DEPARTMENT OF MINES AND ENERGY

GEOLOGICAL SURVEY

SOUTH AUSTRALIA

REPORT BOOK 91/97

REPORT ON A TRANSIENT ELECTROMAGNETIC SURVEY AT NUNDROO SA

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Geophysicist

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DEPARTMENT OF MINES AND ENERGY

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REPORT BOOK 91/97 DME NO 646/75

TRANSIENT ELECTROMAGNETIC SURVEY AT NUNDROO SOUTH AUSTRALIA

A R DODDS

A regional study of the geology in the Nundroo area, S.A. required some knowledge of the electrical properties of the rocks. The SIROTEM survey described in this report provided information on the resistive properties of overburden and bedrock, and on the thickness of the overburden.

The results show the water-table at a depth of 12-46 metres with groundwater salinity approximating that of sea-water in most areas. The depth to bedrock varies from 26 to 89 metres. The conductive environment is absent at one location, possibly because of very shallow bedrock precluding the presence of groundwater.

The survey penetrated well into bedrock. Any sulphide conductors of other than trivial size and conductivity within 50 metres or more of bedrock surface should have been detected. Five anomalies are identified which could be caused by bedrock conductors. None of them give any indication of being caused by a strong conductor.

INTRODUCTION

At the request of the Regional Geology section of the South Australian Department of Mines and Energy (S.A.D.M.E.) a SIROTEM Transient Electromagnetic (TEM) survey was done over four lines at Nundroo, S.A. The work was done between 23rd. June and 2nd. July, 1987, by N. Dunstan of SADME and A. Simamora, a visiting geophysicist from the Geological Survey of Indonesia, with two assistants.

SURVEY SPECIFICATIONS

The survey was done with 100 metre square transmitter loops and an in-loop receiver, this configuration being chosen to obviate any problems from super-paramagnetic effects (a non-conductive response caused by magnetic particles in the surface soil). Readings were taken at 50 metre intervals.

One line, parallel to and several hundred metres to the north-east of the road, was surveyed first (Figure 1). Subsequently three additional lines, parallel to the first, were surveyed to map out a region of low response where basement appears to be shallow.

PRESENTATION OF RESULTS

The results are presented in two formats.

First, the voltage responses are presented as profiles at a logarithmic voltage scale (Figures 2-6). This presentation shows the basic results in a way that gives the maximum sensitivity for anomaly detection while allowing the data for all channels to be contained on one plot.

The data were then processed to compute the apparent resistivity for each station and delay time, the resulting figures being plotted as pseudo-sections (Figures 7-11). This presentation shows how the response varies from channel to channel, and provides a general picture of the basic resistivity pattern.

Thus the apparent resistivity pseudo-sections indicate the resistivity levels for the area, and show qualitative resistivity variations with depth. This is particularly useful for overburden studies and any geological situation where horizontal layering is involved.

The voltage profiles accentuate lateral variations in response, and are the more sensitive presentation for local anomaly detection.

TEM INVERSIONS

After the results were plotted in pseudo-section form, readings were selected for inversion. These inversions, carried out at SADME using the AMIRA GRENDL software created by CSIRO, assume a one-dimensional model, i.e. there is no variation in response other than in the z-direction. Thus, so far as possible, the readings to be modelled were selected at the centre of a sequence of laterally unchanging data. In some cases, readings were selected in less ideal surroundings if a location was considered sufficiently critical.

The inversion process is automated but requires the selection of a viable initial model, the number of layers selected being particularly critical. If too many or too few layers are selected the resultant model is bound to be in error. The initial thickness and resistivity of each layer is less critical. Data points can be weighted and model parameters fixed, if so desired.

The inversion results include statistics to help evaluate the reliability of the final model. These include a standard error(SE), which is an indicator of the general quality of the fit, confidence intervals for each final model parameter, which define how well the given parameter is resolved, and a predicted residual error (APRE) which indicates whether the number of layers selected is appropriate. The standard error at each data point is also provided to indicate whether the errors are randomly scattered (noise) or systematic (a bad fit). A study of these and other data gives a good idea as to whether further adjustment is warranted, and what to do to improve the inversion.

The most obvious cause of problems is inhomogeneity in the horizontal direction, which may move the curve away from a layering shape or may just falsify the inversion. Instrument noise or electrical noise may interfere with the inversion, but these would usually put random noise, which can be identified in interpretation, onto the curve. It might reasonably be expected that, while too few layers might cause an insuperable problem to the inversion, too many layers should be resolvable by the software setting the thickness of a superfluous layer to zero, or making the resistivity the same as an adjoining layer. This is not the case, and the layer is usually left approximately at its initial values, so a better fit can be achieved by removing unnecessary layers.

The inversion results are presented as sections (Figure 12), giving the resistivity and thickness of each layer, and the confidence to be placed in each of these parameters. Also included are the SE and APRE figures, to show, by their proximity to zero, which inversions are the better fit. The APRE figure is regarded as satisfactory if it is close to the SE figure.

RESULTS

Line 0, running parallel to and a few hundred metres east of the main highway, was the initial line surveyed. The apparent resistivity pseudo-section (Figures 3 and 4) shows conductive material under much of the line, particularly at the north end. A qualitative interpretation of these data yields three layers, with resistive surface and bottom layers sandwiching the conductor. The conductor vanishes at some points on the line, where a purely resistive section occurs.

The inversions are shown in Figure 12. Most of these inversions were done in conductive areas, since these are generally extensive and therefore approach a layered model. Two inversions were done in resistive areas, although it is questionable whether the data are suitable for such processing. However, the statistics indicate that the results are reasonable.

Inversions in conductive areas all indicate the presence of a very conductive layer at a depth of 12 to 46 metres and from 6 to 48 metres thick. The resistivity varies from 0.4 to 3.7 ohm-metres. It is probable that the most conductive value, a 0.4 ohm-metre layer only 6 metres thick, is inaccurate because of equivalence problems which make the resolution of resistivity and thickness difficult to resolve in such cases. It may well be that this layer should be twice as thick and twice as resistive, for instance, which would make the lowest resistivity more realistic at 0.8 ohm-metres.

The conductive layer is interpreted as a saline aquifer with water approximating the salinity of sea-water. Such groundwater is widespread in the areas west of Ceduna, and it is probably true to say that all porous sediments below the water-table are saturated with highly saline groundwater.

The top layer, above the conductor, is relatively resistive and varies in thickness from 12 to 46 metres. The resistivity is generally poorly defined, but can be taken as over 10 ohm-metres. This layer is interpreted as dry sediments, because it is either above the water-table or impervious.

The layer under the conductor is at a depth of 26 to 89 metres, and again the resistivity is poorly defined. This is interpreted as impervious rock, probably basement.
Three areas, 17100N-17350N, 18250N-18800N and 20900N-22500N are not underlain by conductive zones. For the latter two areas it appears that basement is shallow, and this accounts for the interruption of the saline aquifer. However, the zone from 17100N to 17350N has comparatively very steep boundaries, and it would appear that shallowing of basement, though still possible, is less likely here. The cause may be a change in the constitution of the overburden to more compact and less porous material, possibly caused by a fault.

Three extra lines, one to the west and two to the east of Line 0, were surveyed to map out the latter zone, between 17000N and 17500N. The zone evidently extends with reduced intensity to the east for some 500 metres, but not to the west, towards the road.

The voltage profiles are presented at a horizontal scale of 1:10 000 or 1:25 000, to show the data more compactly. There are a number of interesting features, apart from the variations in overburden conditions discussed above. These features, five in number, are of minor intensity, to the extent that they are not easily seen on the apparent resistivity pseudo-sections. They are, however, clearly evident on the voltage profiles and although they may still be caused by overburden features, have the positive indicators that they are not near-surface, nor are they extensive.

All of the features of interest occur on the southern section of Line 0 and are marked as anomalies A to E on Figure 3. None of them were detailed by surveying additional lines to either side, or by using other loop configurations, so the interpretation that can be done on them is very limited. The most important characteristic of all of the anomalies is that they are clearly evident on more than one channel and more than one station. This indicates that they are genuine conductive features.

Two of these anomalies, A and E, were selected for further interpretation through the decay curve analysis (Figures 13 & 14). Both late time curves fit a power law decay, with time constants of 3.7 and 2.6 respectively. The former approximates a thin layer response (theoretically 4.0) while the latter is close to that of a uniform half-space (theoretically 2.5). The exponential fits, which would indicate a finite conductor, are much less convincing, but are still credible considering that a certain amount of signal from the conductive overburden is superimposed on the anomalous response. The time constants, at 2.7 and 2.9 ms respectively, are high enough to be interesting, bearing in mind that the rule-of-thumb cutoff level for possible economic mineralization is 2.0 ms.

SUMMARY

The SIROTEM survey at Nundroo indicated extensive and variable conductive response. The lateral extent of the major conductor was sufficient to allow inversion of the data, in most instances, assuming a one-dimensional model (horizontal layering). As a result of this modelling, most of the conductivity is interpreted as saline groundwater in the overburden layer, the response varying as the depth to bedrock, which controls the thickness of water bearing sediments. Where the conductive layer is not present, the bedrock is generally closer to surface than the water-table. The groundwater salinity is interpreted as being between 10 000 and 100 000 mg/l, or of the same order as that of sea-water. The depth to the water table is 12 to 46 metres, and to basement is up to 89 metres.

Five anomalies were selected as possible bedrock conductors. Two of these were further assessed with decay curve analysis, which indicated the probability of their being caused by horizontally extensive sources, probably overburden, but the possibliity of a finite, and perhaps more conductive, bedrock conductor. The time constants, based on the assumption of a finite target, are sufficiently high to be economically interesting.

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GEOPHYSICIST

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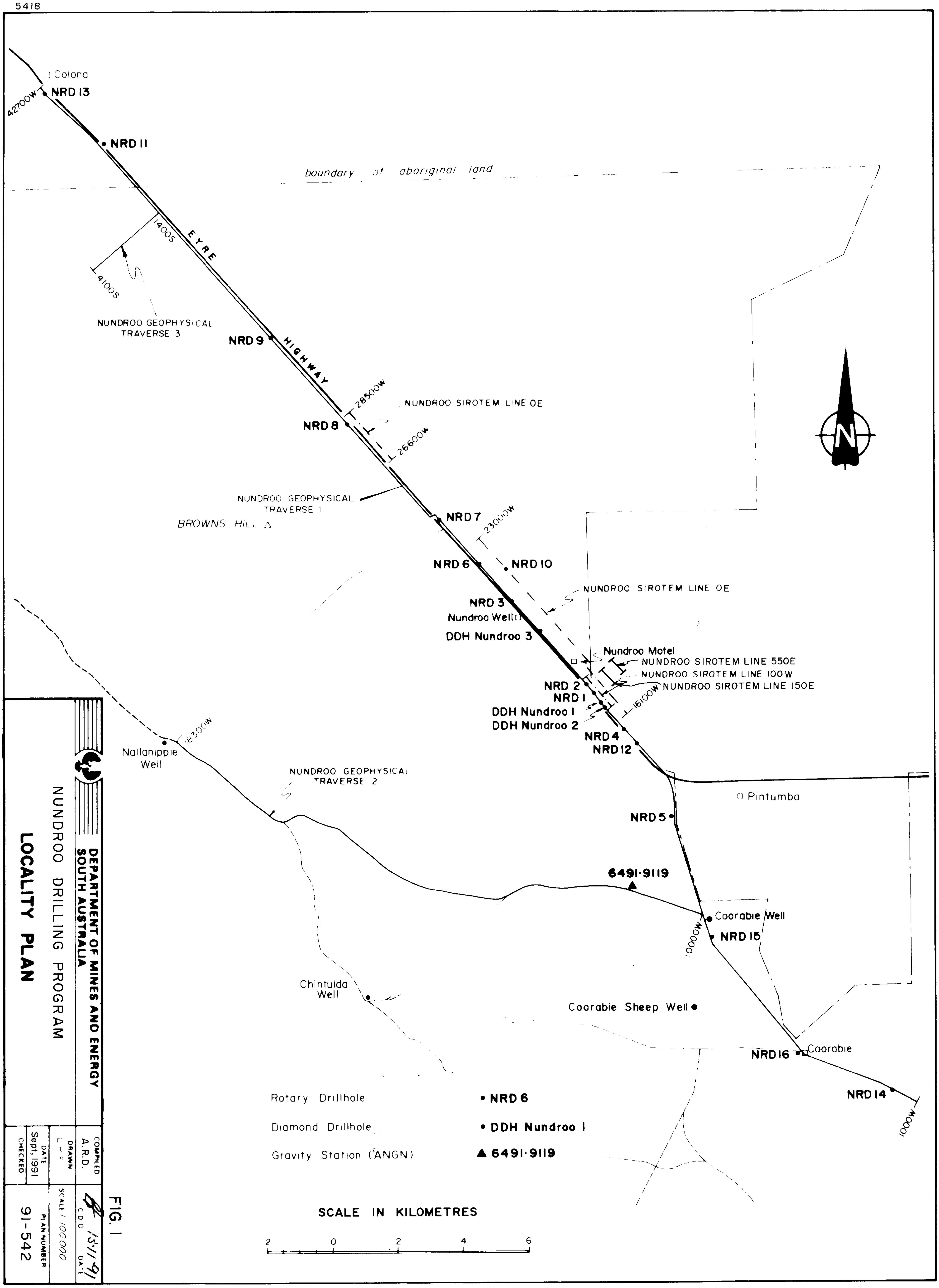
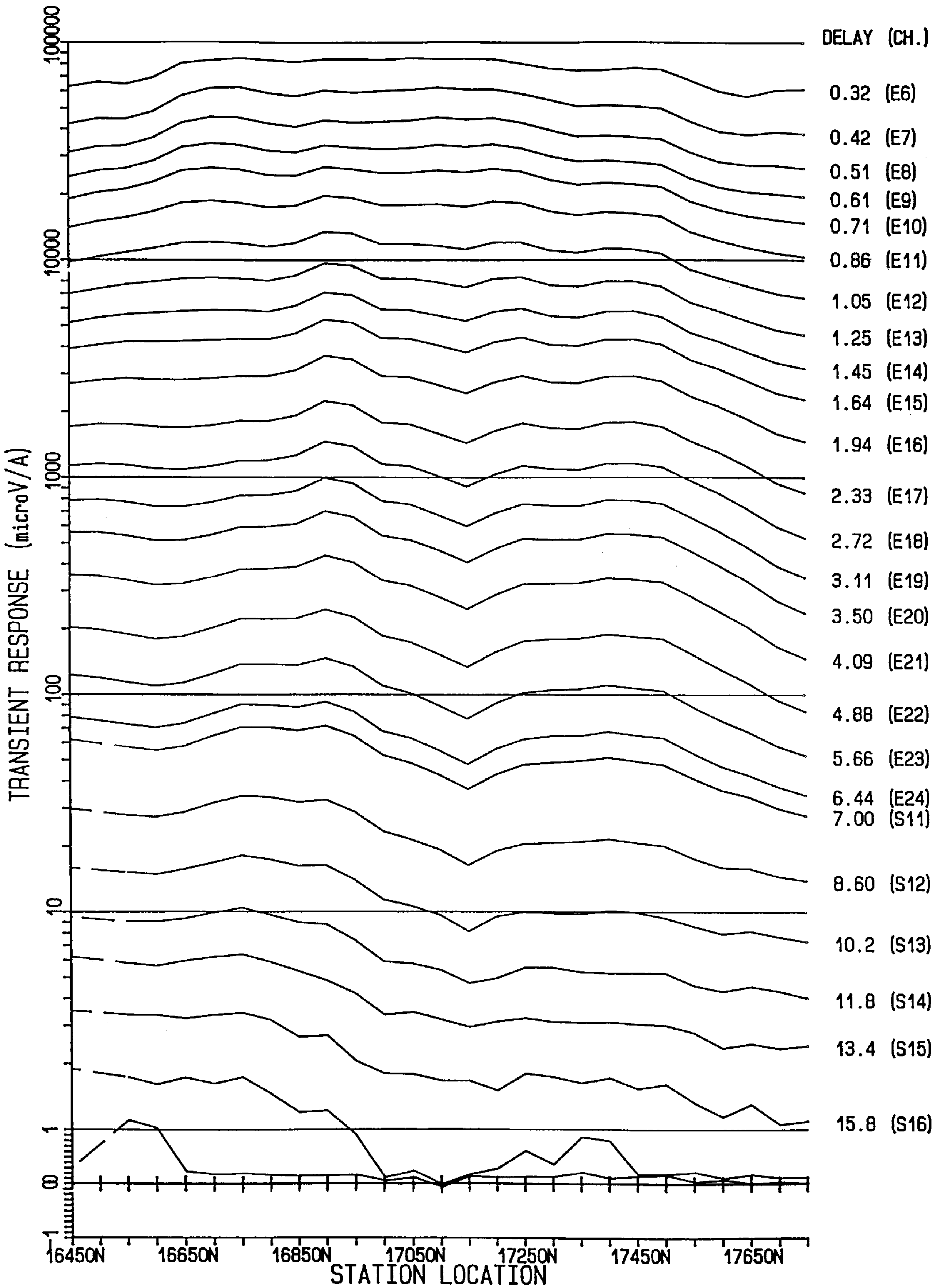

Colona
NRD 13
42700W
NRD 11
boundary of aboriginal land
EYRE
HIGHWAY
1400S
4100S
NUNDROO GEOPHYSICAL TRAVERSE 3
NRD 9
28500W
NUNDROO SIROTEM LINE OE
NRD 8
26600W
NUNDROO GEOPHYSICAL TRAVERSE 1
BROWNS HILL
NRD 7
23000W
NRD 6
NRD 10
NUNDROO SIROTEM LINE OE
NRD 3
Nundroo Well
DDH Nundroo 3
Nundroo Motel
NUNDROO SIROTEM LINE 550E
NUNDROO SIROTEM LINE 100W
NUNDROO SIROTEM LINE 150E
NRD 2
NRD 1
16100W
DDH Nundroo 1
DDH Nundroo 2
NRD 4
NRD 12
Nallanippie Well
18300W
NUNDROO GEOPHYSICAL TRAVERSE 2
Pintumba
NRD 5
6491·9119
Coorabie Well
10000W
NRD 15
Chintulda Well
Coorabie Sheep Well
NRD 16
Coorabie
NRD 14
1000W
N
Rotary Drillhole • NRD 6
Diamond Drillhole • DDH Nundroo 1
Gravity Station (ANGN) ▲ 6491·9119
SCALE IN KILOMETRES
2 0 2 4 6
DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA
NUNDROO DRILLING PROGRAM
LOCALITY PLAN
COMPILED A.R.D.
DRAWN LHF
DATE Sept, 1991
CHECKED
C.D.O.
DATE 13/1/91
SCALE 1:100000
PLAN NUMBER 91-542
FIG. 1



SURVEY SPECIFICATIONS

SURVEY DATE : NOV/87
CONFIGURATION : 100M SQUARE TX. LOOP, IN LOOP RECEIVER
READING INT. : 50 METRES
NO. OF STACKS : 256
INSTRUMENT : SIROTEM MK II #1321
CURRENT : 5.8 AMPS
OPERATOR : N. DUNSTAN

PLOT SPECIFICATIONS

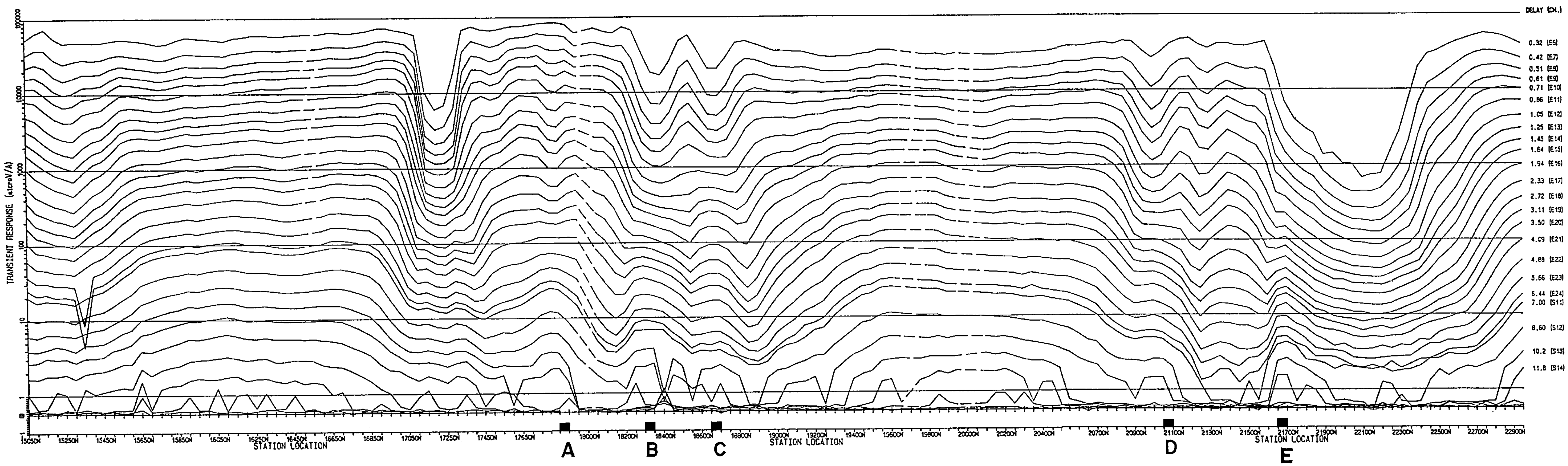
HORIZONTAL SCALE - 1: 10000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

TIME DELAYS IN MILLISECONDS
E - EARLY TIME WINDOW
S - STANDARD TIME WINDOW

FIG. 2

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED A.R.D.	CDC 13.11.91 DATE
NUNDROO DRILLING PROGRAM	DRAWN J. Gray	SCALE 1:10000
SIROTEM PROFILE LINE 100W	DATE Sept, 1991 CHECKED	PLAN NUMBER 91-543

5418



SURVEY SPECIFICATIONS

SURVEY DATE : NOV/87
CONFIGURATION : 100M SQUARE TX. LOOP, IN LOOP RECEIVER
READING INT. : 50 METRES
NO. OF STACKS : 256
INSTRUMENT : SIROTEM MK II #1321
CURRENT : 5.8 AMPS
OPERATOR : N. DUNSTAN

PLOT SPECIFICATIONS

HORIZONTAL SCALE - AS SHOWN
VERTICAL SCALE - LOGARITHMIC 4CM. PER DECADE LINEAR BETWEEN -1 AND +1

TIME DELAYS IN MILLISECONDS
E - EARLY TIME WINDOW
S - STANDARD TIME WINDOW

■ A–E.... ANOMALIES

SCALE

METRES 400 — 0 — 400 — 800 — 1200 METRES

FIG. 3

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED A.R.D.	13·11·91 DATE
NUNDROO DRILLING PROGRAM	DRAWN J. Gray	SCALE As shown
SIROTEM PROFILE LINE 0E 15050N - 22900N	DATE Sept, 1991 CHECKED	PLAN NUMBER 91-544

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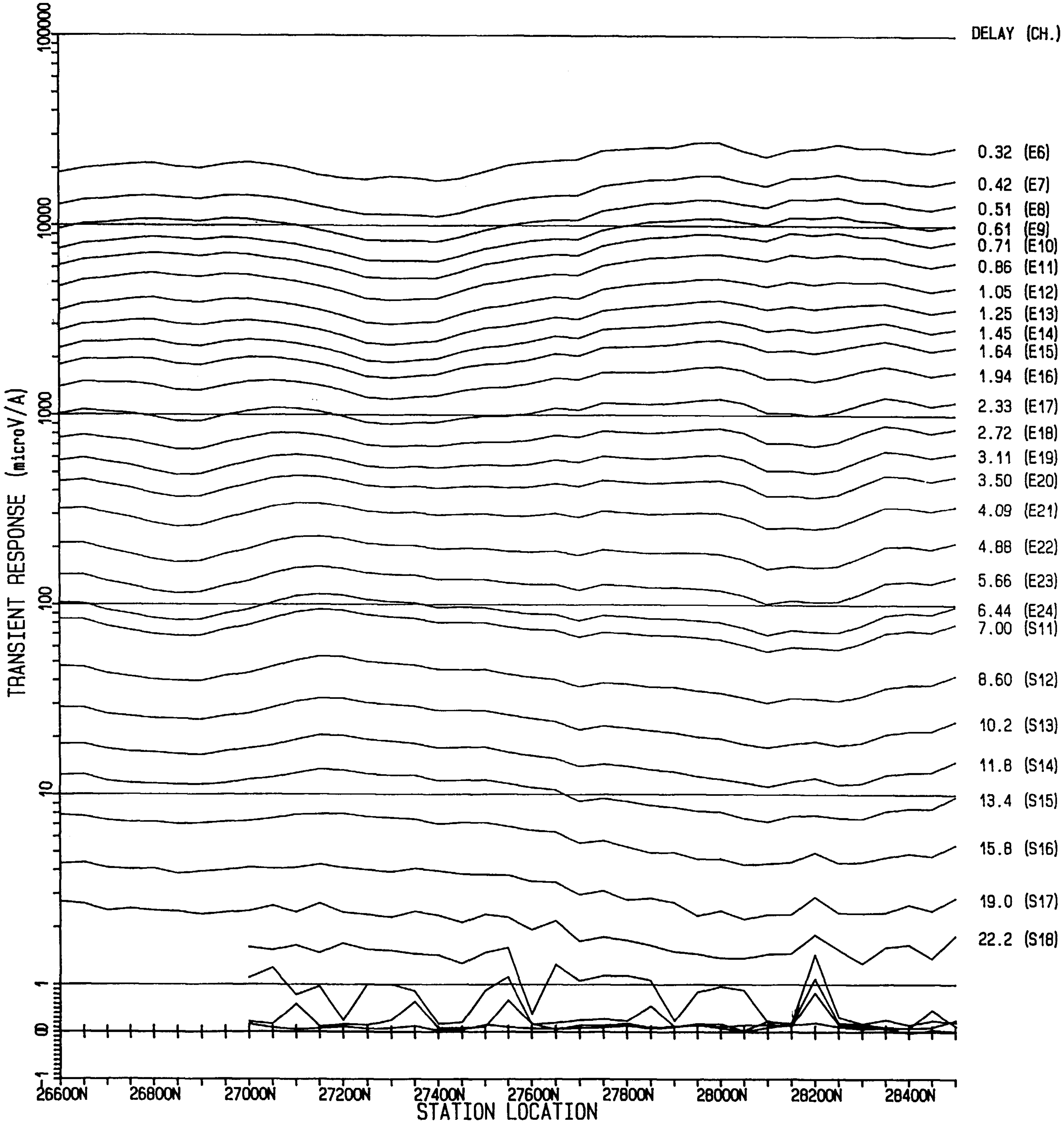

SURVEY SPECIFICATIONS

SURVEY DATE : NOV/87

CONFIGURATION : 100M SQUARE TX. LOOP, IN LOOP RECEIVER

READING INT. : 50 METRES

NO. OF STACKS : 256

INSTRUMENT : SIROTEM MK II #1321

CURRENT : 5.8 AMPS

OPERATOR : N. DUNSTAN

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1: 10000

VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN
-1 AND +1

TIME DELAYS IN MILLISECONDS
E - EARLY TIME WINDOW
S - STANDARD TIME WINDOW

FIG. 4

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED A.R.D.	13·11·91 C D C DATE
NUNDROO DRILLING PROGRAM	DRAWN J. Gray	SCALE 1:10 000
SIROTEM PROFILE LINE OE 26600N - 28500N	DATE Sept, 1991 CHECKED	PLAN NUMBER 91-545

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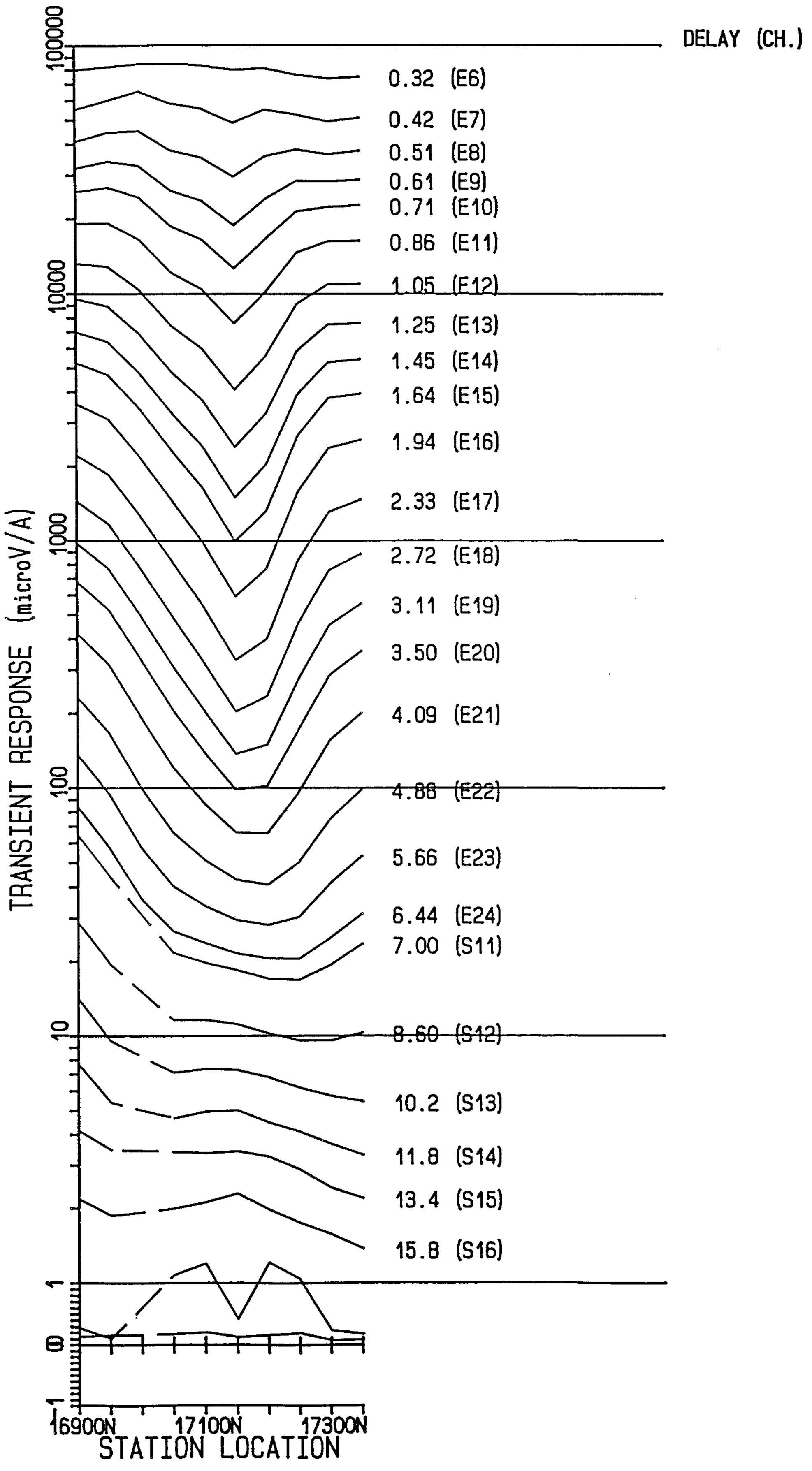


SURVEY SPECIFICATIONS

SURVEY DATE : NOV/87
CONFIGURATION : 100M SQUARE TX. LOOP, IN LOOP RECEIVER
READING INT. : 50 METRES
NO. OF STACKS : 256
INSTRUMENT : SIROTEM MK II #1321
CURRENT : 6.0 AMPS
OPERATOR : N. DUNSTAN

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1: 10000
VERTICAL SCALE - LOGARITHMIC 4CM. PER DECADE LINEAR BETWEEN -1 AND +1

TIME DELAYS IN MILLISECONDS
E - EARLY TIME WINDOW
S - STANDARD TIME WINDOW

FIG. 5

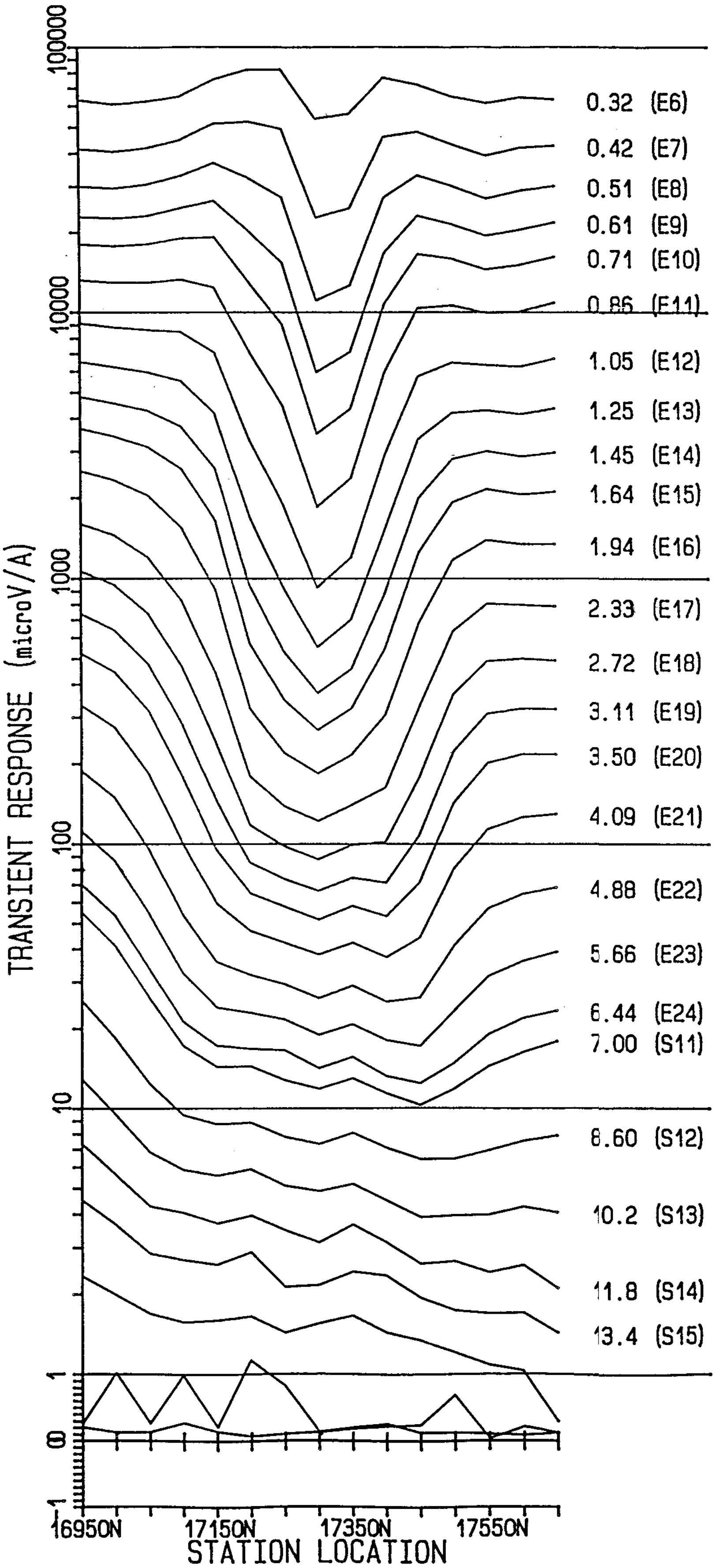
DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

SIROTEM PROFILE LINE 150E

COMPILED A.R.D.	13.11.91 C.D.O. DATE	
DRAWN J. Gray	SCALE 1:10000	
DATE Sept, 1991	PLAN NUMBER S 22481	
CHECKED		

5418



SURVEY SPECIFICATIONS

SURVEY DATE	:	NOV/87
CONFIGURATION	:	100M SQUARE TX. LOOP, IN LOOP RECEIVER
READING INT.	:	50 METRES
NO. OF STACKS	:	256
INSTRUMENT	:	SIROTEM MK II #1321
CURRENT	:	5.8 AMPS
OPERATOR	:	N. DUNSTAN

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:10000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN
-1 AND +1

TIME DELAYS IN MILLISECONDS
E - EARLY TIME WINDOW
S - STANDARD TIME WINDOW

FIG. 6

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

SIROTEM PROFILE LINE 550E

COMPILED A.R.D.	C.D.O.	DATE 13.11.91	
DRAWN J. Gray	SCALE 1:10000		
DATE Sept, 1991	PLAN NUMBER S 22482		
CHECKED			

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DELAY TIME (MS.)	16450N		16550N		16650N		16750N		16850N		16950N		17050N		17150N		17250N		17350N		17450N		17550N		17650N		17750N
(0.32)	6.90	6.63	6.78	6.36	5.47	5.28	5.18	5.26	5.36	5.21	5.21	5.25	5.17	5.21	5.20	5.21	5.45	5.74	5.89	5.84	5.71	5.83	6.48	7.21	7.61	7.18	7.15
(0.42)	5.11	4.85	4.89	4.53	3.83	3.56	3.51	3.72	3.85	3.62	3.71	3.65	3.61	3.52	3.59	3.57	3.75	4.01	4.29	4.24	4.28	4.38	4.96	5.48	5.69	5.55	5.64
(0.51)	4.16	3.92	3.89	3.59	3.08	2.91	2.91	3.10	3.20	2.98	3.06	3.05	3.01	2.91	2.98	2.92	3.06	3.29	3.52	3.48	3.54	3.62	4.11	4.51	4.67	4.69	4.79
(0.61)	3.57	3.36	3.30	3.05	2.67	2.57	2.60	2.76	2.81	2.60	2.66	2.71	2.68	2.60	2.65	2.58	2.68	2.90	3.06	3.02	3.08	3.15	3.59	3.91	4.08	4.17	4.27
(0.71)	3.19	3.00	2.92	2.72	2.44	2.37	2.41	2.54	2.55	2.35	2.40	2.49	2.47	2.42	2.47	2.38	2.45	2.65	2.78	2.72	2.77	2.84	3.25	3.52	3.71	3.83	3.94
(0.86)	2.81	2.65	2.57	2.42	2.23	2.19	2.24	2.33	2.30	2.09	2.14	2.28	2.27	2.26	2.32	2.20	2.24	2.42	2.50	2.43	2.46	2.54	2.92	3.15	3.35	3.51	3.61
(1.05)	2.54	2.41	2.33	2.24	2.13	2.10	2.14	2.20	2.13	1.92	1.96	2.15	2.15	2.19	2.26	2.12	2.11	2.28	2.33	2.24	2.25	2.34	2.69	2.89	3.11	3.30	3.42
(1.25)	2.39	2.28	2.21	2.15	2.09	2.08	2.09	2.13	2.04	1.83	1.87	2.09	2.09	2.16	2.25	2.10	2.06	2.21	2.25	2.14	2.15	2.25	2.57	2.76	2.99	3.22	3.35
(1.45)	2.30	2.21	2.15	2.13	2.10	2.08	2.08	2.10	2.00	1.79	1.83	2.07	2.08	2.17	2.28	2.11	2.05	2.18	2.21	2.10	2.10	2.20	2.50	2.69	2.93	3.19	3.34
(1.64)	2.26	2.18	2.13	2.13	2.12	2.10	2.08	2.09	1.99	1.78	1.82	2.07	2.08	2.20	2.32	2.14	2.06	2.18	2.20	2.09	2.08	2.18	2.47	2.66	2.92	3.21	3.38
(1.94)	2.21	2.15	2.12	2.15	2.15	2.12	2.08	2.09	1.98	1.77	1.82	2.08	2.10	2.23	2.38	2.18	2.08	2.19	2.21	2.09	2.08	2.17	2.45	2.65	2.93	3.26	3.46
(2.33)	2.23	2.18	2.18	2.23	2.24	2.20	2.13	2.13	2.03	1.82	1.88	2.15	2.18	2.34	2.51	2.30	2.17	2.25	2.27	2.15	2.15	2.22	2.49	2.71	3.02	3.41	3.67
(2.72)	2.27	2.25	2.27	2.33	2.34	2.28	2.19	2.18	2.10	1.89	1.96	2.25	2.29	2.47	2.67	2.43	2.27	2.33	2.35	2.24	2.23	2.30	2.56	2.81	3.16	3.60	3.92
(3.11)	2.34	2.32	2.36	2.44	2.44	2.36	2.25	2.24	2.17	1.97	2.06	2.35	2.41	2.61	2.83	2.57	2.39	2.43	2.44	2.33	2.34	2.39	2.66	2.95	3.33	3.83	4.17
(3.50)	2.42	2.42	2.48	2.57	2.56	2.46	2.33	2.32	2.26	2.06	2.16	2.48	2.56	2.77	3.02	2.73	2.53	2.55	2.55	2.44	2.46	2.51	2.79	3.11	3.51	4.03	4.40
(4.09)	2.55	2.56	2.64	2.74	2.71	2.58	2.43	2.42	2.39	2.20	2.32	2.65	2.75	2.99	3.27	2.95	2.73	2.71	2.71	2.61	2.64	2.69	2.99	3.34	3.75	4.30	4.69
(4.88)	2.78	2.81	2.91	3.01	2.96	2.78	2.61	2.60	2.60	2.43	2.58	2.95	3.08	3.37	3.69	3.32	3.06	3.02	3.00	2.91	2.96	3.01	3.35	3.75	4.16	4.69	5.09
(5.66)	3.03	3.09	3.20	3.29	3.21	3.00	2.80	2.80	2.82	2.68	2.86	3.28	3.45	3.77	4.15	3.72	3.44	3.37	3.35	3.26	3.34	3.40	3.79	4.20	4.57	5.07	5.45
(6.44)	3.30	3.38	3.48	3.57	3.45	3.22	3.01	3.02	3.07	2.95	3.17	3.64	3.84	4.20	4.64	4.15	3.87	3.78	3.77	3.66	3.77	3.84	4.27	4.71	5.02	5.45	5.80
(7.23)	3.57	3.65	3.77	3.84	3.71	3.46	3.23	3.26	3.33	3.23	3.51	4.05	4.26	4.65	5.14	4.64	4.34	4.25	4.24	4.13	4.27	4.36	4.81	5.23	5.43	5.76	6.12
(8.40)	3.95	4.04	4.13	4.19	4.03	3.78	3.56	3.62	3.74	3.68	4.02	4.62	4.84	5.28	5.85	5.31	5.04	4.94	4.99	4.84	5.01	5.09	5.58	5.97	6.08	6.38	6.71
(8.52)	3.98		4.17	4.22	4.08	3.82	3.62	3.66	3.79	3.73	4.07	4.67	4.94	5.33	5.94	5.38	5.11	5.07	5.04	4.94	5.06	5.19	5.65	6.04	6.07	6.44	6.65
(10.1)	4.55		4.70	4.77	4.59	4.38	4.18	4.29	4.49	4.47	4.96	5.70	5.98	6.38	7.15	6.42	6.23	6.30	6.33	6.16	6.26	6.49	6.90	7.28	7.13	7.45	7.72
(11.7)	5.06		5.24	5.25	5.13	4.92	4.74	4.99	5.26	5.35	5.98	6.95	7.05	7.39	8.12	7.82	7.30	7.28	7.51	7.56	7.57	7.57	8.24	8.58	8.28	8.60	9.02
(13.2)	5.45		5.71	5.83	5.60	5.45	5.36	5.66	6.03	6.45	7.05	8.22	8.05	8.51	8.97	8.62	8.42	8.68	8.70	8.65	8.79	8.86	9.31	10.4	10.1	10.4	10.2
(15.6)	6.10		6.27	6.28	6.44	6.25	6.16	6.49	7.32	7.23	8.67	9.48	9.52	9.97	9.99	10.7	9.48	9.72	10.1	9.76	10.5	10.2	11.6	12.8	11.7	13.5	13.2
(18.7)	6.78		7.19	7.53	7.18	7.50	7.14	8.03	9.14	9.05	11.0	44.1	26.5		32.8	24.0	14.4	20.2	11.5	12.1	33.4	32.1	27.7	45.7	33.4	43.6	43.6
(21.9)	17.1		7.48	7.88	21.1	25.7	23.8	26.3	29.6	27.4	26.3	53.5	33.3		29.8	32.9	30.9	30.4	22.2	35.1	29.4	27.2	59.8	44.2	109.	67.4	126.

STATION LOCATION

UNITS: OHM-METRES

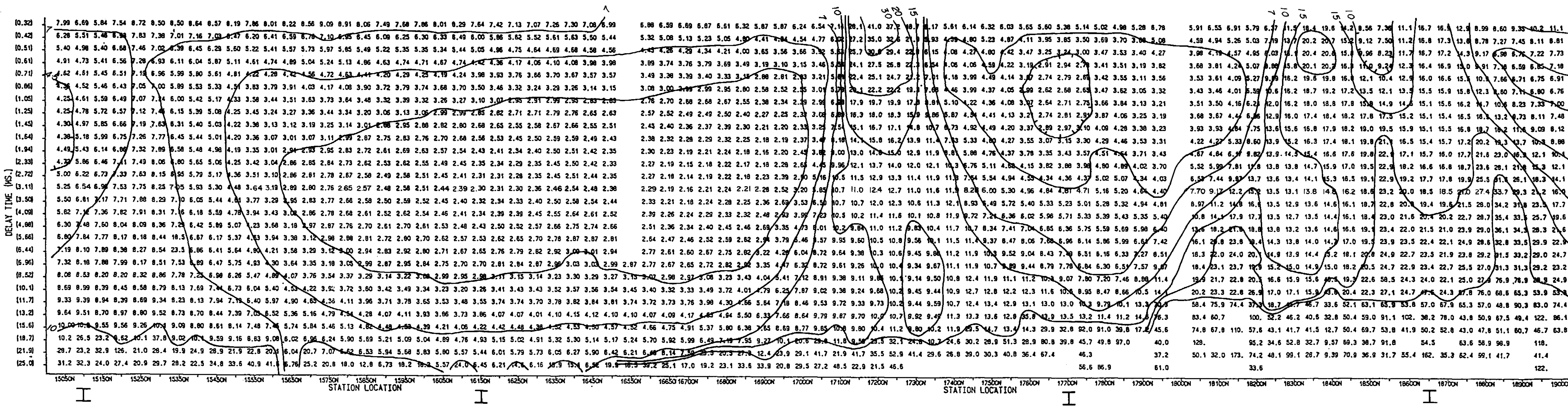
SURVEY SPECIFICATIONS	
INSTRUMENT: SIROTEM	
CONFIGURATION 100M SQ. TRANSMITTER LOOP	
READING INTERVAL	50M
SURVEY DATE	NOV/87
MAP	FOWLER, S.A.

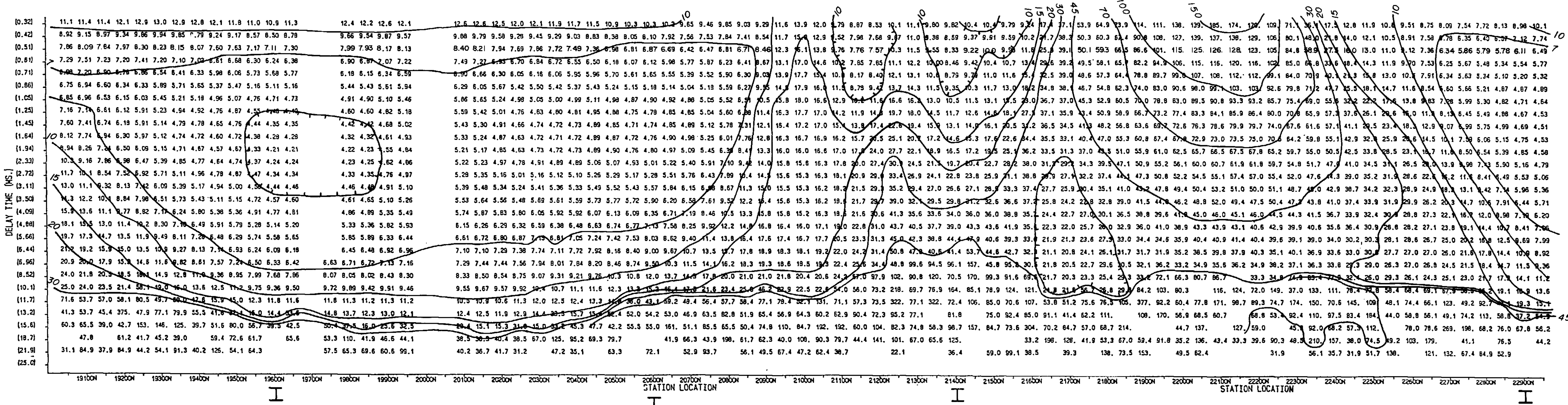
Contour interval: (1, 1·5, 2, 3, 4·5, 7) x 10^n

FIG. 7

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED A.R.D.	13/1/91 DATE
NUNDROO DRILLING PROGRAM	DRAWN J. Gray	SCALE 1:5000
SIROTEM SURVEY 100W	DATE Sept, 1991	PLAN NUMBER
APPARENT RESISTIVITY PSEUDO-SECTION	CHECKED	91-546

5418





SCALE

METRES 100 0 100 200 300 400 500 600 700 METRES

UNITS: OHM-METRES

SURVEY SPECIFICATIONS	
INSTRUMENT: SIROTEM	
CONFIGURATION 100M SQ. TRANSMITTER LOOP	
READING INTERVAL	50M
SURVEY DATE	NOV/87
MAP	FOWLER S.A.

Contour interval : (1, 1·5, 2, 3, 4·5, 7) x 10^n

I....Data sets that have been inverted

FIG. 8

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

SIROTEM SURVEY OE, 15050N - 22900N

APPARENT RESISTIVITY PSEUDO-SECTION

A.R.D.	13/11/91
J. Gray	As shown
Sept, 1991	91-547

5418

DELAY TIME (MS.) / STATION LOCATION

Delay time (ms)	26600N	26650N	26700N	26750N	26800N	26850N	26900N	26950N	27000N	27050N	27100N	27150N	27200N	27250N	27300N	27350N	27400N	27450N	27500N
(0.32)	18.5	17.8	17.4	17.1	16.9	17.5	17.7	17.1	16.7	17.1	17.8	18.8	19.3	19.6	19.1	19.3	19.8	19.4	18.2
(0.42)	13.4	12.8	12.6	12.4	12.3	12.5	12.6	12.3	12.2	12.5	12.9	13.5	14.0	14.6	14.5	14.6	14.8	14.3	13.5
(0.51)	10.6	10.2	10.0	9.84	9.68	9.61	9.91	9.67	9.71	9.98	10.2	10.7	11.2	11.8	11.8	11.8	11.9	11.4	10.7
(0.61)	8.96	8.52	8.38	8.20	8.03	8.14	8.24	8.05	8.12	8.37	8.56	8.97	9.36	9.92	9.98	9.99	10.0	9.52	8.94
(0.71)	7.79	7.38	7.24	7.07	6.91	7.03	7.13	6.95	7.02	7.26	7.43	7.76	8.12	8.64	8.72	8.70	8.67	8.20	7.70
(0.86)	6.55	6.18	6.06	5.91	5.78	5.92	6.01	5.86	5.88	6.09	6.24	6.51	6.82	7.28	7.36	7.32	7.25	6.81	6.40
(1.05)	5.50	5.18	5.10	4.98	4.89	5.05	5.13	4.98	4.96	5.11	5.24	5.46	5.73	6.13	6.21	6.14	6.05	5.66	5.36
(1.25)	4.80	4.53	4.48	4.39	4.35	4.51	4.58	4.44	4.37	4.47	4.58	4.76	5.00	5.35	5.43	5.35	5.25	4.93	4.69
(1.45)	4.31	4.08	4.06	4.01	4.00	4.16	4.22	4.07	3.98	4.03	4.12	4.27	4.47	4.79	4.86	4.78	4.69	4.43	4.25
(1.64)	3.95	3.76	3.76	3.73	3.76	3.92	3.96	3.80	3.70	3.70	3.78	3.91	4.09	4.37	4.43	4.36	4.29	4.07	3.93
(1.94)	3.56	3.41	3.44	3.44	3.50	3.65	3.67	3.52	3.39	3.36	3.40	3.51	3.66	3.90	3.95	3.89	3.85	3.68	3.58
(2.33)	3.25	3.13	3.18	3.22	3.32	3.46	3.46	3.29	3.16	3.08	3.09	3.18	3.30	3.50	3.54	3.49	3.48	3.37	3.30
(2.72)	3.04	2.96	3.03	3.09	3.21	3.34	3.33	3.16	3.02	2.91	2.90	2.96	3.06	3.23	3.27	3.23	3.25	3.17	3.13
(3.11)	2.91	2.85	2.94	3.03	3.16	3.28	3.26	3.08	2.94	2.81	2.77	2.81	2.91	3.06	3.09	3.06	3.10	3.04	3.02
(3.50)	2.84	2.79	2.89	2.99	3.13	3.24	3.21	3.03	2.89	2.75	2.70	2.72	2.80	2.94	2.97	2.95	3.00	2.96	2.95
(4.09)	2.74	2.72	2.84	2.94	3.09	3.18	3.15	2.98	2.84	2.69	2.61	2.61	2.68	2.80	2.83	2.83	2.89	2.87	2.86
(4.88)	2.71	2.71	2.84	2.95	3.09	3.17	3.13	2.97	2.84	2.68	2.57	2.56	2.61	2.72	2.75	2.76	2.84	2.83	2.83
(5.66)	2.72	2.73	2.87	2.98	3.11	3.18	3.14	2.98	2.87	2.71	2.58	2.54	2.59	2.69	2.73	2.74	2.84	2.83	2.84
(6.44)	2.76	2.77	2.93	3.02	3.13	3.19	3.17	3.02	2.92	2.76	2.61	2.57	2.59	2.69	2.74	2.76	2.87	2.86	2.87
(7.23)	2.80	2.83	2.98	3.06	3.17	3.22	3.20	3.06	2.97	2.82	2.66	2.61	2.63	2.73	2.77	2.80	2.92	2.91	2.91
(8.40)	2.88	2.90	3.05	3.10	3.21	3.25	3.24	3.11	3.04	2.91	2.75	2.68	2.68	2.77	2.83	2.87	2.98	2.98	2.99
(8.52)	2.91	2.93	3.08	3.17	3.24	3.28	3.28	3.14	3.07	2.91	2.77	2.68	2.69	2.80	2.84	2.88	2.98	3.00	2.99
(10.1)	3.06	3.08	3.24	3.30	3.35	3.37	3.39	3.28	3.22	3.07	2.93	2.84	2.85	2.96	2.99	3.04	3.16	3.16	3.15
(11.7)	3.24	3.24	3.37	3.45	3.47	3.52	3.55	3.44	3.36	3.28	3.13	3.01	3.02	3.13	3.16	3.22	3.35	3.34	3.32
(13.2)	3.37	3.37	3.54	3.60	3.62	3.65	3.64	3.61	3.49	3.44	3.33	3.22	3.25	3.35	3.39	3.38	3.54	3.52	3.50
(15.6)	3.55	3.60	3.71	3.76	3.75	3.83	3.80	3.75	3.72	3.64	3.54	3.53	3.50	3.61	3.63	3.67	3.82	3.77	3.77
(18.7)	3.88	3.86	4.03	4.07	4.03	4.21	4.14	4.09	4.00	4.03	4.01	3.90	4.01	4.08	4.14	4.05	4.11	4.23	4.24
(21.9)	4.08	4.16	4.40	4.33	4.40	4.43	4.52	4.46	4.41	4.22	4.47	4.15	4.46	4.55	4.64	4.43	4.57	4.83	4.53
(25.0)									4.72	4.84	4.65	4.95	4.59	4.81	4.85	4.99	5.03	5.38	4.92

Delay time (ms)	27550N	27600N	27650N	27700N	27750N	27800N	27850N	27900N	27950N	28000N	28050N	28100N	28150N	28200N	28250N	28300N	28350N	28400N	28450N	28500N
(0.32)	17.2	16.7	16.5	16.3	15.1	14.8	14.6	14.5	13.9	13.8	14.9	15.9	14.9	14.7	14.2	14.6	14.6	15.0	15.3	14.6
(0.42)	12.9	12.5	12.3	12.2	11.3	10.9	10.6	10.5	10.2	10.2	10.8	11.2	10.4	10.4	10.1	10.5	10.5	10.9	11.1	10.6
(0.51)	10.3	9.97	9.78	9.79	9.02	8.69	8.40	8.31	8.12	8.10	8.45	8.70	8.07	8.08	7.93	8.27	8.31	8.66	8.88	8.50
(0.61)	8.62	8.32	8.16	8.20	7.54	7.24	6.99	6.90	6.76	6.75	6.99	7.17	6.67	6.73	6.61	6.87	6.92	7.24	7.46	7.16
(0.71)	7.45	7.18	7.02	7.08	6.50	6.23	6.02	5.94	5.83	5.81	6.00	6.16	5.76	5.84	5.74	5.93	5.97	6.26	6.48	6.23
(0.86)	6.23	6.00	5.84	5.91	5.42	5.21	5.06	4.98	4.89	4.86	5.02	5.17	4.88	4.98	4.88	4.98	5.00	5.24	5.46	5.26
(1.05)	5.25	5.04	4.87	4.94	4.55	4.40	4.30	4.24	4.15	4.11	4.24	4.41	4.23	4.33	4.23	4.24	4.22	4.42	4.63	4.47
(1.25)	4.62	4.44	4.27	4.33	4.01	3.91	3.84	3.78	3.70	3.66	3.78	3.96	3.85	3.95	3.85	3.79	3.74	3.90	4.10	3.97
(1.45)	4.19	4.04	3.87	3.92	3.64	3.58	3.55	3.49	3.41	3.36	3.48	3.68	3.61	3.71	3.60	3.49	3.42	3.56	3.74	3.62
(1.64)	3.89	3.76	3.59	3.64	3.40	3.36	3.35	3.29	3.22	3.17	3.28	3.50	3.46	3.55	3.44	3.30	3.20	3.32	3.49	3.38
(1.94)	3.57	3.46	3.30	3.34	3.14	3.13	3.13	3.08	3.01	2.97	3.07	3.31	3.30	3.38	3.27	3.09	2.97	3.07	3.22	3.12
(2.33)	3.31	3.22	3.08	3.13	2.95	2.96	2.99	2.94	2.88	2.84	2.94	3.20	3.21	3.28	3.18	2.95	2.80	2.88	3.02	2.92
(2.72)	3.14	3.08	2.96	3.01	2.85	2.88	2.91	2.87	2.82	2.78	2.89	3.16	3.17	3.23	3.13	2.89	2.72	2.77	2.90	2.80
(3.11)	3.05	3.00	2.89	2.95	2.80	2.83	2.87	2.84	2.79	2.76	2.88	3.16	3.16	3.23	3.13	2.88	2.68	2.72	2.84	2.73
(3.50)	2.99	2.96	2.88	2.94	2.80	2.83	2.88	2.85	2.82	2.80	2.92	3.19	3.18	3.24	3.15	2.90	2.69	2.71	2.82	2.71
(4.09)	2.92	2.91	2.85	2.94	2.79	2.83	2.88	2.85	2.83	2.83	2.98	3.23	3.19	3.23	3.18	2.93	2.70	2.70	2.79	2.68
(4.88)	2.90	2.91	2.89	3.00	2.86	2.89	2.94	2.92	2.93	2.95	3.09	3.34	3.26	3.30	3.27	3.03	2.79	2.76	2.84	2.70
(5.66)	2.92	2.96	2.95	3.09	2.95	2.98	3.03	3.02	3.05	3.09	3.23	3.45	3.36	3.40	3.39	3.17	2.91	2.86	2.93	2.77
(6.44)	2.96	3.02	3.03	3.19	3.06	3.08	3.14	3.14	3.19	3.24	3.38	3.59	3.46	3.50	3.52	3.32	3.06	2.99	3.03	2.85
(7.23)	3.02	3.08	3.12	3.30	3.17	3.19	3.25	3.27	3.33	3.38	3.52	3.73	3.60	3.63	3.65	3.48	3.22	3.15	3.16	2.96
(8.40)	3.09	3.17	3.22	3.44	3.32	3.34	3.41	3.46	3.53	3.61	3.73	3.92	3.74	3.79	3.87	3.70	3.44	3.34	3.35	3.12
(8.52)	3.11	3.18	3.24	3.44	3.33	3.35	3.45	3.46	3.56	3.61	3.76	3.93	3.78	3.79	3.86	3.72	3.47	3.38	3.38	3.14
(10.1)	3.27	3.36	3.44	3.68	3.57	3.62	3.71	3.78	3.90	3.95	4.14	4.25	4.13	4.05	4.19	4.09	3.83	3.72	3.72	3.45
(11.7)	3.47	3.55	3.65	3.90	3.82	3.88	4.01	4.07	4.22	4.31	4.45	4.59	4.41	4.28	4.51	4.46	4.18	4.09	4.09	3.75
(13.2)	3.62	3.73	3.81	4.17	4.08	4.17	4.32	4.39	4.53	4.54	4.80	4.93	4.71	4.67	4.78	4.83	4.53	4.42	4.45	4.03
(15.6)	3.89	4.02	4.07	4.45	4.38	4.61	4.84	4.81	5.09	5.06	5.34	5.26	5.20	4.82	5.25	5.20	5.01	4.85	4.97	4.52
(18.7)	4.27	4.48	4.51	5.00	4.83	5.22	5.15	5.33	5.94	5.69	6.11	5.86	5.88	5.09	5.79	5.83	5.79	5.43	5.72	5.14
(21.9)	4.63	5.13	4.76	5.61	5.42	5.59	5.82	6.11	6.25	6.43	6.46	6.24	6.20	5.35	6.02	6.74	5.94	5.79	6.48	5.40
(25.0)	4.73	12.1	5.43	6.19	5.91	5.91	6.15	16.9	7.42	6.56	6.90	18.7	19.9	5.00	13.7	20.8	16.0	23.3	16.8	19.1

UNITS: OHM-METRES

SURVEY SPECIFICATIONS	
INSTRUMENT:	SIROTEM
CONFIGURATION	100M SQ. TRANSMITTER LOOP
READING INTERVAL	50M
SURVEY DATE	NOV/87
MAP	FOWLER, S.A.

I ......Data sets that have been inverted

Contour interval: (1, 1·5, 2, 3, 4·5, 7) x 10^n

SCALE

METRES 100 0 100 200 300 METRES

FIG. 9

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

SIROTEM SURVEY 0E, 26600N - 28500N

APPARENT RESISTIVITY PSEUDO-SECTION

COMPILED A.R.D.	13.11.91
DRAWN J. Gray	SCALE As shown
DATE Sept, 1991	PLAN NUMBER 91-548
CHECKED	

5418

DELAY TIME (MS.)	16900N		17000N		17100N		17200N		17300N	
(0.32)	5.41	5.24	5.10	5.11	5.20	5.43	5.35	5.68	5.89	5.78
(0.42)	3.95	3.60	3.28	3.72	3.90	4.43	3.94	4.13	4.39	4.24
(0.51)	3.20	2.94	2.88	3.45	3.69	4.33	3.64	3.43	3.57	3.47
(0.61)	2.74	2.57	2.68	3.31	3.61	4.36	3.56	3.06	3.08	3.02
(0.71)	2.44	2.35	2.56	3.23	3.59	4.45	3.57	2.87	2.77	2.73
(0.86)	2.15	2.14	2.44	3.14	3.59	4.60	3.65	2.71	2.48	2.46
(1.05)	1.96	2.01	2.41	3.13	3.73	4.96	3.92	2.69	2.31	2.30
(1.25)	1.86	1.96	2.42	3.17	3.90	5.35	4.24	2.75	2.25	2.23
(1.45)	1.81	1.95	2.46	3.24	4.11	5.74	4.60	2.87	2.27	2.22
(1.64)	1.79	1.97	2.51	3.33	4.32	6.11	4.97	3.04	2.32	2.25
(1.94)	1.79	2.00	2.60	3.47	4.60	6.54	5.45	3.29	2.44	2.31
(2.33)	1.84	2.11	2.78	3.75	5.08	7.13	6.20	3.77	2.71	2.49
(2.72)	1.92	2.24	2.99	4.09	5.54	7.55	6.86	4.32	3.05	2.72
(3.11)	2.01	2.38	3.24	4.46	5.96	7.83	7.38	4.91	3.45	3.00
(3.50)	2.11	2.55	3.51	4.81	6.32	8.01	7.79	5.51	3.89	3.32
(4.09)	2.27	2.79	3.88	5.29	6.69	8.04	8.08	6.27	4.52	3.79
(4.88)	2.54	3.20	4.48	5.95	7.09	8.04	8.29	7.20	5.50	4.56
(5.66)	2.84	3.64	5.09	6.49	7.34	8.01	8.27	7.87	6.39	5.38
(6.44)	3.16	4.12	5.65	6.91	7.42	7.93	8.20	8.21	7.20	6.20
(7.23)	3.52	4.60	6.07	7.21	7.50	7.83	8.11	8.41	7.81	7.06
(8.40)	4.04	5.30	6.60	7.46	7.49	7.68	7.93	8.50	8.41	7.99
(8.52)	4.09	5.31		7.49	7.51	7.71	8.17	8.56	8.54	8.13
(10.1)	4.97	6.43		7.83	7.64	7.70	8.06	8.64	9.07	9.39
(11.7)	5.87	7.42		8.19	7.82	7.79	8.40	8.90	9.62	10.3
(13.2)	7.17	8.07		8.17	8.25	8.13	8.44	9.16	10.3	11.0
(15.6)	8.37	9.29		8.87	8.51	8.08	8.93	9.71	10.4	11.4
(18.7)	24.8	46.0		9.87	9.17	18.8	9.10	10.1	26.9	33.2
(21.9)	31.1	26.2		26.0	23.3	31.4	26.7	23.7	46.7	41.1

STATION LOCATION

UNITS: OHM-METRES

SURVEY SPECIFICATIONS	
INSTRUMENT:	SIROTEM
CONFIGURATION	100M SQ. TRANSMITTER IN-LOOP RECEIVER
READING INTERVAL	50M
SURVEY DATE	NOV/87
MAP	FOWLER, S.A.

Contour interval: (1, 1·5, 2, 3, 4·5, 7) x 10^n

FIG. 10

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

SIROTEM SURVEY 150E

APPARENT RESISTIVITY PSEUDO-SECTION

COMPILED A.R.D.	C.D.O. 13.11.91 DATE
DRAWN J. Gray	SCALE 1:5000
DATE Sept, 1991	PLAN NUMBER S 22483
CHECKED	

5418

DELAY TIME (MS.)	16950N		17050N		17150N		17250N		17350N		17450N		17550N		17650N
(0.32)	7.00	7.21	7.06	6.78	5.91	5.39	5.36	8.12	7.78	5.80	6.13	6.78	7.16	6.82	6.97
(0.42)	5.27	5.36	5.22	4.90	4.29	4.22	4.50	8.68	8.18	4.80	4.59	5.08	5.54	5.21	5.14
(0.51)	4.33	4.38	4.26	3.99	3.61	4.05	4.72	9.60	8.69	4.73	3.98	4.33	4.76	4.49	4.32
(0.61)	3.75	3.80	3.71	3.50	3.30	4.13	5.21	10.7	9.35	4.88	3.71	3.96	4.31	4.12	3.91
(0.71)	3.36	3.41	3.36	3.21	3.18	4.36	5.86	11.7	10.0	5.14	3.62	3.75	4.03	3.91	3.68
(0.86)	2.98	3.04	3.03	2.97	3.13	4.80	6.90	12.9	10.8	5.58	3.62	3.57	3.75	3.71	3.49
(1.05)	2.70	2.78	2.82	2.87	3.29	5.73	8.72	14.2	11.9	6.44	3.86	3.52	3.58	3.62	3.44
(1.25)	2.54	2.63	2.72	2.89	3.56	6.81	10.5	15.0	12.6	7.39	4.24	3.57	3.51	3.60	3.46
(1.45)	2.44	2.56	2.69	2.98	3.90	7.91	11.8	15.2	13.1	8.35	4.70	3.68	3.50	3.61	3.52
(1.64)	2.39	2.52	2.70	3.11	4.80	8.93	12.6	15.1	13.3	9.28	5.23	3.83	3.53	3.65	3.59
(1.94)	2.34	2.48	2.74	3.34	4.87	9.98	12.9	14.6	13.1	10.3	5.98	4.07	3.60	3.69	3.69
(2.33)	2.35	2.52	2.89	3.77	5.88	10.7	12.8	14.0	12.7	11.5	7.18	4.53	3.83	3.86	3.90
(2.72)	2.39	2.60	3.09	4.28	6.73	10.9	12.4	13.4	12.3	12.1	8.28	5.08	4.14	4.08	4.14
(3.11)	2.45	2.71	3.35	4.81	7.50	10.8	12.0	12.8	11.8	12.2	9.19	5.65	4.51	4.37	4.40
(3.50)	2.54	2.85	3.62	5.34	8.15	10.6	11.5	12.4	11.4	12.2	9.93	6.25	4.93	4.69	4.69
(4.09)	2.67	3.06	4.02	6.00	8.65	10.2	10.9	11.7	10.9	11.9	10.6	7.07	5.58	5.19	5.10
(4.88)	2.93	3.44	4.65	6.85	9.06	9.80	10.4	11.2	10.4	11.4	11.2	8.27	6.62	6.06	5.84
(5.66)	3.23	3.87	5.30	7.51	9.20	9.50	9.86	10.8	10.1	11.1	11.5	9.37	7.67	7.00	6.63
(6.44)	3.56	4.32	5.89	8.00	9.22	9.37	9.44	10.5	9.82	11.0	11.5	10.2	8.62	7.86	7.53
(7.23)	3.91	4.81	6.49	8.27	9.21	9.15	9.10	10.2	9.58	10.6	11.5	10.8	9.48	8.76	8.49
(8.40)	4.42	5.43	7.08	8.57	8.93	9.00	8.73	10.1	9.43	10.5	11.3	11.2	10.5	9.52	9.82
(8.52)	4.43	5.51	7.15	8.61	9.11	9.00	9.80	10.2	9.56	10.5	11.2	11.1	10.6	10.0	9.73
(10.1)	5.24	6.45	8.04	8.94	9.25	8.91	9.79	10.1	9.70	10.7	11.8	11.6	11.6	11.1	11.4
(11.7)	6.04	7.24	8.66	9.00	9.57	9.15	9.97	10.7	9.60	10.7	12.1	11.9	12.7	12.2	13.9
(13.2)	6.78	7.82	9.20	9.58	9.84	9.16	11.2	11.1	10.2	10.5	11.9	12.8	13.1	13.0	14.6
(15.6)	7.98	8.88	9.90	10.4	10.3	10.1	11.1	10.5	10.0	11.0	11.6	12.4	13.3	13.8	31.6
(18.7)	25.8	10.3	25.0	10.4	28.5	9.54	11.8	40.2	32.3	28.0	26.7	13.2	90.3	28.6	41.3
(21.9)	23.2	31.5	30.0	19.1	29.2	45.0	36.2	30.7	23.0	19.2	31.7	32.7	35.1	40.8	31.9

STATION LOCATION

SURVEY SPECIFICATIONS	
INSTRUMENT:	SIROTEM
CONFIGURATION	100M SQ. TRANSMITTER IN-LOOP RECEIVER
READING INTERVAL	50M
SURVEY DATE	NOV/87
MAP	FOWLER, S.A.

UNITS: OHM-METRES

Contour interval: (1, 1·5, 2, 3, 4·5, 7) x 10^n

FIG. 11

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA

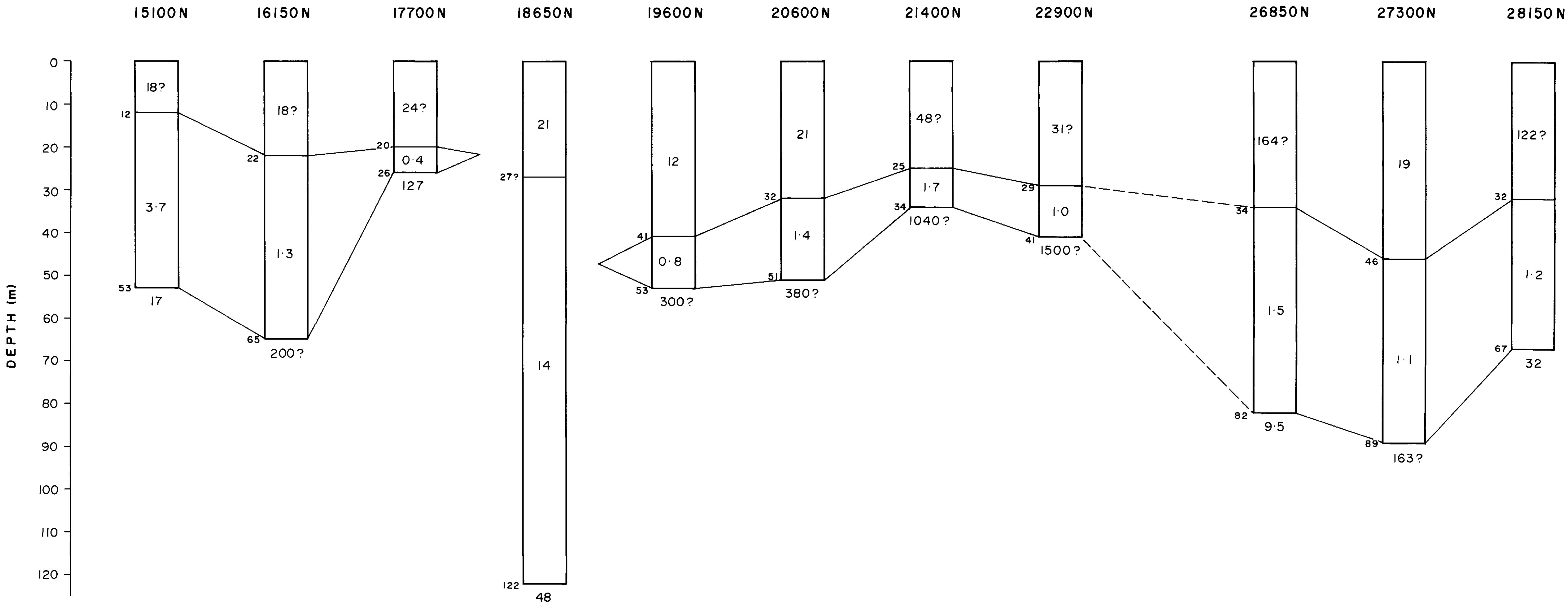
NUNDROO DRILLING PROGRAM

SIROTEM SURVEY 550E

APPARENT RESISTIVITY PSEUDO-SECTION

COMPILED A.R.D.	C.D.O. 13.11.91 DATE
DRAWN J. Gray	SCALE 1:5000
DATE Sept, 1991	PLAN NUMBER S 22484
CHECKED	

5418



APRE	13·1	5·4	6·1	7·9	12·8	14·4	17·4	14·6	5·5	4·8	3·6
S.E. (%)	6·5	4·2	5·9	5·7	9·8	10·6	15·1	12·1	4·1	4·6	2·8

Layer resistivities in ohm-metres

Depths in metres

Horizontal distances are arbitrary

FIG. 12

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

LINE 0

RESISTIVITY SECTIONS INVERTED FROM SIROTEM SOUNDINGS

COMPILED A.R.D.	13-11-91	C D O DATE
DRAWN J. Gray	SCALE	
DATE Sept, 1991	PLAN NUMBER 91-549	
CHECKED		

5418

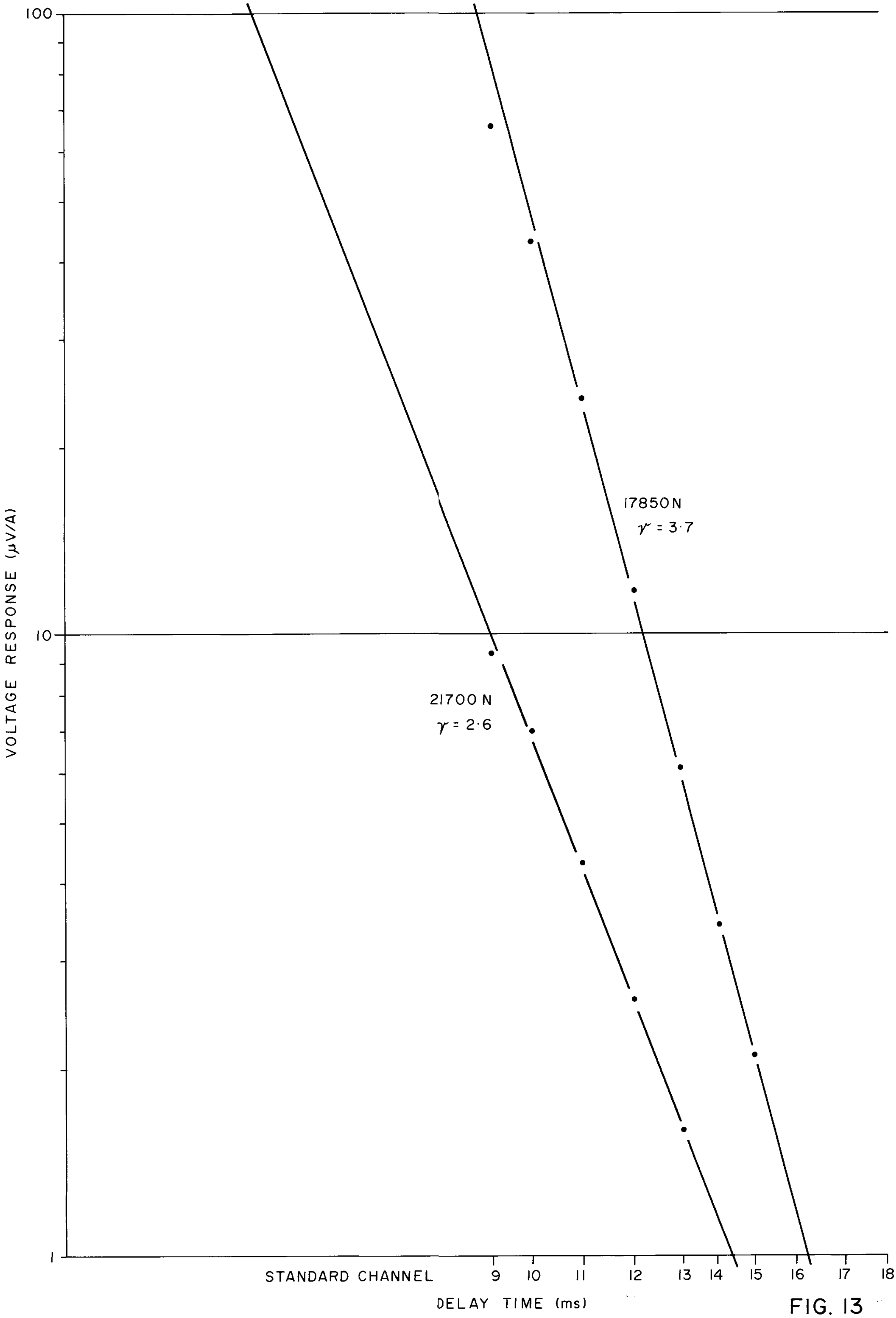


FIG. 13

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

NUNDROO DRILLING PROGRAM

DECAY CURVE ANALYSIS - POWER LAW DECAY

LINE OE, STATIONS 17850N AND 21700N

COMPILED A.R.D.	C.D.O. DATE 13·11·91	
DRAWN J. Gray	SCALE	
DATE Sept, 1991	PLAN NUMBER S 22485	
CHECKED		

5418

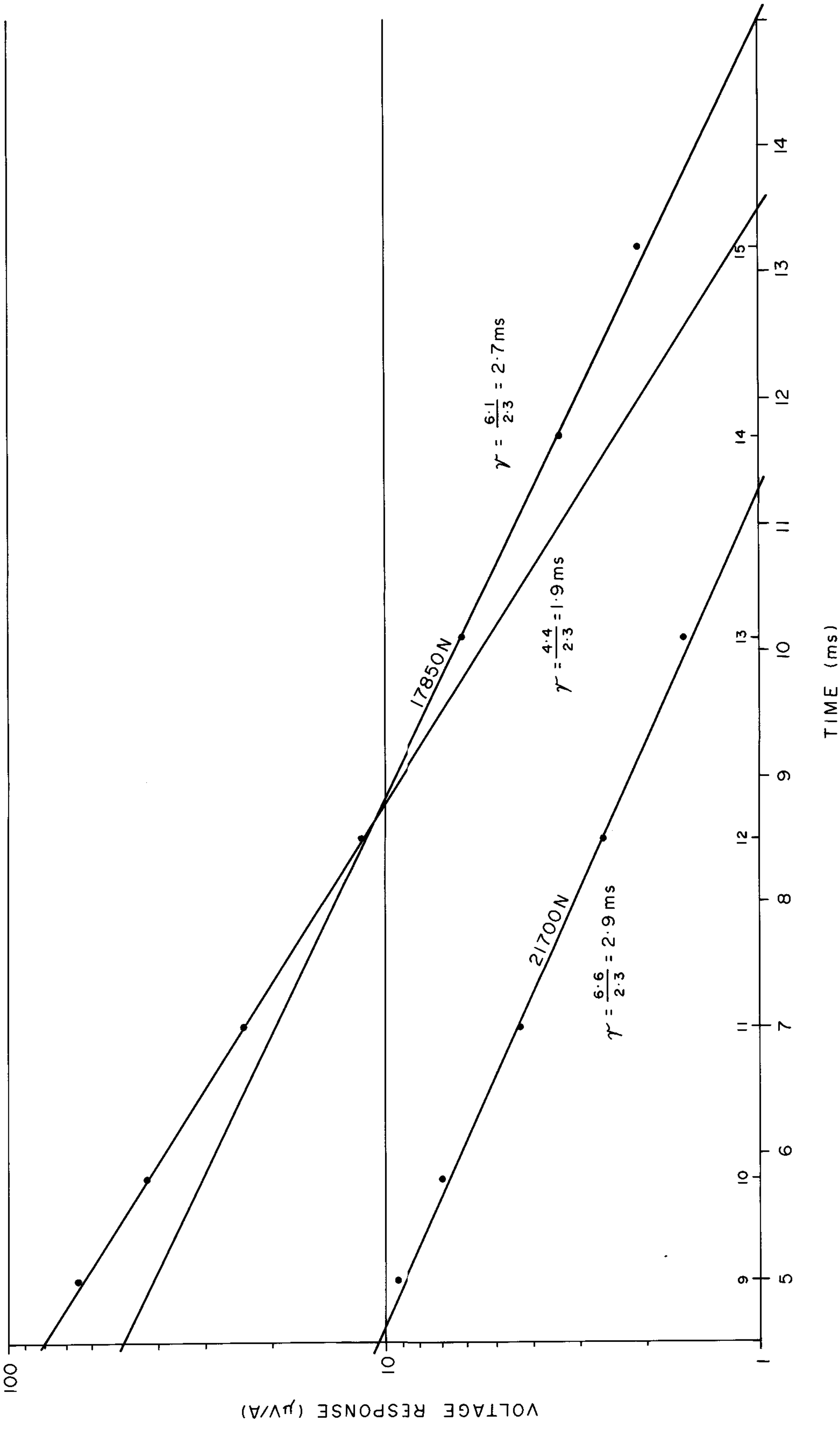


FIG. 14

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED A.R.D.	C.D.O. 13·11·91 DATE
NUNDROO DRILLING PROGRAM	DRAWN J. Gray	SCALE
DECAY CURVE ANALYSIS - EXPONENTIAL DECAY LINE OE, STATIONS 17850N AND 21700N	DATE Sept, 1991 CHECKED	PLAN NUMBER S22486

5418