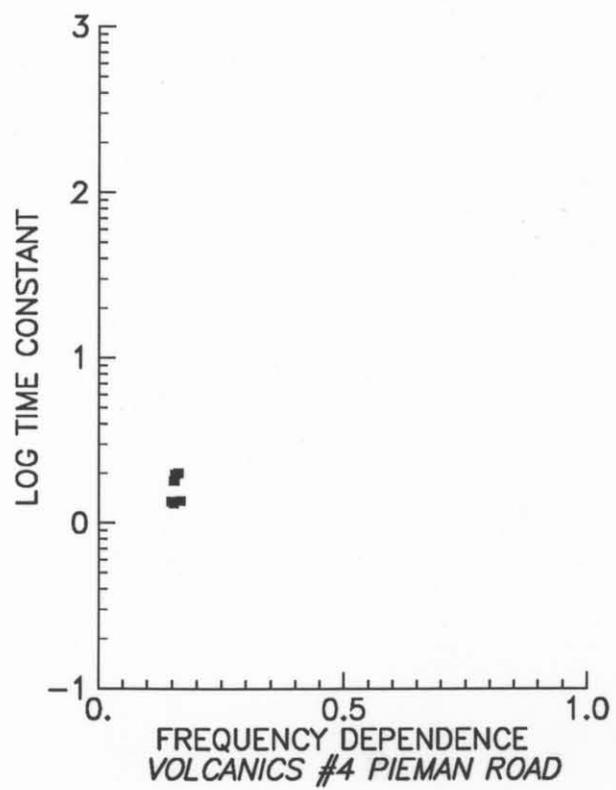
Data from 6 cases. Spectral data from 6 cases. ( 6 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

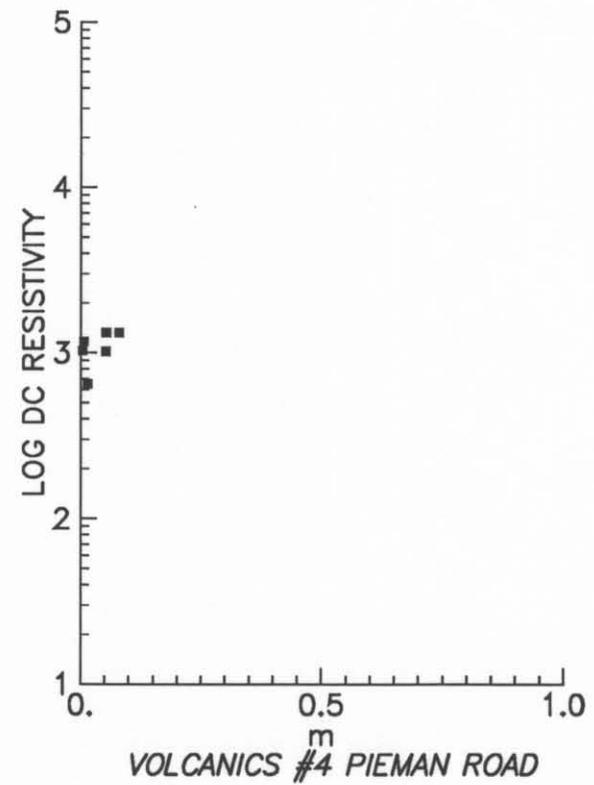
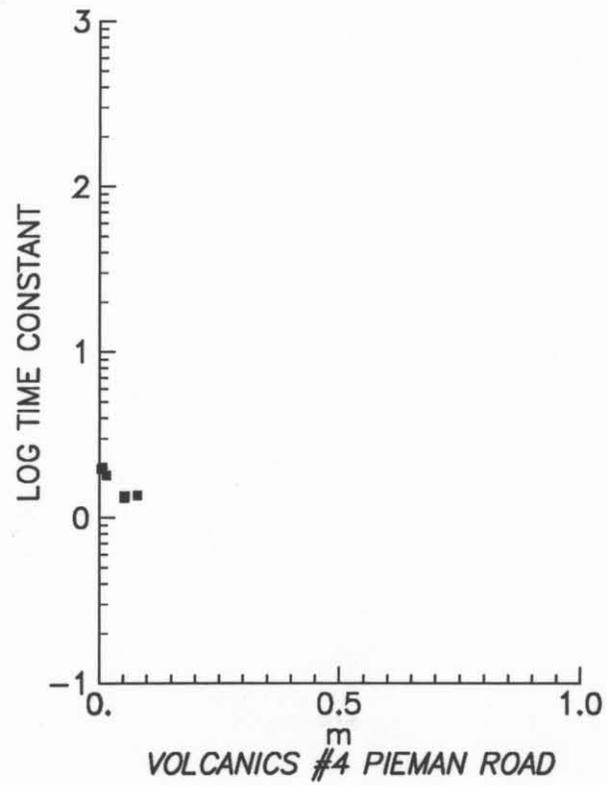
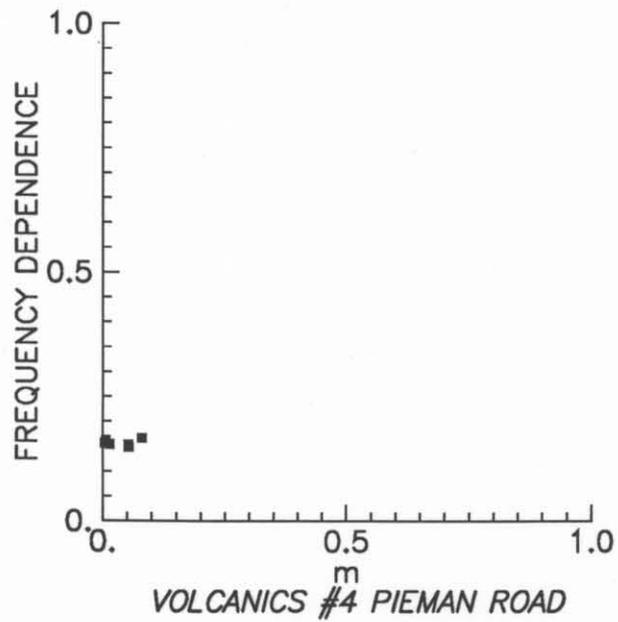
Average Window Chargeabilities

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .63 | .48 | .38 | .31 | .26 | .21 | .18 | .16 | .14 | .12 |

034229



MRV0014



'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0015

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .959E+03 | .174E+04 | .130E+04 | .258E+03              |
| Chargeability | .632E+01 | .126E+02 | .847E+01 | .220E+01              |
| R0            | .997E+03 | .180E+04 | .135E+04 | .262E+03              |
| $\tau$        | .562E+00 | .174E+01 | .119E+01 | .380E+00              |
| c             | .13      | .41      | .21      | .10                   |
| m             | .06      | .12      | .09      | .02                   |

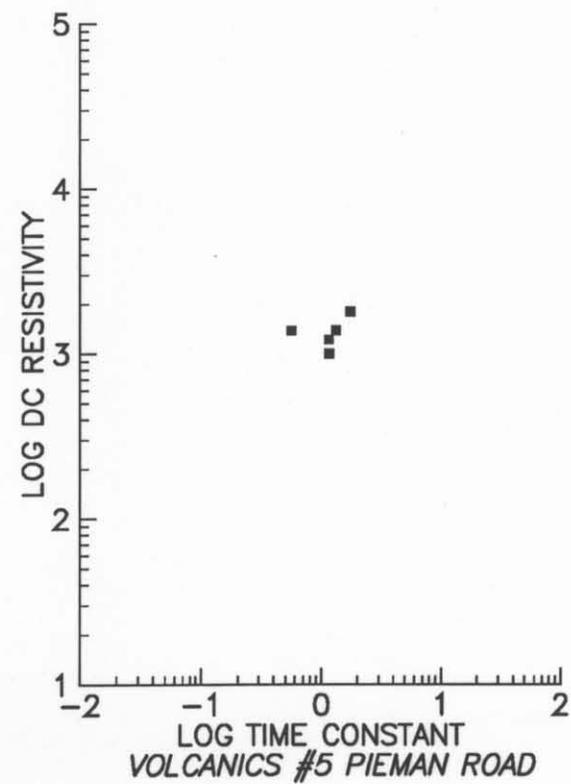
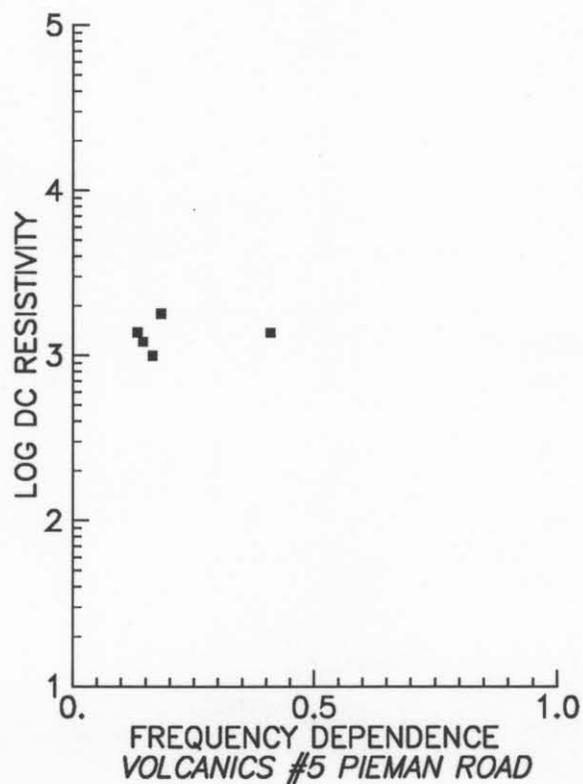
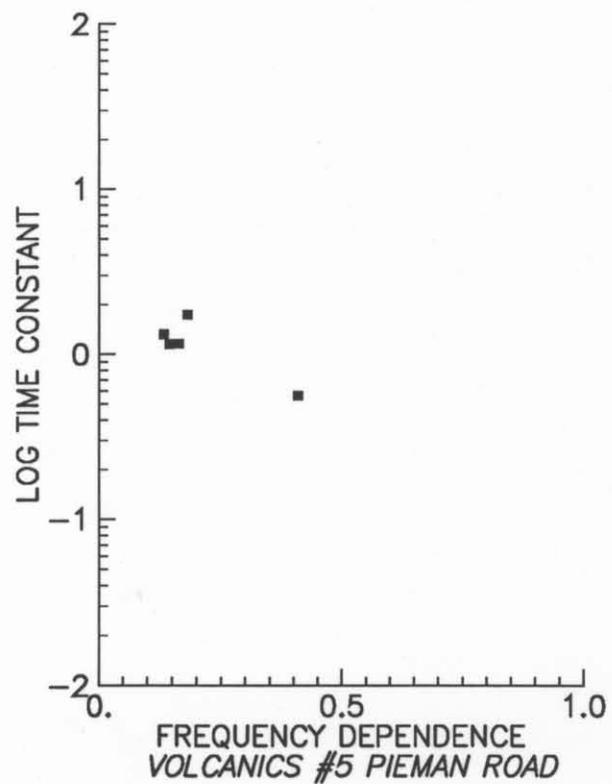
Data from 5 cases. Spectral data from 5 cases. ( 5 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

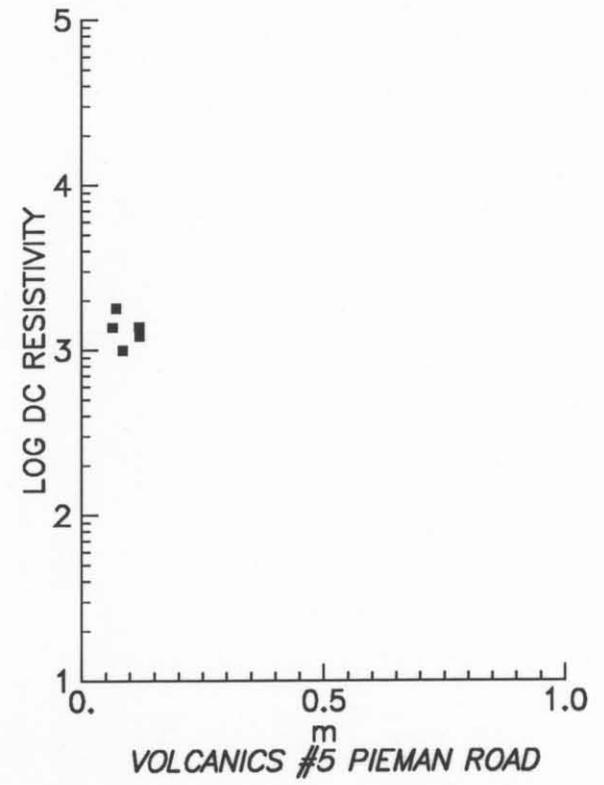
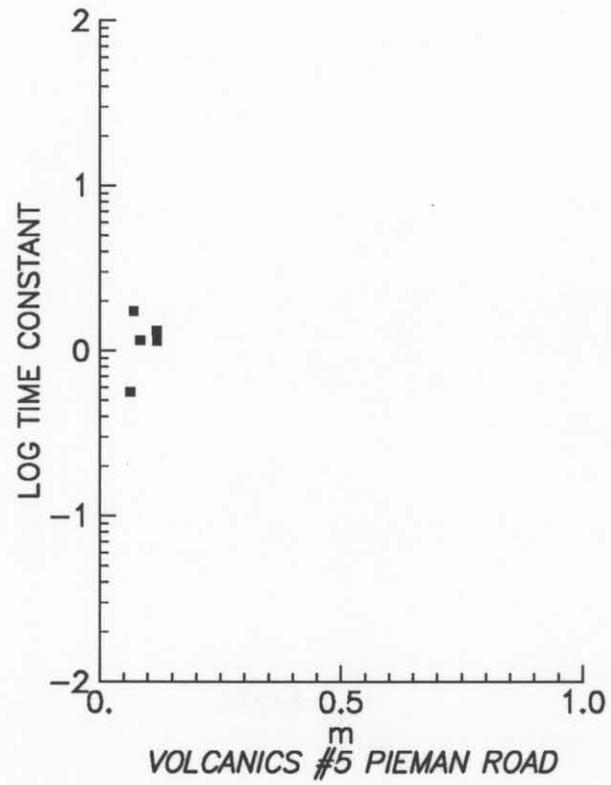
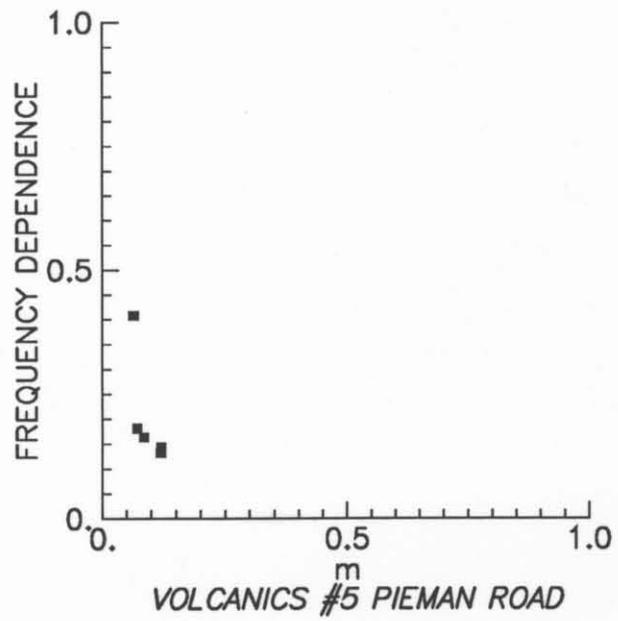
|      |      |      |     |     |     |     |     |     |     |
|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 1    | 2    | 3    | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
| 1.84 | 1.32 | 1.05 | .87 | .74 | .65 | .58 | .52 | .47 | .42 |

034232



MRV0015

D60A



## Electrical Properties - Western Tasmania

D61

'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0016

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

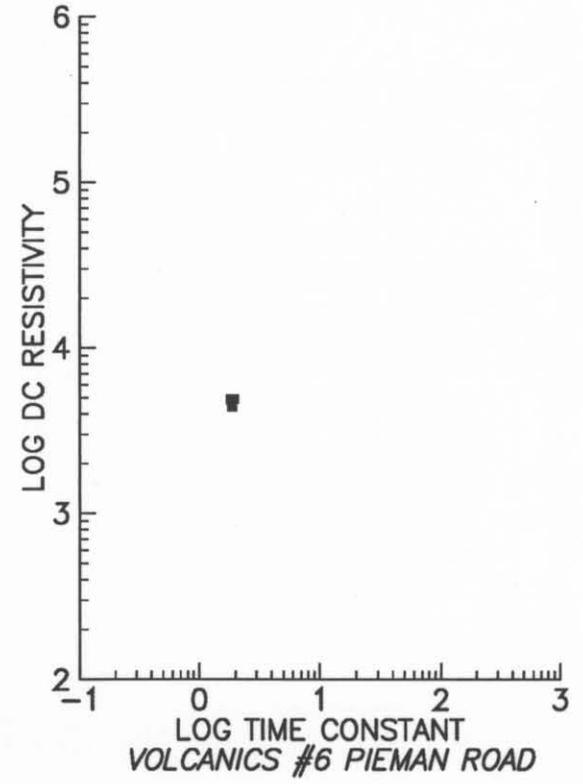
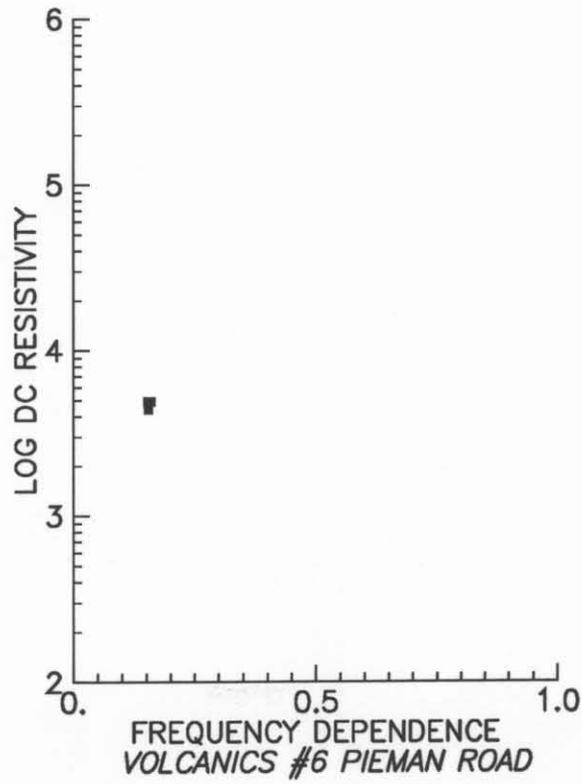
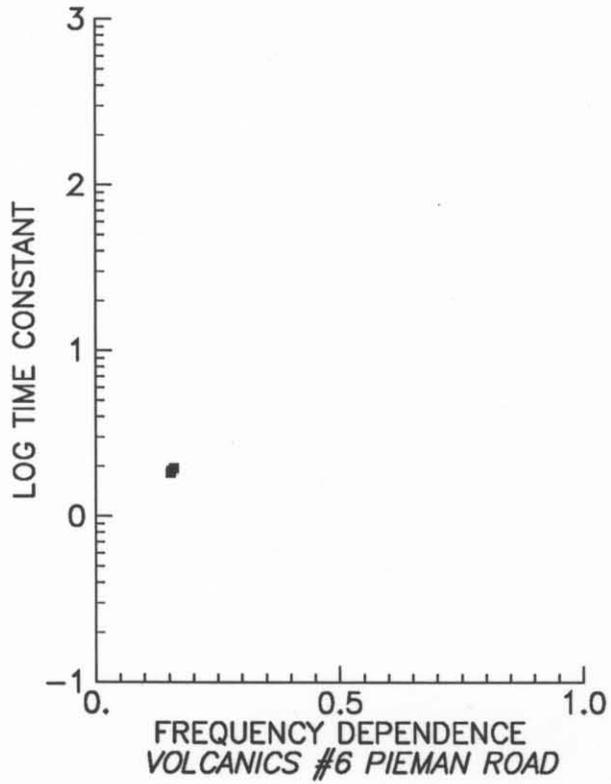
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .453E+04 | .499E+04 | .480E+04 | .192E+03              |
| Chargeability | .101E+01 | .231E+01 | .152E+01 | .569E+00              |
| R0            | .443E+04 | .492E+04 | .475E+04 | .227E+03              |
| $\tau$        | .182E+01 | .195E+01 | .188E+01 | .514E-01              |
| c             | .15      | .16      | .16      | .00                   |
| m             | .01      | .03      | .02      | .01                   |

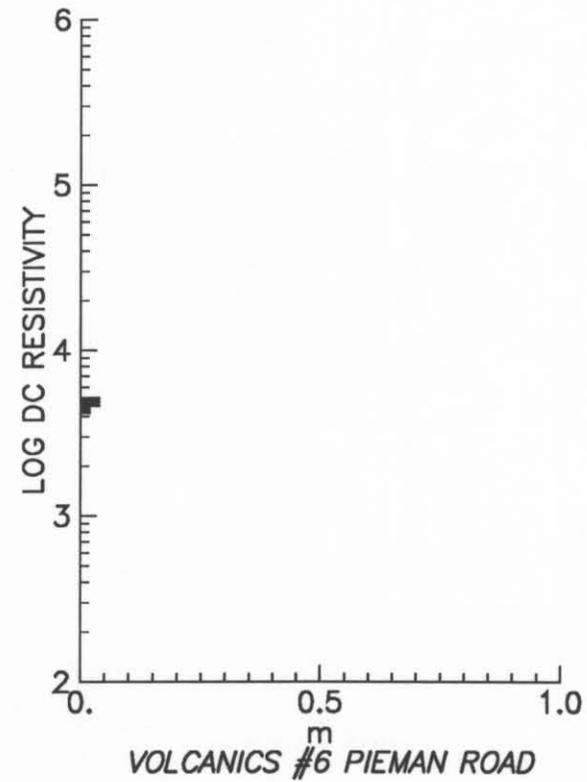
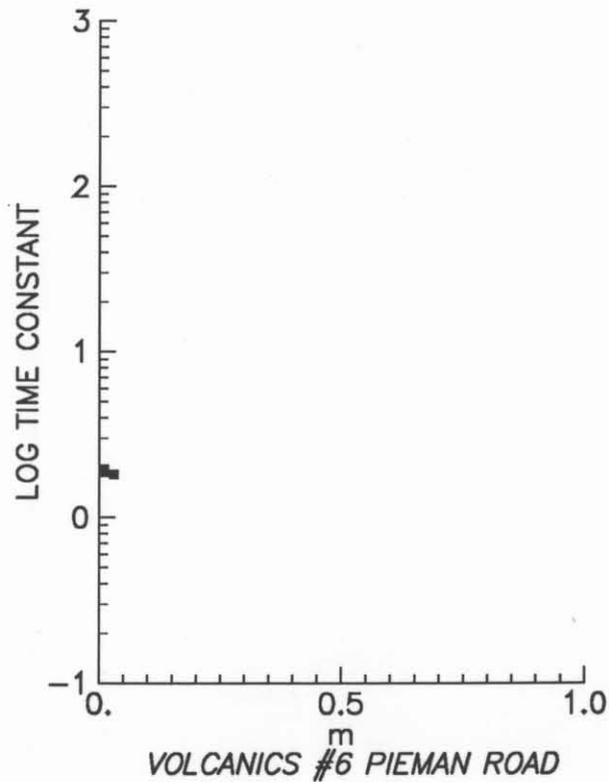
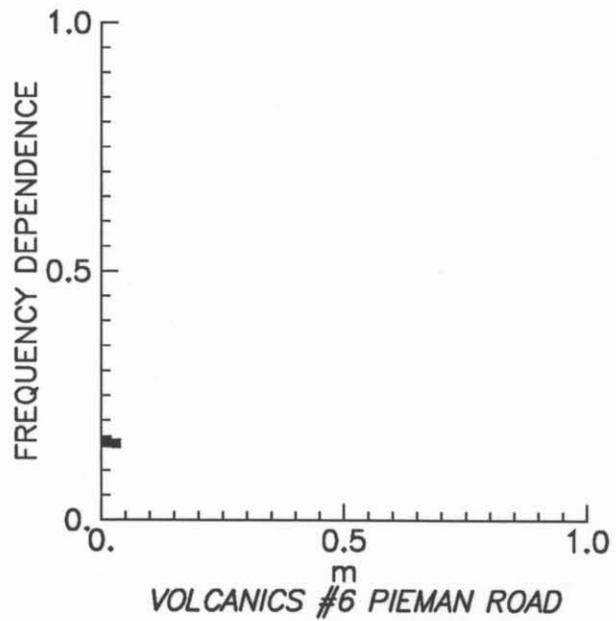
Data from 3 cases. Spectral data from 3 cases. ( 4 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
| .34 | .26 | .21 | .17 | .14 | .11 | .09 | .08 | .06 | .05 |





## Electrical Properties - Western Tasmania

D62

'UNALTERED' VOLCANICS on the PIEMAN ROAD, TULLAH

MRV0017

While virtually all of the Mt. Read volcanics are altered to some extent the Pieman Road affords a section through what appear to be relatively unaltered volcanics and thus an opportunity to measure properties for such rocks.

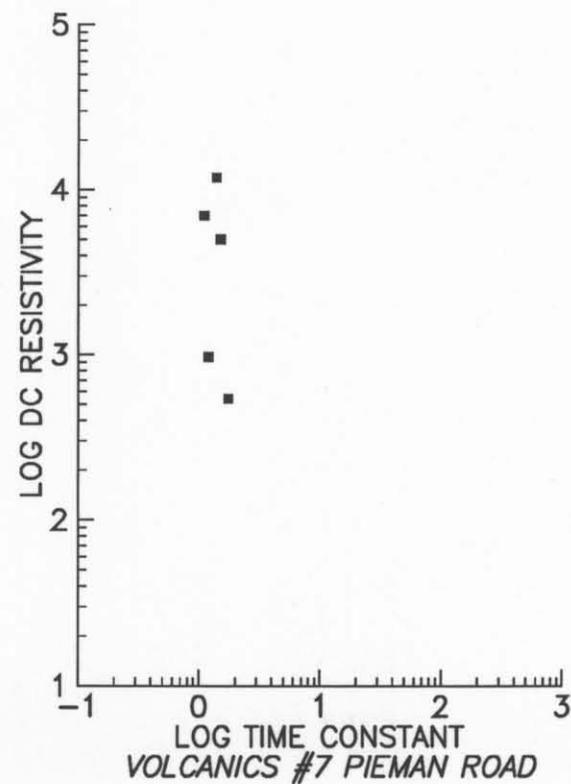
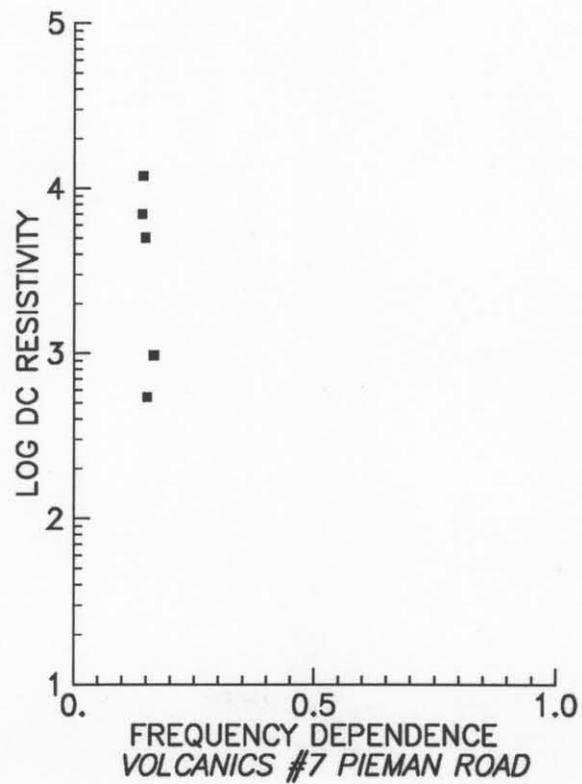
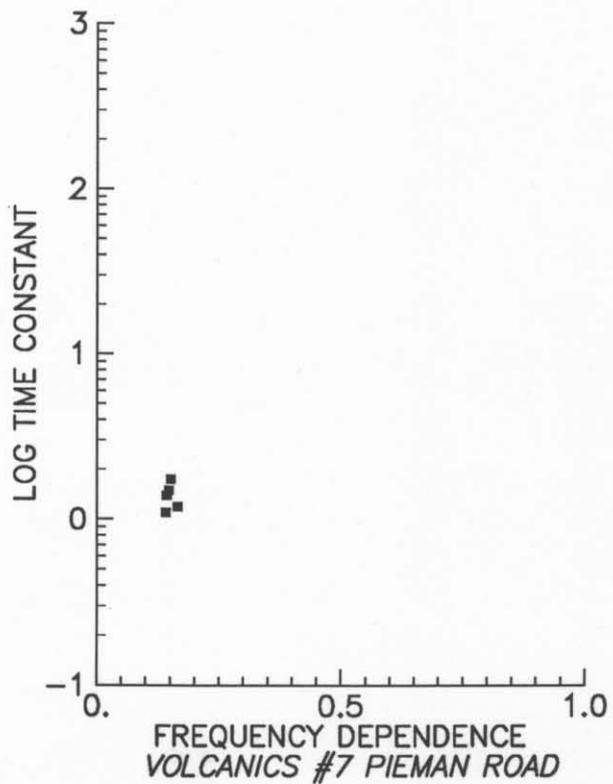
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .536E+03 | .118E+05 | .503E+04 | .415E+04              |
| Chargeability | .229E+01 | .492E+01 | .359E+01 | .862E+00              |
| R0            | .544E+03 | .119E+05 | .509E+04 | .419E+04              |
| $\tau$        | .110E+01 | .174E+01 | .138E+01 | .228E+00              |
| c             | .14      | .17      | .15      | .01                   |
| m             | .03      | .07      | .04      | .01                   |

Data from 5 cases. Spectral data from 5 cases. ( 5 Sites measured).

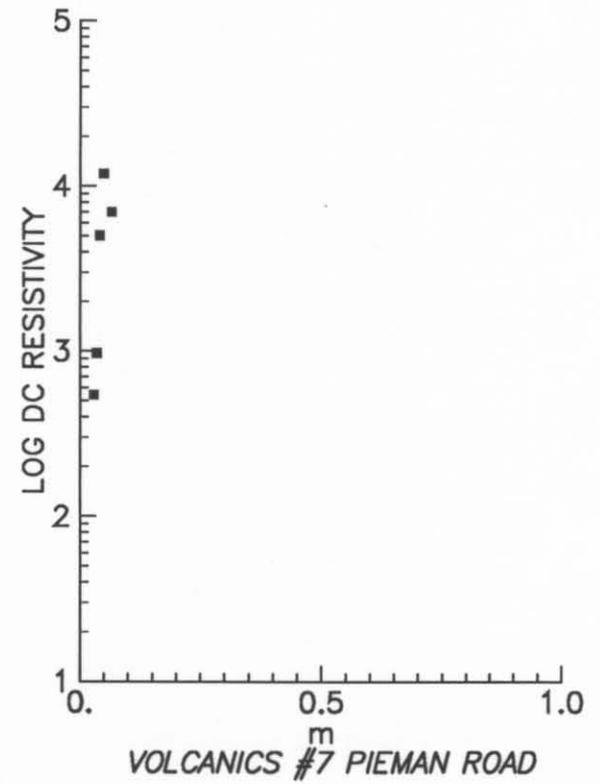
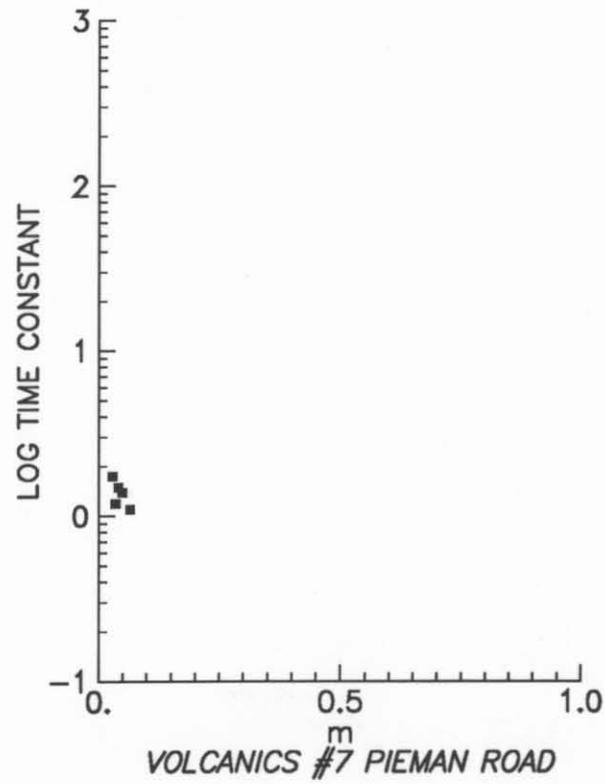
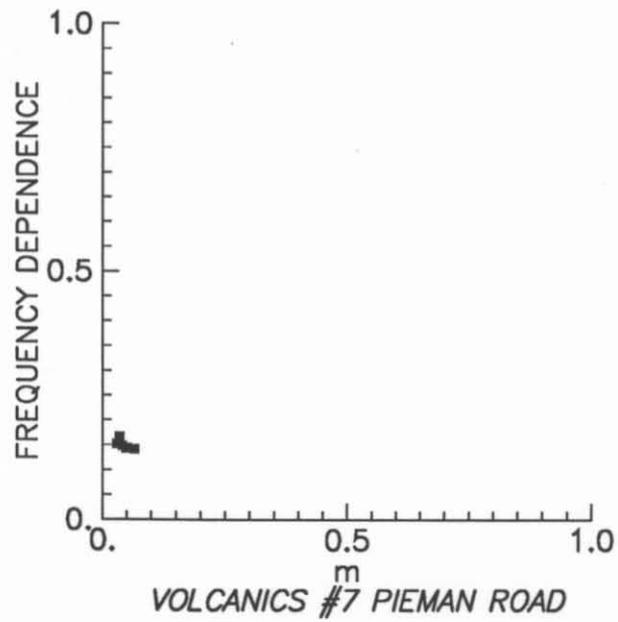
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| .90 | .58 | .44 | .36 | .35 | .25 | .21 | .18 | .16 | .14 |



034239



## Electrical Properties - Western Tasmania

D63

TUNNEL RIDGE at RENISON BELL

MRV0022

The Crimson Creek Formation hosts important tin mineralization in the Renison Bell area and its electrical properties were studied at various points on Tunnel Ridge at Renison Bell.

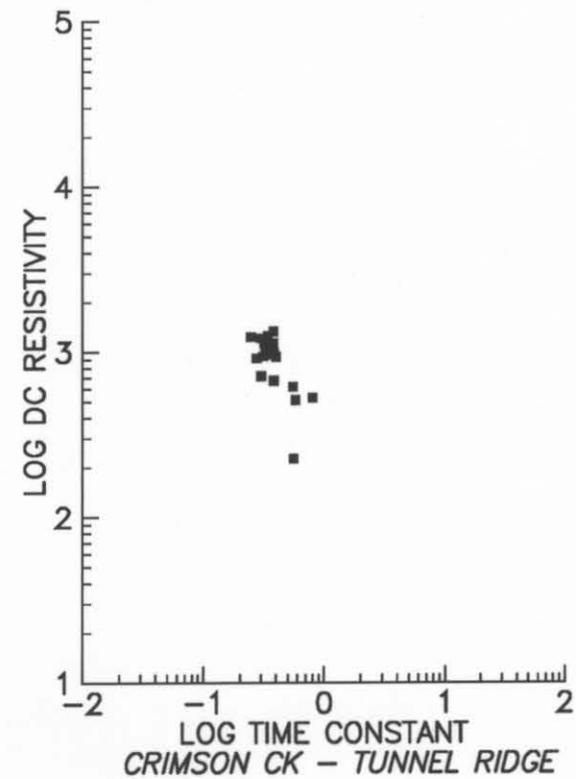
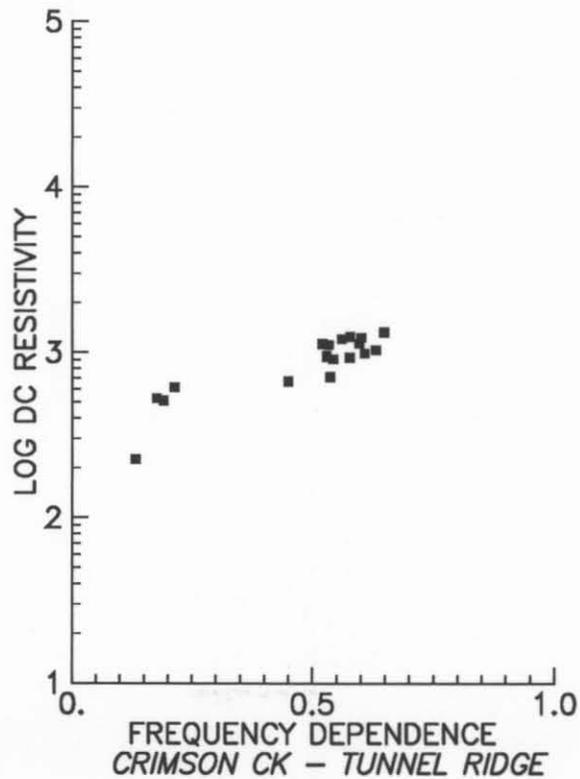
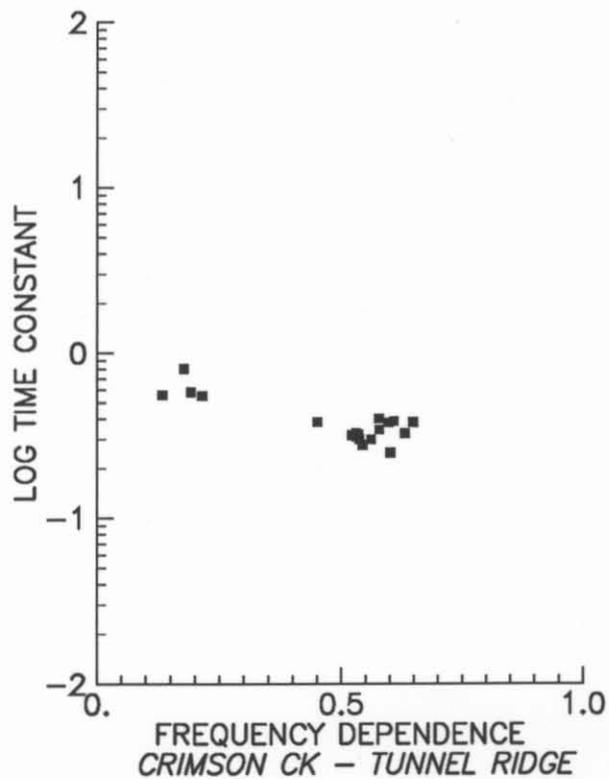
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .163E+03 | .135E+04 | .904E+03 | .301E+03              |
| Chargeability | .579E+01 | .536E+02 | .129E+02 | .959E+01              |
| R0            | .226E+03 | .133E+04 | .909E+03 | .288E+03              |
| $\tau$        | .248E+00 | .805E+00 | .390E+00 | .132E+00              |
| c             | .13      | .65      | .48      | .16                   |
| m             | .03      | .62      | .08      | .12                   |

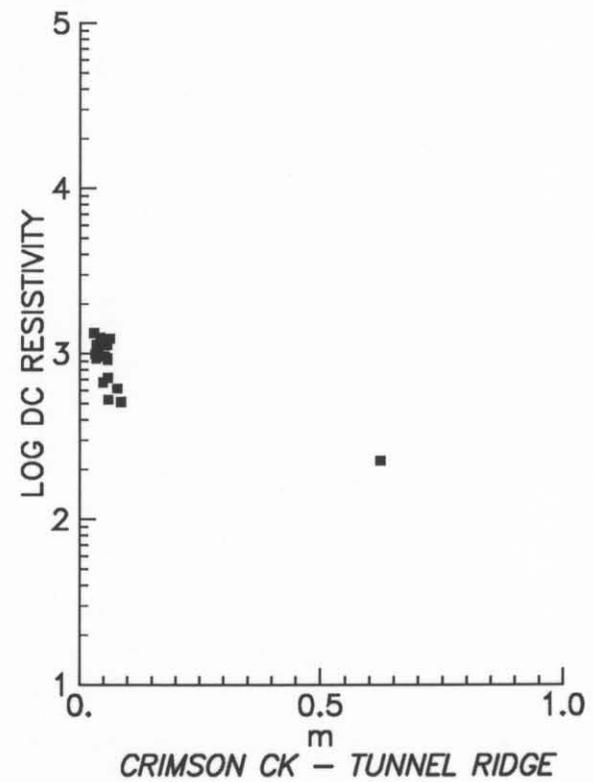
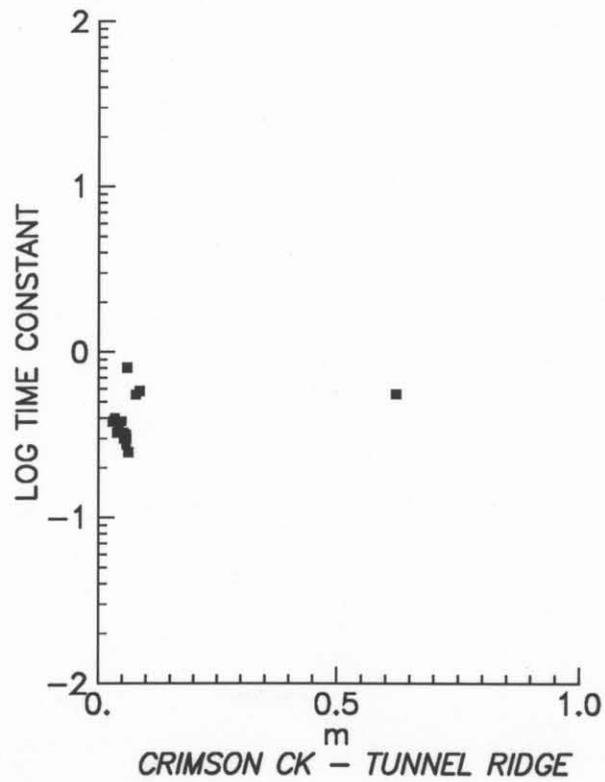
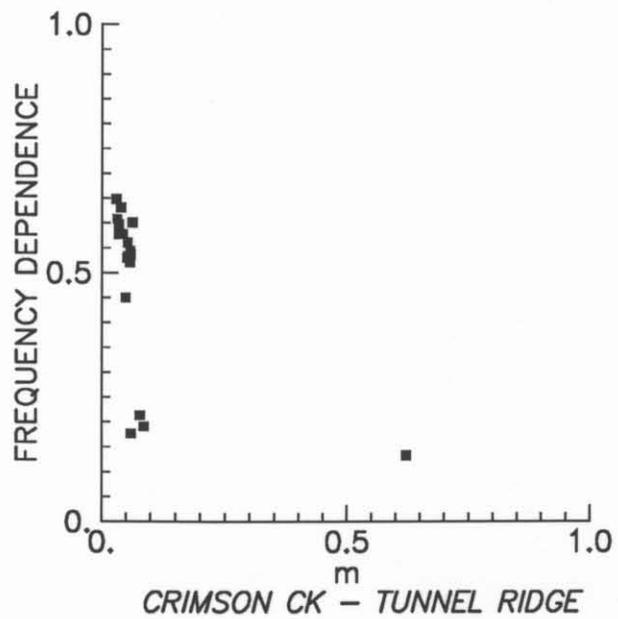
Data from 20 cases. Spectral data from 20 cases. ( 20 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 3.22 | 2.07 | 1.58 | 1.28 | 1.07 | .92 | .81 | .72 | .64 | .58 |





## Electrical Properties - Western Tasmania

D64

TUNNEL RIDGE at RENISON BELL

MRV0023

The Crimson Creek Formation hosts important tin mineralization in the Renison Bell area and its electrical properties were studied at various points on Tunnel Ridge at Renison Bell.

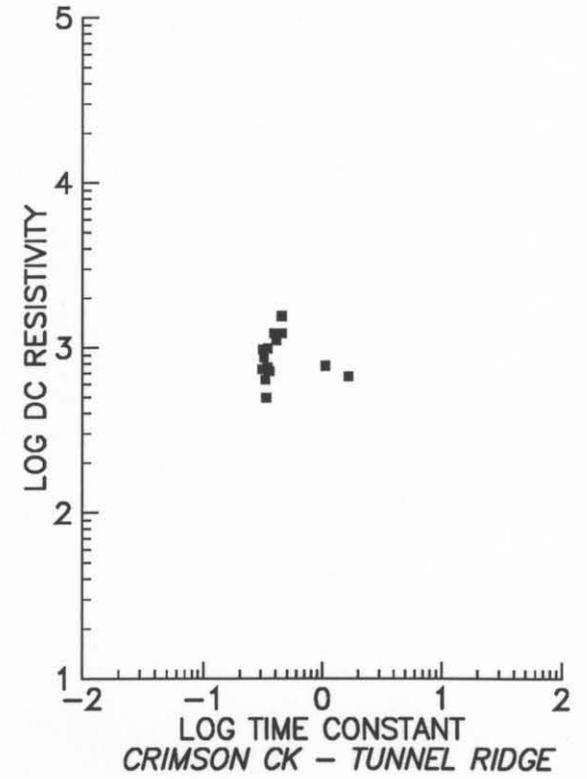
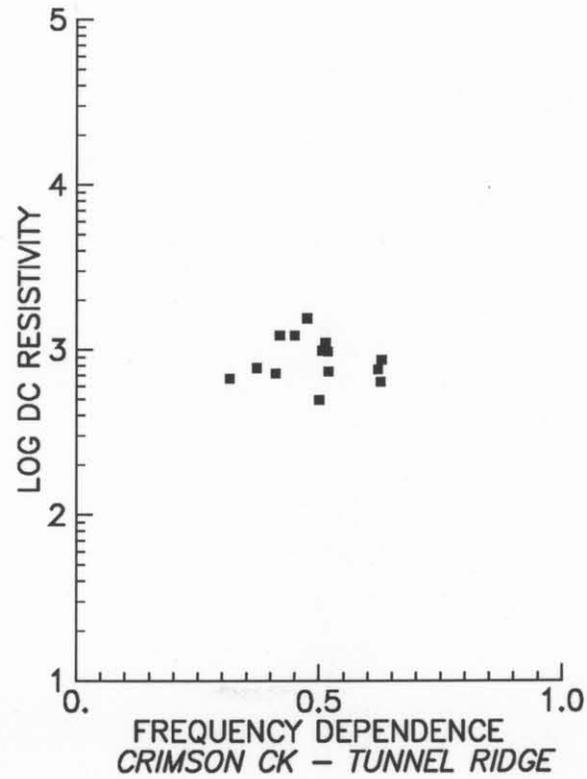
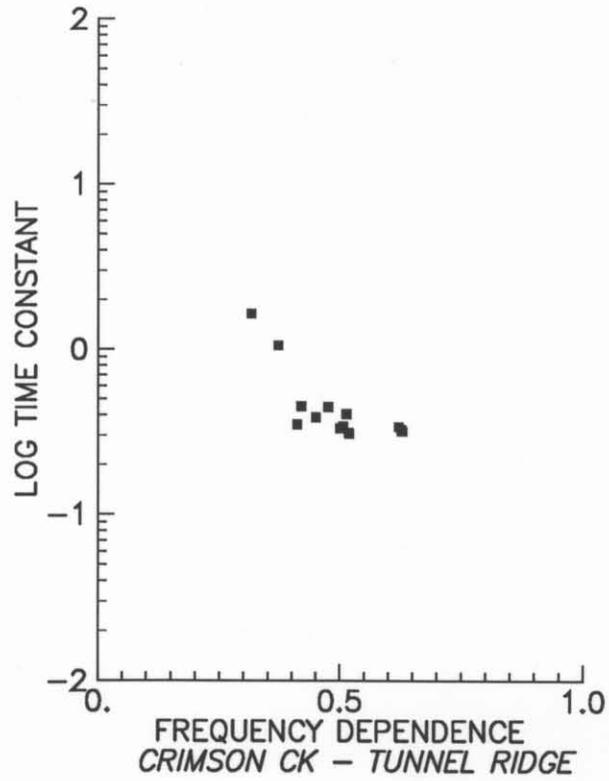
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .490E+03 | .155E+04 | .897E+03 | .279E+03              |
| Chargeability | .780E+01 | .257E+02 | .138E+02 | .500E+01              |
| R0            | .496E+03 | .155E+04 | .909E+03 | .277E+03              |
| $\tau$        | .307E+00 | .165E+01 | .502E+00 | .368E+00              |
| c             | .32      | .63      | .49      | .09                   |
| m             | .03      | .16      | .07      | .03                   |

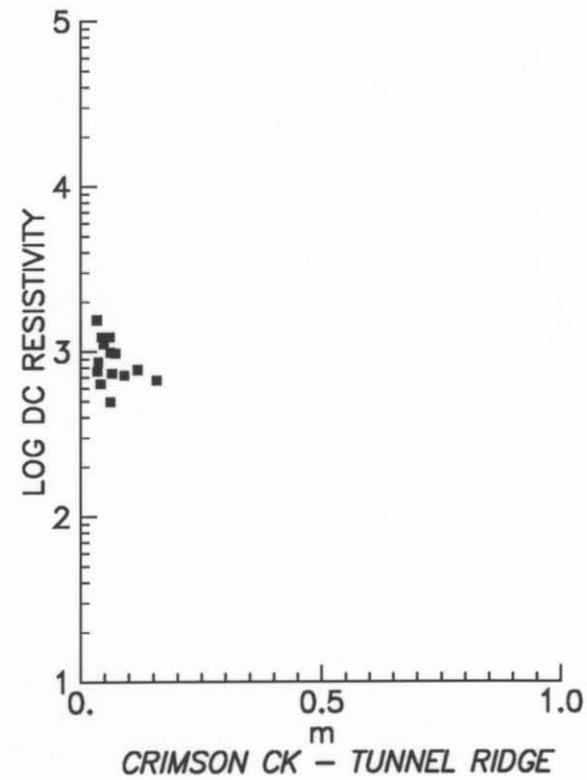
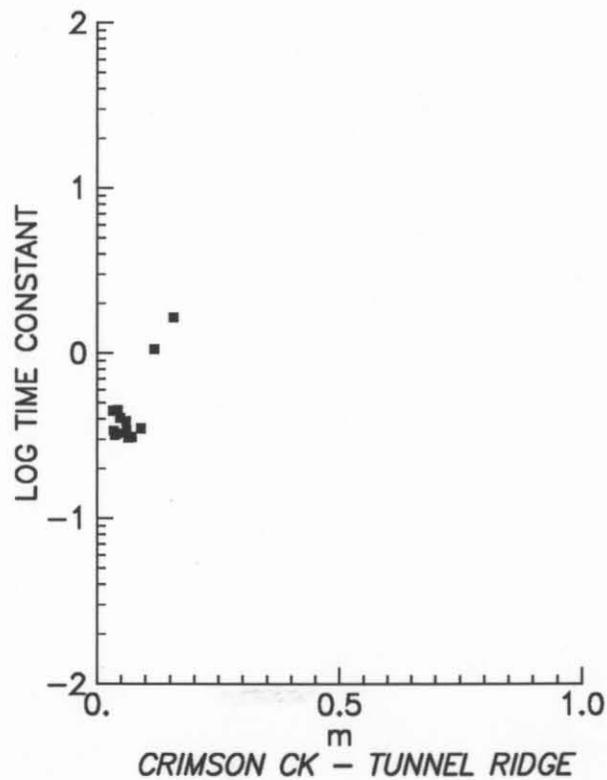
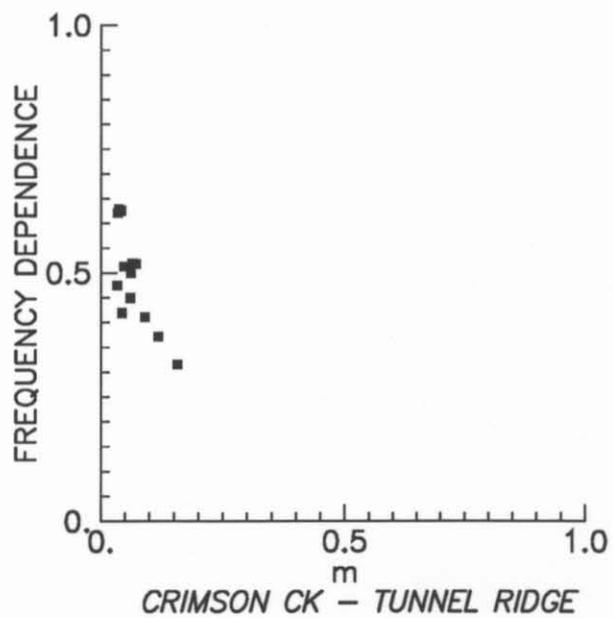
Data from 14 cases. Spectral data from 14 cases. ( 14 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7   | 8   | 9   | 10  |
|------|------|------|------|------|------|-----|-----|-----|-----|
| 3.29 | 2.18 | 1.70 | 1.39 | 1.17 | 1.01 | .89 | .79 | .70 | .63 |





## Electrical Properties - Western Tasmania

D65

TUNNEL RIDGE at RENISON BELL

MRV0042

These data are from the Crimson Creek rocks on Tunnel Ridge at Renison Bell.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .181E+03 | .895E+04 | .258E+04 | .188E+04              |
| Chargeability | .632E+01 | .599E+02 | .194E+02 | .102E+02              |
| R0            | .362E+01 | .968E+06 | .179E+05 | .113E+06              |
| $\tau$        | .172E+00 | .659E+01 | .493E+00 | .789E+00              |
| c             | .16      | .61      | .42      | .10                   |
| m             | .00      | .47      | .11      | .09                   |

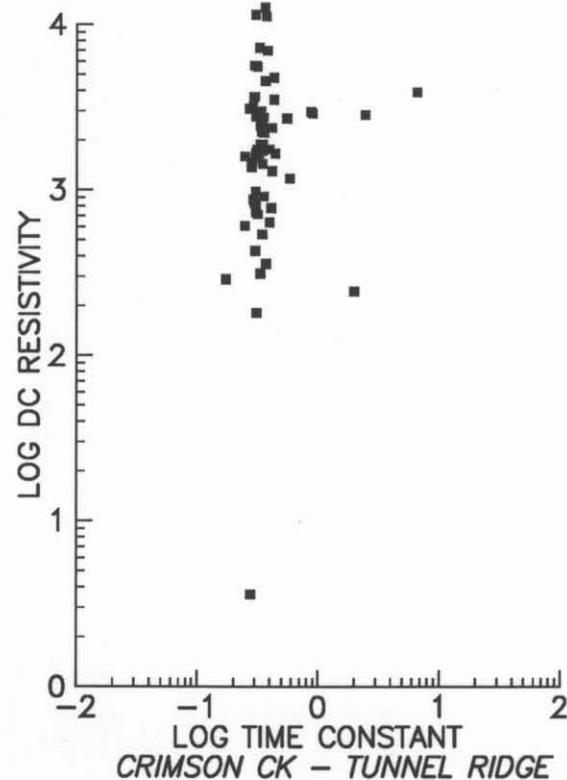
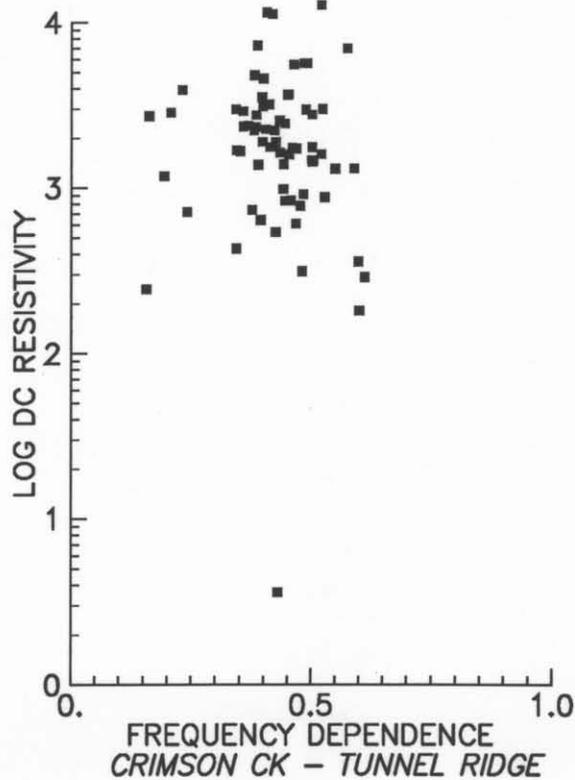
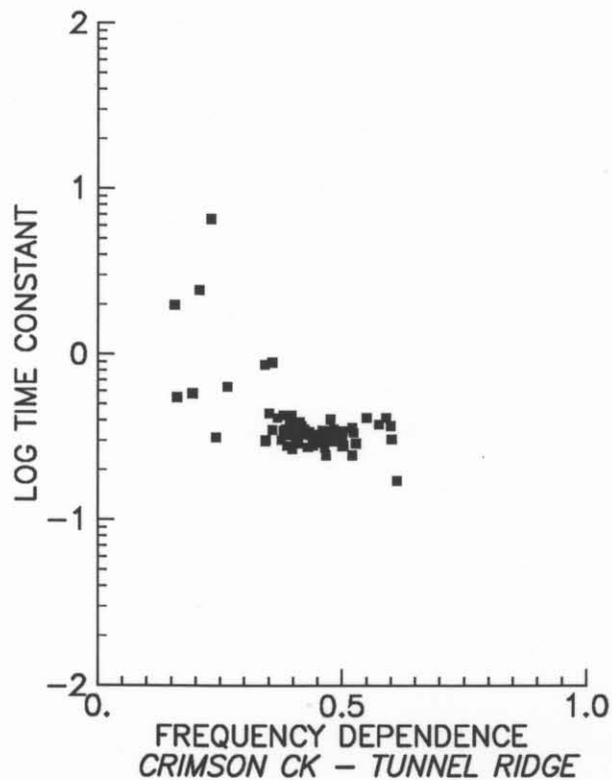
Data from 73 cases. Spectral data from 73 cases. ( 74 Sites measured).

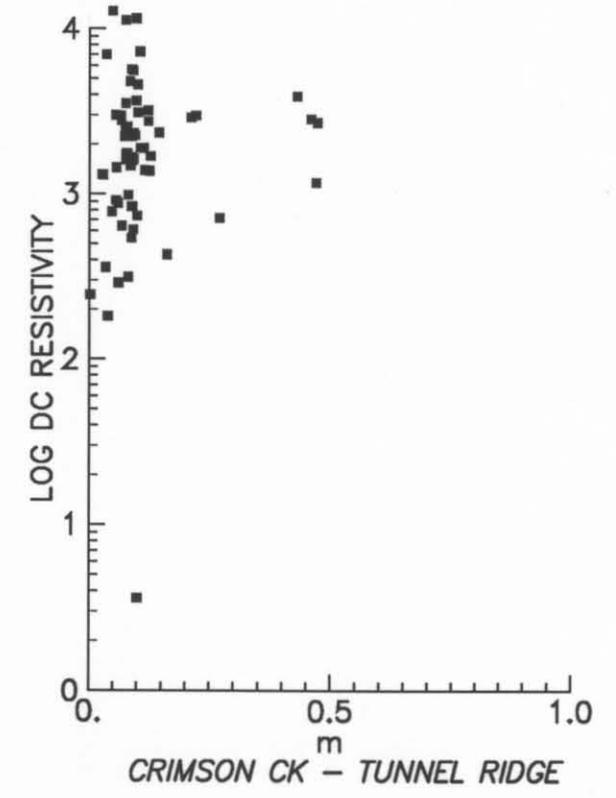
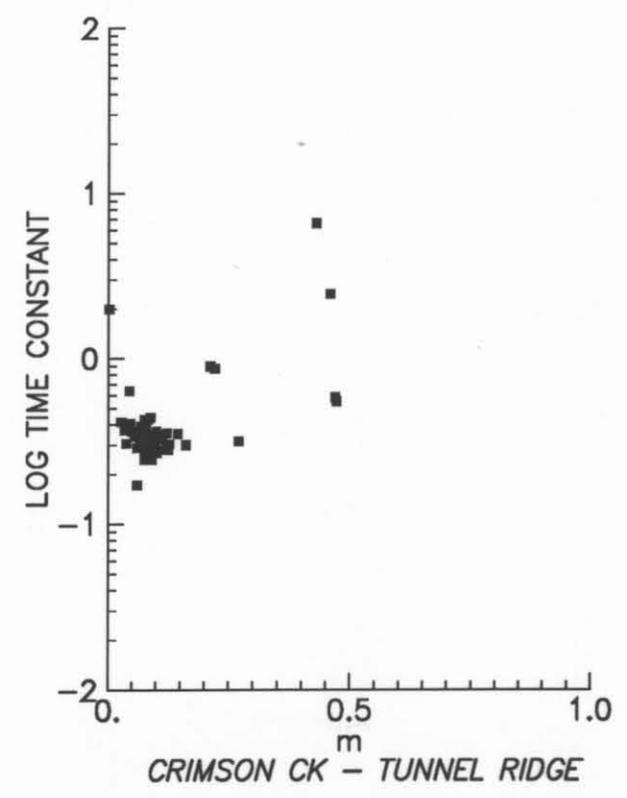
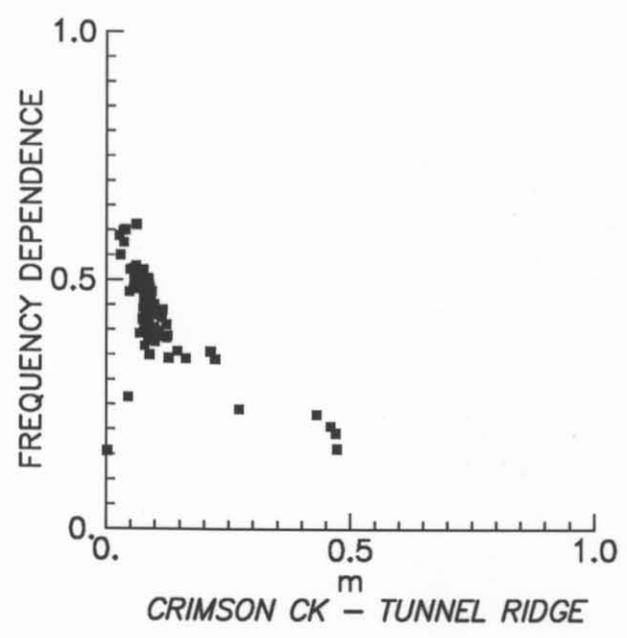
Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10  |
|------|------|------|------|------|------|------|------|------|-----|
| 4.55 | 3.03 | 2.37 | 1.95 | 1.66 | 1.44 | 1.27 | 1.14 | 1.03 | .93 |

034247





## Electrical Properties - Western Tasmania

D66

TUNNEL RIDGE at RENISON BELL

MRV0043

These results are from the Crimson Creek formation on Tunnel Ridge at Renison Bell.

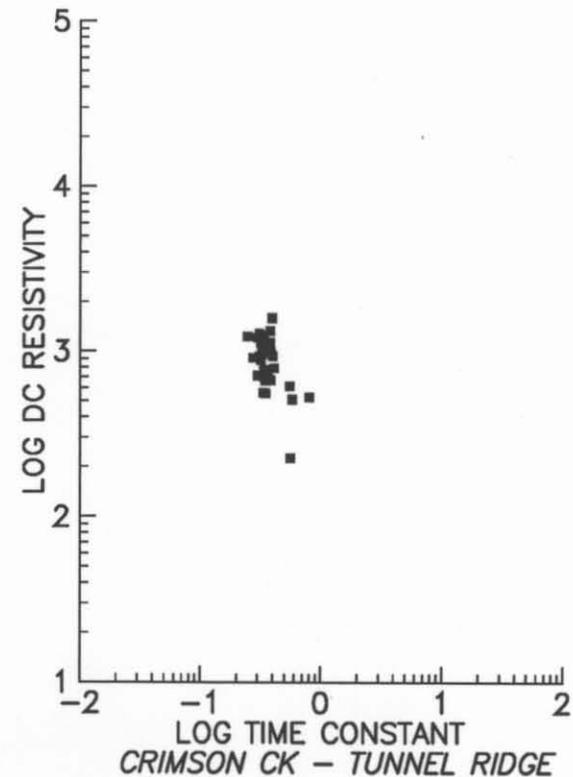
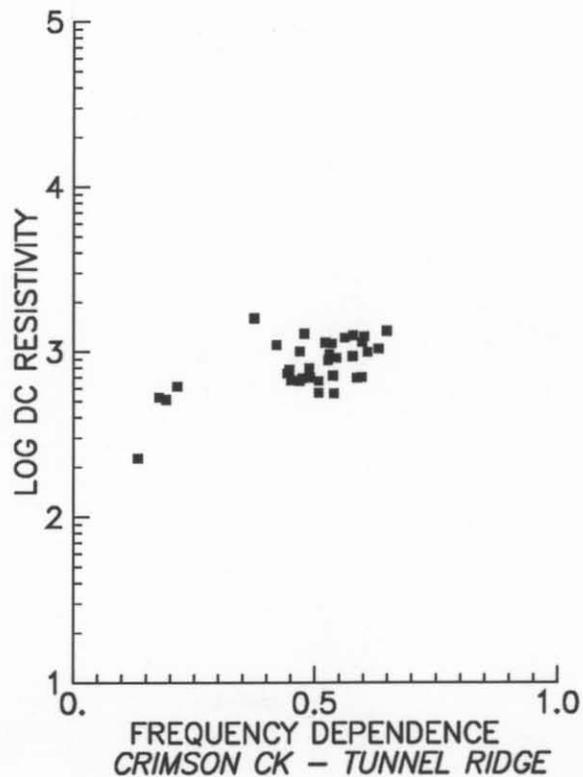
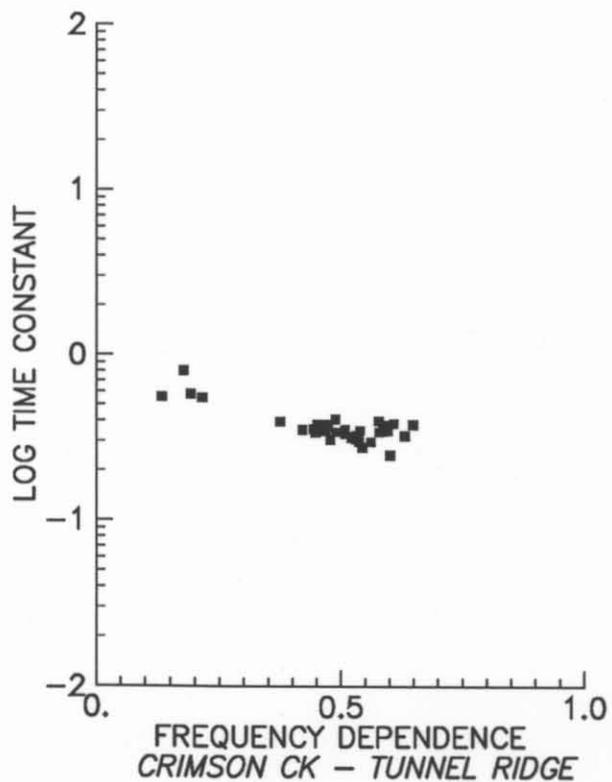
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .163E+03 | .155E+04 | .896E+03 | .278E+03              |
| Chargeability | .579E+01 | .536E+02 | .122E+02 | .619E+01              |
| R0            | .226E+03 | .159E+04 | .901E+03 | .273E+03              |
| $\tau$        | .248E+00 | .805E+00 | .376E+00 | .112E+00              |
| c             | .13      | .65      | .49      | .13                   |
| m             | .03      | .62      | .06      | .08                   |

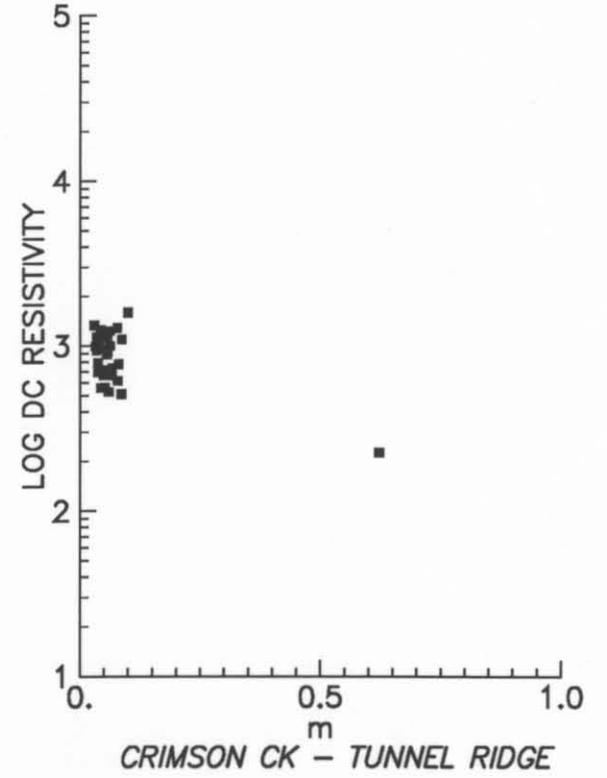
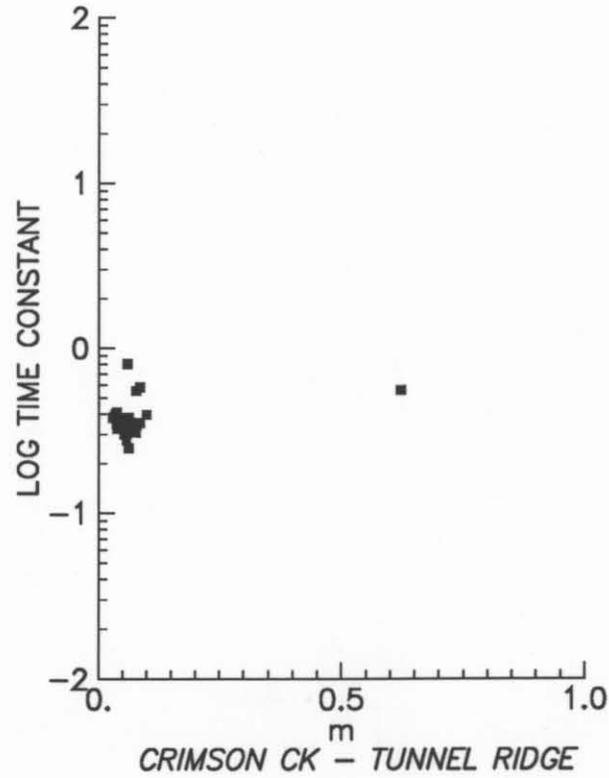
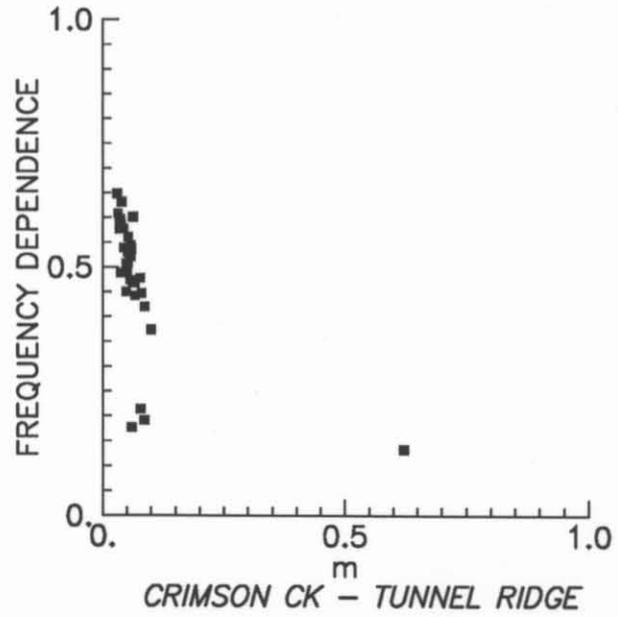
Data from 55 cases. Spectral data from 55 cases. ( 56 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 3.04 | 1.95 | 1.49 | 1.20 | 1.01 | .87 | .76 | .67 | .60 | .54 |





## Electrical Properties - Western Tasmania

D67

TUNNEL RIDGE at RENISON BELL

MRV0044

These results are from the Crimson Creek Formation on Tunnel Ridge at Renison Bell.

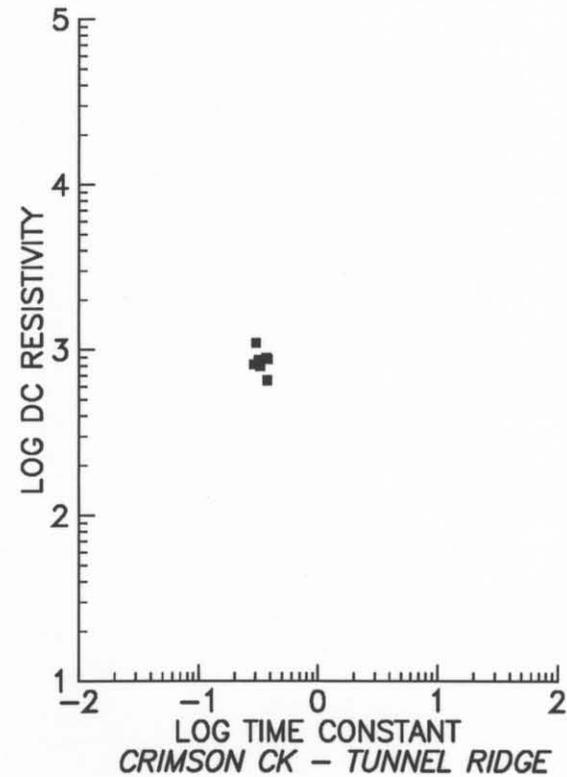
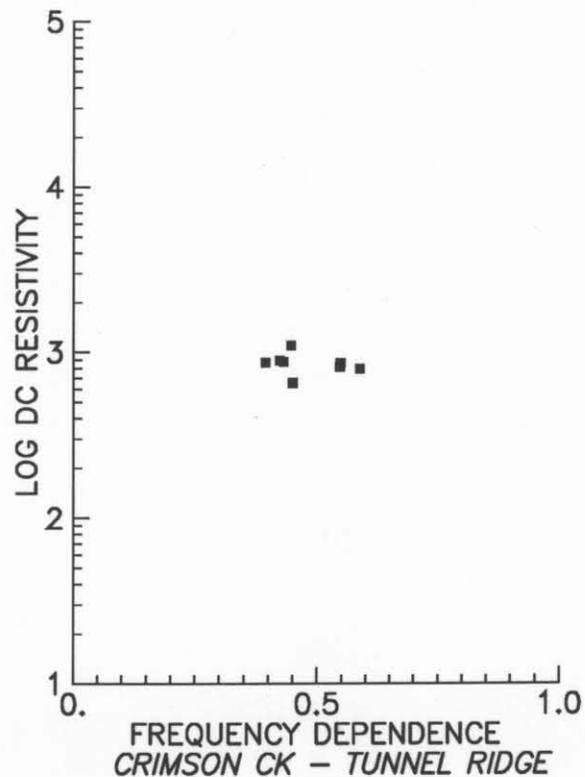
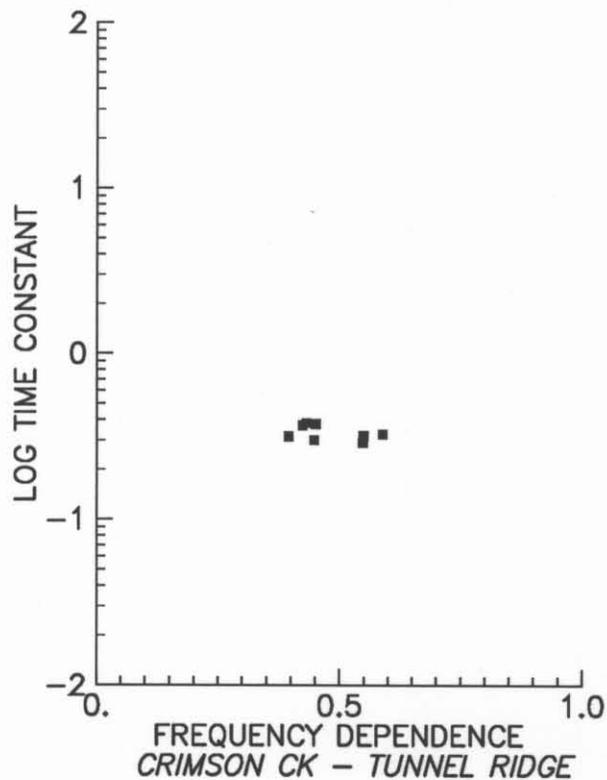
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .644E+03 | .108E+04 | .847E+03 | .111E+03              |
| Chargeability | .104E+02 | .179E+02 | .138E+02 | .223E+01              |
| R0            | .652E+03 | .109E+04 | .857E+03 | .115E+03              |
| $\tau$        | .290E+00 | .381E+00 | .335E+00 | .329E-01              |
| c             | .40      | .59      | .48      | .07                   |
| m             | .04      | .10      | .07      | .02                   |

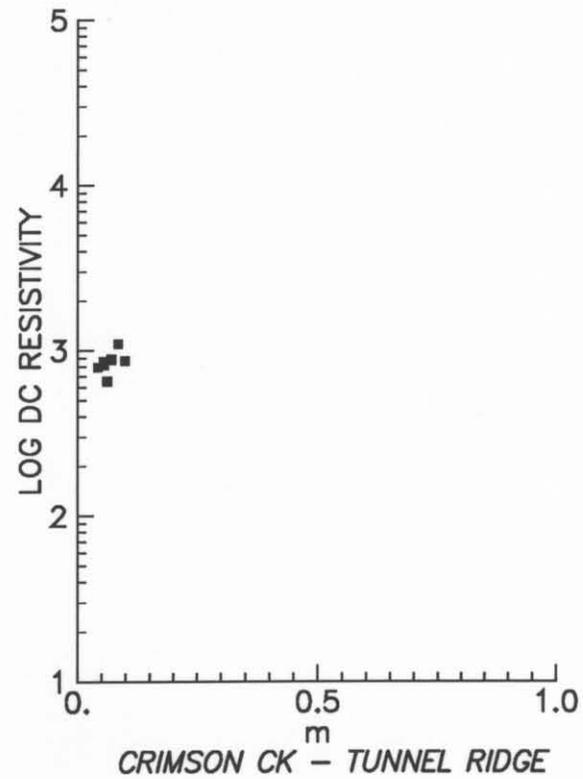
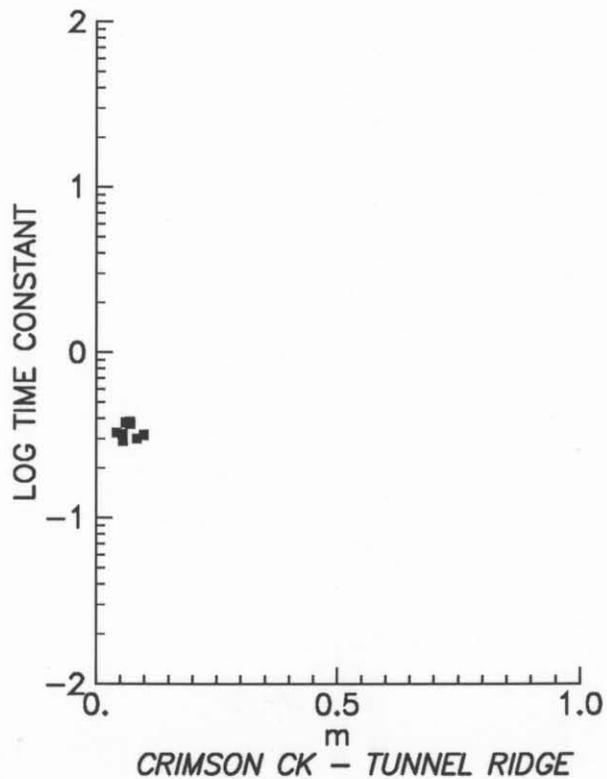
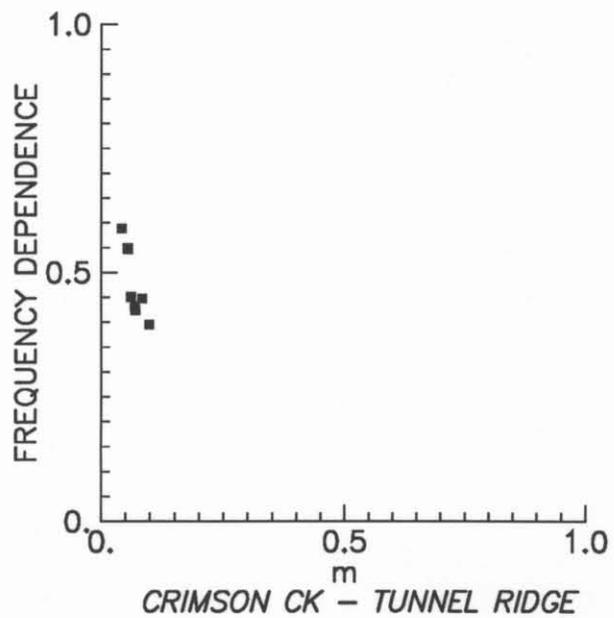
Data from 8 cases. Spectral data from 8 cases. ( 8 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

|      |      |      |      |      |      |     |     |     |     |
|------|------|------|------|------|------|-----|-----|-----|-----|
| 1    | 2    | 3    | 4    | 5    | 6    | 7   | 8   | 9   | 10  |
| 3.37 | 2.19 | 1.69 | 1.38 | 1.16 | 1.01 | .88 | .78 | .70 | .63 |





## Electrical Properties - Western Tasmania

D68

TUNNEL RIDGE at RENISON BELL

MRV0045

These results are from the Crimson Creek Formation on Tunnel Ridge at Renison Bell.

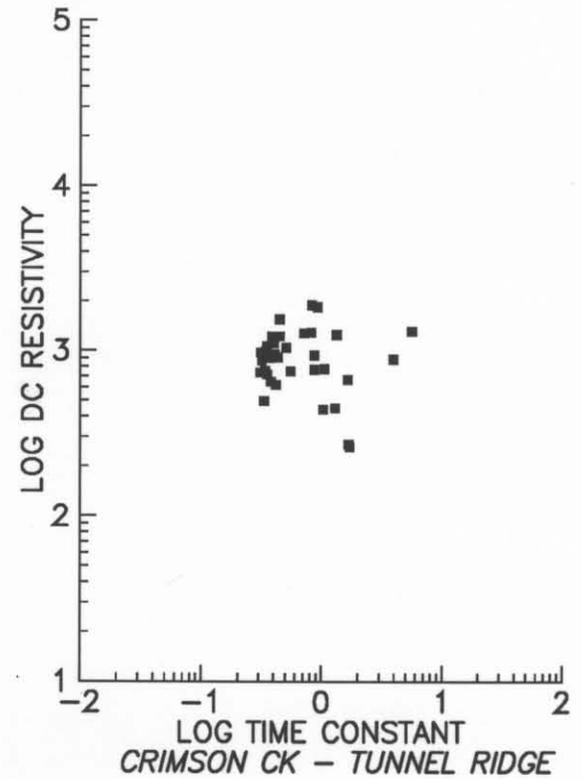
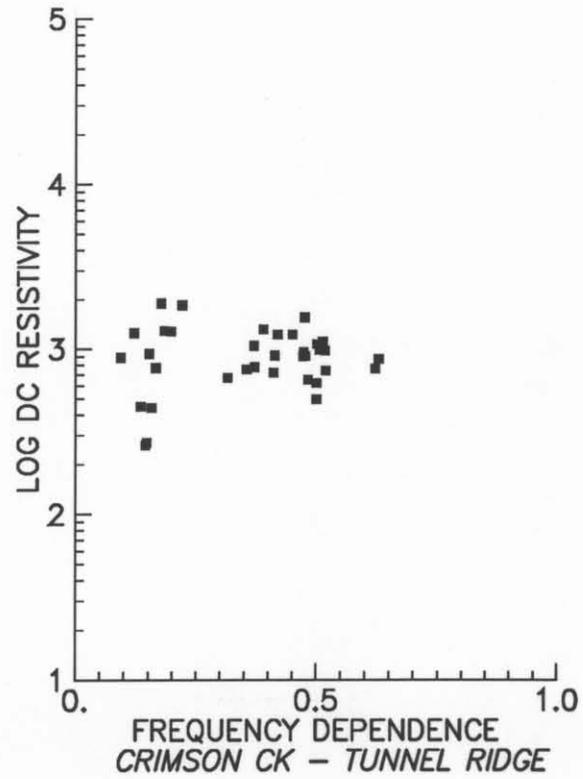
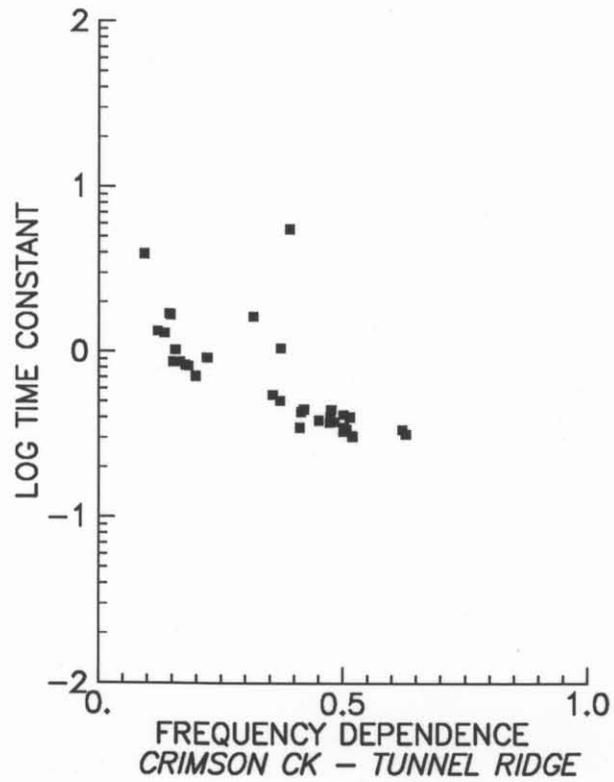
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .258E+03 | .185E+04 | .913E+03 | .363E+03              |
| Chargeability | .229E+01 | .257E+02 | .113E+02 | .482E+01              |
| R0            | .261E+03 | .189E+04 | .937E+03 | .373E+03              |
| $\tau$        | .307E+00 | .560E+01 | .918E+00 | .105E+01              |
| c             | .09      | .63      | .36      | .16                   |
| m             | .03      | .28      | .08      | .05                   |

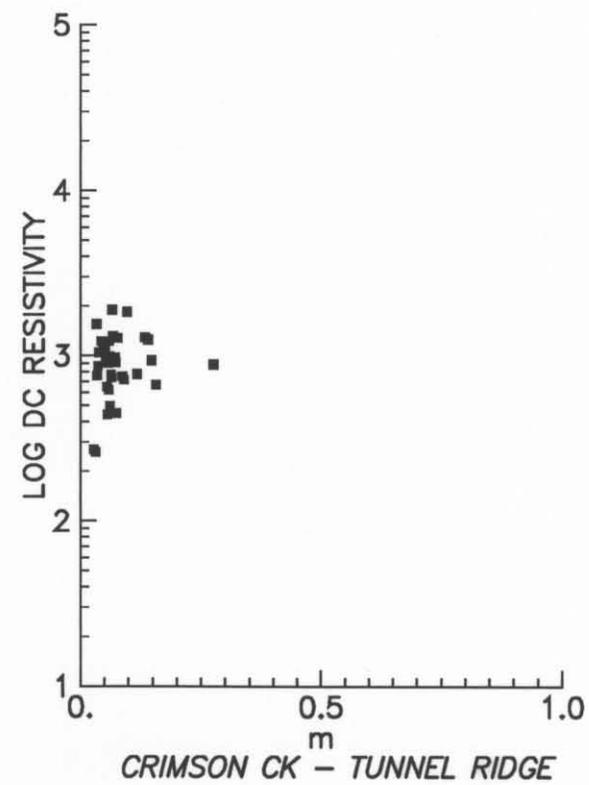
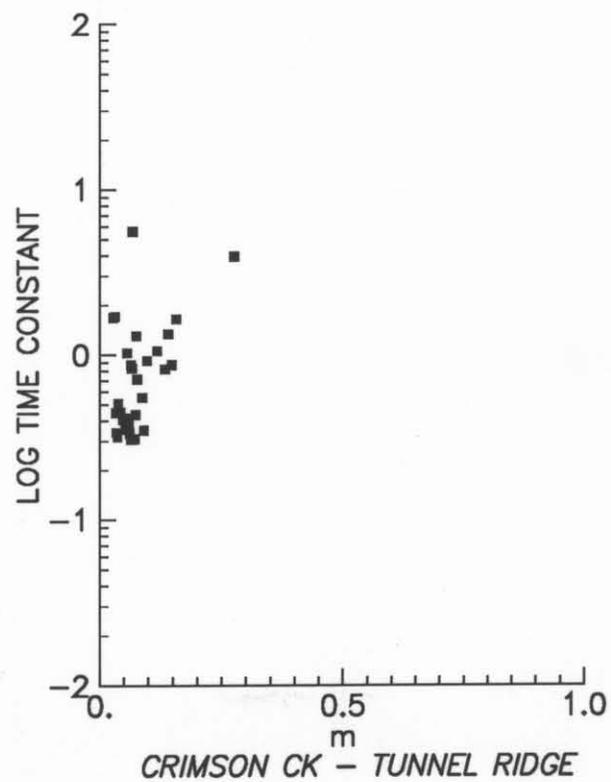
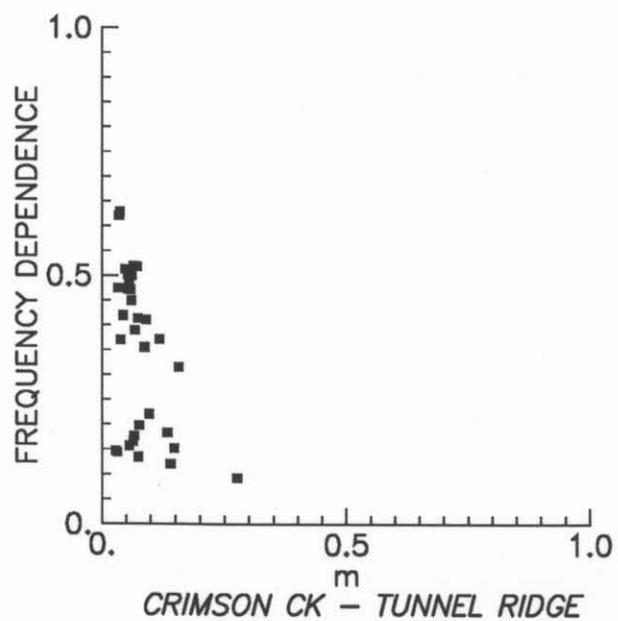
Data from 35 cases. Spectral data from 35 cases. ( 35 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5   | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 2.66 | 1.78 | 1.39 | 1.14 | .97 | .84 | .74 | .67 | .60 | .54 |





## Electrical Properties - Western Tasmania

D69

TUNNEL RIDGE at RENISON BELL

MRV0046

These results are from the Crimson Creek Formation on Tunnel Ridge at Renison Bell.

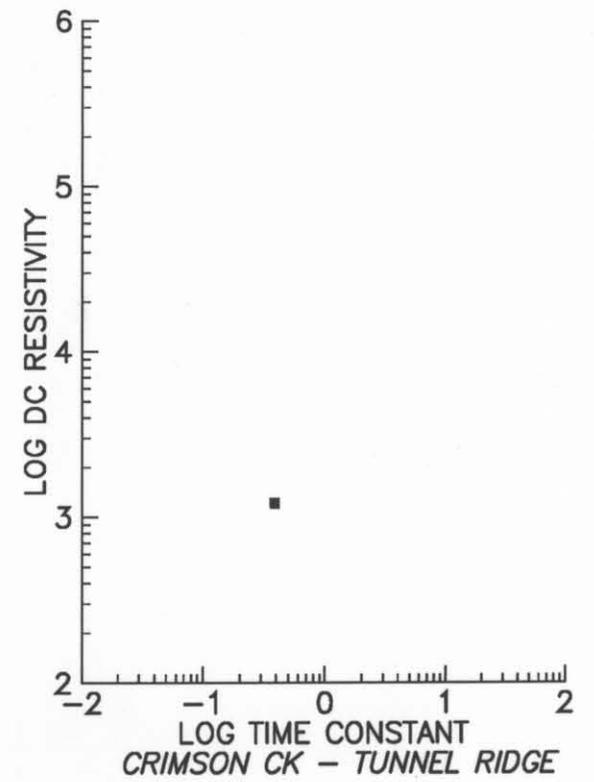
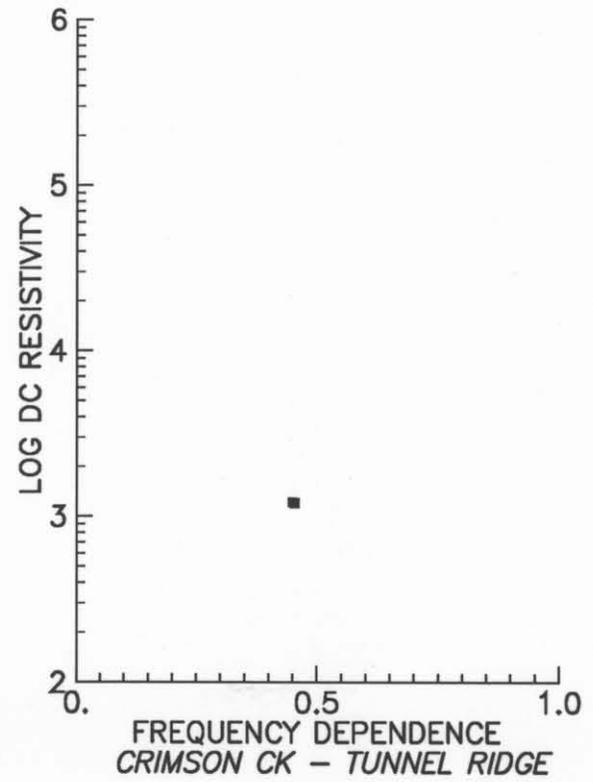
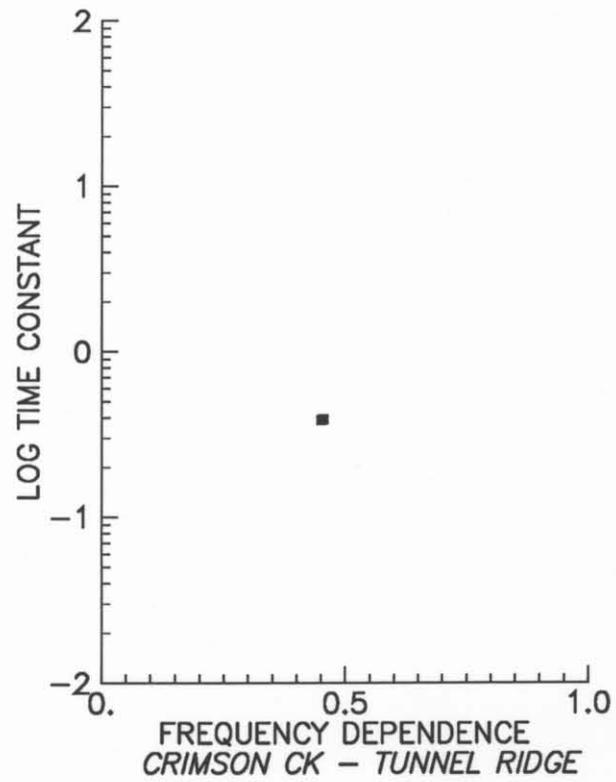
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .119E+04 | .120E+04 | .120E+04 | .656E+01              |
| Chargeability | .125E+02 | .125E+02 | .125E+02 | .343E-01              |
| R0            | .121E+04 | .122E+04 | .121E+04 | .686E+01              |
| $\tau$        | .387E+00 | .390E+00 | .388E+00 | .164E-02              |
| c             | .45      | .45      | .45      | .00                   |
| m             | .06      | .06      | .06      | .00                   |

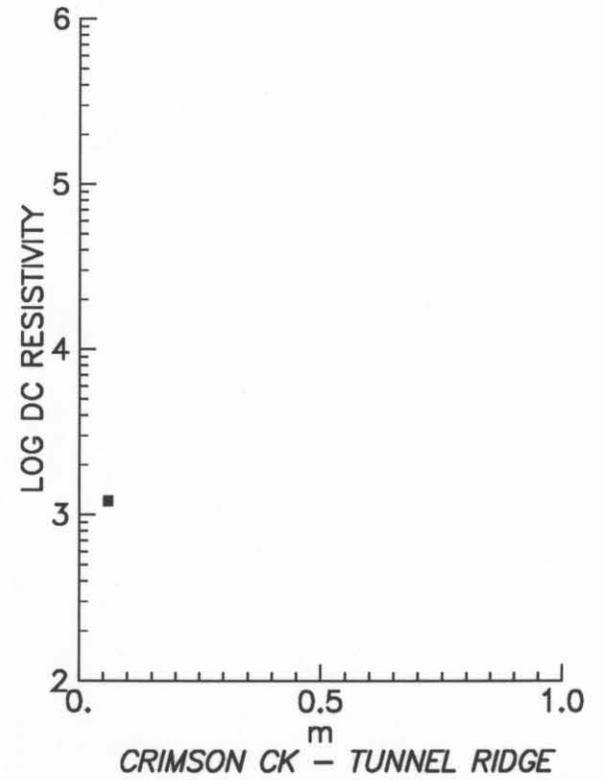
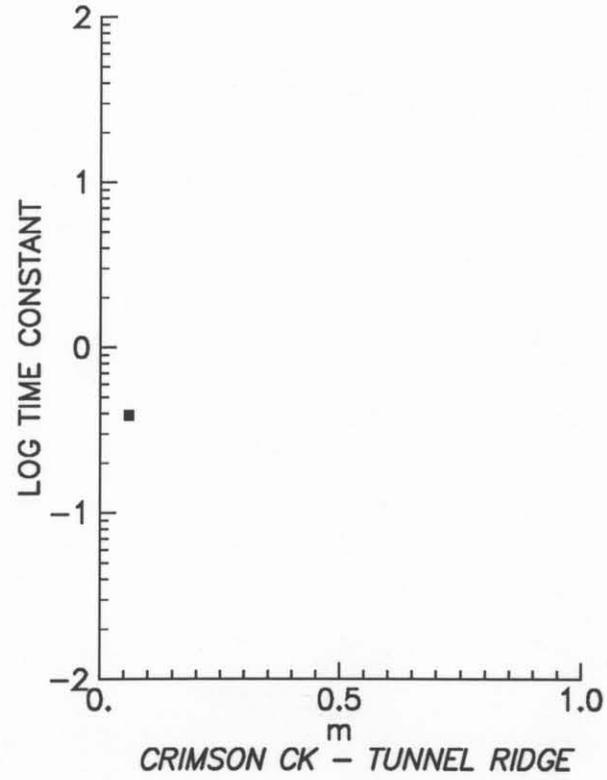
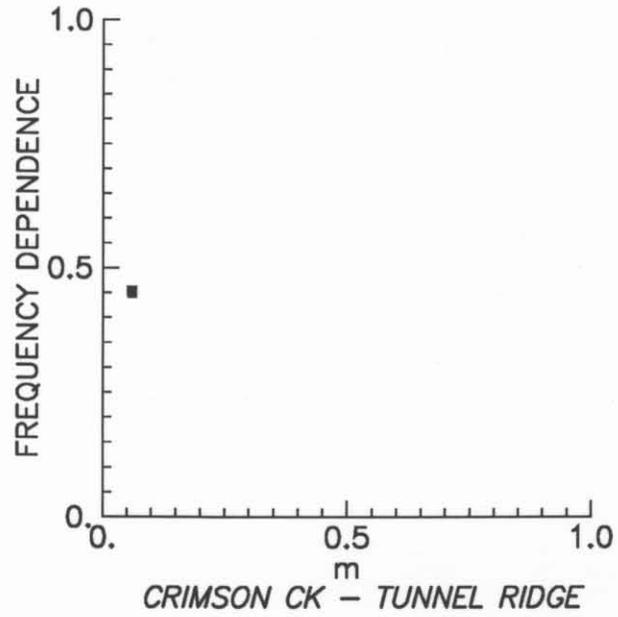
Data from 2 cases. Spectral data from 2 cases. ( 2 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
|------|------|------|------|------|-----|-----|-----|-----|-----|
| 2.96 | 1.96 | 1.53 | 1.26 | 1.07 | .93 | .82 | .73 | .65 | .59 |





## Electrical Properties - Western Tasmania

D70

BLACK SHALES at WEST SEDGWICK

MRV0040

The black shales at West Sedgwick are an example from the Central Volcanic Sequence to the north of the Mt. Lyell field. They contain abundant pyrite.

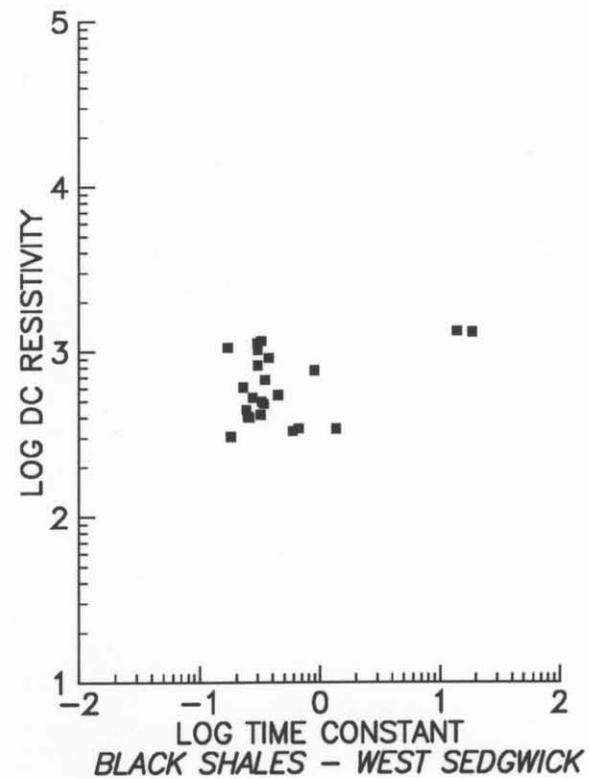
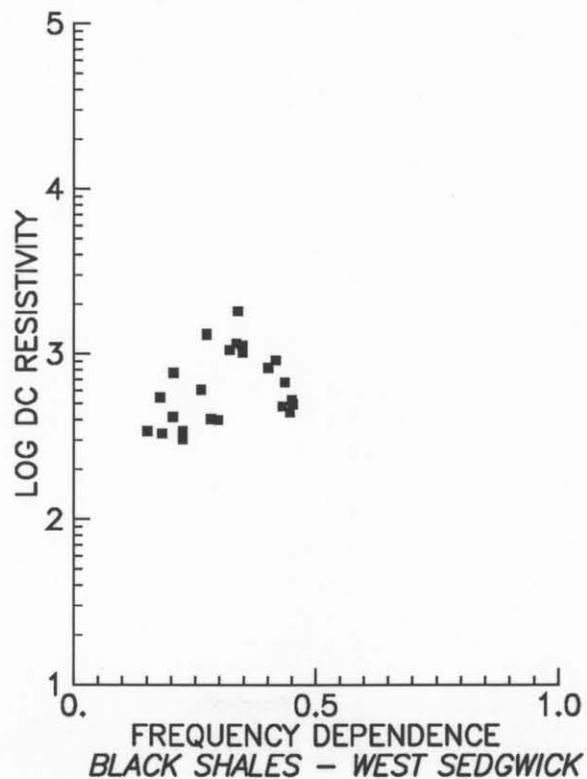
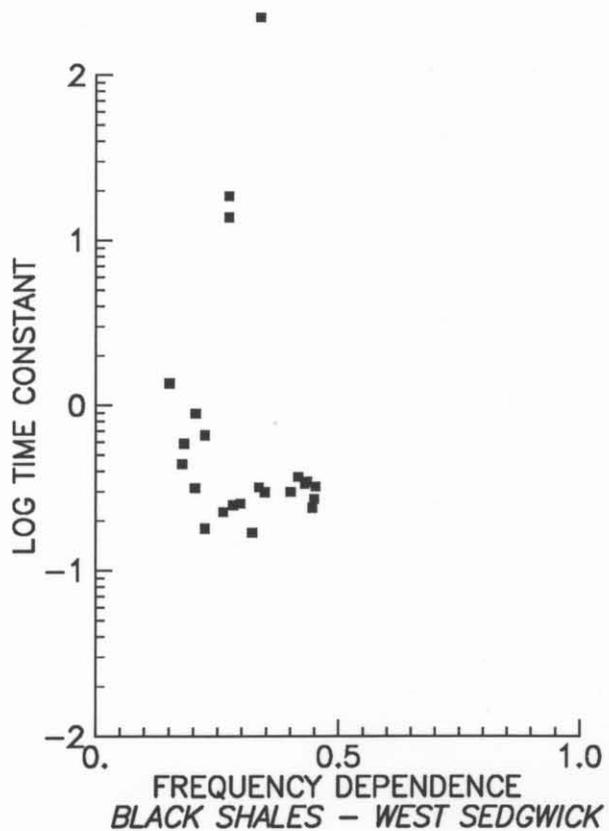
| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .243E+03 | .111E+04 | .641E+03 | .293E+03              |
| Chargeability | .591E+01 | .774E+02 | .357E+02 | .208E+02              |
| R0            | .305E+03 | .182E+04 | .736E+03 | .393E+03              |
| $\tau$        | .169E+00 | .222E+03 | .109E+02 | .442E+02              |
| c             | .15      | .45      | .31      | .09                   |
| m             | .08      | .62      | .26      | .18                   |

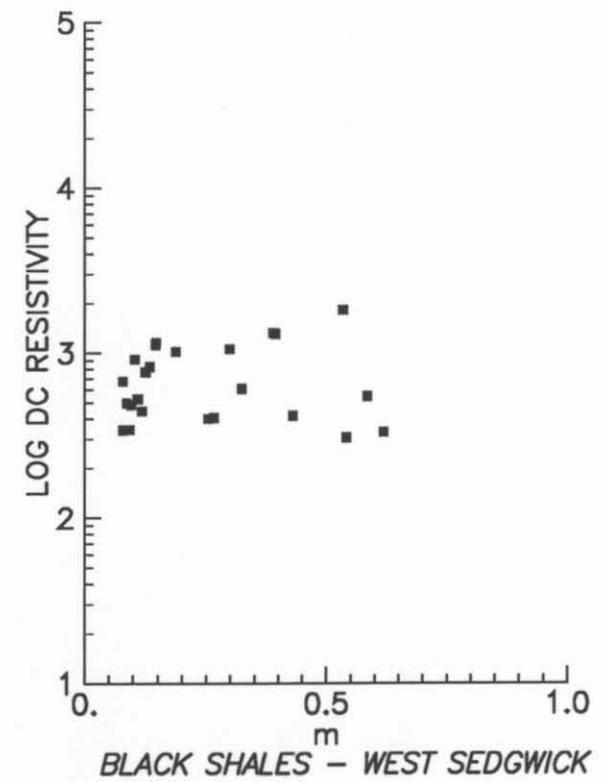
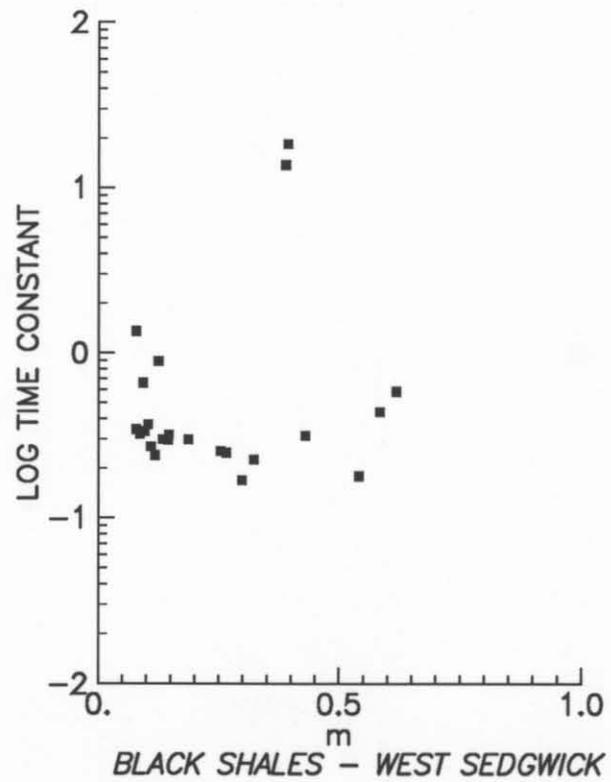
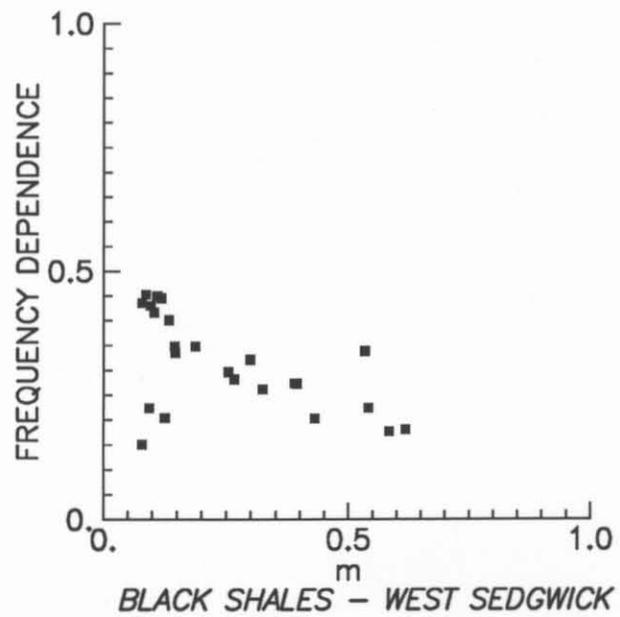
Data from 24 cases. Spectral data from 24 cases. ( 24 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|------|------|------|------|------|------|------|------|------|------|
| 7.81 | 5.42 | 4.33 | 3.63 | 3.13 | 2.76 | 2.47 | 2.24 | 2.04 | 1.87 |





## Electrical Properties - Western Tasmania

D71

BLACK SHALES at WHITE SPUR

MRV0041

The black shales of the White Spur area are another example of material that produces an excellent IP response.

| PARAMETER     | MINIMUM  | MAXIMUM  | MEAN     | STANDARD<br>DEVIATION |
|---------------|----------|----------|----------|-----------------------|
| Resistivity   | .409E+01 | .296E+04 | .622E+03 | .659E+03              |
| Chargeability | .135E+02 | .126E+03 | .547E+02 | .309E+02              |
| R0            | .517E+01 | .299E+04 | .683E+03 | .647E+03              |
| $\tau$        | .761E-01 | .328E+02 | .717E+01 | .115E+02              |
| c             | .15      | .56      | .34      | .13                   |
| m             | .06      | .68      | .37      | .22                   |

Data from 22 cases. Spectral data from 22 cases. ( 22 Sites measured).

Time Delay = 50. ms Window Width = 150. ms

Average Window Chargeabilities

| 1     | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|------|------|------|------|------|------|------|------|------|
| 11.55 | 8.18 | 6.61 | 5.58 | 4.86 | 4.30 | 3.87 | 3.51 | 3.22 | 2.97 |

