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No. 3346

EL 425 AND EL 804

HALLETT

**PROGRESS AND FINAL REPORTS FOR THE PERIOD
24/10/78 TO 11/2/82**

Submitted by
Australian Selection (Pty) Ltd and Adelaide and Wallaroo Fertilizers Ltd
1982

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**PRIMARY INDUSTRIES
AND RESOURCES SA**

ENVELOPE 3346

TENEMENT: EL 425, 804 Hallett (located north of Burra)

TENEMENT HOLDER: Adelaide and Wallaroo Fertilizers Ltd; Australian Selection Pty Ltd and Seltrust Mining Corp. Pty Ltd

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SEPARATELY HELD DATA

DRILLHOLE SAMPLES (held by MESA Core Library):

For up to date information on available drillhole samples, contact the Supervisor, SADME Core Library and quote the Exploration Licence and drillhole number/s you wish to query.

TRANSPARENCIES (stored at Document Storage Centre):

Plans marked on the Contents Pages by +T are also held as transparencies in Cylinder 3346/1.

0003



DEPARTMENT OF MINES AND ENERGY

SOUTH AUSTRALIA

191 Greenhill Road, Parkside

TELEPHONE: (08) 272-5711

TELEGRAMS: Domex

TELEX: AA88692

PLEASE ADDRESS ALL
CORRESPONDENCE TO:

The Director-General

PO Box 151

Eastwood, S.A., 5063

In reply, please quote

THE MANAGER,
AUSTRALIAN SELECTION PTY. LTD.,
32 MAIN STREET,
PT. AUGUSTA. 5700.

27TH OCTOBER, 1978.

Dear Sir,

I forward herewith the results of testing water from your property together with circulars indicating the purpose for which the water is suitable.

<u>Analysis No.</u>	<u>Hundred</u>	<u>Section</u>	<u>Salinity</u> (<u>Milligrams</u> <u>per litre</u>) (<u>mg/l</u>)	<u>Remarks</u>
				<u>"CONFIDENTIAL".</u>
W4534/78	KOORINGA	56	2770	<u>HOLE NO. PHA 3.</u> Depth sample taken 18M. (3.10.78.)
W4533/78	"	Aj. 39	1960	<u>HOLE NO. PHA 2.</u> Depth sample taken 58M. (3.10.78.)
W4532/78	"	-	104	<u>HOLE NO. PHA 1.</u> Depth sample taken 60M. (3.10.78.)

* Samples collected by M.MASON

The analytical work has been done by an approximate method which gives the total salts within small limits of error.

Yours faithfully,

B.P. Webb

B.P. Webb,
DIRECTOR-GENERAL



DEPARTMENT OF MINES-SOUTH AUSTRALIA

0004

WATER SAMPLE ANALYSIS ADVICE

Bore Reference P.H.A 3 Analysis No. W. 4534 / 78
Hundred. Koorringa Section 56
Sample collected by. M.A. Mason Date 3/10/78
Depth sample taken 18. m Name Austr. Selection. pt. 47D
Dept. Mines Results Address 32 main str. pt Augustal

Conductivity 4700 μ S at 25°C

Salinity 2770 . mg/l

To AMDEL for analysis.

pH 6.1

AMDEL No.

Remarks.

Owner advised of

Analysis result

27/10/78

Unit No.

Bore Folder No.

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0005

OFFICE USE ONLY

Sample No. _____
Reference _____
Borehole _____
State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE - County _____

Hundred HD KOORINGA Section 56ⁿ

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of
bore in the section (indicate distance
from boundaries if possible)

BORE DETAILS—

Sample from 18m (depth metres)
Total depth (metres) 62m
Water cut (metres) 18m
Water level below surface 6m
Supply (gallons per hour) 1000 GPH

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet ✓

Situation of bore (✓ where appropriate)

In gully _____ On level ground ✓ On ridge _____ On hill _____

Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in QuarterlyReports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION3rd October 1978QUALITY OF WATER—

Water is required for _____

27/10/78

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million.

Has water been used for (✓ where appropriate) —

Sheep — 0 Horses — Cattle — Poultry — Others —

Has water been used on —

Lucerne — Pastures — Vegetables — Fruit trees — Others —

Has water been used for —

Washing — Drinking — Domestic — Hot water service — Boilers —

Sample collected by (name) M. G. MALCOLM

Please forward to: —

Director of Mines,

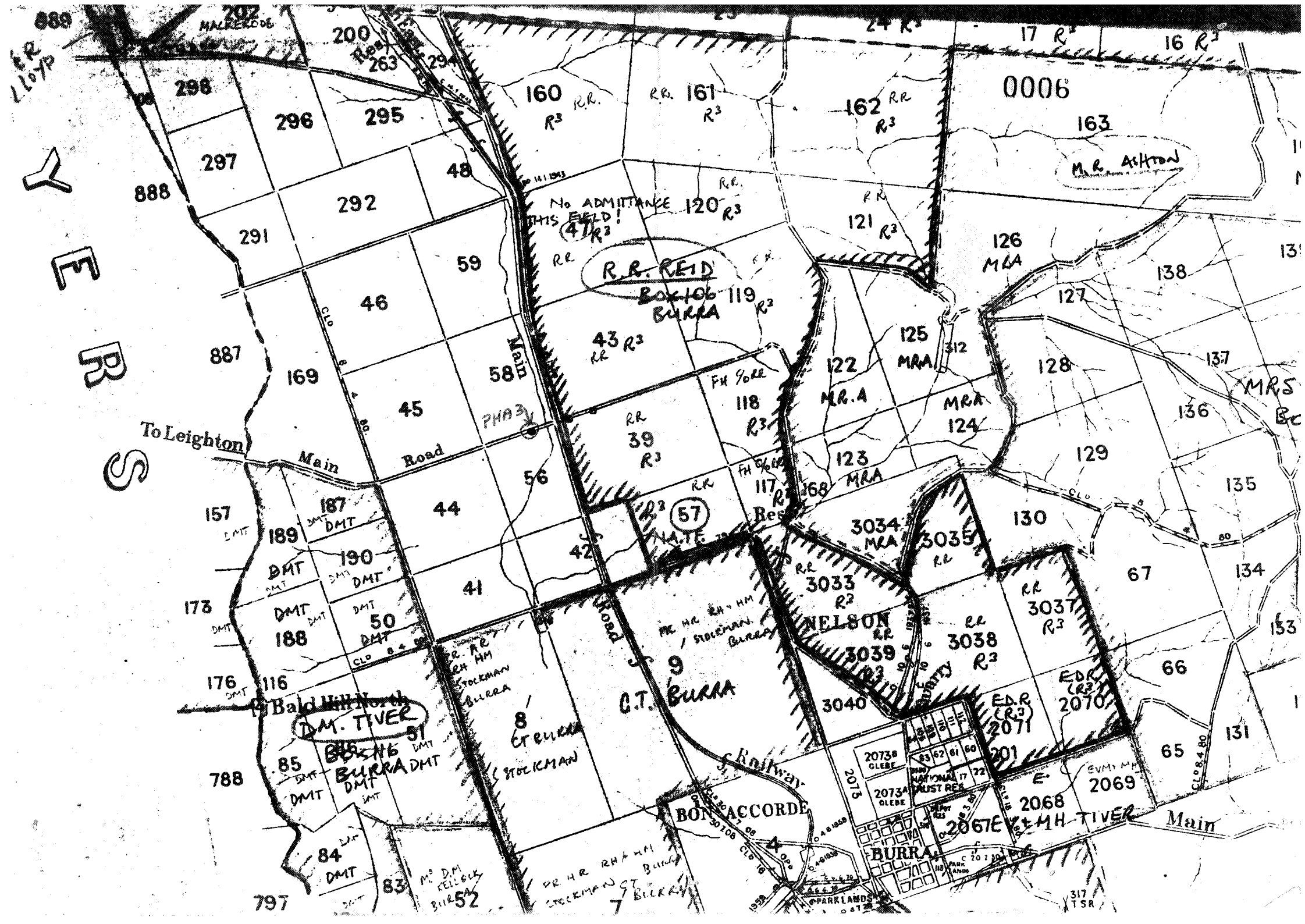
Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

Malcolm G. MalcolmDate 3-10 1978OFFICE USE ONLY

Signed _____



DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

0007

Bore Reference. P.H.A.2 Analysis No. W.4533/78
Hundred. Koorunga Section A.T.39
Sample collected by. M.G. Mason Date 3/10/78
Depth sample taken 58 . m Name Australian Selection

Dept. Mines Results

Conductivity 3400 μ S at 25°C

Address P.Ty. LTD.

Salinity. 1960 . mg/l

32 main str. pt Augusta

To AMDEL for analysis.

pH 6.7

AMDEL No.

Remarks

Owner	Issued to	27/10/78
Analysed	Result	
<u>Confidential</u>		

Unit No.

Bore Folder No.

0008

D.M. C10

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 92 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE -

County _____

Hundred POORINGASection 39

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Sample from 58m (depth metres).
 Total depth (metres) 60m
 Water cut (metres) 18m
 Water level below surface (metres) 12m
 Supply (gallons per hour) 5000 GPH

Casing size (inches) _____ From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet ☒

Situation of bore (/ where appropriate) _____

In gully _____ On level ground ☒ On ridge _____ On hill _____Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling _____

See Geological Log in Quarterly Reports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION3-10-1978QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only) _____

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million.

Has water been used for (/ where appropriate) —

Sheep ☒ Horses ☒ Cattle ☒ Poultry ☒ Others ☒

Has water been used on —

Lucerne ☒ Pastures ☒ Vegetables ☒ Fruit trees ☒ Others ☒

Has water been used for —

Washing ☒ Drinking ☒ Domestic ☒ Hot water service ☒ Boilers ☒Sample collected by (name) M. G. MAXON.

Please forward to: —

Director of Mines,

Box 38, Rundle Street, P.O.,

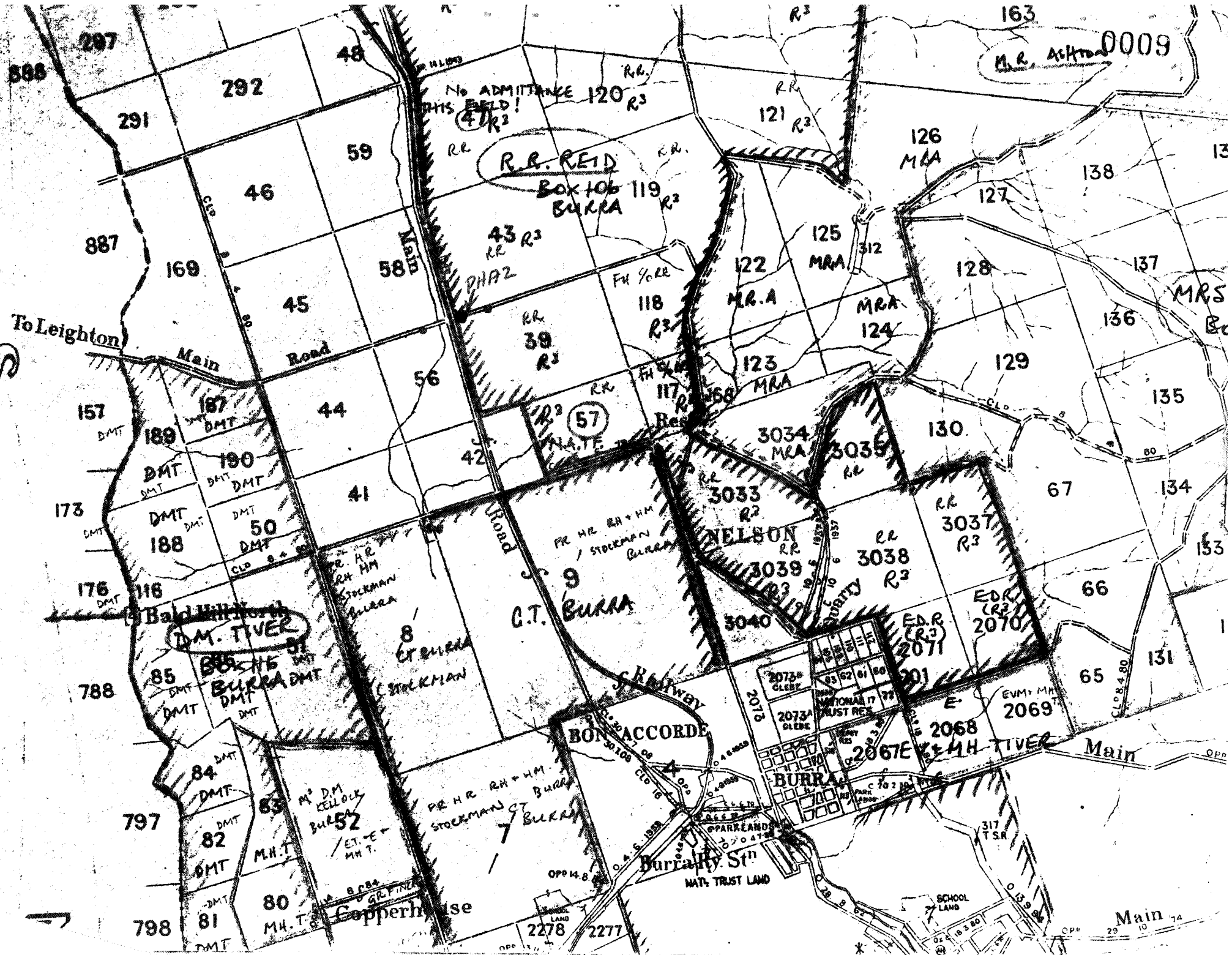
Adelaide, S.A. 5000

Signed _____

Date 3-10-1978

OFFICE USE ONLY

Signed _____



DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

0010

Bore Reference *P.H.A. 1* Analysis No. *W.4532/78*.

Hundred. *Koorlinga* Section

Sample collected by *M. G. Mason* Date *3/10/78*

Depth sample taken *60* m Name *Australian Sel. Pty Ltd.*

Dept. Mines Results

Address *32 main st. pt. Augusta*

Conductivity *200* μ S at 25°C

Salinity *104*

pH *5.0*

mg/l *10* AMDEL for analysis.

Sender advised of

analysis result

AMDEL No.

27/10/78

Remarks

Confidential

Unit No.

Bore Folder No.

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0011

OFFICE USE ONLY

Sample No. _____
Reference _____
Borehole _____
State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 92 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE - County _____

Hundred NO SECTION 37 NO KOORLINGA Section _____

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Sample from 60m (depth metres)
Total depth (metres) 99m
Water cut (metres) 42m
Water level below surface (gallons per hour) 500 GPH

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet

Situation of bore (✓ where appropriate)

In gully _____ On level ground ☒ On ridge _____ On hill _____Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in QuarterlyReports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION3-10-1978

QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate) —

Sheep ☒ Horses ☐ Cattle ☐ Poultry ☐ Others ☐

Has water been used on —

Lucerne ☐ Pastures ☐ Vegetables ☐ Fruit trees ☐ Others ☐

Has water been used for —

Washing ☐ Drinking ☐ Domestic ☐ Hot water service ☐ Boilers ☐Sample collected by (name) M. G. MASON.

Please forward to: —

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

Malcolm G. MasonDate 3rd October 1978

OFFICE USE ONLY

Signed _____

Y

M

B

S

To Leighton

Main

Road

Main

Word

S. Railway

BO ACCORDE

BURRA

298
296
295
292
291
48
59
46
45
44
41
157
187
189
190
173
188
180
176
116
788
85
84
797
82
83
52

160 R³
R.R. 161 R³
162 R³
120 R³
R.R. REID
Box 106
BURRA
43 R³
RR
39 R³
57
C.T. BURRA
8
STOCKMAN
7

0012
163
126 M.L.A.
127
128
129
130
67
3034 M.R.A.
3035
3033 R³
3038
3039
3040
20738 GLEBE
20734 GLEBE
2073
2068
2067E
2070
2071
2069
M.H. TIVER

Bald Hill North
D.M. TIVER
BURRA DMT

No ADMITTANCE
THIS FIELD!
47 R³

PR MR RH + HM
/ STOCKMAN
BURRA

NELSON
RR

20738
20734
2073
2070
2071
2068
2067E
2069

EDR
(R³)
2070

2067E
M.H. TIVER

317
15R

DEPARTMENT OF MINES-SOUTH AUSTRALIA

EL 425

WATER SAMPLE ANALYSIS ADVICE

Bore Reference. P.H.A. 15. Analysis No. W 4873/78
Hundred. Koorringa. Section. 1
Sample collected by. Mason. Date. 26/10/78
Depth sample taken. 4 m. Name. Austr. Selection P/L.
Dept. Mines Results. Address. 32 main str.
Conductivity. 4200 μ S at 25°C. pt Augustor
Salinity. 2450 mg/l. To AMDEL for analysis.
pH. 7.6. AMDEL No.

Remarks.

(CONFIDENTIAL)

Owner advised of
analysis result. 6/11/78.

Unit No. Bore Folder No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

Bore Reference. Analysis No.
Hundred. Section.
Sample collected by. Date.
Depth sample taken. . m. Name.
Dept. Mines Results. Address.
Conductivity. . . . μ S at 25°C.
Salinity. mg/l. To AMDEL for analysis.
pH. AMDEL No.

Remarks.

Unit No. Bore Folder No.

0013

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

Bore Reference. Analysis No.
Hundred. Section.
Sample collected by. Date.
Depth sample taken. . m. Name.
Dept. Mines Results. Address.
Conductivity. . . . μ S at 25°C.
Salinity. mg/l. To AMDEL for analysis.
pH. AMDEL No.

Remarks.

Unit No. Bore Folder No.

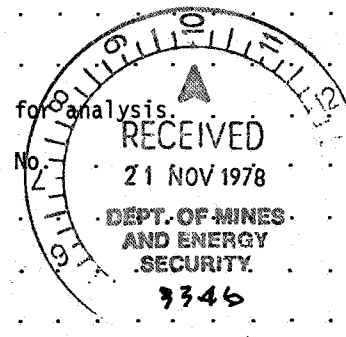
DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

Bore Reference. Analysis No.
Hundred. Section.
Sample collected by. Date.
Depth sample taken. . m. Name.
Dept. Mines Results. Address.
Conductivity. . . . μ S at 25°C.
Salinity. mg/l. To AMDEL for analysis.
pH. AMDEL No.

Remarks.

Unit No. Bore Folder No.



DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

EL 425

Bore Reference. P.H.A. 9 Analysis No. W 4869/78
 Hundred. Koorringa Section 8
 Sample collected by. Mason Date 26/10/78
 Depth sample taken 10 m Name Austr Select.
 Address 32 main str
 pt Augusta
 Dept. Mines Results
 Conductivity 5000 μ S at 25°C
 Salinity. 2970 mg/l To AMDEL for analysis.
 pH 5.6 AMDEL No.

Remarks

(CONFIDENTIAL)

Owner advised of
analysis result

Bore Folder No.

6/11/78

Unit No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

EL 425

Bore Reference. P.H.A. 8 Analysis No. W 4871/78
 Hundred. Koorringa Section 42
 Sample collected by. Mason Date 26/10/78
 Depth sample taken 12 m Name Austr Select
 Address 32 main str
 pt Augusta
 Dept. Mines Results
 Conductivity 5850 μ S at 25°C
 Salinity. 2870 mg/l To AMDEL for analysis.
 pH 7.5 AMDEL No.

Remarks

(CONFIDENTIAL)

Owner advised of
analysis result

Bore Folder No.

6/11/78

Unit No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

0014

Bore Reference P.H.A. 5 Analysis No. W 4870/78
 Hundred. Koorringa Section 56
 Sample collected by. Mason Date 26/10/78
 Depth sample taken 5 m Name Austr Select.
 Address 32 main str
 pt Augusta
 Dept. Mines Results
 Conductivity 4850 μ S at 25°C
 Salinity. 2870 mg/l To AMDEL for analysis.
 pH 7.20 AMDEL No.

Remarks

EL 425

(CONFIDENTIAL)

Owner advised of
analysis result

Bore Folder No.

6/11/78

Unit No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

EL 425

Bore Reference P.H.A. 9 Analysis No. W 4872/78
 Hundred. Koorringa Section 8
 Sample collected by. Mason Date 26/10/78
 Depth sample taken 10 m Name Austr Select.
 Address 32 main str
 pt Augusta
 Dept. Mines Results
 Conductivity 720 μ S at 25°C
 Salinity. 375 mg/l To AMDEL for analysis.
 pH 5.9 AMDEL No.

Remarks

(CONFIDENTIAL)

Owner advised of
analysis result

Bore Folder No.

6/11/78

Unit No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

EL 425

Bore Reference. P.H.A.16 Analysis No. W4865/18
Hundred. Koorlinga Section 59
Sample collected by. Mason Date 26/10/78
Depth sample taken 2. m Name Austr Select
Address 32 main str. pt Aug.
Dept. Mines Results
Conductivity 5800 μ S at 25°C
Salinity. 3520 mg/l To AMDEL for analysis.
pH 7.4 AMDEL No.

Remarks .

(CONFIDENTIAL)

Unit No. .

Owner advised of
analysis result

6/11/78

Bore Folder No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

Bore Reference. P.H.A.6 Analysis No. W4867/78
Hundred. Koorlinga Section 44
Sample collected by. Mason Date 26/10/78
Depth sample taken 16. m Name Austr Select
Address 30 main str.
Dept. Mines Results
Conductivity 5200 μ S at 25°C
Salinity. 3100 mg/l To AMDEL for analysis.
pH 6.2 AMDEL No.

Remarks .

(CONFIDENTIAL)

Owner advised of
analysis result

6/11/78

Bore Folder No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

0015

Bore Reference P.H.A.13 Analysis No. W4866/78
Hundred. Koorlinga Section 48
Sample collected by. Mason Date 26/10/78
Depth sample taken 8. m Name Austr Select
Address 32 main str. pt Aug.
Dept. Mines Results
Conductivity 4200 μ S at 25°C
Salinity. 2450 mg/l To AMDEL for analysis.
pH 7.5 AMDEL No.

Remarks .

EL 425

(CONFIDENTIAL)

Unit No. .

Owner advised of
analysis result

6/11/78

Bore Folder No.

DEPARTMENT OF MINES-SOUTH AUSTRALIA

WATER SAMPLE ANALYSIS ADVICE

Bore Reference P.H.A.6 Analysis No. W4868/78
Hundred. Koorlinga Section 58
Sample collected by. Mason Date 26/10/78
Depth sample taken 16. m Name Austr Select
Address 32 main str.
Dept. Mines Results
Conductivity 3500 μ S at 25°C
Salinity. 2020 mg/l To AMDEL for analysis.
pH 7.6 AMDEL No.

Remarks .

EL 425

(CONFIDENTIAL)

Owner advised of
analysis result

6/11/78

Bore Folder No.

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0016

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA. S. AUST 5700.

LOCATION OF BORE -

County _____

Hundred KOORLINGASection 48

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (Indicate distance from boundaries if possible)

BORE DETAILS—

Sample from (depth metres)
 Total depth (metres) 44 m
 Water cut (metres) 4
 Water level below surface (metres) 3 m
 Supply (gallons per hour) 5000 GPH

Casing size (inches) From _____ to _____ feet

Casing recovered _____

Height of bore above sea level _____ feet ✓

Situation of bore (✓ where appropriate)

In gully _____ On level ground _____ On ridge _____ On hill _____

Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in Quarterly Reports For Exploration Licence 425....
File results with this report.

AUSTRALIAN SELECTION23rd October 1978

QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate) —

Sheep — 0 Horses — 0 Cattle — 0 Poultry — 0 Others — 0

Has water been used on —

Lucerne — 0 Pastures — 0 Vegetables — 0 Fruit trees — 0 Others — 0

Has water been used for —

Washing — 0 Drinking — 0 Domestic — 0 Hot water service — 0 Boilers — 0Sample collected by (name) M. G. MASON

Please forward to: —

Director of Mines,
 Box 38, Rundle Street, P.O.,
 Adelaide, S.A. 5000

Signed

Malcolm G. MasonDate 26th October 1978

OFFICE USE ONLY

Signed

D.M. C10

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0017

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA. 3 AUST 5700.

LOCATION OF BORE -

County _____

Hundred KOORLINGASection 8

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Total depth (metres)

94mSample From 24 (depth metres)

Water cut (metres)

10m

Water level below surface

Supply (gallons per hour)

500

Casing size (inches)

From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet

Situation of bore (✓ where appropriate)

In gully ✓

On level ground

On ridge

On hill

Pump type and size

NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling

See Geological Log in QuarterlyReports For Exploration Licence 425File results with this report.16th October 1978AUSTRALIAN SELECTION

QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only)

in parts per million

Any known previous analysis

NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate)—

Sheep —

Horses —

Cattle —

Poultry —

Others —

Has water been used on—

Lucerne —

Pastures —

Vegetables —

Fruit trees —

Others —

Has water been used for—

Washing —

Drinking —

Domestic —

Hot water service —

Boilers —

Sample collected by (name)

M. G. MASON

Please forward to:—

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

M. G. Mason

Date

16th October 1978

OFFICE USE ONLY

Signed

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0018

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 92 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE -

County HALLETTHundred HOORINCASection 42

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Sample from 36m (depth metres).
 Total depth (metres) 46m
 Water cut (metres) 12m
 Water level below surface 2m
 Supply (gallons per hour) 3000

Casing size (inches) From _____ to _____ feet

Casing recovered _____

Height of bore above sea level _____ feet ✓

Situation of bore (✓ where appropriate)

In gully — On level ground ✓ On ridge — On hill —

Pump type and size NONE

Pump setting below surface — _____ feet

Notes on strata encountered during drilling

See Geological Log in Quarterly Reports For Exploration Licence 425
File results with this report

AUSTRALIAN SELECTION16th October 1978

QUALITY OF WATER—

Water is required for

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate) —

Sheep — 0 Horses — Cattle — Poultry — Others —

Has water been used on —

Lucerne — Pastures — Vegetables — Fruit trees — Others —

Has water been used for —

Washing — Drinking — Domestic — Hot water service — Boilers —

Sample collected by (name) M. G. MASON

Please forward to: —

Director of Mines,

Box 38, Rundle Street, P.O.,
 Adelaide, S.A. 5000

Signed

M. G. Mason16th Date October 1978

OFFICE USE ONLY

BORE DETAILS RECORD 0019

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA. S. AUST 5700.

LOCATION OF BORE -

County _____

Hundred HOOBINGASection 56

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS

Total depth (metres)	Sample from Water cut (metres)	Water level below surface (metres)	Supply (gallons per hour)
136m	5m	3m	3000

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet

Situation of bore (✓ where appropriate)

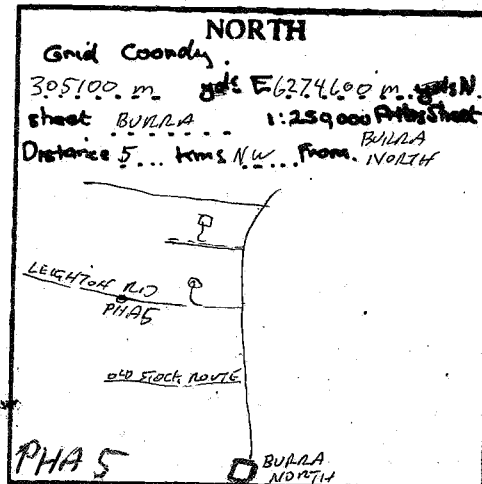
In gully _____ On level ground _____ On ridge _____ On hill _____

Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling

See Geological Log in Quarterly Reports For Exploration Licence 425
File results with this report.

AUSTRALIAN SELECTION**QUALITY OF WATER**

Water is required for _____

Present analysis (Office use only)

in parts per million.

Any known previous analysis NONE

grains per gallon or parts per million.

Has water been used for (✓ where appropriate) —

Sheep — 0 Horses — Cattle — Poultry — Others —

Has water been used on —

Lucerne — Pastures — Vegetables — Fruit trees — Others —

Has water been used for —

Washing — Drinking — Domestic — Hot water service — Boilers —

Sample collected by (name) M. G. MACON

Please forward to: —

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

Malcolm G. MacdonaldDate 26th October 1978**OFFICE USE ONLY**

Signed _____

D.M. C10

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0020

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE - County _____

Hundred 800119ASection 8

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS

Sample from 58m (depth metres).
 Total depth (metres) 94
 Water cut (metres) 10m
 Water level below surface _____
 Supply (gallons per hour) 1500

Casing size (inches) From _____ to _____ feet

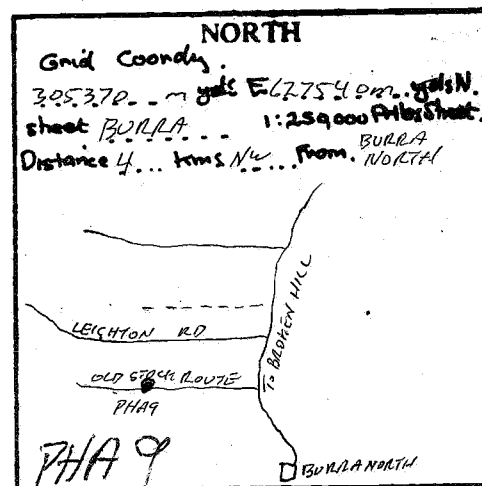
Casing Recovered _____

Height of bore above sea level _____ feet ☒

Situation of bore (where appropriate)

In gully ☒ On level ground ☒ On ridge _____ On hill _____Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in QuarterlyReports For Exploration Licence 425File results with this report.AUSTRALIAN SELECTIONQUALITY OF WATER

Water is required for _____

Present analysis (Office use only) _____

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million.

Has water been used for (/ where appropriate) —

Sheep ☒ Horses ☒ Cattle ☒ Poultry ☒ Others ☒

Has water been used on —

Lucerne ☒ Pastures ☒ Vegetables ☒ Fruit trees ☒ Others ☒

Has water been used for —

Washing ☒ Drinking ☒ Domestic ☒ Hot water service ☒ Boilers ☒Sample collected by (name) M. G. MASON

Please forward to: —

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

M. G. MasonDate 26th October 1978OFFICE USE ONLY

Signed _____

S.A. DEPARTMENT OF MINES

BORE DETAILS RECORD

0021

OFFICE USE ONLY

Sample No. _____
 Reference _____
 Borehole _____
 State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA. S. AUST 5700.

LOCATION OF BORE - County _____

Hundred KOOHLLA Section 58

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Sample from (depth metres)
 Total depth (metres) 164m
 Water cut (metres) 16m
 Water level below surface (metres) 5m
 Supply (gallons per hour) 5000

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet ✓

Situation of bore (✓ where appropriate)

In gully ✓ On level ground On ridge On hill

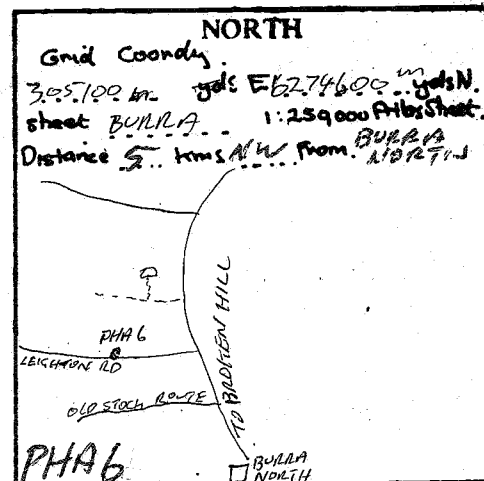
Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling

See Geological Log in Quarterly Reports For Exploration Licence
File results with this report.

AUSTRALIAN SELECTION



QUALITY OF WATER—

Water is required for

Present analysis (Office use only)

in parts per million

Any known previous analysis

NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate)—

Sheep — 0 Horses — Cattle — Poultry — Others —

Has water been used on—

Lucerne — Pastures — Vegetables — Fruit trees — Others —

Has water been used for—

Washing — Drinking — Domestic — Hot water service — Boilers —

Sample collected by (name) M. G. MACON

Please forward to—

Director of Mines,
 Box 38, Rundle Street, P.O.,
 Adelaide, S.A. 5000

Signed

M. G. MacdonaldDate 26th October 1978

OFFICE USE ONLY

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0022

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE -

County _____

Hundred KOORANGASection 44

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Sample from (depth metres)
 Total depth (metres) 64m
 Water cut (metres) 16m
 Water level below surface 3m
 Supply (gallons per hour) 4000

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet ✓

Situation of bore (✓ where appropriate)

In gully _____ On level ground _____ On ridge ✓ On hill _____

Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in QuarterlyReports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION13-14 October 1978

QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million

Has water been used for (✓ where appropriate)—

Sheep ✓ Horses _____ Cattle _____ Poultry _____ Others _____

Has water been used on—

Lucerne _____ Pastures _____ Vegetables _____ Fruit trees _____ Others _____

Has water been used for—

Washing _____ Drinking _____ Domestic _____ Hot water service _____ Boilers _____

Sample collected by (name) M. G. MASON

Please forward to:—

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

Malcolm G. MasonDate 26 October 1978

OFFICE USE ONLY

Signed _____

S.A. DEPARTMENT OF MINES BORE DETAILS RECORD

0023

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 92 MAIN ST PORT AUGUSTA, S. AUST 5700.

LOCATION OF BORE -

County _____

Hundred KOOKINGASection 48

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS—

Total depth (metres)

58mSample from 18m (depth metres)

Water cut (metres)

8m

Water level below surface

4m

Supply (gallons per hour)

2000

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet

Situation of bore (✓ where appropriate)

In gully

On level ground

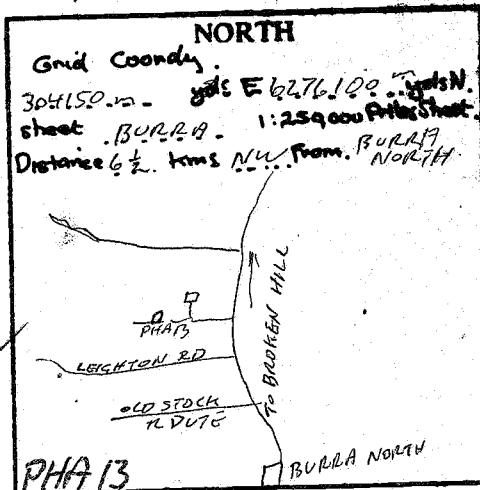
On ridge

On hill

Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling

See Geological Log in QuarterlyReports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION

QUALITY OF WATER—

Water is required for _____

Present analysis (Office use only)

in parts per million.

Any known previous analysis

NONE

grains per gallon or parts per million.

Has water been used for (✓ where appropriate)—

Sheep—

Horses—

Cattle—

Poultry—

Others—

Has water been used on—

Lucerne—

Pastures—

Vegetables—

Fruit trees—

Others—

Has water been used for—

Washing—

Drinking—

Domestic—

Hot water service—

Boilers—

Sample collected by (name)

M. G. MAISON

Please forward to:—

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000

Signed

Michael G. MasonDate 26th October 1978

OFFICE USE ONLY

Signed _____

S.A. DEPARTMENT OF MINES

BORE DETAILS RECORD

0024

OFFICE USE ONLY

Sample No. _____

Reference _____

Borehole _____

State No. _____

Occupier's Name AUSTRALIAN SELECTION (PTY) LIMITEDPostal Address 32 MAIN ST PORT AUGUSTA. S. AUST 5700.

LOCATION OF BORE - County _____

Hundred KOOILINGA Section 59

Pastoral Lease (if out of hundreds) _____

Space for sketch showing location of bore in the section (indicate distance from boundaries if possible)

BORE DETAILS--

Total depth (metres)	Sample from Water cut (metres)	Water level below surface (metres)	Supply (gallons per hour)
<u>40m</u>	<u>2m</u>	<u>1,00m</u>	<u>600</u>

Casing size (inches) From _____ to _____ feet

Casing Recovered _____

Height of bore above sea level _____ feet

Situation of bore (where appropriate)

In gully ☒ On level ground ☒ On ridge ☐ On hill ☐Pump type and size NONE

Pump setting below surface _____ feet

Notes on strata encountered during drilling See Geological Log in QuarterlyReports For Exploration LicenceFile results with this report.AUSTRALIAN SELECTION24th October 1978

QUALITY OF WATER--

Water is required for _____

Present analysis (Office use only)

in parts per million

Any known previous analysis NONE

grains per gallon or parts per million.

Has water been used for (where appropriate) --

Sheep ☒ Horses ☐ Cattle ☐ Poultry ☐ Others ☐

Has water been used on --

Lucerne ☐ Pastures ☐ Vegetables ☐ Fruit trees ☐ Others ☐

Has water been used for --

Washing ☐ Drinking ☐ Domestic ☐ Hot water service ☐ Boilers ☐Sample collected by (name) M. G. MAXON

Please forward to: --

Director of Mines,

Box 38, Rundle Street, P.O.,

Adelaide, S.A. 5000.

Signed

M. G. MaxonDate 26 October 1978

OFFICE USE ONLY

Signed _____

0025

AUSTRALIAN SELECTION (PTY) LIMITED

HALLETT - E.L. 425

FIRST QUARTERLY REPORT

(24 October 1978 to 23 January 1979)



AUSTRALIAN SELECTION (PTY) LIMITED

HALLETT - E.L. 425

.0026

FIRST QUARTERLY REPORT

24TH OCTOBER, 1978 TO 23RD JANUARY, 1979

C O N T E N T S

	<u>Page No.</u>
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PERSONNEL AND EQUIPMENT	3
GEOLOGY	4
PERCUSSION DRILLING	6
RADIOMETRIC LOGGING	8
HYDROLOGY	11
PETROLOGY	11
MINING ACT	12
CONCLUSIONS AND RECOMMENDATIONS	13
EXPENDITURE REPORT	

F I G U R E S

<u>Fig. No.</u>	<u>Title</u>	<u>Plan No.</u>
1	Locality Plan E.L. 425 and Drill Holes Scale 1:500,000	AS 8495
2	Drill Cross Section Burra North are available but will be presented with a later report	
3	Geology - structural plan showing areas worthy of further investigation.	AS 7765

- Appendix 1 Percussion drill lithological logs
PHA-1 to PHA-17 Scale 1:500
- Appendix 2 Percussion drill radiometric logs
PHA-3, 4, 8, 13, and 17 Scale 1:250
- Appendix 3 Petrology Report EIM - 425 by
J. Just - 24th November, 1978

INTRODUCTION

An investigation into the mineral potential of the 'Olary' Arc of Adelaidean sediments led to recognition of a parallel line of Ordovician age granites, to the south and east. These include the Anabama Granite, Bendigo Granite and those south at Palmer. In the southern area Cambrian sediments outcrop on the eastern side of the arc. Here many small acid bodies have intruded the Cambrian rocks.

Mineralisation has been noted as being directly or indirectly related to these acid intrusives. Copper-gold at Kitticoola, gold in quartz reefs (e.g. Woodside mines), copper-molybdenum at Anabama and Bendigo, gold at Waukaringa, Mongolata and copper at Burra.

Many of the deposits are obviously structurally controlled, though many show strata-bound characteristics as well. A structurally oriented exploration programme was therefore planned. The following parameters were considered significant :-

- faults and lineaments, particularly intersections
- small to medium intrusive bodies, including kimberlites
- zones of alteration
- breccia zones.

The eastern half of the Burra sheet was selected as a starting point since this would be big enough not to limit interpretation but small enough to generate a programme rapidly. Surface mapping was initiated by our structural geologist, Dr. D. Findlay, who also carried out research into the whole Olary Arc.

Based on initial results, he selected approximately 8 areas he considered worthy of detailed exploration. About 6 of these were then covered with an irregularly shaped exploration licence. This licence, No. 425 Hallett, was granted on 24th October, 1978, for a period of one year.

Regional surface mapping will continue next period.

One of the first areas selected for further work was a valley running north from the Burra copper mine to Mt. Bryan. The valley was considered to contain a major north-striking fault zone - a strike continuation of the Koorunga - Kingston faults. This fault would be the locus of any intrusives, breccia and alteration zones. The possibility of orebodies similar to the Burra mine was considered high in this situation.

A reconnaissance drilling programme was devised to show the best way of tackling the area. Due to excessive water inflows, high contamination and other major drilling problems, many of the holes failed to reach target. Different drilling techniques are warranted and next year a programme using mud circulation will be initiated.

Some difficulties were experienced in obtaining access to land for exploration purposes. However, in general, land owners have been most co-operative and access to most land in the valley is assured.

The exploration licence is centred about 150 kilometres north of Adelaide. It was applied for on 16th June, 1978, was granted on 24th October, 1978 and covers an area of 1288 square kilometres. Located in the mid-northern agricultural area the licence covers mainly

freehold mixed farming areas but does extend eastward to include the fringe of the pastoral station country.

Access is very good via a network of bitumen and first class roads. The main towns in the area are Burra, Jamestown, Hallett, Booborowie and Clare. A 5'3" gauge railway traverses from Farrel Flat north through Terowie. The Morgan-Whyalla pipeline passes through Hanson and Spalding on its way to Port Augusta and Whyalla.

Many of the farms are well known studs, particularly for sheep. Trees have been removed for farming, apart from along the eastern side and particularly in hilly areas, Topographically a number of hills and valleys cut the licence into north-south belts; e.g. the Burra-Hallett valley. The ridges of hills are often composed of the more resistant Appilla Tillite.

The climate is pleasant with a mean temperature range from 21.4 to 8.2°C, and a moderate mean rainfall of 632 mm per annum. Most of the rain is received in the winter months, from May to September.

PERSONNEL AND EQUIPMENT

Exploration Division

Two geologists and one technical assistant were involved on the project. They used Burra as a base, making use of Hotel and rental cottage facilities. Radio and telephone communication was maintained with Port Augusta exploration base. Two to three Toyota Land Cruisers and a trailer were employed during operations. Facilities, such as

drafting and accounting, were supplied by our head office at 50 St. George's Terrace, Perth.

Drilling Division

A percussion drill crew, consisting of one driller and two off-siders, worked on the project from 26th September to 25th October, 1978. A Schramm T-64 RFW truck-mounted rig was employed with two Leyland Reiver backup vehicles. The rig truck and one backup truck were fitted with super single wheels, the other being conventional duals.

The crew was accommodated throughout at the local hotel in Burra. Supervision was by our Eastern Zone Drilling Manager based at our drilling office in Port Augusta. Perth office also supplied back-up.

GEOLOGY

Regional Geology

The Burra sheet (1:250,000 scale), mapped by R.C. Mirams in 1964, still forms the basis for regional interpretations. Much of our mapping has been oriented towards structural interpretation and this data will be presented in map form at a more complete stage.

The eastern half of the Burra sheet has Adelaidean sediments reasonably well outcropping in all but the eastern part. Here in the east, the eroded tops of at least two large acid plutons subcrop beneath shallow Cainozoic sediments. The Adelaidean age rocks generally strike north-south though begin to curve to the NNE at the top of the sheet. The rocks are folded into open folds elongated north-south with a few generally meridional faults of small throw.

Mineralisation of interest is :-

0032

- (i) copper-molybdenum located on the edge of the Bendigo Ordovician acid intrusive.
- (ii) gold in hematite veinlets in Tapley Hill sandstone at Mongolata. Also gold at Uloomoo.
- (iii) copper at Burra. Secondary copper in a weathered black carbonaceous silty-shale. A fault zone, with breccia, intense alteration and a probable acid intrusive prophyry are all directly or indirectly related to the mineralisation.

Many minor copper shows occur throughout the area, particularly in the older Burra Group sediments.

- (iv) Kimberlite bodies are common in the Whyte Yarcowie - Pine Creek area. These occur in anticlinal cores, often in clusters. The largest (a pipe) is located east of Pine Creek pastoral station.

Burra - Mt. Bryan

This is the only area any detailed exploration has been carried out. As can be seen from the plan the Koorunga fault south of Burra is a wide breccia zone. This appears to veer to the north west just south of the Burra Mines and Kingstons Fault probably took up the strain in an en echelon pattern. Continuing north of the town the fault is quickly lost under alluvium of the Burra-Mt. Bryan valley. The chance of an orebody being localised close to this fault and associated with a breccia and/or alteration zone was considered high. It was probable that the black carbonaceous silty shale would also continue some distance along the valley - since the valley was eroded into an axial faulted anticlinal core.

It was decided to drill several lines of drill holes across the valley to determine the stratigraphy and structure of bedrock.

However, few holes reached bedrock in the deeper parts of the valley and those that did were often so contaminated that accurate interpretation of stratigraphy was impossible.

Results have indicated that the fault does pass along the length of the valley, and that the rock sequences on both sides of the fault are relatively simple; i.e. not disturbed by complex folding/faulting.

The drilling therefore, although disappointing, has not tested the zone of interest and the potential remains high.

PERCUSSION DRILLING

Statistics

Hole No.	Coords		Depth (metres)	Dip	Comments
	mE	mN			
PHA-1	5098	5000	99	-60E	completed
PHA-2	4990	5000	60	-60E	abandoned
PHA-3	4800	5000	62	90	abandoned
PHA-4	4700	5000	118	90	completed
PHA-5	4580	5000	136	90	completed
PHA-6	4610	5000	164	90	completed
PHA-7	4800	3800	64	90	abandoned
PHA-8	4320	3800	46	90	abandoned
PHA-9	4390	3800	94	90	abandoned
PHA-9b	4420	3800	14	-60E	abandoned
PHA-10	4900	6650	56	90	abandoned
PHA-11	4800	6650	100	90	abandoned
PHA-12	4600	6650	22	90	abandoned
PHA-13	4550	6650	58	90	abandoned
PHA-14	4650	6650	70	90	abandoned
PHA-15	4540	6650	44	-60E	abandoned
PHA-16	4638	7500	40	-60E	abandoned
PHA-17	5250	7500	40	90	completed

Total Advance 1287 metres

Eighteen holes were drilled for an advance of 1287 metres, the deepest hole being 164 metres. Only five holes were completed. Holes PHA-2,

PHA-7, PHA-9b, PHA-10 and PHA-11 failed to penetrate into definite bedrock.

The truck-mounted Schramm carries its own compressor with supplies low or high (250psi) pressure at a rate of about 400cfm. An auxiliary compressor (250 cfm) was also available and mounted on one of the back up trucks. About 350 metres of rods, in 6 metre lengths, were available. The rig has a hydraulic pulldown and rotary top drive allowing the bit pressure to be varied from 0 to more than 14 tonnes. Fuel was carried on a separate fuel trailer.

All holes were drilled with air, water and foam injection was used when caving ground or high water inflows were encountered.

Generally the top part of the alluvium was silt-clay boulder or pebble beds which stood up reasonably well. However, beneath and hence in the deeper parts of the valley, unconsolidated sands and gravels created major problems. The high water inflows and caving nature of the sands made placing casing to bedrock almost impossible.

The rig had initially been set up for 60° angle drilling; but due to difficulties, such as placing of heavy steel casing, vertical holes were reverted to.

Often the rig could drill into bedrock but contamination from the caving alluvium was so high that interpretation of cuttings was almost impossible. Casing could not be placed and so holes, such as PHA-2, PHA-4 and PHA-6, had to be abandoned.

Bedrock, particularly dolomites and limestones, caused difficulties.

Large pieces caving into the hole meant rods were always prone to jamming and that casing could not be placed to full depth. Plastic casing broke up under these conditions and even steel casing jammed. Water inflows in the limestones were often so great that holes had to be abandoned, E.G. PHA-13.

All in all it was obvious that drilling techniques did not suit the rock being drilled. It is probable that mud circulation will be the answer.

Casing, cut to ground level, was left in holes.

Holes were filled to surface and all drill sites tidied.

Sample cuttings blown from the hole were collected in plastic buckets placed alongside the drill collar. A sample interval of 2 metres was selected. Samples were placed in ordered heaps on the ground a short distance from the collar. Two sets of samples were collected in Kraft envelopes. One set was sent for geochemical analysis at our Sydney Laboratory. Results for copper, lead and zinc have been placed on relevant log sheets (see appendices). The other set of samples has been filed at Port Augusta as a reference set and will be forwarded to the Department of Mines and Energy, South Australia, at conclusion of the programme.

The geologist logged all cuttings on site with a binocular microscope - see lithological log in appendices.

RADIOMETRIC LOGGING

Radiometric logging of all holes was attempted with a T-450B logger

manufactured by SJE Inc.

0036

This machine is portable and carried in two sturdy boxes. In one box is a heavy duty hand driven winch, while in the other is an electronic recording system and the probe is carried separately. Power is provided by the 12V battery of the Toyota Land Cruiser.

The unit is able to carry out most down hole logging techniques. However, the SP and Resistivity techniques employed did not return adequate information. Further tests will be made when drilling starts up again. With this probe only the total gamma-ray (natural radioactivity) activity can be measured. Therefore, the source of any encountered radioactivity cannot be differentiated; e.g. potassium, uranium or thorium. However, for Adelaidean stratigraphy total gamma-ray readout is quite adequate.

Several gamma-ray scales are available: these are 50, 100, 500, 1K, 5K full scale deflections. Normally only 50 or 100 scales are used in stratigraphic work.

Downhole or depth scales available vary from about 1:100 up to 1:2500. Experience has shown that a scale of 1:250 gives adequate definition for even individual small bands and is also compatible to our diamond drill hole lithological logs. Smaller scales e.g. 1:100, tend to become too cumbersome. First the unit is standardised and then the probe is lowered to the bottom of the hole (or end of cable) at about 8 metres/minute on a Time Constant of 1 second without the paper record. This allows a suitable gamma-ray scale to be chosen.

Then the probe is set at a Time Constant of 2 seconds and raised at a constant rate of 2 metres/minute with the paper recording.

Considerable difficulties have been experienced with the machine but, once working, results are clear and accurate.

Results corresponded well with the lithological log.

Though all holes were attempted, few gamma-ray logs were obtained due to caving.

The gamma-ray log for PHA-3 showed very good differentiation between the clays and sand and/or gravel layers in the Cainozoic. Similarly in the upper part of PHA-4, below 10 metres a consistent clay formation was intersected.

The log for PHA-8 is of some interest. Down to 10 metres Cainozoic gravelly clays are recorded. Higher irregular values to 28 metres indicate a layered siltstone - sandy siltstone sequence with a few sandstone bands. One thick sandstone between 26 and 28 metres shows up well.

Below 28 metres high average, but "peaky", values indicate a finely layered sequence of shales (or shaley siltstones) and silty sandstone. There is quite a distinct difference in gamma-ray signature above and below 28 metres and this must be considered an important boundary. This is at some odds to the lithological log and illuminates some of the difficulties of percussion hole logging.

The log from hole PHA-17 is also informative though the difference between shale and siltstone may be more a change in degree of weathering with depth; i.e. depth to fresh rock being about 30 metres.

No attempt was made to interpret the S.P. and Resistivity logs.

HYDROLOGY

Water inflows varied markedly from hole to hole, relating to the presence of clean sands, gravels and limestone versus clays or siltstones; e.g. PHA-6 versus PHA-4.

Water level in the valley is consistent varying from about 1000 to 4000 mg/litre. The lowest salinities are recorded in the alluvium where local recharge is prominent. Salinities may be increasing in a northwards direction along the valley.

However, adequate supplies of water for stock appear to be available throughout the length of the valley tested to date. Water suitable for some plants may be available in selected areas.

PETROLOGY

Two samples from holes PHA-1 were submitted for petrological investigation to determine rock type.

The rock is a dolomite with quartz sandy layers. This is similar to the 1c and 1d beds in the Burra Mine area.

In general, access to land in the Licence area has to be via requisite Notice of Entry forms. This is a relatively simple procedure at most times. However, one land owner, Mr Hawker, did object to our entering his land and the case was brought before the Mining Warden. It was adjourned on completion of a private agreement which allows us to enter his land for geological mapping and hand sampling. If we do contemplate drilling or mining then we will have to negotiate directly with the landowner or go before the Warden.

The case has brought to a head the fact that, though initial exploration often involves only work with no disturbance of the land surface, the Notice of Entry allows all forms of exploration and mining, which can affect the landowner considerably. It is obvious that a different procedure would help both parties. A Notice of Entry for surface mineral exploration and a further Notice of Entry to permit the whole spectrum of exploration including mining, would be desirable for both parties.

Much of the area of the exploration licence is exempt land; e.g. cultivated fields and in close proximity to houses, watering points, etc. We have been lucky to date that most land owners are happy to see us on their ground and are willing to sign Cessor of Exemptions.

CONCLUSIONS

0040

Mt. Bryan-Burra Valley

Kingstons Fault does pass down the length of this valley. It was not tested by this present suite of holes. Resistivity surveys should be carried out to try and determine accurately the profile of the valley. Further drilling in the valley should be undertaken using mud circulation to bedrock. The holes should then be cased and continued by conventional rotary-percussion methods.

The potential for discovery of a base metal orebody in the Mt. Bryan-Burra Valley is high.

Rest of the Licence

Further areas warrant detailed exploration. Work will continue next year. The potential of the rest of the block is considered good.

Malcolm G. Mason,
SENIOR GEOLOGIST

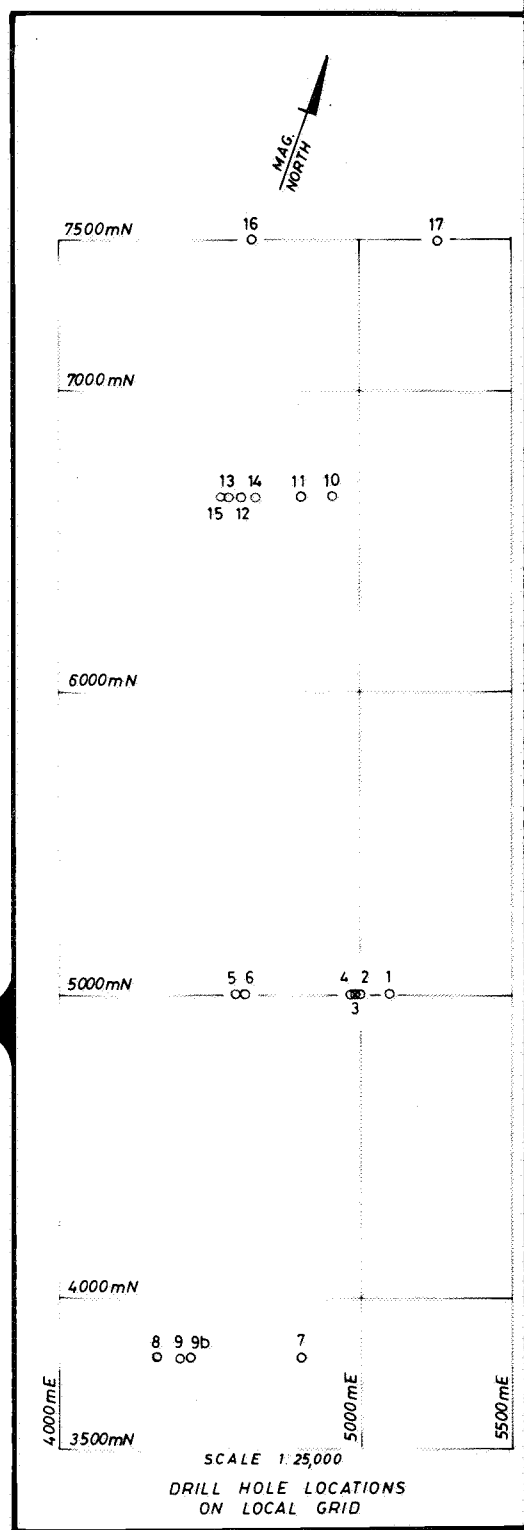
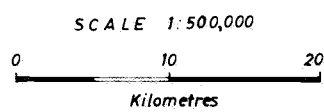
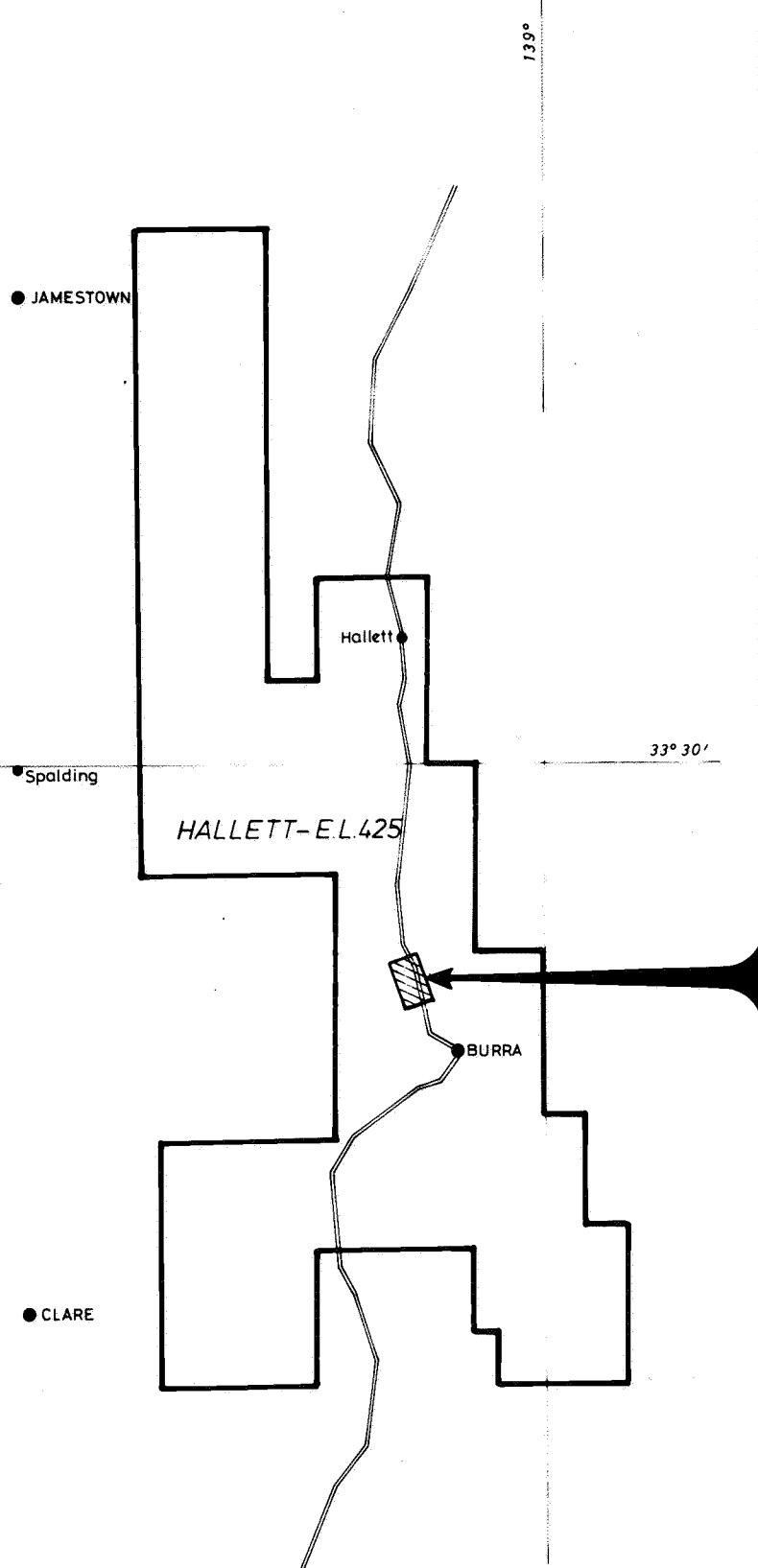
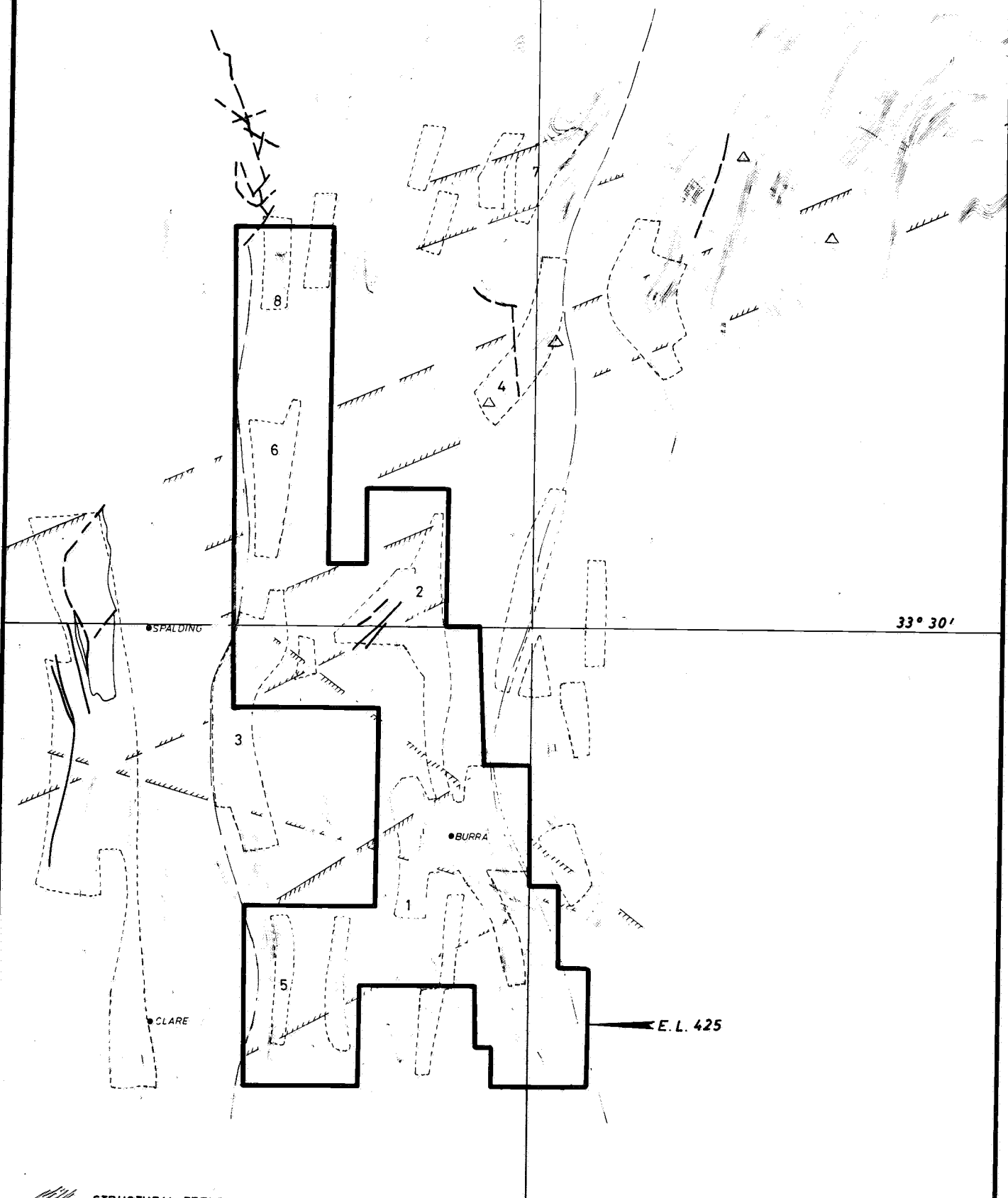


FIG. 1.
AUSTRALIAN SELECTION (PTY) LTD
HALLETT-EL 425
DRILL HOLE LOCATION MAP

0042

139°

33° 30'



-  STRUCTURAL TREND LINE
 FAULT
 TRAVERSE COMPONENT OF REGIONAL NECKING
 RECOMMENDED AREAS
 KIMBERLITE

SCALE 1:500,000

 0 10 20
 Kilometres

FIG. 3.
 AUSTRALIAN SELECTION (PTY) LTD
 STRUCTURAL TREND MAP SHOWING
 LOCATION OF FAVOURABLE AREAS
 AND E.L. 425

0043

HALLETT E.L. 425FIRST QUARTERLY REPORTEXPENDITURE TO 23RD JANUARY, 1979

Exploration Staff	18,017
Exploration Logistics	6,806
Exploration Services	4,678
Property Costs	1,933
Percussion Drilling	29,296
Exploration Administration	1,583
Management & Administration	1,600
Depreciation	2,333
Total	66,246

N.B. Our accounting system is based on calendar months so the above figures actually represent the period ending 31st December, 1978.

0044

APPENDIX I

PROSPECT: BURRA NORTH

Burra 1:250 000 Atlas Sheet.

Adj. Sed. B'g Ho

AMG. Local 5000mN 5098mE

LOCATION: 5 km N.N.W. BURRA.

CO-ORDS: 305800mE, 6274800mN

R.L. COLLAR: N (logged)

INCLINATION: -60°

DIRECTION: 067M

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb.	As.	
500 gph. ↓ damp Small Flow	CLAY SOIL Dark brown limy high plasticity 10% fg sand dolomitic pebbles			20	35	40	5	
	SANDS f.g. calcareous, white yellow sub angular, v clear clean qtz veins 10% kaolin clay	10 m		25	50	45	<5	
				15	30	35	<5	
				20	30	30	5	
				20	35	30	5	
				10	20	35	<5	
				15	25	35	<5	
	m-cg sub rounded clear qtz 30% fg. partly silicified			20	30	35	5	
				25	30	40	5	
				20	40	30		
build up to 3000 gph. ①	SILTS pale yellow 25% clay 25% fg qtz, 50% silts	20 m		40	50	40	5	
	SAND clean qtz wfg angular 10% clay			10	20	45	<5	
				10	20	40	<5	
	partly cemented almost siltstone	30 m		10	30	40	<5	
				20	35	40	<5	
				15	55	40	5	
				35	55	45	5	
	30 brown siltstone CW			30	40	40	5	
		40 m		30	30	40	5	
				15	40	40		
BURRA GROUP	Brown HW			15	30	35		
				20	40	40	5	
				20	45	35		
	20% brown chert			15	85	35	<5	
				30	135	40		
	LIMESTONE grey fine grained v. quartz	50 m		40	170	45	<5	rare py in pale grey 1st.
				25	70	35		
				20	70	40	<5	probably 40% contamination.
				20	60	35		
		60 m		15	40	35	<5	
Nms.				15	40	35	<5	
				20	60	40	<5	
				70	90	50		
				55	90	50	5	
	indurated	70 m		35	65	45	<5	washing of collar 15m plastic casing - not sealed. washing outside 30% contamination.
	Pet sample K43794			30	60	45	<5	
				30	45	40		
				20	45	40	<5	
				10	35	35		
		80 m		15	45	40	<5	
END OF HOLE 99 M				15	40	40	<5	
				10	40	40	<5	
				15	30	40		
				15	30	40		
		90 m		15	30	35	<5	
				10	40	40		
				10	60	45	<5	
				10	40	35		
				10	35	35	5	
				10	35	35		
SCALE 1:500		100 m	END					
		110 m						

OPERATOR
ASP.

DRILL TYPE: Schramm.

4

DATE DRILLED:

28-29 Sept 1978

SAMPLE NOS

DRILLER: KEN WRIGHT.

LOGGED: Maden et al

SCALE

1:500

DRG NO. AS 8132

PROSPECT: Burra North

Burra 1:250,000 Atlas Sheet

0046

L. COLLAR:

LOCATION: 5km NNW Burra.

P: Sect 39 HP Koorunga

ANG Loc 5000m N 4990 m E

CO-ORDS. 305700m E 6274800m N

INCLINATION: -60

DIRECTION: 067M

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb	As.	
100 gph 1000 gph 500 gph ① ↓	CLAY - Soil - brown mod. plasticity. 5% pebble clasts 10% qtz F.m.g. sand.			30	60	50		
				35	55	55		
				35	60	55		
				40	60	65		
				35	55	55		
	CLAY GRIT brown - 30% clay Rest c.g. sand to pebble rock clasts	10 m		40	55	60		
				40	60	60		
				30	45	55		
				25	45	50		
	20% with clay white matrix As above but white clay.	20 m		35	30	40		
				20	40	30		
				20	40	30		
				40	30	35		
				25	35	30		
	Fewer pebbles. 30% grit rest white - pink clay.	30 m		25	40	30		
	Larger pebbles shale siltstone sandstone all round & weathered			25	35	25		
				120	40	30		
				45	45	30		
				40	75	30		
		40 m		30	35	25		Plastic cased to 42 metres,
				40	75	30	5	
	SANDSTONE pale yellow. F.m.g. qtz clear. partly silicified. 10% clay 10% hematite limonite CW. generally unconsolidated.			25	155	30		
				80	195	25	5	
				30	125	30		
				35	140	30	5	
		50 m		30	125	30		
	more consolidated - 5% hematite cement minor gossan.			30	115	35	5	minor shale
				10	110	30		
				50	175	30	10	
				55	130	30		
	HOLE ABANDONED at 60 metres. due to caving of sandstone.	60 m						
	N/m w?	70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

4

DATE DRILLED:

30 Sept 1978

DRILLER: Ken

Wright

LOGGED: M. Mason

SCALE

1:500

DRG N° AS 7985

EL. HALLETT LOG OF PERCUSSION DRILL HOLE
 PROSPECT: Burra North Burra 1:250,000 Atlas Sheet 0047
 LOCATION: 5km NNW Burra Adj. Sect 56 HD Koorlinga
 AMG. Local 5000mN 4880mE
 CO-ORDS: 305500mE 6274800mN
 R.L. COLLAR:
 INCLINATION: -90°
 DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM. (p.p.m.)			REMARKS
				Cu.	Zn.	Pb.	
500gph.	CLAY SOIL brown mod. plasticity 5% pebble clasts 10% f.m.g qtz sand.	10 m		35	75	50	
				35	90	40	
				35	70	35	
				60	85	40	
				40	70	50	
				35	70	55	
				15	50	30	
				70	75	45	
				115	85	45	
				115	120	55	
1000gph.	CLAY/GRAVEL brown 30% clay. Rest rock clasts - variety.	20 m		115	105	45	
				40	60	30	
				25	75	25	
				25	50	20	
				25	40	20	
				30	50	20	
				25	15	20	
				25	15	25	
				55	20	30	
				50	35	30	
	CLAY/GRAVEL 20% c.g. sand 30% gravel Rest white mod plasticity clay.	30 m		25	30	25	PVC cased to 34 metres.
				45	30	25	
				30	30	25	
				25	25	25	
				50	65	40	
				80	35	35	
				40	10	20	
				35	15	25	
				40	15	20	
				30	10	20	
	CLAY - Red brown high plasticity 10% grit clasts.	40 m		80	30	45	5-10% contami- nation. Casing breaking up.
	QUARTZITE / CHALCEDONY pale grey. F.m.g. subrounded silicified qtz sandstone. 10-50% cavities with layered chalcedony.	50 m					
	5% black v.f.g. MnO ₂ hematite?	60 m					
	10% yellow brown cw. shale also possible igneous porphyry?	70 m					
	30% yellow white spotted cw. 45% feldspar? (now clay) Rest mica v.f.g. qtz. Mod. wavy foliation.	80 m					
	END OF HOLE 62 metres	90 m					
	Abandoned due to cuttings not washing to surface.	100 m					
	Nm w?	110 m					

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:

4

1 - Oct 1978

DRILLER: Ken

LOGGED: M. Mason

Wright

SCALE

1:500

DRG N° AS 7986

PROSPECT BURRA NORTH

LOCATION 5km NW Burra.

AMG 4700 E 5000 N
CO ORDS 305200mE 6274600mN

Burra 1:250,000 F.H.S. Sheet

0048

R.L. COLLAR:

INCLINATION: -90°

DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb.	As.	
130-118 118-116 116-114 114-112 112-110 110-108 108-106 106-104 104-102 102-100	SANDY CLAY - Red brown 15% F.m.g. rock clasts and quartz. subangular to subrounded. 20% grit clasts	10m						Only collar pipe.
	CLAY 20% c.g. sand size clasts high plasticity	20m						
	20% F.g. sand 10% silt.	30m						
	brown	40m						
	yellow-brown.	40m		30	30	40		30-60% contamination throughout.
				30	30	35		
				50	35	35		
				25	25	35		
				25	30	40		
	khaki.	50m		45	40	40		
Less 1000 g/day.				40	40	35		
				30	30	30		
				40	40	50		
		60m		35	45	25		
				35	45	25		
				35	50	25		
				45	55	30		
				35	35	25		
		70m		45	50	30		
	yellow-brown.			30	50	30		
ADELID DIVISION				30	45	25		
				25	35	30		
				30	35	30		
		80m		40	45	25		
				80	50	35	15	
				55	45	30	20	
	QUARTZ BRECCIA 50% hydrothermal brecciated quartz 40% rock clasts - sandstone/siltstone cemented with hematite. 10% round 2-5mm chert in quartz matrix 30% hydrothermal quartz.	90m		55	45	30	20	
				65	45	25		
				55	40	25	15	
				40	25	20		
ADELID DIVISION				40	35	20	15	
				25	25	25		
	CHERT - DOLOMITE - SILTSTONE Oolitic black chert-white quartz matrix 50% siltstone HW. brown 30% Rest vuggy dolomite.	100m		40	45	25	20	5% hematite.
				35	40	20		
	SILTSTONE brown HW. 30% quartz hematite veinlets. Rare senicula siltstone clasts.			30	30	20	15	
				30	30	15		
				30	35	20	10	
				25	20	15		
		110m		25	20	15	15	5% goossan and MnO2.
				35	30	20		
				35	30	20	15	
				40	30	20		

END OF HOLE 118metres

116-118m - 45 30 20.

SAMPLE NOS

DRILL TYPE: Schramm.

4

DATE DRILLED:

10-12 Oct 1978

DRILLER: Ken

Wright

LOGGED: M. Mason

SCALE

1:500

DRG N° AS 8032

EL. HALLETT LOG OF PERCUSSION DRILL HOLE
 PROSPECT BURRA NORTH Burra 1:250,000 Atlas Sheet
 LOCATION 5km NW Burra AMG 4580mE 5000mN. 0049
 CO-ORDS 30 5100mE 6274600mN. R.L. COLLAR
 INCLINATION: -90°
 DIRECTION: -

DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
		Cu.	Zn.	Pb.	As.	
10 m	SANDY CLAY Red brown 20% sand f.m.g. subrounded quartz. Mod. plasticity. 20% c.g. clasts	40	75	65		5 1/2": 43/15 All way No casing.
		30	35	40		
		30	60	45		
		35	45	35		
		35	30	35		
		25	35	30		
		20	30	35		
		25	30	40		
		25	40	35		
		25	35	40		
20 m	CLAY-white- 20% siltstone clasts. GRAVELLY CLAY 30% clasts sandstone, siltstone, chert, white quartz. Unconsolidated 20% sand. Rest clay. rounded to subrounded. 50% brown clay	20	35	35		
		25	40	35		
		30	40	45		
		30	40	40		
		25	40	35		
30 m	GRAVEL 15% pebbles - 35% grit/gravel 10% clay Rest sand. Clasts rounded to sub- rounded. clasts sandstone, quartzite white (v. fine) quartz. Siltstone	25	35	35		
		25	30	35		
		25	35	40		
		20	30	35		
		20	30	35		
40 m	SILTSTONE brown H-CW 10% 10mm quartz veins. Siltstone - 60% quartz silt. 5% Feldspar. 20% mica (biotite)/clay. yellow HW.	20	30	35		35% average contamination throughout hole.
		20	30	35		
		20	25	30		
		20	20	30	5	
		20	25	30		
50 m	35% pale grey s-mw. Few thin 0.1m? layers Fg. kaolin sandstone. throughout.	50	35	35		Joints MnO ₂ & Fe ₂ O ₃ stained.
		35	30	45	5	
		40	30	35		
		35	30	40	10	
		30	35	35	10	
60 m	50% blue grey SW	30	30	35		
		35	35	35	10	
		30	30	30		
		20	30	35	10	
		25	35	30		
70 m	SILTSTONE Blue-grey SW-FR Fissile 65% qtz silt. 5% Feldspar. Rest biotite rare pink bands	20	30	25	15	
		30	35	30		
		25	35	30	5	
		35	40	40	5	
		35	35	30		
80 m	Kmw.	30	35	30	5	
		40	30	35	5	
		25	30	45		
		35	20	35	5	
		25	25	40		
90 m	2% vein quartz	25	25	35	<5	Few round clasts hematite cont.
		20	20	35		
		20	25	45	5	
		25	25	40		
		25	20	35	5	
100 m	Qtz vein with py. Few pink siltstone layers.	20	20	30	<5	cont. Mn & Fe stained clasts
		20	20	30		
		25	25	35	5	
		30	35	35		
		25	25	30	<5	
110 m	% pale green siltstone. (low biotite content - sericite instead.	20	20	30		
		25	25	35	5	
		20	20	30		

SCALE 1:500
 SAMPLE NOS.
 DRILL TYPE: Schramm. DATE DRILLED: 12 Oct 1978
 4.
 DRILLER Ken WRIGHT. LOGGED J. Fergusson.
 DRG No. AS 8033.

SOUTH AUSTRALIA
 EL Hallett
 PROSPECT BURRA NORTH
 LOCATION 5km NW Burra
 HOLE N° PHA-5
 LOG OF PERCUSSION DRILL HOLE
 Burra 1:250,000 Atlas Sheet 0050
 4580m E 5000m N
 AMG.
 CO. ORDS 305100m E 6274 600m N.
 R.L. COLLAR.....
 INCLINATION - 90°.....
 DIRECTION:.....

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb.	As.	
ADSLATERN	40% white sericite siltstone soft fissile 5% hematite pyrite pseudomorphs.	120m		20	20	30	<5	
				20	15	30		
				25	25	35		
				25	30	30	5	
		130m		25	35	35		
				25	30	35	5	
				25	30	40		
				25	35	45	5	
				35	30	35	5	
				30	25	35	5	
END OF HOLE 136metres								
	140m							
	150m							
	160m							
	170m							
	180m							
	190m							
	200m							
	210m							
	220m							
	230m							

SAMPLE NOS.

DRILL TYPE: Schramm.

4

DATE DRILLED:.....

12 Oct 1978

DRILLER Ken
WRIGHT

LOGGED J. Fergusson et al.

AS. 8033.

SIGNATURE TAG/ Sect 38 2020

DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
		Cu.	Zn.	Pb.	As.	
10 m		35	55	45		Cased steel to 52metres Reamed with 7 7/8" roller Tricone. First drilled to 76metres. Contamination to 76metres. Steel casing recovered
		25	50	35	5	
		25	55	35		
		30	45	40	10	
		30	40	30		
20 m		30	50	40	15	
		30	45	40	5	
		25	30	35	5	
		20	30	30	5	
		20	25	25	5	
30 m		20	20	35	15	
		25	30	30	15	
		25	25	25	15	
		30	25	25	15	
		20	20	20	5	
40 m		40	30	25	15	70% gravel contamination *
		35	160	25	15	
		25	25	25	10	
		25	35	35	10	
		30	30	30	10	
50 m		30	30	35	5	
		25	30	35	5	
		25	30	35	5	
		25	30	35	5	
		30	30	40	5	
60 m		20	35	35	5	
		15	25	35	5	
		30	45	40	5	
		40	40	40	5	
		40	35	40	5	
70 m		35	30	40	10	
		30	35	40	10	
		30	30	40	10	
		30	40	40	10	
		30	25	35	5	
80 m		30	30	40	5	minor vein qtz.
		25	30	40	10	
		25	30	40	10	
		15	30	40	10	
					<5	
90 m					<5	
					<5	
					<5	
					<5	
					<5	
100 m					5	sharp contact.
					5	
					5	
					10	
					10	
110 m					10	poor return Foam injected.
					10	
					10	
					10	
					10	

4000gph. most upper aquifer cased off

①

RED LIME

SCALE 1:500

SAMPLE NOS

DRILL TYPE: Schramm

4

DATE DRILLED:

13-14 Oct 1978

DRILLER: Ken

WRIGHT

LOGGED: J. Fergusson

DRG N° AS 8034

PROJECT SOUTH AUSTRALIA
EL HALLETT

PROSPECT BURRA NORTH

LOCATION 5km NW Burra

LOG OF PERCUSSION DRILL HOLE

Burra 1:250,000 Atlas Sheet

AMG. 4610mE 5000mN

COORDS 305100mE 6274600mN

HOLE N° PHA-6

BL COLLAR

INCLINATION -90°

DIRECTION:

0052

DEPTH (m)	LITHOLOGY	GEOCHEM. (p.p.m.)				REMARKS
		Cu.	Zn.	Pb.	As.	
	QUARTZITE - as before SW					
120m	CHERT/DOLOMITE - black & blue Fr. Quartz matrix with oolitic chert partly massive black 50:50. Dolomite pale grey. becoming blue grey.	35	25	35		30% siltstone + quartzite
		55	45	30	15	Rare pyrite
		65	45	40		
		45	45	30		
130m		25	35	40	5	
		35	20	35		
		35	15	40	5	
		30	15	40		
		30	15	35	<5	
140m		25	15	45		
		20	10	45	<5	10% contamination sst + siltstone From fault zone.
		55	15	35	<5	
		25	25	35		
		30	15	40		
150m	DOLOMITE - pale grey. 30% dark blue chert. Some quartz white	30	25	40	5	
		40	20	40		
		40	20	35	5	
		35	20	40		
		35	20	40	5	
160m		30	25	35		
		30	25	35	15	
		55	25	35		
	END 164m					hole stopped due to high water inflows 5,000+gph
170m						
180m						
190m						
200m						
210m						
220m						
230m						

SAMPLE NOS.

DRILL TYPE: Schramm.

4

DATE DRILLED:

13-14 Oct 1978

DRILLER Ken

LOGGED J. Fergusson.

WRIGHT.

A.S. 8034.

PROJECT SOUTH AUSTRALIA

E.L. HALLETT

LOG OF PERCUSSION DRILL HOLE

HOLE N° PHA-7

PROSPECT BURRA NORTH

BURRA 1:250,000 1145 SHEET

4800mE 3800mN

0053

R.L. COLLAR.....

INCLINATION -90°

LOCATION 4 Km NW BURRA

CO-ORDS 305850mE 6275400N

DIRECTION.....

ON STOCK ROUTE

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb.		
	SOIL red brown f-mg sands, clays + grit			30	25	35		5 1/2" 43-15 → 64m
	CLAYS - red brown high plasticity			30	30	35		reamed (tricone)
				40	40	40		hammering
				40	45	40		6 1/2" casing
	Gravel content increases	10 m		35	45	40		
				35	30	35		
				30	35	30		
	GRAVEL in yellow brown clay (10% unsorted sub-rounded 5% cobbles 65% grit 20% weath. sands 10% clays)	20 m		30	45	35		
				45	35	35		
				45	35	30		
				30	35	30		
				35	40	40		
				25	35	40		
	9.5% qtz clasts 5% wea. silt.	30 m		20	30	40		
	most clasts subangular sand content increasing			25	30	45		
				15	20	40		
				10	20	40		
				15	20	45		
				10	5	55		
		40 m		10	5	55		
				15	15	40		
	rare clasts purple siltstone and dolomite with py.			15	15	35		
				15	10	35		
				15	10	30		
	sand % increases to ~10%	50 m		20	15	35		
				15	10	30		
				15	10	35		
	few large rounded cobbles			15	10	40		
				25	10	45		
	purple siltstone clasts more common >5%	60 m		15	10	55		casing getting badly bogged
				15	15	35		
				15	15	40		
			HOLE END 64m				ABANDONED	
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:.....

4

14-15/10/78

DRILLER: K Wright

LOGGED: Ferguson

SCALE

1:500

DRG N° AS 8035

E.L. HALLETT

LOG OF PERCUSSION DRILL HOLE

HOLE N° PHA-8

PROSPECT BURRA NORTH

BURRA 1:250,000 ATLAS SHEET

0054

R.L. COLLAR:.....

INCLINATION: -90

DIRECTION:.....

LOCATION: 4 kms NW BURRA
on stock route4320mE 3800mN
GO-ORDS 305370mE 627540mN

800gph Salinity 2870
140gph
800gph
2,000gph
2,000gph

DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
		Cu.	Zn.	Pb.	As.	
SOIL	red brown grit and clay	20	50	45	5	5 1/2" 43-15 hammer
CLAYS	red brown, highly plastic 15% pebbles - weath siltstone and sandstone	25	60	50		
		20	55	35	5	
		20	60	40		
SILTSTONE - SANDSTONE	fine grained weathered white and buff	25	36	35	5	← water intersected
	becomes increas. sandy	20	20	25	<5	
		20	15	25		
		25	25	25	5	
SANDSTONE	crean and grey fine grained rare sandy dolomite rare siltstone bands 10%	30	15	20		Mn & Fe staining common on beds
		20	15	20	5	
		20	30	30	5	
		20	25	25	5	
	pink sandstone bands 5%	20	15	20		← rare red beam rich frag of srt? contain?
		25	30	25	5	
		30	20	25		
		15	20	25	<5	
	signs of silicification and quartz veins 80% qtz 15% feldspar	15	20	35	5	
		10	10	20		
		10	10	20	<5	
		10	10	20		
	rare grey siltstone bands	15	10	20	<5	
END OF HOLE 40M						
50m						
60m						
70m						
80m						
90m						
100m						
110m						

N6W?

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:.....

4

15/10/78

DRILLER Mr. Wing

LOGGED Mr. Wing

SCALE

1:500

DRG N° AS 8036.

RL COLLAR: *re-logged*
55 INCLINATION: *-90*
DIRECTION:

← water intersected
← blow out
10m away.

perhaps recent
diagenetic.

~ 20% contamination

DRILL TYPE: Schramm	DATE DRILLED: 16/10/78
4	
DRILLER: K Wright	LOGGED: Vernon
DRG NO	AS 8037

E.L. HALLETT

LOG OF PERCUSSION DRILL HOLE

HOLE N° PHA 96

PROSPECT: BURRA NORTH

BURRA

1:250,000 ATLAS SHEET

0056

AL COLLAR:.....

4420mE 3.800mN

INCLINATION: -60

LOCATION: 4 Kms NW BURRA
on stock route

GO-ORDS 306400mE 627540mN

DIRECTION: NE

WATER CUT	DESCRIPTION	DEPTH METRES	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb		
	RIVER GRAVEL sub rounded-sub angular 20% red brown clay	0-10	0-10					
		10m	10m					
		14m	14m					blow out 10m N
		14m	14m					END OF HOLE
		20m	20m					Hole abandoned when a fountain of drill foam erupted 10m N of the hole
		30m	30m					
		40m	40m					
		50m	50m					
		60m	60m					
		70m	70m					
		80m	80m					
		90m	90m					
		100m	100m					
		110m	110m					

SAMPLE NOS.

DRILL TYPE: Schramm

DATE DRILLED:.....

4

18/10/78

DRILLER: K. Wing Pot

LOGGED: V. J. J. J.

SCALE

1:500

DRG N° AS 8038

EL. HALLETT LOG OF PERCUSSION DRILL HOLE
 PROSPECT: BURRA NORTH BURRA 1:250,000 ATLAS SHEET 0057
 LOCATION: ~6 1/2 km N. of BURRA CO-ORDS: 304500mE 6276100mN
 R.L. COLLAR: INCLINATION: -90
 on dirt road DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb		
	CLAYS AND GRIT							
500 gph	GRITS							43-15 hammer
500 gph	↓ grades to							5 1/2" hole
	grits 60%							standing water
	sands 30%							2.6m standing water
	clay 5%							
	pebbles 5%							
	clasts - subangular to	10 m						
	sub rounded							
	poorly sorted							
	mostly red and							
	grey pelites							
	↓ grades to	20 m						
	grits 60%							
	sands 30%							
	pebbles 10%							
800 gph	GRAVEL AND GRIT	30 m						
800 gph	↓ grades to							
	5% cobbles							
	10% pebbles							
	clasts clear quartz							
	milky quartz							
	purple siltstone	40 m						
	grey siltstone			25	25	20		
	dolomite			30	30	20		
				45	35	25		
				15	15	10		
2,000 gph		50 m		35	35	20		
				35	35	15		
				40	35	20		
				35	35	20		← hole washes in
		56m	END OF HOLE				ABANDONED	
		60 m						mud pump necessary
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

Pha

SAMPLE NOS

DRILL TYPE: Schramm
 DATE DRILLED: 17/10/78
 DRILLER: K. Wright
 LOGGED: Jengwa
 DRG N° AS 8039

SCALE 1:500

PROSPECT: BURRA NORTH

BURRA 1:250,000 ATLAS SHEET
6650N 4800E

0058

R.L. COLLAR:

LOCATION: ~ 6 1/2 km NW BURRA
on dirt track

GO ORDS:

INCLINATION: -90°

DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METERS	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb.		
	CLAYS red brown highly plastic 5% sands							5 1/2" 43-15 hammer
	GRAVEL & GRIT sub angular 5% clays 10% sands 5% cobbles 25% grits 65% pebbles clasts-80% siltstone green & purple Cobble band	10 m						
		20 m						← water intersected
	5% clays 5% pebbles 90% grits. weathered clasts 80% sst 10% vein qtz 10% siltstones	30 m						better sorted Mn staining on clast surfaces
		40 m						
	5% siltstone & purple 5% quartz white			40	35	15		
				40	30	15		
				185	25	40		
				195	25	40		
		50 m		170	25	40		
				175	30	40		
				175	30	40		
				170	220	45		
				165	30	40		
		60 m		170	25	40		
				190	20	40		
	pebble band			185	25	35		
				155	20	35		
				150	20	30		
		70 m		125	20	30		
	pebbles become less common			200	25	35		
				135	25	30		
				185	20	30		
				190	25	40		
		80 m		165	30	35		
				185	25	30		
	GRITS AND SANDS 10% frags red pebbles rounded			150	25	35		
				155	30	35		
				160	30	35		
		90 m		180	30	35		
				155	20	35		
				155	25	40		
				160	25	35		
				140	25	30		
		100 m		130	25	35		
			100M END OF HOLE					Hole abandoned collapsing sands & grits
		110 m						

SCALE

1 500

SAMPLE NOS.

DRILL TYPE: Schramm

4

DATE DRILLED: 18/10/78

DRILLER: K Wright

LOGGED: J. J. J.

DRG N° AS 8040

E.L. HALLETT

LOG OF PERCUSSION DRILL HOLE

HOLE NO: PHA - 12

PROSPECT: NORTH BURRA

6650N 4600E

0059

R.L. COLLAR:

INCLINATION: -90°

LOCATION: ~6 1/2 kms NW Burra

CO-ORDS:

DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb	AS.	
	SOIL. Red brown plastic clay grading rapidly into f			25	40	35		5 1/2" hole 43-15 hammer
				20	30	35	5	
	QUARTZ BRECCIA 90% vein qtz grey-blue-cream			25	20	40		cf. HGM's buck quartz
				15	30	20	<5	
	10% dolomite sandstone quartzite	10 m		100	20	45		
				15	15	20	<5	
	rare gossanous frags			15	25	25	<5	← water intersected
	rare Mn & Fe staining.			20	20	25		
		20 m		25	15	25	5	rare frags of pink ? ign-feldspathic rock
				25	15	25		
				HOLE ABANDONED 22M			BAD GROUND	
							NO WATER LOSS	
		30 m						large pieces of quartz 3cm + blown out of hole
								sludge pump requested
		40 m						
		50 m						
		60 m						
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:

DRILLER: K Wright

LOGGED: 19/10/98

SCALE

1 500

DRG NO AS 8041.

E.L. HALLETT

PROSPECT... BURRA NORTH

BURRA 1:250,000 ATLAS SHEET
6650N 4550E

R.L. COLLAR:.....

INCLINATION:..... -90°

LOCATION: ~ 6½ kms. NW. BURRA GO ORDS

0060

DIRECTION:.....

Salinity mg/l 2450
Valley 21/10/78

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb	As.	
	CLAY Red brown, + soil 10% grit, quartz + calcite			20	30	35	<5	5½" 43-15 hammer to 22m
				20	40	40		5½" roller bit tried
				10	25	45	<5	standing water
	CLAY - cream highly plastic ? kaolin grades into ↓			10	25	35		4.7m
		10m		15	35	35	5	← water intersect.
	LIMESTONE white-cream silicified in part. strong Mn & Fe staining on bedding & in rare veins of quartz rare gossanous fragments			5	25	30		
				15	25	30	5	
				10	25	35		2 frags ? gossan
				5	15	35	5	
		20m		5	10	30		" "
				5	15	30	<5	
				5	15	30		
				5	15	30	<5	
				5	10	30		
		30m		5	15	25	<5	~ 30% contamination
				5	35	25		return to hammer.
				5	15	25	<5	
				5	15	30		
				5	30	30	<5	
		40m		5	10	25		
				10	25	25	<5	
				5	15	25		
				5	20	25	<5	
				5	20	25		
		50m		5	20	25	<5	rare frags of granular sugary calcite
				5	25	30		
				5	20	30	5	
				5	20	25		
		60m		HOLE STOPPED AT 58M.				
		70m						
		80m						
		90m						
		100m						
		110m						

Nb?

Nb?

51

SCALE	1:500	SAMPLE NOS	DRILL TYPE: Schramm	DATE DRILLED: 19/10/78
			DRILLER: K. Wright	LOGGED: J. Wynn
				DRG NO. AS 8042

E.L. HAUETT LOG OF PERCUSSION DRILL HOLE
 PROSPECT: BURRA NORTH
 LOCATION: ~6 1/2 km NW BURRA CO-ORDS 6650N 4,650E
 0061
 R.I. COLLAR:
 INCLINATION: -90°
 DIRECTION:

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb.	As.	
500gph 3000gph	CLAYS red brown highly plastic grading into							5 1/2" 43-15 hammer reamed to 40m and steel cased
	GRAVELS and GRITS Fe+Mn staining 10% clay red brown 50% gravels 30% grits clasts 60% agst/sfts. purple sub ang - sub round - 60% grits 40% gravels	10 m						rare white clay c/p H-15 rare purple sfts clasts with py pseudom.
		20 m						
		30 m						~ 30% contamination
	Coarse pebbly bands	40 m		40	30	30	15	
				40	40	35		
				35	40	40	15	
				30	40	40		
				30	40	35	15	pyrite cube
				30	45	40		foam turns black
ADELAIDIAN	GRAPHITIC SHALES frags of black shale rare pyrite cubes	50 m		35	45	40	20	80% contamination
				35	45	40		
				40	40	35	15	Attempts to case off to 40 metres
		60 m		40	40	35		fail
				35	45	30	15	hole keeps collapsing at 14 m
				40	40	35		
				40	35	30	15	
				45	40	40		
				40	40	35		
		70 m	HOLE ENDS 70M					
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:

4

21st 22nd Oct 78

DRILLER: Ken Wright

LOGGED: J. Langman

SCALE

1:500

DRG NO. AS 8043.

PROSPECT, BURRA NORTH...

BURRA 1:250,000 ATLAS SHEET

R.L. COLLAR:

LOCATION: ~6 1/2 Km NW BURRA CO-ORDS:

6650N 4540E

0062

INCLINATION: ~60°

DIRECTION: east

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn.	Pb	15	
800 gph	CLAYS AND LIMESTONE - weathered brown and white plastic clays 60% buff weathered limestone 40%			10	20	40	5	5 1/2" 43-15 hammer reamed
	LIMESTONE white and cream - rare bands/beds/veins rich in Mn. Slightly weathered rare quartz veins rare fragments of ? baryte?	10 m		10	65	50	5	← blow out
16000 gph				5	15	30	5	
				10	15	40	10	← water intersected
				10	20	40	10	
				10	20	40	5	
				10	15	30	<5	veined 7 7/8"
				5	10	35	<5	incase roller and casing cemented (not set)
				10	15	30	<5	
				10	15	30	<5	
				5	10	30	5	
				5	10	30	5	
				10	20	35	<5	
				5	10	30	<5	
				10	10	30	<5	
				5	10	30	<5	
ADELAIDIAN				5	15	20	<5	auxiliary compression contamination from steel from rods
				10	20	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
				5	15	20	<5	
		44 m	END OF HOLE					
			No return					
		50 m						
		60 m						
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

DATE DRILLED:

4

22-23 Oct 78

DRILLER: Ken Wright

LOGGED: Ferguson

SCALE

1:500

DRG N° AS 8044

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m.)				REMARKS
				Cu.	Zn.	Pb	As.	
600 gph	CLAY AND ALLUVIAL GRAVEL	10 m		35	45	50	5	5 1/2" 43-15 hammer
	red brown plastic clay 60%			35	85	75		
	30% sub angular poorly sorted gravel			30	50	45	5	← blow out
	60% weathered siltstone			30	40	45		
	40% weathered limestone			50	45	50	10	thin bands of white plastic clay
	10% sand			80	25	40		
				70	30	40	25	
				45	30	30		
				45	30	30	20	
				45	35	35		
	SANDSTONE. Loosely calcite cemented poorly sorted	20 m		40	40	30	10	~ 30% contain
				40	30	35		
				30	30	40	10	
				50	55	40		
				50	55	35	15	
				35	30	35		~ 60% contain
				40	30	35	10	
				30	45	30		
				30	45	30	10	
				30	35	30		← hole collapses and 2m x 1m section of ground with it
	END OF HOLE 40M ABANDONED							
		50 m						
		60 m						
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS.

DRILL TYPE: Schramm

DATE DRILLED:

4

24/10/78

DRILLER: Buam

LOGGED: Yergoon

Sommerville

SCALE

1:500

DRG N° AS 8045

E.L. HALLETT

LOG OF PERCUSSION DRILL HOLE

HOLE NO. P.HA-17

PROSPECT: BURRA NORTH

BURRA 1:250,000 ATLAS SHEET
7500N 5250E

R.L. COLLAR:.....

INCLINATION: -90°

LOCATION: ~8 1/2 Km NW BURRA
on track/railway

CO-ORDS

0064

DIRECTION:.....

WATER CUT	DESCRIPTION	DEPTH METRE	LOG	GEOCHEM. (p.p.m)				REMARKS
				Cu.	Zn	Pb	Ag.	
25/10/78	CLAYS AND ALLUVIAL GRAVEL	10 m	10	30	45	40	5	5 1/2' 43-15 hammer
	red brown highly plastic clays 60%			30	45	45	5	
	sub angular clasts of 40% purple siltstone and 60% weathered ? dolomite rare quartz			25	45	45	5	
				35	35	35	5	
				30	45	30	5	
				30	40	35	5	
	pebble band			25	35	35	5	
				25	30	35	5	
				25	35	35	5	
				25	35	30	5	
	SILTSTONE	20 m	20	50	45	35	5	rare bands of fine grained sandstone
	greenish grey - grey clay - rare dolomitic bands			330	140	45	5	
	greenish grey			50	25	30	5	
	weathered along bedding 25% w. mica 30% feldspar 25% b mica 20% qtz.			45	25	30	5	
	↓ becomes darker + more fissile			40	20	35	5	
	SILTSTONE	30 m	30	45	15	35	5	drilling mud turns black rare chert bands
	black fissile unweathered graphitic bands.			50	25	30	5	
				30	20	35	5	
				25	15	30	5	
				25	15	30	5	
		40 m		HOLE ENDS 40M				← No pyrite or sulphide obvious ALL AG
	Nm w?	50 m						
		60 m						
		70 m						
		80 m						
		90 m						
		100 m						
		110 m						

SAMPLE NOS

DRILL TYPE: Schramm

4

DATE DRILLED:.....

24/10/78

DRILLER: Brian

Somerville

LOGGED: Vanguan

SCALE

1:500

DRG N°. AS 8046.

0065

APPENDIX II

PROJECT: SOUTH AUSTRALIA....

AUSTRALIAN SECTION (PTY) LTD.

HOLE N° PHA-3

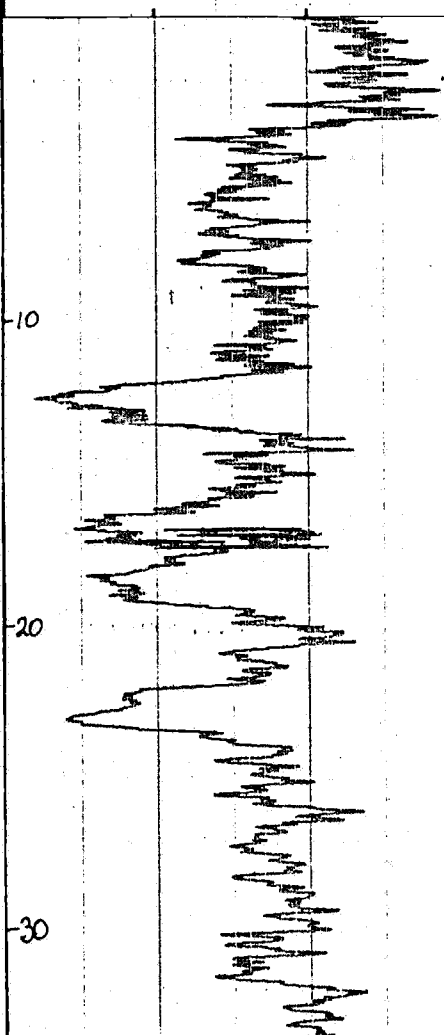
PROSPECT: EL. Hallett.....

PERCUSSION DRILL HOLE.

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

5 km. NNW. Burra.

ELECTRIC LOGS. 0066

DEPTH
METRESRADIOMETRIC LOG.
COUNTS PER SECOND.

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: 2sec..... RANGE SETTING: 50 G/SEC. FULL SCALE.
SCALE SETTING: 1:250 LOGGING SPEED: 2 METRES PER MIN.

LOGGED BY: G.J. Hall
DATE: 17th October 1978

DRG N° AS. 8027

PROJECT: SQUID. H. AUSTRALIA...

AUSTRALIAN S. LECTON (PTY) LTD.

HOLE N° PHA-4

PROSPECT: E.L. Hallett

PERCUSSION DRILL HOLE.

0067 FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

5 km. NW. Burra...

ELECTRIC LOGS.

DEPTH
METRES

RADIOMETRIC LOG.

COUNTS PER SECOND

red = resistivity - 25
blue = sp. K.

STANDING WATER 3.6M

0

-10

-20

-30

-40

-50

BOTTOM OF HOLE BLOCKED 54.3m

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: RANGE SETTING: G/SEC. FULL SCALE.
SCALE SETTING: 1 LOGGING SPEED: METRES PER MIN.

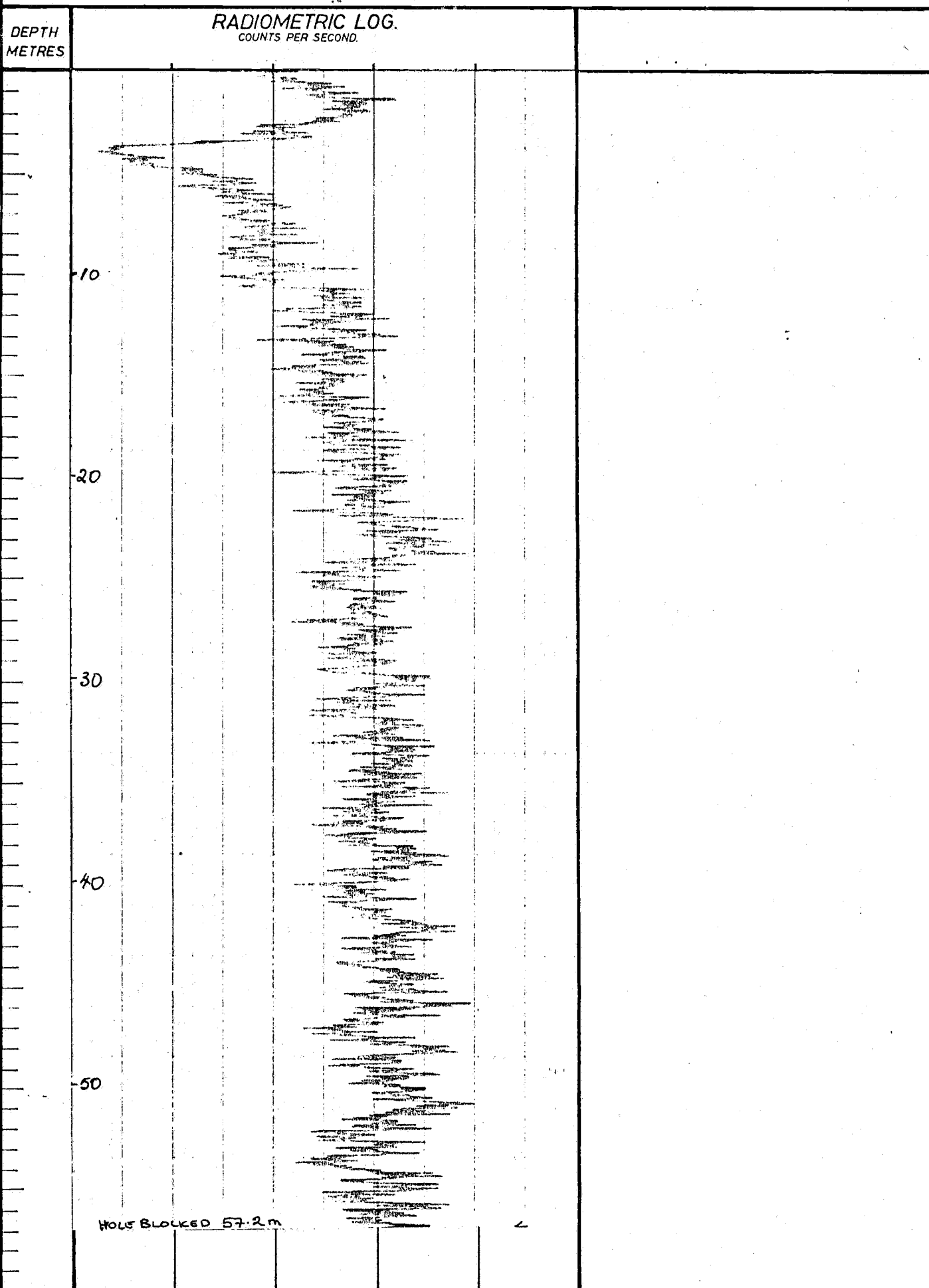
LOGGED BY: J. Ferguson
DATE: 17/10/78

DRG N° A.S. 8028

PROJECT: SOUTH AUSTRALIA...

AUSTRALIAN COLLECTION (PTY) LTD.

HOLE N° PHA-H

PROSPECT: E.L. Hallett
5 km. NW. Burra.PERCUSSION DRILL HOLE. 0068
ELECTRIC LOGS.FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.

TIME CONSTANT: 2secs RANGE SETTING: 50 G/SEC. FULL SCALE.

SCALE SETTING 1:250

LOGGING SPEED 2 METRES PER MIN

LOGGED BY: J. Ferguson
DATE: 17/10/78

DRG N° AS 8028

PROSPECT: E.L. Hallett

PERCUSSION DRILL HOLE.

ELECTRIC LOGS. 0069

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.4 kms. NW. Burra.
on stock routeDEPTH
METRESRADIOMETRIC LOG.
COUNTS PER SECOND.

10

20

30

40

BOTTOM 45.4m

HOLE BLOCKED

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: ... 250 ... RANGE SETTING: ... 50 G/SEC. FULL SCALE.
SCALE SETTING 1:250

LOGGED BY: J. Ferguson.
DATE: 18th October 1978.

DRG NO A.S. 8029

PROSPECT: E.L. Hallett

PERCUSSION DRILL HOLE.

4 kms NW. Burra.
on stock route

ELECTRIC LOGS. 0070

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.DEPTH
METRESRADIOMETRIC LOG.
COUNTS PER SECOND.red = resistivity = 50
blue = S.P. = 50

water 4m

PHA-8
Top location
SP 50
90505
50

-10

-20

-30

-40

BOTTOM 45.4m
PHA-8
HOLE BLOCKEDDISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: RANGE SETTING: G/SEC. FULL SCALE.
SCALE SETTING: LOGGING SPEED: METRES PER MIN.LOGGED BY: J. Ferguson
DATE: 18th Oct. 1978.

DRG N° A.S. 8029

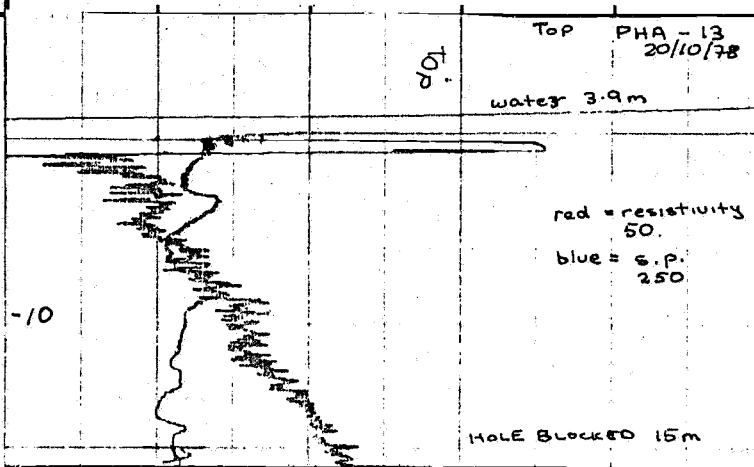
PROSPECT: E.L. Hallett - Burra North
6.5 km NW Burra.

PERCUSSION DRILL HOLE. 0071
ELECTRIC LOGS.

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

DEPTH
METRES

RADIOMETRIC LOG.
COUNTS PER SECOND.



DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: RANGE SETTING: G/SEC. FULL SCALE.
SCALE SETTING: LOGGING SPEED: METRES PER MIN.

LOGGED BY: J. Ferguson
DATE: 20th October 1978

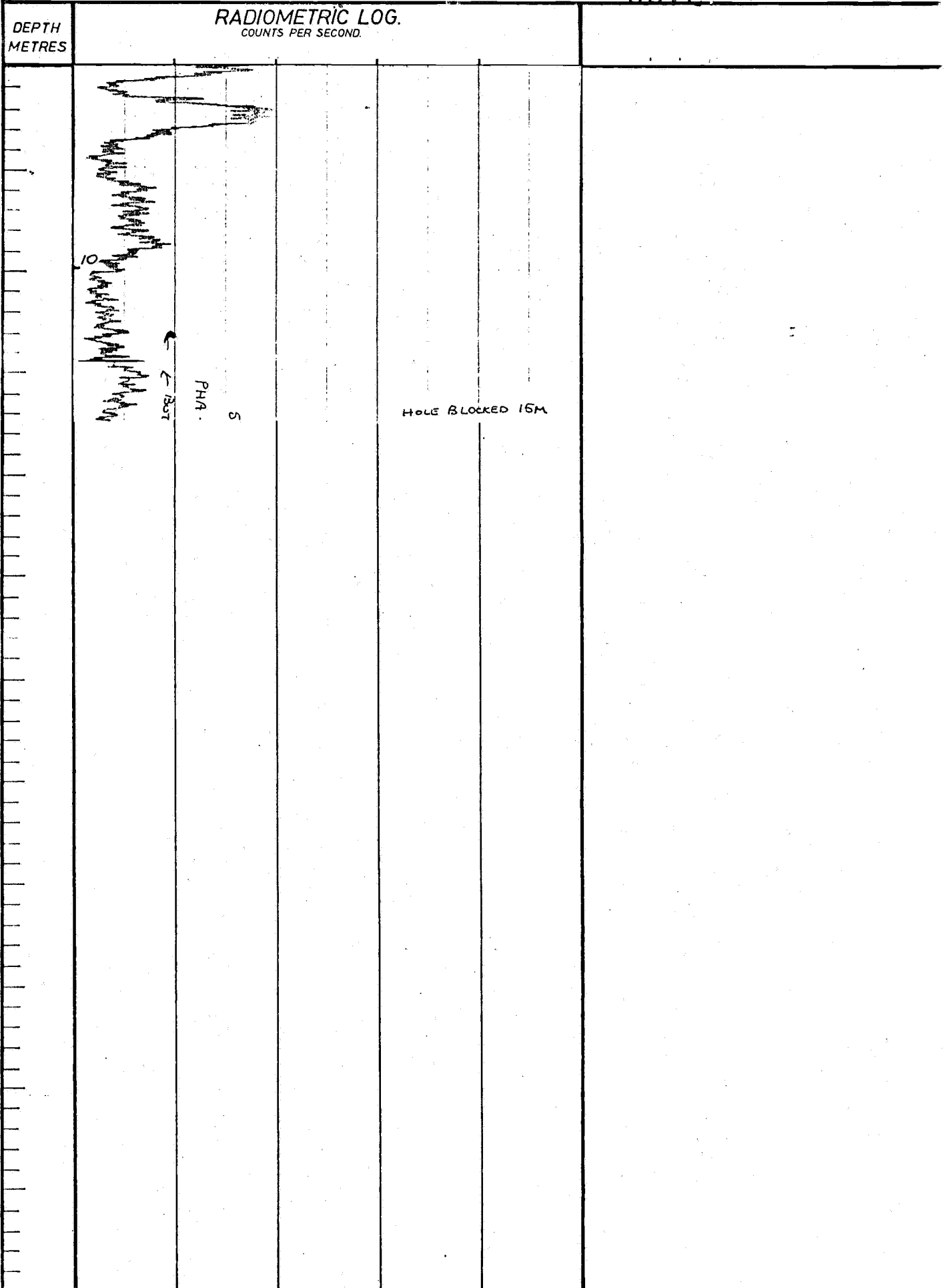
DRG No A.S. 8030.

PROSPECT: EL. HALLETT
6.5 km NW. Barra

PERCUSSION DRILL HOLE.
ELECTRIC LOGS.

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

0072



DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: 25cc RANGE SETTING: 50 G/SEC. FULL SCALE.
SCALE SETTING 1:250 LOGGING SPEED 2 METRES PER MIN

LOGGED BY: J. Ferguson
DATE: 20th October 1978
DRG N° A.S. 8030

PROSPECT: E.L. Hallett - Burra Nth
8 1/2 km NW Burra
on track II railway

PERCUSSION DRILL HOLE.
ELECTRIC LOGS.

0073

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.

DEPTH
METRES

RADIOMETRIC LOG.
COUNTS PER SECOND.

radiometric

50 cps
2 T.C.

10

20

30

38.9 m bottom

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.
TIME CONSTANT: ... 2 sec. ... RANGE SETTING: ... 50. G/SEC. FULL SCALE.
SCALE SETTING: 1'250 LOGGING SPEED: 2 METRES PER MIN.

LOGGED BY: J. Ferguson...
DATE: 24th Oct: 1978...

DRG N° A5 8031

PROSPECT: EL Hallett - Nth. Burra

PERCUSSION DRILL HOLE.

8.5 km. NW Burra
on track II railway

ELECTRIC LOGS.

0074

FOR LOCATION AND GEOLOGY
REFER TO GEOLOGICAL LOG.DEPTH
METRESRADIOMETRIC LOG.
COUNTS PER SECOND.

PHA-17

24/10/78

hole filled with fresh

TOP

red = resistivity
100blue = sp
= 600

-10

-20

-30

37.2m

bottom

DISCRIMINATOR SETTING: 0 i.e. TOTAL COUNT.

TIME CONSTANT: RANGE SETTING: G/SEC. FULL SCALE.

SCALE SETTING: 1:250

LOGGED BY: 2 J. Ferguson
DATE: 24th Oct. 1978.

DRG N° A.S. 8031.

0075

APPENDIX III



Selection Trust Group, Australia — PERTH OFFICE

50 St. George's Terrace, Perth, W.A. 6000

0076

Telephone 25 4511
Telex AA 93033
Telegrams AUSELEX Perth

Correspondence to:
Australian Selection (Proprietary) Limited
Box R 1274, G.P.O.,
Perth, Western Australia 6001

For intergroup correspondence only. Use separate sheet for each subject.

To MALCOLM MASON
FROM JIRI JUST

Date

24th November, 1978

Reference No. EIM 425

Subject/Heading

HALLET
PETROLOGY

File No.

Two sections made.

K 43794A

Impure dolomite.

Texture: granoblastic

Minerals identified microscopically: carbonate, quartz, muscovite, microcline.

XRD: dolomite >> quartz; muscovite (tr.), microcline (tr.)
possibly zoisite (?tr.)

The rock consists mostly of quartz and dolomite. Dolomite strongly predominates over quartz and forms a mosaic of interlocking idiomorphic to hypidiomorphic grains mostly 100 - 600 μ in size. Quartz grains (mostly 150 - 400 μ in size) are irregular or rounded and are more or less evenly distributed through the rock. Microcline, which forms small (< 50 μ) allotriomorphic grains, is present only in small amounts. Only trace amount of muscovite is present. Small (up to 50 x 150 μ) colourless prisms with parallel extinction are possibly zoisite or tourmaline.

K 43794B

Dolomite

Texture: granoblastic

Minerals identified microscopically: carbonate, talc, quartz, limonite.

XRD: dolomite >>> quartz, talc; muscovite (?tr.)

The rock consists mostly of interlocking hypidiomorphic grains of dolomite. Dolomite is finer grained than in the A section, the average grain size being approx. 100 μ . Talc flakes (mostly < 50 μ) are intergranular to dolomite. Quartz is present also only in small amount as rounded grains up to 600 μ in size. Limonite stains occur at one edge of the section.

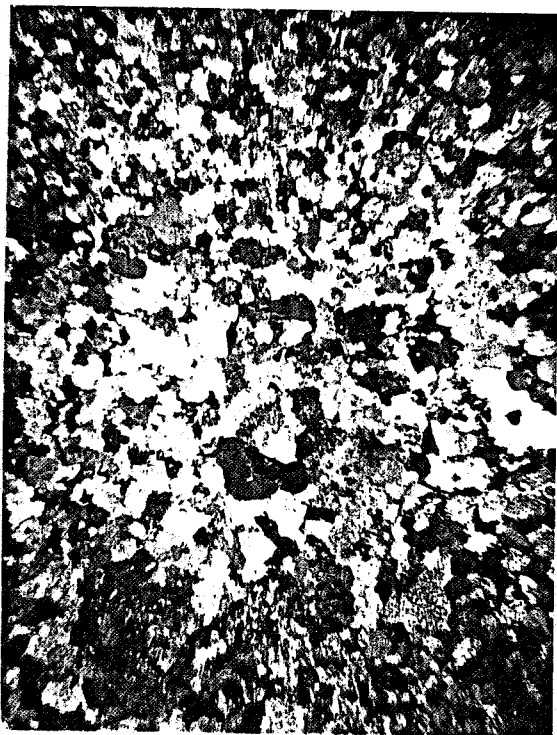
Fig. 1.

0077

Fig. 1. K 43794B

Dolomite. General view.
Rounded grains of quartz
and flakes of interstitial
talc are well visible.

Magn. 20x, nic.X, RI plate.



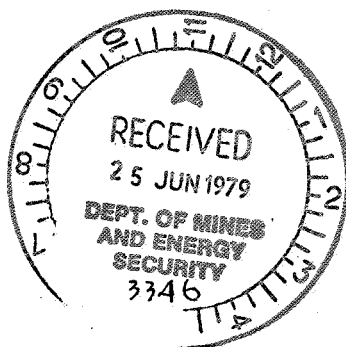
HALLETT E.L. 425

0078

RESISTIVITY SURVEY NEAR BURRA

10TH JANUARY TO 8TH FEBRUARY, 1979

R. TIMMINS



RESISTIVITY SURVEY NEAR BURRA10TH JANUARY TO 8TH FEBRUARY, 1979R. TIMMINSC O N T E N T S

	<u>Page No.</u>
<u>INTRODUCTION</u>	1
FIELD PROCEDURES	1
PRESENTATION OF RESULTS	2
SUMMARY AND TARGETS	4
DISCUSSION OF RESULTS	6

A P P E N D I C E S

1. Interpretation of the Resistivity and thickness of the Geo-Electric Layers
2. Undraughted Sounding Curves

D I A G R A M S

	<u>Plan No.</u>
1. Location of Lines used for Resistivity Report	AS 8695
2. Resistivity Report (Tenement overlay)	AS 8694
3. Traverse Line - Mine Road	AS 8602
4. " " Golf Course Road	AS 8611
5. " " Race Course Road (Pseudo Section)	AS 8601
6. " " Race Course Road (Interpreted Section)	AS 8635
7. " " Springvale Road	AS 8631
8. " " 3800mN (Pseudo Section)	AS 8627

9.	Traverse Line	-	3800mN (Interpreted Section)	AS 8630
10.	"	"	5000mN (Pseudo Section)	AS 8628
11.	"	"	5000mN (Interpreted Section)	AS 8636
12.	"	"	6650mN (Pseudo Section)	AS 8629
13.	"	"	6650mN (Interpreted Section)	AS 8691
14.	Traverse Fault Line			AS 8699
15.	Traverse Line	-	7500mN	AS 8612
16.	Traverse Line	-	Woollana Road (Profile and Pseudo Section)	AS 8604
17.	"	"	Woollana Road (Interpreted Section)	AS 8613
18.	"	"	Mackerode Road	AS 8605
19.	"	"	Belcunda Road (Pseudo Section)	AS 8603
20.	"	"	Belcunda Road (Interpreted Section)	AS 8638
21.	"	"	Mt. Bryan Road (Pseudo Section)	AS 8526
22.	"	"	Mt. Bryan Road (Interpreted Section)	AS 8537

INTRODUCTION

1. A resistivity survey has been conducted in the valley between Burra and Mt. Bryan. The field work was conducted on behalf of Australian Selection (Pty) Limited from 20th January until 8th February, 1979, by Mr. R. Timmins, assisted by two Australian Selection field assistants, Mr. W. Anderson, and Mr. D. Emsbury. (Diagrams 1 and 2)

2. The aim of the survey was to map geo-electrically the northern extension of the Kingston fault, and, secondly to estimate the depth of alluvial cover. These aims are intended to optimise drilling in the area.

FIELD PROCEDURES

1. The survey comprised 13 traverses. See location plan Diagrams 1 and 2.

2. The traverses involved combinations of profiling and soundings; the combinations being determined by (a) drill hole control of the zone and (b) logistics of the traverse (viz: length and expected usefulness of data).

3. All the resistivity profiling was conducted with a half current electrode separation (r) of 80 and 160 metres, and a half potential electrode separation (m) of 5 metres.

4. Most of the Schlumberger array vertical soundings were expanded logarithmically outwards from a half current electrode separation (r) of 8 metres to a final separation of 320 metres. Where possible the soundings were expanded north-south, approximately parallel to strike. The notable exceptions were the Belcunda Road, Mine Road, and Mt. Bryan Roads, all of which were expanded east-west. These exceptions were due to property development on these lines.

1. Location Plans - Diagrams 1 and 2, show the location of the traverses, datum points and other features to facilitate location on the ground.
2. Pseudo sections (where enough data was collected), profiles and interpreted sections (where applicable) are shown on Diagrams 3 to 22. Appendix 1 is a line for line interpretation of the resistivity and thicknesses of the geo-electric layers. Undraughted sounding curves are presented as Appendix 2 on a line for line basis.
3. Pseudo sections have been logarithmically contoured with horizontal axis representing lateral position and vertical axis, arithmetic half current electrode separation.

Profiles have been plotted as log-linear graphs of apparent resistivity versus line position. Vertical scale is 1 decade = 12.5 cms, and the horizontal scale is 1:2,500.

Sounding curves (Appendix 2) are presented as bi-logarithmic graphs of apparent resistivity (vertical axis) and r separation (horizontal axis). The scale is 1 decade = 6.25 cms.

4. The thirteen traverse lines are presented and discussed in order from south to north, according to the following table.

<u>LINE</u>	<u>Diagram Numbers</u>
1. Mine Road	3
2. Golf Course Road	4
3. Race Course Road	5, 6
4. Springvale Road	7
5. 3800N	8, 9

LINEDiagram Numbers

0083

cont.....

6. 5000N	10, 11
7. Fault Line	14
8. 6650N	12, 13
9. 7500N	15
10. Woollana Road	16, 17
11. Mackerode Road	18
12. Belcunda Road	19, 20
13. Mt. Bryan Road	21, 22

Lines 1 to 9 occur in the southern half of the area where some drill hole control exists. Lines 10 to 13 occur in the northern section where no drill hole data has been collected.

Resistivity surveys depend, for accurate interpretation, on relating results from line to line in a particular geological domain. As it is interpretative, errors will obviously occur, depending largely on geological information available (e.g. mapping and drill hole data).

Generally errors or mis-fits in a resistivity survey can be of two types:-

(i) Those inherent to the resistivity technique which are caused by layer suppression and equivalence. These errors normally effect quantitative interpretation and for this reason all quantitative interpretation should only be regarded as a guide rather than absolute. The results of Appendix 2, therefore, should not be considered accurate "to the metre" but be considered as an average result of a series of apparent resistivity and depth estimations that would fit a particular sounding curve. The results need to be up-dated as drilling data becomes available.

(ii) Geological prediction errors - similar to prediction errors made by geologists.

Both errors can be progressively corrected as new data becomes available. If the mis-fit is due to layer suppression or equivalence, it is likely to have ramifications through the whole interpretation, in which case the author may be contacted to correct and progressively up-grade the interpretation. This will be done free of charge.

The following drill targets are given in order of interpretation confidence with short added notes where applicable. More detailed information and explanations can be found in the main text under "Discussion of Results".

Race Course Road. 300 - 350E. The limits of this geo-electric zone would be expected to be from 275E - 375E.

Line 7500N. Already drilled; however limit of barren shale would be 5040E - 5215 E - possible structural target 4740E - 4790E.

Golf Course Road. 1000E - 1100E.

Springvale Road. 1000W - 1050W. This target should be considered only if the Race Course Road interpretation is correct. The depth estimate of the final layer does not seem to fit the trends north and south of this line and must be open to conjecture as to whether the final layer is actually basement.

No drilling could be recommended on Mackerode Road at this stage.

Woollana Road, Belcunda Road, and Mt. Bryan may be drilled according to the interpreted sections if the interpretation still agrees with geology after more data has been collected.

DISCUSSION OF RESULTS

Mine Road

0086

00W of Mine Road is opposite the railway station at the junction of two gates, approximately 400 metres west of the Bon Accord Hotel. This datum is not readily recognised on the supplied air photo.

Diagrams of this line are self explanatory. Basement resistivities are presented on the interpreted section. The lower basement resistivities of 100W and 200W are most likely due to the cupiferous shale of the Burra mine.

For the two basement types, limestone/dolomite to the east (00W) and silt-stone sediments to the west (300W onwards), there appears to be no difference in their corresponding resistivities. This is apparent on the interpreted section where the final layer resistivities are equivalent. Also comparisons of sounding curves (Appendix 2) illustrate little difference in slope of final layer resistivities.

In general depth to basement of this line is in the order of 15 to 70 metres (see Appendix 1 and interpreted section Diagram 3.)

Golf Course Road

From Diagram 4, the most important feature of this line is seen on examination of a plot of r_{160} minus r_{80} values. This divides the line into three broad sections.

Section 1. Low r_{160} minus r_{80} values are due to a final conductive layer within the basement unit. Approximate depth to basement is 20 metres at 00E and increases to the east.

Section 2. Higher r_{160} - r_{80} values indicate the absence of the conductive layer of Section 1. Sounding at 450E shows a geo-electric layer (probably Cainozoic) of 40 metres thickness. Depth to basement is approximately 50 metres at 450E. Changes in depth to basement are qualitatively reflected in the $r=160$ and $r=80$ profiles between 250E and 975E.

The "kick" in the profiles at 425E could possibly be a fault but no basement change in rock type is anticipated if this is the case.

Section 3. Lower r_{160} - r_{80} values in this section probably reflect a basement rock type change commencing at 1000E. Examination of sounding curves show a change in slope of final layer. However, the final layer slope of this section is parallel to the slope of the anticipated Cainozoic element in Section 2. It is possible, therefore that Section 3 represents a thickening of the Cainozoic layers. This possibility is considered unlikely considering the proximity of outcrop to 00W.

Race Course Road

Profiles and pseudo section of this line indicate a probable fault with a corresponding change in basement between 300E and 350E.

Examination of the plotted soundings for 200E and 300E (Appendix 2) illustrate a similar shape of sounding curve to that over the known fault (see Fault line).

Change in basement type is probable because of the change in distance between the $r=80$ and $r=160$ profiles, which is also seen in the change in the interval between contours of the pseudo section.

Although the interpreted section shows only one fault zone at 350E it is quite possible that there are two faults associated with the basement change; one at 275 - 300E and a second at 350 - 375E.

Springvale Road

The r=80 and r=160 profiles illustrate the following : -

(i) A likely fault at 1050W with a possible basement change. However, this feature is far less definitive than in the preceeding southerly line.

Sounding comparison of 650W against 1050W and 1100W indicates the possibility of a basement change, because of the change of slope of the final layer apparent resistivities.

(ii) A fault at 275W, upthrown to the east appears likely. No change in basement is anticipated because no change in r160 -r80 is apparent either side of the expected fault. A sounding either side of 275W would have clarified the position further.

(iii) The rest of the profile (especially r=160) qualitatively reflects basement topography.

Quantitatively, the depth to the final layer of this line is in the order of 20 metres (Appendix 1) with a deeper zone between 300W and 500W.

3800W

The soundings conducted on this line were not successful in delineating any possible change in basement. This was due to "masking" of any difference in resistivity of basement types by a thick section of Cainozoic sediment overlying basement.

From the interpreted section (Diagram 9) it can be seen that it is possible for the Cainozoic section to be up to 160 metres thick, with a reasonably consistent resistivity range from 15 - 38 ohm metres. It should be noted, however, that the resistivity mapping technique is almost entirely relative and known basement depths on line 5000N tend to be lower than the estimated basement depths using resistivity, so it is possible that depth estimates are possibly overstated on this line. The results, nonetheless, should be considered to be in the correct order of magnitude.

The "masking" effect is evident by the uniform contour lines of the pseudo section.

5000N

Once again it is seen, from the pseudo section, the effect of "masking" from the Cainozoic section overlying basement.

Drilling indicates the fault zone contact of interest at 4700E, but examination of the pseudo section for this line shows that it would be difficult to differentiate between the responses obtained at 4700E and 4900E.

The only use that resistivity would have in this situation is estimation of depth to basement, which can be seen in the interpreted section (Diagram 11) and the quantitative interpretation of Appendix 1.

Line 6650N

From this line, with its reasonably dense drilling coverage, it can be seen that the Cainozoic overburden is variable in its conductive properties. See soundings of Appendix 2. If the resistivity properties were uniform similar curve shapes would normally be expected.

With the likely shale contact being at some depth the resistivity technique founders, nonetheless the soundings may be used as a guide to depth of Cainozoic material. This is presented as an interpreted section (Diagram 13) and in the results of Appendix 1.

Fault Line

Three soundings were conducted across a known fault to illustrate the resistivity response (see Diagram 14). The sounding occurring in the middle (i.e. 20 metres West of the fault) is reasonably typical of the quite flat type of curve obtained when the electric field is interrupted by some structural change. Similar responses can be seen on examination in other lines of the survey (e.g. Race Course Road).

The other two soundings either side of the fault clearly show a displacement of the sounding curves. Any profiles conducted at a separation of 50 metres upwards (i.e. in the final resistivity layer - assumed fresh bedrock) would be expected to illustrate a significant apparent resistivity difference which is normally interpreted as some lithological change and/or fault.

7500N

As normally expected with resistivity surveys, the shallower the zone to be mapped the more accurate is the method. Drilling on this line indicated basement limestone at less than 20 metres at 4640E and a similar depth

RESISTIVITY SOUNDING

CLIENT:

AREA:

BURRA.

LINE:

MINE

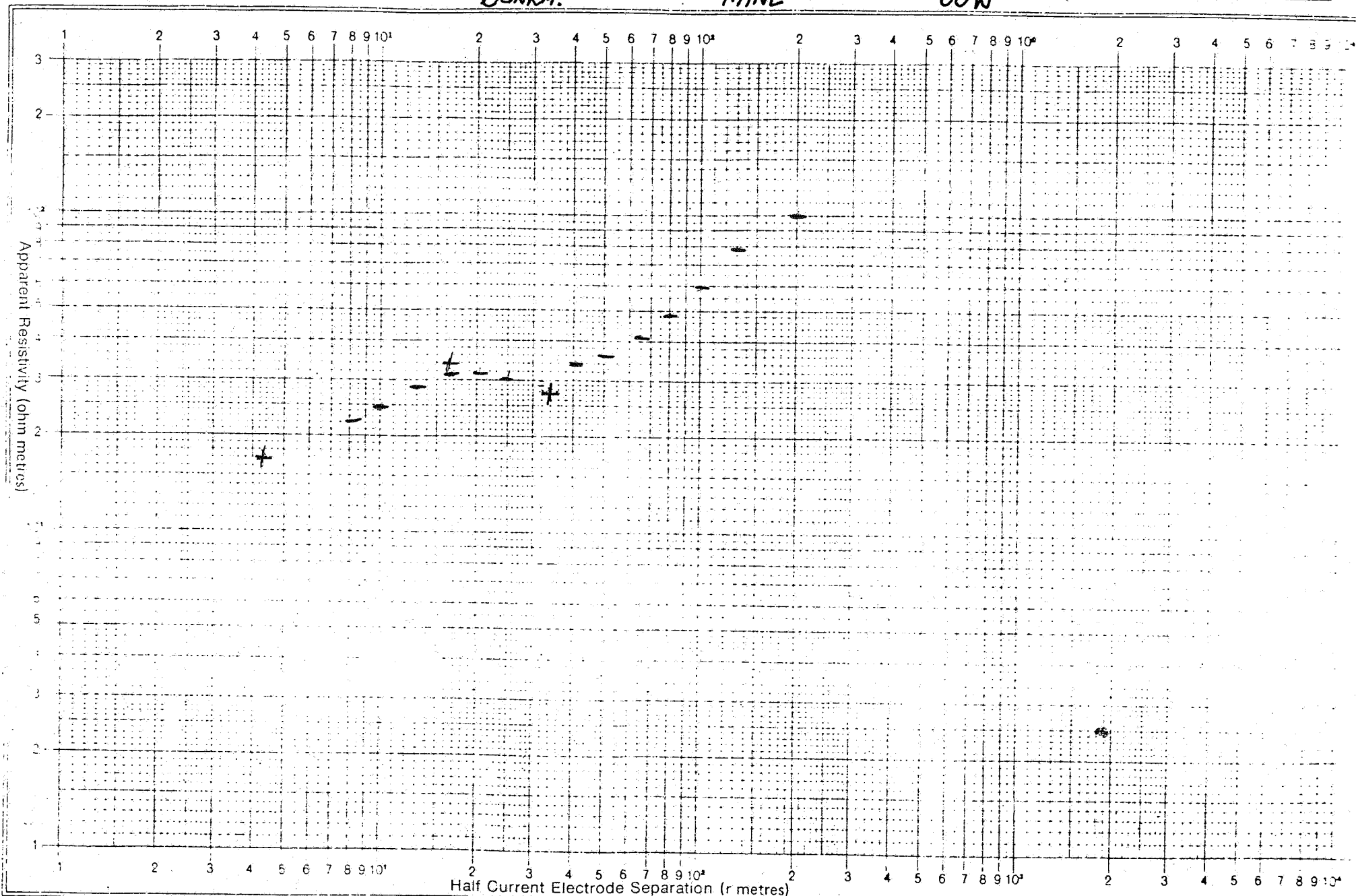
STATION:

00W

Report

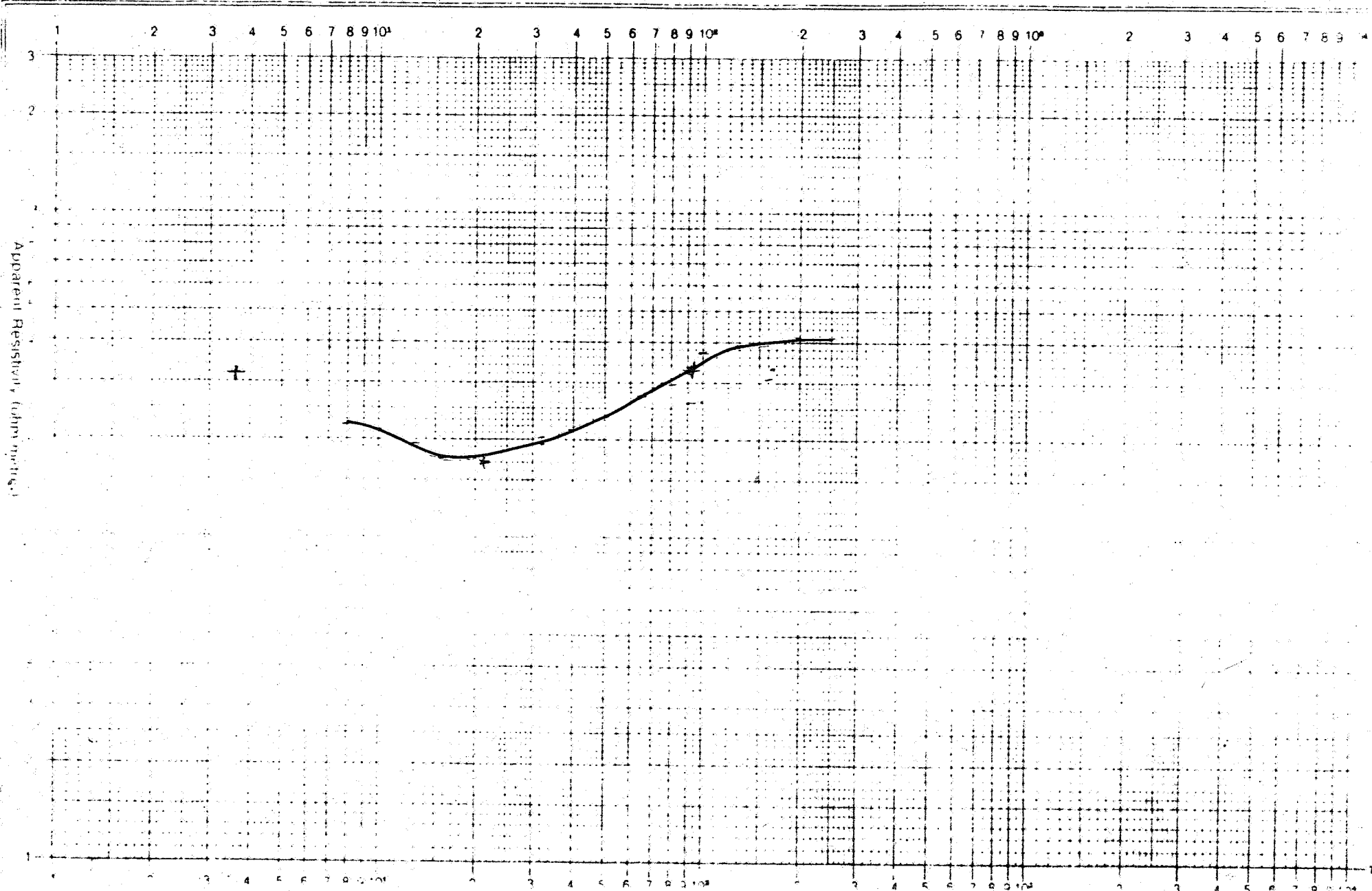
0091

Plate



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

0092



RESISTIVITY SOUNDING

0093

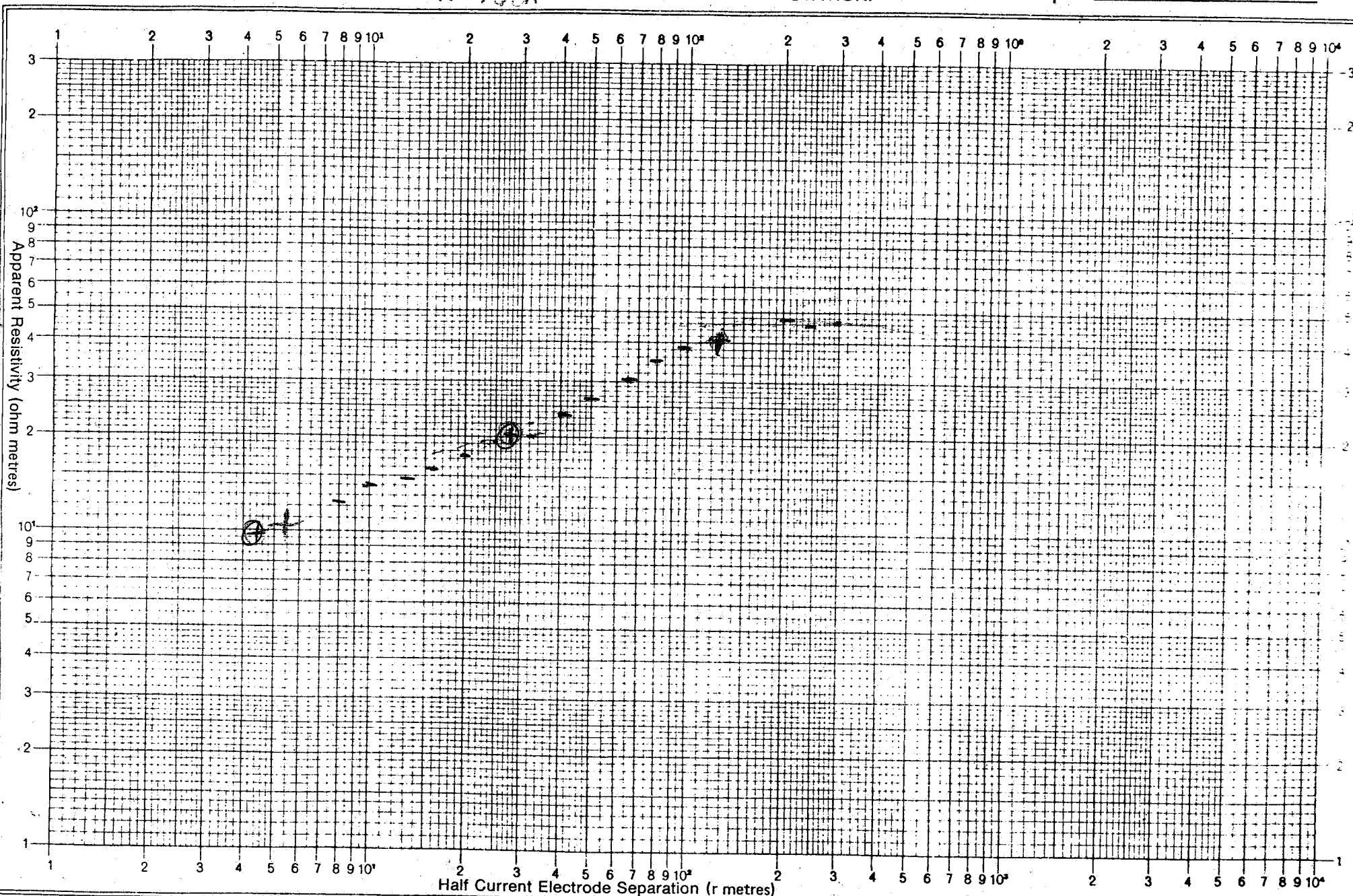
Plate _____

CLIENT: _____

AREA: *BURRA*

LINE: *NINE* STATION: *200W*

Report _____



0.5
5.5
1.25 x 10^3
49.6
17.5 x 10^3
96.25



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

$\rho_1 = 15$
 $h_1 = 6$
 $\rho_2 = 50$
 $h_2 = 3 \times 6$
 $= 18$
 $= 20V$

0094

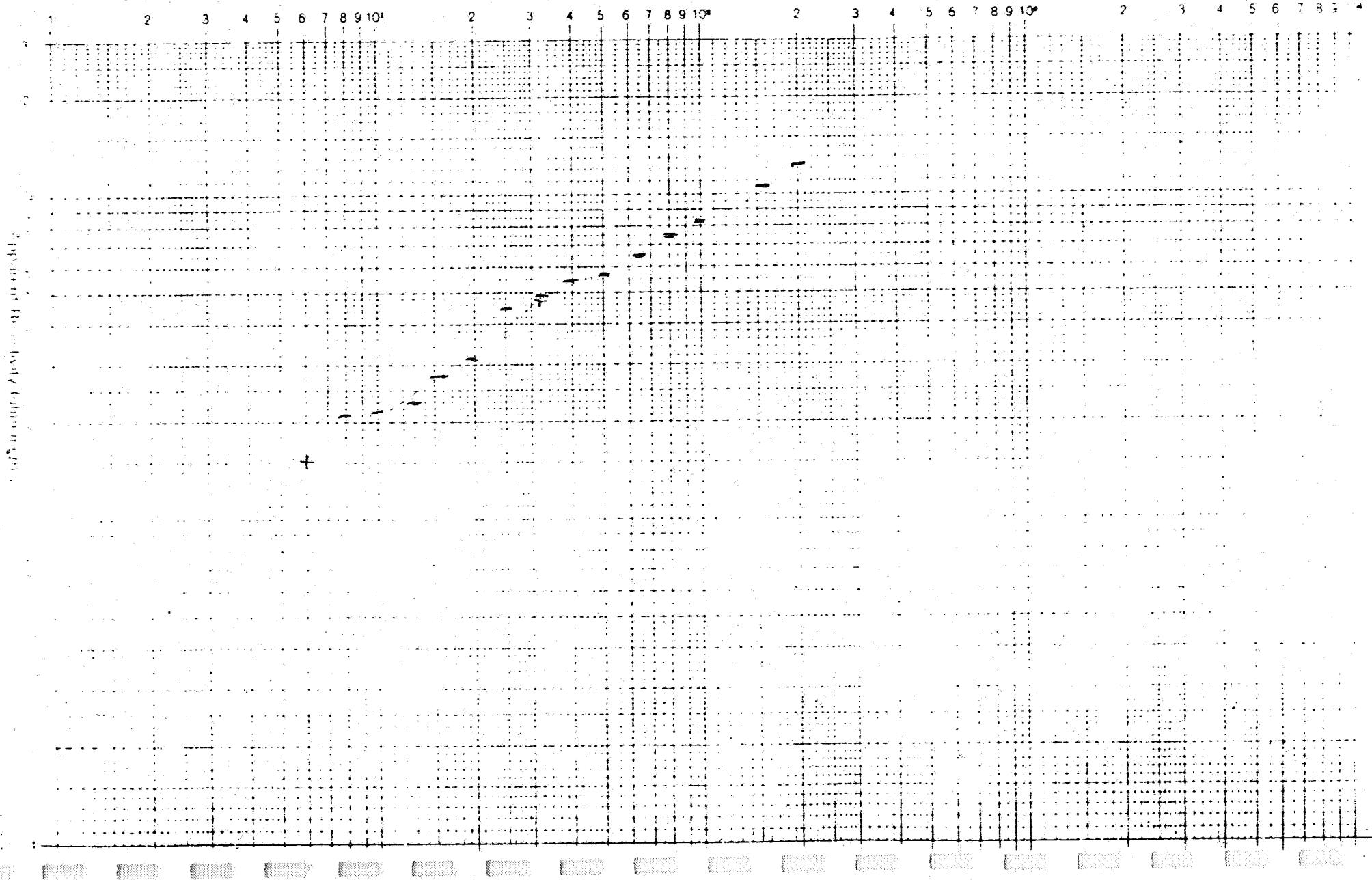
RESISTIVITY SOUNDING

CLIENT: AUSELEY

AREA: BICKEN

LINE: MINE ROAD STATION: 300W

Plate _____
Report _____



RESISTIVITY SOUNDING

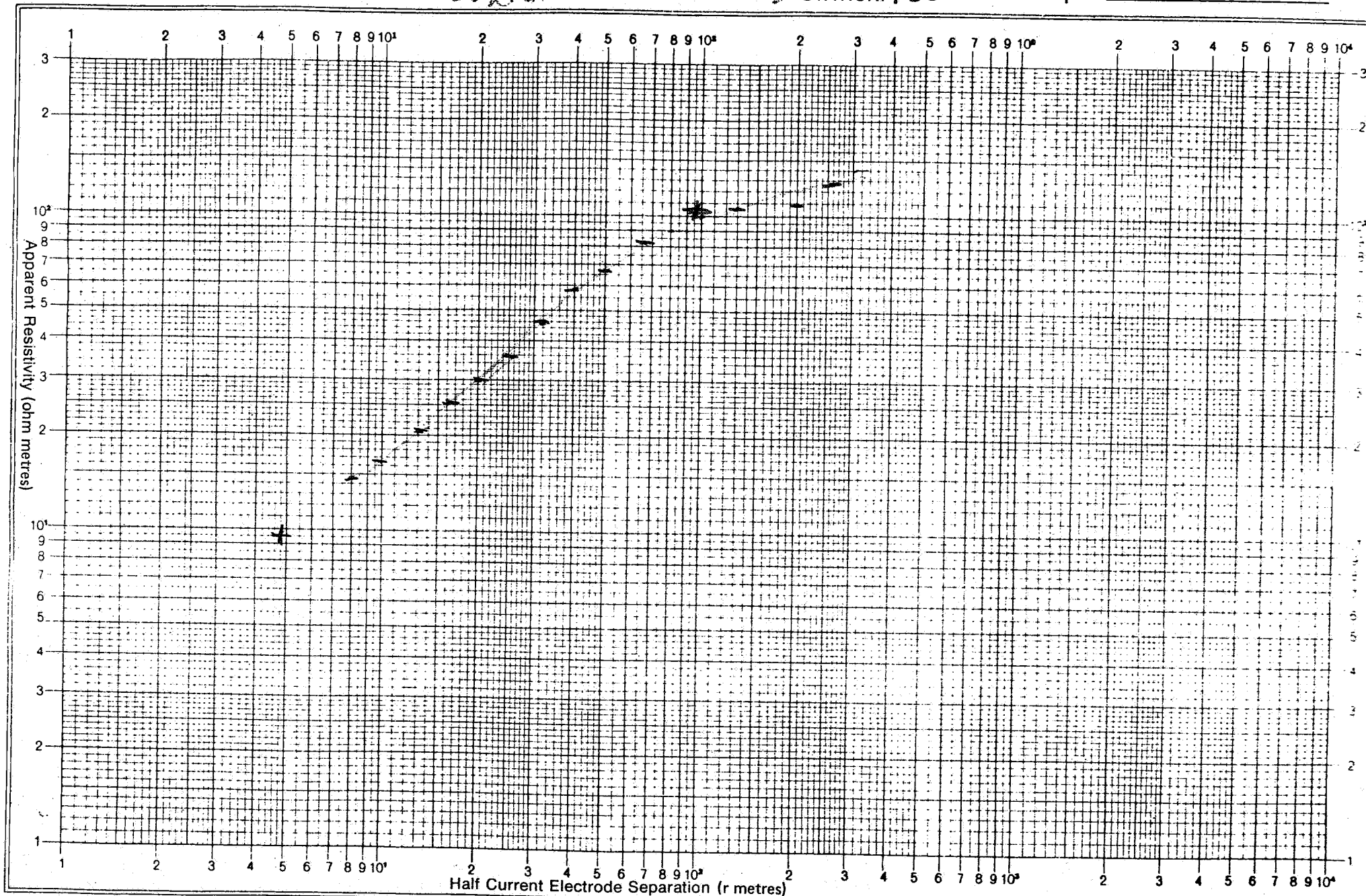
0095 Plate _____

CLIENT: _____

AREA: BURRA

LINE: MINE STATION: 400w

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT:

AREA:

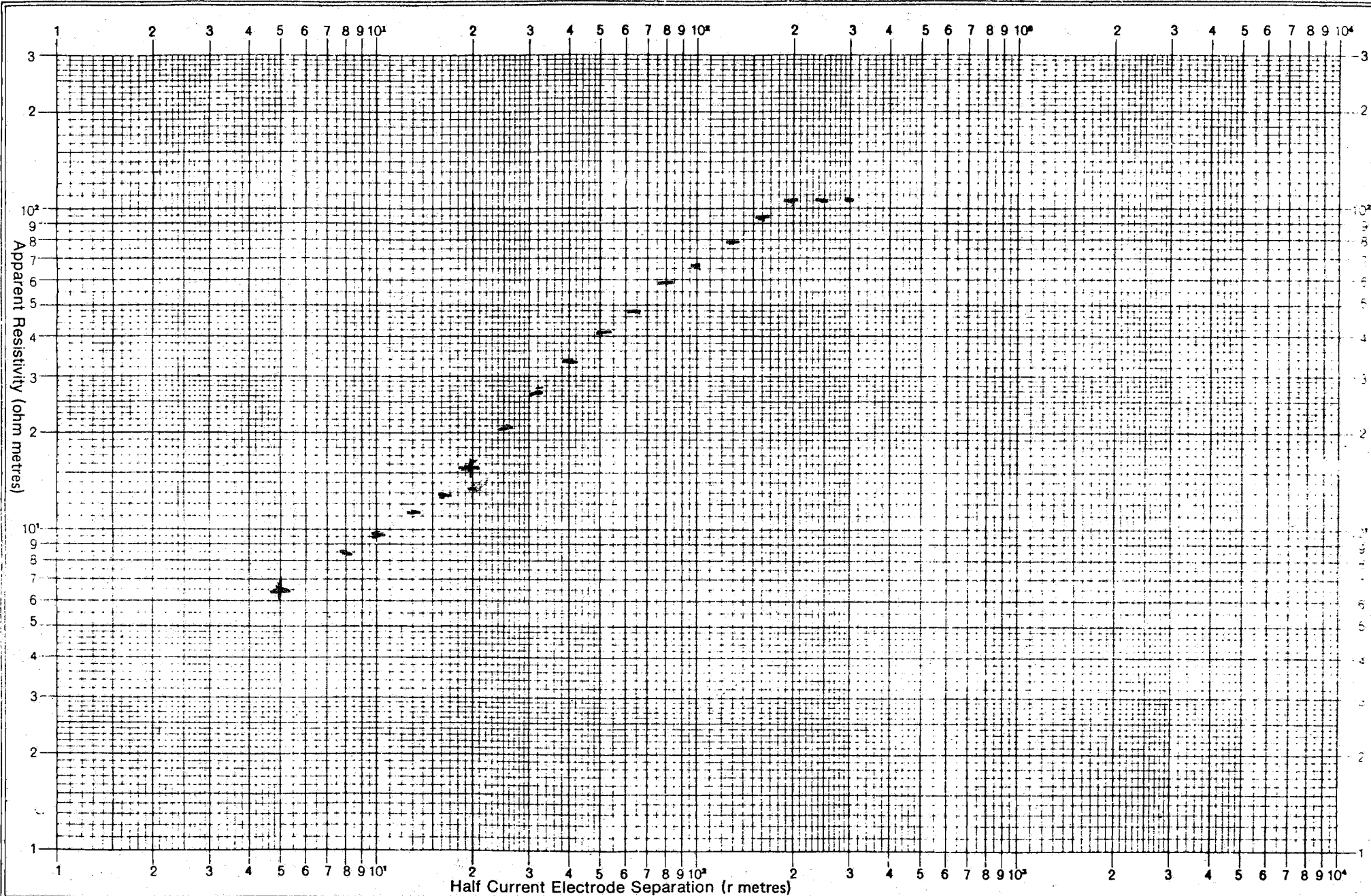
BURRA

LINE: MINE STATION:

0096

Plate

Report



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

to a barren shale unit near 5140E (N.B. traverse line did not pass over drill hole at this point.)

The interpretation is limestone basement 4640E to 5065E, with a probable fault at 4765E - 4780E. Profile gradient reflects depth to basement qualitatively. The zone 5065E - 5240E would indicate the limits of the shale unit along the traverse line. The rising profile from 5265E onwards probably indicates a change in basement type from shale. Diagram 15 contains all the detail required for this line and Appendix 1 has a numerical solution to the soundings conducted.

On a regional basis line 7500N must be considered important as it shows (a) a change in regional geology (viz: basement types appear reversed and depth to basement is considerably less than that experienced on line 6650N.) (b) it marks the end of drill hole control for the survey.

From here to Mt. Bryan the survey was aimed at tying results only to 7500N and when this was impossible to apply resistivity reconnaissance techniques with almost a purely geophysical interpretation for subsequent incorporation into known geological facts as they come to hand.

In retrospect, for structural reasons, a traverse between 6650N and 7500N (e.g. along the main road) would have been useful to pin-point for at least one location the marked lithological change between these two lines.

Woollana Road

See Diagram 17 for interpreted section. In addition to what appears on this diagram the zone from 225W - 100W may also be important as a zone of structural change.

However, the main resistivity response was obtained at the eastern end where a significant conductor was encountered - it is considered unlikely that such a response would be due to limestone. A shale unit would be more likely, especially if the respective diagrams are compared for Woollana Road and 7500N.

The conductive response is probably due to basement. This is apparent when it is compared with other cases in this area where typically a high degree of variability in resistivity response occurs within the basement units. This variability often occurs with sedimentary units such as limestone and siltstone.

Of seemingly less importance is the zone around 500W which is not all that conclusive as it does not even show up on the double profile. Without the sounding at 500W it would not even appear as a feature, and therefore, must be considered only a possibility.

Mackerode Road

Only limited work was done on this line. A double profile was carried out in an attempt to pick up any major lithological changes. This met with limited success; the only significant features being at either end of the line close to basement outcrop. The middle part of the traverse 500E-2000E showed little. Detailed sounding work was not considered feasible over such a long traverse without drill hole control. This traverse is partly cross country which would make initial scout drilling unattractive.

00E is virtually outcrop. From 100E - 175E a conductive zone is encountered which may be worth further examination. However, a not so marked, but a similar response, is seen from 2300E onwards.

Overall, considering the paucity of results and narrower traverses further north e.g. Mt. Bryan Road, further investigation on this traverse would best be left till last.

Belcunda and Mt. Bryan Roads

These two lines are best considered together as there appears to be similarity in the responses. This is best seen in the pseudo section contours of the respective lines. Although there are different horizontal scales the overall shape of the contours would be useful in relating information from one line to another following any drilling, the Mt. Bryan Road being the easier of the two for drilling.

In both cases there appears to be a zone of faulting at the western ends of the lines (see interpreted sections). The variability in resistivity response of the basement features makes an interpretation of a basement change at these points less certain. However, these probable fault zones are the best resistivity responses obtained on these lines.

From the pseudo sections the basement type for 2000E - 4000E on Belcunda Road and 1250E to 2500E on Mt. Bryan Road is likely to be the same.

It should be stressed that on these two lines there is no drilling information for correlation, and so the resistivity should be taken as a guide only. Any subsequent drilling should be "married" to the resistivity results. This would optimize drilling, by relating resistivity information from one line to another.

There is a question mark on the apparent final layer on Mt. Bryan Road from 1000E to 1500E. If the final layer does exist as shown on the inter-

preted section then it is quite likely there will be an error in depth estimates of the layer - the depth to the final layer probably being less than actually stated on the interpreted section.

APPENDIX I

0101

INTERPRETATION OF THE RESISTIVITY
AND THICKNESS OF THE GEO-ELECTRIC LAYERS

Mine Road

Resistivity thickness

Depth of Layers

00W	$\rho_1 = 17, h_1 = 4.3$ $\rho_2 = 51, h_2 = 7.5$ $\rho_3 = 22.1, h_3 = 16.5$ $\rho_4 = 193$	0 - 4.3 4.3 - 11.8 11.8 - 28.3 28.3+
100W	$\rho_1 = 32, h_1 = 3.6$ $\rho_2 = 16, h_2 = 17.1$ $\rho_3 = 42.5, h_3 = 63$ $\rho_4 = 56$	0 - 3.6 3.6 - 20.7 20.7 - 83.7 83.7+
200W	$\rho_1 = 9.8, h_1 = 4.4$ $\rho_2 = 24.5, h_2 = 22$ $\rho_3 = 60, h_3 = 54$ $\rho_4 = 40$	0 - 4.4 4.4 - 26.4 26.4 - 80.4 80.4+
300W	$\rho_1 = 15, h_1 = 6$ $\rho_2 = 75, h_2 = 18$ $\rho_3 = 204$	0 - 6 0 - 24 24+
400W	$\rho_1 = 9.5, h_1 = 4.8$ $\rho_2 = 143, h_2 = 62.4$ $\rho_3 = 200$	0 - 4.8 4.8 - 67.2 67.2+
600W	$\rho_1 = 6.5, h_1 = 5$ $\rho_2 = 27.6, h_2 = 10$ $\rho_3 = 450$	0 - 5 5 - 15 15+

Golf Course Road

00E	$\rho_1 = 18, h_1 = 3.2$ $\rho_2 = 7.2, h_2 = 17.6$ $\rho_3 = 34, h_3 = 55$ $\rho_4 = 10$	0 - 3.2 3.2 - 20.8 20.8 - 75.8 75.8+
450E	$\rho_1 = 5.1, h_1 = 6.25$ $\rho_2 = 2.6, h_2 = 3.4$ $\rho_3 = 14, h_3 = 40$ $\rho_4 = 315 \text{ approx.}$	0 - 6.25 6.25 - 9.65 9.65 - 49.65 49.65+
1150E	$\rho_1 = 26, h_1 = 6$ $\rho_2 = 16.9, h_2 = 3.6$ $\rho_3 = 36.8, h_3 = 20$ $\rho_4 = 119$	
200W	$\rho_1 = 100, h_1 = 3.1$ $\rho_2 = 33.3, h_2 = 27.9$ $\rho_3 = 112$	

Race Course Road

0103

00E	$\rho_1 = 5.25, h_1 = 5.5$ $\rho_2 = 9.2, h_2 = 5.5$ $\rho_3 = 28.1, h_3 = 74.4$ $\rho_4 = 57.5$	0 - 5.5 5.5 - 11 11 - 85.4 85.4+
100E	$\rho_1 = 7.6, h_1 = 5.25$ $\rho_2 = 26.6, h_2 = 26.3$ $\rho_3 = 25, h_3 = 74$ $\rho_4 = 84$	0 - 5.25 5.25 - 31.6 31.6 - 106 106+
200E	$\rho_1 = 15.2, h_1 = 6.75$ $\rho_2 = 26.6, h_2 = 13.5$ $\rho_3 = 25, h_3 = 64.5$ $\rho_4 = 60$	0 - 6.75 6.75 - 20.25 20.25 - 84.75 84.75+
300E	$\rho_1 = 28, h_1 = 4.5$ $\rho_2 = 18.2, h_2 = 9$ $\rho_3 = 31.5, h_3 = 6.9$ $\rho_4 = 15.6, h_4 = 34.5$ $\rho_5 = 76.5$ approx.	0 - 4.5 4.5 - 13.5 13.5 - 20.4 20.4 - 54.9 54.9+
400E	$\rho_1 = 26.5, h_1 = 3.5$ $\rho_2 = 13.25, h_2 = 28$ $\rho_3 = 33.8, h_3 = 115.5$ ρ_4 high	0 - 3.5 3.5 - 31.5 31.5 - 147 147+
500E	$\rho_1 = 11, h_1 = 14.2$ $\rho_2 = 22, h_2 = 56.8$ $\rho_3 = 700$	0 - 14.2 14.2 - 61 61+
600E	Approximation only $\rho_1 = 7.6, h_1 = 6.75$ $\rho_2 = 19, h_2 = 43.9$ $\rho_3 = 72.3$	0 - 6.75 6.75 - 50.7 50.7+

Springvale Road

650W	$\rho_1 = 18, h_1 = 5.75$ $\rho_2 = 14.4, h_2 = 17.25$ $\rho_3 = 45$
1050W	$\rho_1 = 19.5, h_1 = 3.6$ $\rho_2 = 9.8, h_2 = 9$ $\rho_3 = 52.5, h_3 = 9.8$ $\rho_4 = 13, h_4 = 16.5$ $\rho_5 = 51$
1100W	$\rho_1 = 8.4, h_1 = 5.75$ $\rho_2 = 21, h_2 = 20.1$ $\rho_3 = 17.6, h_3 = 19.2$ $\rho_4 = 45$

3800N

0104

4400E	$\rho_1 = 9, h_1 = 6.2$ $\rho_2 = 16, h_2 = 31$ $\rho_3 = 135$	0 - 6.2 6.2 - 37.2 37.2+
4500E	$\rho_1 = 19.5, h_1 = 3.3$ $\rho_2 = 7.8, h_2 = 12.9$ $\rho_3 = 21.9, h_3 = 66$ $\rho_4 = 61.3$	0 - 3.3 3.3 - 16.2 16.2 - 82.2 82.2+
4600E	$\rho_1 = 32, h_1 = 5.1$ $\rho_2 = 9.6, h_2 = 15.3$ $\rho_3 = 24, h_3 = 84$ $\rho_4 = 140$	0 - 5.1 5.1 - 20.4 20.4 - 104.4 104.4+
4700E	$\rho_1 = 150, h_1 = 3.8$ $\rho_2 = 19, h_2 = 17$ $\rho_3 = 15.2, h_3 = 42$ $\rho_4 = 38, h_4 = 97.5$ $\rho_5 = 130$	0 - 3.8 3.8 - 20.8 20.8 - 62.8 62.8 - 160.3 160.3+
4800E	$\rho_1 = 90, h_1 = 4$ $\rho_2 = 11.25, h_2 = 12$ $\rho_3 = 26.3, h_3 = 119$ $\rho_4 = 120$	0 - 4 4 - 16 16 - 135 135+
4900E	$\rho_1 = 21, h_1 = 4$ $\rho_2 = 10.5, h_2 = 9.6$ $\rho_3 = 22.5, h_3 = 56$ $\rho_4 = 131$	0 - 4 4 - 13.6 13.6 - 69.6 69.6+
4950E	$\rho_1 = 10.5, h_1 = 4.2$ $\rho_2 = 6.8, h_2 = 8.4$ $\rho_3 = 22.5, h_3 = 65$ $\rho_4 = 185$	0 - 4.2 4.2 - 12.6 12.6 - 77.6 77.6+

4700E PHA 4	$\rho_1 = 6.25$ $h_1 = 3.7$ $\rho_2 = 10.9$ $h_2 = 18.5$ $\rho_3 = 25$ $h_3 = 110.4$ ρ_4 high	0 - 3.7 3.7 - 22.2 22.2 - 132.6 132.6+
4800E PHA 3	$\rho_1 = 19$ $h_1 = 3.3$ $\rho_2 = 9.5$ $h_2 = 23.1$ $\rho_3 = 35$ $h_3 = 108$ $\rho_4 = 500$	0 - 3.3 3.3 - 26.4 26.4 - 134.4 134.4+
5100E PHA 1	$\rho_1 = 17.5$ $h_1 = 3.9$ $\rho_2 = 35$ $h_2 = 6.8$ ρ_3 117 $h_3 = 18$ $\rho_4 = 210$	0 - 3.9 3.9 - 10.7 10.7 - 28.7 28.7+
4580E PHA 5	$\rho_1 = 5.9$ $h_1 = 3.6$ $\rho_2 = 17.7$ $h_2 = 36$ $\rho_3 = 72.5$	0 - 3.6 3.6 - 39.6 39.6+
4990E PHA 2	$\rho_1 = 45$ $h_1 = 3.8$ $\rho_2 = 13.5$ $h_2 = 37$ $\rho_3 = 91$ $h_3 = 45$ $\rho_4 = 144.5$	0 - 3.8 3.8 - 40.8 40.8 - 85.8 85.8+
4900E	$\rho_1 = 17$ $h_1 = 4.2$ $\rho_2 = 11$ $h_2 = 37.8$ $\rho_3 = 40.3$ $h_3 = 159.5$ $\rho_4 = 81$	

4400E	$\rho_1 = 8, h_1 = 13.5$ $\rho_2 = \text{Very High}$	0 - 13.5 13.5+
4500E	$\rho_1 = 20.5, h_1 = 6$ $\rho_2 = 16.4, h_2 = 3.6$ $\rho_3 = 27.8, h_3 = 44.4$ $\rho_4 = 62.5$	0 - 6 6 - 9.6 9.6 - 53.0 53+
4540E	$\rho_1 = 19.5, h_1 = 12.2$ $\rho_2 = 48.8$	0 - 12.2 12.2+
4650E	$\rho_1 = 6.5, h_1 = 5.4$ $\rho_2 = 16.3, h_2 = 21.6$ $\rho_3 = 25.8$	0 - 5.4 5.4 - 27
4800E	$\rho_1 = 10, h_1 = 16$ $\rho_2 = 25, h_2 = 160$ $\rho_3 = 19.2$	0 - 16 16 - 176
4900E	$\rho_1 = 14, h_1 = 80$ $\rho_2 = 42, h_2 = 20$ $\rho_3 = 4$	0 - 80 80 - 100 100+
5000E	$\rho_1 = 6.5, h_1 = 5.2$ $\rho_2 = 22.8, h_2 = 3.1$ $\rho_3 = 22, h_3 = 54.5$ $\rho_4 = ??$	0 - 5.2 5.2 - 8.3 8.3 - 62.8 62.8+
5100E	$\rho_1 = 19.2, h_1 = 34.2$ $\rho_2 = 67.2, h_2 = 103$ $\rho_3 < 48$	0 - 34.2 34.2 - 137.2
<u>7500N</u>		
4638E (PHA - 16)	$\rho_1 = 6.5, h_1 = 10$ $\rho_2 = 195$	0 - 10 10+
5120E	$\rho_1 = 21.5, h_1 = 3.4$ $\rho_2 = 10.8, h_2 = 18.7$ $\rho_3 = 23, h_3 = 46$ $\rho_4 = 7.2$	0 - 3.4 3.4 - 22.1 22.1 - 68.1 68.1 +
5250E (PHA - 17) approx.	$\rho_1 = 23.2, h_1 = 5.5$ $\rho_2 = 11.6, h_2 = 77$ $\rho_3 = 19.3$	0 - 5.5 5.5 - 83.5 83.5+
5365E	$\rho_1 = 23, h_1 = 6.2$ $\rho_2 = 18.4, h_2 = 49.6$ $\rho_3 = 92.5$	0 - 6.2 6.2 - 55.8 55.8+

275E	$\rho_1 = 4.4, h_1 = 4.6$ $\rho_2 = 15.4, h_2 = 9.2$ $\rho_3 = 12.5, h_3 = 15$ $\rho_4 = 22, h_4 = 43.8$ $\rho_5 = 6.4$	$0 - 4.6$ $4.6 - 13.8$ $13.8 - 28.8$ $28.8 - 72.6$ $72.6 +$
100E	$\rho_1 = 4.8, h_1 = 6.9$ $\rho_2 = 7.2, h_2 = 34.5$ $\rho_3 = 14, h_3 = 55.9$ $\rho_4 = 10.2$	$0 - 6.9$ $6.9 - 41.4$ $41.4 - 97.3$ $97.3 +$
00E/W	$\rho_1 = 5, h_1 = 6$ $\rho_2 = 12.5, h_2 = 21$ $\rho_3 = 11.9, h_3 = 23.3$ $\rho_4 = 38.5, h_4 = 52$ $\rho_5 = 27$	$0 - 6$ $6 - 27$ $27 - 50.3$ $50.3 - 102.3$ $102.3 +$
100W	$\rho_1 = 12.5, h_1 = 42.$ $\rho_2 = 8.1, h_2 = 18.9$ $\rho_3 = 21.3$	$0 - 4.2$ $4.2 - 23.1$ $23.1 +$
200W	$\rho_1 = 5, h_1 = 38$ $\rho_2 = 35$	$0 - 38$ $38 +$
300W	$\rho_1 = 8, h_1 = 5.5$ $\rho_2 = 4, h_2 = 8.3$ $\rho_3 = 30$	$0 - 5.5$ $5.5 - 13.8$ $13.8 +$
400W	$\rho_1 = 3.7, h_1 = 8.9$ $\rho_2 = 13, h_2 = 62.3$ $\rho_3 = 52.5$	$0 - 8.9$ $8.9 - 71.2$ $71.2 +$
500W	$\rho_1 = 8.25, h_1 = 15$ $\rho_2 = 24.8, h_2 = 11.3$ $\rho_3 = 16.5$	$0 - 15$ $15 - 26.3$ $26.3 +$
600W	$\rho_1 = 8, h_1 = 5$ $\rho_2 = 12, h_2 = 50$ $\rho_3 = 69, h_3 = 41.3$ $\rho_4 = 42$	$0 - 5$ $5 - 55$ $55 - 96.3$ $96.3 +$
700W	$\rho_1 = 7, h_1 = 5.9$ $\rho_2 = 17.5, h_2 = 34.2$ $\rho_3 = 90, h_3 = 67.5$ $\rho_4 = 51.6$	$0 - 5.9$ $5.9 - 40.1$ $40.1 - 107.6$ $107.6 +$
800W	$\rho_1 = 6.25, h_1 = 6.5$ $\rho_2 = 18.75, h_2 = 22.75$ $\rho_3 = 84$	$0 - 6.5$ $6.5 - 29.25$ $29.25 +$

00E	$\rho_1 = 14.8, h_1 = 4$ $\rho_2 = 22.2, h_2 = 12$ $\rho_3 = 68.3, h_3 = 53.3$ $\rho_4 = 23.5$	0 - 4 4 - 16 16 - 69.3 69.3 +
500E	$\rho_1 = 3.8, h_1 = 5.2$ $\rho_2 = 38$	0 - 5.2 5.2 +
1000E	$\rho_1 = 14.8, h_1 = 6.6$ $\rho_2 = 7.4, h_2 = 3.3$ $\rho_3 = 14.1, h_3 = 30$ $\rho_4 = 94.5$	0 - 6.6 6.6 - 9.9 9.9 - 39.9 39.9 +
1500E	$\rho_1 = 5.1, h_1 = 5.8$ $\rho_2 = 12.8, h_2 = 63.8$ $\rho_3 = 177$	0 - 5.8 5.8 - 69.6 69.6 +
2000E	$\rho_1 = 8.2, h_1 = 6.25$ $\rho_2 = 12.3, h_2 = 6.25$ $\rho_3 = 33.6, h_3 = 58.5$ $\rho_4 = 106$	0 - 6.25 6.25 - 12.5 12.5 - 71 71+
2500E	$\rho_1 = 4.8, h_1 = 4.8$ $\rho_2 = 12, h_2 = 33.6$ $\rho_3 = 216$	0 - 4.8 4.8 - 38.4 38.4+
3000E	$\rho_1 = 10, h_1 = 5.2$ $\rho_2 = 25, h_2 = 27$ $\rho_3 = 410, h_3 = 28.8$ $\rho_4 = 120??$	0 - 5.2 5.2 - 32.2 32.2 - 61 61 +
3500E	$\rho_1 = 17.8, h_1 = 5.6$ $\rho_2 = 11.6, h_2 = 12.3$ $\rho_3 = 40.5, h_3 = 35$ $\rho_4 = 520$	0 - 5.6 5.6 - 17.9 17.9 - 52.9 52.9 +
4150E	$\rho_1 = 25, h_1 = 9.25$ $\rho_2 = 62.5, h_2 = 37$ $\rho_3 = 150$	0 - 9.25 9.25 - 46.75 46.75 +

750E	$\rho_1 = 16, h_1 = 2.5$ $\rho_2 = 8, h_2 = 9$ $\rho_3 = 31.5, h_3 = 65$ ρ_4 high	$0 - 2.5$ $2.5 - 11.5$ $11.5 - 76.5$ $76.5 +$
250E	$\rho_1 = 5, h_1 = 5$ $\rho_2 = 50, h_2 = 35$ $\rho_3 = 20.8, h_3 = 79$ $\rho_4 = 106$	$0 - 5$ $5 - 40$ $40 - 119$ $119 +$
00E	$\rho_1 = 14.5, h_1 = 5$ $\rho_2 = 123, h_2 = 15$ $\rho_3 = 25.6, h_3 = 25.2$ $\rho_4 = 161$	$0 - 5$ $5 - 20$ $20 - 45.2$ $45.2 +$
500E	$\rho_1 = 11, h_1 = 6$ $\rho_2 = 66, h_2 = 4.5$ $\rho_3 = 28.8, h_3 = 40$ $\rho_4 = 49$	$0 - 6$ $6 - 10.5$ $10.5 - 50.5$ $50.5 +$
1500E	$\rho_1 = 10.5, h_1 = 45$ $\rho_2 = 44.6, h_2 = 113$ $\rho_3 = ??$ may not exist Depth to basement = 45m probably	$0 - 45$ $45 - 158$
1250E	$\rho_1 = 21.5, h_1 = 3.2$ $\rho_2 = 10.8, h_2 = 48$ $\rho_3 = 45.9, h_3 = 138$ ρ_4	$0 - 3.2$ $3.2 - 51.2$ $51.2 - 190$ $190 +$
1000E	$\rho_1 = 4.7, h_1 = 7$ $\rho_2 = 16.5, h_2 = 42$ $\rho_3 = ??$	$0 - 7$ $7 - 49$
1820E	$\rho_1 = 2.7, h_1 = 4.2$ $\rho_2 = 13.5, h_2 = 42$ $\rho_3 = 165?$	$0 - 4.2$ $4.2 - 46.2$ $46.2 +$
2500E	$\rho_1 = 5.4, h_1 = 3.5$ $\rho_2 = 27.0, h_2 = 31.5$ $\rho_3 = 420$	$0 - 3.5$ $3.5 - 35$ $35 +$
2250E	$\rho_1 = 4.7, h_1 = 5.2$ $\rho_2 = 14.1, h_2 = 15.6$ $\rho_3 = 400$	$0 - 5.2$ $5.2 - 20.8$ $20.8 +$
2000E	$\rho_1 = 8.5, h_1 = 5.5$ $\rho_2 = 6.8, h_2 = 9.6$ $\rho_3 = 14.2, h_3 = 27.1$ $\rho_4 = 440$	

0110

APPENDIX II

UNDRAUGHTED SOUNDING CURVES

$$\rho_1 = 18$$

$$h_1 = 3.2$$

$$\rho_2 = 0.4 \times 18$$

$$= 7.2$$

$$h_2 = 5.5 \times 3.2$$

$$= 17.6$$

$$\rho_3 = 4.25 \times 8$$

$$= 34$$

$$h_3 = 2.5 \times 22$$

$$= 55$$

$$\rho_p = 1.25 \times 8$$

$$= 10$$

0111

RESISTIVITY SOUNDING

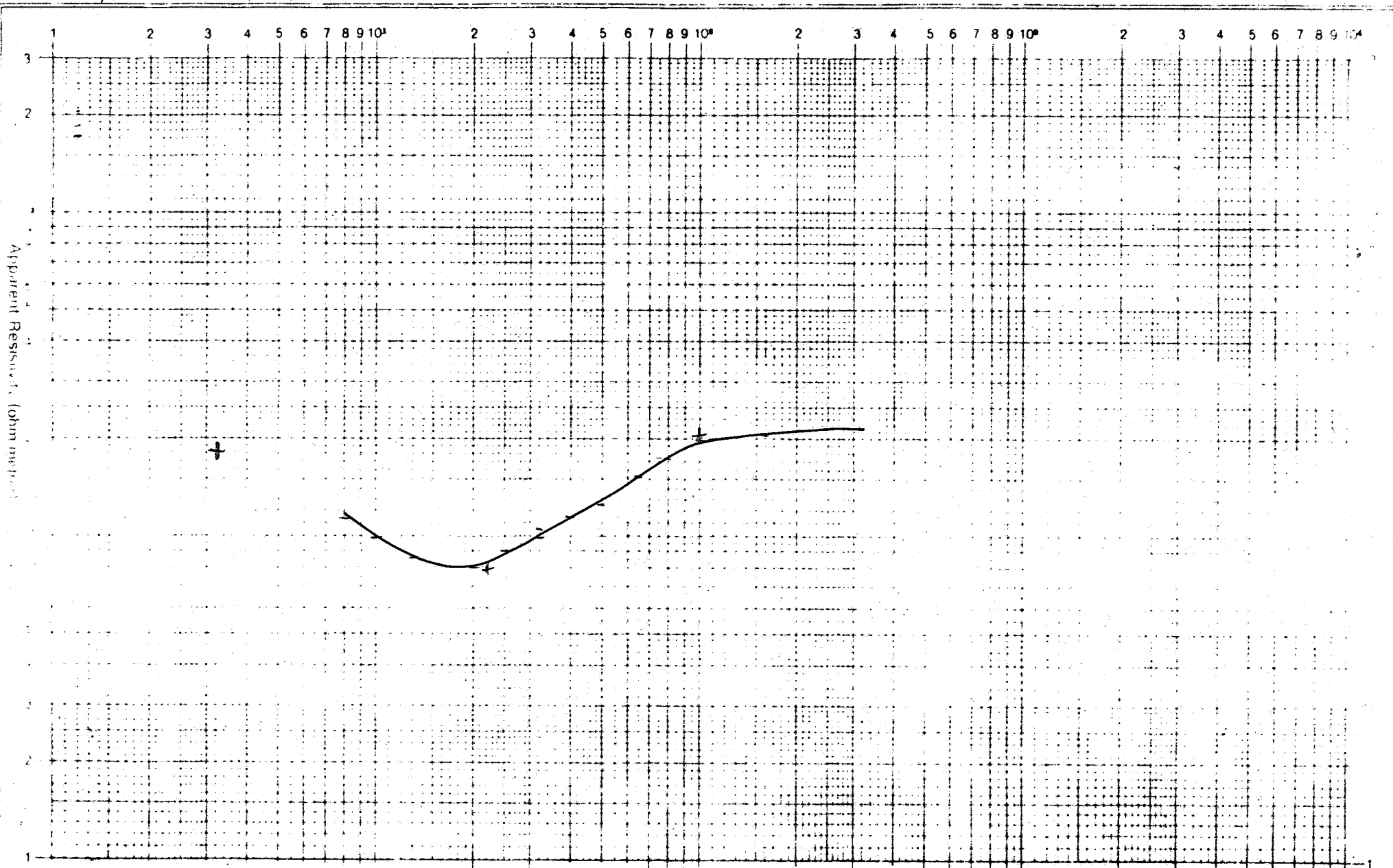
CLIENT: AUSEL

AREA: Atto BULNA

LINE: 60m COURSE
20 STATION: 00E

Plate _____

Report _____



$\rho_1 = 100$
 $h_1 = 3.1$

$\rho_2 = 0.3 \times 100$
 $= 33.3$
 $h_2 = 9 \times 3.1$
 $= 27.9$

$\rho_3 = 3.5 \times 32$
 $= 112$

0112

RESISTIVITY SOUNDING

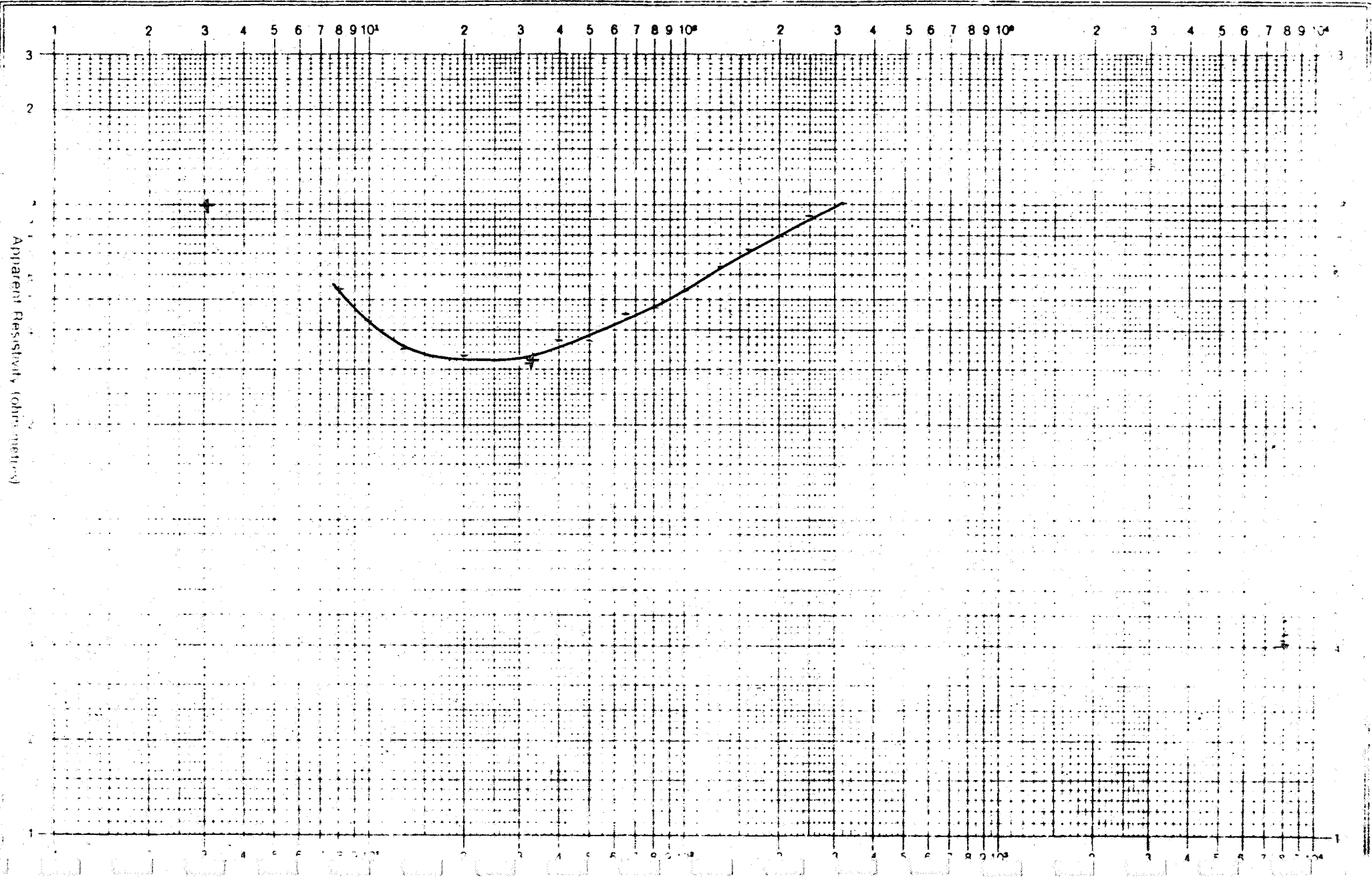
CLIENT: *DUSELEX*

AREA: *BOARH*

GOLF COURSE
LINE: *R7* STATION: *5050*

Plate _____

Report _____



$$\rho_1 = 51$$

$$h_1 = 6.25$$

$$\rho_2 = 0.85 \times 51$$

$$= 2.6$$

$$h_2 = 0.55 \times 6.25$$

$$= 3.4$$

$$\rho_3 = 3.5 \times 4$$

$$= 14$$

$$h_3 = 4 \times 10$$

$$= 40$$

$$\rho_3 = 30 \times 0.15$$

$$= 4.5$$

$$= \text{approx}$$

0113

Plate _____

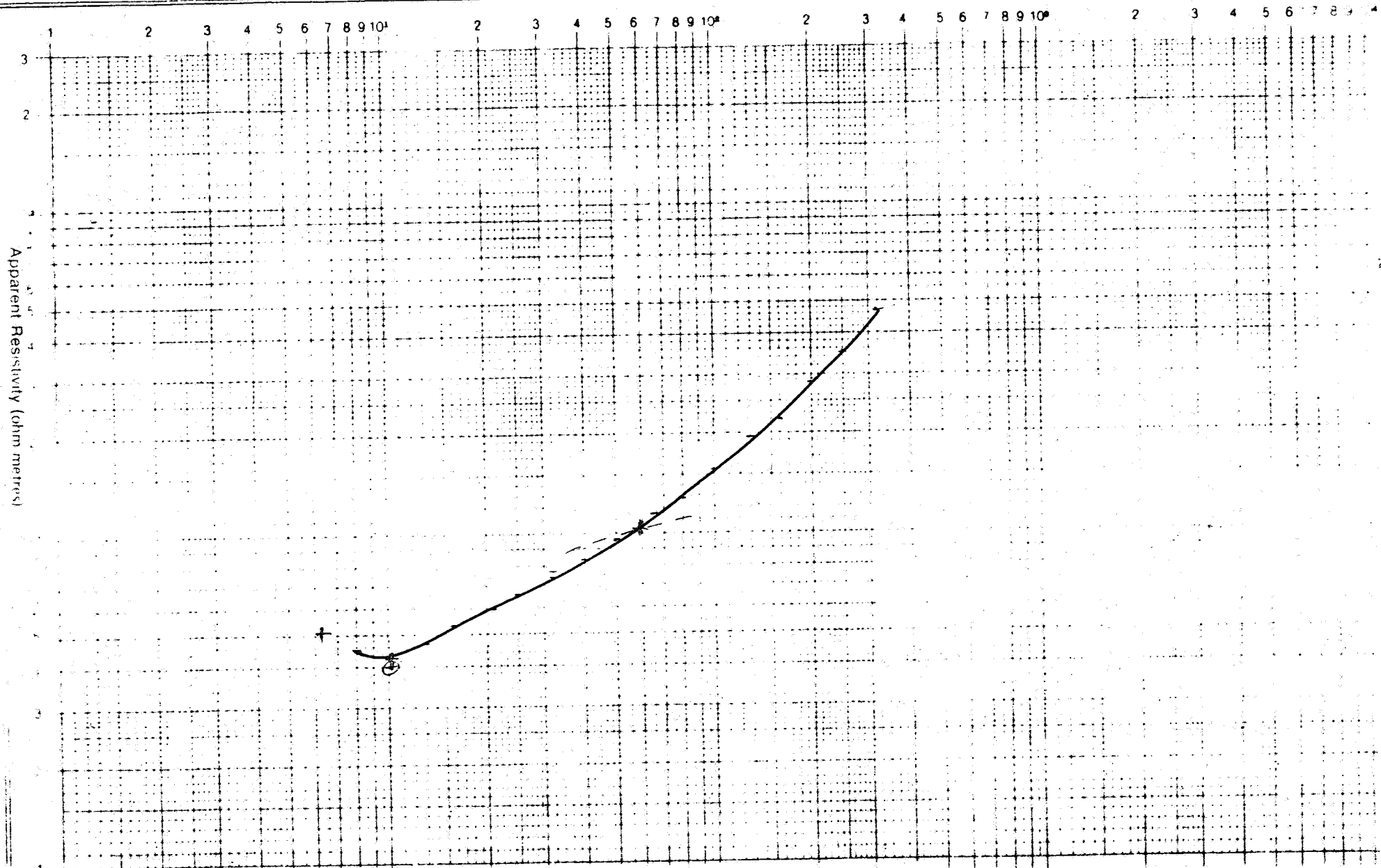
Report _____

RESISTIVITY SOUNDING

CLIENT: *ALCOA*

AREA: *A*

LINE: *GOLF COURSE*
ROAD STATION *450*



RESISTIVITY SOUNDING

CLIENT: *AUSELEX*

AREA: *BURRA*

LINE: *R.D.* STATION *1150E*

Plate _____

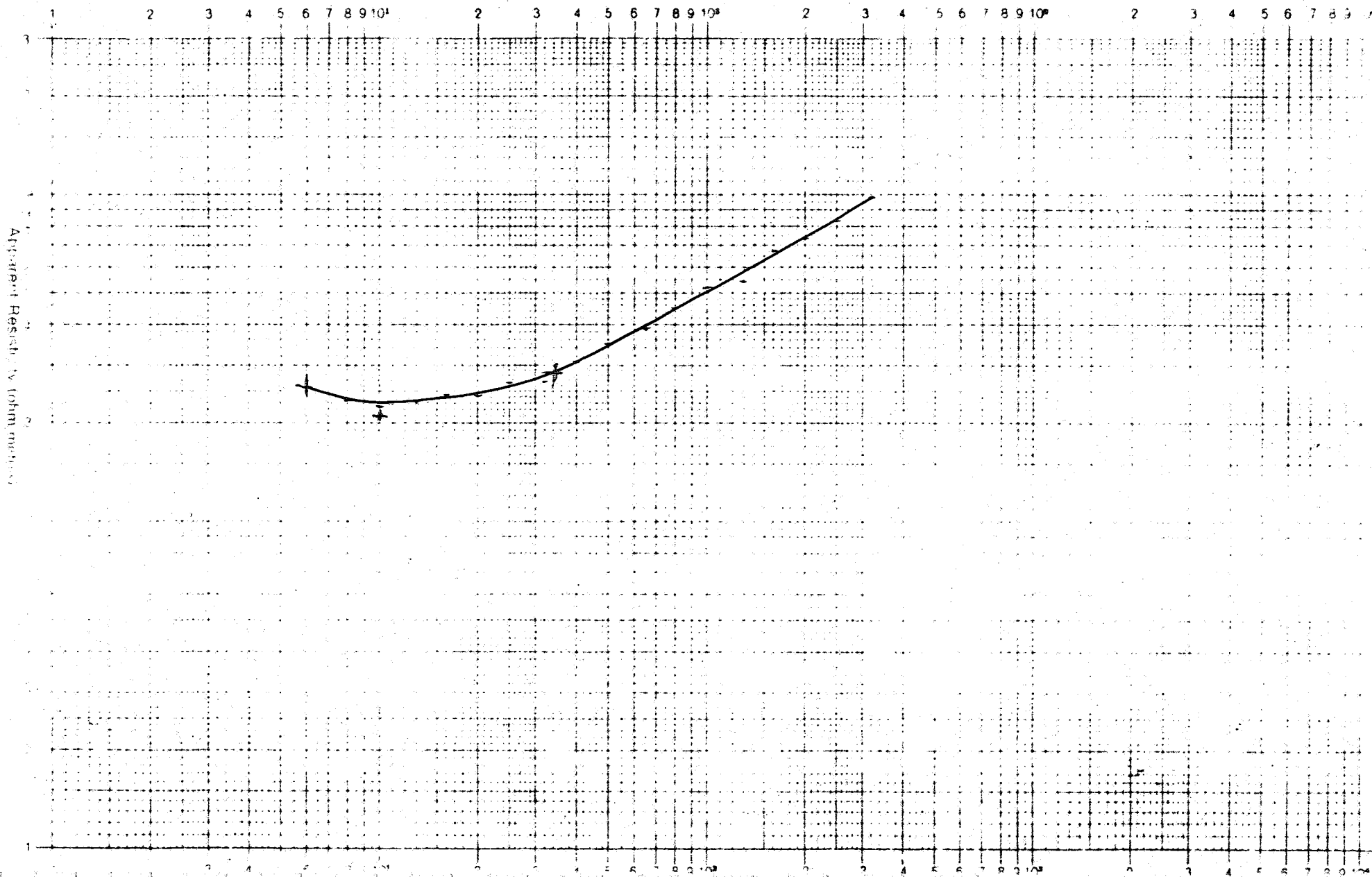
Report _____

$$\begin{aligned} \rho_1 &= 20 \\ h_1 &= 6 \\ \rho_2 &= 0.65 \times 26 \\ &= 16.9 \\ h_2 &= 0.6 \times 6 \\ &= 3.6 \end{aligned}$$

$$\begin{aligned} \rho_3 &= 36.8 \\ h_3 &= 2 \times 10 \\ &= 20 \end{aligned}$$

0114

GOLF COURSE



RESISTIVITY SOUNDING

CLIENT: *AUSELEY*

AREA: *BURRA*

LINE: *ROW 7* STATION: *00E*

Plate _____

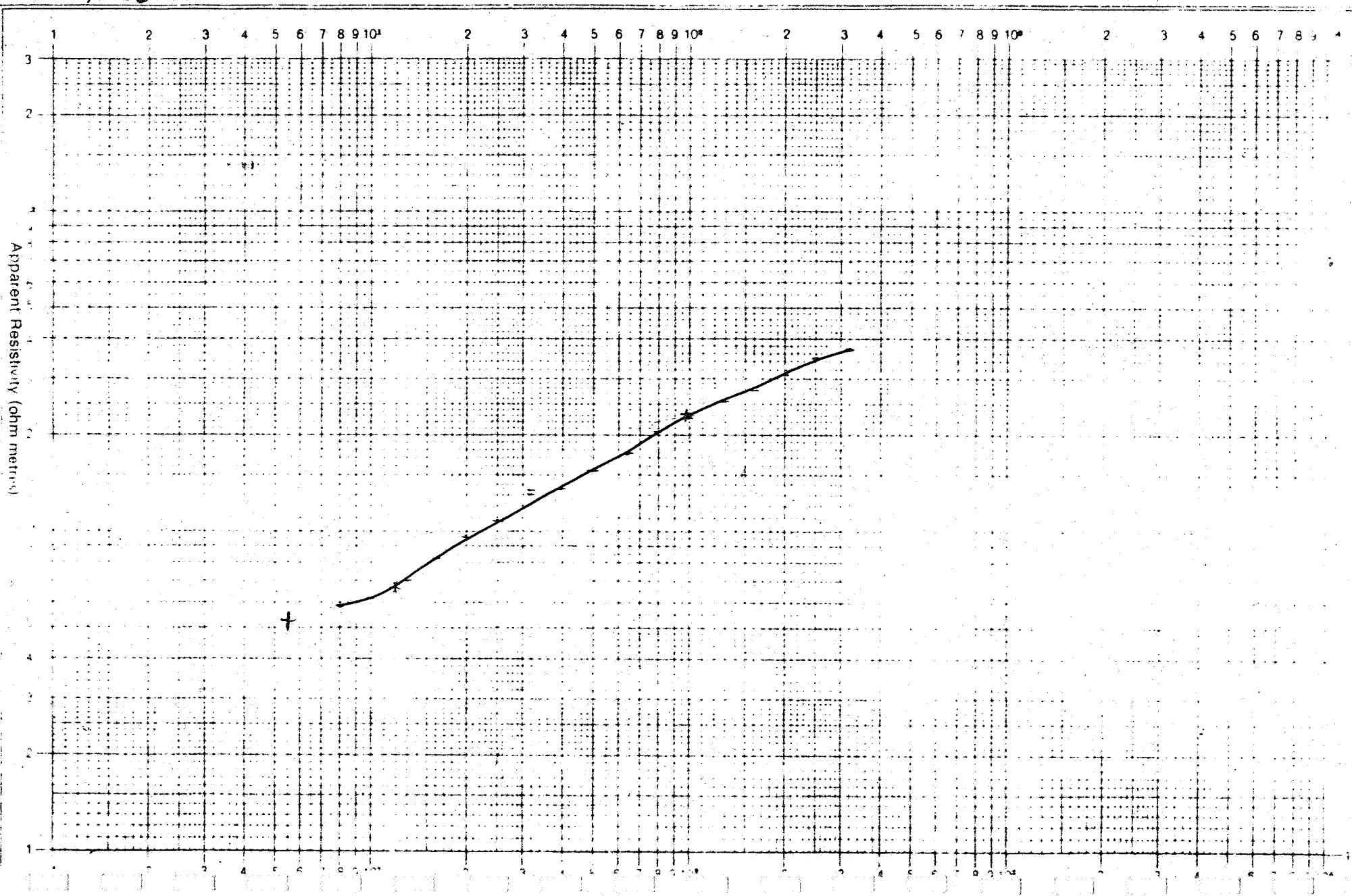
Report _____

$$\begin{aligned} \rho_1 &= 5.25 \\ h_1 &= 5.5 \\ \rho_2 &= 1.75 \times 5.25 \\ &= 9.2 \\ h_2 &= 1 \times 5.5 \\ &= 5.5 \end{aligned}$$

$$\begin{aligned} \rho_3 &= 4.25 \times 6.6 \\ &= 28.1 \\ h_3 &= 6.2 \times 12 \\ &= 74.4 \\ \rho_4 &= 2.5 \times 23 \\ &= 57.5 \end{aligned}$$

0115

RACE COURSE



RESISTIVITY SOUNDING

CLIENT: AVSELEX

AREA: BURKH

LINE: ROAD STATION: 1108

0116

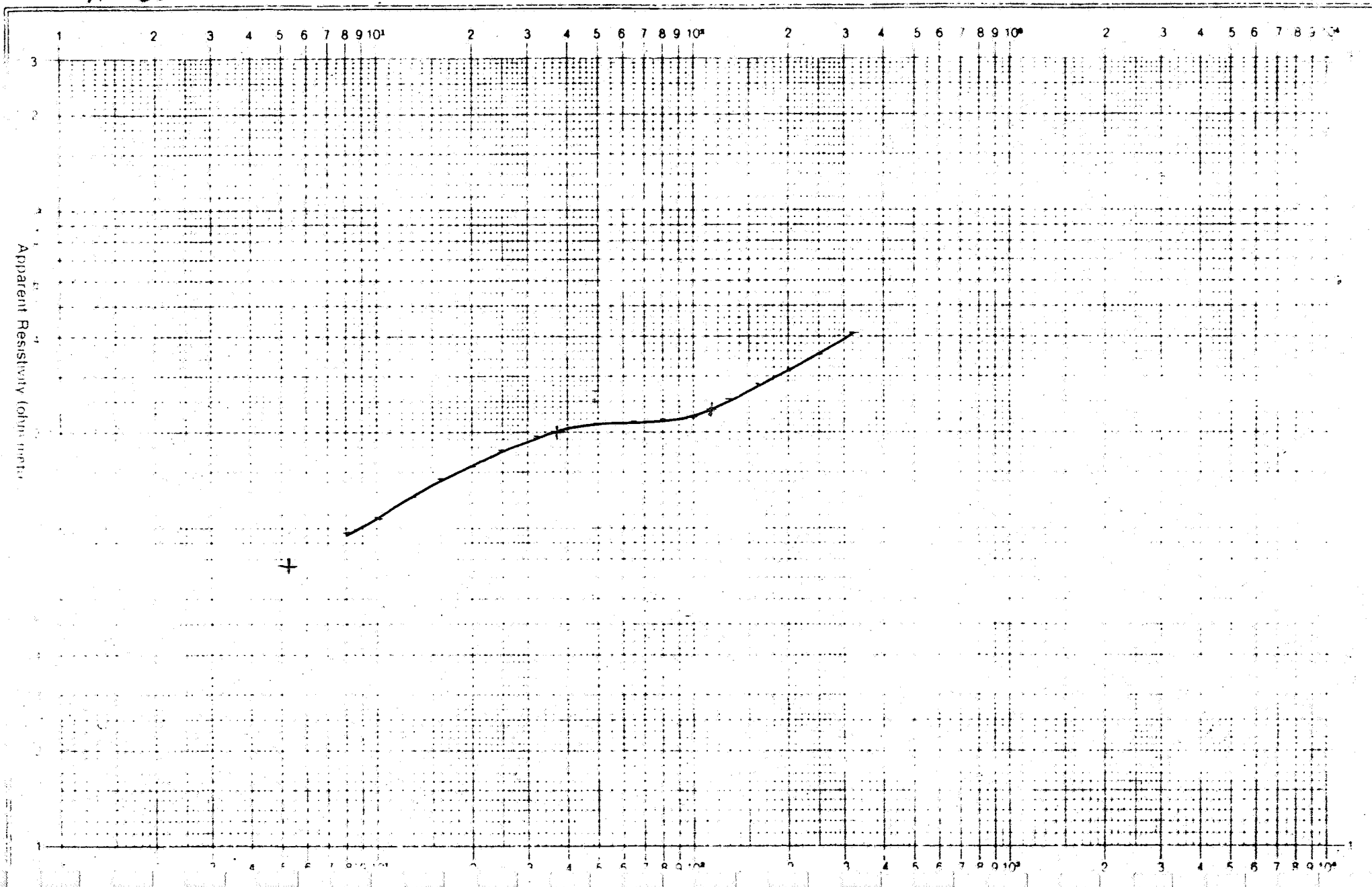
Plate _____

Report _____

$\rho_1 = 7.6$
 $h_1 = 5.25$
 $\rho_2 = 35 \times 7.6$
 $= 266$
 $h_2 = 5 \times 5.25$
 $= 26.3$
 $\rho_3 = 1.15 \times 20$
 $= 23$
 $h_3 = 2 \times 37$
 $= 74$
 $\rho_4 = 5 \times 20$
 $= 100$

RACE COURSE

Apparent Resistivity (ohm meter)



$$\rho_1 = 15.2$$

$$h_1 = 6.75$$

$$\rho_2 = 1.75 \times 15.2$$

$$= 26.6$$

$$h_2 = 2 \times 6.75$$

$$= 13.5$$

$$\rho_3 = 1.75 \times 20$$

$$= 25$$

$$h_3 = 3 \times 2.5$$

$$= 64.5$$

$$\rho_4 = 2.5 \times 24$$

$$= 60$$

0117

RESISTIVITY SOUNDING

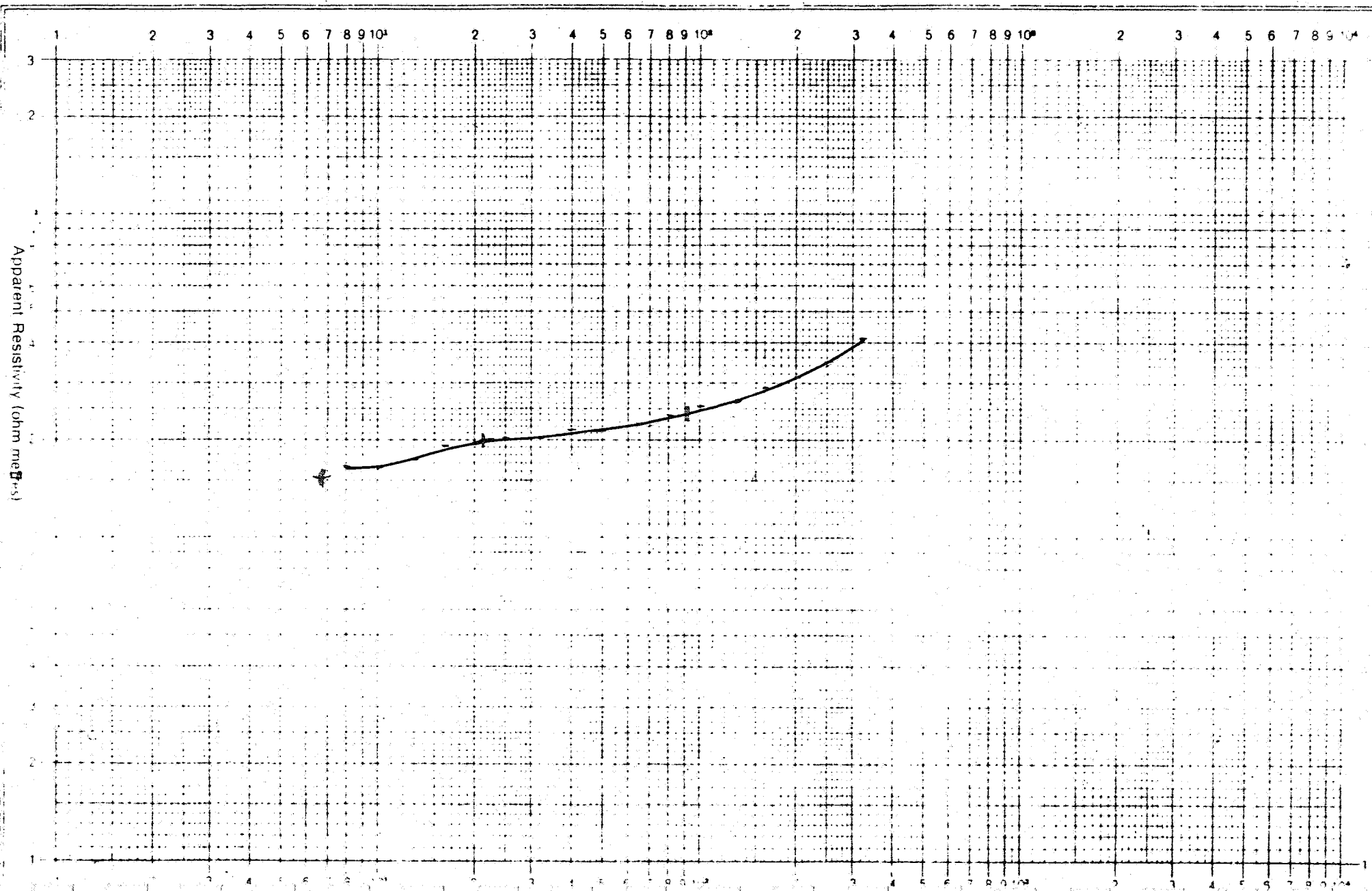
CLIENT: *AUSELER*

AREA: *BURAH*

TRACE COURSE
LINE ROAD STATION: *200E*

Plate _____

Report _____



$$\rho_1 = 28$$

$$h_1 = 4.5$$

$$\rho_2 = 0.65 \times 28$$

$$= 18.2$$

$$h_2 = 2 \times 4.5$$

$$= 9$$

$$\rho_3 = 1.5 \times 21$$

$$= 31.5$$

$$h_3 = 0.5 \times 13.8$$

$$= 6.9$$

$$\rho_4 = 0.25 \times 24$$

$$= 15.6$$

$$h_4 = 1.5 \times 23$$

$$= 34.5$$

$$\rho_5 = 4.25 \times 18$$

$$= 76.5$$

$$= 76.5$$

0118

RESISTIVITY SOUNDING

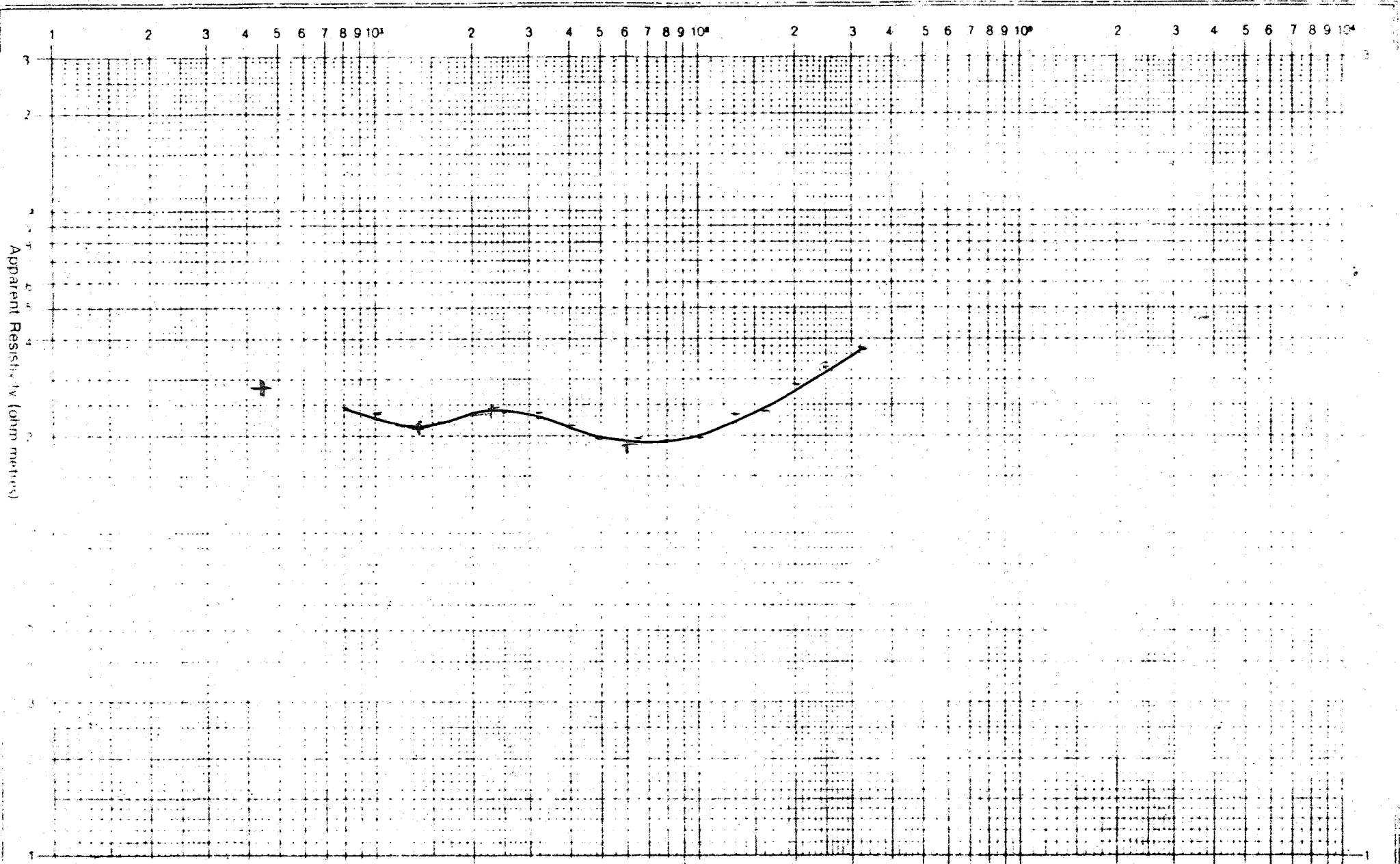
CLIENT: *AUSLEX*

AREA: *BURRA*

RACE COURSE
LINE: *ROAD* STATION: *3005*

Plate _____

Report _____



$$\rho_1 = 26.5$$

$$h_1 = 3.5$$

$$\rho_2 = 0.5 \times 20$$

$$= 10$$

$$h_2 = 8 \times 3.5$$

$$= 28$$

$$\rho_3 = 2.5 \times 10$$

$$= 25$$

$$h_3 = 3.5 \times 33$$

$$= 115.5$$

$\rho_4 = \text{high}$

0119

RESISTIVITY SOUNDING

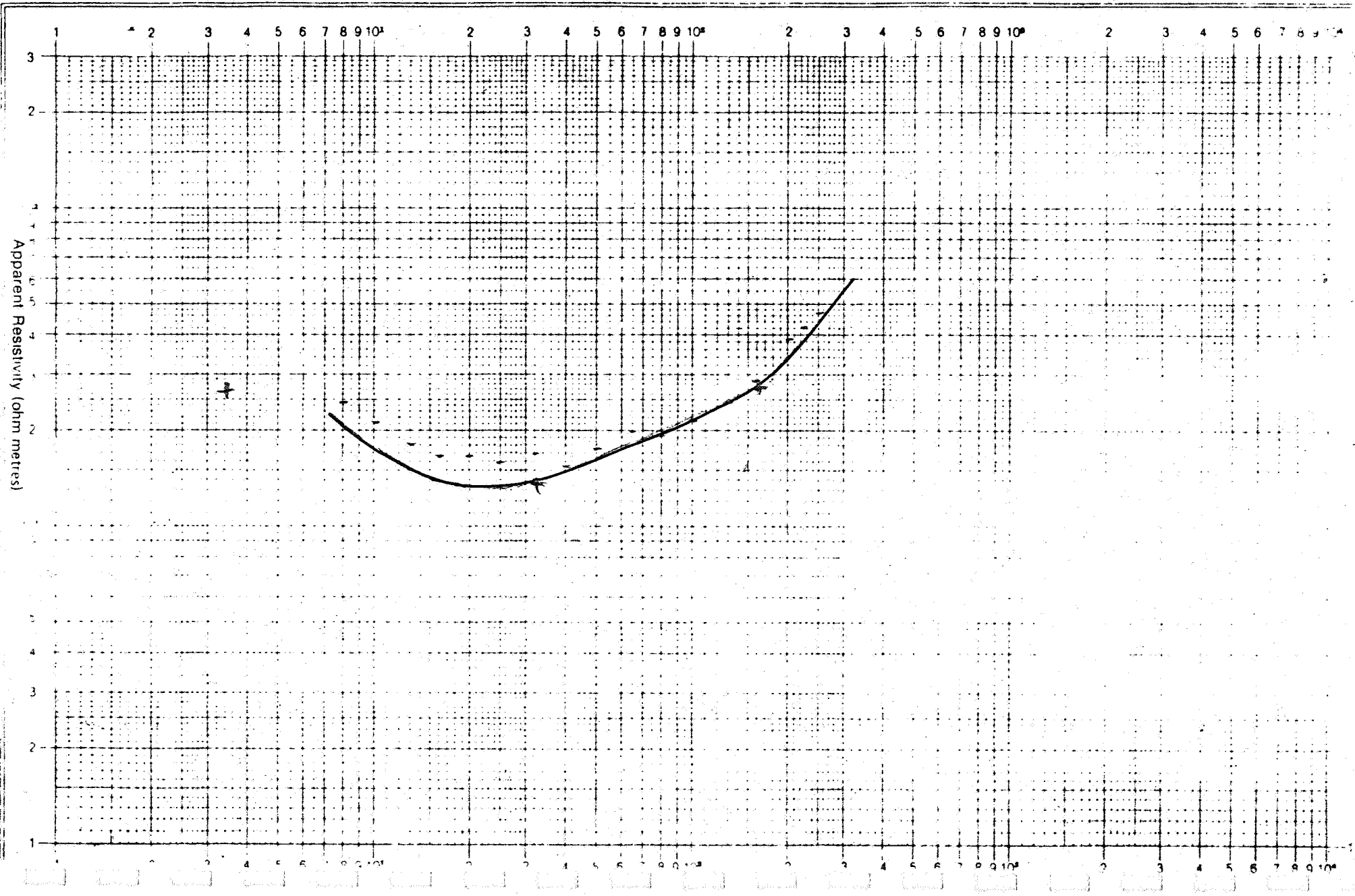
CLIENT: AUSELEX

AREA: BURIN

ROUTE COURSE
LINE: ROAD STATION: 400E

Plate _____

Report _____



$$\rho_1 = 11$$

$$h_1 = 14.2$$

$$\rho_2 = 27$$

$$= 22$$

$$h_2 = 4 \times 14.2$$

$$= 56.8$$

$$\rho_3 = 40 \times 17.5$$

$$= 700$$

0120

RESISTIVITY SOUNDING

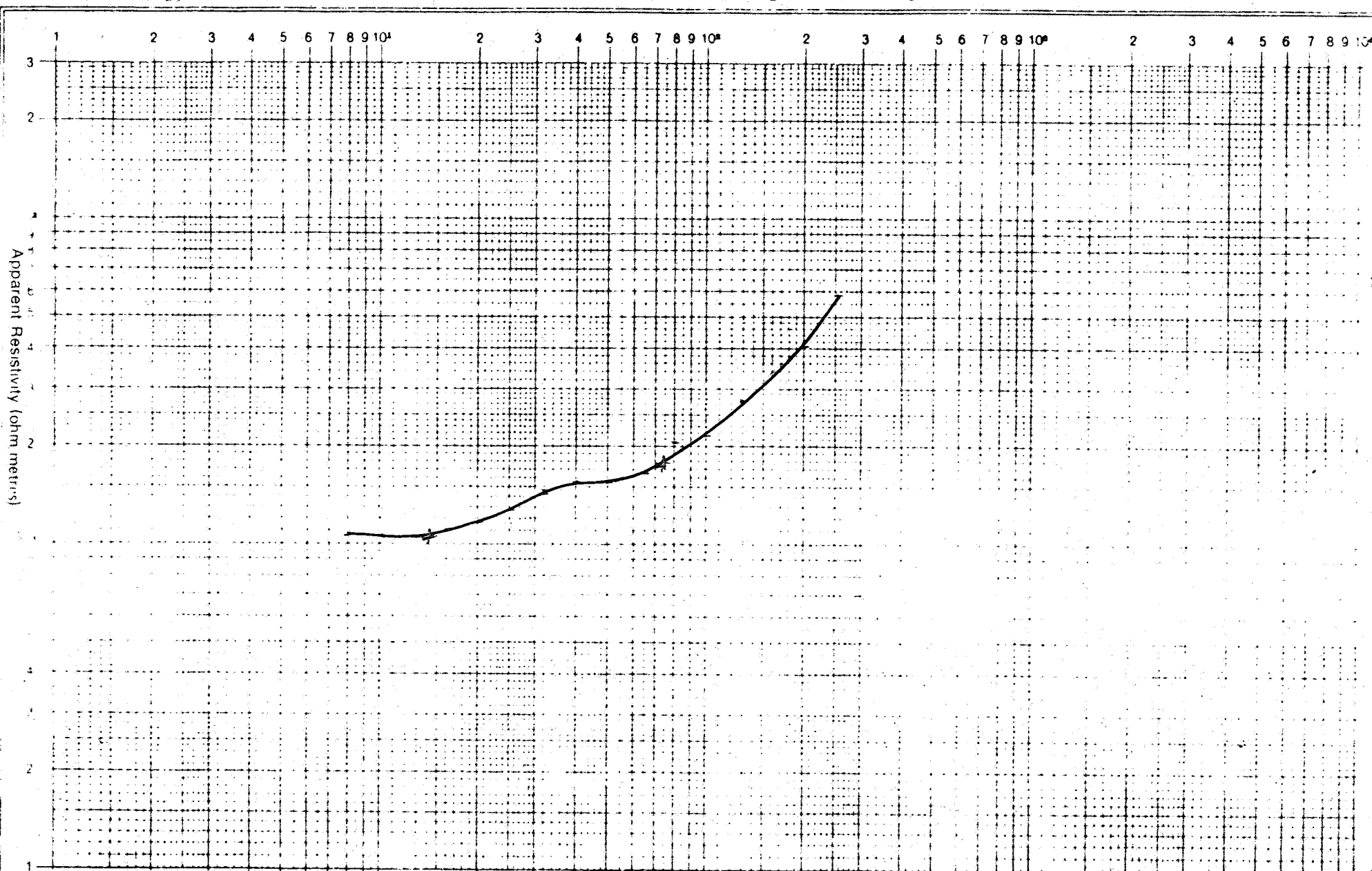
CLIENT: *AUSELEX*

AREA: *BURRA*

RACE COURSE
LINE: *ROAD* STATION: *500 E*

Plate _____

Report _____



ADP-R-X 011 1

$$\rho_1 = 7.6$$

$$\rho_2 = 6.75$$

$$\rho_2 = 2.5 \times 7.6$$

$$= 19$$

$$\rho_2 = 6.5 \times 6.75$$

$$= 43.9$$

$$\rho_3 = 4.25 \times$$

$$= 72.3$$

RAIL COURSE

0121

Plate _____

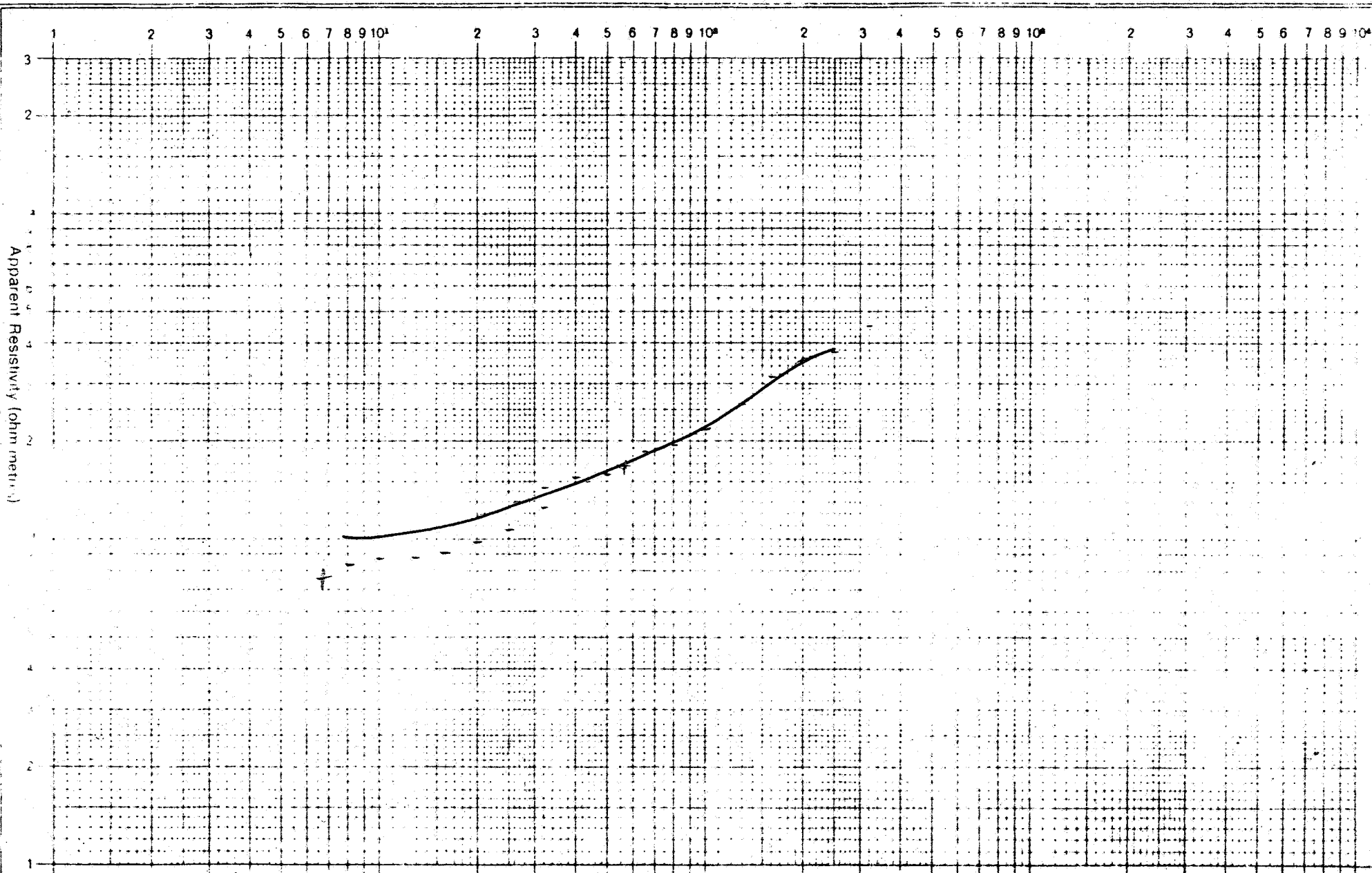
RESISTIVITY SOUNDING

CLIENT: *PUSSEY*

AREA: *BURRA*

LINE: *ROAD* STATION: *600E*

Report _____



$$\rho_1 = 18$$

$$h_1 = 5.75$$

$$\rho_2 = 0.8 \times 18$$

$$= 14.4$$

$$h_2 = 3 \times 5.75$$

$$= 17.25$$

$$\rho_3 = 3 \times 18$$

$$= 54$$

RESISTIVITY SOUNDING

CLIENT: AUSELEY

AREA: PURRA

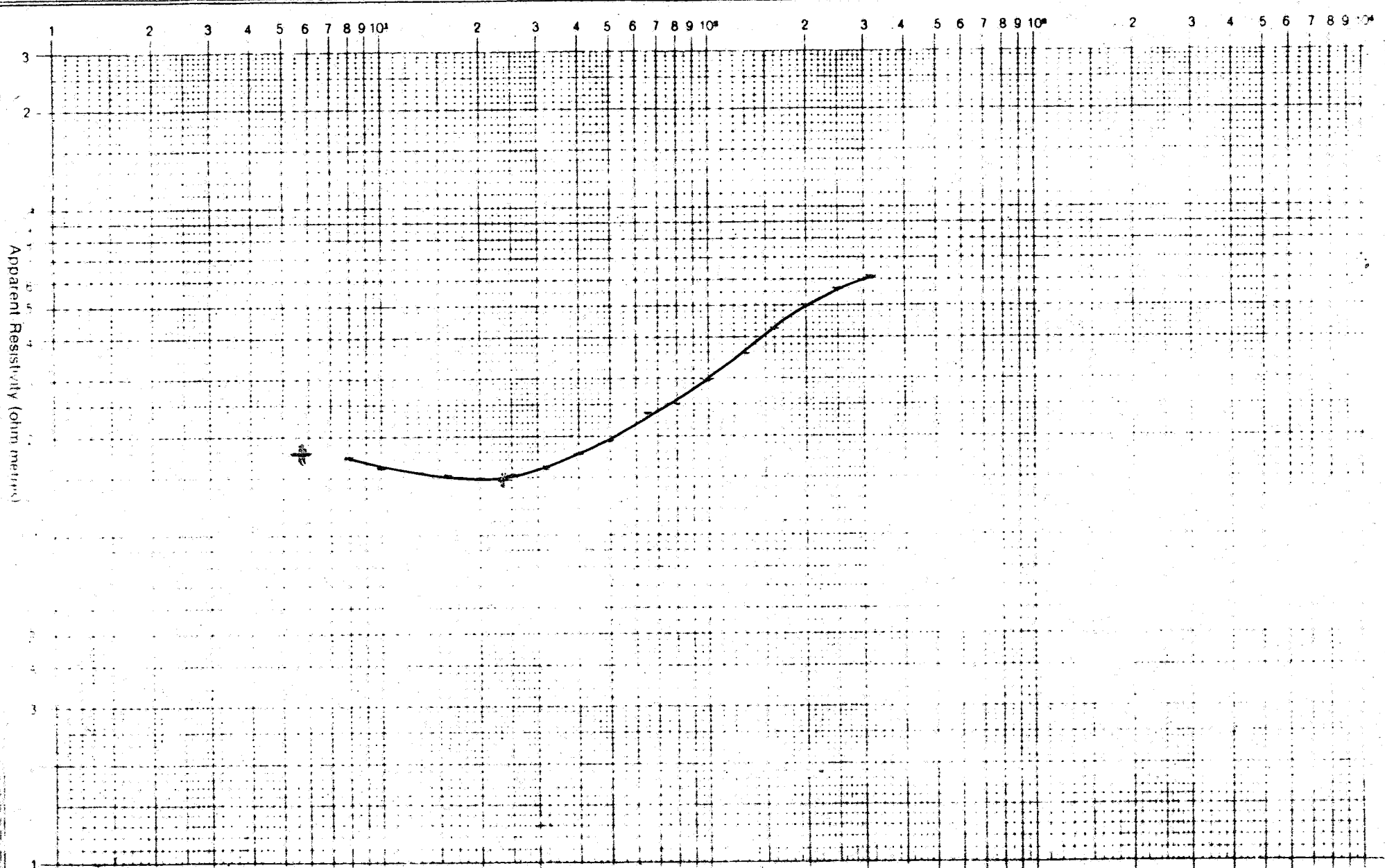
SPRINGTIDE

LINE: ROAD STATION: 650W

0122

Plate _____

Report _____



$$\rho_1 = 19.5$$

$$h_1 = 36$$

$$\rho_2 = 0.5 \times 19.5 = 9.8$$

$$h_2 = 25 \times 3.6 = 9$$

$$\rho_3 = 0.5 \times 10.5 = 5.25$$

$$h_3 = 0.75 \times 13 = 9.8$$

$$\rho_4 = 0.65 \times 10 = 6.5$$

$$h_4 = 0.5 \times 33 = 16.5$$

$$\rho_5 = 3 \times 17 = 51$$

RESISTIVITY SOUNDING

CLIENT: AUSELEY

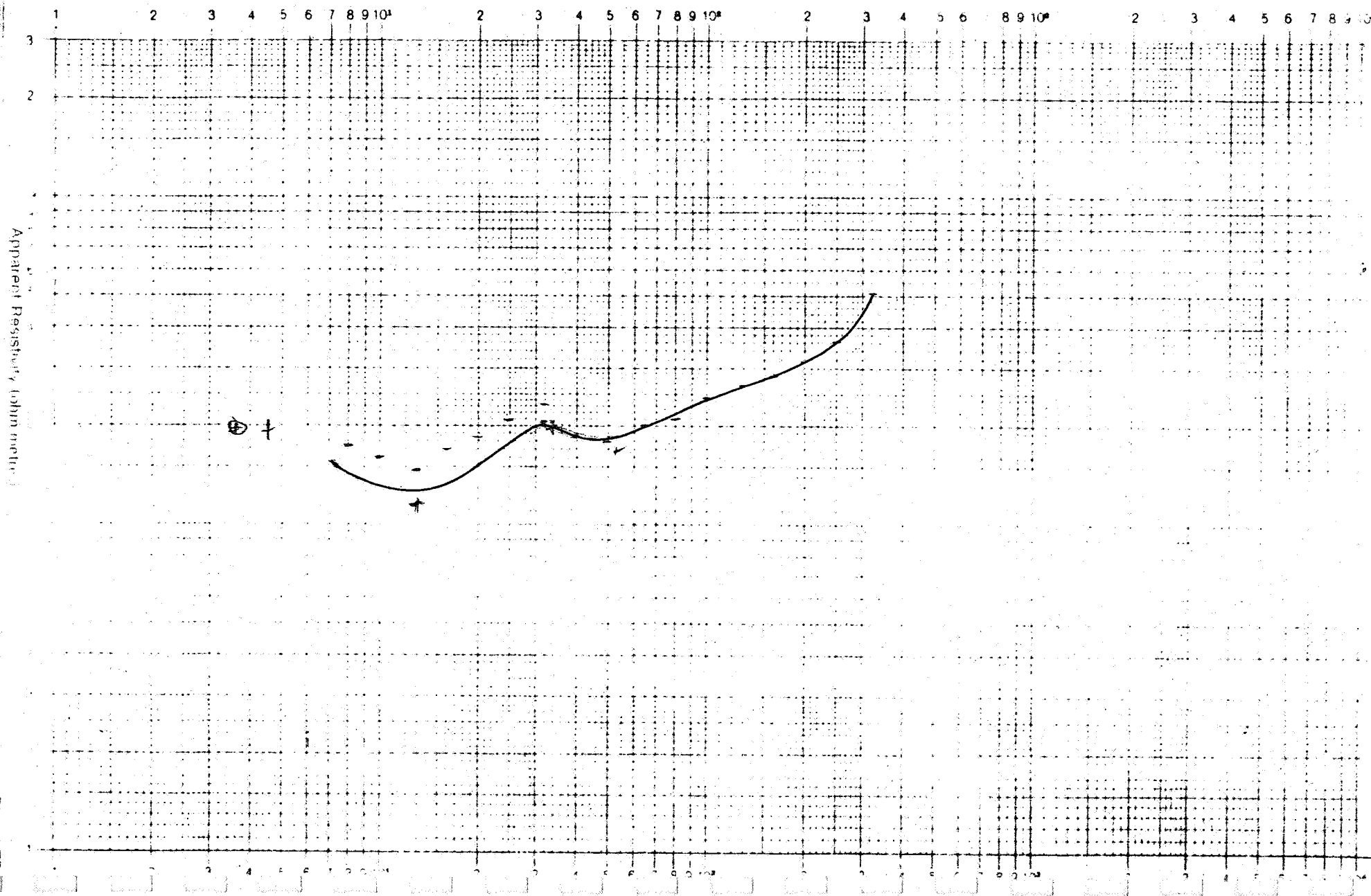
AREA: BURRA

SPRINGVALE
LINE ROAD STATION 105-061

0123

Plate _____

Report _____



$$\rho_1 = 8.4$$

$$h_1 = 5.75$$

$$\rho_2 = 2.5 \times 10^4$$

$$h_2 = 3.5 \times 5.75$$

$$= 20.1$$

$$\rho_3 = 0.8 \times 10^4$$

$$h_3 = 0.6 \times 10^4$$

$$= 19.2$$

$$\rho_4 = 3 \times 10^4$$

$$= 45$$

0124

RESISTIVITY SOUNDING

CLIENT: *ANSELEX*

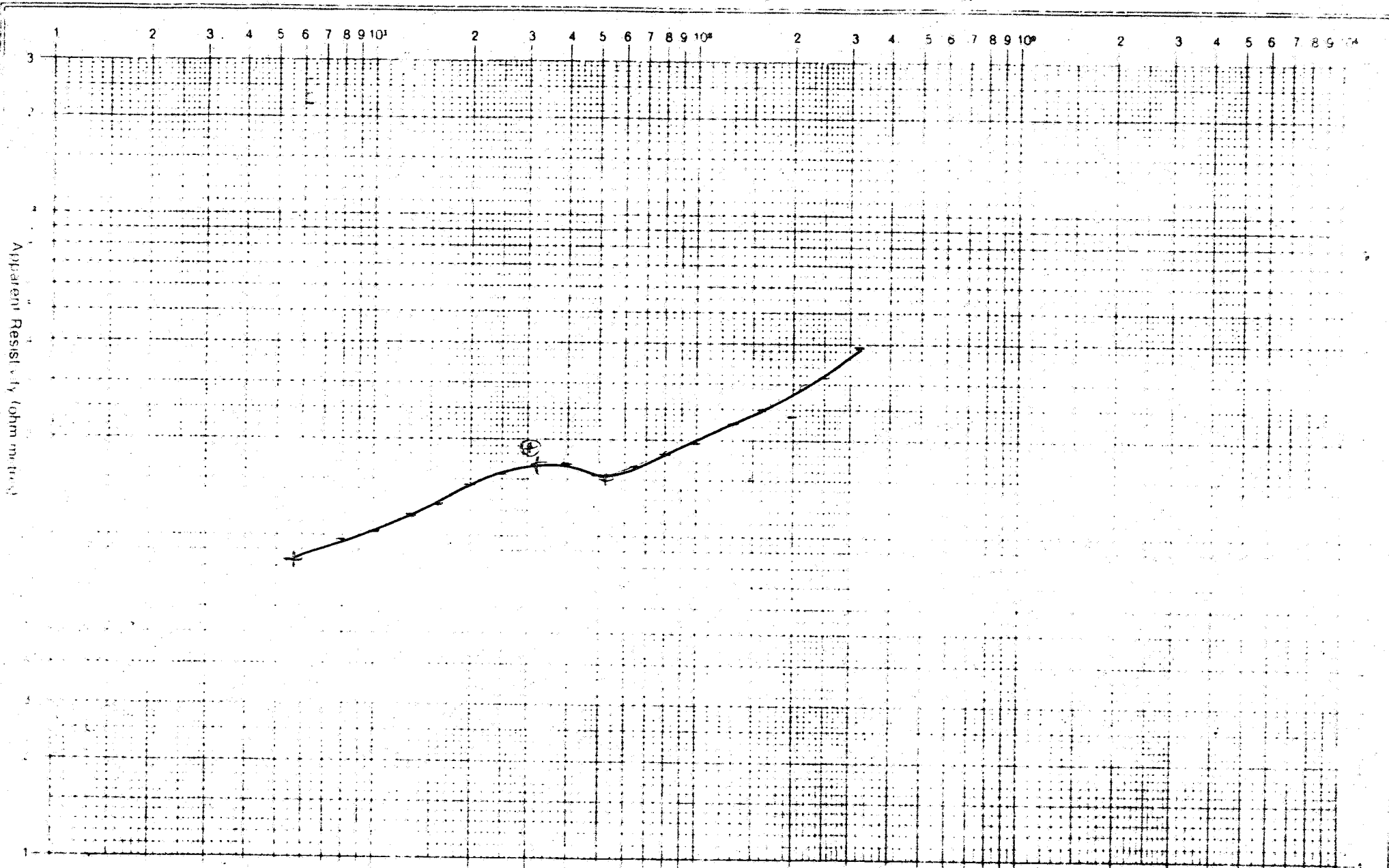
AREA: *BURRA*

SPRINGVALE

LINE *ROAD* STATION: *1100W*

Plate _____

Report _____



RESISTIVITY SOUNDING

0125

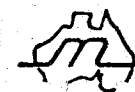
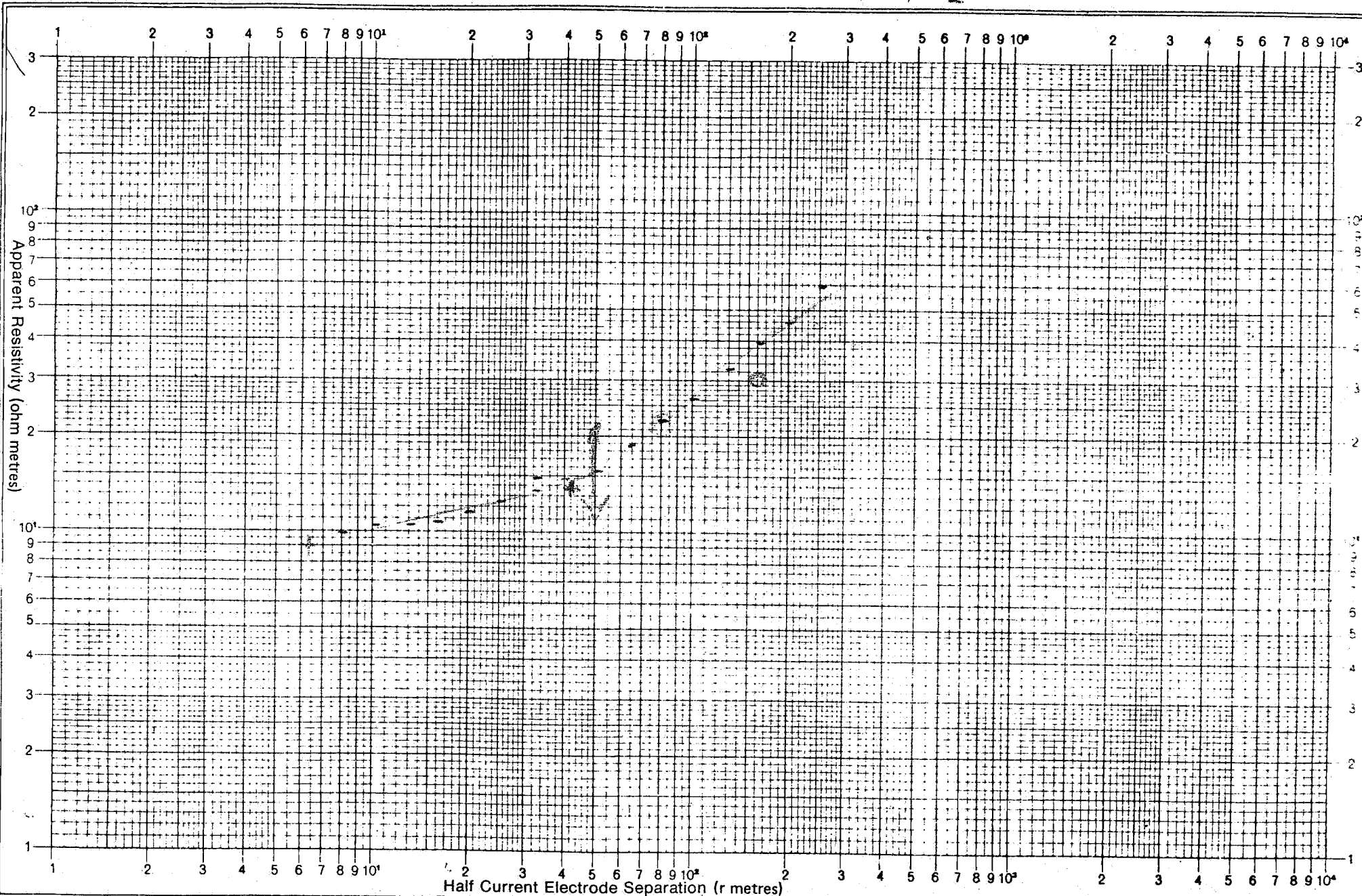
Plate _____

CLIENT: *A USELEY*

AREA: *BURKA*

LINE: *3800 N* STATION: *4400 E*

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

0126

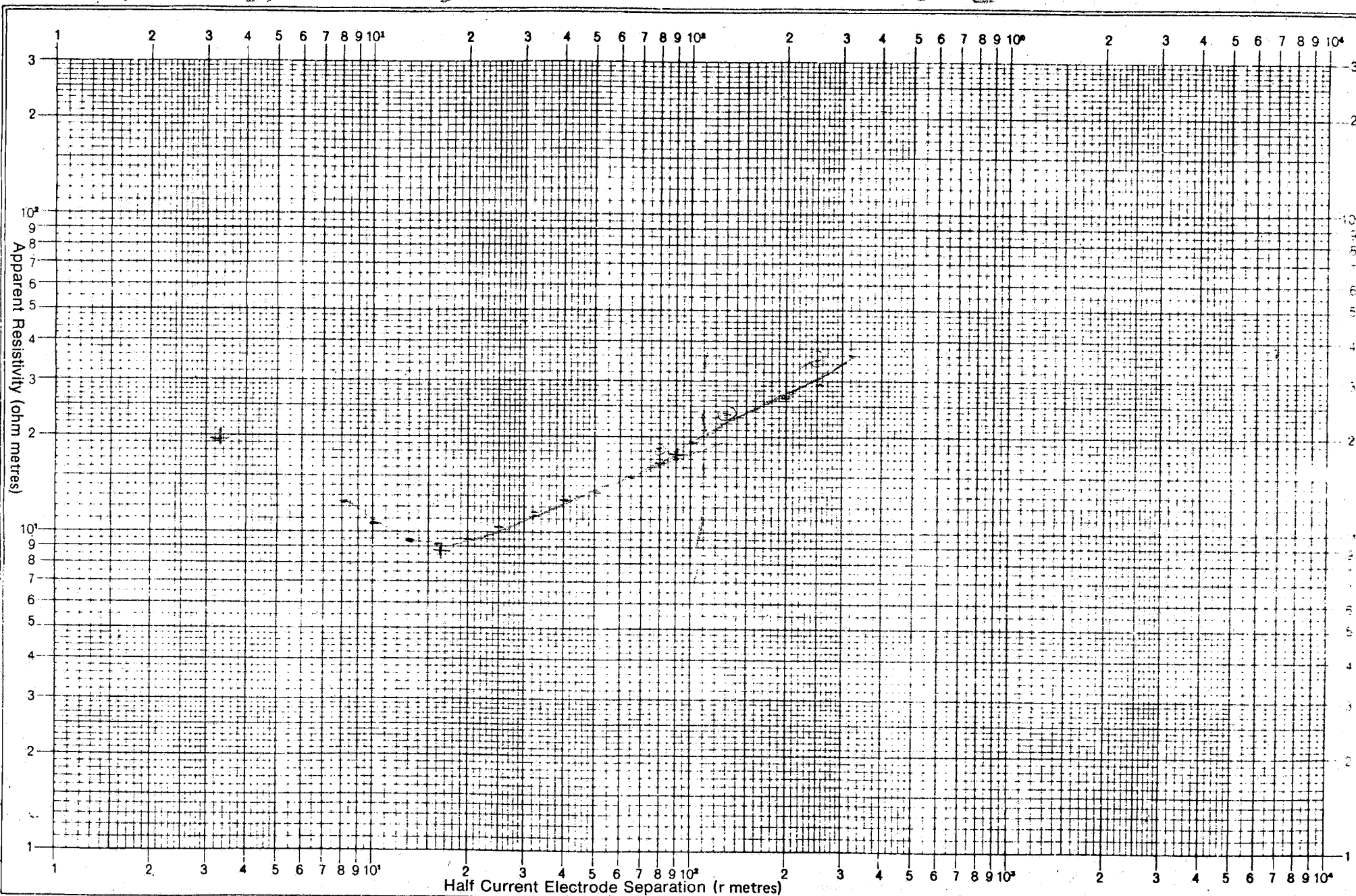
Plate _____

CLIENT: *AUSELEY*

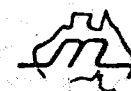
AREA: *BURRA*

LINE: *3800N* STATION: *4500 E*

Report _____



3.5
3.3
19.5
7.8
4x3.3
2.9
2.5x0.75
21.9
1x10.5
66
3.5x17.5
61.5



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

0127

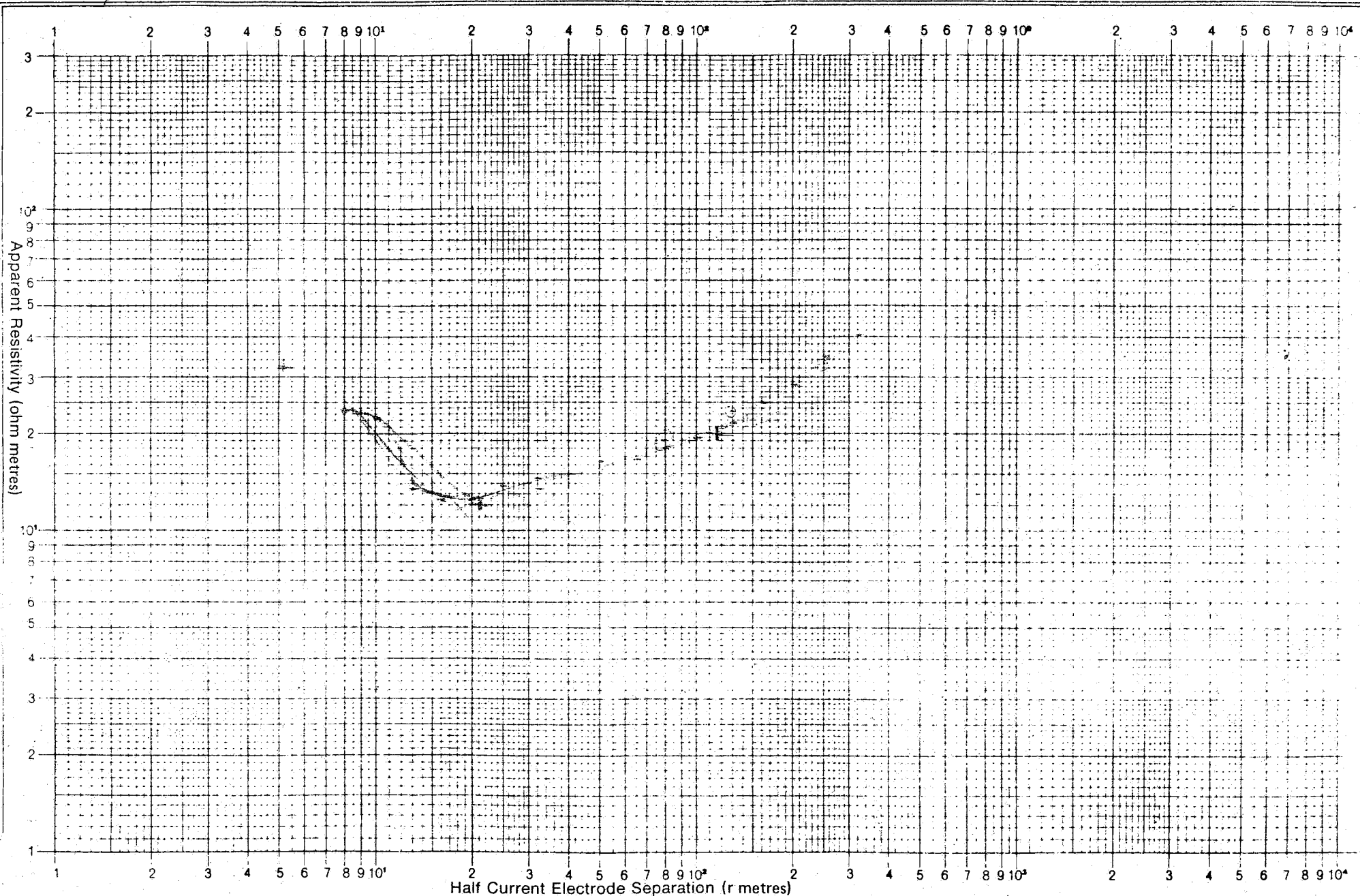
Plate _____

CLIENT: *PURELEX*

AREA: *10500*

LINE: *3800A* STATION: *4600E*

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *AUSELEY*

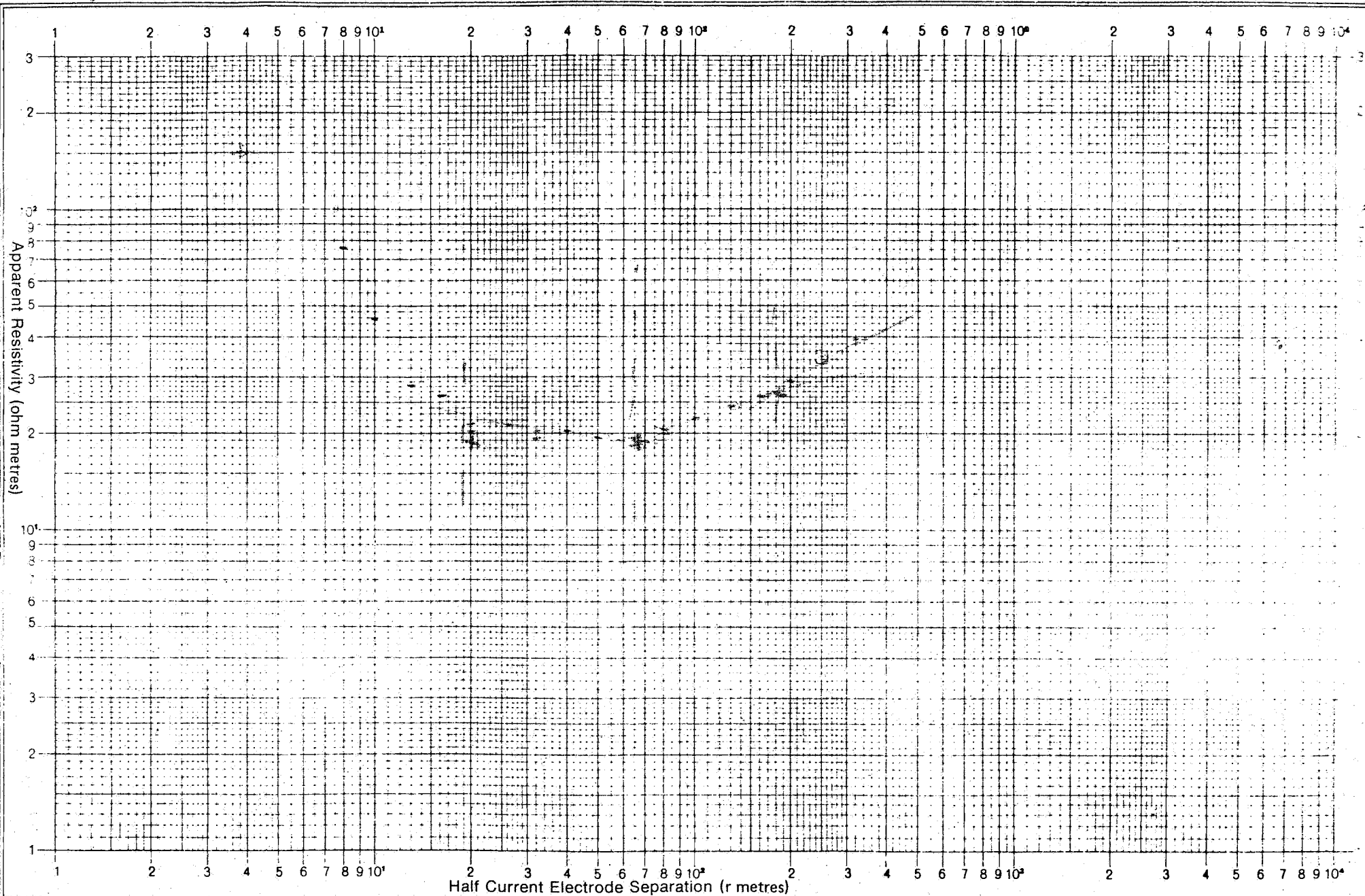
AREA: *BUARA 0128*

LINE: *3800*

STATION: *4700E*

Plate _____

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT:

0129

AREA:

0129

LINE:

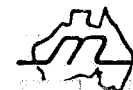
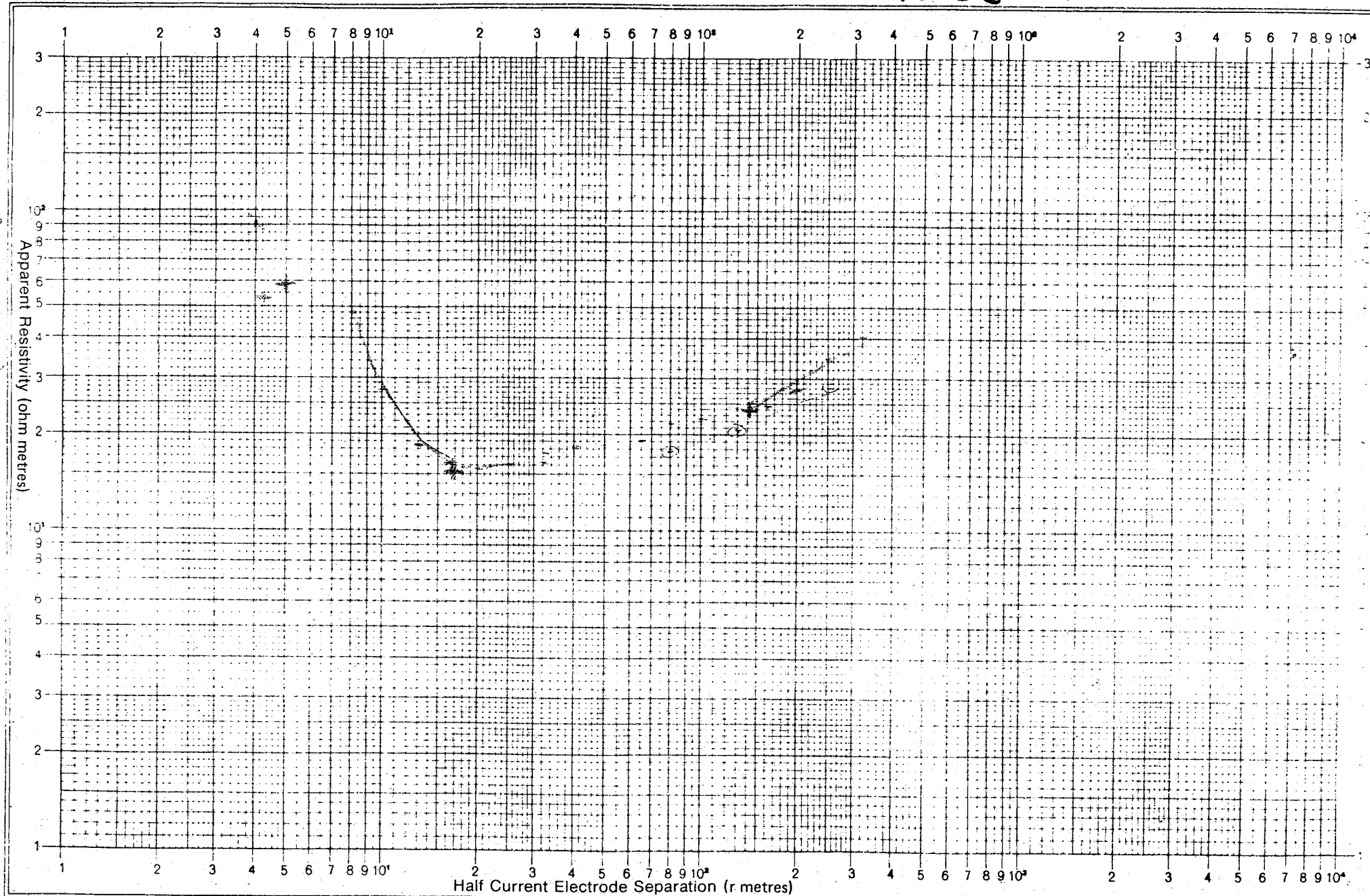
3800N

STATION:

4800E

Report

Plate



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *POSELON*

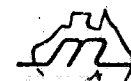
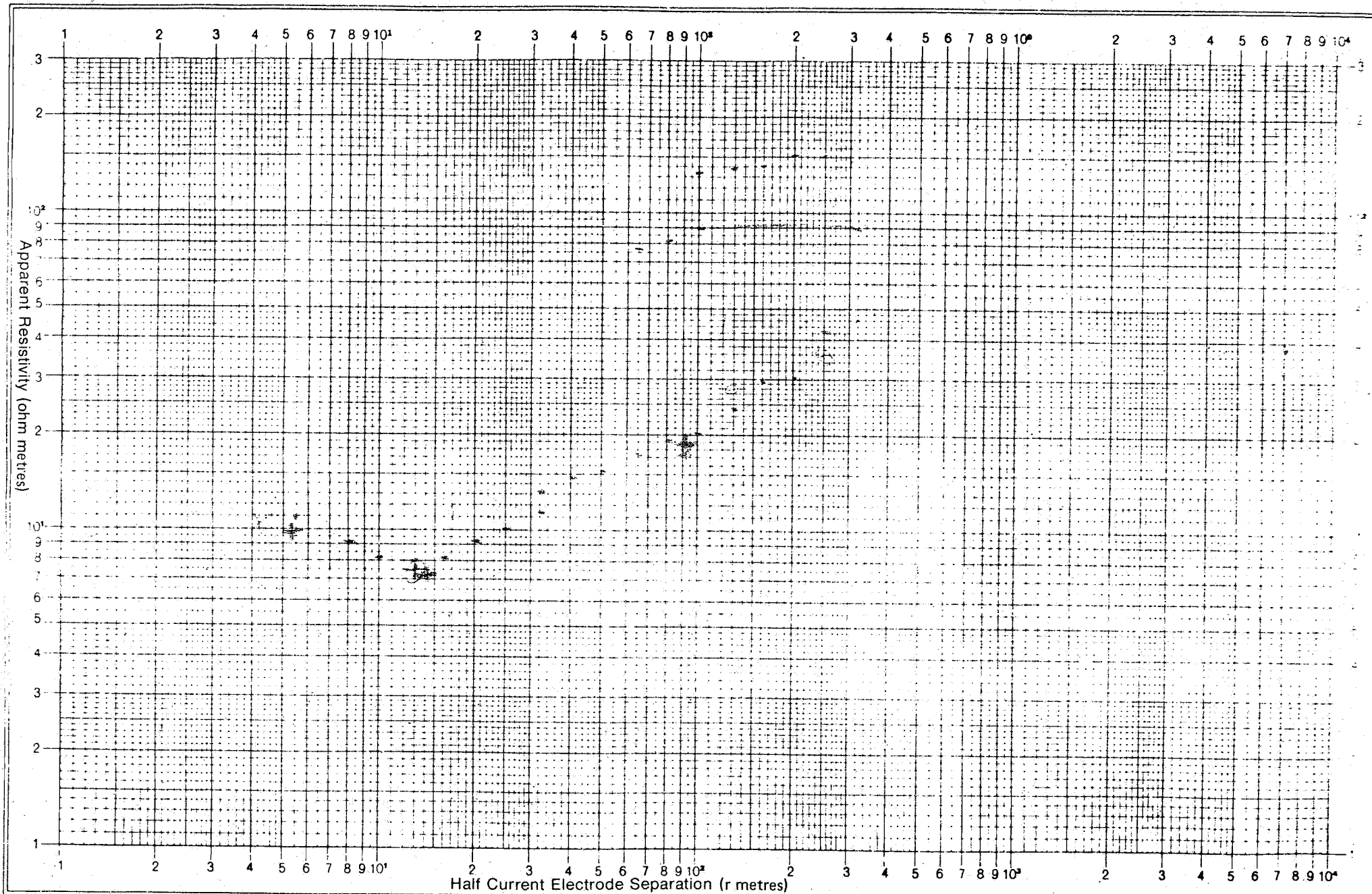
AREA: *10000*

0130

LINE: *3000N* STATION: *5000E*

Plate _____

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

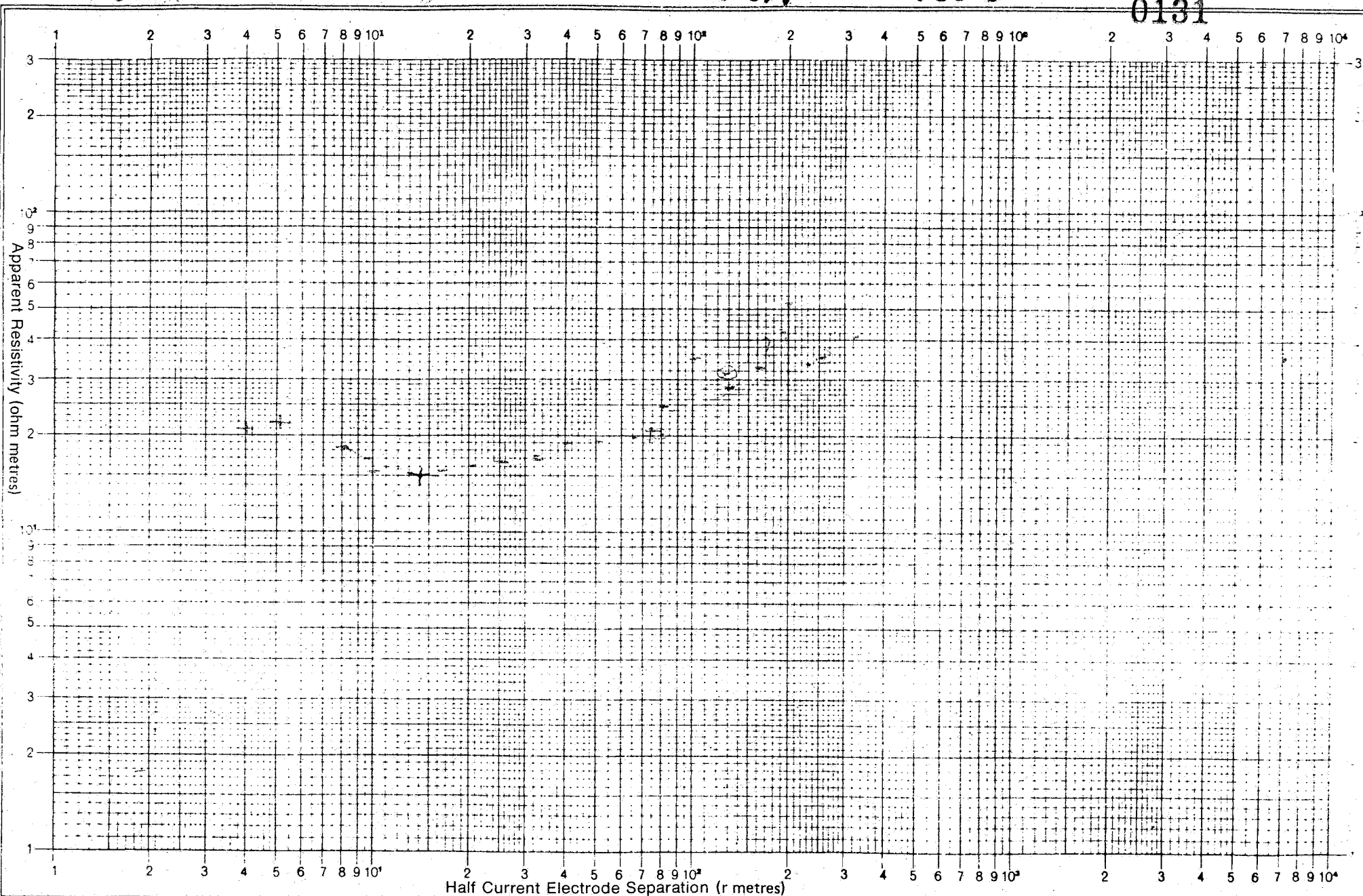
CLIENT: *MUSEER*

AREA: *BURRA*

LINE: *3800N* STATION: *4900E*

Report

0131



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

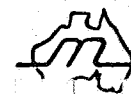
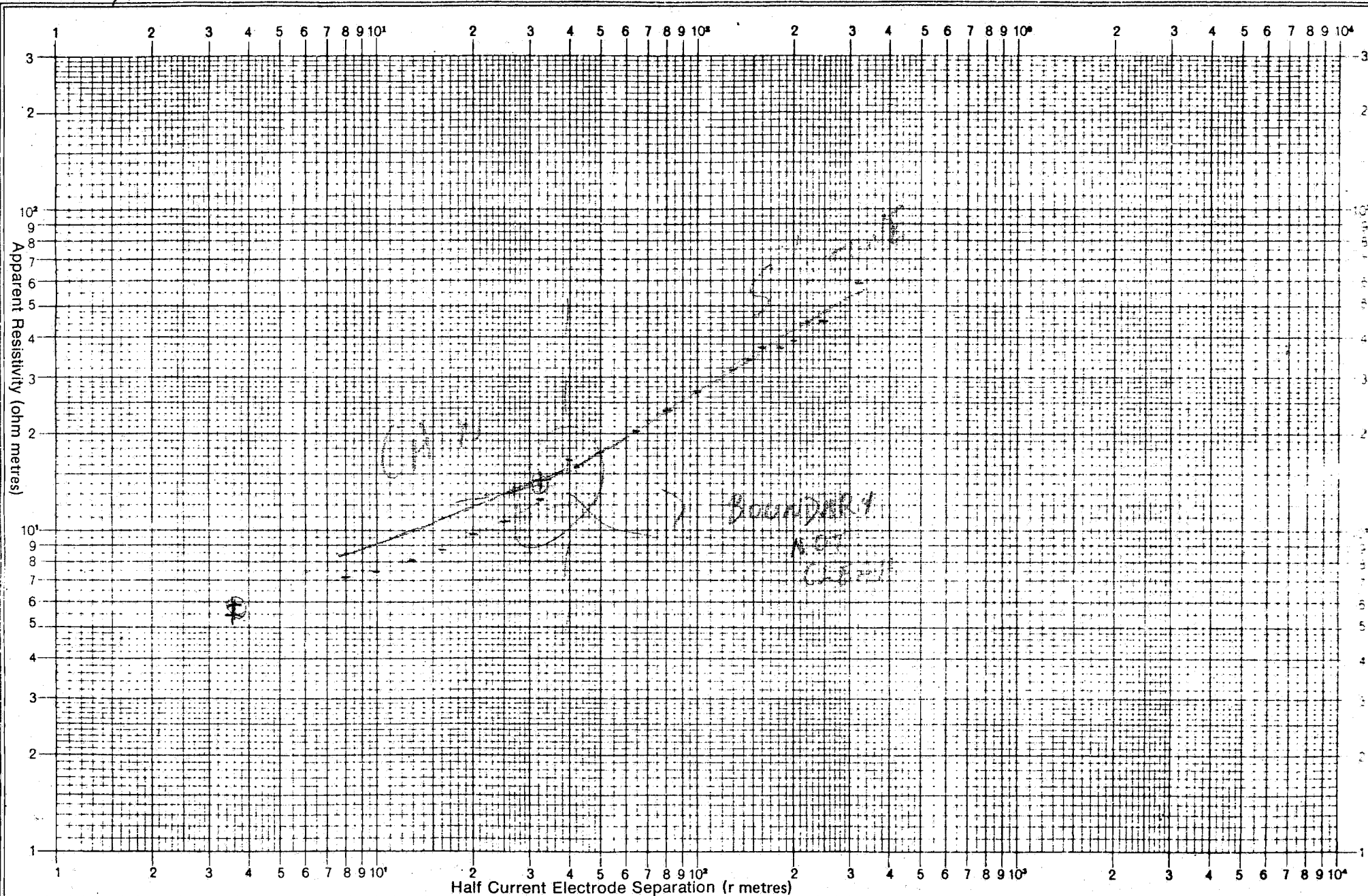
RESISTIVITY SOUNDING

CLIENT: *AUSELEX*

AREA: *BURRA*

LINE: *5000N* STATION: *4580E*

Plate *0132* Report



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT:

0154-24

AREA:

BURKE

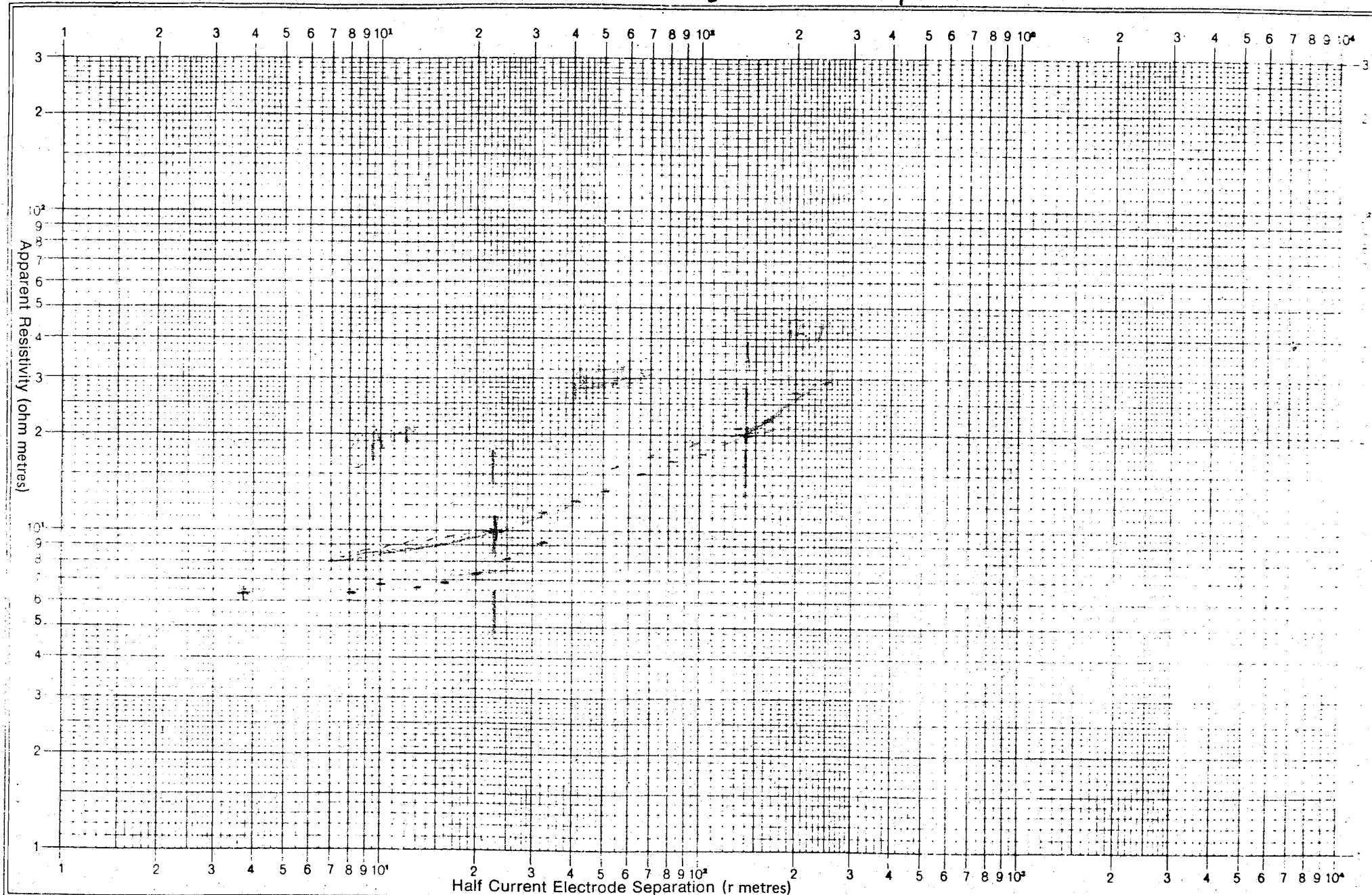
0133

LINE: 5000N

STATION: 4700 E

Plate

Report



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *POOLEY*

AREA: *BURRUM*

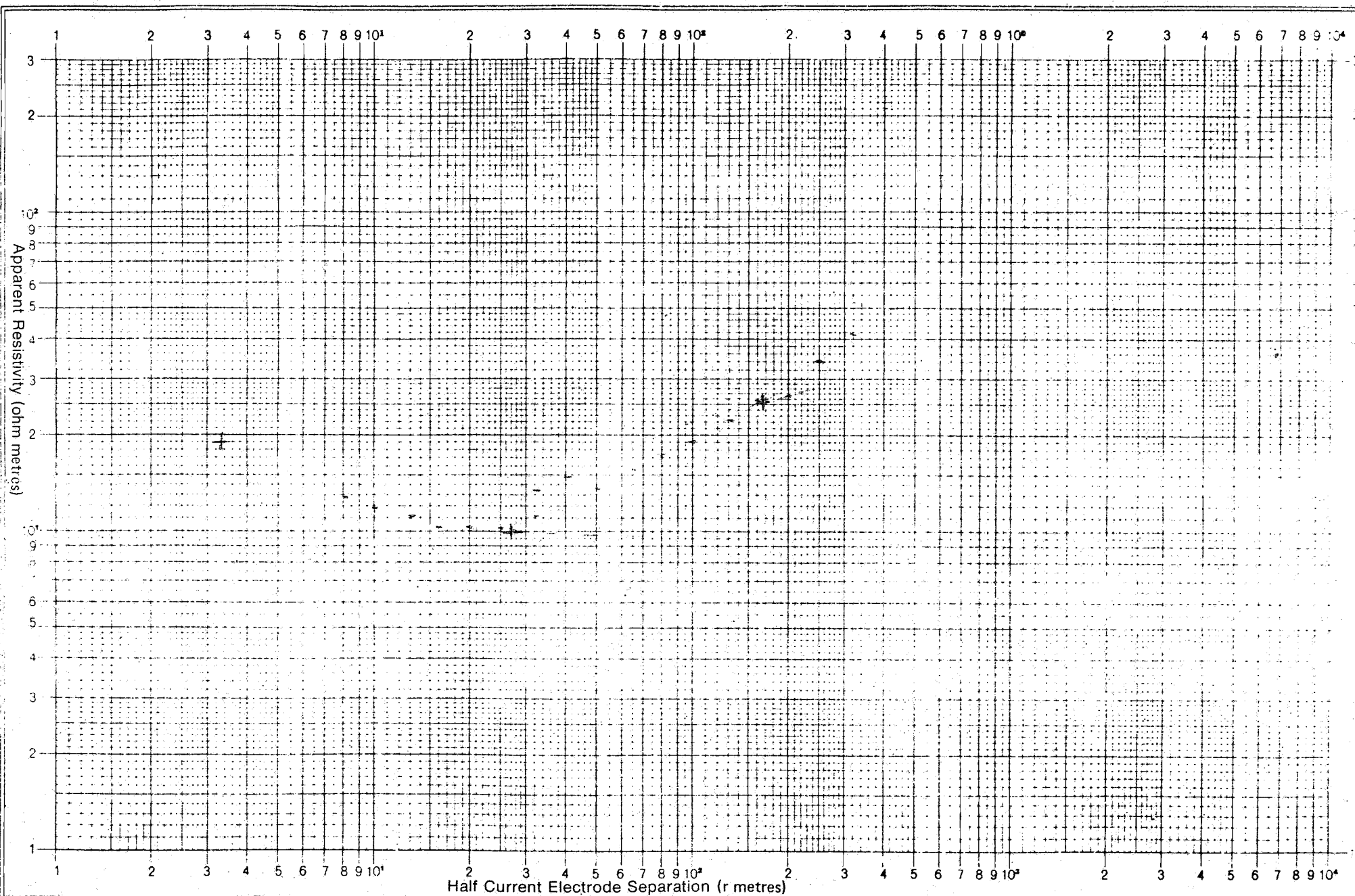
0134

LINE: *5000N*

STATION: *4800E*

Plate _____

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT:

ANSELEX

AREA:

BURRA

0135

LINE:

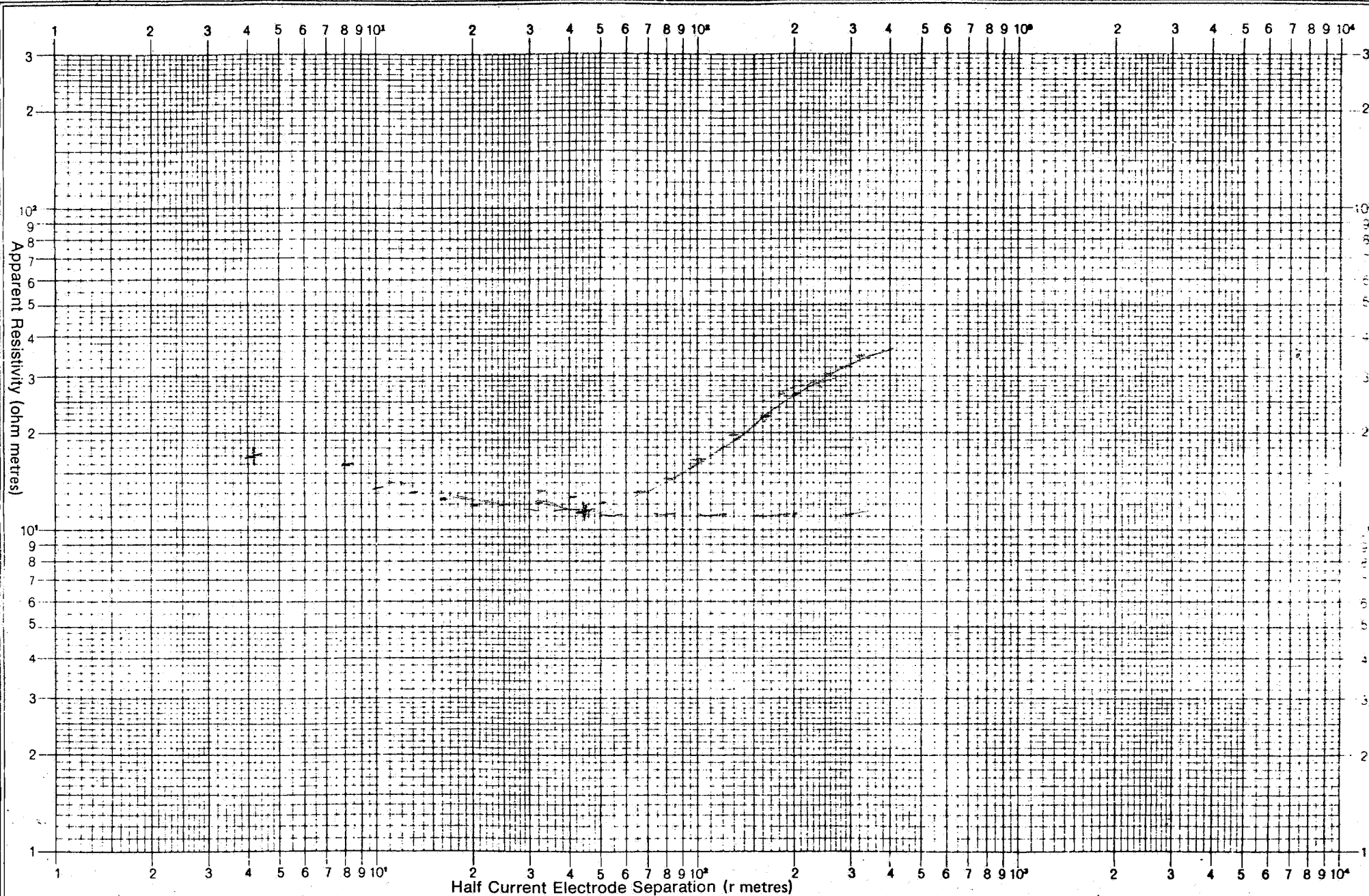
5000N

STATION:

4900E

Plate

Report



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT:

AUSELEX

AREA:

BORRA

0136

LINE:

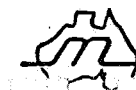
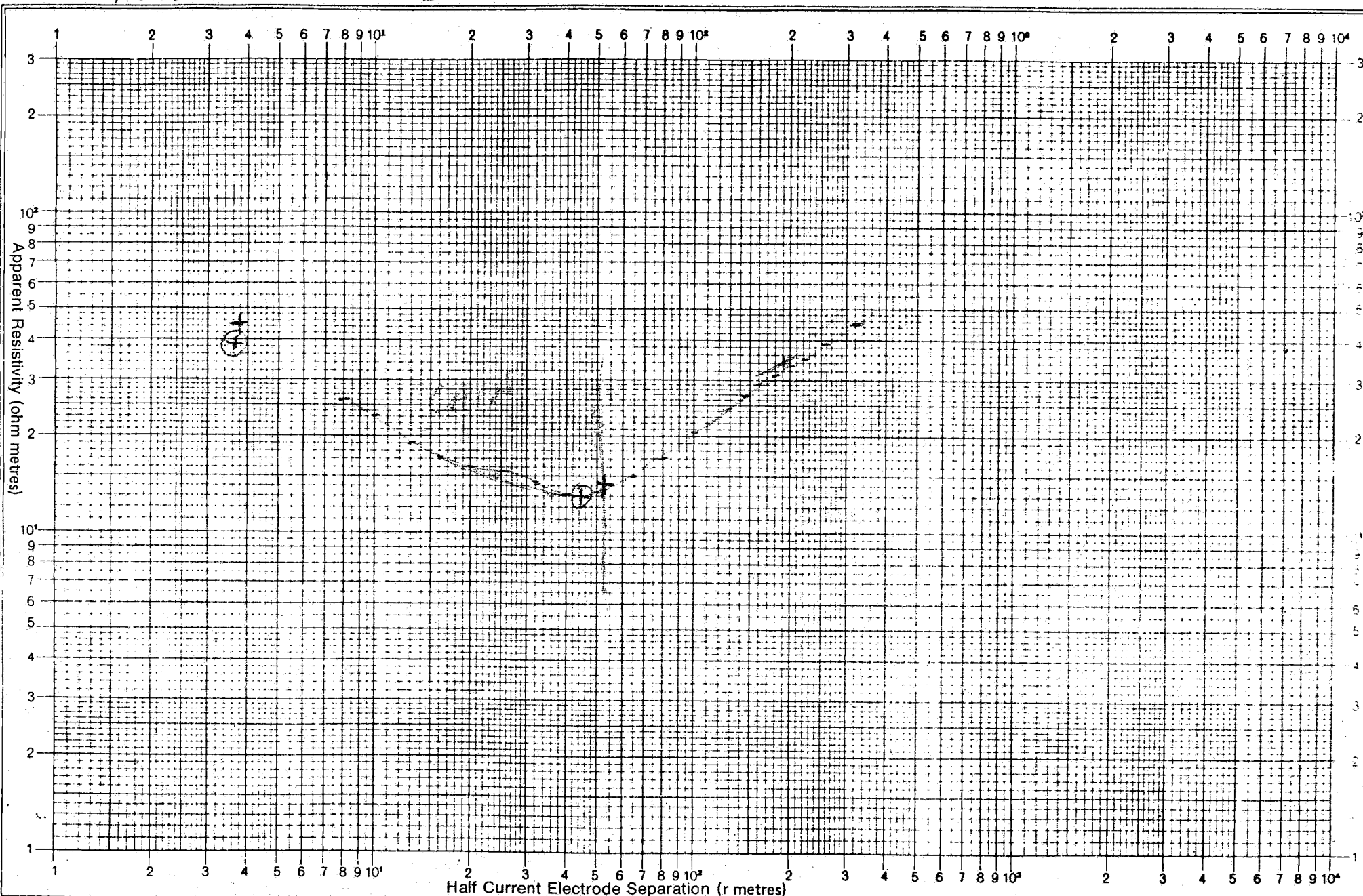
5000N

STATION:

4990E
5100E

Plate

Report



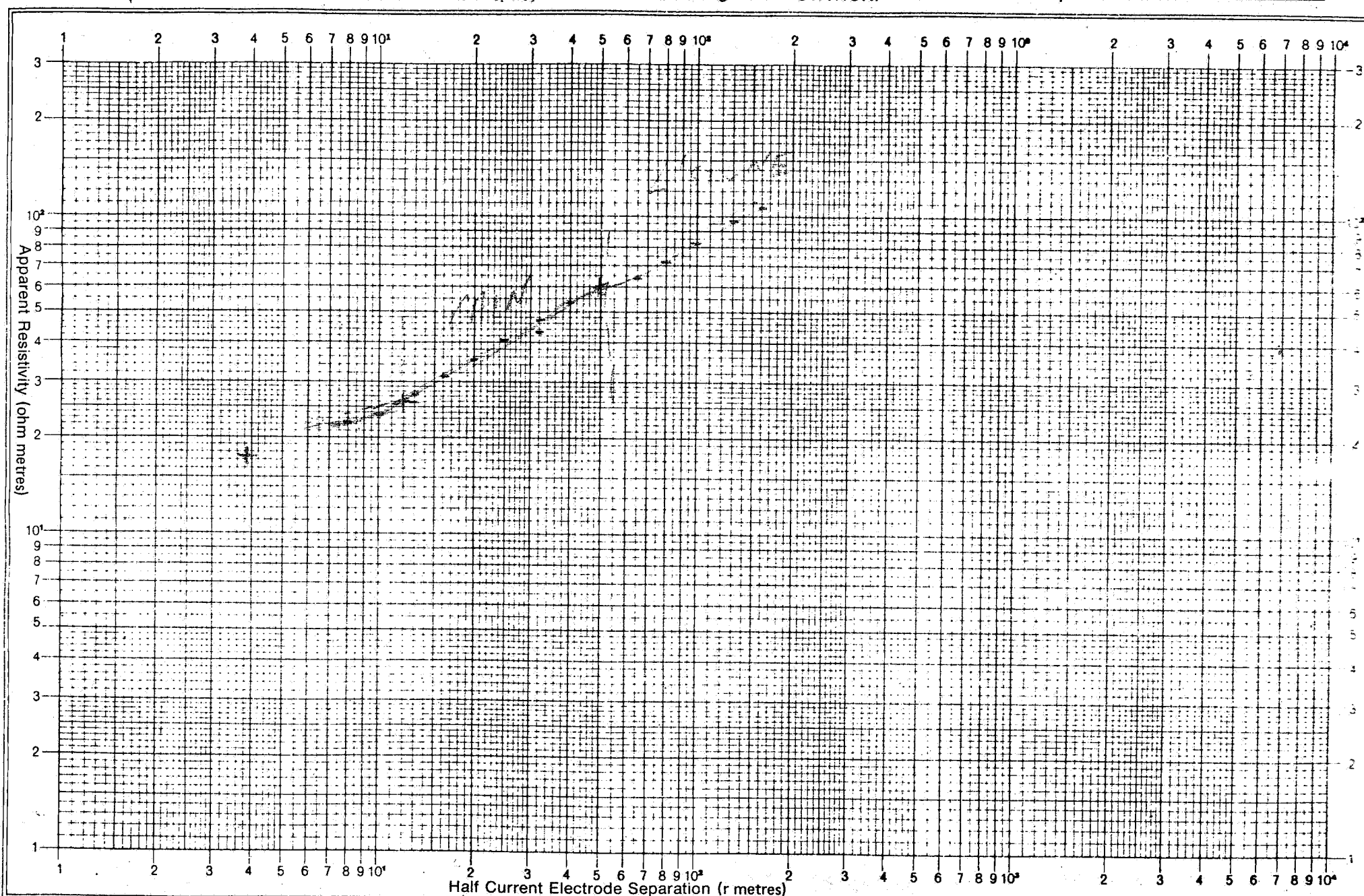
MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *ANSELY*

AREA: *BURRA* 0137

LINE: *5000N* STATION: *5700E* Plate _____ Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

$\rho_1 = 8, h_1 = 13.5$

$\rho_2 \uparrow$

0138

RESISTIVITY SOUNDING

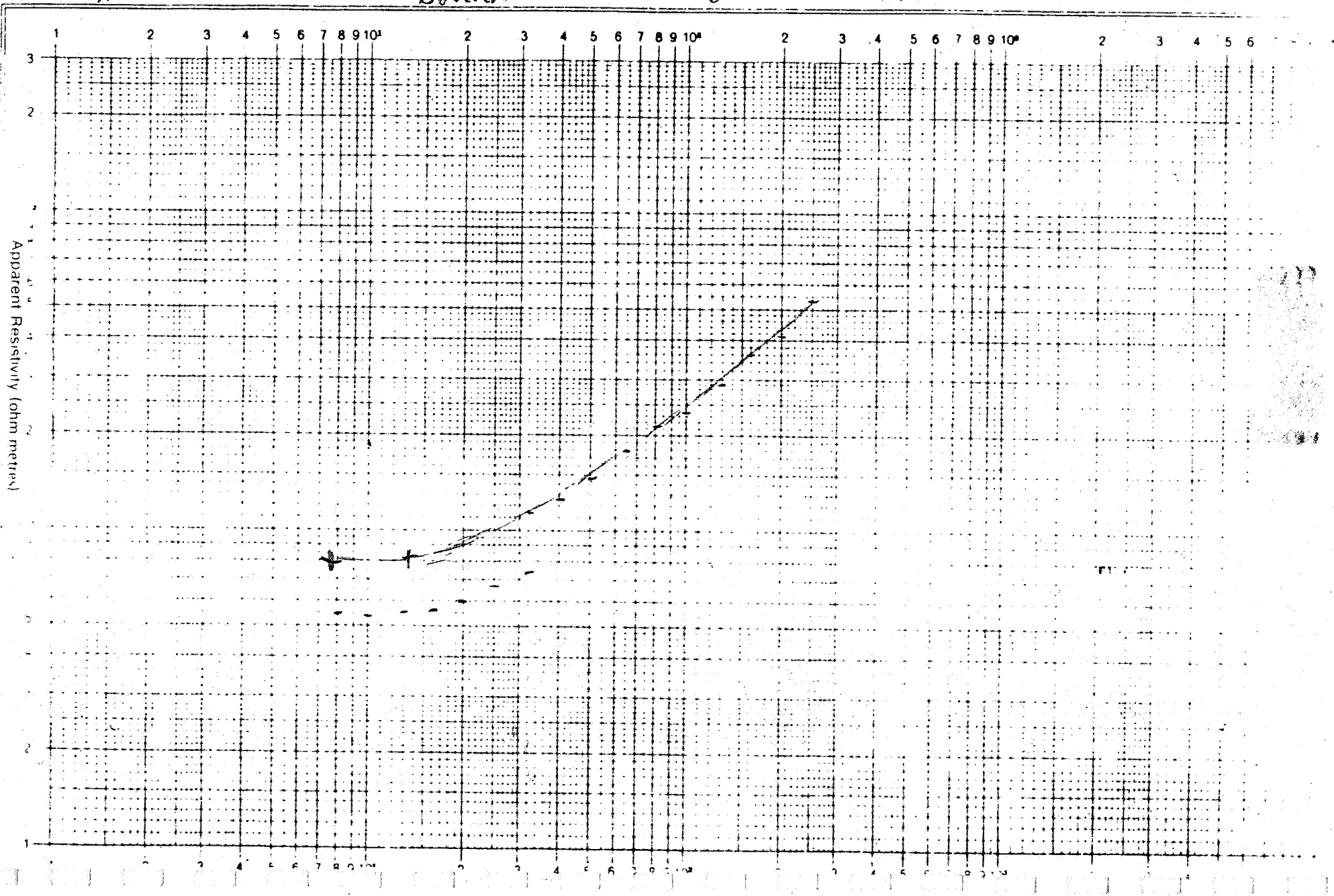
CLIENT: *AVSELEX*

AREA: *BURRA*

LINE: *6650N* STATION: *4400E*

Plate _____

Report _____



0139

RESISTIVITY SOUNDING

CLIENT: JOSELEYAREA: BURRALINE: 6650N STATION: 4500E

Report _____

$$\rho_1 = 20.5$$

$$h_1 = 6$$

$$\rho_2 = 0.5 \times 20.5$$

$$= 10.25$$

$$h_2 = 0.6 \times 6$$

$$= 3.6$$

$$\rho_3 = 1.5 \times 18.5$$

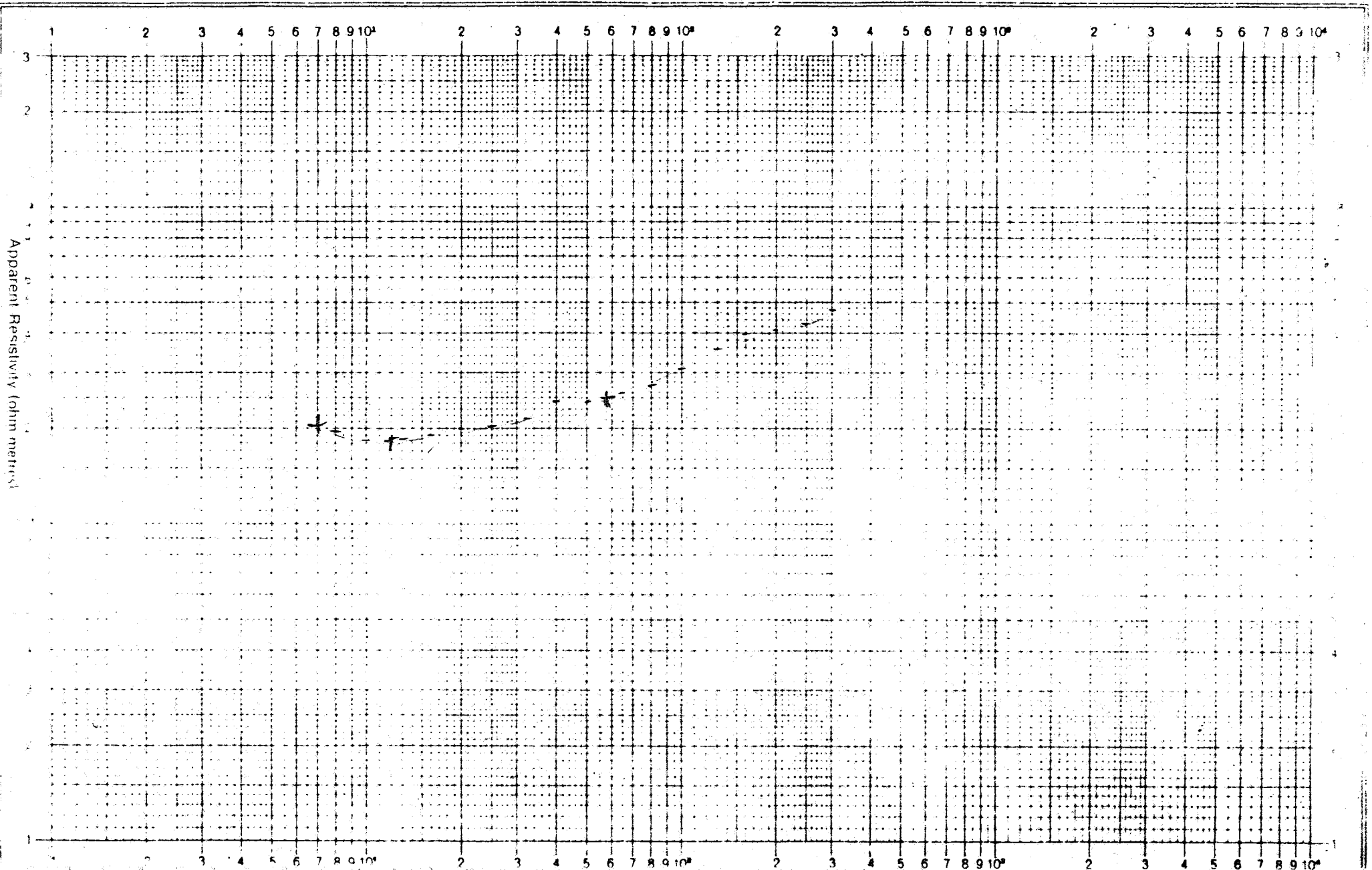
$$= 27.75$$

$$h_3 = 3.7 \times 12$$

$$= 44.4$$

$$\rho_4 = 2.5 \times 25$$

$$= 62.5$$



RESISTIVITY SOUNDING

CLIENT: AUSELEX

AREA: BURRA

LINE 66JON STATION: 4500 E

Plate _____

Report _____

0140

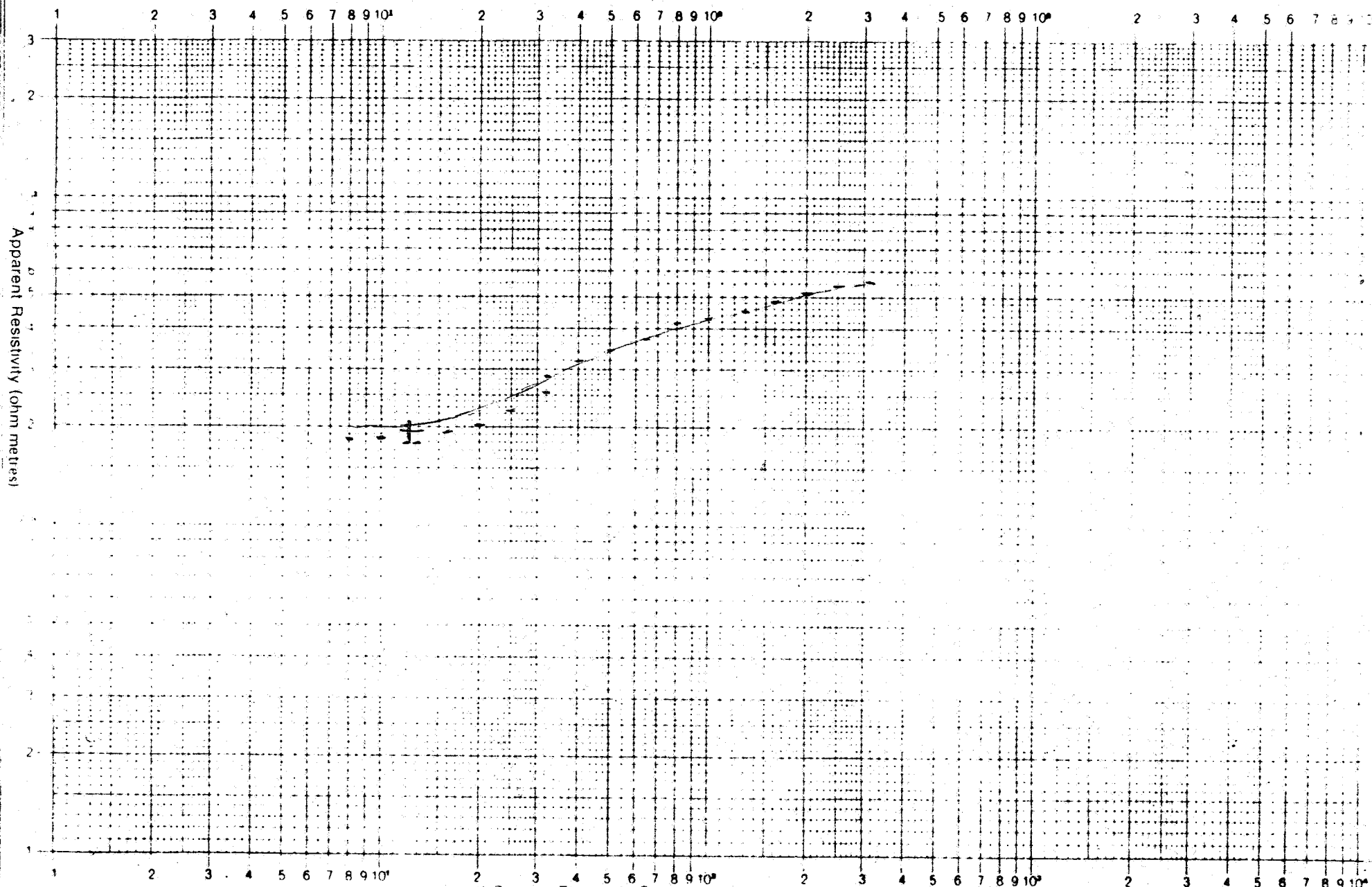
$\rho_1 = 19.5$

$h_1 = 12.2$

$\rho_2 = 2.5 \times 19.5$
 $= 48.8$

$h_2 =$

PHA 15



0141

$$\rho_1 = 65$$

$$h_1 = 5.4$$

$$\rho_2 = 2.5 \times 65$$

$$= 16.3$$

$$h_2 = 4 \times 5.4$$

$$= 21.6$$

$$\rho_3 = 2 \times 12.9$$

$$= 25.8$$

RESISTIVITY SOUNDING

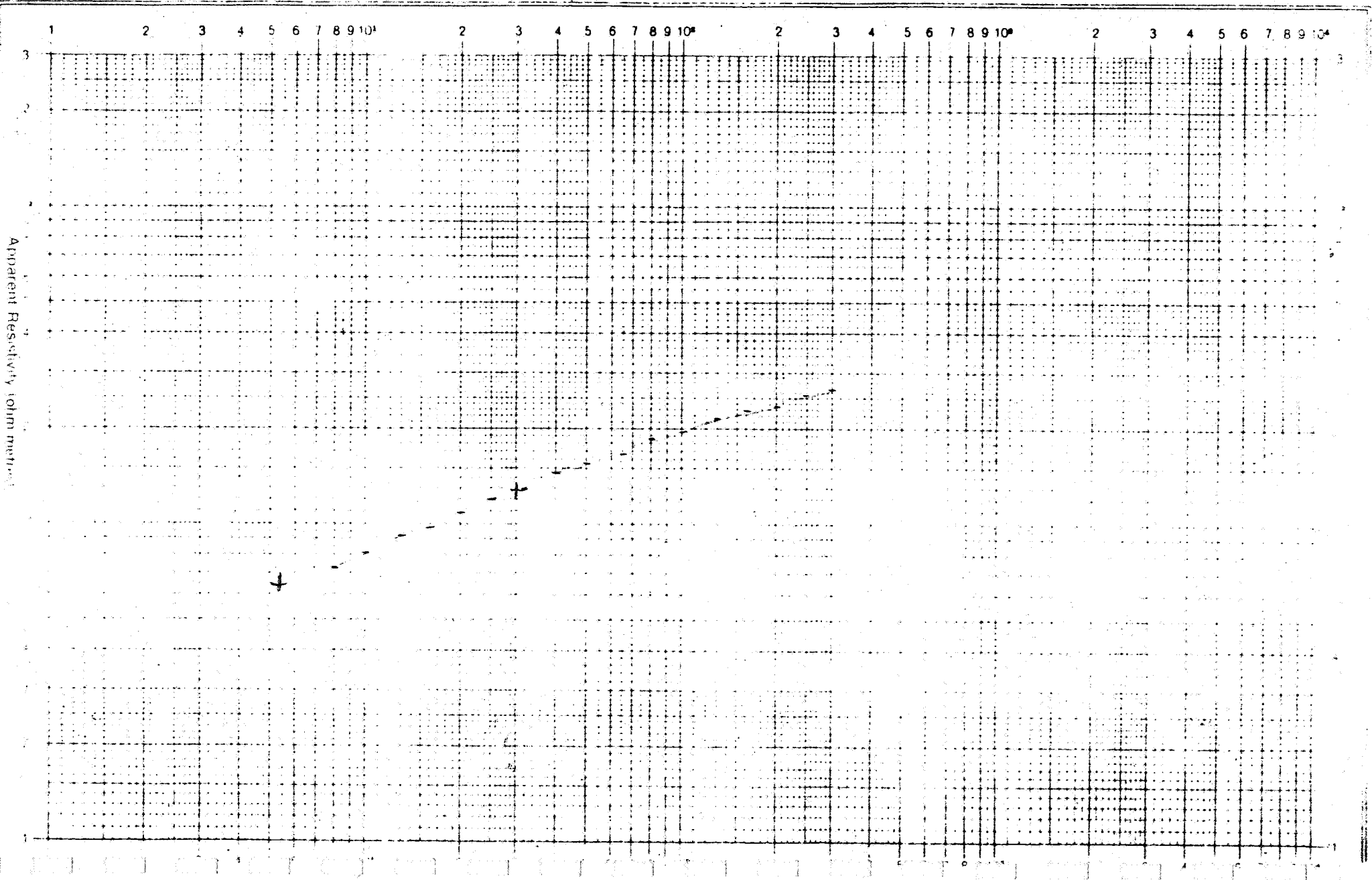
CLIENT AUSELEX

AREA BURRA

LINE 6650A STATION 4650E

Plate _____

Report _____



$$\rho_1 = 10$$

$$h_1 = 16$$

$$\rho_2 = 2.5 \times 10$$

$$= 25$$

$$h_2 = 10 \times 16$$

$$= 160$$

$$\rho_3 = 0.8 \times 25$$

$$= 19.2$$

RESISTIVITY SOUNDING

0142

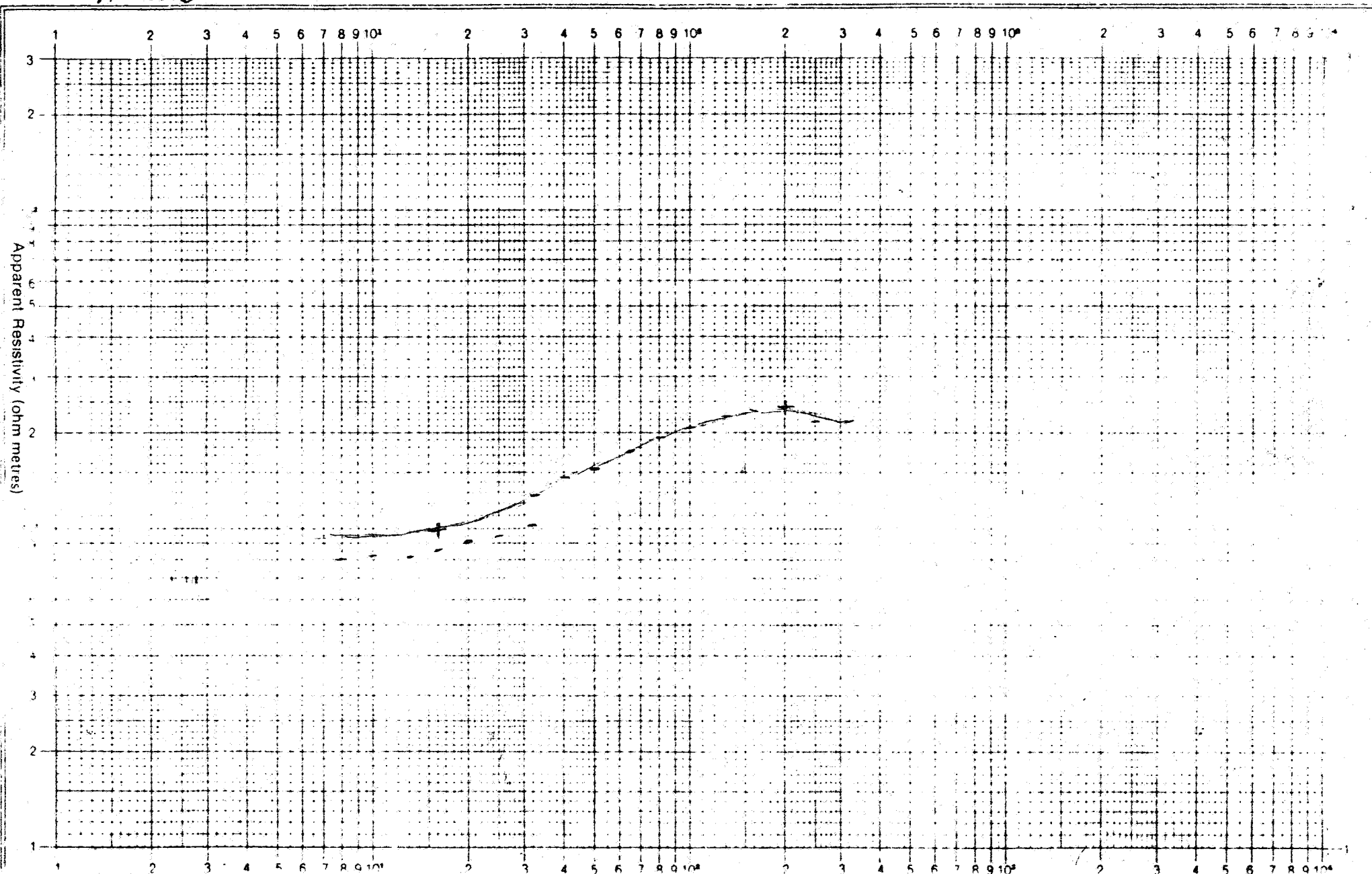
CLIENT: *AUSELEY*

AREA: *BURRA*

LINE *6650 N* STATION: *4800 E*

Plate _____

Report _____



$\rho_1 = 14$
 $h_1 = 80$

$\rho_2 = 3 \times 10^4$
 $h_2 = 0.25 \times 80 = 20$
0143

$\rho_3 = 0.2 \times 20$
 $= 4$

RESISTIVITY SOUNDING

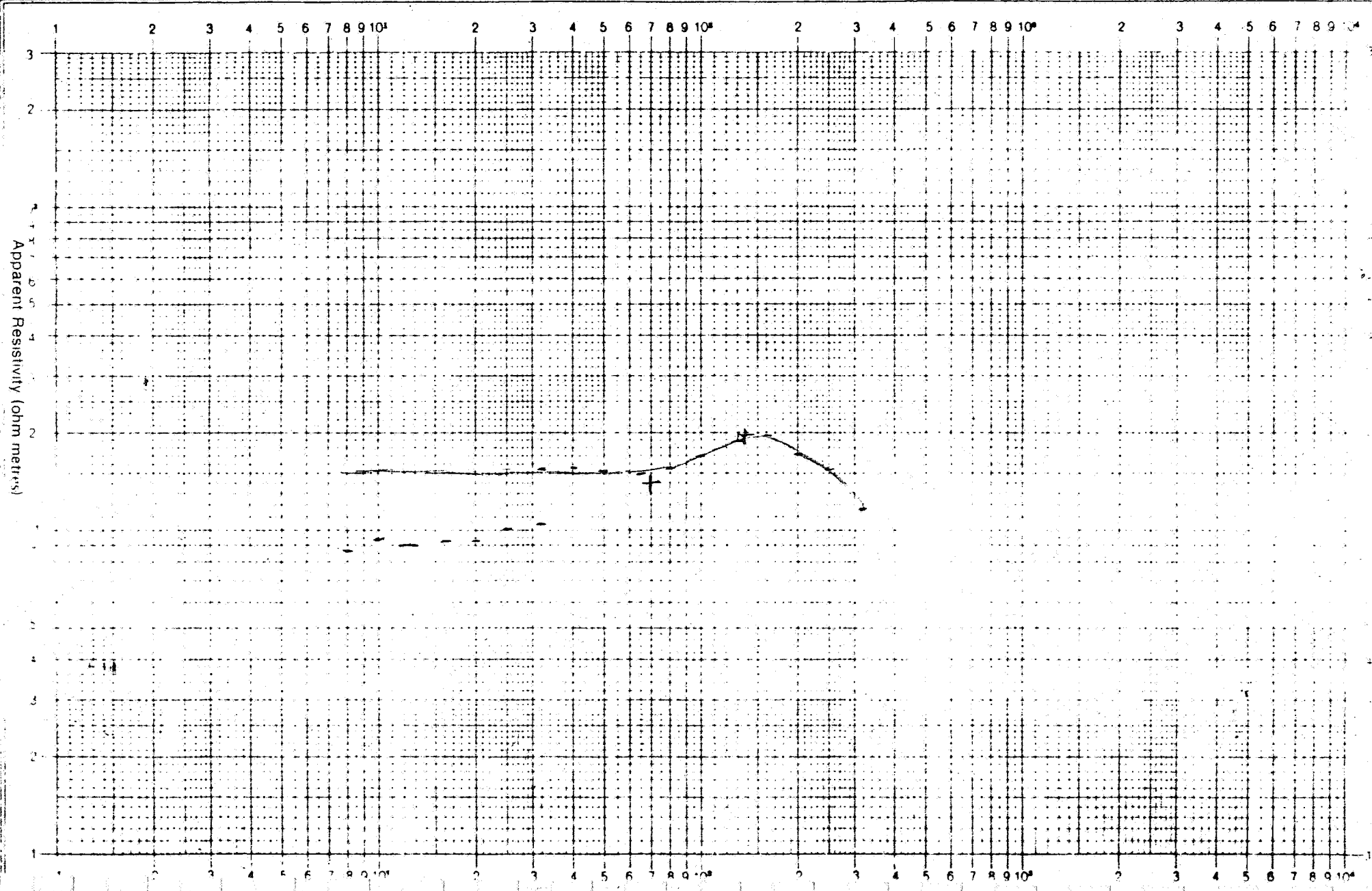
CLIENT: AUSELEY

AREA: BURRA

LINE 6650N STATION: 4900E

Plate _____

Report _____



$$\rho_1 = 6.5$$

$$h_1 = 5.2$$

$$\rho_2 = 3.5 \times 6.5$$

$$= 22.8$$

$$h_2 = 0.6 \times 5.2$$

$$= 3.1$$

$$\rho_3 = 2 \times 11$$

$$= 22$$

$$h_3 = 4.5 \times 121$$

$$= 54.5$$

$$\rho_4 = ?$$

RESISTIVITY SOUNDING

CLIENT: AUSELEX

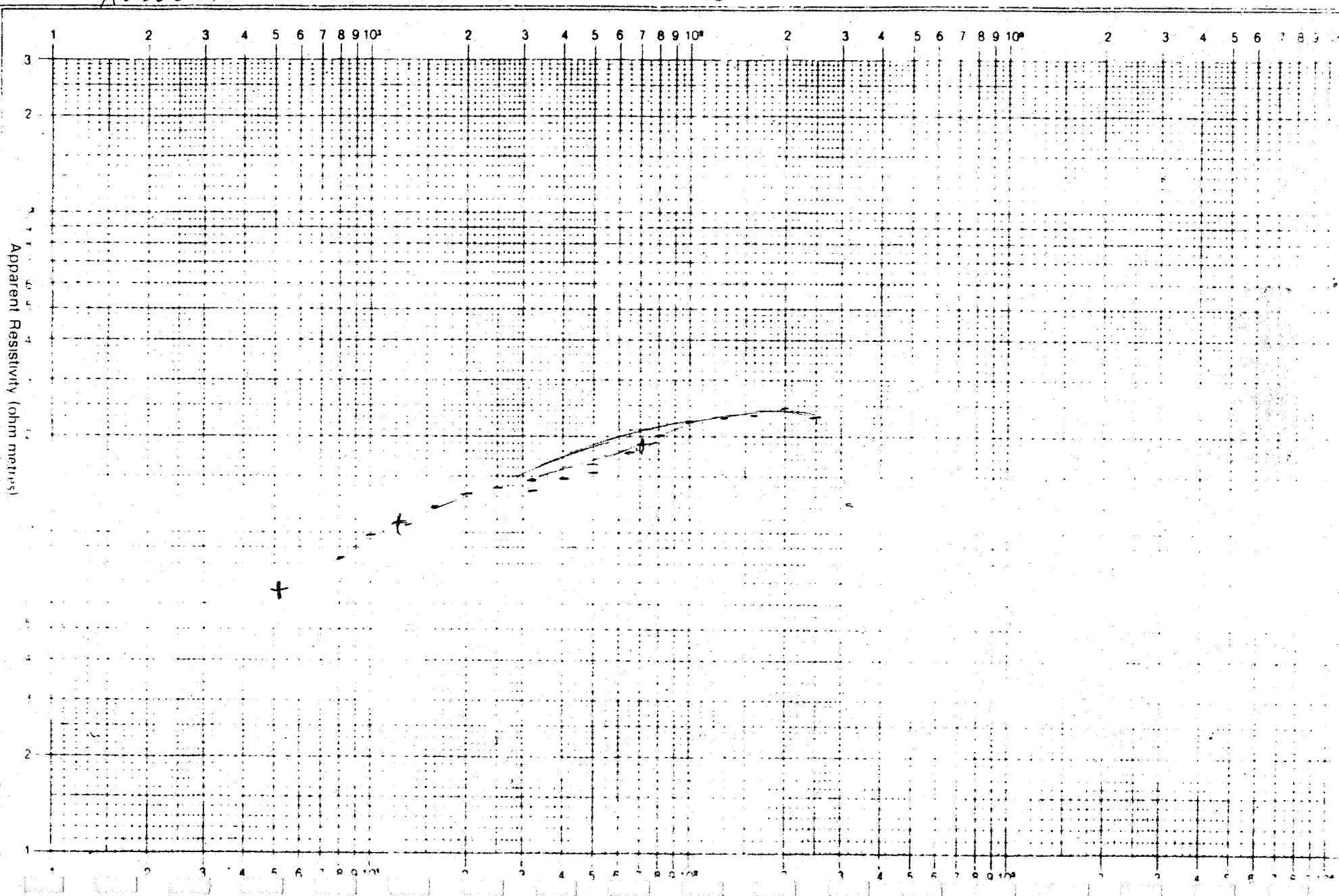
AREA: BURRA

LINE: 6650N STATION: 5000E

0144

Plate _____

Report _____



$$p_1 = 19.2$$

$$h_1 = 34.2$$

$$p_2 = 35 \times 19.2 = 67.2$$

$$h_2 = 3 \times 34.2 = 103$$

$$p_3 = L 48$$

0145

Plate _____

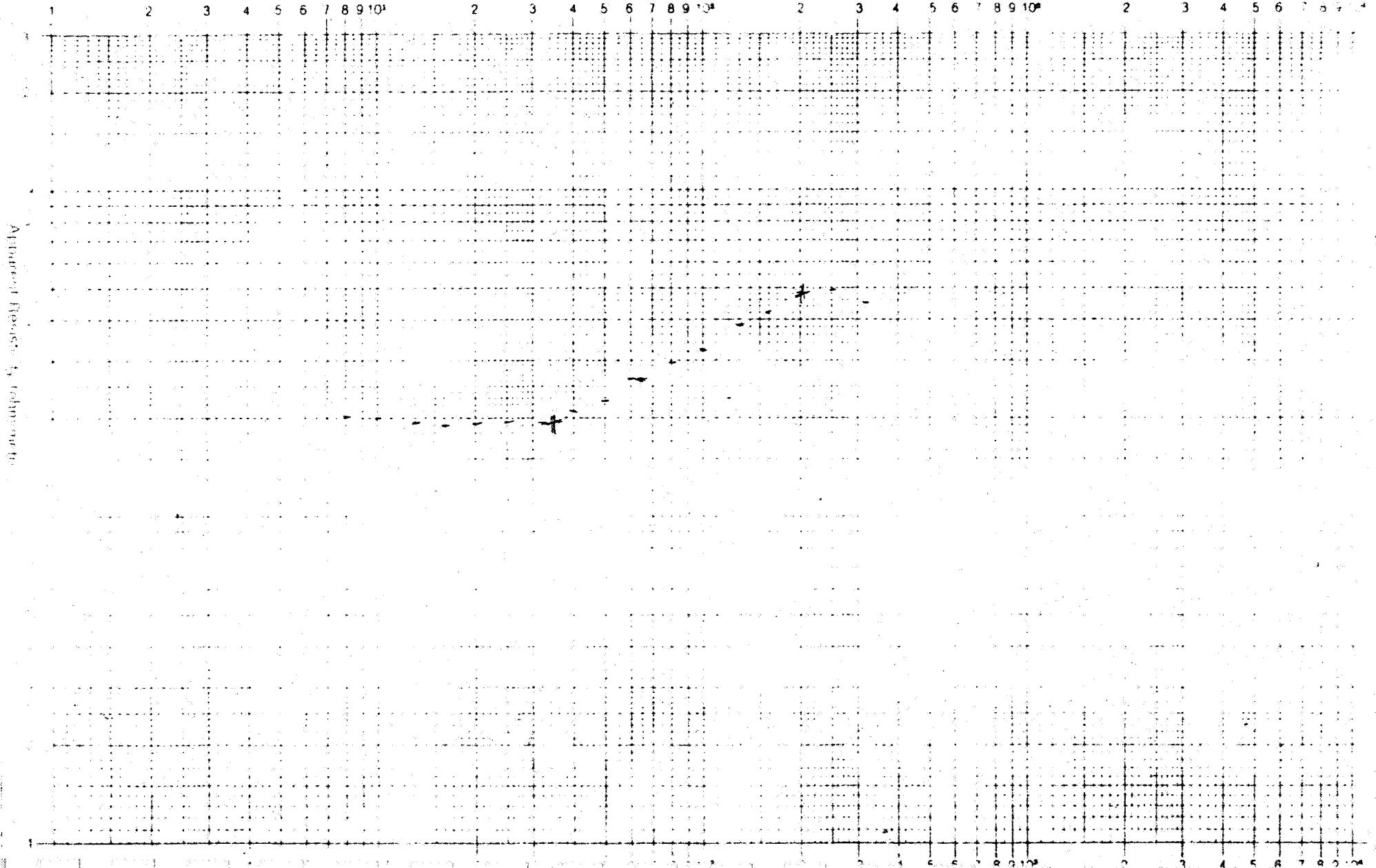
Report _____

RESISTIVITY SOUNDING

CLIENT AUSELEX

AREA BURRA

LINE 6650N STATION 5100E



$$\rho_1 = 6.5$$

$$h_1 = 10$$

$$\rho_2 = 30 \times 6.5 = 195$$

0146
PH 16

Plate _____

RESISTIVITY SOUNDING

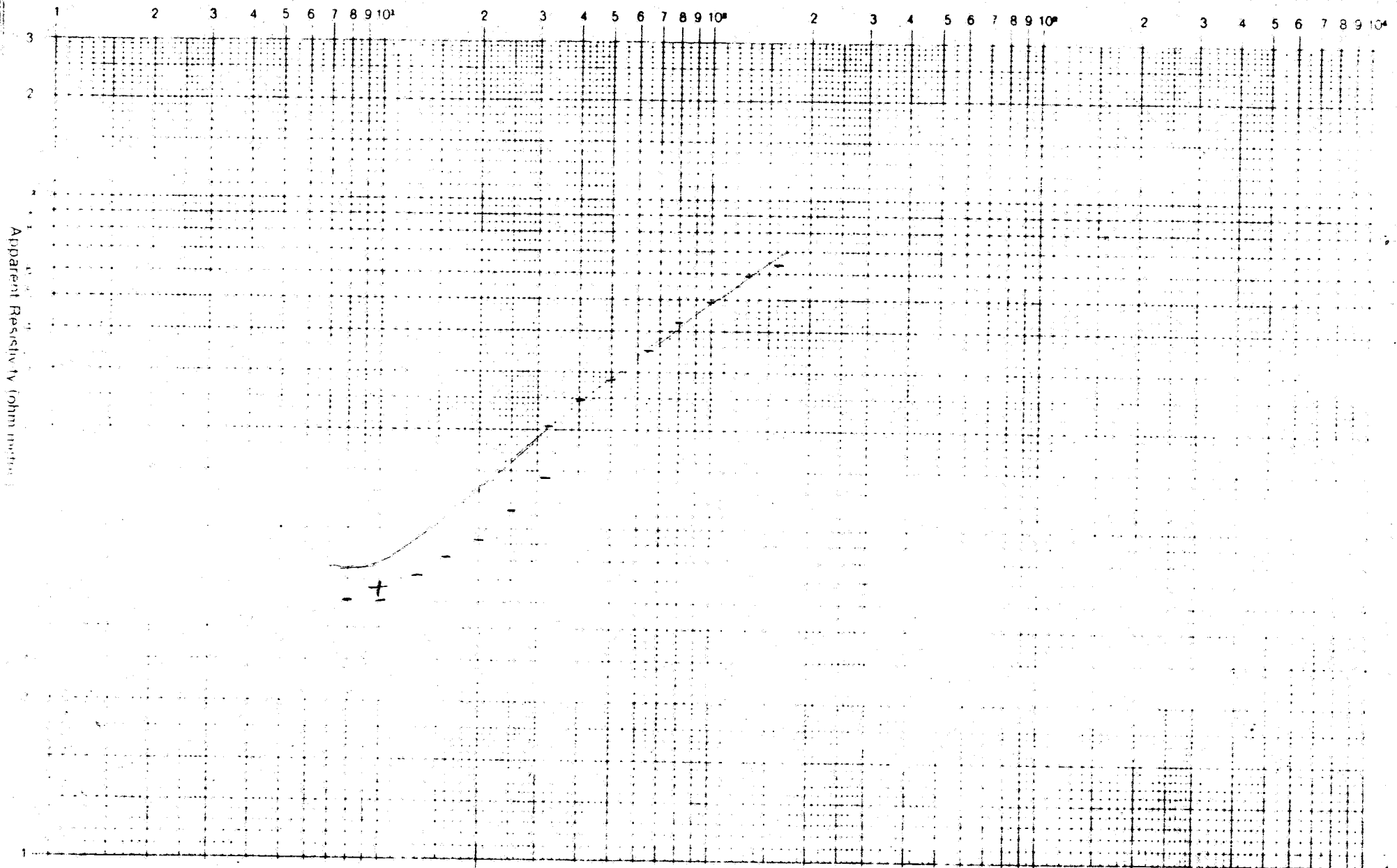
CLIENT: AUSELEX

AREA: BULLA

LINE: 73005

STATION: 4638E

Report _____



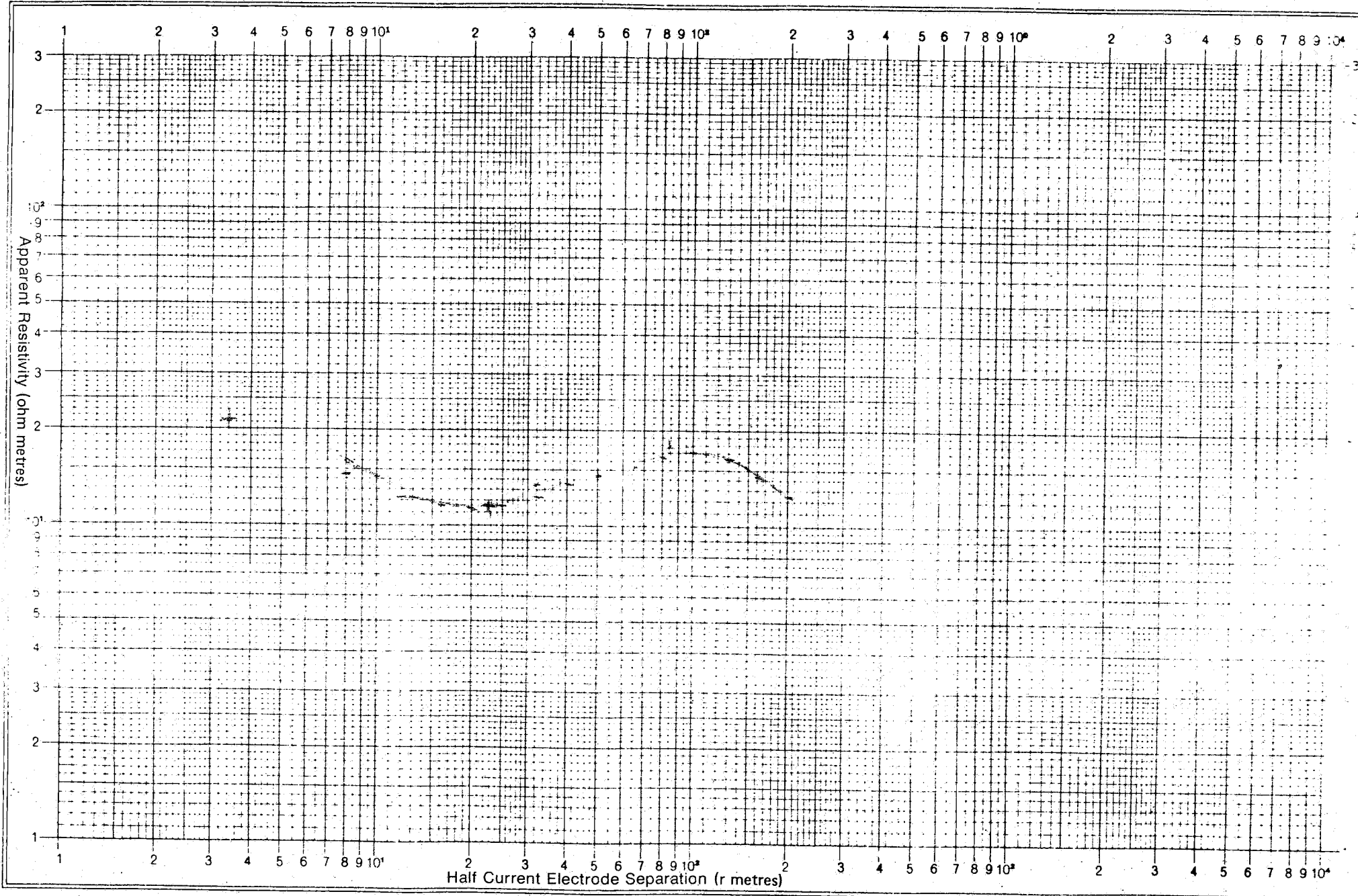
RESISTIVITY SOUNDING

CLIENT: *ANGLER*

AREA: *COVIA*

0147
LINE: *7500 N* STATION: *51206*

Plate _____
Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *MURDOCH*

AREA: *BURRA*

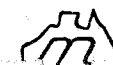
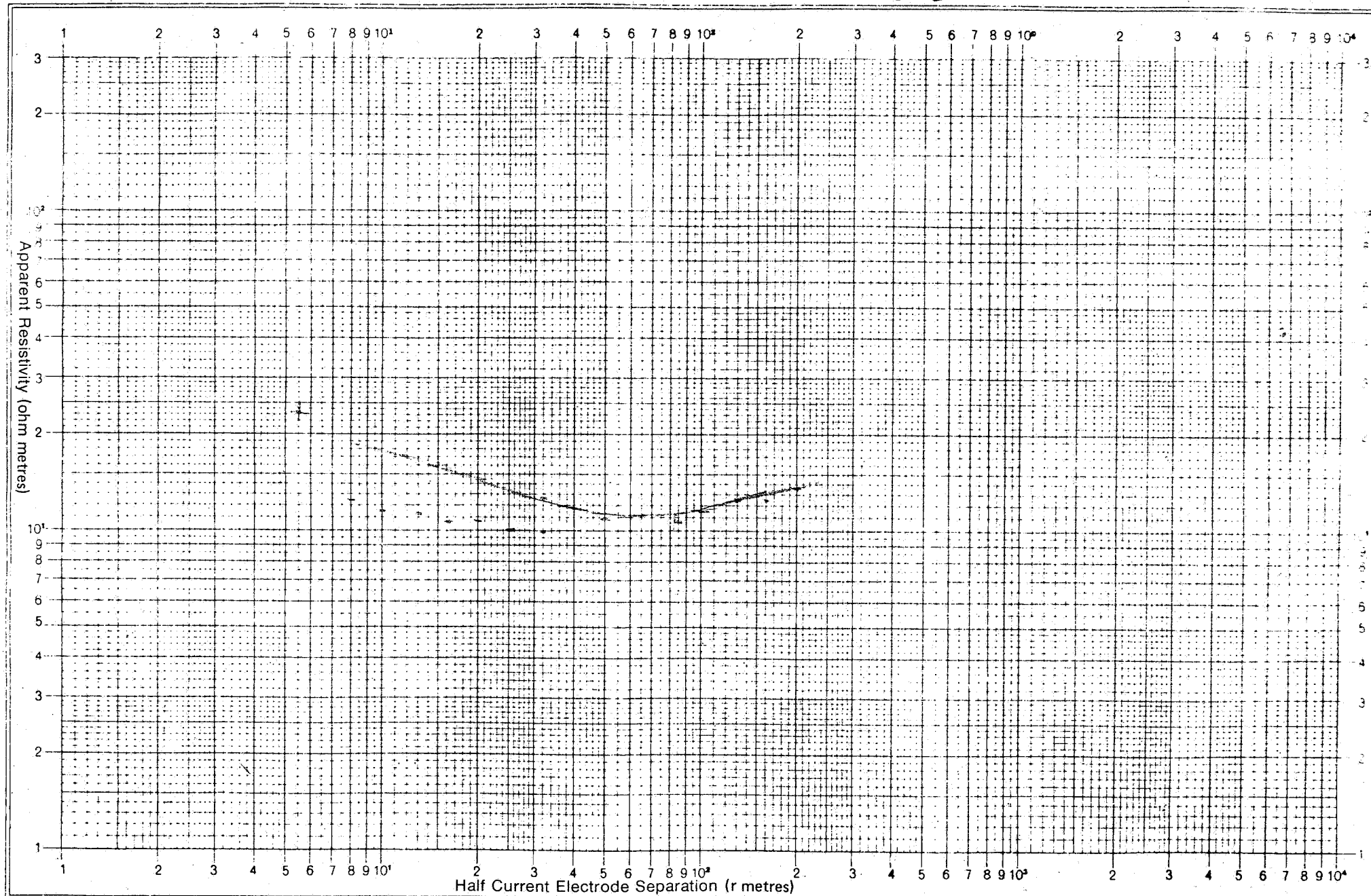
LINE: *755A*

STATION: *5250E*

Report: _____

0148

Plate _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *AUSELEX*

AREA: *BO RAIL*

$$\rho_1 = 23$$

$$h_1 = 6.2$$

$$\rho_2 = 0.8 \times 23$$

$$= 18.4$$

$$h_2 = 8 \times 6.2$$

$$= 49.6$$

$$\rho_3 = 5 \times 18.4$$

$$= 92.5$$

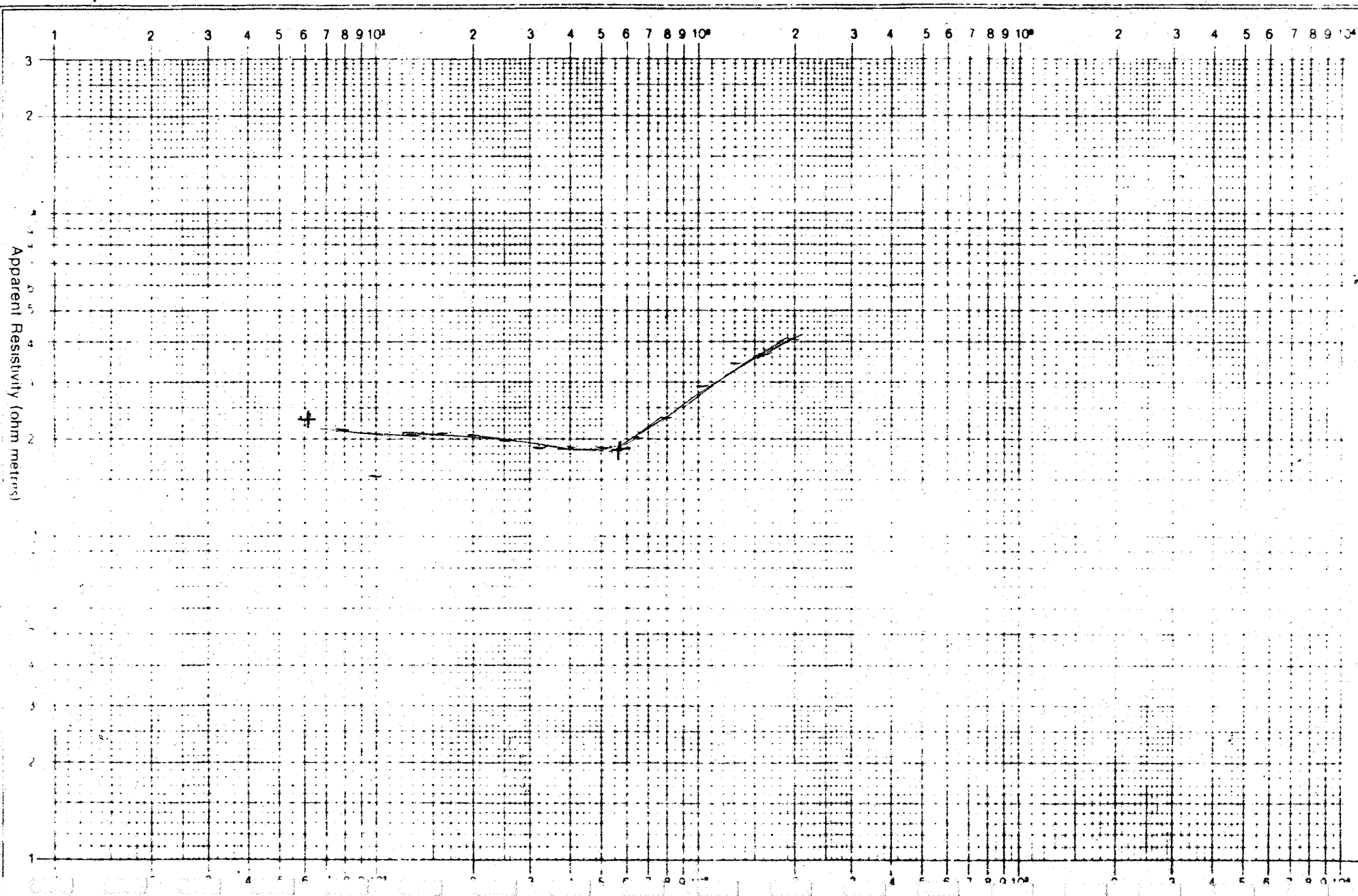
0149

Plate _____

Report _____

LINE *7500N*

STATION: *5365E*



RESISTIVITY SOUNDING

CLIENT:

ASSELEY

AREA:

BURRA

LINE:

WOOLLANA

RD

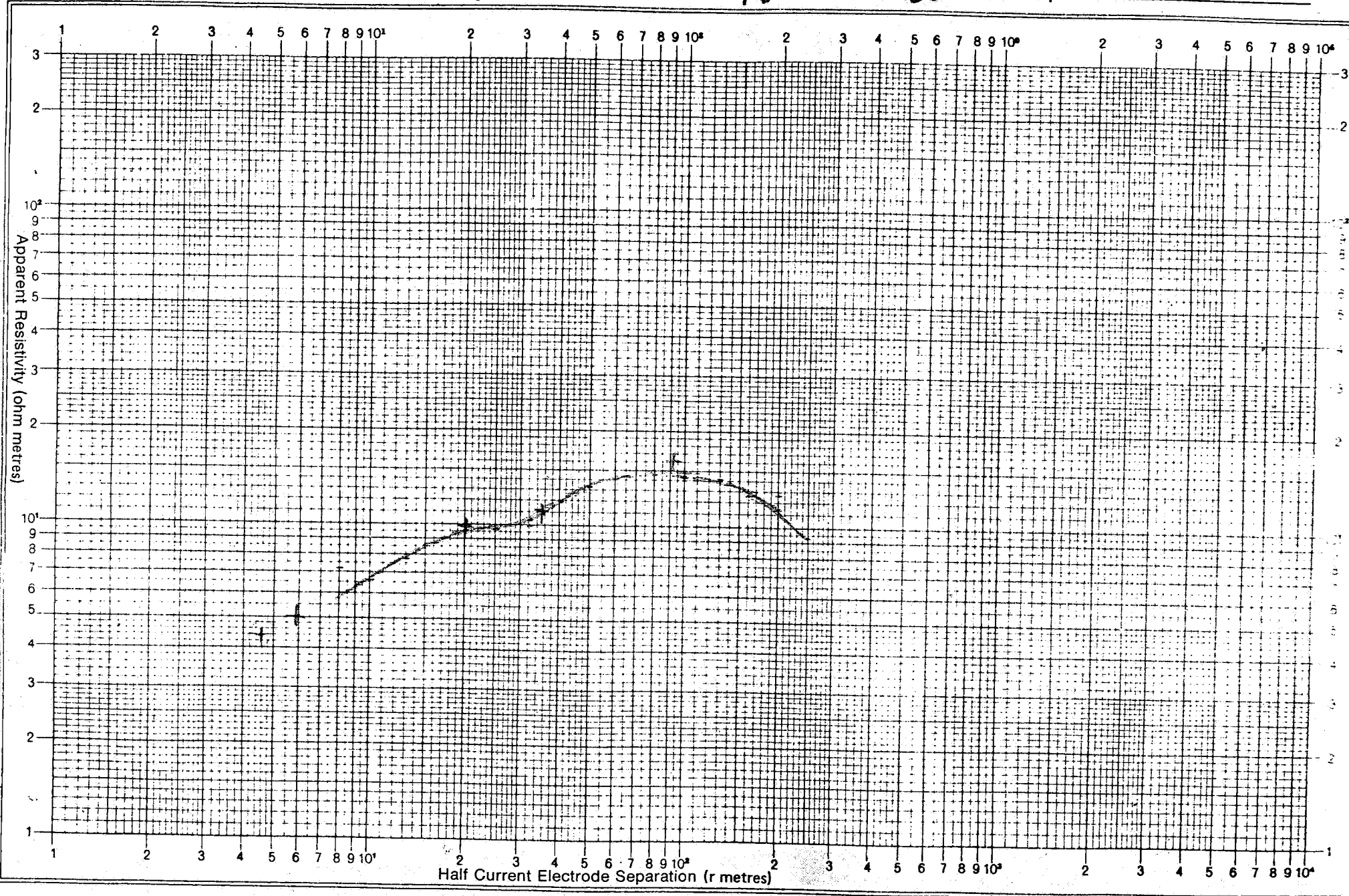
STATION:

275E

0150

Plate

Report



4.4
6.6
5.5
6.6
7.2
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9.5
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MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

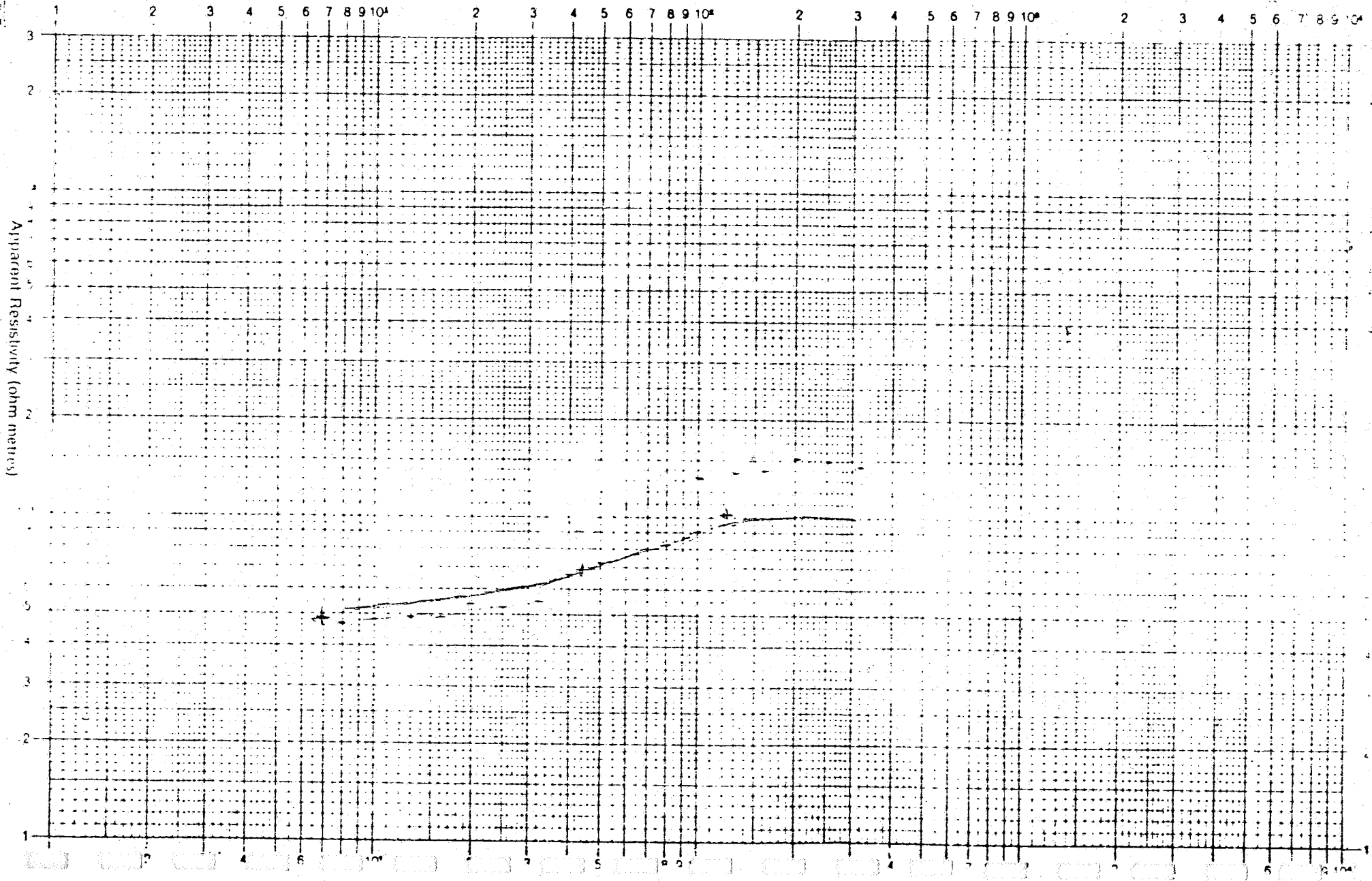
0151

RESISTIVITY SOUNDINGCLIENT: *AUSELEX*AREA: *BUTTE*LINE: *Re-3* STATION: *100E*

Report: _____

*P₁ = 4.8**h₁ = 5.0**P₂ = 1.5 x 10⁸**h₂ = 7.2**h₂ = 5 x 10⁸**30.5**P₃ = 2 x 10⁷**h₃ = 10**h₃ = 1.3 x 10³**WOLARNA 2 55.9**P₄ = 1 x 10¹²**h₄ = 10.2*

Plate: _____



0152

$\rho_1 = 5$
 $h = 5$

$\rho_2 = 2.5 \times 5$
 $= 12.5$
 $h_2 = 3.5 \times 6$
 $= 21$

$\rho_3 = 1.25 \times 9.5$
 $= 11.9$
 $h_3 = 20.75 \times 3$
 $= 62.3$

$\rho_4 = 3.5 \times 4$
 $= 14$
 $h_4 = 1 \times 52$
 $= 52$

$\rho_5 = 1.5 \times 18$
 $= 27$

RESISTIVITY SOUNDING

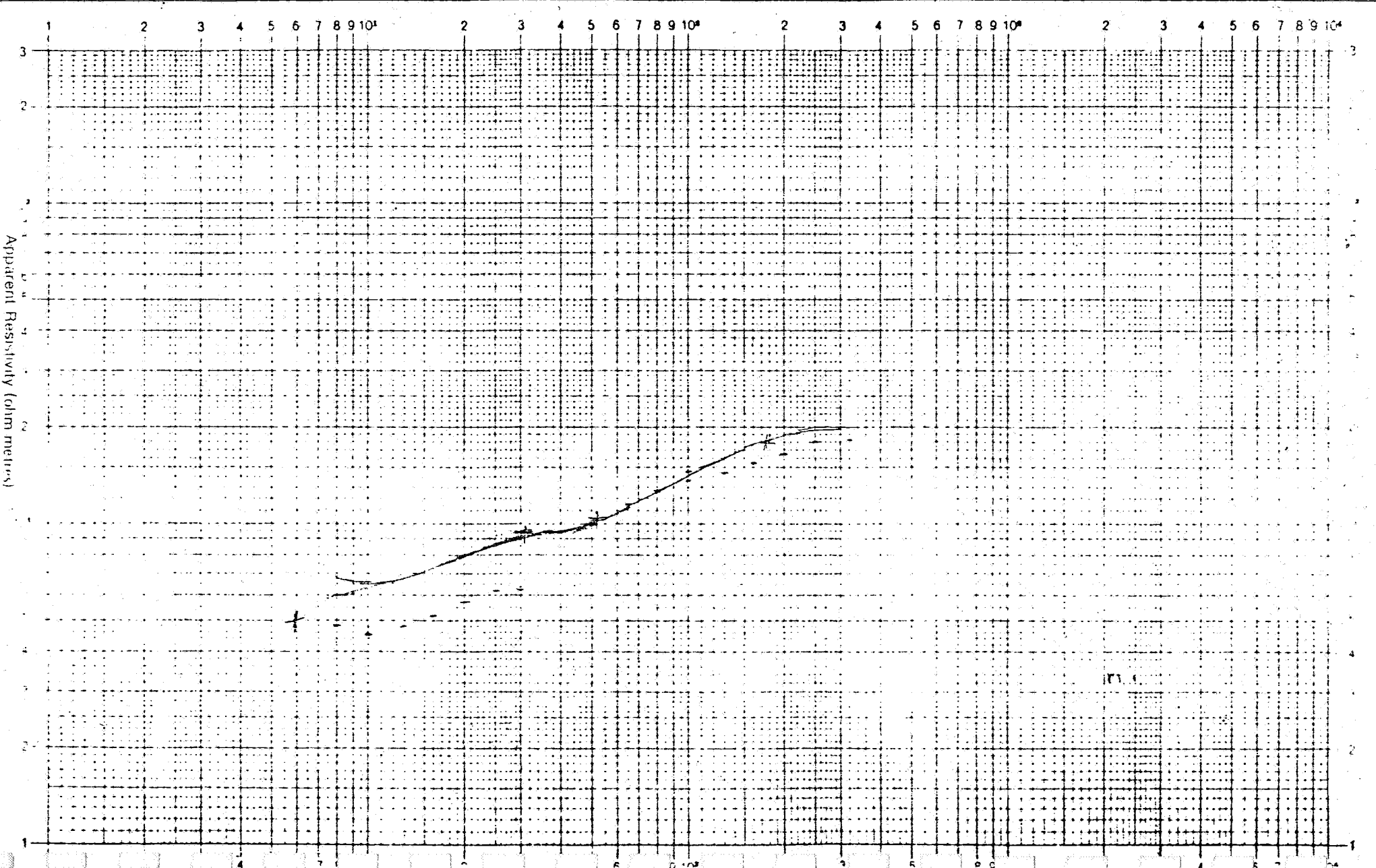
CLIENT: H. SELEY

AREA: BURRA

LINE:

STATION: 005/W

Plate 52 Report _____



$$\rho_1 = 12.5$$

$$h_1 = 4.2$$

$$\rho_2 = 0.65 \times 12.5$$

$$= 8.1$$

$$h_2 = 4.5 \times 4.2$$

$$= 18.9$$

$$\rho_3 = 2.5 \times 8.1$$

$$= 21.25 \text{ - basement } ?$$

0153

RESISTIVITY SOUNDING

CLIENT:

ANSELEX

AREA:

BURRA

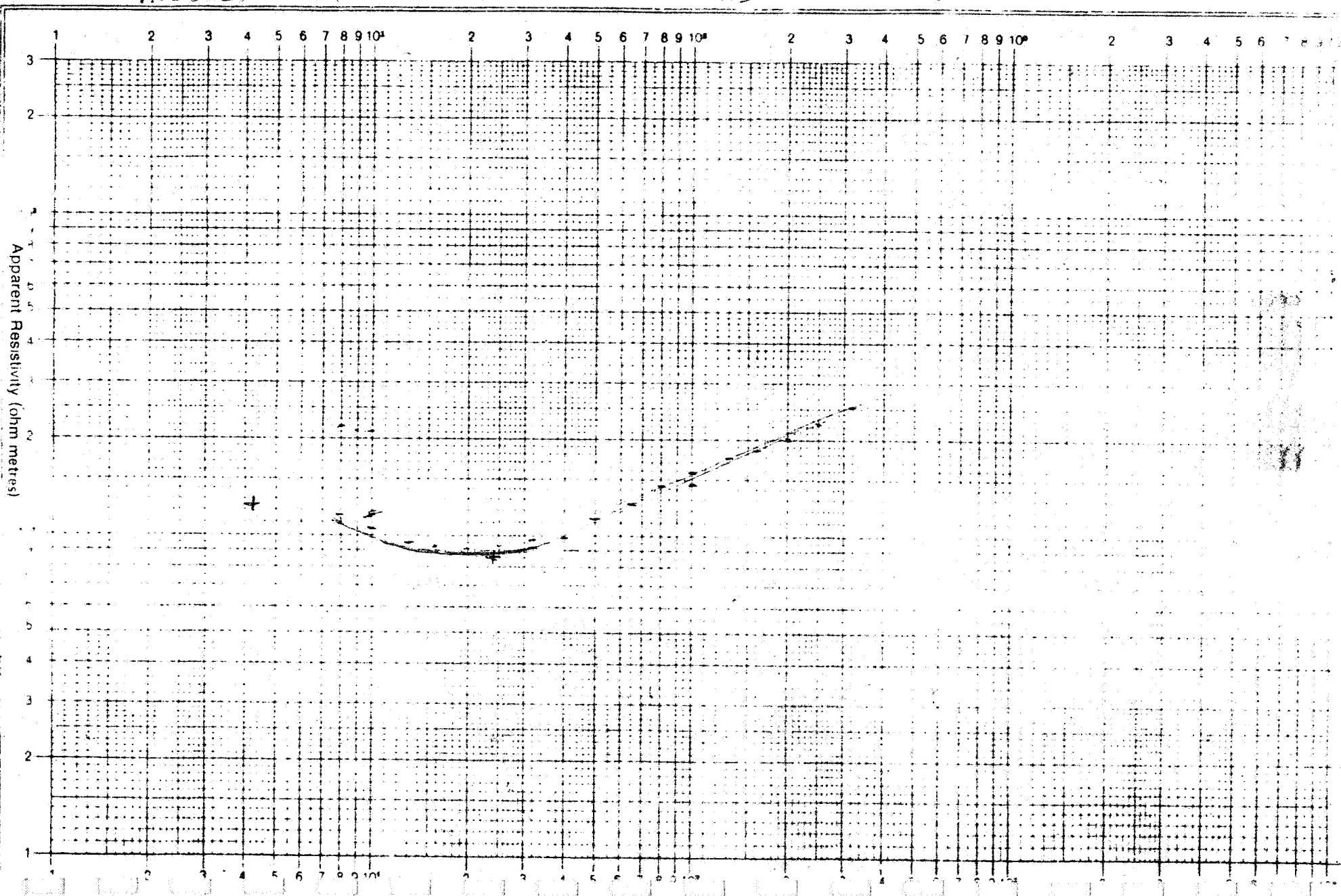
LINE:

WOOLLANA

STATION: 100 W

Plate

Report



$\rho_1 = 7 \times 5$

$\rho_2 = 7 \times 5$

$h_1 = 38$

$= 35$

0154

RESISTIVITY SOUNDING

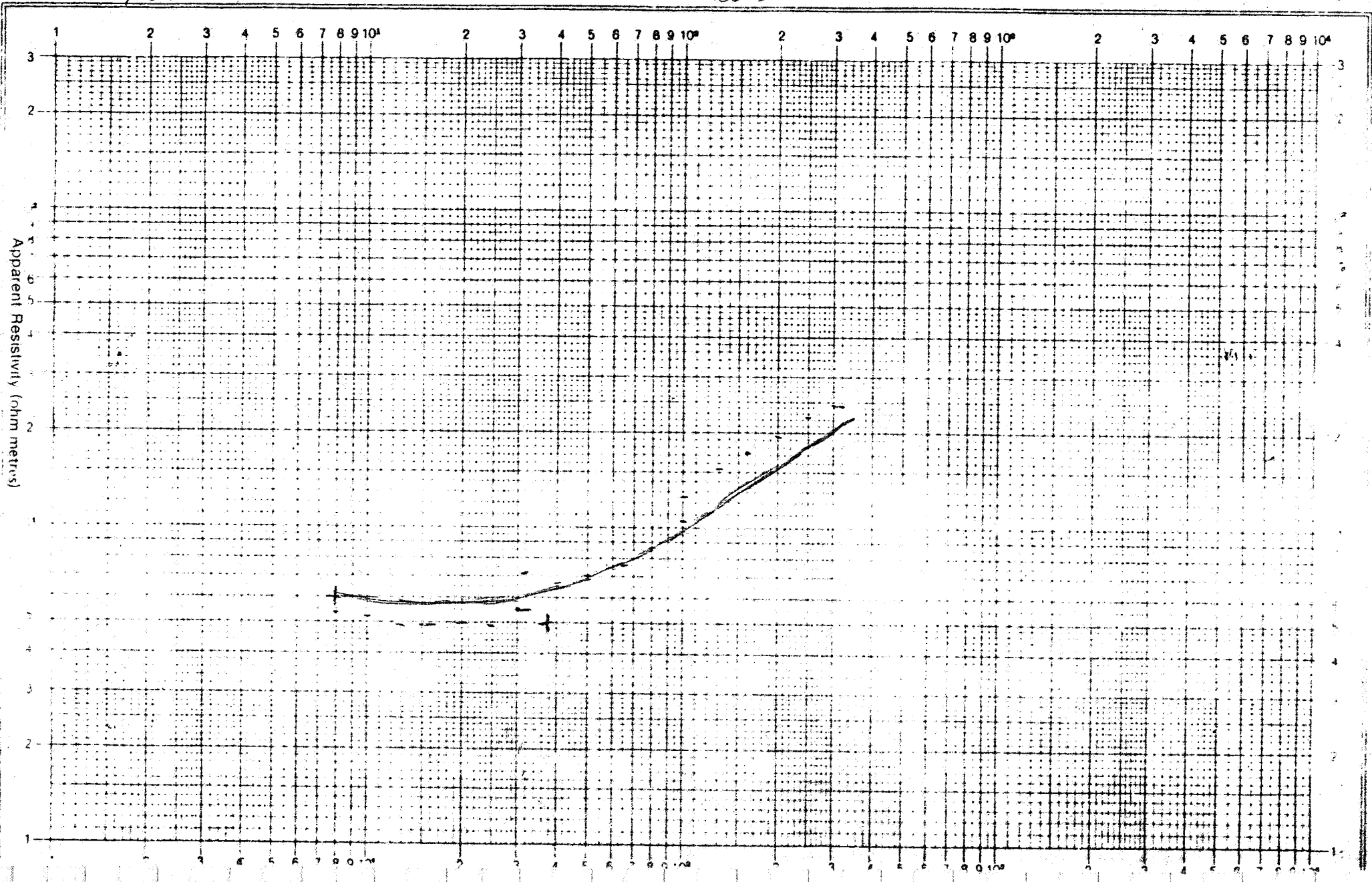
CLIENT: AUSELEX

AREA: BURRA

LINE: WOOLLANA ROAD STATION: 200W

Plate _____

Report _____



RESISTIVITY SOUNDING

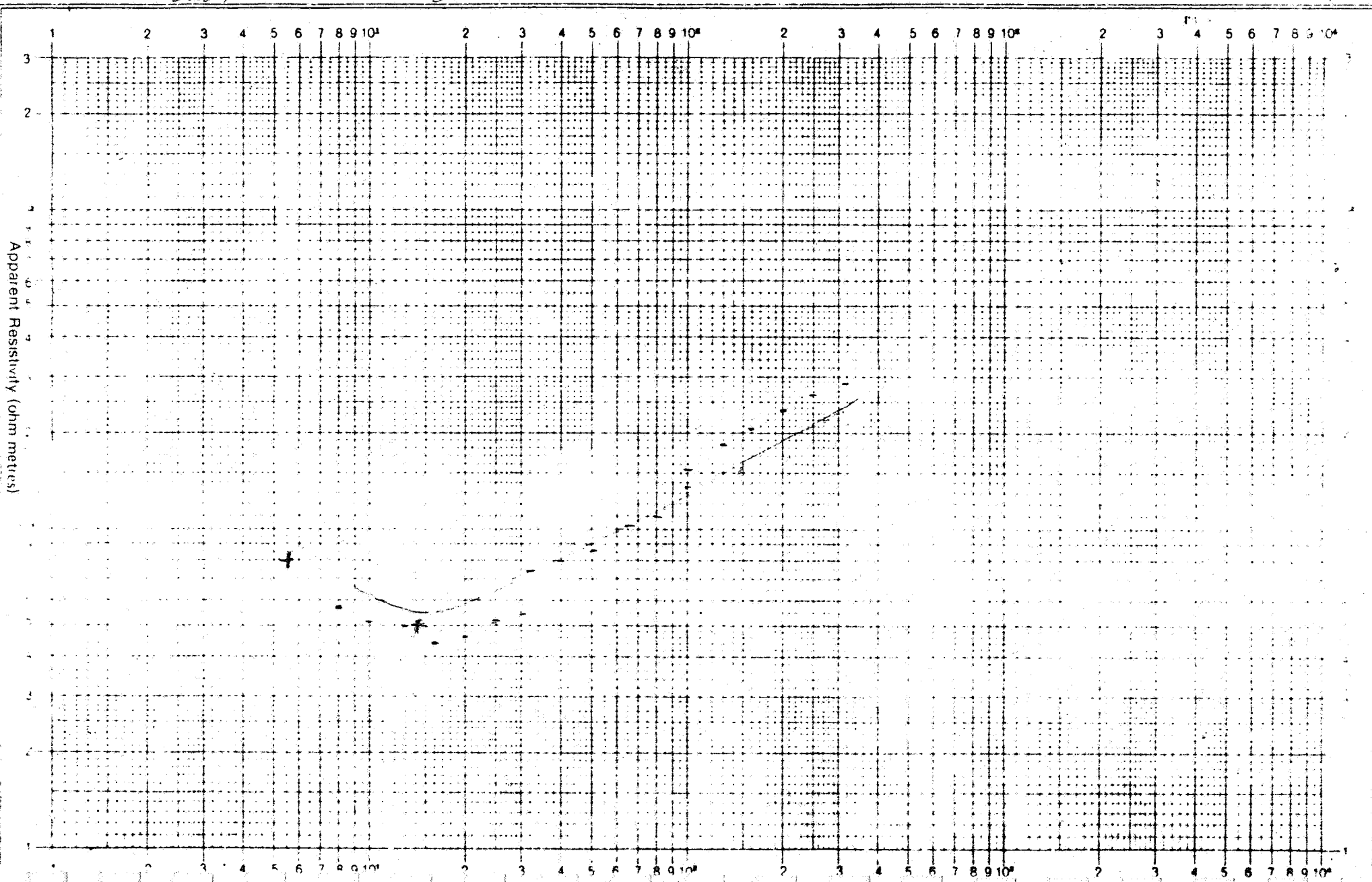
CLIENT: AUSELEX

AREA: BURRA

$\rho_1 = 8$
 $\rho_2 = 0.5 \times 80155 = 40077.5$
 $\rho_3 = 6 \times 5 = 30$
 $\rho_4 = 1.5 \times 55 = 82.5$
WOODLANDA
 LINE: ROAD STATION: 300 W

Plate _____

Report _____



0156

$\rho_1 = 3.7$
 $h_1 = 8.9$

$\rho_2 = 3.5 \times 3.7$
 $h_2 = 7 \times 8.9$

$\rho_3 = 5 \times 10.5$
 $= 52.5$

RESISTIVITY SOUNDING

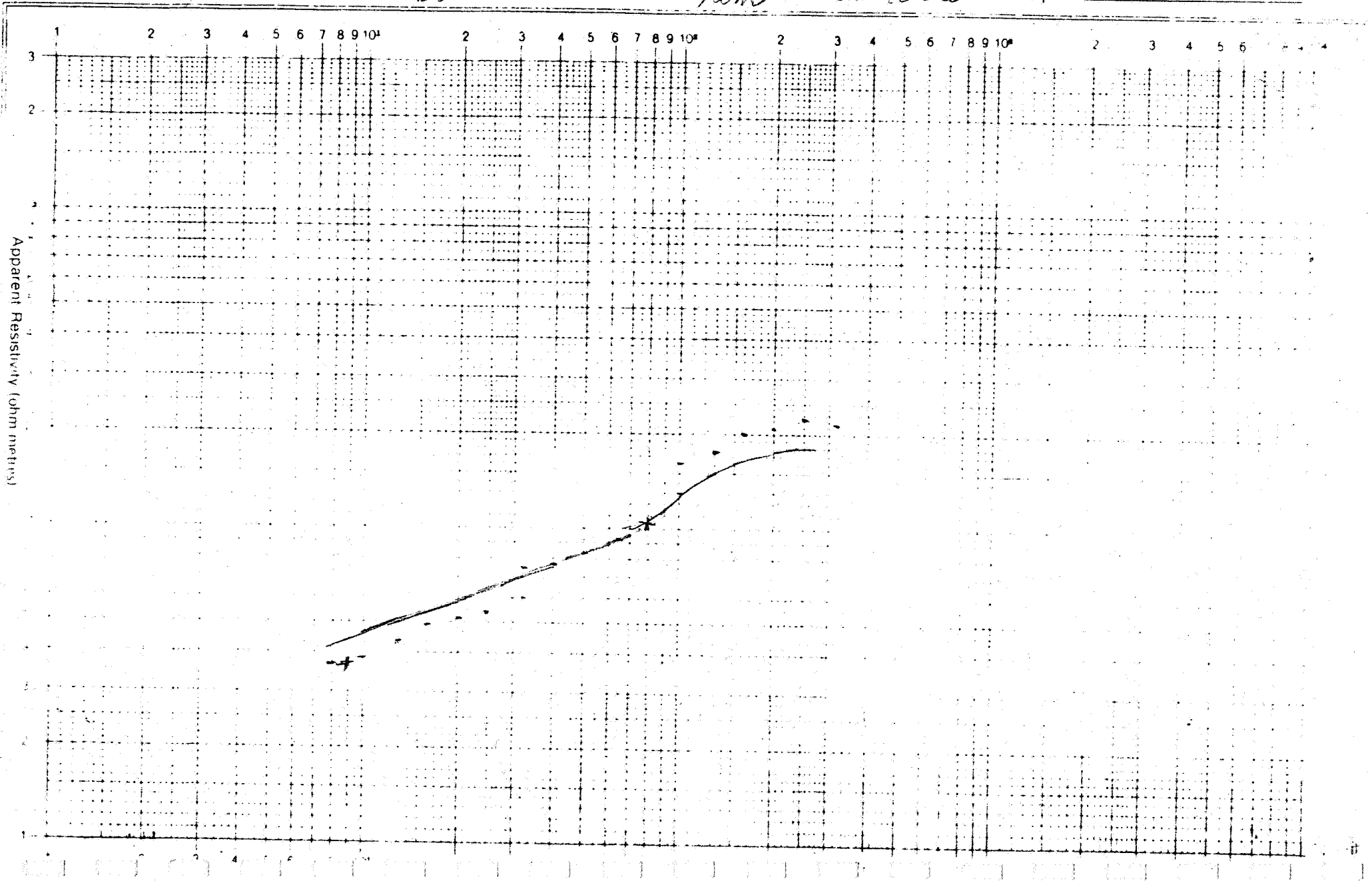
CLIENT: AUSELEX

AREA: BURRA

WOOLLANA
LINE ROAD STATION 400W

Plate 623

Report _____



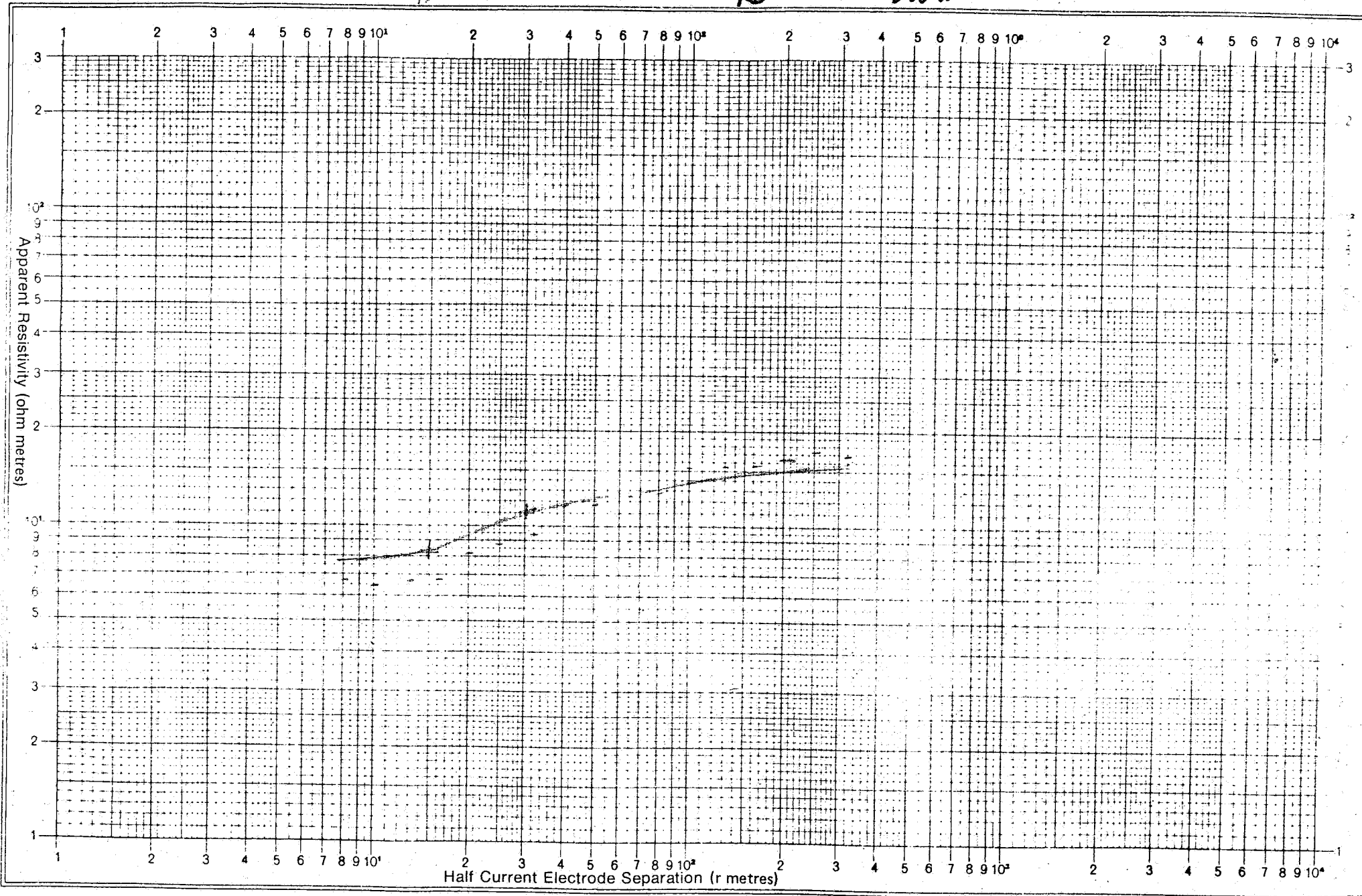
RESISTIVITY SOUNDING

CLIENT: ROSEBURY

AREA: B 3000

0157
LINE: WOODLAND RD STATION: 500 W

Plate _____
Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

0158

Plate _____

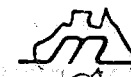
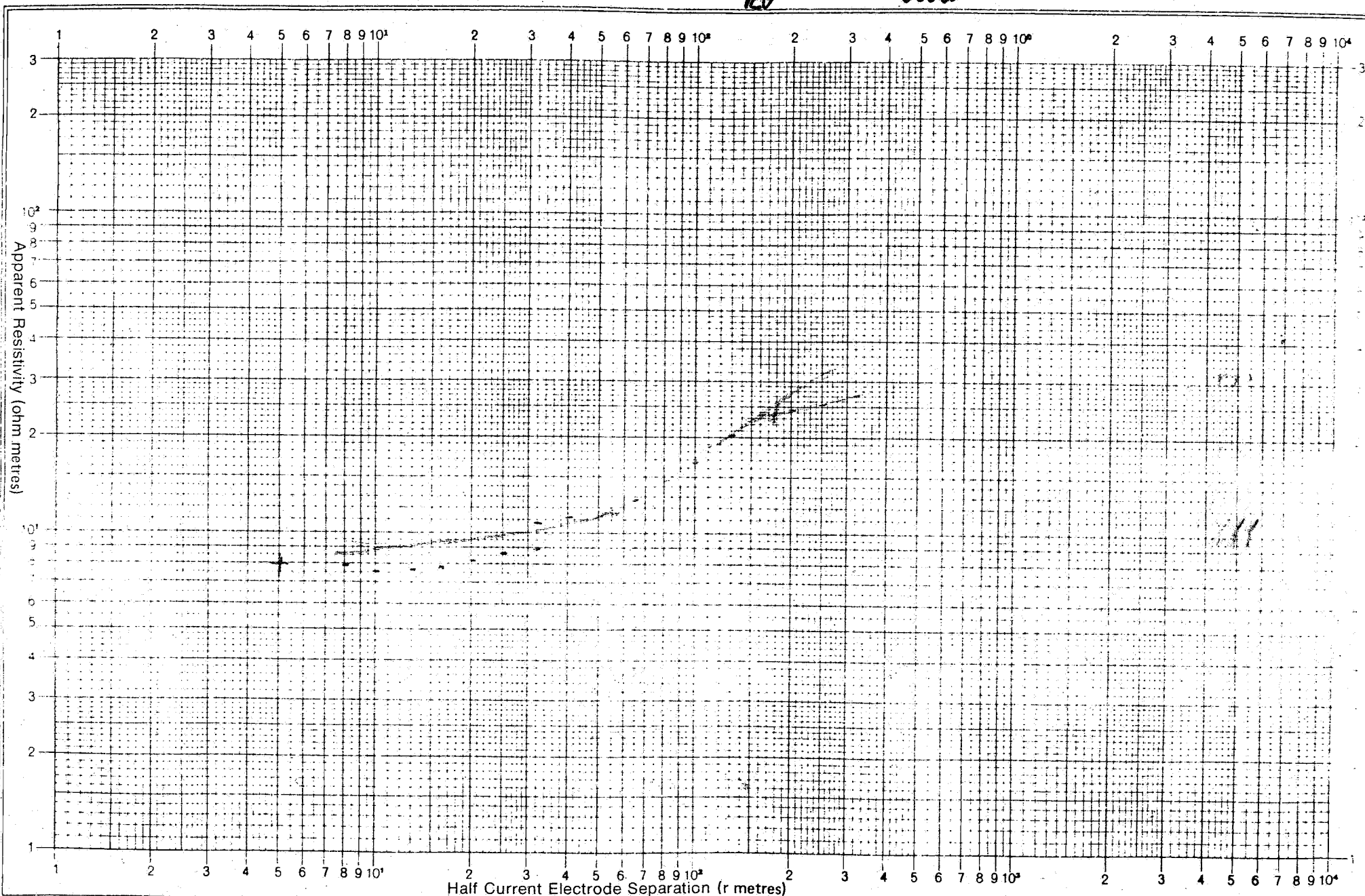
CLIENT: *ASCO*

AREA: *Woolan*

LINE: *WOOLAN RD*

STATION: *600W*

Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY LTD

RESISTIVITY SOUNDING

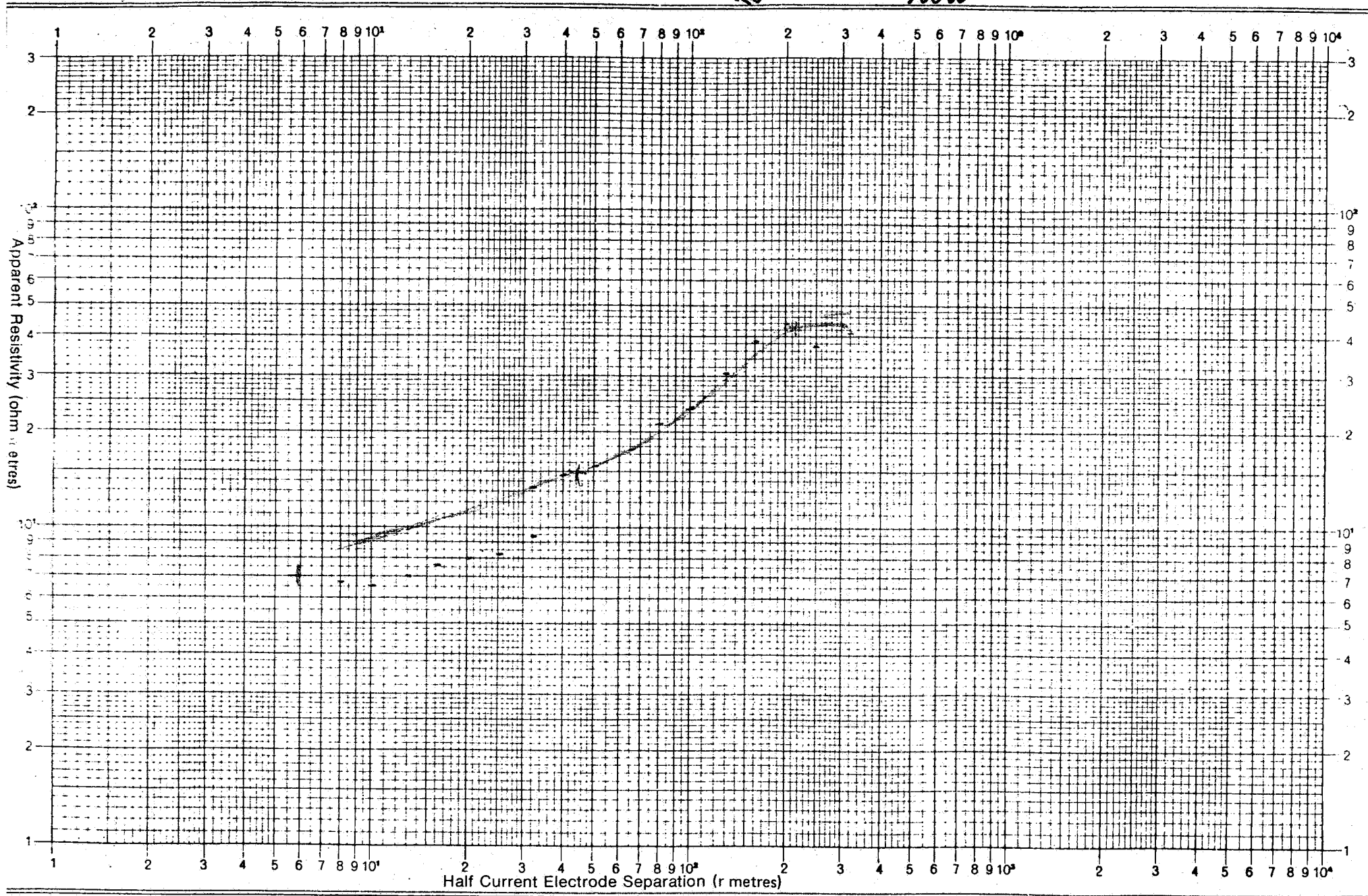
CLIENT: *ROSELEY*

AREA: *BURRA*

LINE: *WOOLANA RD*

STATION: *0159 700W*

Plate _____
Report _____



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

RESISTIVITY SOUNDING

CLIENT: *ROSELEY*

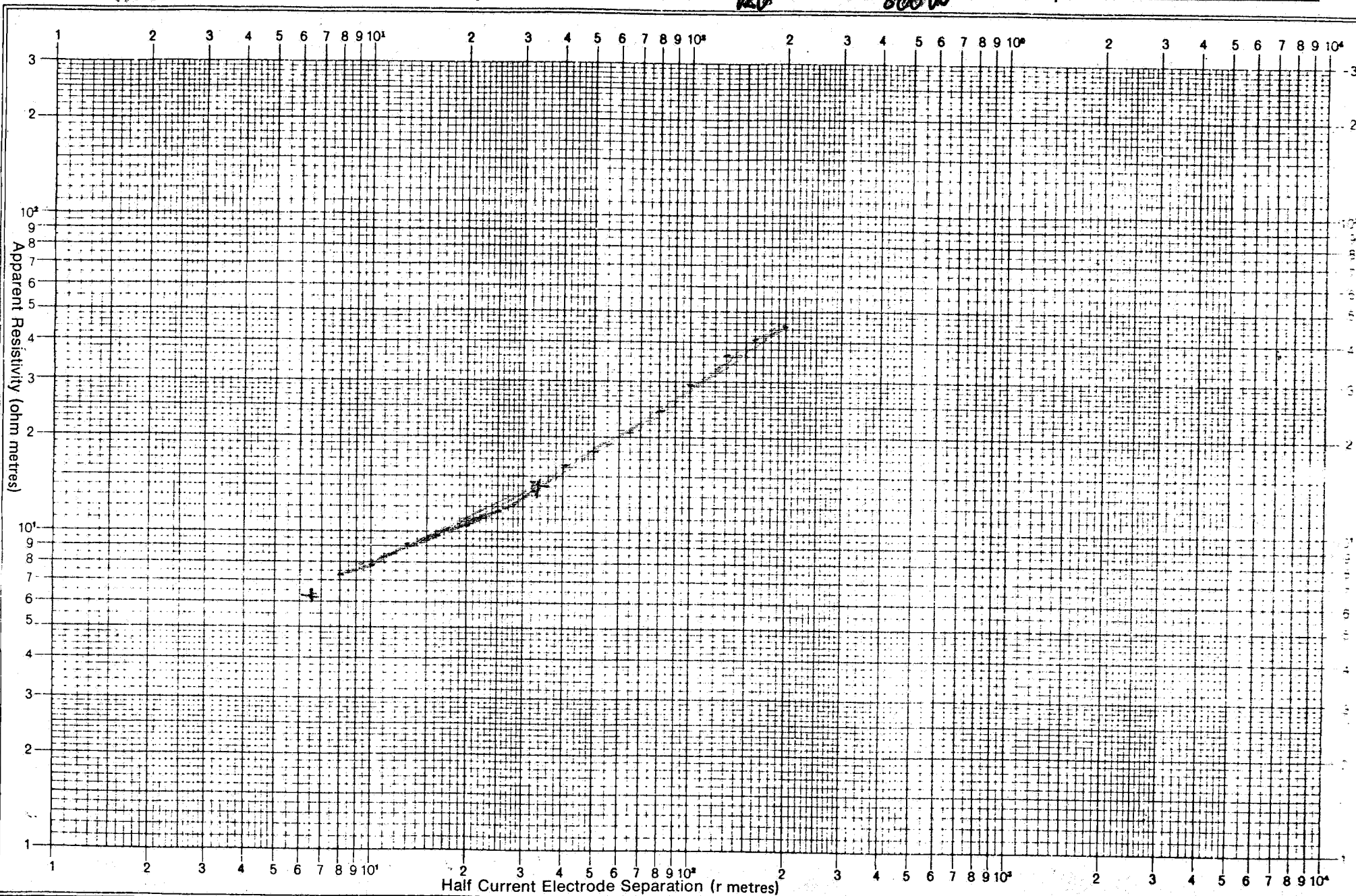
AREA: *BURRA*

LINE: *WOOLLANA RD* STATION: *800W*

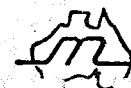
0160

Plate _____

Report _____



6.25
6.5
3x6.25
19.75
2.5x6.5
22.75
EX/4
20



MURDOCH GEOPHYSICS (AUSTRALIA) PTY. LTD.

$\rho_1 = 14.8$
 $h_1 = 4$
 $\rho_2 = 1.5 \times 14.8$
 $= 22.2$
 $h_2 = 3 \times 4$
 $= 12$
 $\rho_3 = 3.5 \times 19.5$
 $= 68.3$
 $h_3 = 3.1 \times 17.1$
 $= 53.3$
 $\rho_4 = 0.5 \times 47$
 $= 23.5$

0161

RESISTIVITY SOUNDING

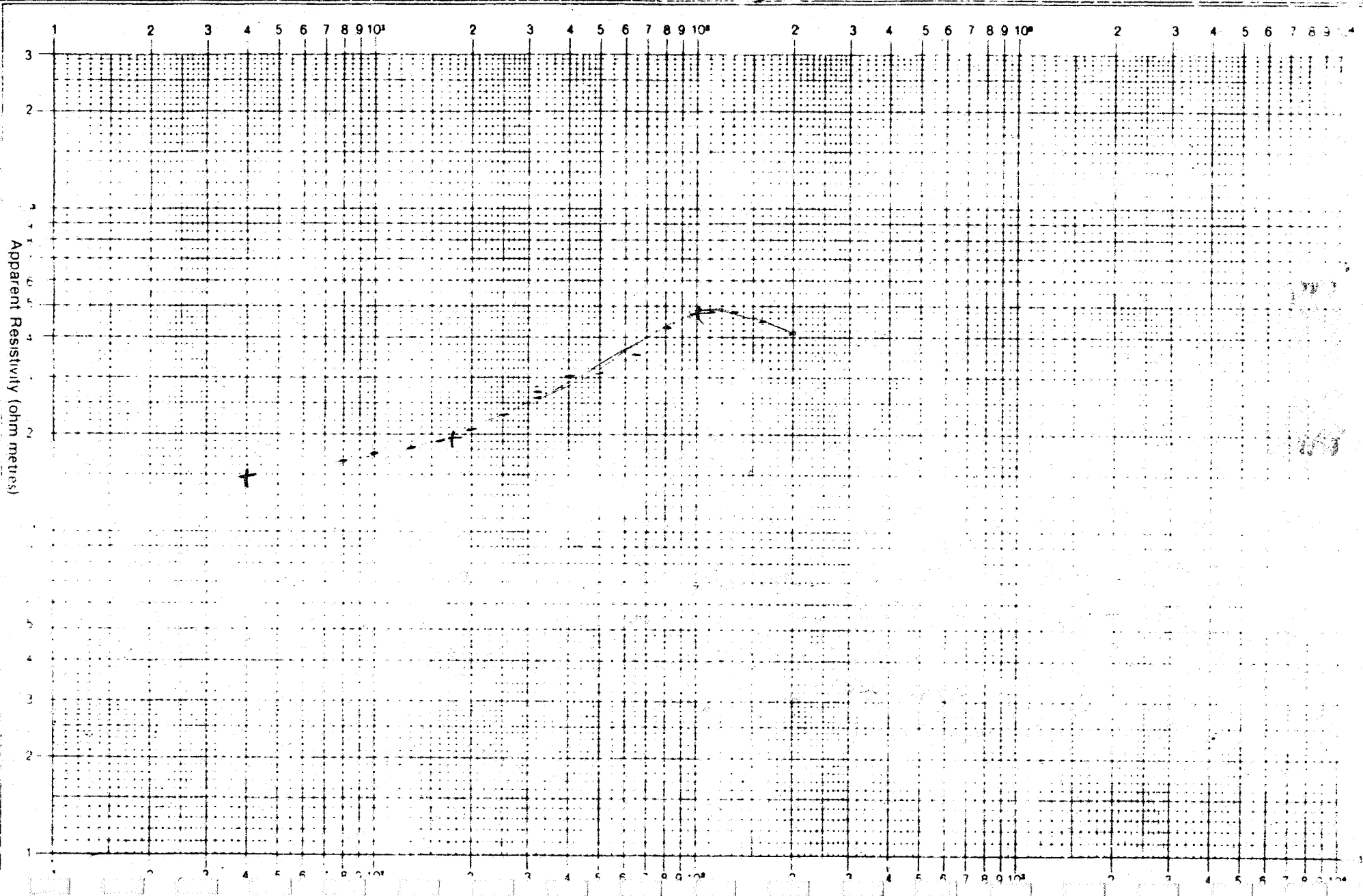
CLIENT: AUSELEX

AREA: BURRA

BELCUNDA
 LINE R.D. STATION: 00E

Plate _____

Report _____



$\rho_1 = 3.8$ $\rho_2 = 10 \times 3.8$
 $h_1 = 5.2$ $= 38$

0162

RESISTIVITY SOUNDING

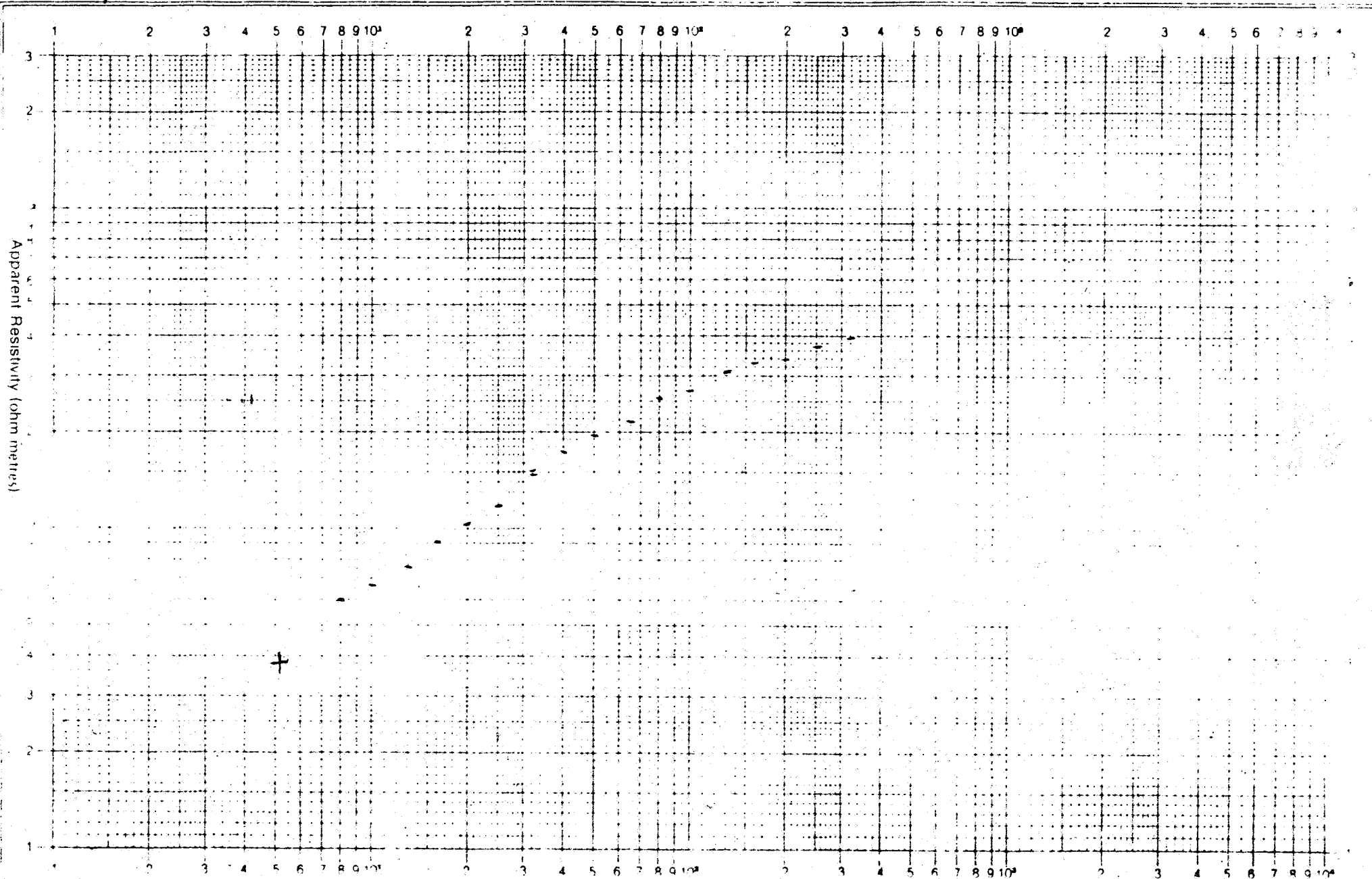
CLIENT: *AUSELEX*

AREA: *BURRA*

BELLUNDA
LINE: *ROAD* STATION: *500E*

Plate _____

Report _____



$\rho_1 = 14.8$
 $h_1 = 6.6$

$\rho_2 = 0.5 \times 14.8$
 $= 7.4$
 $h_2 = 0.5 \times 6.6$
 $= 3.3$

$\rho_3 = 12.5 \times 11.3$
 $= 14.1$
 $h_3 = 3 \times 10$
 $= 30$
 $\rho_4 = 7.7 \times$
 $= 94.5$

0163

Plate _____

RESISTIVITY SOUNDING

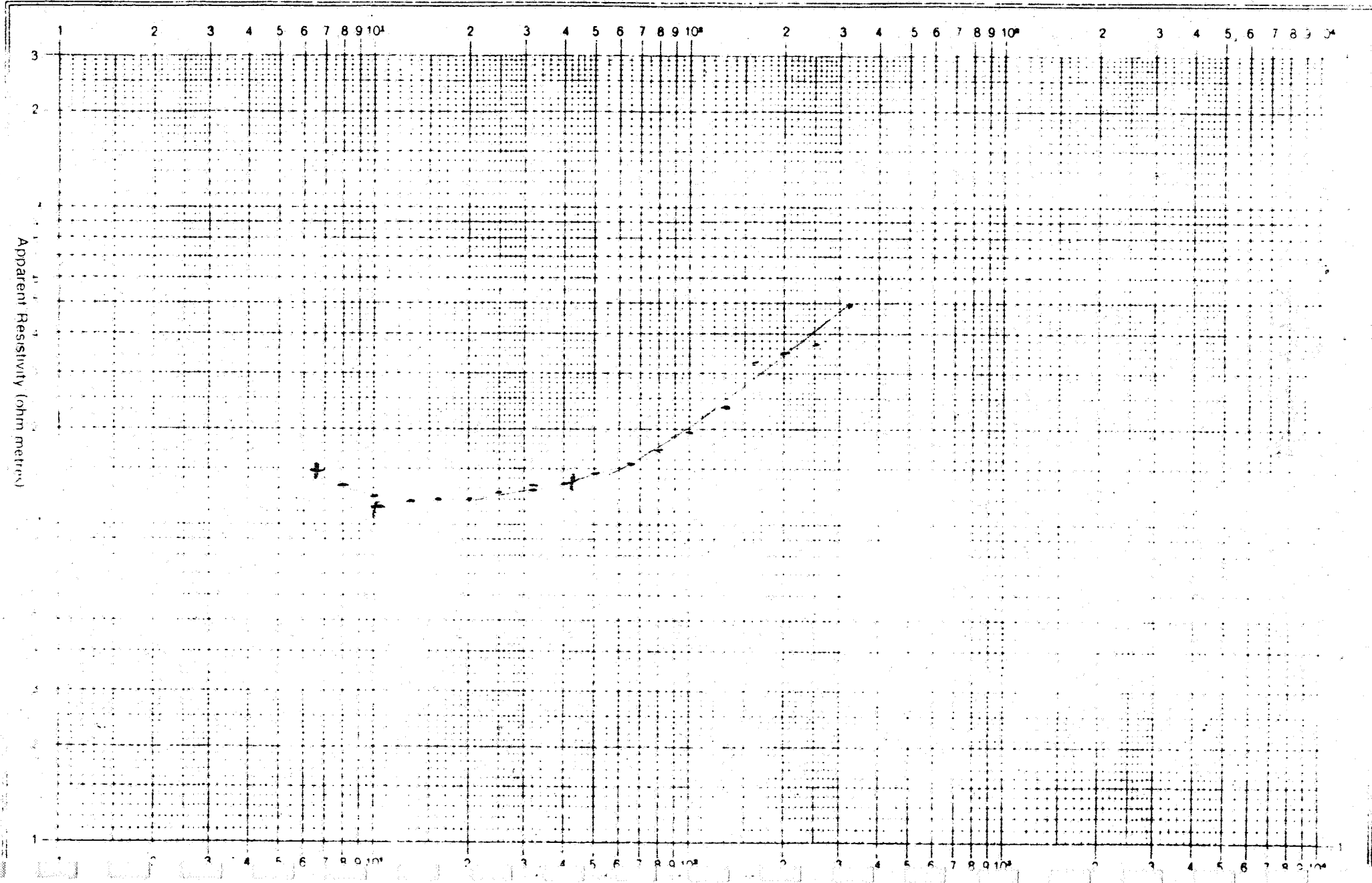
CLIENT: AUSELEX

AREA: BURRA

DELCUNDA

LINE: R.D STATION: 1000 E

Report _____



RESISTIVITY SOUNDING

CLIENT: AUSELEX

AREA: BURRA

LINE: RD. STATION: 1500E

Plate: _____

Report: _____

$$\rho_1 = 5.1$$

$$h_1 = 5.8$$

$$\rho_2 = 2.5 \times 5.1$$

$$= 12.8$$

$$h_2 = 11 \times 5.8$$

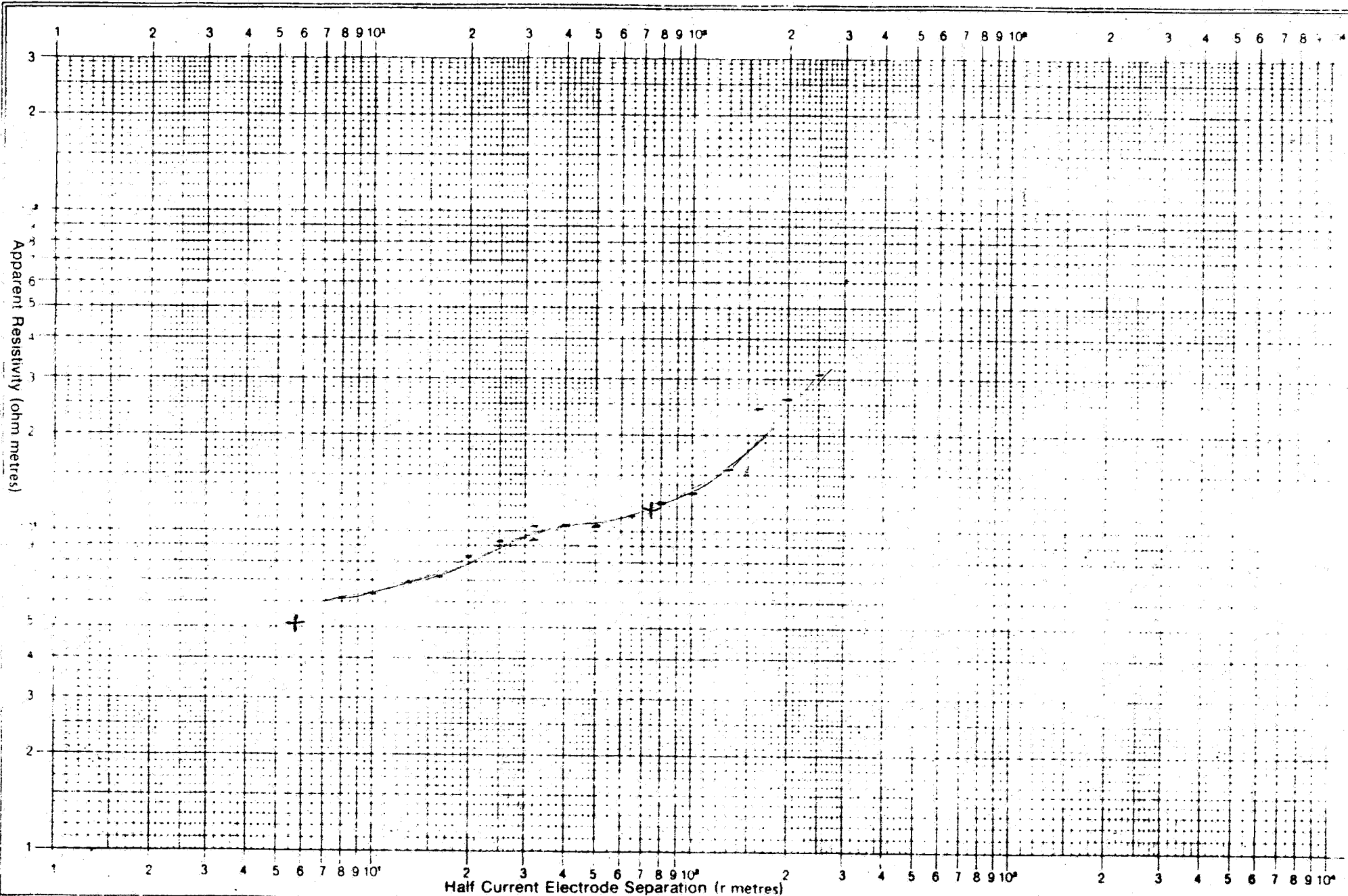
$$= 63.8$$

BECCINDA

$$1.3 \times 5.1 \times 8$$

$$= 177$$

0164



$\rho_1 = 8.2$
 $h_1 = 6.25$

$\rho_2 = 15 \times 8.2$
 $= 123$
 $h_2 = 1 \times 6.25$
 $= 6.25$

$\rho_3 = 35 \times 16$
 $= 336$
 $h_3 = 4.5 \times 13$
 $= 58.5$

$\rho_4 = 4 \times 106$
 $= 106$

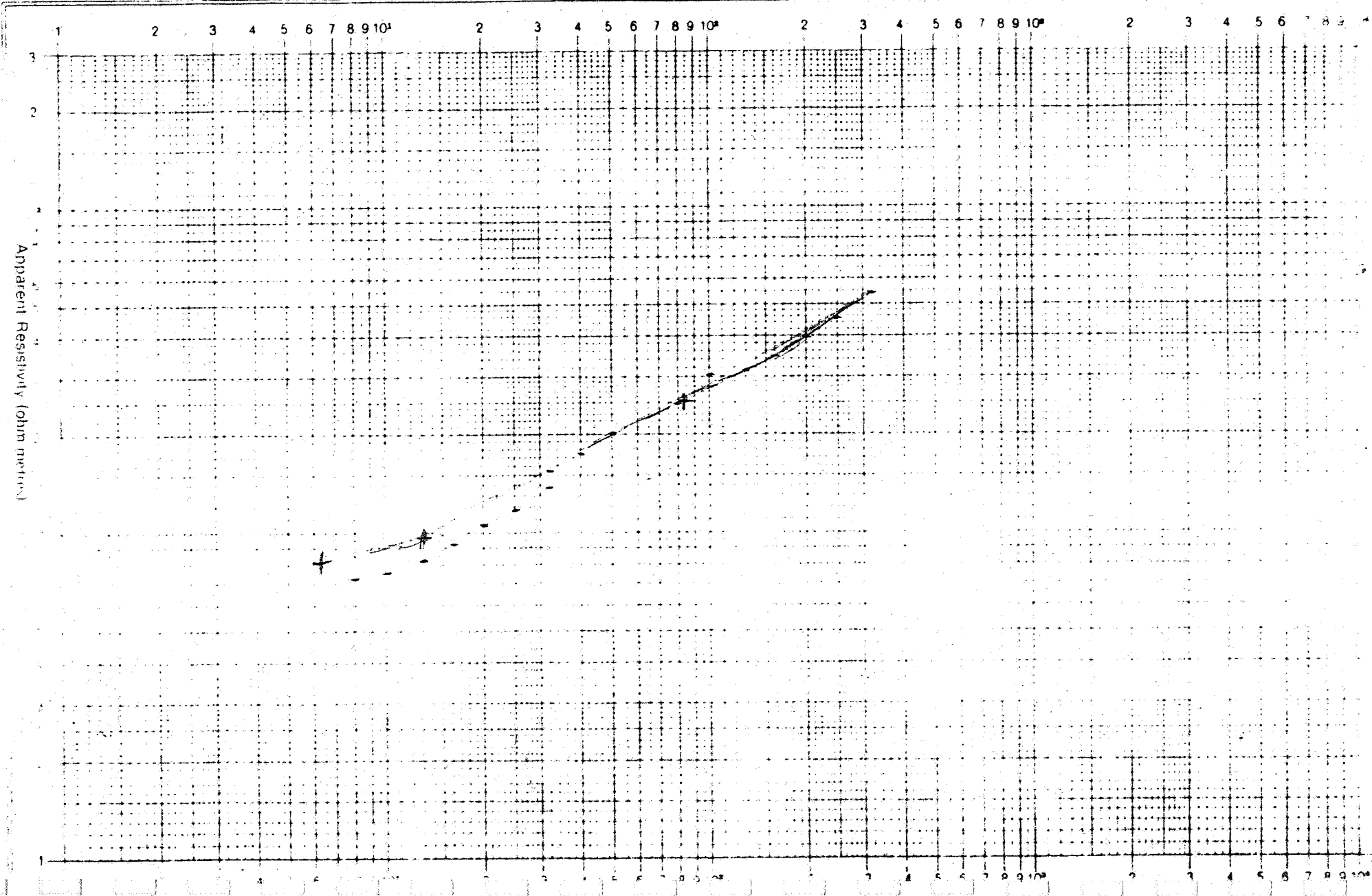
RESISTIVITY SOUNDING

CLIENT AUSELEX

AREA BURRA

BELLUNDA
 LINE RD STATION 2000E

Plate _____
 Report _____



$\rho_1 = 4.6$
 $h_1 = 4.8$

$\rho_2 = 2.5 \times 10^8$
 $= 12$
 $h_2 = 7 \times 4.8$
 $= 33.6$

$\rho_3 = 20 \times 10^8$
 $= 216$

RESISTIVITY SOUNDING

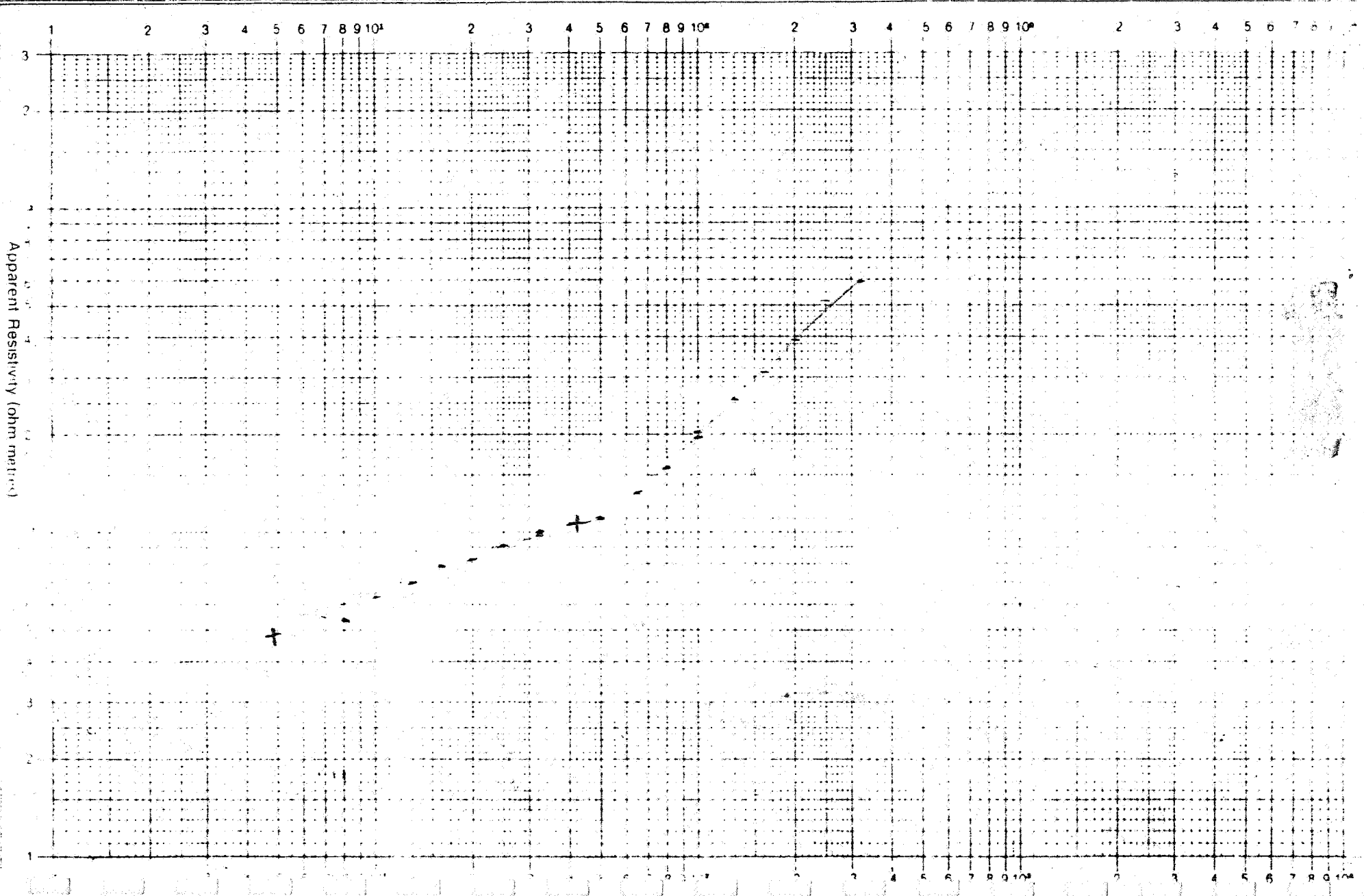
CLIENT: AUSELEX

AREA: BURAH

LINE: BELCUNDA
RD. STATION 2500E

Plate _____

Report _____



$$\mu_4 = 20415, 22$$

$$= 120$$

RESISTIVITY SOUNDING

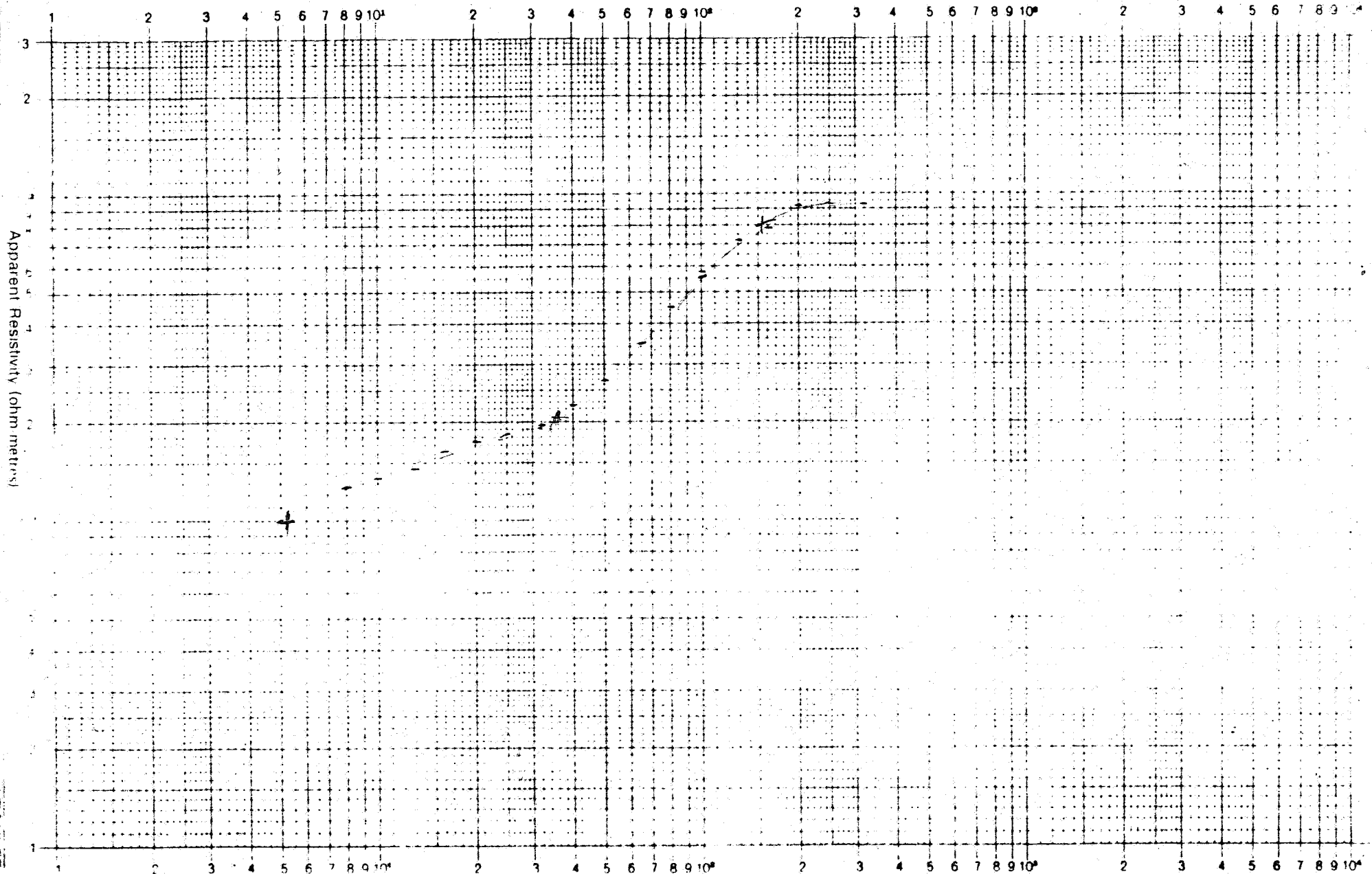
CLIENT: AUSELEX

AREA: BURRA

LINE: AD STATION: 3000E

Plate _____

Report _____



$$\rho_1 = 17.8$$

$$h_1 = 5.6$$

$$\rho_2 = 0.65 \times 17.8$$

$$= 11.6$$

$$h_2 = 2.2 \times 5.6$$

$$= 12.3$$

$$\rho_3 = 3 \times 13.5$$

$$= 40.5$$

$$h_3 = 1.71 \times 20$$

$$= 35$$

$$\rho_4 = 20 \times 76$$

$$= 520$$

RESISTIVITY SOUNDING

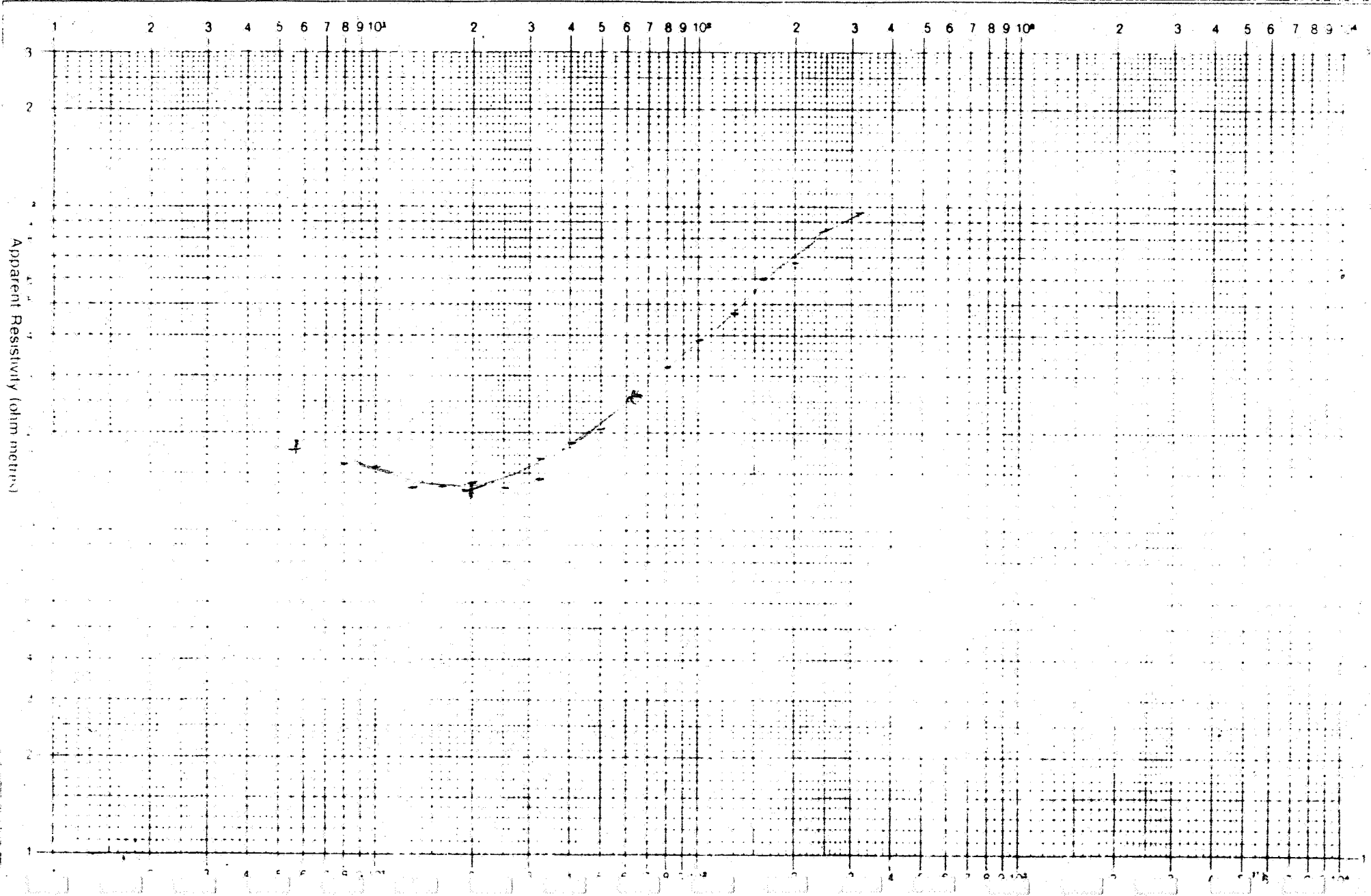
CLIENT: AUSELEX

AREA: BORRA

LINE: BELCUNDA RD STATION: 3500E

Plate _____

Report _____



$$\rho_1 = 25$$

$$h_1 = 9.25$$

$$\rho_2 = 2.5 \times 25 = 62.5$$

$$h_2 = 4 \times 9.25 = 37$$

$$\rho_3 = 3 \times 50 = 150$$

0169

RESISTIVITY SOUNDING

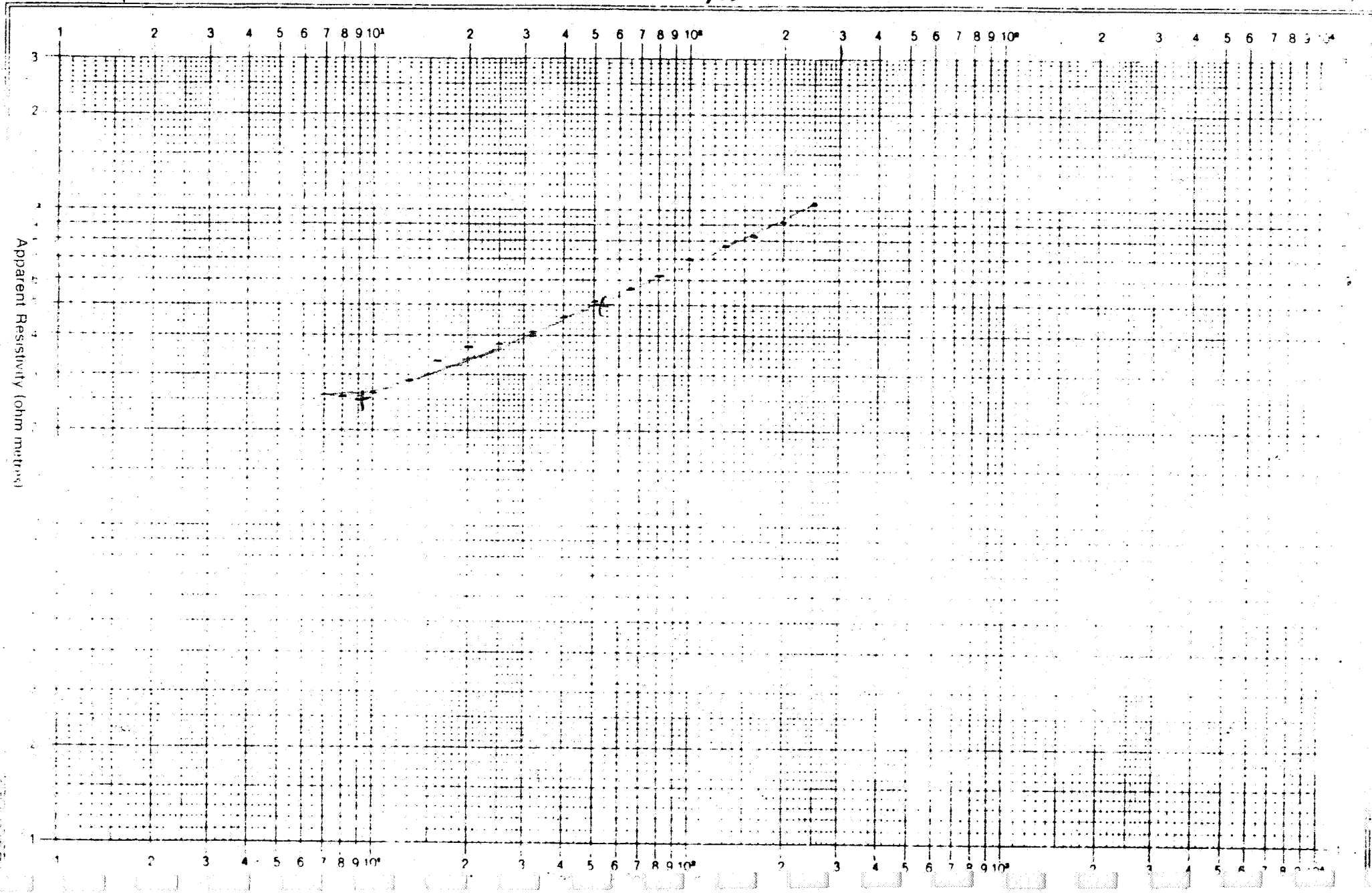
CLIENT: AUSELEX

AREA: BURRA

LINE: RD. STATION: 4/50E

Plate _____

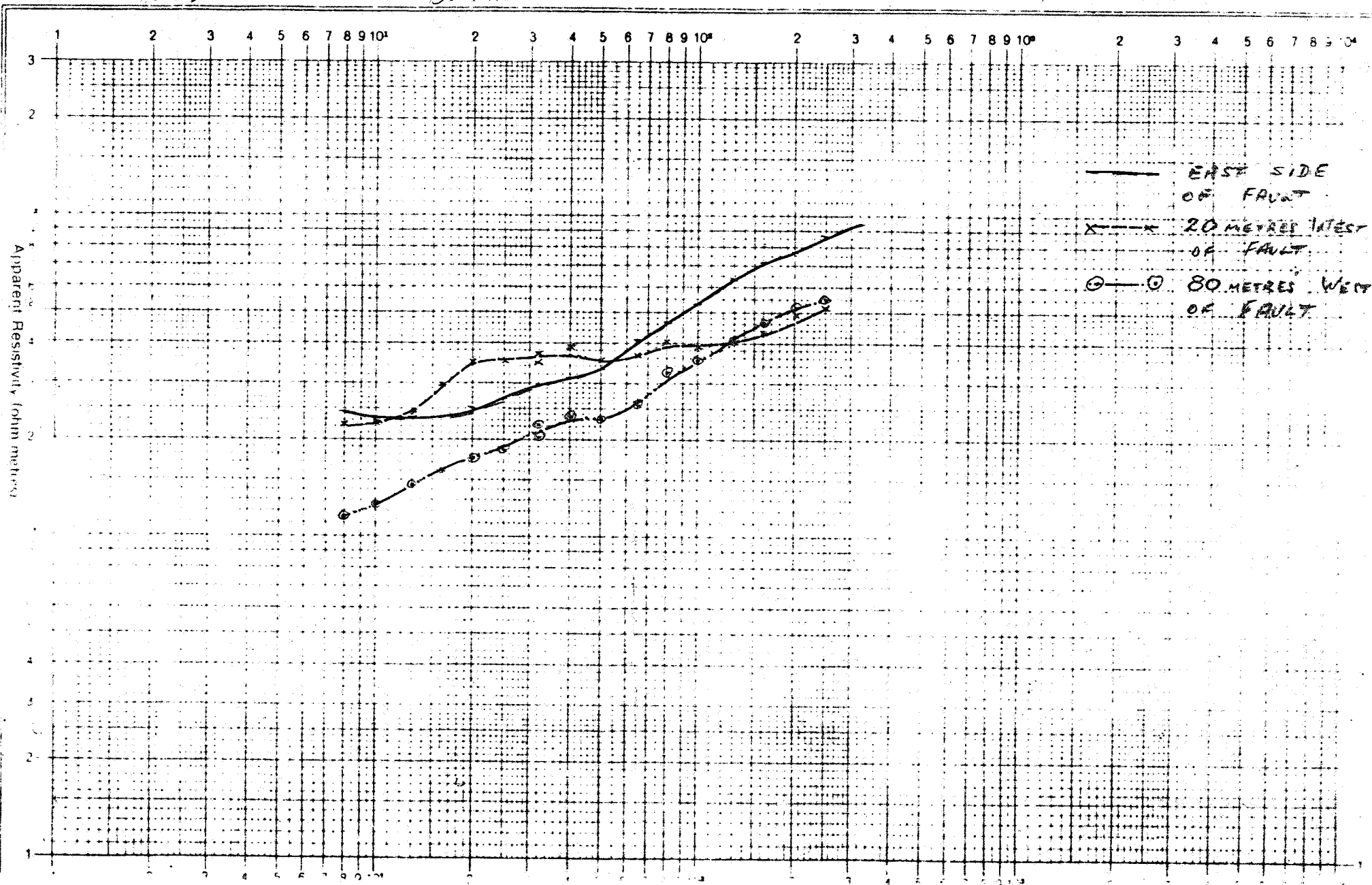
Report _____

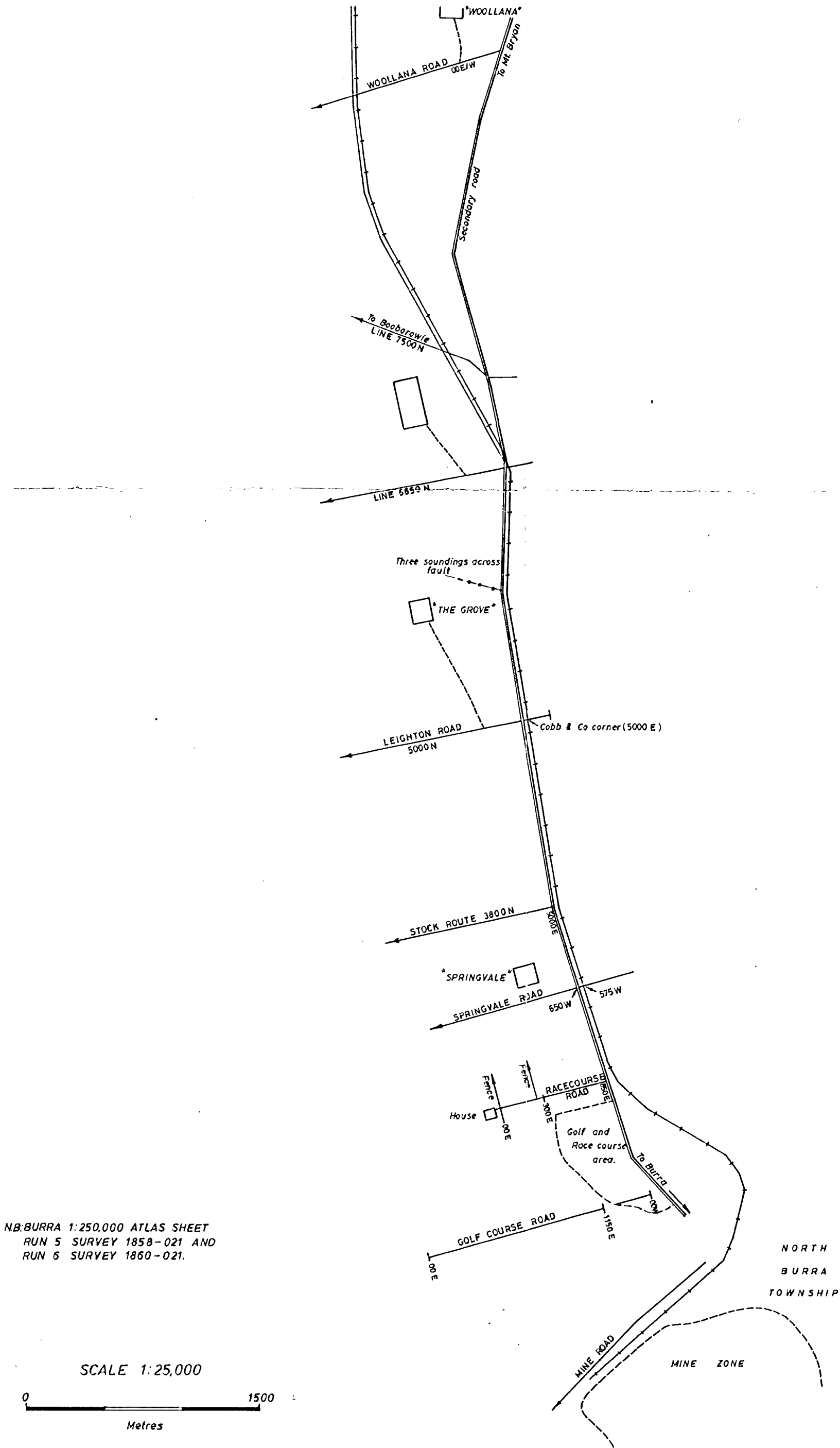


RESISTIVITY SOUNDINGCLIENT: *AUSELEX*AREA: *BURRA*FAULT
LINE: *LINE* STATION

Plate _____

Report _____





N.B. BURRA 1:250,000 ATLAS SHEET
RUN 5 SURVEY 1858-021 AND
RUN 6 SURVEY 1860-021.

SCALE 1:25,000

0 1500
Metres



AUSTRALIAN SELECTION (PTY. LTD.)

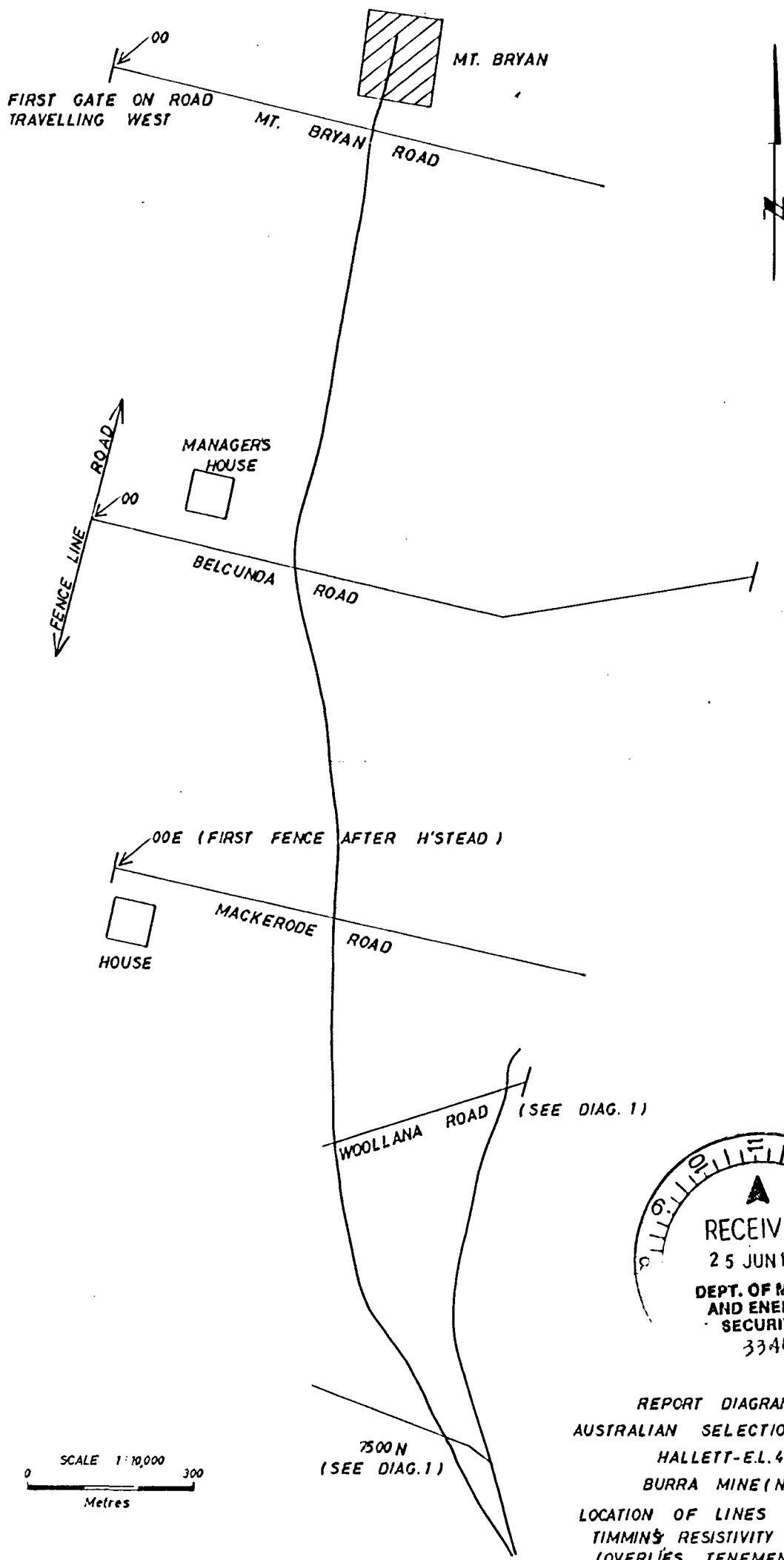
HALLETT - E.L.425

BURRA MINE (NORTH)

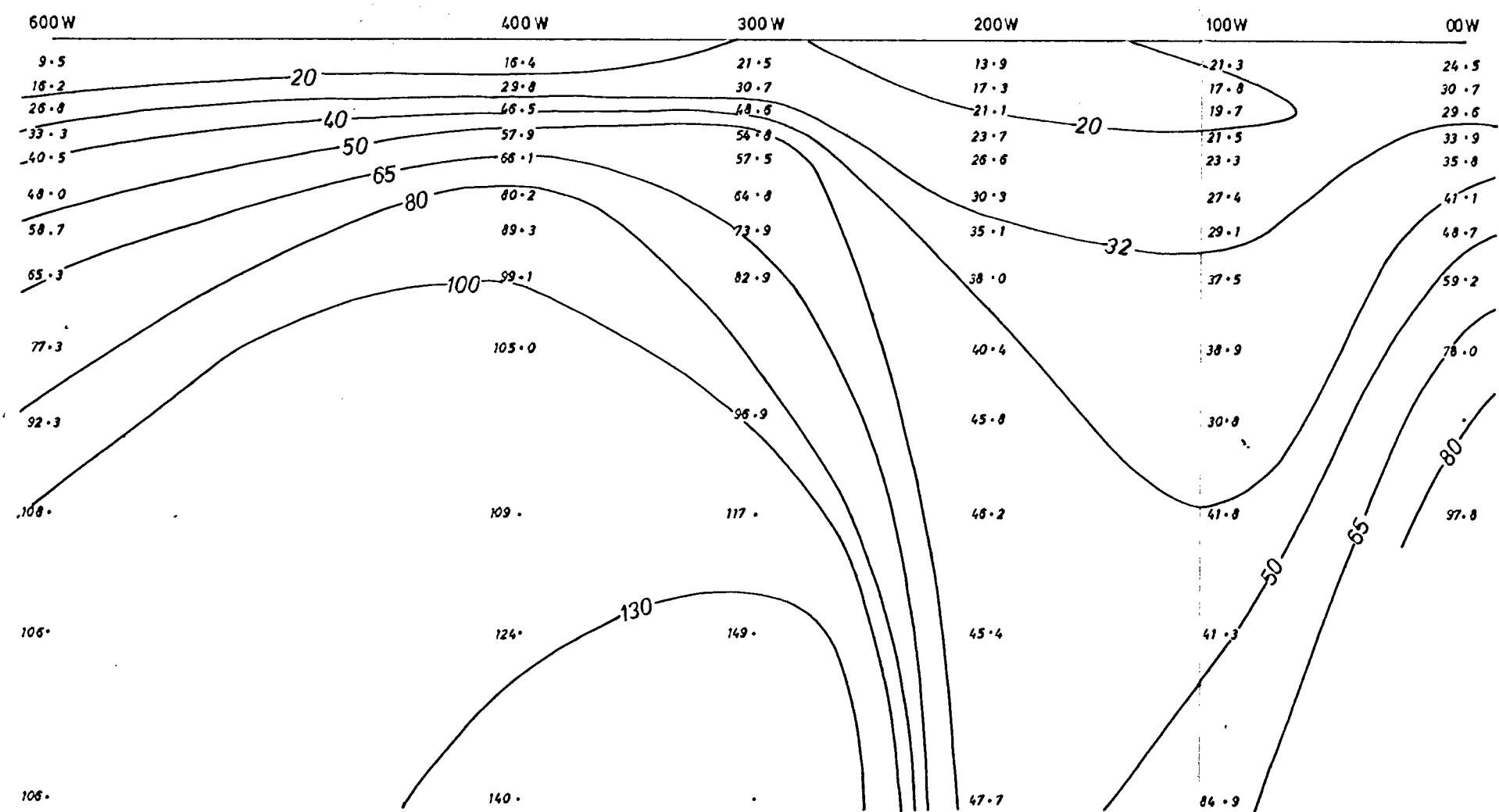
LOCATION OF LINES USED FOR
TIMMINS RESISTIVITY REPORT.
(OVERLAY)

REPORT DIAGRAM 1

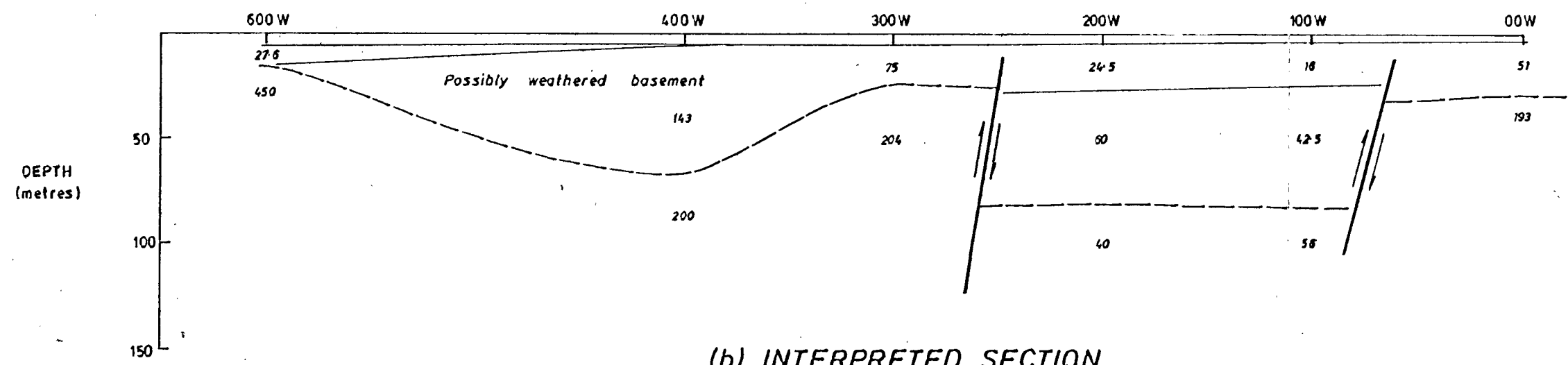
A.S. 8695



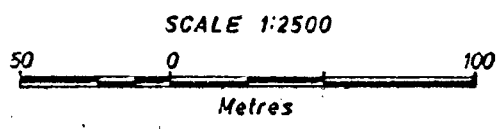
REPORT DIAGRAM 2
AUSTRALIAN SELECTION (PTY. LTD.)
HALLETT-EL. 425
BURRA MINE (NORTH)
LOCATION OF LINES USED FOR
TIMMING RESISTIVITY REPORT.
(OVERLIES TENEMENT MAP.)
A.S. 8694



(a) PSEUDO SECTION



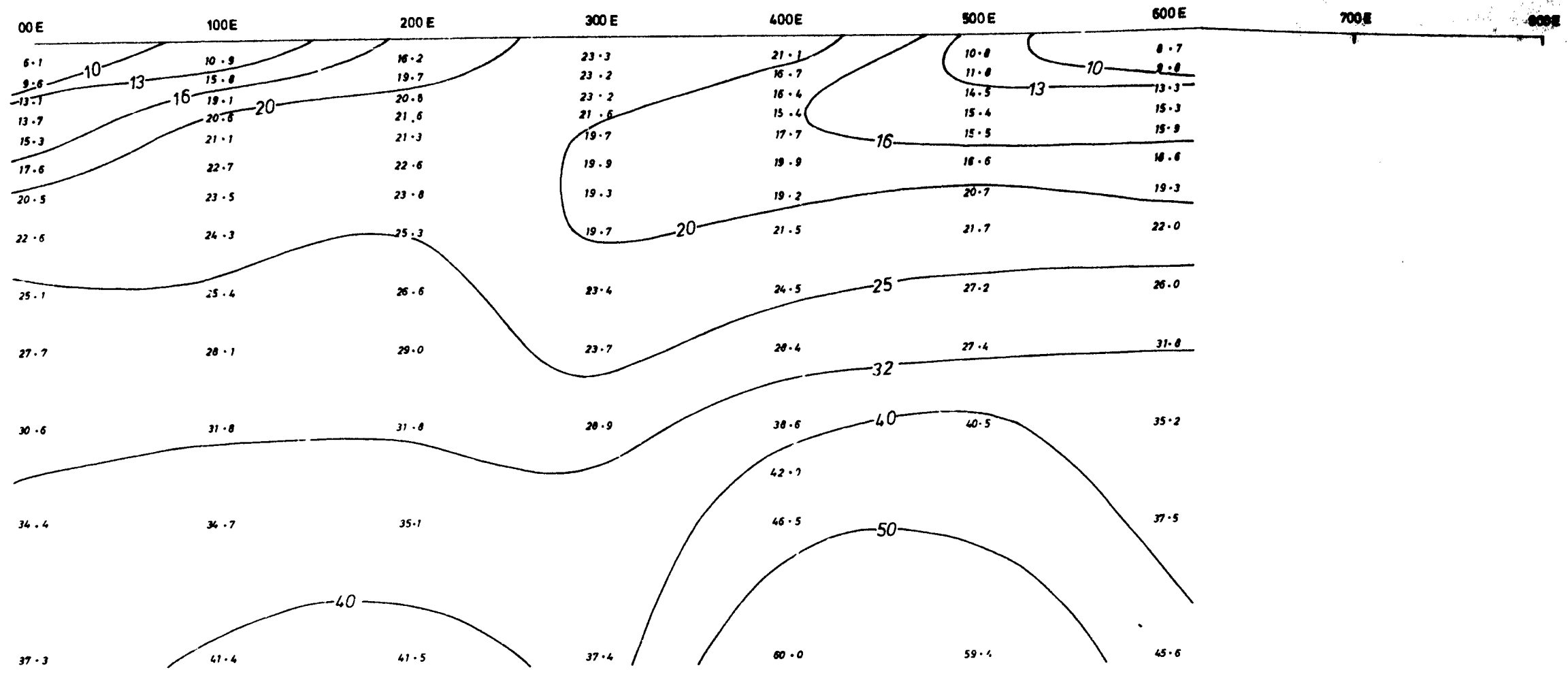
(b) INTERPRETED SECTION



REPORT DIAGRAM 3.

AUSTRALIAN SELECTION (PTY) LTD			
HALLETT - EL.425			
TIMMINS RESISTIVITY REPORT			
BURRA MINE (NORTH)			
MINE ROAD			
Revisions.	Date.	Compiled by: A.T.	Date: JAN. '79
		Drawn by: .	
		Traced by: R.W.	MAR. '79
		Checked by:	
PLAN NUMBER: AS 8602			

0173

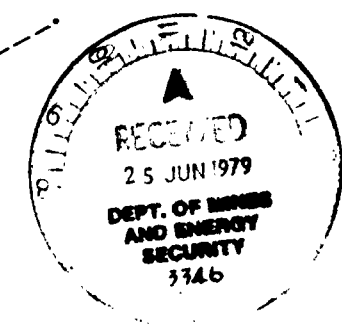
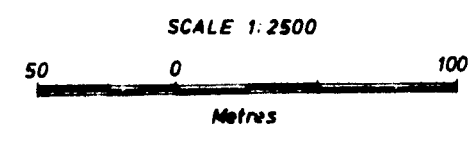


(a) PSEUDO SECTION

APPARENT
RESISTIVITY
(ohm-metres)

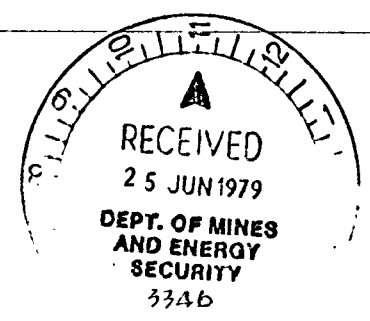
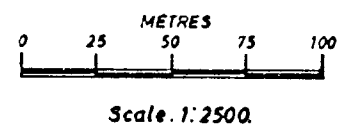
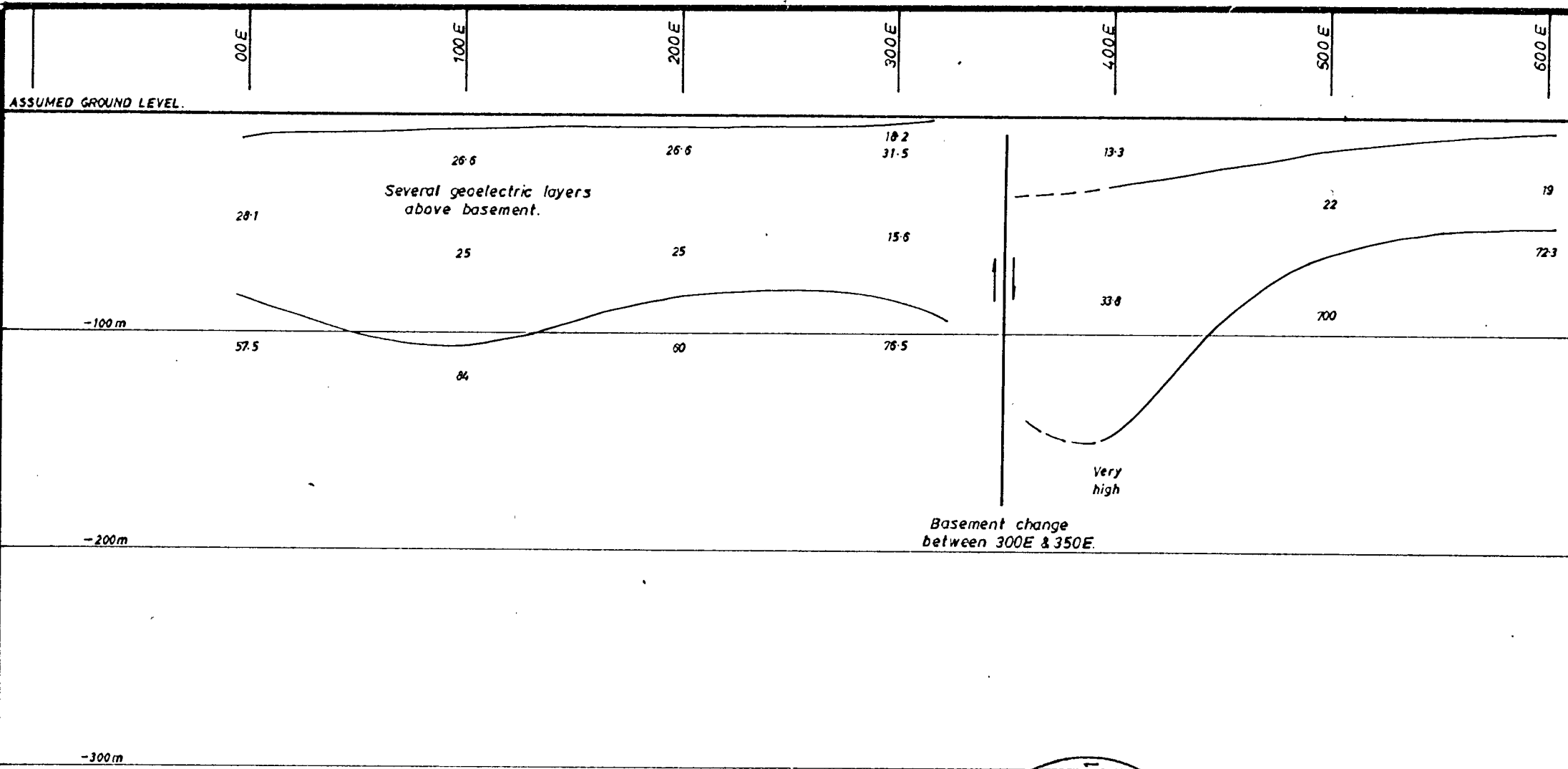


(b) PROFILE



REPORT DIAGRAM 5

AUSTRALIAN SELECTION (PTY) LTD				
HALLETT - EL425				
TIMMINS RESISTIVITY REPORT				
BURRA MINE (NORTH)				
RACECOURSE ROAD				
Revisions	Date	Compiled by	B.T.	Date
		Drawn by		JAN '79
		Traced by	R.W.	MAR '79
		Checked by		
		PLAN NUMBER	AS 8501	



TIMMINS RESISTIVITY REPORT
REPORT DIAGRAM 6
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425.
BURRA MINE (NORTH)
INTERPRETED SECTION
RACECOURSE ROAD
AS 8635

0175

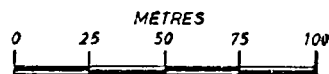
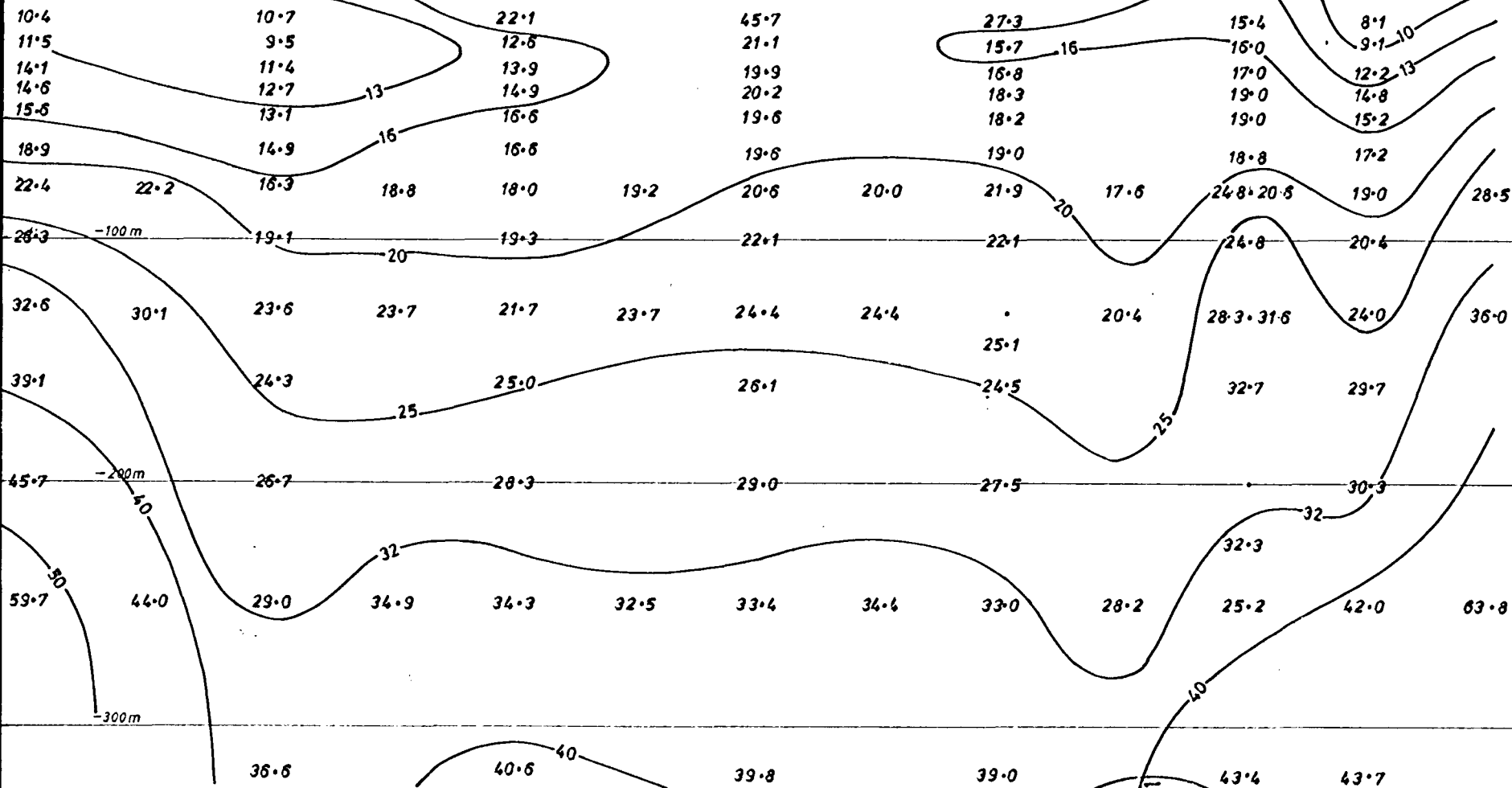
4400mE

4600mE

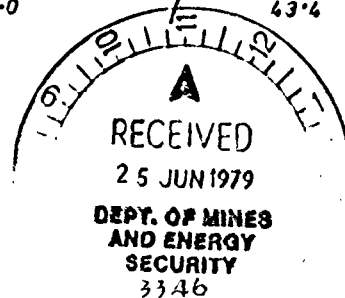
4800mE

5000mE

ASSUMED GROUND LEVEL.



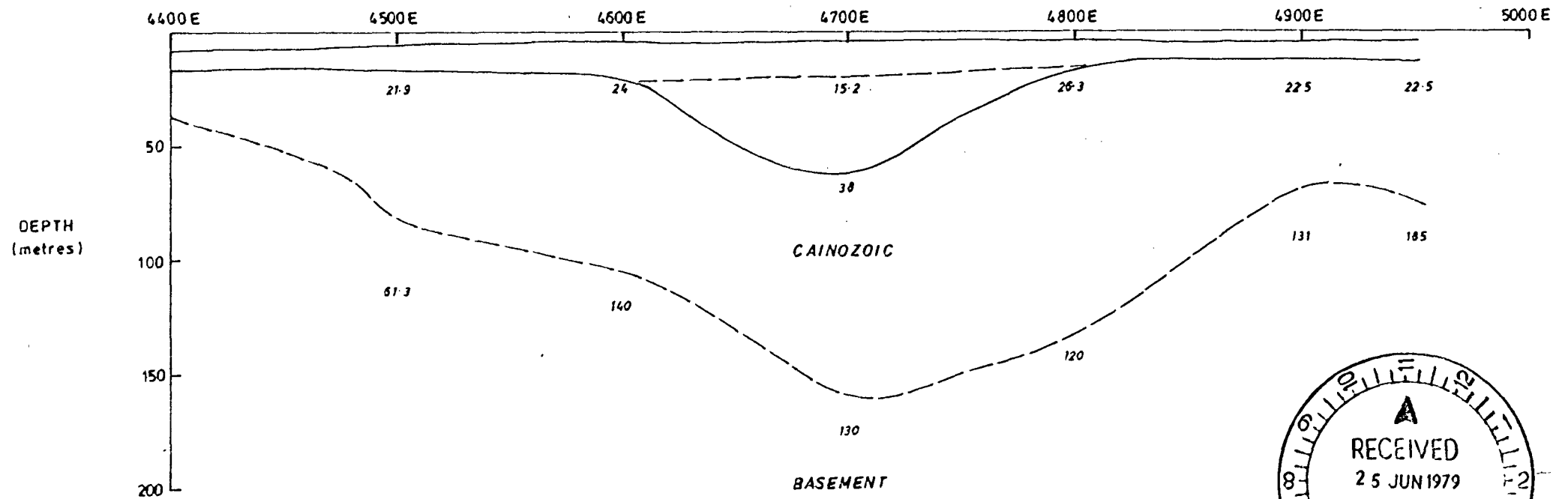
Scale 1:2500.



TIMMINS RESISTIVITY REPORT
 REPORT DIAGRAM 8
 AUSTRALIAN SELECTION (PTY) LTD
 HALLETT E.L. 425.
 BURRA MINE (NORTH)
 PSEUDO SECTION.
 LINE 3800mN.
 AS 8627

0176

LINE 3800 N
(b) INTERPRETED SECTION



TIMMINS RESISTIVITY REPORT
REPORT DIAGRAM 9
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425
BURRA MINE (NORTH)
LINE 3800 N
AS 8630

0177

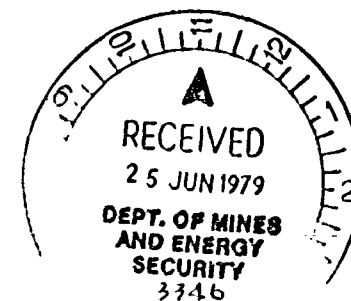
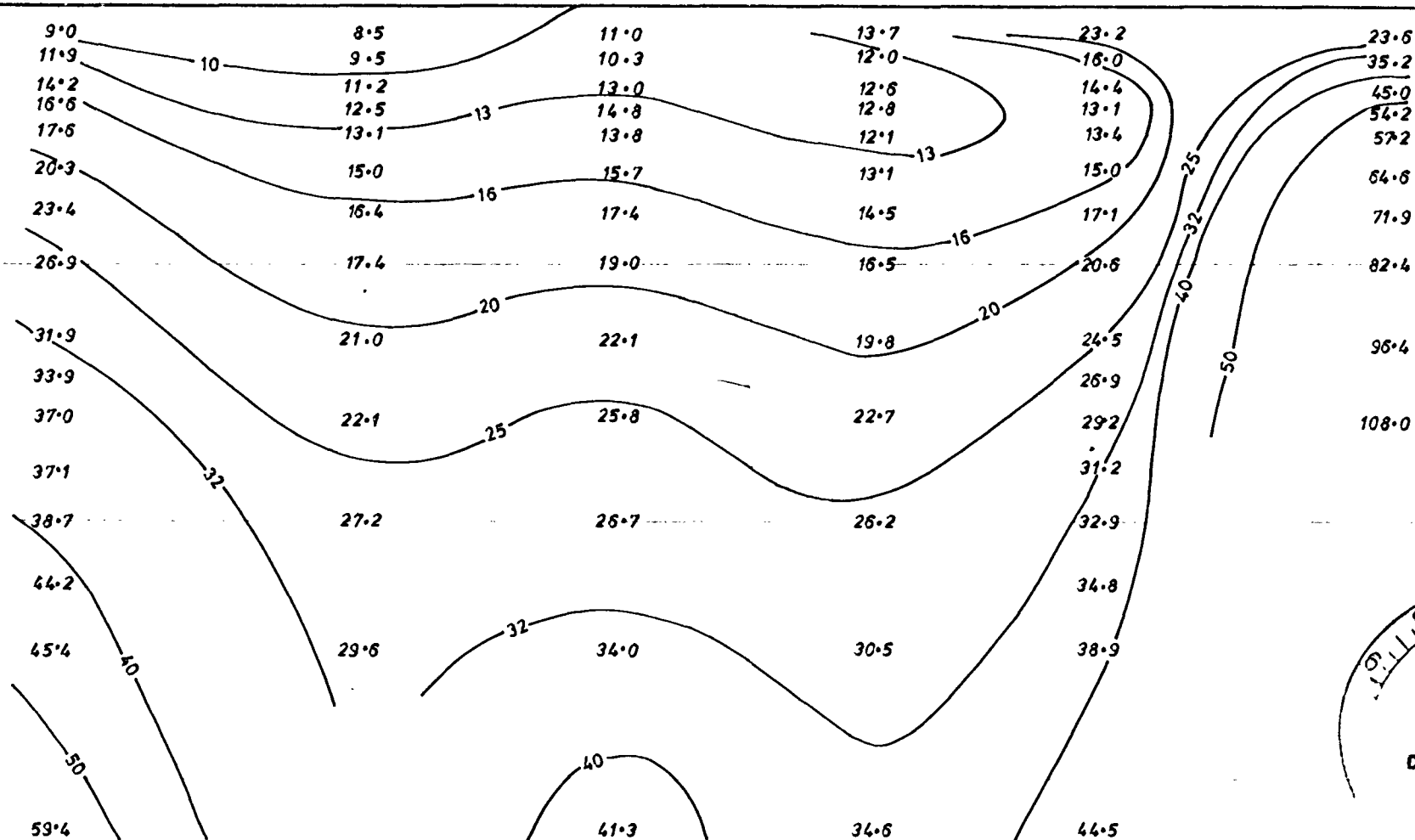
4500mE

4700mE

4900mE

5100mE

ASSUMED GROUND LEVEL.



Scale 1:2500.

TIMMINS RESISTIVITY REPORT
REPORT DIAGRAM 10
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425.
BURRA MINE (NORTH)
PSEUDO SECTION.
LINE 5000 mN.
AS 8628

0178

4600 E

4700 E

4800 E

4900 E

5000 E

ASSUMED GROUND LEVEL.

-100m

-200m

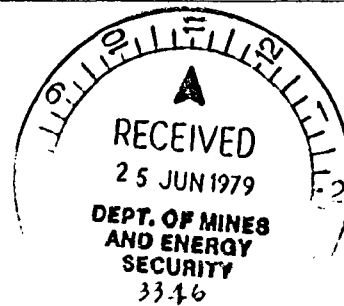
-300m

CENOZOIC

BASEMENT

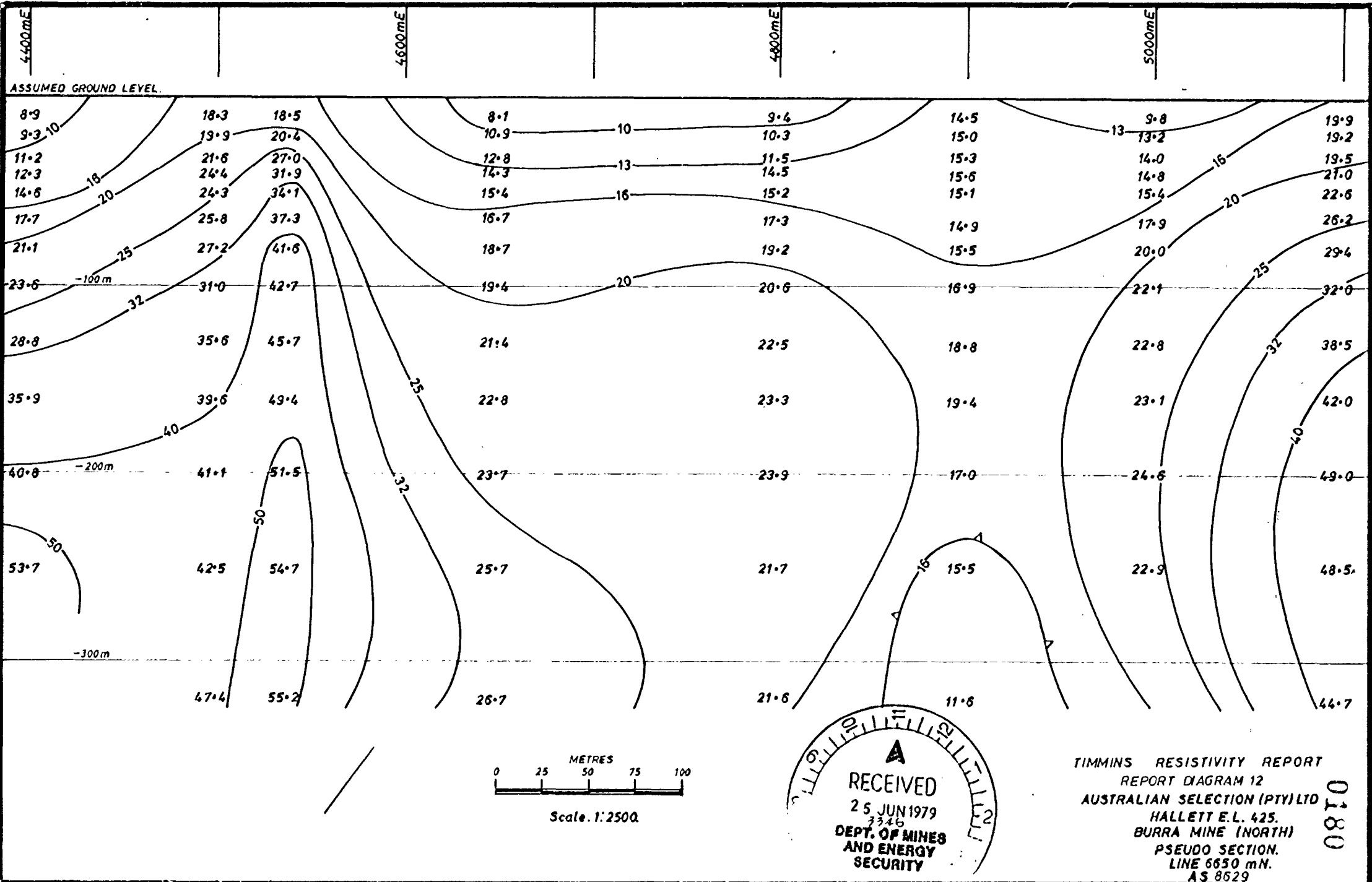


Scale 1:2500

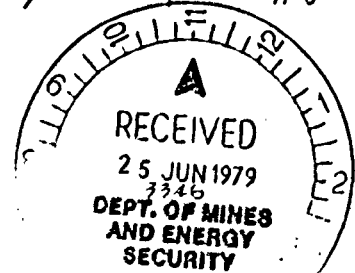


TIMMINS RESISTIVITY REPORT
REPORT DIAGRAM 11
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425.
BURRA MINE (NORTH)
INTERPRETED SECTION
LINE 5000 mN.
AS 8635

0179

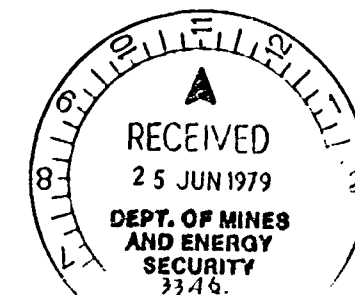
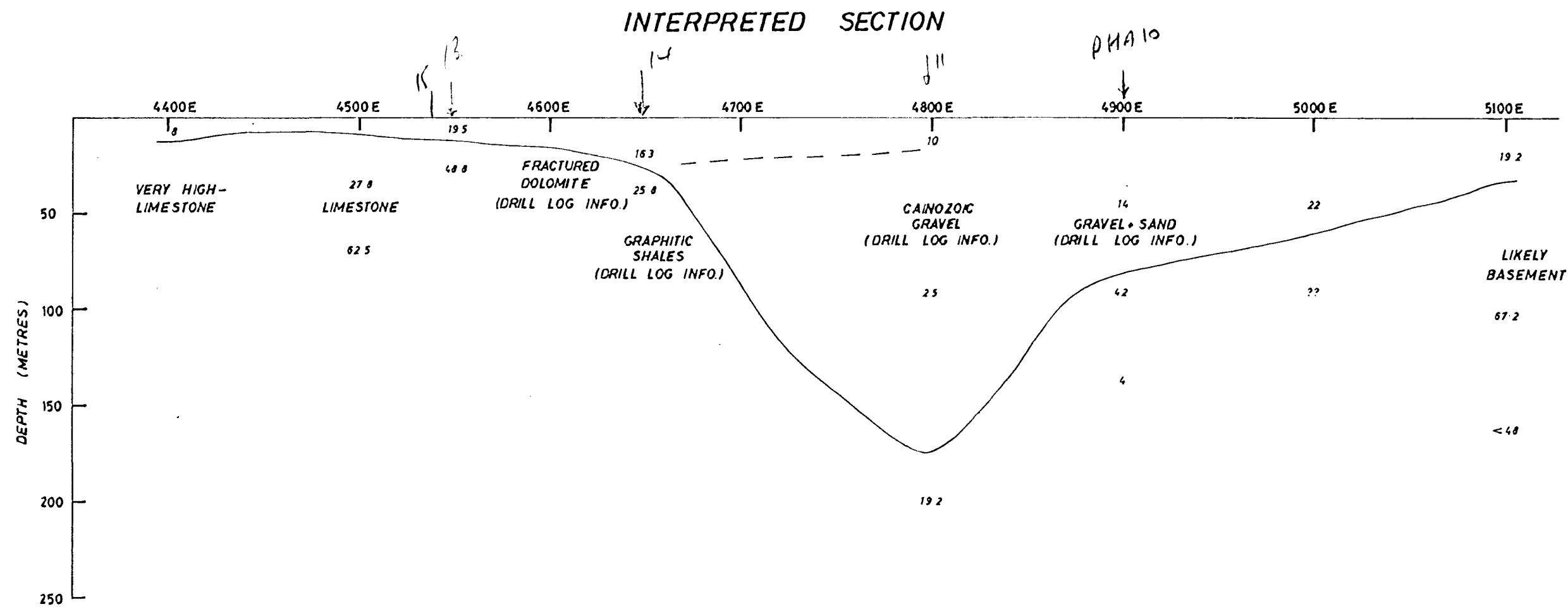


0 25 50 75 100
METRES
Scale 1:2500



TIMMINS RESISTIVITY REPORT
REPORT DIAGRAM 12
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425.
BURRA MINE (NORTH)
PSEUDO SECTION.
LINE 6650 mN.
AS 8629

0180



REPORT DIAGRAM 13

AUSTRALIAN SELECTION (PTY. LTD.)

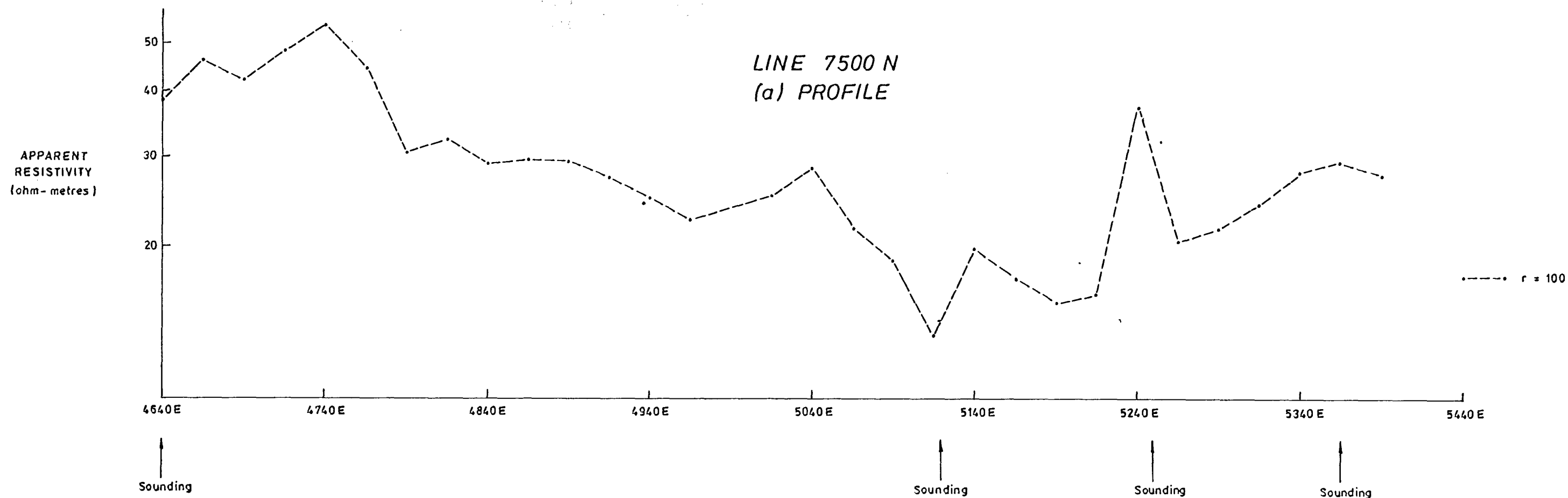
HALLETT - E.L. 425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
LINE 6650 N

0101

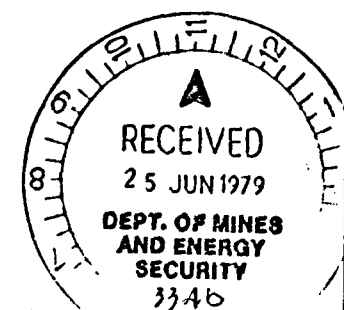
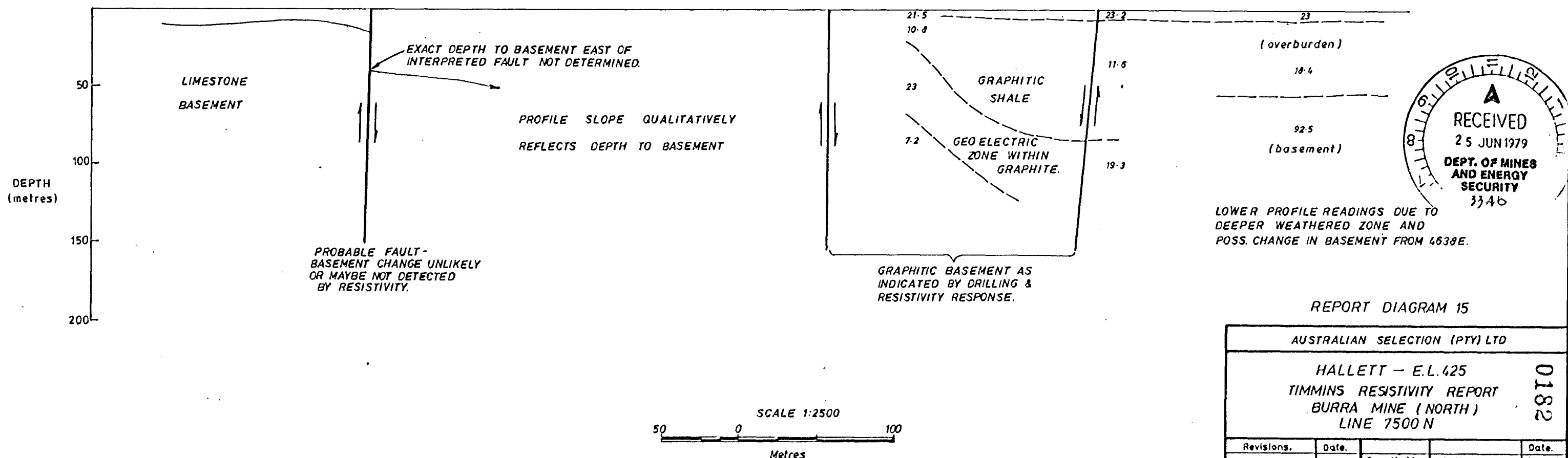
SCALE 1:12,500



Revisions.	Date	Compiled by	Date
		Drawn by: B.T.	JAN.'79
		Traced by: S.L.C.	APR.'79
		Checked by:	
		PLAN NUMBER	A. S. 8691



LINE 7500 N
(b) INTERPRETED SECTION



LOWER PROFILE READINGS DUE TO
DEEPER WEATHERED ZONE AND
POSS. CHANGE IN BASEMENT FROM 4638E.

REPORT DIAGRAM 15

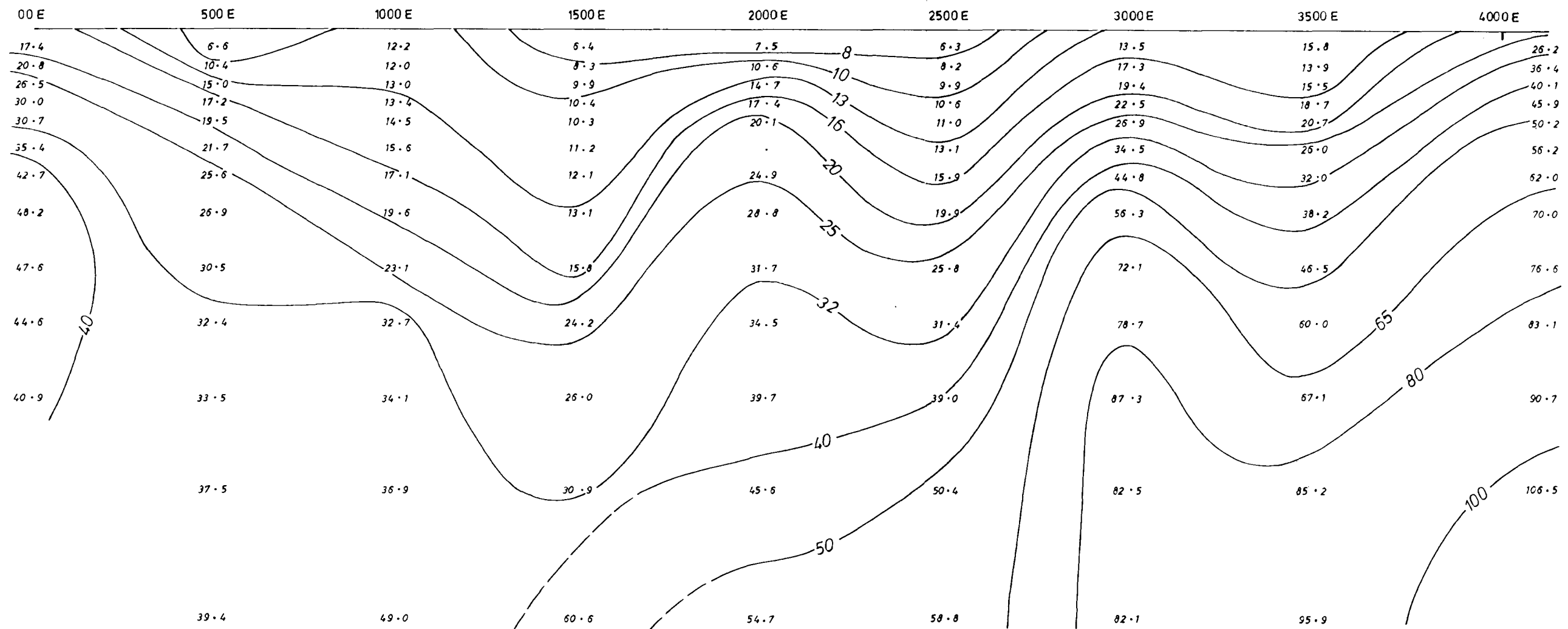
AUSTRALIAN SELECTION (PTY) LTD

HALLETT - E.L.425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
LINE 7500 N

0182

Revisions.	Date.	Compiled by:	Date.
		B.T.	Jan. '79
		Drawn by:	"
		Traced by:	R.W. Mar. '79
		Checked by:	
PLAN NUMBER: AS 8612			

(a) PSEUDO SECTION



VERT. SCALE 1:2500
HORIZ. SCALE 1:12500



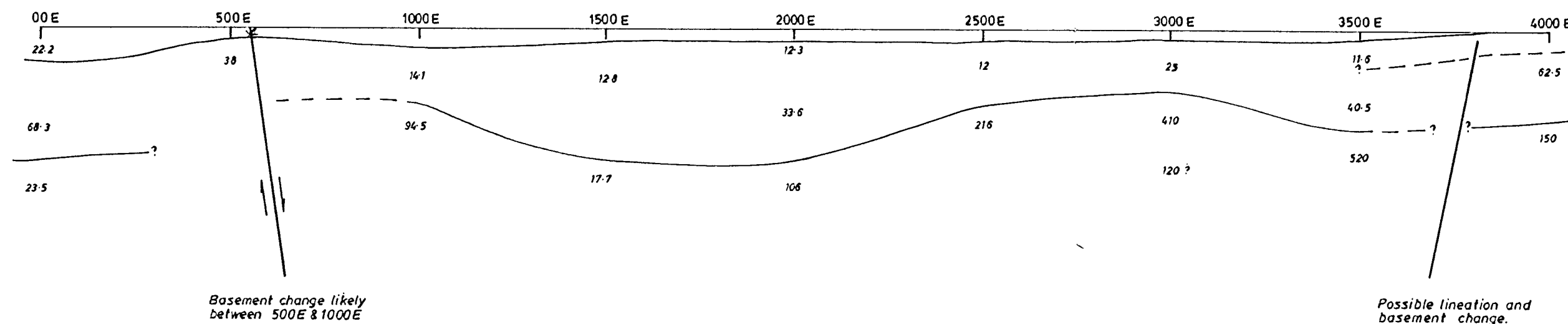
REPORT DIAGRAM 19

AUSTRALIAN SELECTION (PTY) LTD				
HALLETT - E.L.425 TIMMINS RESISTIVITY REPORT BURRA MINE (NORTH) BELCUNDA ROAD				
Revisions	Date	Drawn by	B.T.	Date
		Traced by	R.W.	JAN '79
		Checked by		MAR '79
PLAN NUMBER			AS 8603	

0183

0184

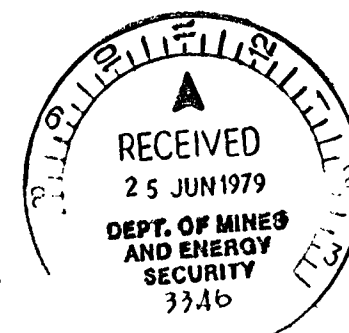
INTERPRETED SECTION



SCALE 1:12,500

250 0 500

Metres



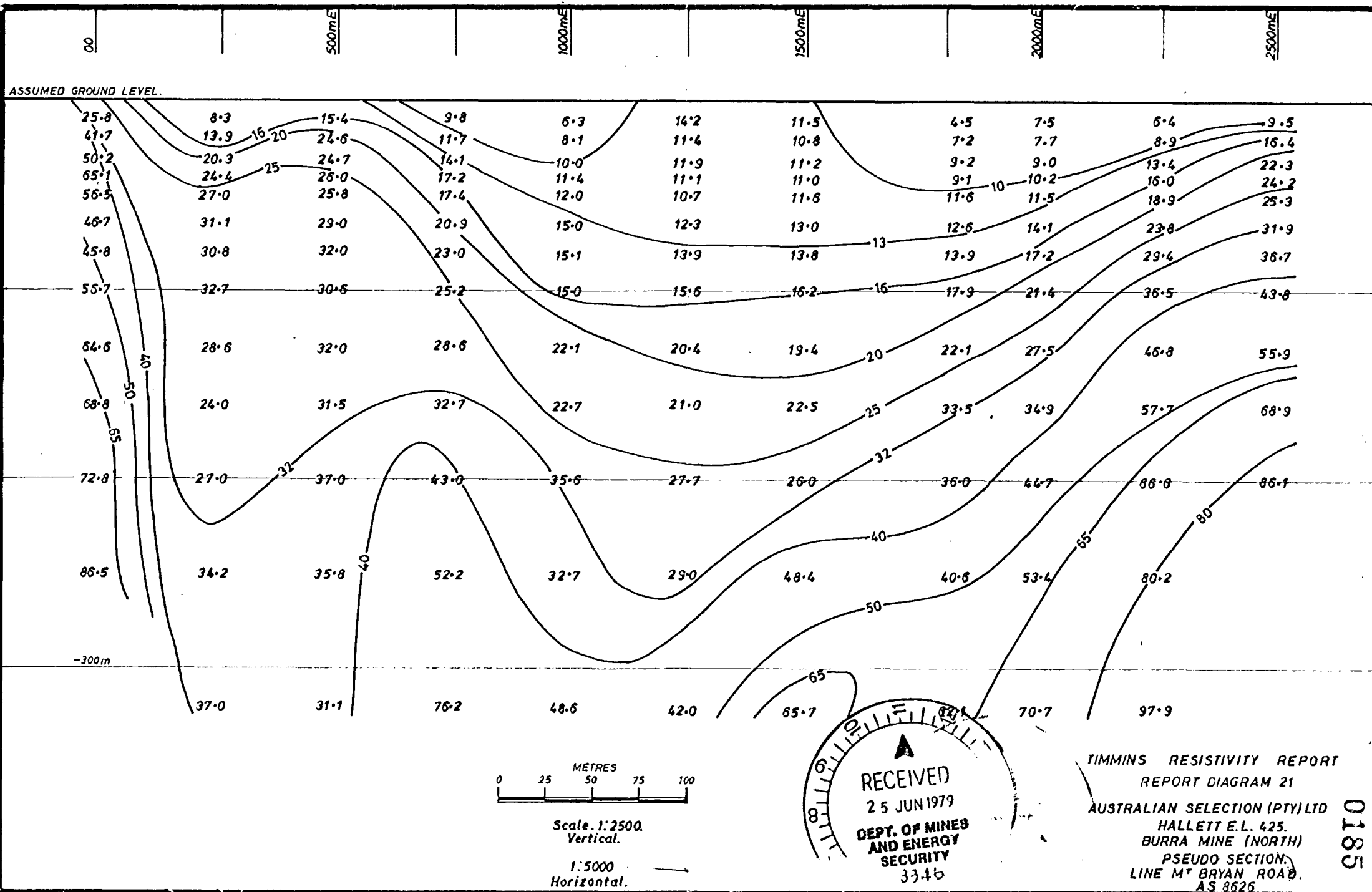
REPORT DIAGRAM 20

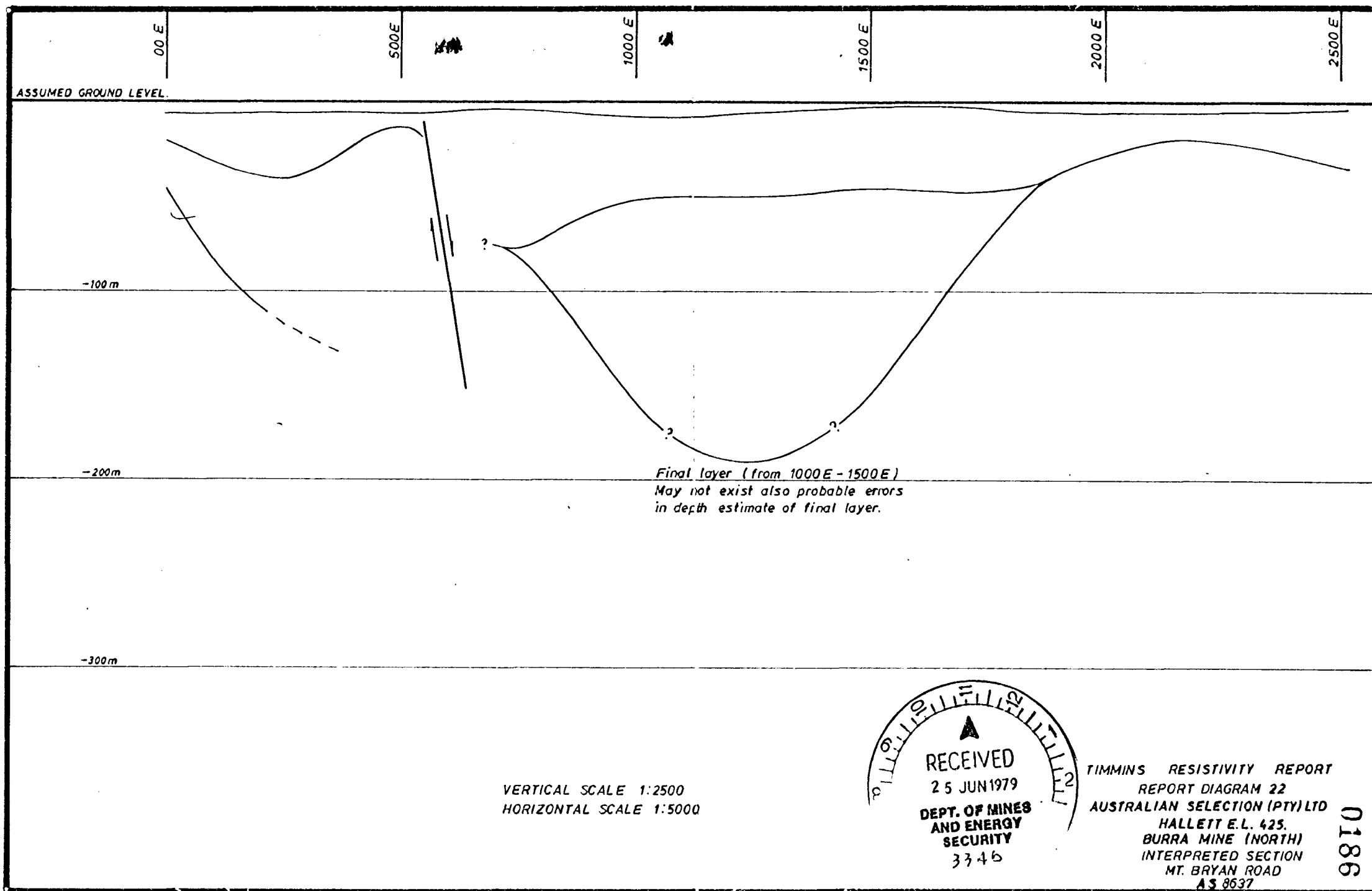
AUSTRALIAN SELECTION (PTY LTD)

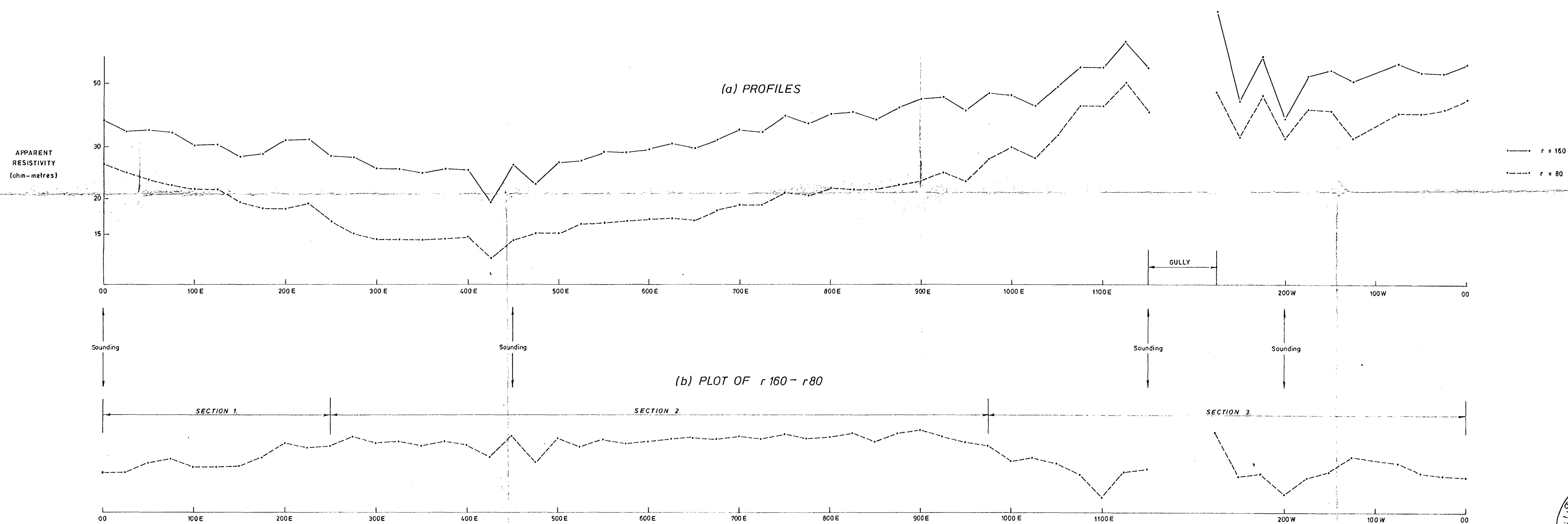
HALLETT-E.L.425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
BELCUNDA ROAD

0184

Revisions.	Date.	Completed by:	Date.
		B.T.	JAN '79
		Drawn by:	
		Traced by:	R.W. APR '79
		Checked by:	
PLAN NUMBER: AS 8638			

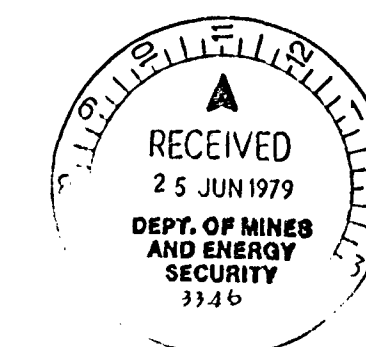
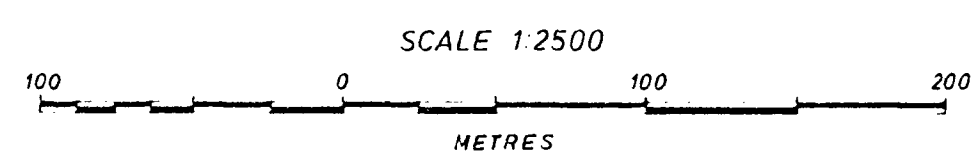






GOLF COURSE ROAD

(c) FOR INTERPRETATION SEE TEXT OF REPORT



3346-1

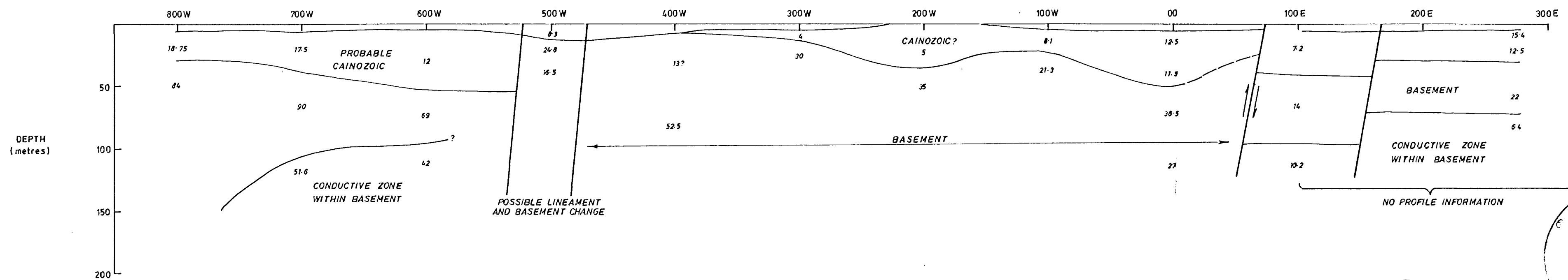
REPORT DIAGRAM 4

AUSTRALIAN SELECTION (PTY) LTD

HALLETT - EL.425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
GOLF COURSE ROAD

Revisions	Date	Compiled by	B. T.	Date
		Drawn by		JAN '79
		Traced by	R. W.	MAR '79
		Checked by		
		PLAN NUMBER AS 8611		

WOOLLANA ROAD
(b) INTERPRETED SECTION



3346-3



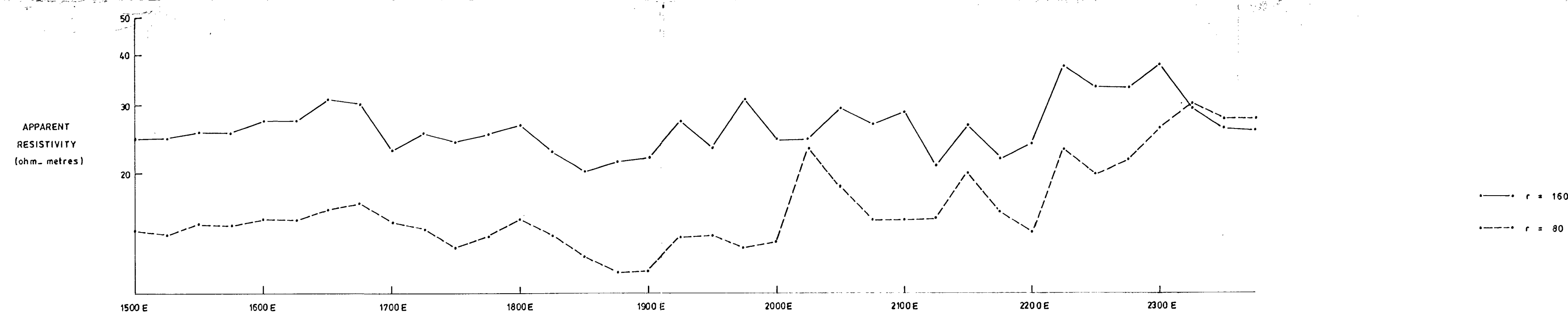
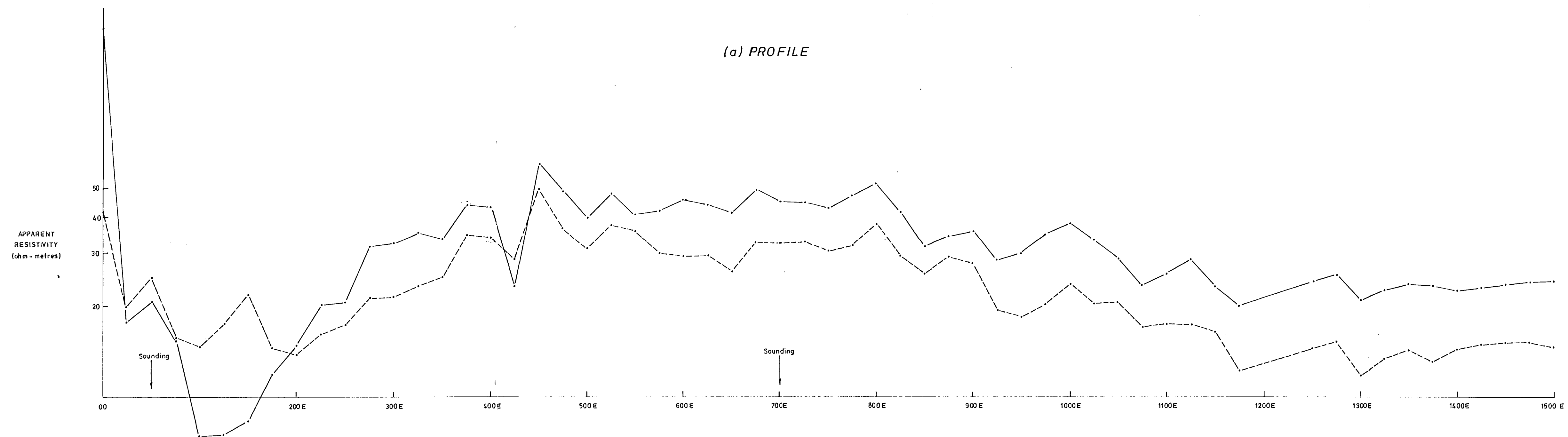
REPORT DIAGRAM 17

AUSTRALIAN SELECTION (PTY) LTD

HALLETT - E.L.425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
WOOLLANA ROAD

SCALE 1:2500
0 100 200
Metres

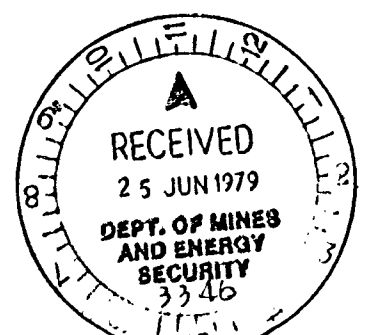
Revisions.	Date.	Compiled by:	Date.
		B. T.	JAN. '79
		Drawn by:	"
		Traced by:	R. W.
		Checked by:	MAR. '79
PLAN NUMBER: AS 8613			



SCALE 1:2500

100 0 100 200

Metres



3346-4

REPORT DIAGRAM 18

AUSTRALIAN SELECTION (PTY) LTD

HALLETT - EL. 425
TIMMINS RESISTIVITY REPORT
BURRA MINE (NORTH)
MACKERODE ROAD

Revisions	Date	Compiled by	Date
		B.T.	JAN '79
		Drawn by	
		Traced by	R.W. MAR '79
		Checked by	
PLAN NUMBER AS 8605			

0187

AUSTRALIAN SELECTION (PTY) LIMITED

HALLETT F.L. 425

SECOND QUARTERLY REPORT

24TH JANUARY TO 23RD APRIL, 1979



AUSTRALIAN SELECTION (PTY) LIMITEDHALLETT E.L. 425SECOND QUARTERLY REPORT24TH JANUARY TO 23RD APRIL, 1979C O N T E N T SPage No.

INTRODUCTION	1
PERSONNEL AND EQUIPMENT	1
GOSSAN SEARCH	1
PETROLOGY	1
HYDROLOGY	2
CONCLUSIONS AND RECOMMENDATIONS	3
EXPENDITURE REPORT	

F I G U R E S

<u>Fig. No.</u>	<u>Title</u>	<u>Plan No.</u>
1	Locality Plan Rock Chip Samples. Scale: 1:250,000	AS 8697
2	Locality Plan Rock Chip Samples. Scale: 1:500,000	AS 8698

A P P E N D I C E S

1. Report on Resistivity Survey Mt. Bryan - Burra Valley by R. Timmins - February 1979
2. Petrological Reports:
EIM 502, February, 1979 - Bundaleer Reservoir - J. Just
EIM 494, February, 1979 - Burra Copper Mine
3. Surface Rock Chip Geochemical Results.

Work during this quarter was confined to a resistivity survey carried out along the Mt. Bryan - Burra Valley. Access was generally along roads but where access was required across fields, permission was generally readily granted by landowners.

PERSONNEL AND EQUIPMENT

One geophysicist (Contract) and two Australian Selection Field Assistants were employed for about three weeks from mid January to February.

One Toyota Land Cruiser was used. Equipment used is listed in accompanying report. (Appendix 1)

Personnel were accommodated in the local hotel.

GOSSAN SEARCH

During mapping by Dr. Findlay samples of unusual, or gossanous, rocks were collected and sent to Sydney Laboratory for geochemical analysis. The location of these samples is shown in Figures 1 and 2 and the results are appended.

PETROLOGY

Two petrological reports were received from Jiri Just during the period.

One covers rocks obtained from near Bundaleer Reservoir. This is outside the limits of the E.L. but has been included for sake of completeness.

Two samples of quartz-andradite rock and two epidote amphibolite rocks are described. These rocks occur within an interlayered sandstone siltstone sequence from within the Spalding Diapir.

K205603-5 • K205600-02

0190

Samples collected by D. Findlay
June to August 1978.
Samples located on photo en-
largements of this E.L. Results
of samples are contained in
South Australian Rock Chip files.

33° 30'

E.L. 425

MT BRYAN

BURRA

K18789-800

LEGEND

-  TILLITE
-  DOLOMITE
-  ANTICLINE
-  SYNCLINE
-  MAJOR FAULT
-  TREND LINE
-  NECK
-  SELECTED AREA OUTLINE
-  MINE, OCCURRENCE

SCALE 1:250,000

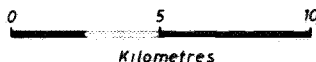


FIG. 1.
AUSTRALIAN SELECTION (PTY) LTD
HALLETT E.L. 425
STRUCTURAL TRENDS AND ROCK CHIP
SAMPLE LOCATIONS EASTERN PART OF
E.L.

0191

139°

33° 30'

• K20614
 K20608-13 • K20806-7
 K20615-16 • K20617-20
 K20621-24
 K20584-6
 K20581-3
 K20587-9
 • K20525-28
 • K20590-91

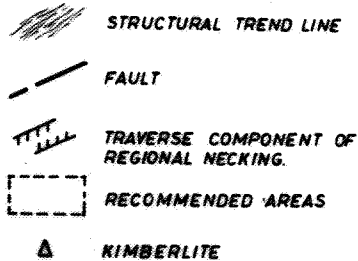
• SPALDING

• BURRA

• CLARE

E.L. 425

Samples collected by D. Finlay
 June to August 1978.
 Samples located on photo en-
 largements of this E.L. Results
 of samples are contained in
 South Australian Rock Chip files.



SCALE 1:500,000

0 10 20
 Kilometres

FIG. 2
 AUSTRALIAN SELECTION (PTY) LTD
 HALLETT E.L. 425
 STRUCTURAL TRENDS AND ROCK
 CHIP SAMPLE LOCATIONS.

0192

Four samples of presumed altered acid porphyry from a mass in the bottom of the Burra Copper Open Pit Mine are included. All are described as quartz feldspar rocks, possibly altered acid intrusive porphyry.

These rocks have been subject to several periods of tectonic deformation and have undergone both intense albitisation and silicification at two separate periods of time.

Pyrite is generally idiomorphic and of replacement type. Chalcopyrite, bornite and chalcocite inclusions are common with chalcopyrite often partly replaced by bornite and chalcocite, later probably secondary chalcocite rim and vein pyrite. That is, late stage chalcopyrite/pyrite mineralisation of a highly altered acid intrusive porphyry.

HYDROLOGY

Results of tests for groundwater salinity from percussion drill holes were received during the quarter and have been appended to the relevant lithological drill logs.

<u>Hole No.</u>	<u>Analysis No.</u>	<u>Depth Sample (metres)</u>	<u>Salinity (mg/l)</u>
PHA - 1	W 4532/78	60	104
PHA - 2	W 4533/78	58	1960
PHA - 3	W 4534/78	18	2770
PHA - 5	W 4870/78	56	2870
PHA - 6	W 4867	44	2020
	W 4868	58	3100
PHA - 8	W 4871/78	42	2870
PHA - 9	W 4869/78	8	2970
PHA - 13	W 4866/78	48	2450
PHA - 15	W 4873/78	40	2450
PHA - 16	W 4865/78	59	3520

0193

CONCLUSIONS AND RECOMMENDATIONS

A successful resistivity survey has shown the depth of overburden (Cainozoic), probable position of continuation of Kingston's Fault and subcrop position of a thin carbonaceous siltstone horizon (one of the host rocks in the Burra Mines) in the Burra - Mt. Bryan Valley.

Further follow up drilling is warranted and a programme of drilling is in preparation.

The potential of this block for discovery of an orebody is considered high and continuing exploration is planned.

M.G. MASON,
SENIOR GEOLOGIST.

EXPENDITURE REPORTSECOND QUARTER24TH JANUARY TO 23RD APRIL, 1979

	Expenditure for quarter	Expenditure to date
Exploration Staff	1,655	19,672
Exploration Logistics	1,657	8,463
Exploration Services	3,604	8,282
Property Costs	65	1,998
Percussion Drilling	10	29,306
Exploration Administration	494	2,077
Management & Administration		
General	525	2,125
Depreciation	872	3,205
Totals	8,882	75,128

NOTE: Our accounting system is based on calender months so the above figures actually represent the period ending 31st March, 1979.

0195

APPENDIX ONE

REPORT ON RESISTIVITY SURVEY MT. BRYAN - BURRA
VALLEY BY R. TIMMINS - FEBRUARY 1979

ATTACHED SEPARATELY

0196

APPENDIX TWO

PETROLOGICAL REPORTS



Selection Trust Group, Australia — PERTH OFFICE

50 St. George's Terrace, Perth, W.A 6000

Telephone 25 4511
Telex AA 93033
Telegrams Auselex Perth

Correspondence to:
Australian Selection (Proprietary) Limited
Box R 1274, G.P.O.,
Perth, Western Australia 6001

For intergroup correspondence only. Use separate sheet for each subject.

To MALCOLM MASON
FROM JIRI JUST

Date

21st February 1979

Reference No. EIM 502

Subject/Heading

HALLET
PETROLOGY

File No.

Samples collected by Dr. D. Findlay near Bundaleer Reservoir.

JJ 784 rock with abundant black garnet.

Quartz - andradite rock.

Texture: porphyroblastic, granoblastic matrix.
Minerals identified microscopically: garnet, quartz, epidote, limonite,
clay minerals, chalcedony (?), carbonate (?)
XRD: quartz > andradite; goethite (?)

The rock consists mostly of quartz and andradite. Large metacrysts (porphyroblasts) of andradite, up to 1 cm in size (hand specimen) are embedded in a matrix consisting mostly of fine grained (10-30 μ) quartz. The andradite metacrysts are often weakly anisotropic in the centres (d up to 0.005) and almost always have an anisotropic zone approximately 10 μ thick 20 to 30 μ from the surface of the phenocrysts irrespective of their size. Some andradites have epidote grains in the centre. The centres of most andradite crystals are generally very inhomogeneous. Andradite crystals are often skeletal or with stepped surfaces. Anisotropic centres in some large crystals show complex twinning pattern.

The matrix consists mostly of fine grained quartz. Idiomorphic to hypidiomorphic grains of epidote (up to 500 μ) and granular aggregates of epidote are disseminated through the rock. Small amount of carbonate (?) is also present. Chalcedony occurs as fibrous rims around other minerals or as cavity infillings in quartz matrix.

The rock is crosscutted with veinlets of limonite and/or clay minerals.

Fig. 1, 2, 3, 4,.

JJ 785 rock with abundant green garnet.

Quartz - andradite rock.

Texture: porphyroblastic, matrix granoblastic.
Minerals identified microscopically: quartz, garnet, chalcedony (?),
limonite (tr.), hematite (tr.), sericite (?tr.),
epidote (tr.)
XRD: quartz >>> andradite; goethite (?tr.), minor amount
of an unidentified mineral.

The rock consists mostly of quartz and andradite. The XRD pattern of the garnet is the same in JJ 784 and JJ 785 and gives a very good match with that of andradite. Andradite forms hypidiomorphic metacrysts (porphyroblasts) zone of which contain distinctly anisotropic zones with intricate twinning patterns. Most garnets are fractured. A characteristic feature of this rock are skeletal porphyroblasts of quartz (grainsize in mm).

The matrix consists of very fine grained (<15 μ) quartz, fibrous chalcedony (?) small amount of hematite and goethite, traces of epidote and sericite (?). Sericite (?) is accumulated around quartz porphyroblasts and in fractures in them. Cavities in the rock are filled with chalcedony.

Fig. 5.

JJ 786 Host rock.

Epidote biotite amphibolite,

Texture: nematoblastic.

Minerals identified microscopically: actinolite, plagioclase, biotite, chlorite, epidote, limonite, leucoxene.

XRD: tremolite > biotite $\geq$ chlorite > quartz;
zoisite - epidote, albite.

The rock consists mostly of actinolite, epidote, biotite and chlorite. Actinolite occurs as aggregates of hypidiomorphic acicular or slender to thick prismatic grains up to 2 mm in size. Acicular actinolite is usually crosscutting prismatic actinolite. Brown biotite occurs as xenomorphic grains which are tabular to equant in habit and up to 1 mm in size. Epidote grains are hypidiomorphic to idiomorphic and generally are of the same size or somewhat smaller than actinolite grains. In some cases epidote seems to partly replace actinolite grains.

Chlorite occurs mostly as pseudomorphs after small flakes of biotite. Plagioclase probably together with quartz, is filling interstices between other minerals. Opaque minerals (titanomagnetite?) are mostly altered to leucoxene (?) and little limonite.

Fig. 6.

JJ 787 Host rock.

Albite - microcline - actinolite - epidote rock.
(leucocratic amphibolite)

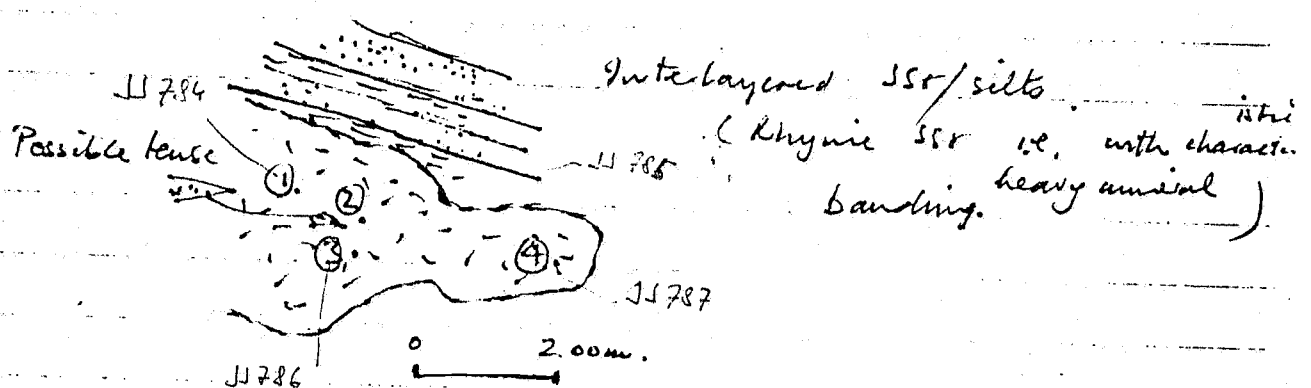
Texture: granoblastic to nematogranoblastic

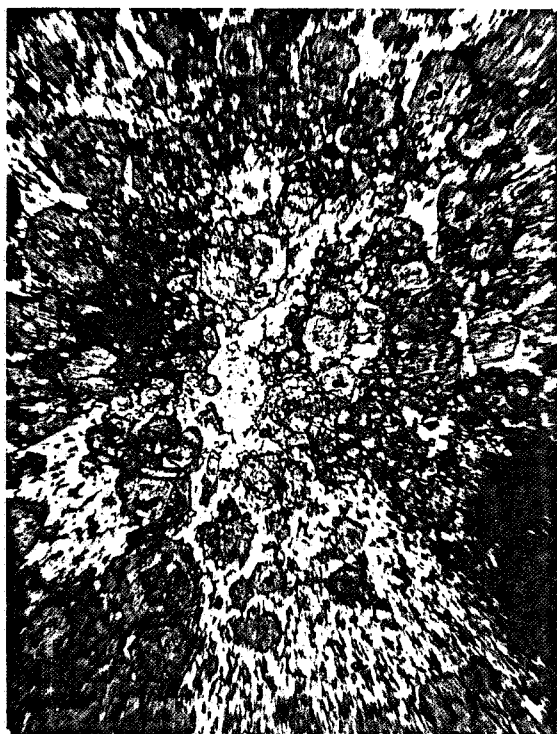
Minerals identified microscopically: feldspar, epidote, actinolite - hornblende, biotite, sericite, leucoxene, titanite (?), chalcedony - opal, limonite.

XRD: albite > microcline > tremolite > epidote; quartz
(titanite would be masked by the above minerals).

The rock consists mostly of feldspars (plagioclase recognised in thin section, microcline only by XRD), actinolite and epidote. It is idiomorphic against actinolite and xenomorphic against other minerals. Grain size in mm. Actinolite (looks like common hornblende but the XRD gives better fit on tremolite than on the three hornblende patterns from the JCPDF tables; actinolite is ferroan tremolite) is almost always xenomorphic. Grain size in mm. Epidote is mostly hypidiomorphic or xenomorphic. It forms either small grains enclosed in or replacing plagioclase and actinolite, or large (up to cm in hand specimen) granular aggregates. Only small amount of brown biotite is present. Opaque minerals are represented by leucoxene pseudomorphs after skeletal crystals of probably titanomagnetite. There might be a few of small titanite crystals (no positive identification). No garnet has been recognised in thin section nor XRD.

J. Just.
J. JUST.





0200

Fig. 1. JJ 784

Quartz - andradite rock.
General view.
a - andradite
e - epidote
black - limonite

Magn. 20 x, nic.//.



Fig. 2. JJ 784

Quartz - andradite rock.
General view.
a - andradite
e - epidote
black - limonite

Magn. 20x, nic.X, RI plate.

0201



Fig. 3. JJ 784

Quartz - andradite rock.
Epidote in centre of andradite
metacryst.

Magn. 50x, nic.X, RI plate.



Fig. 4. JJ 784

Quartz - andradite rock.
Anisotropic domains in
andradite metacrysts.

Magn. 20 x, nic.X, RI plate.

0202



Fig. 5. JJ 785

Quartz - andradite rock.
Skeletal metacrysts of
quartz and zoned metacrysts of
andradite in quartz matrix.

Magn. 20x, nic.X, RI plate.



Fig. 6. JJ 786

Epidote biotite amphibolite.
General view.

a - actinolite

e - epidote

b - biotite

black - leucoxene after
titanomagnetite?

Magn. 20x, nic.//.

0203



Fig. 7. JJ 787

Leucocratic amphibolite.
General view.

a - actinolite

b - biotite

e - epidote

black - leucoxene after
titanomagnetite.

Magn. 20x, nic.//.

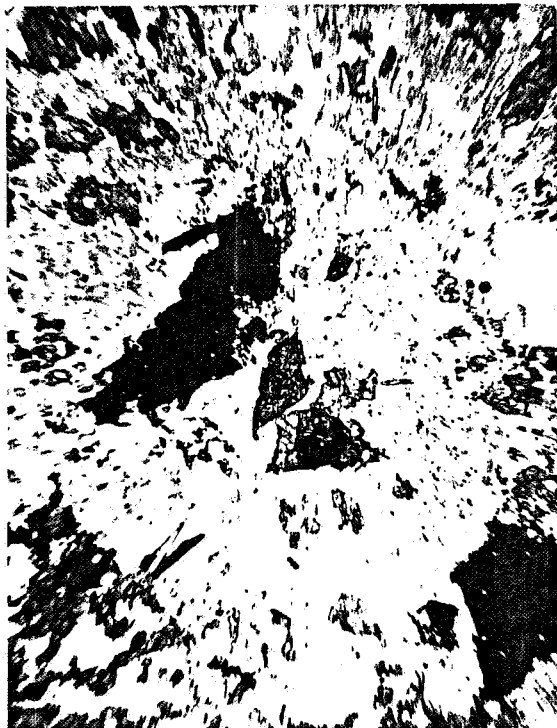


Fig. 8. JJ 787

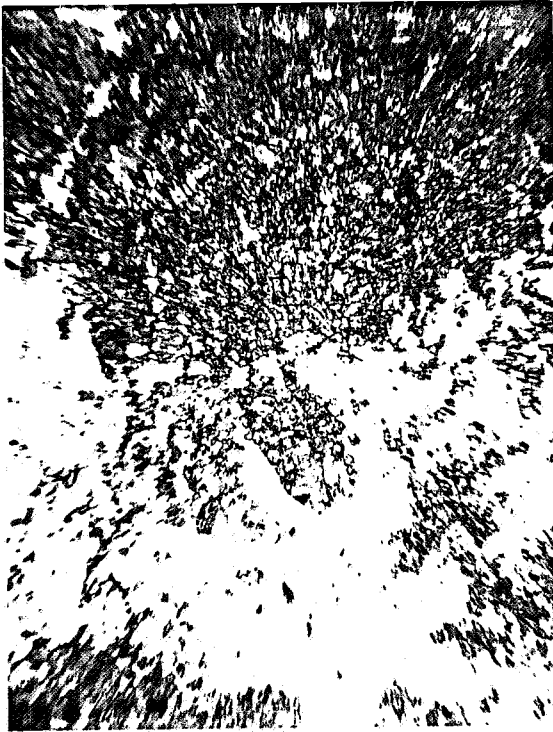
Leucocratic amphibolite.

t - titanite XX?

e - epidote

black - leucoxene

Magn. 20x, nic //.



0204

Fig. 9. JJ 787

Leucocratic amphibolite.
Epidote aggregate,
plagioclase.

Magn. 20x, nic.//.

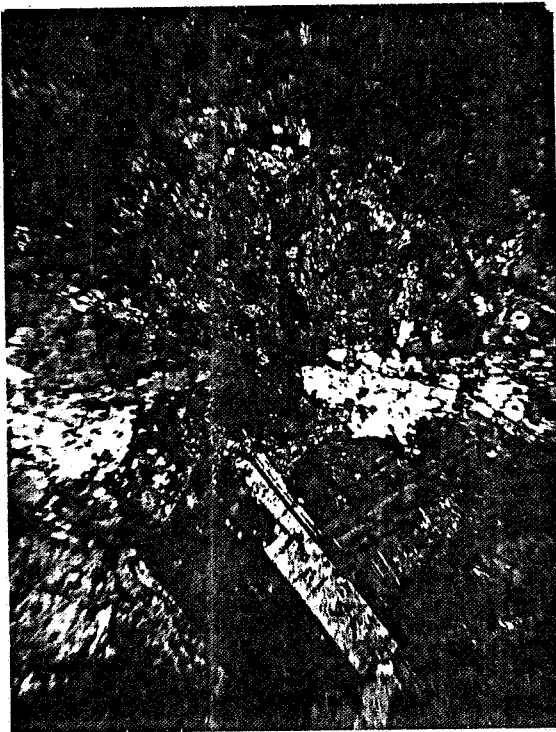


Fig. 10 JJ 787

Leucocratic amphibolite.
Epidote aggregate,
plagioclase.

Magn 20x, nic.X, RI plate.



Selection Trust Group, Australia — PERTH OFFICE

0205

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Australian Selection (Proprietary) Limited
Box R 1274, G.P.O.,
Perth, Western Australia 6001

For intergroup correspondence only. Use separate sheet for each subject.

Date

To

MALCOLM MASON

14th February 1979

FROM JIRI JUST

Reference No. EIM 494

Subject/Heading

BURRA COPPER MINE
PETROLOGY

File No.

K 42835

Quartz - microcline rock.
(Possibly altered porphyry)

Texture: granoblastic; possibly traces of relict porphyritic texture.

Minerals identified microscopically: quartz, K-feldspar, carbonate, clay minerals, apatite?, sericite?, rutile.

XRD: quartz > microcline; muscovite (tr.). No plagioclase.

The rock consists mostly of quartz and microcline. No plagioclase was found by XRD. The rock is very fine grained, the average grain size of both quartz and K-feldspar is approx. 10μ , practically all grains are $< 30\mu$. Microcline strongly predominates over quartz. Occasionally are found deformed phenocrysts (or porphyryblasts?) of K-feldspar.

The rock is strongly silicified. The introduced quartz forms veinlets and nests sometimes containing also idiomorphic crystals of K-feldspar. Some recrystallization of feldspar in the rock took place during silicification (hydrothermal) leading to development of radiating fibrous aggregates of K-feldspar along the walls of quartz veinlets and nests, less often further away from them.

Idiomorphic to hypidomorphic grains of carbonate (up to 1mm) are disseminated through the rock. Acicular aggregates of rutile occur only sporadically.

The rock is possibly a silicified acid porphyry (trachytic composition??) but no reliable identification is possible because of silicification and recrystallization.

Fig. 1.

K 42836

Albite - quartz rock.
(possibly altered porphyry)

0206

Texture: granoblastic.
 Minerals identified microscopically: plagioclase, quartz, pyrite,
 bornite, chalcopyrite, chalcocite (?), zircon, apatite,
 carbonate.
 XRD: albite > quartz >>> pyrite.

The rock consists mostly of very fine grained (5 - 10 μ) albite and quartz. Onto this matrix are superimposed veinlets and nests of albite which in turn are crosscutted with quartz veinlets. Lenses and nests of coarse grained quartz are abundant. Some quartz aggregates look like granulated and annealed quartz crystals (up to 1mm) with outlines well preserved but consisting of domains of very different orientation showing no undulating extinction. These are probably metasomatic metacrysts (porphyroblasts) as they are not affected by quartz veinlets. Larger grains of plagioclase are probably also prophyroblasts. Some are fragmented and dislocated, other show plastic deformation.

Sporadic sulphides and rare grains of carbonate, zircon and apatite are disseminated through the rock.

The rock underwent intense albitization and silicification (as two processes separate in time) and several periods of tectonic deformation. The original rock was possibly acid intensive rock, perhaps even the same as in K 42835 but no reliable identification is possible.

Sulphides were studied in more detail in polished section. Pyrite forms idiomorphic to hypidiomorphic grains, some of which look partly corroded. It contains inclusions of non-opaques (N.O.) chalcopyrite, bornite and chalcocite. Fractures in pyrite are filled with chalcocite, less often with N.O. There are almost continuous rims of chalcocite around pyrite grains. Chalcocite is also distinctly replacing pyrite. Chalcopyrite inclusions are partly replaced by bornite and chalcocite, than of bornite (after chalcopyrite?), by chalcocite. Chalcocite is also sporadically disseminated through the rock.

Small grains of a grayish white phase containing Pb, Cu, Fe and S and of a brownish phase containing Cu, S and little As, V, Sn and Fe are occasionally found in bornite - chalcocite inclusions in pyrite.

Fig. 2.

K 42837

Albite - quartz rock.

Texture: granoblastic.
 Minerals identified microscopically: plagioclase, quartz, pyrite,
 carbonate.
 XRD: albite, > quartz; pyrite (tr.).

The rock is very similar to K 42836 but is more strongly tectonically deformed.

The deformation is mostly plastic - bent plagioclase grains, undulating extinction in quartz.

Fig. 3.

K 42838.

0207

Albite - quartz rock.

Texture: granoblastic.

Minerals identified microscopically: plagioclase, quartz, pyrite, chalcopyrite, bornite.

XRD: albite > quartz.

The rock is similar to K 42836 and K 42837. Idiomorphic to hypidomorphic grains of pyrite are associated mostly with quartz veinlets and are commonly located on junctions of two veinlets or a veinlet and a fracture.

The relations of individual sulphides are similar to those in K 42836 only the replacement of pyrite by chalcocite is more pronounced. Only a few very small grains of the brownish Cu - S (+ V, As, Sn, Fe) phase are present.

Fig. 4.



J. JUST.

0208

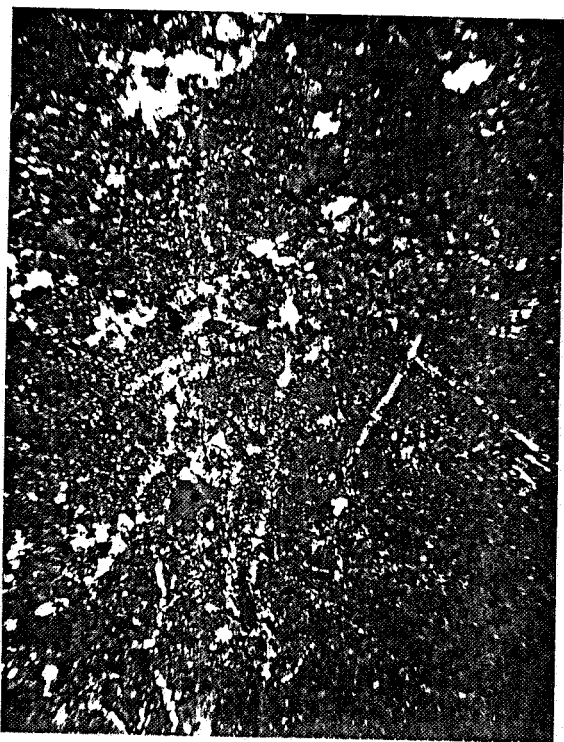


Fig. 1. K 42835

Quartz - microcline rock.

A patch of radiating aggregates of microcline (m) and veinlets and patches of quartz in fine grained rock.

Magn. 20x, nic.X, RI plate.



Fig. 2. K 42836

Albite - quartz rock.

Albite vein and granulated quartz metacrysts in fine grained rock. Black - sulphides.

Magn. 20x, nic.X, RI plate.



0209

Fig. 3. K 42837

Albite - quartz rock.
Plastic deformation of albite
in a quartz - albite
nest.

Magn. 20x, nic.X, RI plate.



Fig. 4. K 42838

Albite - quartz rock.
Pyrite grain on junction
of two quartz veinlets.

Magn. 20x, nic.X, RI plate.

0210

APPENDIX THREE

SURFACE ROCK CHIP GEOCHEMICAL RESULTS

GRID

Box No 28776

Analyst RW Date 4/9/78

Analytical Method HF

HOLE No _____ **COORDS**

SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 20 Aug 78

ANALYSE FOR Ni Cu Zn Pb Ag Au

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	Ag	Au.	
1	F128	K 20606		60	460	40	60	0.5	<0.1	
2	29	7		55	550	45	55	0.5	<0.1	
3										
4										
5	30	8		30	570	30	45	<0.2	<0.1	
6	31	9		15	580	25	40	<0.2	<0.1	
7	32	10		30	670	30	45	<0.2	<0.1	
8	33	11		15	240	25	50	<0.2	<0.1	
9	34	12		15	560	30	45	<0.2	<0.1	
10	35	13		15	490	20	50	<0.2	<0.1	
11										
12										
13	36	14		15	20	20	40	<0.2	<0.1	
14										
15										
16	37	15		40	60	55	60	2-3	<0.1	
17	38	16		40	65	60	70	2.5	<0.1	
18										
19										
20	39	17		80	430	75	70	<0.2	<0.1	
21	40	18		90	520	95	70	<0.2	<0.1	
22	41	19		80	370	55	65	<0.2	<0.1	
23	42	20		80	410	60	70	<0.2	<0.1	
24										
25										
26	43	21		135	240	90	75	<0.2	<0.1	
27	44	22		135	235	90	75	<0.2	<0.1	
28	45	23		145	225	100	75	<0.2	<0.1	
29	46	24		135	215	95	70	<0.2	<0.1	
30										
31										
32	47	25		50	110	30	55	<0.2	<0.1	
33	48	26		30	15	30	25	<0.2	<0.1	
34	49	27	checked	600	65	100	30	<0.2	<0.1	
35	30/1	28		45	120	20	45	<0.2	<0.1	
36										
37										
38										
39	2	K20620		80	400	60	70	<0.2		

GEOCHEMICAL ANALYSIS SHEET 021213511

PROJECT ORDANIAN Project
 LOCATION BURRA

GRID

Box No 28776
 Analyst RW Date 4-9-78
 Analytical Method HF

HOLE No _____ COORDS _____
 SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED Aug 78.
 ANALYSE FOR Cu Pb Zn Ag Au (No Nickel)

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	Ag	Au	
1	F11	K20581			260	35	50	0.7	<0.1	
2	2	2			350	25	50	0.6	<0.1	
3	3	3			460	25	50	0.7	<0.1	
4										
5	4	4			730	140	55	<0.2	<0.1	
6	5	5			680	140	60	<0.2	<0.1	
7	6	6			670	150	55	<0.2	<0.1	
8										
9	7	7			30	65	50	<0.2	<0.1	
10	8	8			25	60	45	<0.2	<0.1	
11	9	9			20	65	45	<0.2	<0.1	
12										
13	1									
14	10	90			390	70	35	<0.2	<0.1	
15	11	1			65	110	45	<0.2	<0.1	
16										
17										
18	12	2			1290	1200	1440	0.2	<0.1	
19	13	3			1430	1130	1620	0.3	<0.1	
20	14	4			1080	1270	1430	0.3	<0.1	
21	15	5			1120	1240	1500	0.2	<0.1	
22	16	6			680	1230	1130	0.3	<0.1	
23										
24										
25	17	7			115	90	85	<0.2	<0.1	
26	18	8			90	75	55	<0.2	<0.1	
27	19	9			85	70	50	<0.2	<0.1	
28										
29										
30	20	600			50	660	50	<0.2	<0.1	
31	21	1			55	700	35	<0.2	<0.1	
32	22	2			65	910	30	<0.2	<0.1	
33										
34										
35	23	3			225	95	55	<0.2	1.0	
36	24	4			230	105	55	<0.2	1.3	
37										
38	25 (only)	5	Pb Ba Cs to follow				<5		Rb	
39	26	K20589							<20	
40	27	K20528			25	65	50	<0.2	-	

sample not received

* Cross out data not applicable

AUSTRALIAN SELECTION (PTY.) LTD.

GEOCHEMICAL LABORATORY SHEET

AREA LOCATION

BURRA.

GRID No.

LINE No.

ORDOVICIAN PROSEC

EAST *
WEST

ANALYTICAL
DETAILS

SAMPLE TYPE

Rock

SAMPLED BY

DF

DATE SAMPLED _____

9th Aug 78

BOX No.

28742

DATE ANALYSED

$$\begin{array}{r} 23 \overline{) 87} \end{array}$$

ANALYST 54.

- 5L.

SAMPLE NUMBER	TUBE No.	* Line Footage / Core Foot- age From	* Soll Color / Core Footage To	Mn	Bi	As	% T:
K20548✓	y/1					10	0.33
49✓	2					10	0.30
50✓	3					5	0.18
51✓	4			All	All	15	0.18
52✓	5			sam	ples	10	0.12
53✓	6					15	0.18
54✓	7					10	0.12
55✓	8					10	0.09
56✓	9					15	0.15
57✓	10					10	0.12
58✓	11			V	V	15	0.21
59✓	12					10	0.18
60✓	13			5	20	15	0.06
61✓	14			ppm	ppm	10	0.03
62✓	15					40	0.06
63✓	16					10	0.09
64✓	17					10	0.12
65✓	18					5	0.12
66✓	19					5	0.15
67✓	20					5	0.09
68✓	21					10	0.12
69✓	22					5	0.09
70✓	23					10	0.12
71✓	24					10	0.12
72✓	25					10	0.15
73✓	26					20	0.06
74✓	27					55	0.10
75✓	28					15	0.12
76✓	29					10	0.16
K20577	30					10	0.21
(7)	31						

Location plotted
Jell

19

GEOCHEMICAL ANALYSIS SHEET

0214 13509

PROJECT ORDOVICIAN PROJECTLOCATION BURRA

GRID

Box No 28742Analyst RUSHR Date 17/8/78Analytical Method ICP

HOLE No _____ COORDS _____

SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 9th Aug 78

ANALYSE FOR _____

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb						
1	LOMMANS FIELD			Specular Haematite Occurrence									
2	K	Cu	Zn	Pb	Ag	Au	Mn	Co	Cr	Va	Ni	Fe ₂ O ₃	
3	20548	10	10	15	<0.2	<0.1	20	25	60	50	25	30	
4	9	25	15	25	<0.2	<0.1	95	50	140	650	35	25.0	
5	50	15	15	10	<0.2	<0.1	95	20	80	200	25	12.0	
6	1	105	20	25	<0.2	<0.1	190	45	80	250	50	16.0	
7	2	5	20	25	<0.2	<0.1	45	50	20	450	75	63.0	
8	3	15	35	30	<0.2	<0.1	115	50	145	900	40	27.0	
9													
10													
11	QUINNFIELD												
12	54	10	30	20	<0.2	<0.1	520	45	40	450	35	33.5	
13	5	5	20	25	<0.2	<0.1	890	50	35	400	35	33.5	
14	6	25	20	20	<0.2	<0.1	330	40	50	400	40	32.5	
15	7	5	30	25	<0.2	<0.1	215	35	50	400	40	33.5	
16	8	5	20	25	<0.2	<0.1	400	35	50	350	35	35.5	
17	9	5	30	25	<0.2	<0.1	205	40	50	450	45	32.0	
18	60	25	20	10	<0.2	<0.1	340	20	55	100	30	5.5	
19	1	5	15	10	<0.2	<0.1	410	20	60	100	25	3.0	
20	2	15	45	30	<0.2	<0.1	750	45	65	500	75	23.5	
21	3	260	350	20	0.2	<0.1	112000	2820	65	150	330	6.5	
22	4	30	105	25	<0.2	<0.1	7400	280	45	200	250	32.0	
23	5	5	25	40	<0.2	<0.1	215	65	30	250	45	92.5	
24	LEHMANSFIELD												
25	66	5	10	25	<0.2	<0.1	180	35	50	500	25	42.5	
26	7	5	15	25	<0.2	<0.1	400	35	35	450	20	40.5	
27	8	10	15	25	<0.2	<0.1	195	30	35	400	20	39.5	
28	9	5	15	25	<0.2	<0.1	180	30	35	400	20	40.5	
29	70	35	20	20	<0.2	<0.1	450	85	30	400	20	21.5	
30	1	10	15	25	<0.2	<0.1	160	35	40	550	25	35.5	
31													
32	2	10	15	10	<0.2	<0.1	75	25	50	150	20	19.0	
33	3	25	35	5	<0.2	<0.1	510	25	60	200	35	7.5	
34	4	120	70	30	<0.2	<0.1	1530	95	70	250	55	76.0	
35													
36	5	65	170	30	0.2	<0.1	10500	370	65	200	320	20.5	
37	6	10	50	25	<0.2	<0.1	580	40	35	150	30	36.5	
38	7	15	70	25	0.2	<0.1	3700	125	50	150	110	22.5	
39													
40	25/24	5	25	25	<0.2		215	60	30	250	45	92.5	

GEOCHEMICAL ANALYSIS SHEET 0215 15508

PROJECT ORDOVICIAN PROJECT

LOCATION BURRA

GRID #1-2

Box No 24743

Analyst RC/sc/RW Date 17/8/78

Analytical Method HF

HOLE No _____ COORDS _____

SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 9th Aug 78

ANALYSE FOR

[illegible]

GEOCHEMICAL ANALYSIS SHEET

13505
0216PROJECT CRADOCKIAN PROJECTLOCATION BURRA

GRID

Box No 28596Analyst SHS Date 6/7/78Analytical Method HFHOLE No Area I COORDSSAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 30th June 78ANALYSE FOR Cu Zn Pb Ag As Ba V

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	As	V	Ag
21.1	36	K20501 ✓			155	30	60	780	<50	0.4
2	37	2 ✓			260	20	65	550	<50	<0.2
3	38	3 ✓			140	20	85	2180	<50	1.0
4										
5	39	4 ✓			80	25	40	460	<50	<0.2
6	40	5 ✓			105	20	35	220	<50	<0.2
7	41	6 ✓			80	60	50	650	<50	<0.2
8	42	7 ✓			170	125	60	1170	<50	<0.2
9			501-7: from landway crossing Quarry							
10			North Barren							
11										
12										
13	43	8 ✓			630	80	60	370	50	<0.2
14	44	9 ✓			500	55	45	310	150	<0.2
15	45	10 ✓			780	60	80	1050	200	<0.2
16			508-10 from road cut north Thomas'							
17										
18			KOORIN CIA FAULT							
19	46	11 ✓			60	80	55	30	150	<0.2
20	47	12 ✓			260	390	60	50	200	<0.2
21			(By fence)							
22	48	13 ✓			470	820	60	80	200	<0.2
23	49	14 ✓			310	850	55	15	250	<0.2
24	50	15 ✓			55	790	65	10	100	<0.2
25	51	16 ✓			95	280	65	10	50	<0.2
26			(North field)							
27	2	17 ✓			45	330	80	20	800	<0.2
28	3	18 ✓			105	75	45	25	150	<0.2
29	4	19 ✓			35	1050	80	10	200	<0.2
30	5	20 ✓			115	135	50	45	100	<0.2
31			(South field)							
32	6	510			800	60	85	1110	200	<0.2
33										
34										
35										
36										
37										
38										
39										
40										

Location as plotted

J.S.
24/4/79.

Barium to follow

GEOCHEMICAL ANALYSIS SHEET

02113504

PROJECT ORDOVICIAN PROJECT

LOCATION BURRA

GRID

Box No 28590

Analyst SHS Date 6/7/78

Analytical Method HF

HOLE No _____ COORDS _____

SAMPLE TYPE ROCK SAMPLER DF DATE SAMPLED 25.6.78

ANALYSE FOR Cu Zn Ag Pb Ba As Va

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	As	V	Ag
30/7	K18970				1350	30	110	2800	100	2.5
8	1				165	70	40	140	<50	0.2
9	2				900	30	105	2560	100	1.0
10	3				100	20	80	170	100	<0.2
11	4				180	70	70	50	100	<0.2
12	5									
13	6				610	610	240	1300	100	3.2
14	7				480	310	85	1600	150	4.6
15	8				1470	1450	125	2450	50	1.8
16	9				390	490	310	640	100	4.8
17	10				2090	1030	130	3500	50	2.0
18	11				90	70	90	140	50	1.2
19	12									
20	13				65	50	65	50	<50	*10.8
21	14				500	110	95	250	100	7.8
22	15				500	190	90	240	100	0.8
23	16				135	40	90	115	50	*5.6
24	17									
25	18									
26	19									
27	20									
28	21									
29	22									
30	23									
31	24									
32	25									
33	26									
34	27									
35	28									
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93	86									
94	87									
95	88									
96	89									
97	90									
98	91									
99	92									
100	93									

BURRA ~ 3km

Quarry

Hill of chert or
silic. Dolomite

Dol.

*electr
24K

Barium to follow

22 K18974

* Arrow means: order samples in worst → best.

GEOCHEMICAL ANALYSIS SHEET 0218

13503

PROJECT ORDOVICIAN PROJECT

LOCATION BURRA AREA I

GRID

Box No 28589

Analyst STB Date 6/7/78

Analytical Method HF

HOLE No _____ COORDS _____

SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 25 June 78

ANALYSE FOR Cu Zn Pb Ag Ba As Va

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	As	V	As
1	K18766				420	30	100	1000	100	0.2
2	7				330	20	105	610	100	0.2
3	8				75	15	45	65	<50	0.2
4	9				275	20	55	580	50	1.0
5	70				65	10	25	45	<50	0.2
6	1				55	10	45	75	<50	0.2
7	2				100	15	50	55	<50	0.2
8	3				55	40	45	80	<50	0.2
9	4				55	30	40	400	<50	0.2
10	5				30	10	30	160	<50	0.2
11	6				50	20	40	890	<50	0.2
12	7				45	20	50	170	<50	0.2
13	8				60	25	40	330	50	0.2
14										
15	79				30	15	25	240	<50	0.2
16	80				155	30	80	135	50	1.6
17	1				60	55	65	320	50	0.2
18										
19	82				65	25	45	630	50	0.2
20	3				105	10	20	130	<50	0.2
21	4				40	15	25	160	<50	0.2
22										
23	85				35	15	40	170	50	0.2
24	6				45	10	35	260	<50	0.2
25										
26										
27										
28	81									
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										

Locations Plotted.
2/14/79

North 70 320 50 0.2
 BURRA 1 Km
 Railway

K18766
 from field
 79-S1 LHS Road
 82-4 RHS Road
 85-6 BY Dam

Benjamin to follow

GEOCHEMICAL ANALYSIS SHEET

021913502

PROJECT ORDOVICIAN PROJECT

LOCATION BURRA
AREA '1'

GRID

Box No 28589

Analyst SHS Date 6/7/11

Analytical Method HF

HOLE No _____ COORDS _____

SAMPLE TYPE Rock SAMPLER DF DATE SAMPLED 25 June 18

ANALYSE FOR Cu Zn Pb Ag Ba As Va

TUBE No	SAMPLE NUMBER	DEPTH FROM (LINE DIST.) AUGER	DEPTH TO	Ni	Cu	Zn	Pb	As	V	Ag
23	K18789				850	190	35	10	100	<0.2
24	90				700	30	60	20	400	<0.2
25	1				360	100	60	15	150	<0.2
26	2				200	150	25	10	100	<0.2
27	3				235	160	30	10	50	<0.2
28	4				235	95	65	25	250	0.2
29	5				130	80	65	10	10	<0.2
30	6				300	40	40	15	50	<0.2
31	97				210	135	60	10	150	<0.2
32	8				165	40	50	15	100	<0.2
33	9				135	60	15	20	<50	<0.2
34	800				245	55	30	15	<50	<0.2
35	796									

Gossan on W. margin of Dolomite Breccia. (Good gossan too!)

Location Plotted

NORTH
(not to scale)

BURRA ~ 6 Km.

To PRINCESS ROYAL

Plugged field (fallow)

K18789 - 96

97 800

35

796

310

30

35

20

50

Barren to follow

HOUSE

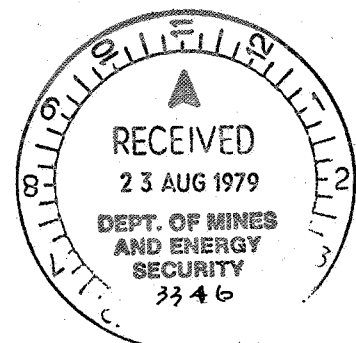
~~0870~~ 220

AUSTRALIAN SELECTION (PTY) LIMITED

HALLETT E.L. 425

THIRD QUARTERLY REPORT

24TH APRIL TO 23RD JULY, 1979



HALLETT E.L. 425

THIRD QUARTERLY REPORT

24TH APRIL TO 23RD JULY, 1979

No exploration was carried out during the quarter. It is hoped to initiate drilling and surface exploration during the next quarter.

An expenditure report is attached.

M.G. MASON,
SENIOR GEOLOGIST.

21/7/79

0222

HALLETT E.L. 425EXPENDITURE REPORTTHIRD QUARTER24TH APRIL TO 23RD JULY, 1979

	Expenditure for quarter	Expenditure to date
Exploration Staff	1,124	20,796
Exploration Logistics	161	8,624
Exploration Services	19	8,301
Property Costs	-	1,998
Percussion Drilling	-	29,306
Exploration Administration	235	2,312
Management & Administration		
General	225	2,350
Depreciation	362	3,567
Totals	2,126	77,254

NOTE: Our accounting system is based on calendar months so that the above figures represent the period 1st April to 30th June, 1979.

0223

AUSTRALIAN SELECTION (PTY) LIMITED

HALLET E.L. 425

FOURTH QUARTERLY REPORT

24TH JULY TO 23RD OCTOBER, 1979



HALLET E.L. 425

FOURTH QUARTERLY REPORT

24TH JULY TO 23RD OCTOBER, 1979

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PETROLOGY	2
EXPENDITURE REPORT	

A P P E N D I X

Appendix 1

Petrology Report Ref. EIM 610

0225

INTRODUCTION

Cessor of exemption and right of entry notices are being collated to allow access onto the ground both for mapping and drilling. Mapping has commenced and requires to be completed before the next drilling programme commences.

Aerial photographs, at a scale of 1:20,000, were requested from QUASCO. The survey was flown earlier by Adastra (liquidated) for Aquitaine and the negatives have been destroyed. However, a set of black and white prints may be available and negotiations are proceeding.

The District Council of Burra-Burra has advised that some holes drilled at the end of last year have caved. The council will fill the holes at the Company's expense. //

PERSONNEL AND EQUIPMENT

One geologist and a field assistant were employed part time on the project.

Equipment included a Toyota Landcruiser and Skipper Bailey caravan.

Personnel stayed at Burra caravan park for the duration of their work on the E.L.

Communications were via our own SSB radio channel to Port Augusta.

GEOLOGY

Geological mapping of prospects south of Burra has commenced. Data are plotted directly onto enlarged black and white aerial photographs at a

0226

scale of about 1:20,000. The geology of this area will be discussed when mapping is at a more advanced stage.

PETROLOGY

A sample of vein quartz from the Mongolata gold field was collected for petrological and mineragraphical examination. However, there was insufficient mineralisation in the specimen to allow any meaningful conclusions to be made about the relationship between ore minerals and host rock. (Appendix 1).

An expenditure report will be forwarded when it becomes available.

A.D. PEDLER,
PROJECT GEOLOGIST.

0227

APPENDIX 1

PETROLOGY REPORT REF. EIM 610



Selection Trust Group, Australia—PERTH OFFICE

50 St. George's Terrace, Perth, W.A. 6000

0228

Telephone 25 4511
Telex AA 93033
Telegrams Auselex Perth

Correspondence to:
Australian Selection (Proprietary) Limited
Box R 1274, G.P.O.,
Perth, Western Australia 6001

For intergroup correspondence only. Use separate sheet for each subject.

To ANDY PEDLER
FROM JIRI JUST

Date

8th June, 1979

Reference No. EIM 610

Subject/Heading

MONGOLATA, MINERAL IDENTIFICATION

File No.

K 86950 Mongolata gold field

Vein quartz.

Minerals identified: quartz, muscovite, goethite, hematite, pyrite,
halite, gypsum (?), sphalerite, galena, chalcopyrite,
nat: gold, nat. copper ?, zircon.

Unidentified: Nd-Ce-Sm phosphate, Y silicate.

Vein quartz with patches rich in muscovite (resorbed rock fragments?)

In cavities are developed usually distorted crystals of quartz sometimes overgrown with well developed platy crystals of muscovite, less often also hematite. Porous pseudomorphs after small (up to 2mm) octahedra are common.

Sulphides were found almost exclusively in massive quartz, only exceptionally in minute cavities. Only pyrite was macroscopically visible (pyritohedral crystals up to 2mm often with "skin" of limonite). Other minerals were found only by detailed investigation with a scanning electron microscope with X-ray energy dispersion detector.

Native gold: only one grain, approx 20 μ in size, was found embedded in a pyrite crystal.

Native copper: one minute grain in quartz.

Galena: several minute grains either singly in quartz or associated with pyrite and sphalerite (galena and sphalerite forming discontinuous rims around pyrite).

Sphalerite: sporadic minute grains associated with pyrite.

Chalcopyrite: one grain in small druzy cavity.

Halite: minute crystals on walls of cavities and fractures, in some cases associated with gypsum (?)

Zircon: small grains in quartz and in quartz - muscovite patches.

0229

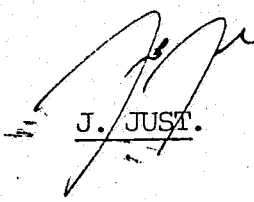
Unidentified Nd - Ce - Sm phosphate: minute grains associated with quartz and muscovite.

Unidentified Y silicate (yttrialite?, thalenite?): one minute grain in quartz.

The amount of ore minerals is too small to allow any meaningful conclusions about their mutual relations. The above cases are just random examples. The probability of intersecting one ore more ore minerals (other than pyrite) is very small.

The limonite boxwork appears to be after cubic crystals of pyrite.

Fig. 1, 2.


J. JUST.

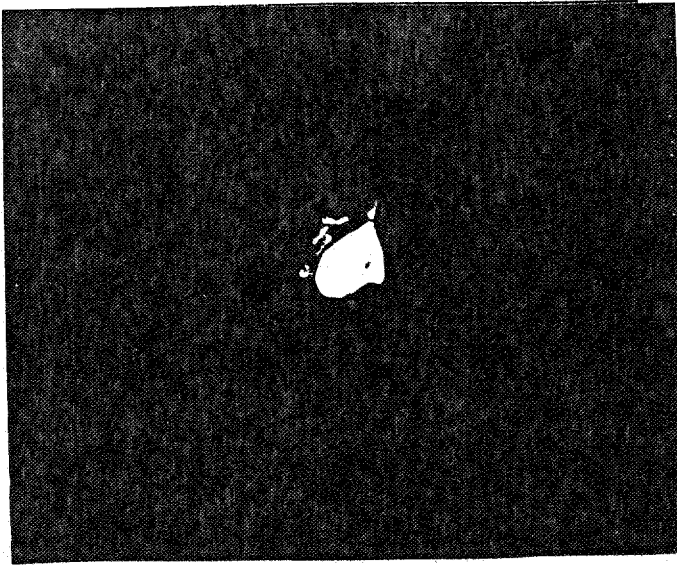


Fig. 1. K 86950

Gold in pyrite.
SEM, backscattered electrons image.
Magn. approx. 700x.

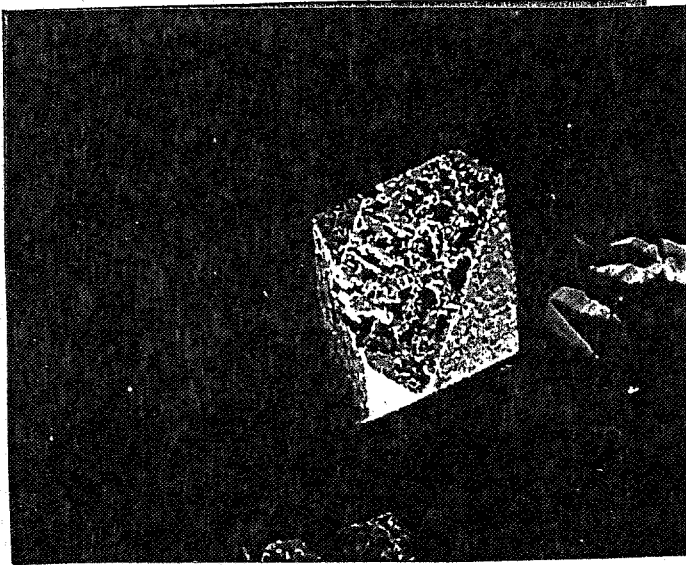


Fig. 2. K 86950

Goethite pseudomorphs after pyrite octahedron.
SEM, backscattered electrons image.
Magn. approx. 230x.

HALLETT E.L. 425

0231

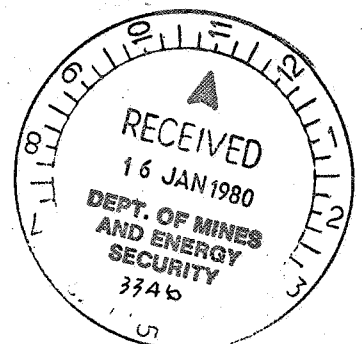
EXPENDITURE REPORT

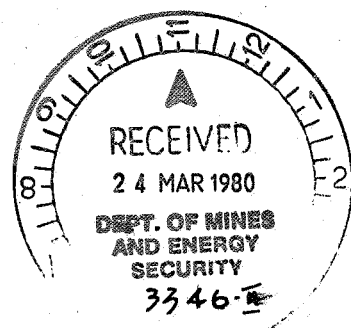
FOURTH QUARTER

24TH JULY TO 23RD OCTOBER, 1979

	Expenditure for quarter	Expenditure to date
Exploration Staff	1,254	22,050
Exploration Logistics	781	9,405
Exploration Services	-	8,301
Property Costs	646	2,644
Percussion Drilling	-	29,306
Exploration Administration	-110 (Cr.)	2,202
Management & Administration		
General	- 99 (Cr.)	2,251
Depreciation	-545 (Cr.)	3,022
Total	\$ 1,927	\$ 79,181

NOTE: The above figures represent the period 1st July to 30th September, 1979.



SELTRUST MINING CORPORATION PTY LTDHALLETT E.L. 425FIFTH QUARTERLY REPORT24TH OCTOBER, 1979 TO 23RD JANUARY, 1980

SELTRUST MINING CORPORATION PTY LTDHALLETT E.L. 425FIFTH QUARTERLY REPORT24TH OCTOBER, 1979 TO 23RD JANUARY, 1980C O N T E N T S

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PERSONNEL AND EQUIPMENT	1
GEOLOGICAL MAPPING	1
ROCK CHIP SAMPLING	1
EXPENDITURE	2

INTRODUCTION

Exploration during the period consisted of a continuation of the geological mapping and rock-chip sampling programme, which was initiated in the previous quarter.

Right of entry notices have been issued to landowners, in order to gain access to specific blocks within E.L. 425. These blocks contain priority exploration targets, and typically include the region around old mine workings.

PERSONNEL AND EQUIPMENT

Two geologists and two field assistants were employed for part of the period on the project. Equipment included a Toyota Landcruiser, a Holden utility and a caravan. As in the previous reporting period, personnel stayed at the Burra Caravan Park.

GEOLOGICAL MAPPING

Geological data were mapped directly on to enlarged black and white aerial photographs at a scale of 1:25,000. A small part of the exploration licence is not covered by these photographs and data for this area were plotted onto standard photographs, at a scale of approximately 1:80,000. Field mapping and drafting of these data onto overlays has not been completed. Results of the programme will be presented next quarter. 11

Outcrop in the area is limited, and most geological information has been derived from road cuttings, quarries, and creek traverses.

ROCK CHIP SAMPLING

Rock chip samples were collected from most areas of outcrop and

occasionally from float and rubble. Samples were submitted for geo-chemical determinations of copper, lead, zinc, tin, gold and silver by atomic absorption spectroscopy. Results were not available for inclusion in this report, and will be discussed next quarter.

EXPENDITURE

	Expenditure for quarter	Expenditure to date
Exploration Staff	1,709	23,759
Exploration Logistics	1,709	11,114
Exploration Services	105	8,406
Property Costs	1,959	4,603
Percussion Drilling	- 2 (Cr.)	29,304
Exploration Administration	-32 (Cr.)	2,170
Management & Administration		
General	174	2,425
Depreciation	-124 (cr.)	2,898
	\$ 5,498	\$ 84,679

NOTE: The above figures represent the period ended 31st December, 1979.

P.J. BROOMHEAD,
GEOLOGIST.

ADFLAIDE & WALLAROO FERTILIZERS LTD.
INTER-OFFICE CORRESPONDENCE

0236

Man. Dir. (F)		Man. Director	/
Man. Dir. (M)		Gen. Mgr. (M)	
Contr. Acc. Div.		Dep. Mgr.	
Supply Mng.		Secretary	
Mgt. Copper Div.	2	Mgt. Admin.	
Res. Supt.		Admin. Officer	
T.A.D.		Insurance & Prop.	
Pl. Adm.		Personnel Mgt.	
Wash.		Economist	
Pl. Line		Files	

To..... MANAGER - COPPER DIVISION

Copies to.....

DATE

7th March, 1980.

SUBJECT PRINCESS ROYAL COPPER PROSPECT

LOCATION/ACCESS/PHYSIOGRAPHY

The Princess Royal prospect is located on Section 2, Hundred of Koorringa, 13 km south east of Burra. It lies within Exploration Licence 425 held by Seltrust Mining Corporation. The adjacent Utica prospect on Section 3 immediately to the south is held under Mining Lease 4245 by Gold Copper Exploration Ltd. These titles are due to expire on October 23rd and 29th, 1980 respectively but are renewable virtually at the holders option.

Access (from Burra) is by gravel road for 9 km to Princess Royal home-
stead and then 5 km on unformed bush track currently passable only to 4WD
vehicles. Alternatively (and preferably, to avoid annoyance to station
residents) the prospect may be reached 3 km westerly across open paddocks
from a gate 17 km from Burra on the gravel World's End road.

The major workings lie along the crest of a ridge (in a saddle position)
at an elevation of about 500 m, which is 100 m above Burra Creek level 1 km
to the west. A subsidiary line of workings lies at slightly lower elevation,
north of, and offset to the east from the former, on the eastern fall of the
same ridge. The ridge constitutes the main eastern scarp of the northern
Mount Lofty Ranges in this area.

PRODUCTION HISTORY

The deposit was discovered by a shepherd named Striear early in 1845,
shortly before the discovery of Burra. Following division of a 20 000 acre
special survey encompassing both deposits, between two rival syndicates who
had combined to purchase it, operation commenced almost at the same time as
at Burra (September, 1845). Mining continued until 1851 when water was
struck at about 55 m. Further development was not carried out due to both
original capital and proceeds from ore sales having been expended. Recorded
production for this period is 588 tons of hand-picked ore grading 25-30% Cu
valued at £7,000. The land was sold for a sheep run in October 1860, realizing
a further £9,000. The English and Australian Copper Company leased the
property and produced another 46 tons averaging 18% Cu in 1867-8. No further
production has been recorded. No plans of underground workings are available.

7th March, 1980.

0237

BRIEF GEOLOGY

The mineralization occurs in the Upper Proterozoic Skillogalee Dolomite, the same formation which is host to the Burra orebody, but at a slightly higher stratigraphic level - Burra ore straddles the 1B horizon whereas Princess Royal mineralization occurs in the 1D unit up to the contact with the overlying Woolshed Flat Shale. This closeness of stratigraphic position is considered fortuitous and related to level of exposure near the axes of domal structures.

Mineralization generally consists of malachite and lesser azurite, chrysocolla and cuprite associated with vein quartz, limonite and local manganese staining in brecciated zones. These may be crosscutting but the more persistent are sub-parallel to bedding (in strike at least). Widths vary from .5 m to 5 m and lengths up to several hundreds of metres.

PREVIOUS INVESTIGATIONS

1. Reyner and Pitman examined the prospect for the S.A. Mines Department as part of "An Appraisal of Some Copper Mines in the Burra District" in February, 1953 but did not recommend any exploratory work.
2. Geoscience Incorporated took up the area under S.M.L.68 in 1964. An associated company, Australian Geophysical Pty. Ltd. carried out geological mapping, soil geochemistry and induced polarization geophysics (I.P.). On the basis of coincident geochem. and I.P. anomalies diamond drilling was commenced to test the primary zone at 500' - 800' depth for stratiform mineralization at the contact between pyritic carbonaceous shale and the underlying dolomite. Hole BU-1 was inclined 50° W below the eastern flank lode and intersected 2'4" of 2.7% Cu as chalcopryrite in quartz/dolomite vein at 553'. The hole was abandoned at 860' in a chloritic/graphitic gouge zone presumed to be a fault. The second hole BU-2 was located 1800' to south - same inclination. It was abandoned at 433' after intersecting a similar gouge zone, but without intersecting any copper. The rig was moved to a third site 1700' further south - opposite the main ridge top line of workings - but then pulled out before collaring the hole. The drilling was carried out by Glinderman & Kitching utilizing a Mindril A3000 rig (NXWL to AXWL sizes), and overall recoveries were 84% and 76%.
3. Burra Ridge Pty. Ltd., gained title to the area under S.M.L.395 in 1970. Ten percussion holes totalling 1200' were drilled along the main line of lode - towards its southern end - in September that year. Due to drilling difficulties the results were considered inconclusive and not plotted up. Best results were 6' (124' - 130') @ 1.0% in PR50/50 and 6' (106' - 112') @ 0.51% in PR52/50, the two most southerly holes. Southern Cross Exploration N.L. became operators of this venture from November, 1970. After further reconnaissance work they commenced drilling at Princess Royal in March, 1971.

3. Burra Ridge Pty. Ltd. (Contd.)

Contractor Cunis Minerals attempted four vertical holes with a target depth of 500', achieving 290', -, 65', 350'. Best result was only 5' (25' - 30') @ 0.26% Cu in hole 4. Boring Enterprises successfully completed a hole (5) to 500' in July but results were still poor - best 0.21% Cu over 5'. Water was encountered at depths between 120' and 160' and the flow rate was extremely high in all cases.

4. Gold Copper Exploration Ltd. acquired an Authority to Enter over Princess Royal in March 1972, and subsequently pegged three mining leases, one of which covered Utica and is still retained. This company's target was near surface secondary copper in contrast to the deeper primary targets of earlier explorers. Following further geochemical work, 2524' of drilling (44 holes) was carried out in June/July 1972, utilizing a Halco-Stenuick down-hole-hammer rig. Unclosed strike continuity of mineralization was established over 1125'. Also surprising sub-surface lateral spread at widths up to 80' was obtained. Maximum hole depth was only 60' (inclined) and many holes were terminated in mineralization. The following in-situ reserve estimates were made from the data :-

a) "Main lode" (= narrow near vertical vein) over 1500' of strike to 40' depth at varying cut-offs (0.5 - 1% Cu) :-

42 000 tons @ +1.2% Cu including a possible 12 500 tons @ approx. 2% Cu.

b) "All mineralization" (= all rock) over same length/depth but to 60' width, no cut-off :-

230 000 tons @ 0.6% Cu.

5. In September 1972, Gold Copper submitted samples from three of the above holes to Samin at Burra. Ammonia leach recoveries for composites from each hole were only 30%, 40%, and 67%. Further composites of the same samples were prepared in July, 1973 and yielded corresponding recoveries of 23%, 46% and 14%. After roasting however these improved to 90%, 86%, and 86% respectively, and on roasting/aeration 91%, 89% and 88%. Following these excellent results Samin examined the geological data with a view to gaining an interest. Using the same drilling data a diluted mining reserve of 189,000t @ 0.80% Cu and 1:1 stripping ratio was calculated for an open pit to 50' depth. On the basis of the further 900' of mineralization outcropping to the south an additional 130,000 tons was predicted and rounded down total of 300,000 tons stated.

DISCUSSION

The stratigraphic model proposed by Australian Geophysical is discounted in favour of a simple vein model. The 0.7 m vein intersection obtained in hole BU-1 is considered consistent with the surface mineralization in this flank area. Despite the thinness of this primary source the near surface zone still requires investigation due to flat dips, secondary enrichment and potential for lateral spreading in the oxidized zone. Reasonable continuity

7th March, 1980.

0239

DISCUSSION (CONTD.)

over 300 m of strike is indicated by surface workings with a subsidiary line 50 m to the east.

The central area which was pattern drilled by Gold Copper is the most encouraging. Drill proven strike of this zone is 350 m with another 300 m of outcropping mineralization to the south. Although the latter area was drilled by Burra Ridge Pty. Ltd. their holes were sited such that this zone may still be considered essentially untested. A further 150 m of apparently barren ground exists before the lode reappears at the Utica boundary. Good intersections were obtained on the most northerly line beyond the most northerly workings, allowing the possibility of extension in this direction also. Unclosed widths up to 25 m have been demonstrated and testing only extended to 15 m depth. With a water table at about 45 m, considerable extension in depth may be expected. In view of all these possibilities and the Samin calculations, optimism for the existence of 500 000 tonnes in this zone is possible, with realistic potential for double that amount. However, results to date suggest that a cut-off grade of 0.5% Cu is probably too low in considering ore cartage to Burra. Perhaps a figure of 1% Cu (to take the average above 1.5%) would be necessary, with consequent major tonnage reduction.

The original Princess Royal shaft is located centrally in a small group of workings, 100 m west of the main zone. This area has never been drill tested. The Country rock dolomites are extremely hard (silicified) in this vicinity. It does not appear to be an attractive target in its own right but could no doubt contribute additional tonnage if the other areas proved viable. Similar comments apply to the Utica area.

CONCLUSION

There appears to be good potential for at least 1 million tonnes of near surface oxidized copper ore (0.5% cut-off grade) in two or more bodies at Princess Royal. Considering the location only 20 km from Burra, it undoubtedly constitutes the best potential external source of ore for the Burra operation. Grade would be the most critical factor in determining viability. A programme of pattern percussion drilling could provide the necessary data for evaluation within twelve months.

RECOMMENDATION

An interest in the property should be negotiated as soon as possible and a drilling programme embarked upon. Seltrust Mining have already indicated willingness in principle to enter into a royalty agreement for oxidized ore only. This would be quite satisfactory for our purposes - sulphide ore is of no immediate use to us and potential for such is considered quite low at Princess Royal. The Utica area is not considered worthy of attention at this stage and there is the possibility it may not be renewed and fall to the enclosing exploration licence in October anyway.

...../5

7th March, 1980.

0240

RECOMMENDATION (CONTD.)

The envisaged programme would occupy a geologist, driller and sampler for several months spread over one year. Viz:-

Two weeks preliminary surveying work to establish a metric grid over a 2 km x 0.5 m area and prepare base plans. Mapping of geological/physical features would be minimal as existing data could be utilized after suitable scale modification.

A first pass scout drilling programme utilizing Roche Bros. air-trac rig - say 100 holes to 25 m depth on a 100 m x 20 pattern.

A follow-up drilling programme utilizing a down-hole-hammer rig - say 100 holes to 50 m depth as indicated by the scout holes.

The initial use of Roche's rig is proposed because of the steep terrain which will be more easily negotiated by a tracked than wheeled vehicle, thus reducing the need for site preparation. The extent of the follow up programme depends entirely on results with the possibility of a several fold multiplication of the initial 100 holes. Further funding would be sought as appropriate in this case.

Costing (for the first twelve months) is thus estimated at :-

Salaries & Wages	\$15,000	
Drilling - Stage 1	10,000	(+ assaying \$10,000 - done) (internally by I.R. & D. (Dept. at no charge?)
" Stage 2	25,000	
Other (vehicles/sample bags etc.)	5,000	
	<u>\$55,000</u>	

BIBLIOGRAPHY

(In Chronological Order)

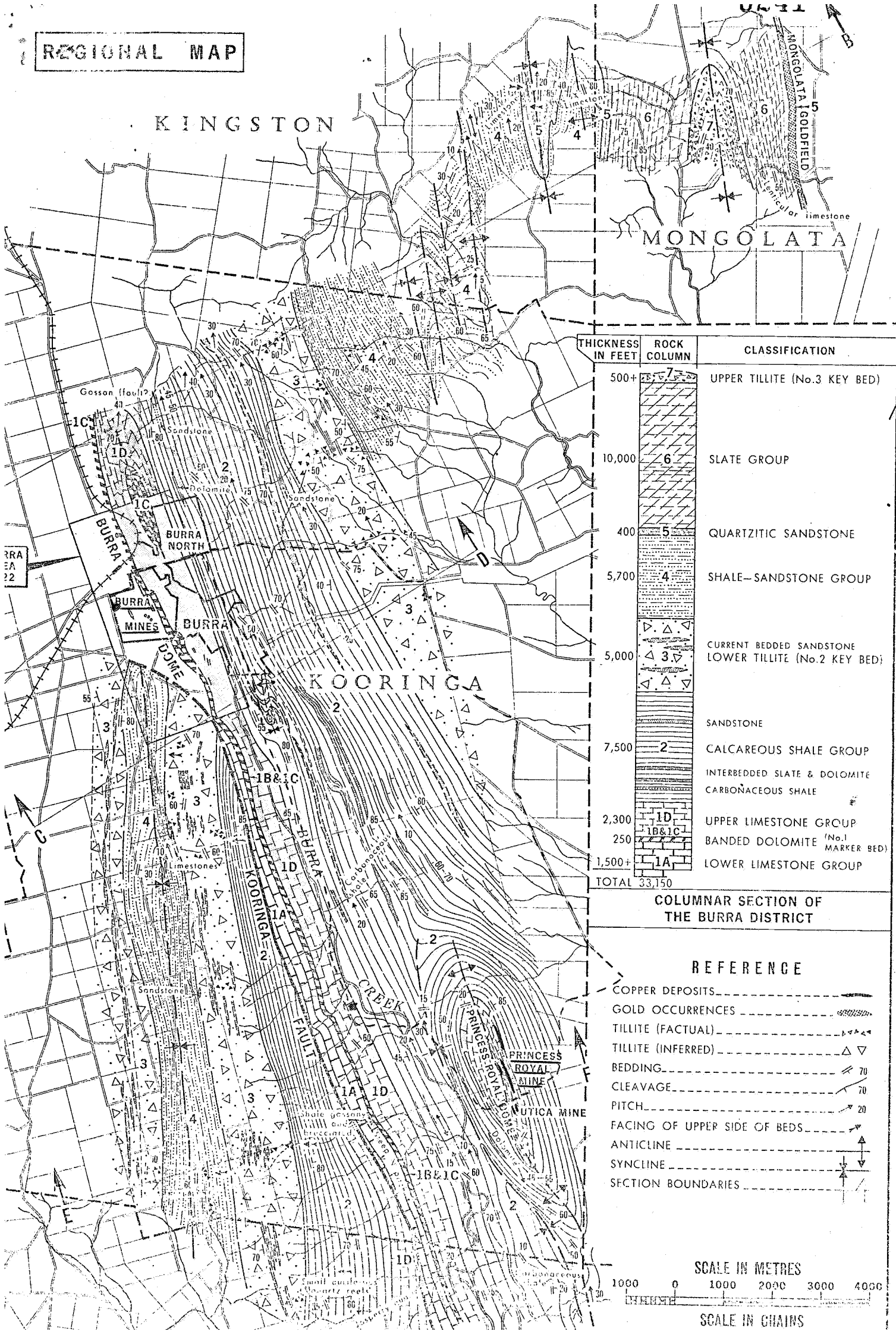
- Record of Mines of S.A. 1908 pp. 16 & 122
- Review of Mining Operations 1916 No. 24 p. 8
- Geological Survey Bulletin No. 20, 1942 p. 66
- Mining Review 1953 No. 98 pp. 71-73 (= SADME RB35/49)
- Australian Geophysical Pty. Ltd. 1965/6 in
 - S.A.D.M.E. Open File Envelope 593 (includes 551)
- Burra Ridge Pty. Ltd. 1970/1
 - in S.A.D.M.E. O/F ENV 1431
- SAMIN RECORDS including Gold Copper Exploration Ltd. - 1972.

KB:BP

R. F. Brumpton
CHIEF GEOLOGIST

K I N G S T O N

MONGOLATA

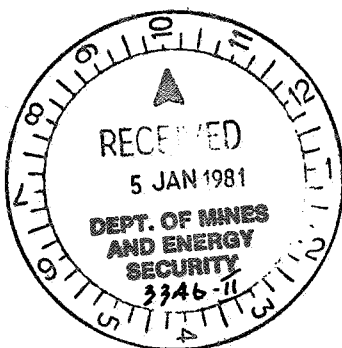


AUSTRALIAN SELECTION (PTY) LIMITED

HALLETT E.L. 425

SIXTH QUARTERLY REPORT

24TH JANUARY TO 23RD APRIL, 1980



Seltrust Mining Corporation Pty Ltd
Technical Managers

A.D. PEDLER.

AUSTRALIAN SELECTION (PTY) LIMITEDHALLETT E.L. 425SIXTH QUARTERLY REPORT24TH JANUARY TO 23RD APRIL, 1980C O N T E N T S

	<u>Page No.</u>
INTRODUCTION	1
PERSONNEL & EQUIPMENT	1
GEOLOGY	1
ROCK CHIP SAMPLING	2
MINERALISATION	2
CONCLUSIONS & RECOMMENDATIONS	2
EXPENDITURE REPORT	

F I G U R E S

<u>Fig. No.</u>	<u>Title</u>	<u>Plan No.</u>
1	Hallett E.L. 425 Structural Trends & Rock Chip Locations Scale 1:250,000	AS 8697
2	Hallett E.L. 425 Timmins Resistivity Report Belcunda Road, Report Diagram 19	AS 8603
3	Hallett E.L. 425 Geology & Rock Chip Sample Location Plan Scale 1:25,000	AS 9822
4	" "	AS 9823
5	" "	AS 9824
6	" "	AS 9826

INTRODUCTION

Little field work was carried out on E.L. 425 during the quarter. Geological mapping and rock-chip sampling, initiated toward the end of 1979, was completed.

Arrangements were made to transfer the licence to Adelaide & Wallaroo Fertilizers Ltd., in June, 1980.

PERSONNEL AND EQUIPMENT

One Geologist (contract) and two field assistants (all part-time) were employed on the project.

Equipment comprised a Toyota Landcruiser, a Holden utility and a Skipper Baily caravan. Field crew stayed in a caravan park in Burra.

Communications to our Port Augusta and Perth offices were by telephone.

Drafting, accounting and administrative back-up were provided by our Perth Office.

GEOLOGY

Geological mapping (in conjunction with rock chip sampling) was completed on the E.L. All information was plotted directly onto aerial photographs at 1:25,000 scale and compiled in plan form.

(Figs. 1 and 3 to 6)

Outcrop in the area is limited, most geological information being derived from road cuttings, creek traverses and quarries. Lithologies mapped were Burra group sediments (siltstones, dolomites and quartzites)

* K205692-6 1400 Cu, 1600 Pb,
RULDOLOO 0.3 Ag, <0.1 Au.
Cu.

Samples collected by D. Findlay
June to August 1978.
Samples located on photo en-
largements of this E.L. Results
of samples are contained in
South Australian Rock Chip files
Geochem is in ppm unless otherwise
Shown.

33° 30'

E.L. 425

Up to 1000 As, 1.6 Ag, <0.2 Au

Up to 0.35% As, 10.8 Ag, <0.1 Au

K20538-41

K20529-34

K20508-10

K20501-7

M. BRYAN

* K20566-77

* K20548-53

* K20554-65

BURRA

K18766-66

* K20578-79

K20513-16

K20511-12

20517-20

K18970-84

K20535-37

* K18789-800

LEGEND



TILLITE



DOLOMITE



ANTICLINE



SYNCLINE



MAJOR FAULT



TREND LINE



NECK



SELECTED AREA OUTLINE



MINE OCCURRENCE

SCALE 1:250,000

0 5 10

Kilometres

FIG. 1

SELTRUST MINING CORPORATION PTY. LTD.

HALLETT E.L. 425

STRUCTURAL TRENDS AND ROCK CHIP
SAMPLE LOCATIONS EASTERN PART OF
E.L.

and Umberatana Group sediments (quartzites, shales, siltstones and tillites).

ROCK CHIP SAMPLING

Rock-chip sample sites were accurately located onto aerial photographs at either 1:25,000 or 1:80,000 scale and transferred to the geology plans.

Samples were collected from most areas of outcrop and occasionally from float and rubble.

MINERALISATION

Samples were submitted for geochemical determinations of copper, zinc, lead, gold and silver, by atomic absorption spectroscopy.

Anomalous results were only obtained from localities of known mineralisation. Significant results were tabulated below : -

Rock Chip Geochemistry (results in ppm unless otherwise indicated)

<u>Sample No.</u>	<u>Au</u>	<u>Ni</u>	<u>Cu</u>	<u>Zn</u>	<u>Pb</u>	<u>Ag</u>	<u>As</u>	<u>Sb</u>	<u>Locality</u>
K 135145	0.9	500	4600	1170	55	16.5	750	25	Princess Royal & Utica Mines
K 135141	0.1	1750	155	970	55	0.2	115	5	" "
K 135137	0.1	110	32000	370	50	2.8	55	10	" "
K 135135	0.1	30	5600	1910	70	0.2	650	50	" "
K 136359	0.1	45	2.05%	1.75%	310	5.6	n.d.	n.d.	St. Elmo Mine
K 136451	0.1	150	2.46%	200	80	0.2	"	"	Apoinga Mine
K 136298	0.1	n.d.	15.5%	n.d.	n.d.	n.d.	"	"	West Burra Mine

n.d. = Not determined

CONCLUSIONS & RECOMMENDATIONS

The majority of known copper occurrences in the Burra region occur in

fractured or folded dolomite or dolomitic siltstones, commonly within the Burra Group.

Known gold occurrences are generally located in siltstones, usually associated with tillitic units of the Umberatana Group. At the old gold workings 7.2km north east of Booborowie, mineralisation appears to be associated with the contact of a homogeneous unit with a 'gossanous quartz breccia'.

Further rock-chip sampling plus gridding and RAB drilling in the vicinity of the Apoinga and Utica workings to ascertain the extent of the mineralisation may be warranted, followed by percussion drilling as required.

Gridding and RAB drilling in the vicinity of the old gold prospect 7.2km NE of Booborowie and further rock chip sampling around St. Elmo Mine may also be warranted. An Expenditure Report is attached.

A.D. PEDLER,
GEOLOGIST.

2/12/80.

NOTE: Report Diagram No. 19 from the Timmins REsistivity Report, previously omitted is included in the figures in this report.

HALLETT E.L. 425EXPENDITURE REPORTSIXTH QUARTERLY REPORT24TH JANUARY TO 23RD APRIL, 1980

	Expenditure for quarter	Total Seltrust expenditure
Exploration Staff	5,779	29,538
Exploration Logistics	1,189	12,303
Exploration Services	3,735	12,141
Property Costs	102	4,705
Percussion Drilling	-	29,304
Exploration Administration	834	3,004
Management & Administration		
General	750	3,175
Depreciation	709	3,607
	\$ 13,098	\$ 97,777

NOTE: The above "quarterly" figures represent the total exploration expenditure by Seltrust from 1st January, 1980 to the time at which the licence was transferred to Adelaide and Wallaroo Fertilizers Limited.

W. portion of Airphoto 039 Rect - Burma
Scale 1:25,000.

K136477
K136478

K156479

Handwritten notes and markings on the left margin of the page, including the number 1736289, 47, and various scribbles and numbers like 1736288, 1736289, 1736290, 1736291, 1736292, 1736293, 1736294, 1736295, 1736296, 1736297, 1736298, 1736299, 1736300, 1736301, 1736302, 1736303, 1736304, 1736305, 1736306, 1736307, 1736308, 1736309, 1736310, 1736311, 1736312, 1736313, 1736314, 1736315, 1736316, 1736317, 1736318, 1736319, 1736320, 1736321, 1736322, 1736323, 1736324, 1736325, 1736326, 1736327, 1736328, 1736329, 1736330, 1736331, 1736332, 1736333, 1736334, 1736335, 1736336, 1736337, 1736338, 1736339, 1736340, 1736341, 1736342, 1736343, 1736344, 1736345, 1736346, 1736347, 1736348, 1736349, 1736350, 1736351, 1736352, 1736353, 1736354, 1736355, 1736356, 1736357, 1736358, 1736359, 1736360, 1736361, 1736362, 1736363, 1736364, 1736365, 1736366, 1736367, 1736368, 1736369, 1736370, 1736371, 1736372, 1736373, 1736374, 1736375, 1736376, 1736377, 1736378, 1736379, 1736380, 1736381, 1736382, 1736383, 1736384, 1736385, 1736386, 1736387, 1736388, 1736389, 1736390, 1736391, 1736392, 1736393, 1736394, 1736395, 1736396, 1736397, 1736398, 1736399, 1736400, 1736401, 1736402, 1736403, 1736404, 1736405, 1736406, 1736407, 1736408, 1736409, 1736410, 1736411, 1736412, 1736413, 1736414, 1736415, 1736416, 1736417, 1736418, 1736419, 1736420, 1736421, 1736422, 1736423, 1736424, 1736425, 1736426, 1736427, 1736428, 1736429, 1736430, 1736431, 1736432, 1736433, 1736434, 1736435, 1736436, 1736437, 1736438, 1736439, 1736440, 1736441, 1736442, 1736443, 1736444, 1736445, 1736446, 1736447, 1736448, 1736449, 1736450, 1736451, 1736452, 1736453, 1736454, 1736455, 1736456, 1736457, 1736458, 1736459, 1736460, 1736461, 1736462, 1736463, 1736464, 1736465, 1736466, 1736467, 1736468, 1736469, 1736470, 1736471, 1736472, 1736473, 1736474, 1736475, 1736476, 1736477, 1736478, 1736479, 1736480, 1736481, 1736482, 1736483, 1736484, 1736485, 1736486, 1736487, 1736488, 1736489, 1736490, 1736491, 1736492, 1736493, 1736494, 1736495, 1736496, 1736497, 1736498, 1736499, 1736500, 1736501, 1736502, 1736503, 1736504, 1736505, 1736506, 1736507, 1736508, 1736509, 1736510, 1736511, 1736512, 1736513, 1736514, 1736515, 1736516, 1736517, 1736518, 1736519, 1736520, 1736521, 1736522, 1736523, 1736524, 1736525, 1736526, 1736527, 1736528, 1736529, 1736530, 1736531, 1736532, 1736533, 1736534, 1736535, 1736536, 1736537, 1736538, 1736539, 1736540, 1736541, 1736542, 1736543, 1736544, 1736545, 1736546, 1736547, 1736548, 1736549, 1736550, 1736551, 1736552, 1736553, 1736554, 1736555, 1736556, 1736557, 1736558, 1736559, 1736560, 1736561, 1736562, 1736563, 1736564, 1736565, 1736566, 1736567, 1736568, 1736569, 1736570, 1736571, 1736572, 1736573, 1736574, 1736575, 1736576, 1736577, 1736578, 1736579, 1736580, 1736581, 1736582, 1736583, 1736584, 1736585, 1736586, 1736587, 1736588, 1736589, 1736590, 1736591, 1736592, 1736593, 1736594, 1736595, 1736596, 1736597, 1736598, 1736599, 1736600, 1736601, 1736602, 1736603, 1736604, 1736605, 1736606, 1736607, 1736608, 1736609, 1736610, 1736611, 1736612, 1736613, 1736614, 1736615, 1736616, 1736617, 1736618, 1736619, 1736620, 1736621, 1736622, 1736623, 1736624, 1736625, 1736626, 1736627, 1736628, 1736629, 1736630, 1736631, 1736632, 1736633, 1736634, 1736635, 1736636, 1736637, 1736638, 1736639, 1736640, 1736641, 1736642, 1736643, 1736644, 1736645, 1736646, 1736647, 1736648, 1736649, 1736650, 1736651, 1736652, 1736653, 1736654, 1736655, 1736656, 1736657, 1736658, 1736659, 1736660, 1736661, 1736662, 1736663, 1736664, 1736665, 1736666, 1736667, 1736668, 1736669, 1736670, 1736671, 1736672, 1736673, 1736674, 1736675, 1736676, 1736677, 1736678, 1736679, 1736680, 1736681, 1736682, 1736683, 1736684, 1736685, 1736686, 1736687, 1736688, 1736689, 1736690, 1736691, 1736692, 1736693, 1736694, 1736695, 1736696, 1736697, 1736698, 1736699, 1736700, 1736701, 1736702, 1736703, 1736704, 1736705, 1736706, 1736707, 1736708, 1736709, 1736710, 1736711, 1736712, 1736713, 1736714, 1736715, 1736716, 1736717, 1736718, 1736719, 1736720, 1736721, 1736722, 1736723, 1736724, 1736725, 1736726, 1736727, 1736728, 1736729, 1736730, 1736731, 1736732, 1736733, 1736734, 1736735, 1736736, 1736737, 173673

K136290

KL 629

81364-39.

P BROOMHEAD
Dec 1979

A handwritten sketch showing a geological feature, possibly a fault or boundary, indicated by dashed lines. The sketch includes two labels: K136293 on the left and K136292 on the right, with a small '9' written below the latter.

SCALE 1: 25 000

A horizontal scale bar labeled "Kilometres" with markings for 0, 1, 2, and 3.

33° 30' Spalding

HALLETT

8.

• 5



West Bar
Mine

Hanson

2

Porter
Lagoon

SCALE 1:500,000

KILOMETERS

3346-5

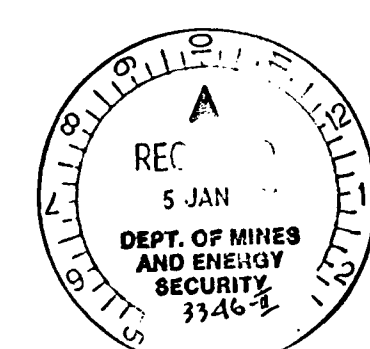
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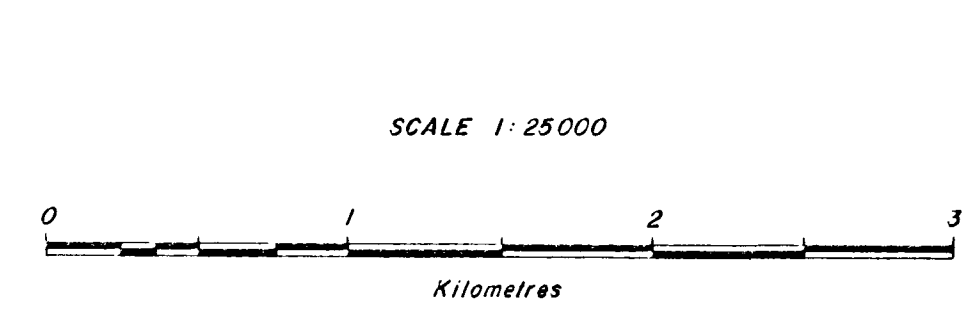
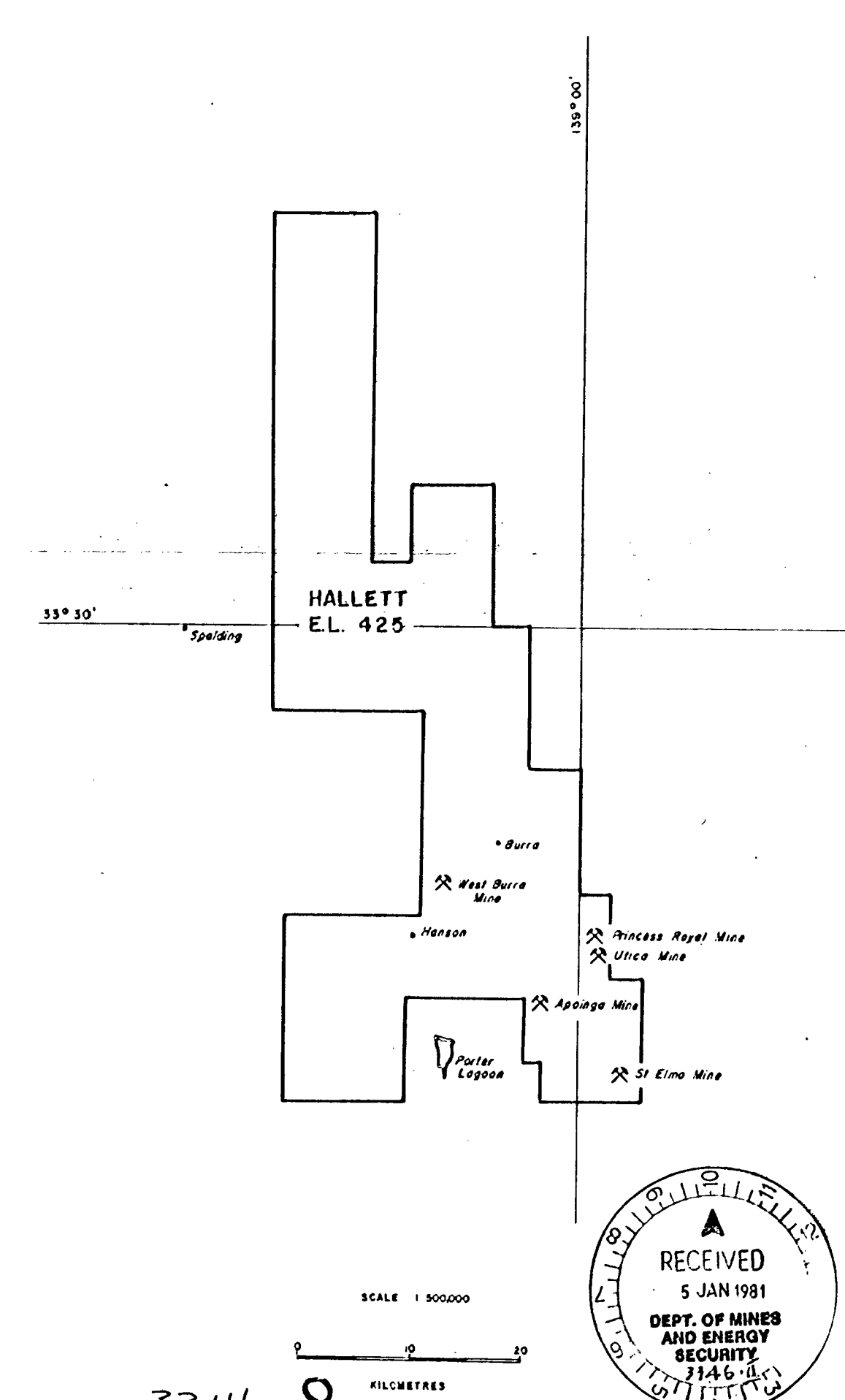
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 SELTRUST MINING CORPORATION PTY LTD

HALLETT EL425
GEOLOGY & ROCK CHIP SAMPLES

Revisions	Date	Compiled by	P B	Date
		Drawn by		Dec '79
		Traced by		
		Checked by		
		PLAN NUMBER AS 3822		





3346-8

SELTRUST MINING CORPORATION PTY. LTD.

HALLETT E.L. 425

GEOLOGY & ROCK CHIP SAMPLES

Revisions	Date	Compiled by	Date
		P.B.	Feb 80
		Drawn by	
		Traced by	
		Checked by	
PLAN NUMBER AS 9826			

E.L. 425 REPORT FOR QUARTER 24-4-80 - 23-7-80.

A Letter of Intent between Australian Selection Pty. Ltd. and Adelaide & Wallaroo Fertilizers Ltd. (AWF) was prepared, to allow AWF to evaluate, at its own expense, the oxidized copper mineralization at the old Princess Royal Mine site within E.L. 425. This was signed by both parties in June but then placed in abeyance pending transfer of the licence to AWF. Transfer documents were lodged for ministerial consent on July 3rd.

AWF commenced field work on June 24th. 1000m of baseline was surveyed and 100m cross lines (either side) established from it at 100m intervals. The baseline and co-ordinates are a metricated re-juvenation of the pre-existing Gold-Copper grid. Following lodgement of a Declaration of Environmental Factors percussion drilling commenced on July 22nd utilizing a contracted Air-Track rig. A pattern of 3" vertical holes is being implemented at 10m intervals on lines 100m apart - target depth 25m.

Expenditure during the period totalled \$1,686.17 as below :-

SALARIES & WAGES	\$1,672.52
TRAVEL & ACCOMMODATION	3.30
FIELD SUPPLIES	10.35
	\$1,686.17

KFB:BP
11-11-80

K. F. Bampton
(K.F. Bampton)
CHIEF GEOLOGIST



EXPLORATION LICENCE NO. 425

QUARTERLY REPORT TO

23-10-80



1. INTRODUCTION

Exploration Licence No. 425 was transferred from Australian Selection (Pty.) Ltd., to Adelaide & Wallaroo Fertilizers Ltd., on 14th August, 1980.

Preliminary work had already been undertaken in the licence area by Adelaide & Wallaroo prior to transference, under agreement with Australian Selection - see report for previous quarter.

2. PRINCESS ROYAL AREA

A 2 month pattern percussion drilling programme was conducted in the vicinity of the old Princess Royal Mine workings approximately 13 km south-south-east of Burra, to outline oxidized copper mineralization.

2.1 Drilling

Drilling was undertaken in two concurrent operations. An Air-Track rig was used in a scouting role - 111 holes averaging 17 m depth.

A Jacro 350 rig was used in down-hole-hammer and rotary air blast modes, for deeper testing of areas delineated by earlier work and the Air-track. Drilling was terminated at or before the water table. Many holes were abandoned prior to target depth due to lack of sample return in very soft earthy material encountered below hard surface dolomites - 23 holes averaging 23 m depth.

2.2 Assaying

All holes were sampled at 1 m intervals and assayed for copper content. Cuttings were collected in a cyclone and reduced to approx. 2 kg samples by riffle splitter.

A total of 2498 samples were assayed from the 2530 m drilled. The assay results and drill hole cross-sections are appended.

2.3 Conclusion

As the cross-sections show, there are a number of unclosed areas of copper mineralization and further testing of these areas is proposed.

3. GENERAL

Prior work by Australian Selection and earlier operators is under review and oxidized copper ore potential at other old mine sites (Apoinga, St. Elmo, Edelweiss) is being investigated. Preliminary examination of the West Burra Mine site offered no encouragement.

4. EXPENDITURE

A total of \$39,348.07 was outlaid during the period as detailed in the attached statement.

DRAWINGS

E5	Princess Royal - Geological Sketch Map	1:2000
E6	Princess Royal - Drill Hole Overlay	1:2000
E7/1	Princess Royal - Drill Hole Cross-sections	1:200
E7/2	Princess Royal - " " " "	"
E7/3	" " " " " "	"
E7/4	" " " " " "	"
E7/5	" " " " " "	"
E7/6	" " " " " "	1:500

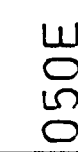
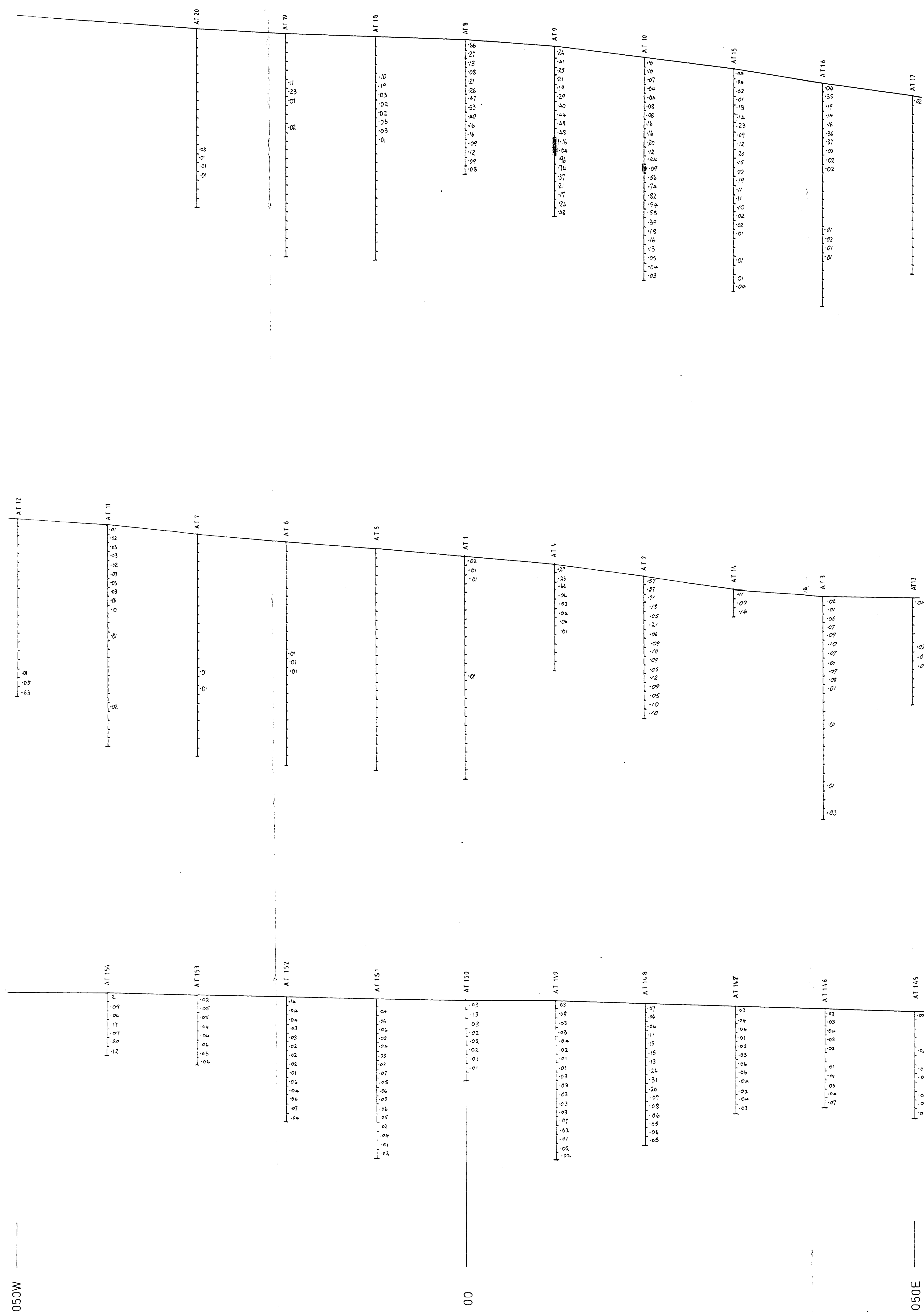
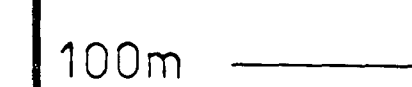
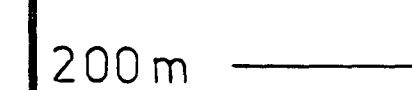
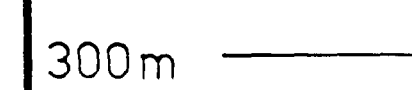
E.L. 425 EXPENDITURE24/7/80 - 23/10/80

	\$
Salaries & Wages	8,135.97
+ Overheads (=50% of above)	4,068.00
Travel and Accommodation	33.68
Vehicle Expenses	1,640.88
Field Supplies	1,945.59
Direct Office	13.20
Geochemistry	6,245.00
Drilling	
- Contract	10,903.75
- In House	2,930.00
Equipment Hire	3,500.00
	\$39,348.07

24/4/80 - 23/7/80

Reported last quarter	1,686.17
+ Overhead	836.00
+ Vehicle Expenses	286.60
	\$2,808.77

TOTAL TO DATE	\$42,156.84



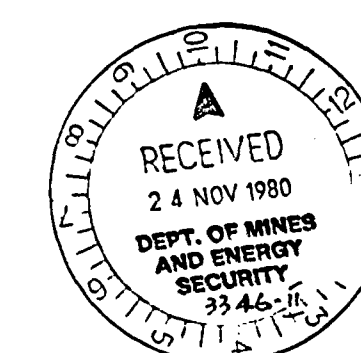
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4+	4+
2-4	2-4
1-2	1-2
0.5-1	0.5-1

% Cu
4+
2 - 4
1 - 2
0.5 - 1

$$\begin{array}{r} 4 + \\ 2 - 4 \\ 1 - 2 \\ 0.5 - 1 \end{array}$$

2 - 4

1 - 2
0.5 - 1



NOTE - VALUES LESS THAN 0.01 % Cu NOT SHOWN

ADELAIDE & WALLAROO FERTILIZERS LTD.
ADELAIDE, STH. AUST.

ADELAIDE, STH. AUST.

PRINCESS ROYAL
DRILL HOLE CROSS-SECTIONS

DRILL HOLE CROSS-SECTIONS

SCALE	1:200

APPROVED

DRAWN

TRACED

CHECKER

	DRG

4	No.

E7/1 of 6

3346-11

REVISIONS										PRINCESS ROYAL DRILL HOLE CROSS-SECTIONS					
										SCALE	1:200	DRAWN	<i>[Signature]</i>	DRG. No.	E7/1 of 6
										APPROVED		TRACED			
												CHECKED		ISSUE	
	ISSUE		REMARKS		DATE	DRN.	CKD.			DATE					

ISS

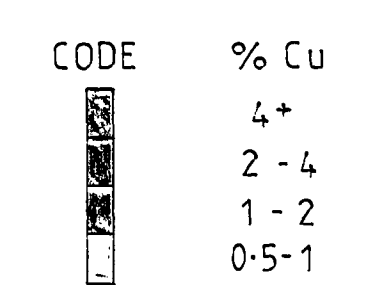
REMARK

DATE	

DRN.	

CKD.

D.	DA



RECEIVED
24 NOV 1980
DEPT. OF MINES
AND ENERGY
SECURITY
3346-11

ADELAIDE & WALLAROO FERTILIZERS LTD.
ADELAIDE, STH. AUST.

PRINCESS ROYAL DRILL HOLE CROSS-SECTIONS

SCALE	1:200

APPROVED

DRAWN

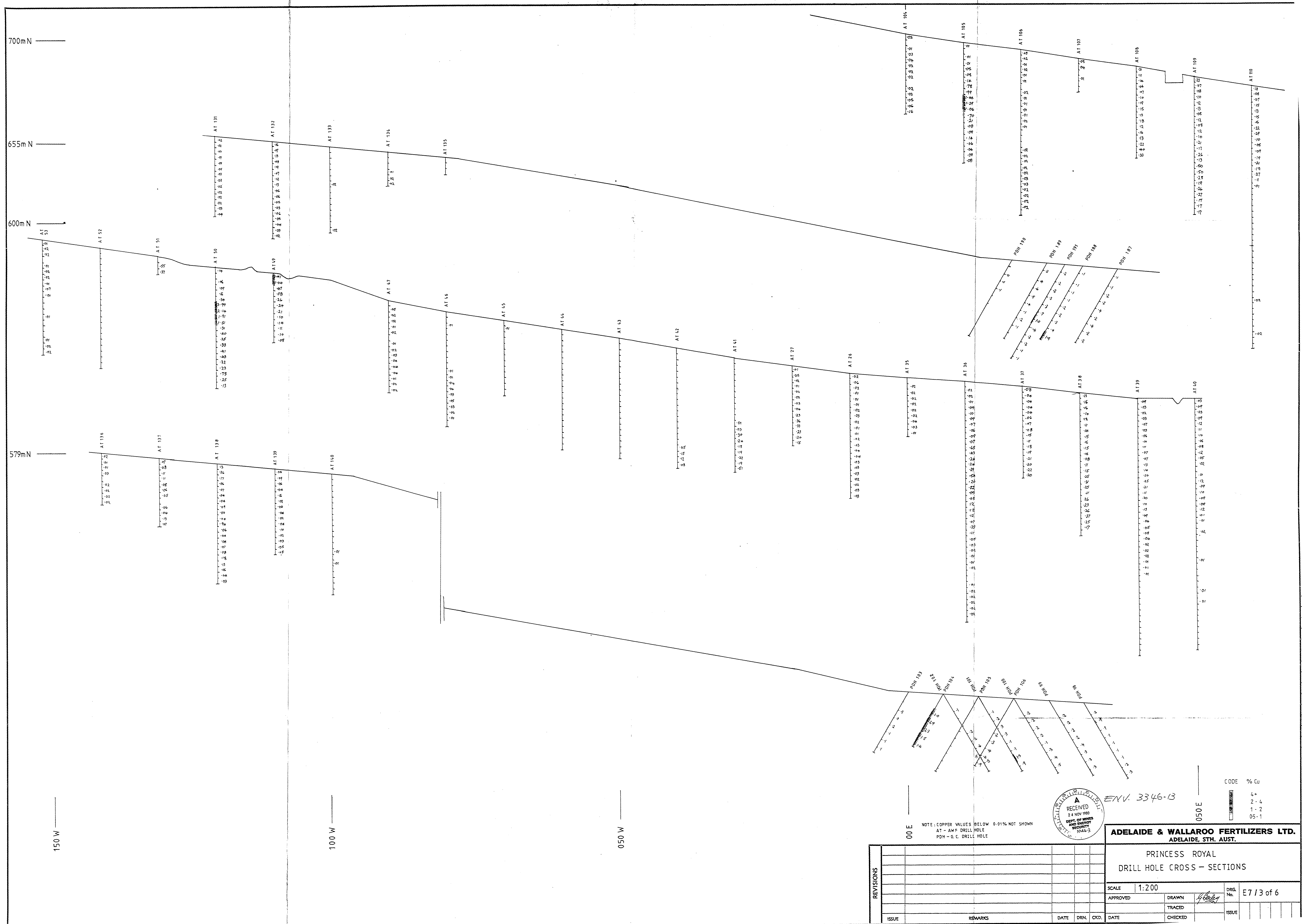
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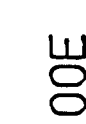
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ISSUE

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732m



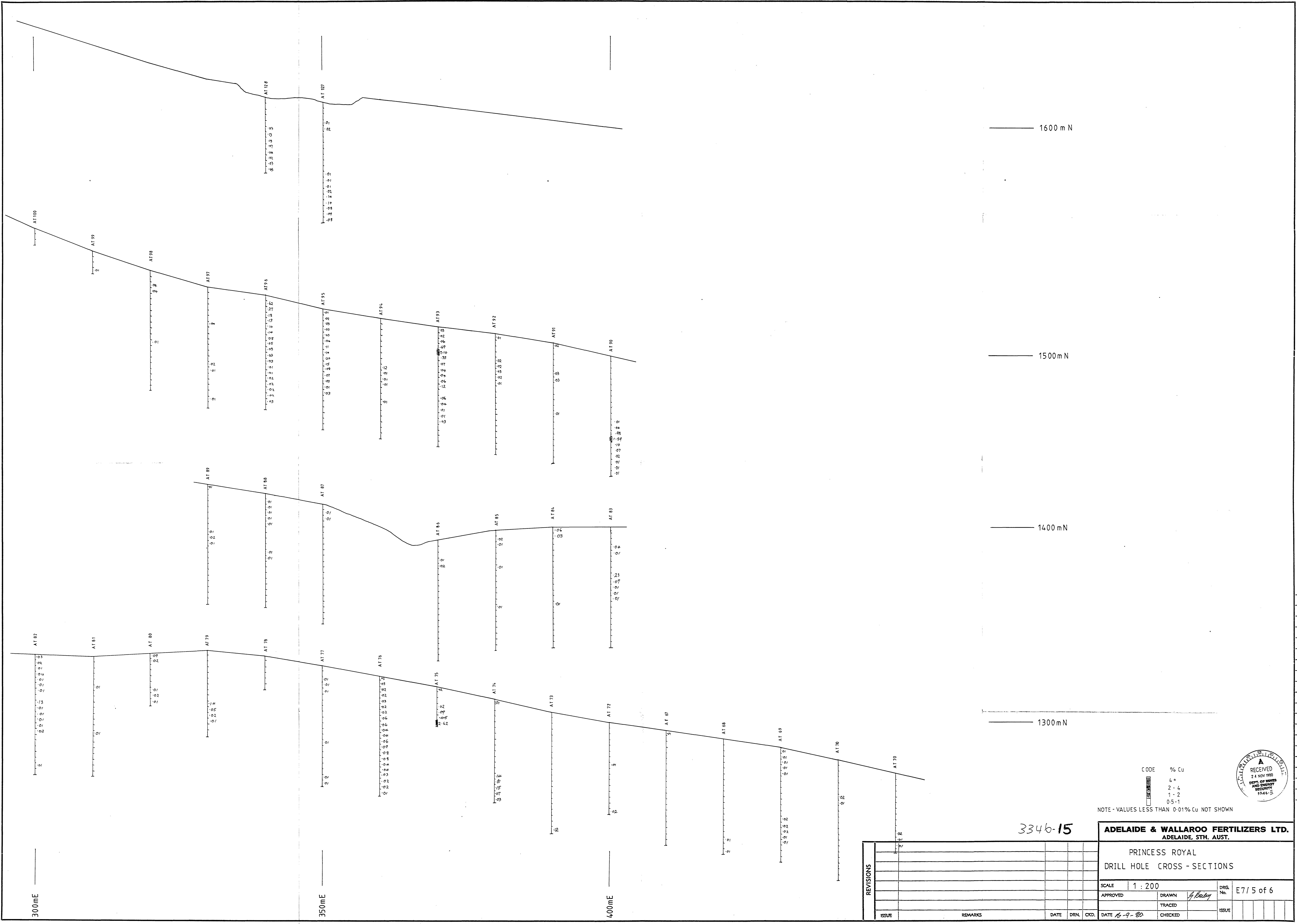
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AND ENERGY
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PRINCESS ROYAL
DRILL HOLE CROSS-SECTIONS

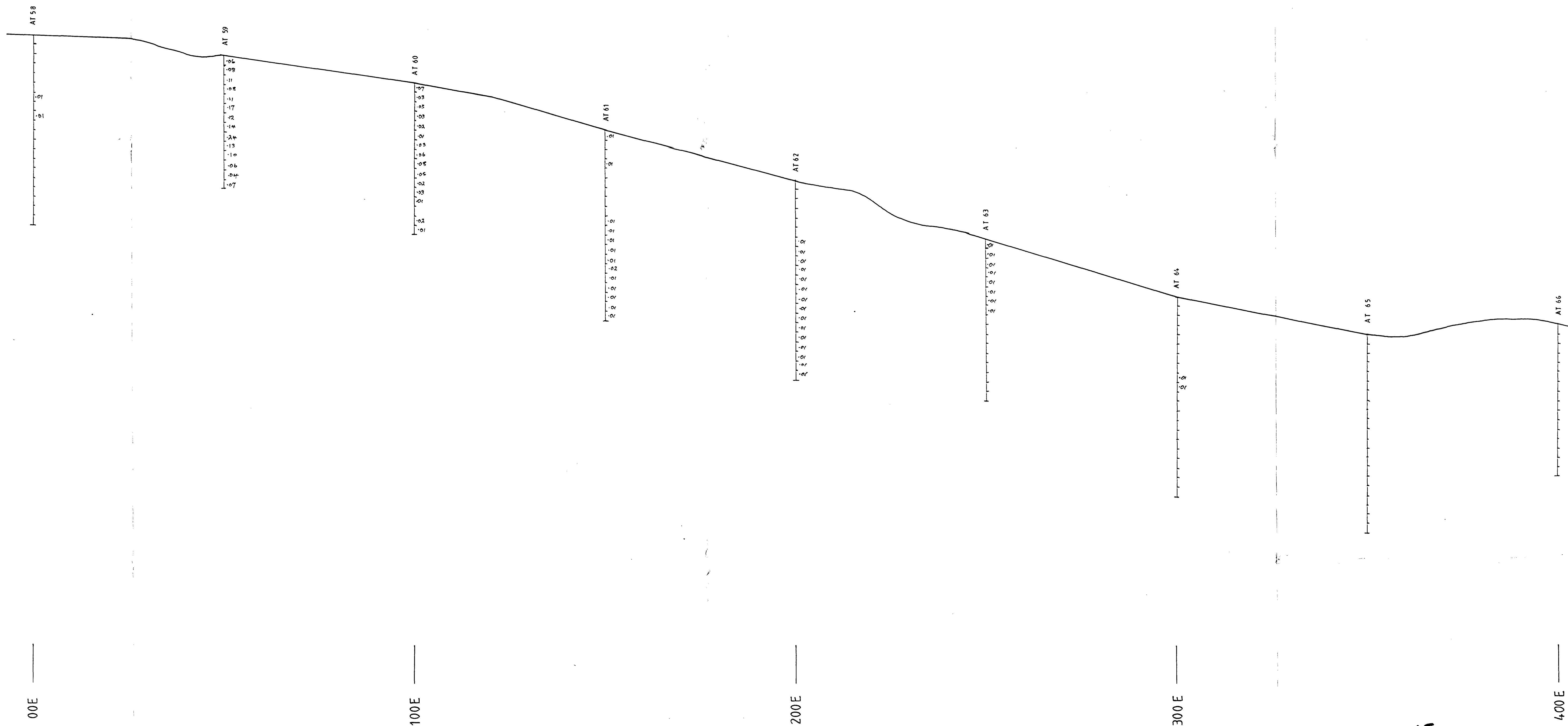
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ISSUE

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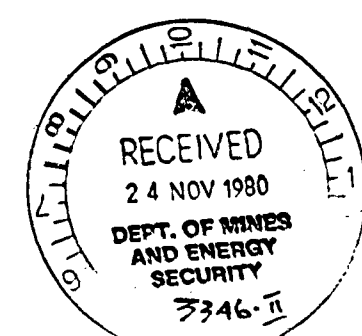


1000 m



3346-16

NOTE: DRILL HOLE DEPTHS AT 1:200 SCALE



ADELAIDE & WALLAROO FERTILIZERS LTD.
ADELAIDE, STH. AUST.

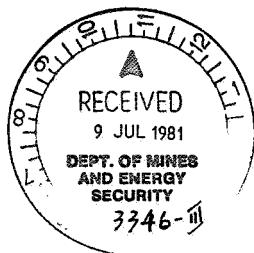
PRINCESS ROYAL
DRILL HOLE CROSS-SECTIONS

REVISIONS					SCALE 1:500 - SEE NOTE		DRA. No. E7/6 of 6	
					APPROVED	DRAWN <i>[Signature]</i>	TRACED	ISSUE
ISSUE	REMARKS	DATE	DRN.	CKD.	DATE	CHECKED		

EXPLORATION LICENCE NO. 804

QUARTERLY REPORT TO

11-5-81



0255

INTRODUCTION

Exploration Licence No. 804 was granted to Adelaide & Wallaroo Fertilizers Ltd., on 12th February, 1981 replacing Exploration Licence No. 425 which expired on 23rd October, 1980.

INVESTIGATION OF OLD WORKINGS

Investigation of the numerous old copper mining sites is being undertaken. To date inspections have been made of the following sites :

- a) St. Elmo
- b) Eidelweiss
- c) Apoinga
- d) Karkulto - both workings (outside E.L.)
- e) Burra West
- f) West Hallett Hill (unnamed site)
- g) Sheoak Hill (unnamed site)

A number of the sites were sampled and assay results are currently awaited.

PRINCESS ROYAL AREA

Drilling: Rotary percussion drilling was resumed from 16th March 1981, on a semi-continuous basis with a Jacro 350 trailer mounted rig. This programme further delineates previously defined oxidized copper mineralization.

As with earlier work, drilling was terminated at or near the water table and many holes were abandoned before target depth due to caving of unconsolidated material on one hand and lack of sample return on the other.

Eight new holes were drilled totalling 200 m at an average of 25 m per hole. Three existing holes, AT8, AT12 and AT23 were deepened 2m, 10m and 5m respectively. See drawing E6 for drill hole locations.

ASSAY RESULTS

All holes were sampled at 1 m intervals over their entire length and assayed for copper content. Some selected samples have also been assayed for Gold and Silver but results are not yet available. Copper results are appended for all drilling to date.

A total of 216 samples were assayed from the 217 m drilled. Drill-hole cross-sections will be prepared at the end of the current programme and included in the next report.

EXPENDITURE

Expenditure for the quarter totalled \$14,117 as detailed in the attached statement. Details of a further \$16,248 expended in the period 24-10-80 to 11-5-81 while awaiting grant of the new licence, are also included. Although active work was suspended during this period the costs were incurred in report writing, data compilation and outstanding accounts from the previous quarter.

KFB:BP
18-6-81


(K.F. Bampton)
CHIEF GEOLOGIST

ADELAIDE & WALLAROO FERTILIZERS LTD.

- 3 -

0257

EXPENDITURE

	<u>E.L. 804</u> <u>QUARTER ENDED</u> <u>11-5-81</u>	<u>E.L. 425</u> <u>24-10-80 TO</u> <u>11-2-81</u>
SALARIES & WAGES	\$7,043.33	\$5,285.15
Overhead @ 50%	3,521.67	2,642.58
TRAVEL & ACCOMMODATION	18.80	198.00
VEHICLE EXPENSES	17.48	212.39
+ 20¢/km	3136 km = 627.00	851 km = 170.20
FIELD SUPPLIES	226.55	367.48
DIRECT OFFICE	125.65	36.35
GEOCHEMISTRY		
Contract	203.45	-
In-House @ \$3 ea.	216 = 648.00	-
DRILLING		
Contract	-	3,097.50
In-House @ \$5/m	217m = 1,085.00	-
LEASE/LEGAL FEES	-	966.00
EQUIPMENT HIRE	600.00	3,000.00
FUEL	-	272.54
	<u>\$14,117.13</u>	<u>\$16,248.19</u>

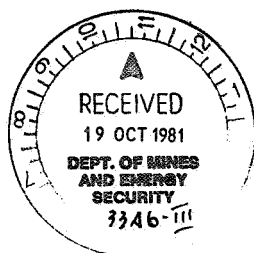
+ PREVIOUS REPORTED EXPENDITURE OF \$42,156.84 = \$72,522.16
TOTAL TO DATE.

0258

EXPLORATION LICENCE NO. 804

QUARTERLY REPORT TO

11-8-81



0259

PROGRAMME

Activity was concentrated on the Princess Royal copper prospect with continuous rotary percussion drilling throughout the quarter, the programme finishing on August 11th. Thirty two vertical holes were drilled, varying in depth between 8m and 50m and totalling 773m VIZ:-

AT 111	31m	AT 177	47m
AT 113	40m	AT 178	41m
AT 163	14m	AT 179	34m
AT 164	17m	AT 180	21m
AT 165	30m	AT 181	15m
AT 166	17m	AT 182	17m
AT 167	10m	AT 183	22m
AT 168	30m	AT 184	50m
AT 169	30m	AT 185	21m
AT 170	30m	AT 186	5m
AT 171	30m	AT 187	9m
AT 172	30m	AT 188	35m
AT 173	9m	AT 189	22m
AT 174	24m	AT 190	24m
AT 175	8m	AT 191	9m
AT 176	39m	AT 192	12m

All holes were sampled and assayed for copper at 1m intervals over their entire lengths - assays are appended. Cross sections are in preparation.

EXPENDITURE

Expenditure totalled \$23,480.87 as detailed in the attached statement.

K. F. Bampton
(K.F. Bampton)
CHIEF GEOLOGIST

KFB:BP
13-10-81

0260

E.L.804 EXPENDITURE

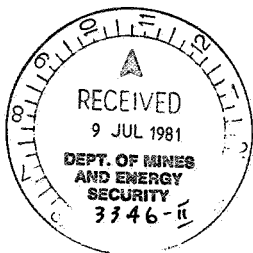
	<u>QTR. ENDED 11-8-81</u>	<u>TOTAL TO DATE</u>
Salaries & Wages	\$7,478.37	\$14,521.70
Overhead @ 50%	3,739.19	7,260.86
Travel & Accommodation	7.42	26.22
Vehicle Expenses	101.51	118.99
+ 20¢/km (8025 km)	1,605.00	2,232.00
Field Supplies	378.58	605.13
Direct Office	3.00	128.65
<u>Geochemistry</u>		
Contract	-	203.45
In-house @ \$3/sample (784)	2,352.00	3,001.00
<u>Drilling</u>		
Contract	-	-
In-house @ \$10/m (773m)	7,730.00	8,825.00
Lease/Legal Fees	-	-
Equipment Hire	75.80	675.80
Fuel	10.00	10.00
	\$23,480.87	\$37,597.80

Prior expenditure under E.L.425 was \$58,405.03 bringing total for the area to \$96,002.83.

KFB:BP
8-10-81

0261

ASSAY RESULTS



ADELAIDE & WALLAROO FERTILIZERS LTD.

000262

APPENDIX

ASSAY RESULTS

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT1	200N 00E	06.02.0001.5	0- 1m	170
		2	1- 2m	130
		3	2- 3m	100
		4	3- 4m	80
		5	4- 5m	60
		6	5- 6m	40
		7	6- 7m	30
		8	7- 8m	70
		9	8- 9m	50
		10	9-10m	50
		11	10-11m	20
		12	11-12m	70
		13	12-13m	70
		14	13-14m	130
		15	14-15m	60
		16	15-16m	30
		17	16-17m	5
		18	17-18m	20
		19	18-19m	10
		20	19-20m	5
		21	20-21m	30
		22	21-22m	10
		23	22-23m	30
		24	23-24m	30
		25	24-25m	20
AT2	200N 020E	06.02.0026.5	0- 1m	5680
		27	1- 2m	3680
		28	2- 3m	7140
		29	3- 4m	1760
		30	4- 5m	450
		31	5- 6m	2080
		32	6- 7m	580
		33	7- 8m	850
		34	8- 9m	1000
		35	9-10m	930
		36	10-11m	540
		37	11-12m	1160
		38	12-13m	870
		39	13-14m	500
		40	14-15m	970
		41	15-16m	1020
AT3	200N 040E	06.02.0042.5	0- 1m	240
		43	1- 2m	110
		44	2- 3m	450
		45	3- 4m	700
		46	4- 5m	880
		47	5- 6m	950
		48	6- 7m	660
		49	7- 8m	100
		50	8- 9m	660
		51	9-10m	800
		52	10-11m	100
		53	11-12m	40
		54	12-13m	30
		55	13-14m	20
		56	14-15m	50
		57	15-16m	30
		58	16-17m	20
		59	17-18m	20
		60	18-19m	20
		61	19-20m	20
		62	20-21m	40
		63	21-22m	50

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT4	200N 010E	63	21-22m	50
		64	22-23m	20
		65	23-24m	30
		66	24-25m	310
		06.02.0067.5	0- 1m	2660
		68	1- 2m	2320
		69	2- 3m	6560
		70	3- 4m	600
		71	4- 5m	170
		72	5- 6m	370
		73	6- 7m	390
		74	7- 8m	100
		75	8- 9m	10
		76	9-10m	40
		77	10-11m	30
		78	11-12m	40
AT5	200N 010W	06.02.0079.5	0- 1m	10
		80	1- 2m	20
		81	2- 3m	30
		82	3- 4m	20
		83	4- 5m	10
		84	5- 6m	20
		85	6- 7m	10
		86	7- 8m	20
		87	8- 9m	30
		88	9-10m	30
		89	10-11m	30
		90	11-12m	30
		91	12-13m	60
		92	13-14m	60
		93	14-15m	20
		94	15-16m	20
		95	16-17m	30
		96	17-18m	20
		97	18-19m	20
		98	19-20m	10
		99	20-21m	10
		100	21-22m	10
		101	22-23m	20
		102	23-24m	30
		103	24-25m	30
AT6	200N 020W	06.02.0104.5	0- 1m	60
		105	1- 2m	10
		106	2- 3m	40
		107	3- 4m	30
		108	4- 5m	10
		109	5- 6m	5
		110	6- 7m	5
		111	7- 8m	5
		112	8- 9m	10
		113	9-10m	10
		114	10-11m	20
		115	11-12m	40
		116	12-13m	140
		117	13-14m	130
		118	14-15m	130
		119	15-16m	90
		120	16-17m	60
		121	17-18m	40
		122	18-19m	20
		123	19-20m	20

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT7	200N 030W	124	20-21m	20
		125	21-22m	20
		126	22-23m	20
		127	23-24m	20
		128	24-25m	20
		06.02.0129.5	0- 1m	30
		130	1- 2m	50
		131	2- 3m	80
		132	3- 4m	20
		133	4- 5m	50
		134	5- 6m	20
		135	6- 7m	40
		136	7- 8m	30
		137	8- 9m	30
		138	9-10m	20
		139	10-11m	30
		140	11-12m	40
		141	12-13m	50
		142	13-14m	80
		143	14-15m	80
		144	15-16m	140
		145	16-17m	20
		146	17-18m	100
		147	18-19m	20
		148	19-20m	20
		149	20-21m	50
		150	21-22m	30
		151	22-23m	40
		152	23-24m	40
		153	24-25m	20
AT8	300N 00E	06.02.0154.5	0- 1m	6600
		155	1- 2m	2700
		156	2- 3m	1320
		157	3- 4m	780
		158	4- 5m	2100
		159	5- 6m	2620
		160	6- 7m	4700
		161	7- 8m	5300
		162	8- 9m	4000
		163	9-10m	1600
		164	10-11m	1640
		165	11-12m	900
		166	12-13m	1200
		167	13-14m	900
		168	14-15m	760
		06.07.0190.5	15-16m	490
		0191	16-17m	550
AT9	300N 010E	06.02.0169.5	0- 1m	2600
		170	1- 2m	4100
		171	2- 3m	2540
		172	3- 4m	2100
		173	4- 5m	1900
		174	5- 6m	2900
		175	6- 7m	4000
		176	7- 8m	4400
		177	8- 9m	4760
		178	9-10m	4800
		179	10-11m	11600
		180	11-12m	10400
		181	12-13m	9600
		182	13-14m	7400
		183	14-15m	3700
		184	15-16m	2120

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT10	300N 020E	185	16-17m	1740
		186	17-18m	2360
		187	18-19m	4800
		06.02.0188.5	0- 1m	1000
		189	1- 2m	1000
		190	2- 3m	700
		191	3- 4m	360
		192	4- 5m	400
		193	5- 6m	760
		194	6- 7m	840
		195	7- 8m	1640
		196	8- 9m	1580
		197	9-10m	2040
		198	10-11m	1200
		199	11-12m	4400
		200	12-13m	10900
		201	13-14m	5600
		202	14-15m	7400
		203	15-16m	8200
		204	16-17m	5400
		205	17-18m	5800
		206	18-19m	3920
		207	19-20m	1800
		208	20-21m	1600
		209	21-22m	1320
		210	22-23m	500
		211	23-24m	440
		212	24-25m	340
AT11	200N 040W	06.02.0213.5	0- 1m	100
		214	1- 2m	160
		215	2- 3m	300
		216	3- 4m	260
		217	4- 5m	200
		218	5- 6m	300
		219	6- 7m	320
		220	7- 8m	260
		221	8- 9m	140
		222	9-10m	120
		223	10-11m	60
		224	11-12m	80
		225	12-13m	120
		226	13-14m	60
		227	14-15m	60
		228	15-16m	60
		229	16-17m	40
		230	17-18m	40
		231	18-19m	40
		232	19-20m	80
		233	20-21m	160
		234	21-22m	40
		235	22-23m	40
		236	23-24m	60
		237	24-25m	40
AT12	200N 050W	06.02.0238.5	0- 1m	160
		239	1- 2m	120
		240	2- 3m	70
		241	3- 4m	40
		242	4- 5m	30
		243	5- 6m	70
		244	6- 7m	20
		245	7- 8m	20

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT13	200N 050E	246	8- 9m	90
		247	9-10m	20
		248	10-11m	10
		249	11-12m	70
		250	12-13m	30
		251	13-14m	10
		252	14-15m	10
		253	15-16m	20
		254	16-17m	10
		255	17-18m	100
		256	18-19m	470
		257	19-20m	6300
		No Sample	20-21m	-
		06.07.0001.5	21-22m	540
		0002	22-23m	280
		0003	23-24m	180
		0004	24-25m	150
		0005	25-26m	160
		0006	26-27m	100
		0007	27-28m	70
		0008	28-29m	70
		0009	29-30m	260
		06.02.0258.5	0- 1m	360
		259	1- 2m	40
		260	2- 3m	10
		261	3- 4m	40
		262	4- 5m	20
		263	5- 6m	210
		264	6- 7m	680
		265	7- 8m	550
		266	8- 9m	80
		267	9-10m	50
		268	10-11m	40
		269	11-12m	30
AT14	200N 030E	06.02.0270.5	0- 1m	1080
		271	1- 2m	930
		272	2- 3m	1360
AT15	300N 030E	06.02.0273.5	0- 1m	440
		274	1- 2m	430
		275	2- 3m	200
		276	3- 4m	140
		277	4- 5m	1280
		278	5- 6m	1440
		279	6- 7m	2340
		280	7- 8m	880
		281	8- 9m	1240
		282	9-10m	2000
		283	10-11m	1460
		284	11-12m	2200
		285	12-13m	1940
		286	13-14m	1060
		287	14-15m	1140
		288	15-16m	1040
		289	16-17m	230
		290	17-18m	200
		291	18-19m	100
		292	19-20m	70
		293	20-21m	90
		294	21-22m	120
		295	22-23m	70
		296	23-24m	120
		297	24-25m	360
AT16	300N 040E	06.02.0298	0- 1m	370
		299	1- 2m	3540
		300	2- 3m	1940
		301	3- 4m	1400
		302	4- 5m	1640
		303	5- 6m	3600
		304	6- 7m	3700

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT17	300N 050E	305	7- 8m	520
		306	8- 9m	230
		307	9-10m	150
		308	10-11m	60
		309	11-12m	50
		310	12-13m	70
		311	13-14m	80
		312	14-15m	90
		313	15-16m	80
		314	16-17m	120
		315	17-18m	160
		316	18-19m	110
		317	19-20m	130
		318	20-21m	60
		319	21-22m	80
		320	22-23m	80
		321	23-24m	90
		322	24-25m	70
		06.02.0323	0- 1m	210
		324	1- 2m	30
		325	2- 3m	30
		326	3- 4m	20
		327	4- 5m	10
		328	5- 6m	20
		329	6- 7m	20
		330	7- 8m	20
		331	8- 9m	20
		332	9-10m	20
		333	10-11m	10
		334	11-12m	20
		335	12-13m	20
		336	13-14m	20
		337	14-15m	20
		338	15-16m	20
		339	16-17m	30
		340	17-18m	60
		341	18-19m	80
		342	19-20m	30
AT18	300N 010W	06.02.0343.5	0- 1m	30
		344	1- 2m	20
		345	2- 3m	20
		346	3- 4m	50
		347	4- 5m	990
		348	5- 6m	1880
		349	6- 7m	320
		350	7- 8m	200
		351	8- 9m	200
		352	9-10m	580
		353	10-11m	290
		354	11-12m	110
		355	12-13m	60
		356	13-14m	40
		357	14-15m	80
		358	15-16m	60
		359	16-17m	70
		360	17-18m	130
		361	18-19m	140
		362	19-20m	170
		363	20-21m	280
		364	21-22m	350
		365	22-23m	110
		366	23-24m	100
		367	24-25m	40

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT19	300N 020W	06.02.0368.5	0- 1m	20
		369	1- 2m	10
		370	2- 3m	0
		371	3- 4m	0
		372	4- 5m	20
		373	5- 6m	1120
		374	6- 7m	2320
		375	7- 8m	140
		376	8- 9m	20
		377	9-10m	20
		378	10-11m	160
		379	11-12m	20
		380	12-13m	10
		381	13-14m	0
		382	14-15m	10
		383	15-16m	10
		384	16-17m	10
		385	17-18m	10
		386	18-19m	12
		387	19-20m	20
		388	20-21m	40
		389	21-22m	70
		390	22-23m	30
		391	23-24m	10
		392	24-25m	10
AT20	300N 030W	06.02.0393.5	0- 1m	120
		394	1- 2m	220
		395	2- 3m	80
		396	3- 4m	90
		397	4- 5m	130
		398	5- 6m	250
		399	6- 7m	140
		400	7- 8m	210
		401	8- 9m	150
		402	9-10m	100
		403	10-11m	70
		404	11-12m	60
		405	12-13m	90
		406	13-14m	800
		407	14-15m	100
		408	15-16m	110
		409	16-17m	110
		410	17-18m	80
		411	18-19m	60
		412	19-20m	60
AT21	400N 00E	06.02.0413.5	0- 1m	1300
		414	1- 2m	1200
		415	2- 3m	1340
		416	3- 4m	1480
		417	4- 5m	1650
		418	5- 6m	1300
		419	6- 7m	1040
AT22	400N 010E	0.602.0420	0- 1m	9100
		421	1- 2m	12100
		422	2- 3m	5800
		423	3- 4m	11100
		424	4- 5m	3400
		425	5- 6m	4600
		426	6- 7m	1740
		427	7- 8m	1100
		428	8- 9m	4000

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT23	400N 020E	429	9-10m	1720
		430	10-11m	840
		431	11-12m	930
		432	12-13m	700
		433	13-14m	510
		434	14-15m	860
		435	15-16m	650
		436	16-17m	234
		437	17-18m	650
		438	18-19m	200
		439	19-20m	310
		440	20-21m	140
		441	21-22m	290
		442	22-23m	4900
		443	23-24m	8000
		444	24-25m	2740
		06.02.0445	0- 1m	1400
		446	1- 2m	370
		447	2- 3m	340
		448	3- 4m	100
		449	4- 5m	180
		450	5- 6m	130
		451	6- 7m	60
		452	7- 8m	0
		453	8- 9m	90
		454	9-10m	350
		455	10-11m	130
		456	11-12m	100
		457	12-13m	80
		458	13-14m	60
		459	14-15m	120
		460	15-16m	510
		461	16-17m	650
		462	17-18m	260
		463	18-19m	310
		464	19-20m	300
		465	20-21m	3210
		466	21-22m	870
		467	22-23m	470
		468	23-24m	350
		469	24-25m	150
		06.07.0192.5	25-26m	1240
		0193	26-27m	330
		0194	27-28m	90
		0195	28-29m	70
		0196	29-30m	80
AT24	400N 030E	06.02.0471	0- 1m	360
		472	1- 2m	90
		473	2- 3m	120
		474	3- 4m	70
		475	4- 5m	0
		476	5- 6m	20
		477	6- 7m	20
		478	7- 8m	50
		479	8- 9m	60
		480	9-10m	40
		481	10-11m	30
		482	11-12m	10
		483	12-13m	30
		484	13-14m	40
		485	14-15m	30
		486	15-16m	20
		487	16-17m	30
		488	17-18m	30
		489	18-19m	20
		490	19-20m	30

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT25	400N 040E	06.02.0491.5	0- 1m	150
		492	1- 2m	70
		493	2- 3m	30
		494	3- 4m	20
		495	4- 5m	20
		496	5- 6m	20
		497	6- 7m	40
		498	7- 8m	40
		499	8- 9m	40
		500	9-10m	40
		501	10-11m	40
		502	11-12m	50
		503	12-13m	50
		504	13-14m	30
		505	14-15m	40
		506	15-16m	50
		507	16-17m	20
		508	17-18m	10
		509	18-19m	20
		510	19-20m	20
AT26	600N 010E	06.02.0511.5	0- 1m	240
		512	1- 2m	560
		513	2- 3m	170
		514	3- 4m	80
		515	4- 5m	140
		516	5- 6m	110
		517	6- 7m	150
		518	7- 8m	320
		519	8- 9m	160
		520	9-10m	100
		521	10-11m	130
		522	11-12m	160
		523	12-13m	320
		524	13-14m	390
		525	14-15m	370
		526	15-16m	330
		527	16-17m	290
		528	17-18m	290
		529	18-19m	150
		530	19-20m	230
AT27	600N 020W	06.02.0533.5	0- 1m	100
		534	1- 2m	540
		535	2- 3m	200
		536	3- 4m	120
		537	4- 5m	150
		538	5- 6m	210
		539	6- 7m	320
		540	7- 8m	430
		541	8- 9m	2320
		542	9-10m	3560
		543	10-11m	3310
		544	11-12m	2300
		545	12-13m	1990
		546	13-14m	1520

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT28	500N 020E	06.02.0547.5	1- 2m	27400
		548	2- 3m	44200
		549	3- 4m	23100
		550	4- 5m	66800
		551	5- 6m	66800
AT29	500N 019E	06.02.0552.5	1- 2m	47400
		553	2- 3m	1430
		554	3- 4m	30700
		555	4- 5m	39500
		556	5- 6m	62200
		557	6- 7m	69400
		558	7- 8m	31800
		559	8- 9m	14700
		560	9-10m	19900
		561	10-11m	2820
		562	11-12m	1300
		563	12-13m	1140
		564	13-14m	3090
		565	14-15m	2790
		566	15-16m	1890
		567	16-17m	1450
		568	17-18m	1260
		569	18-19m	1100
		570	19-20m	35300
		571	20-21m	910
		572	21-22m	850
		573	22-23m	2180
		574	23-24m	1280
		575	24-25m	1180
		576	25-26m	570
		577	26-27m	570
		578	27-28m	650
		579	28-29m	250
		580	29-30m	200
		581	30-31m	100
		582	31-32m	200
		583	32-33m	90
		584	33-34m	100
		585	34-35m	60
		586	35-36m	70
		587	36-37m	200
AT30	500N 030E	06.02.0588.5	1- 2m	4500
		589	2- 3m	8100
		590	3- 4m	3780
		591	4- 5m	600
		592	5- 6m	720
		593	6- 7m	490
		594	7- 8m	780
		595	8- 9m	2740
		596	9-10m	3780
		597	10-11m	14400
		598	11-12m	2720
		599	12-13m	1070
		600	13-14m	750
		601	14-15m	570
		602	15-16m	410
		603	16-17m	190
		604	17-18m	150
		605	18-19m	60
		606	19-20m	80
		607	20-21m	80
		608	21-22m	120
		609	22-23m	50

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT31	500N 040E	610	23-24m	50
		611	24-25m	180
		612	25-26m	80
		613	26-27m	90
		614	27-28m	50
		615	28-29m	60
		616	29-30m	90
		617	30-31m	50
		618	31-32m	110
		619	32-33m	60
		620	33-34m	110
		621	34-35m	100
		622	35-36m	80
		623	36-37m	70
		624	37-38m	100
		06.02.0625.5	0- 1m	1130
		626	1- 2m	1110
		627	2- 3m	1180
		628	3- 4m	1160
		629	4- 5m	820
		630	5- 6m	1240
		631	6- 7m	1660
		632	7- 8m	4370
		633	8- 9m	2920
		634	9-10m	1260
		635	10-11m	180
		636	11-12m	130
		637	12-13m	190
		638	13-14m	110
		639	14-15m	110
		640	15-16m	220
		641	16-17m	180
		642	17-18m	170
		643	18-19m	80
		644	19-20m	50
		645	20-21m	80
		646	21-22m	50
		647	22-23m	50
		648	23-24m	20
		649	24-25m	20
		650	25-26m	20
		651	26-27m	90
		652	27-28m	50
		653	28-29m	100
		654	29-31m	80
AT33		06.02.0655.5	1- 2m	3500
		656	2- 3m	5500
		657	3- 4m	4600
		658	4- 5m	4300
		659	5- 6m	2190
		660	6- 7m	460
		661	7- 8m	690
		662	8- 9m	650
		663	9-10m	760
		664	10-11m	400
		665	11-12m	590
		666	12-13m	300
		667	13-14m	800
		668	14-15m	640
		669	15-16m	1410
		670	16-17m	690
		671	17-18m	1640
		672	18-19m	650

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT34	500N 00E	673	19-20m	1630
		674	20-21m	1030
		675	21-22m	530
		676	22-23m	640
		677	23-24m	270
		678	24-25m	250
		679	25-26m	340
		680	26-27m	200
		681	27-28m	110
		682	28-29m	200
		06.02.0683.5	0- 1m	410
		684	1- 2m	320
		685	2- 3m	360
		686	3- 4m	660
		687	4- 5m	360
		688	5- 6m	460
		689	6- 7m	480
		690	7- 8m	480
		691	8- 9m	450
		692	9-10m	520
		693	10-11m	330
		694	11-12m	1160
		695	12-13m	720
		696	13-14m	1260
		697	14-15m	1300
		698	15-16m	2340
		699	16-17m	2820
		700	17-18m	1550
		701	18-19m	1520
		702	19-20m	750
		703	20-21m	950
		704	21-22m	1280
		705	22-23m	2090
		706	23-24m	610
		707	24-25m	600
		708	25-26m	560
		709	26-27m	460
		710	27-28m	510
		711	28-29m	240
		712	29-30m	190
		713	30-31m	150
		714	31-32m	150
		715	32-33m	170
		716	33-34m	80
		717	34-35m	60
		718	35-36m	80
		719	36-37m	120
		720	37-38m	120
AT35	600N 00E	06.02.0721.5	1- 2m	210
		722	2- 3m	210
		723	3- 4m	230
		724	4- 5m	210
		725	5- 6m	180
		726	6- 7m	240
		727	7- 8m	430
		728	8- 9m	290
		729	9-10m	130

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT36	600N 010E	06.02.0730.5	1- 2m	210
		731	2- 3m	180
		732	3- 4m	110
		733	4- 5m	940
		734	5- 6m	1040
		735	6- 7m	890
		736	7- 8m	650
		737	8- 9m	560
		738	9-10m	900
		739	10-11m	680
		740	11-12m	6500
		741	12-13m	4300
		742	13-14m	2370
		743	14-15m	2400
		744	15-16m	2890
		745	16-17m	5400
		746	17-18m	2020
		747	18-19m	1230
		748	19-20m	490
		749	20-21m	800
		750	21-22m	1160
		751	22-23m	1210
		752	23-24m	1200
		753	24-25m	670
		754	25-26m	2530
		755	26-27m	1070
		756	27-28m	460
		757	28-29m	290
		758	29-30m	180
		759	30-31m	110
		760	31-32m	130
		761	32-33m	170
		762	33-34m	90
		763	34-35m	60
		764	35-36m	100
		765	37-38m	170
		766	38-39m	200
		767	39-40m	220
		768	40-41m	200
		769	41-42m	190
AT37	600N 020E	06.02.0770.5	0- 1m	780
		771	1- 2m	430
		772	2- 3m	390
		773	3- 4m	370
		774	4- 5m	390
		775	5- 6m	580
		776	6- 7m	650
		777	7- 8m	770
		778	8- 9m	1480
		779	9-10m	1140
		780	10-11m	1810
		781	11-12m	1890
		782	12-12m	2090
		783	13-14m	2020
		784	14-15m	2150
		785	15-16m	1980
AT38	600N 030E	06.02.0786.5	0- 1m	1250
		787	1- 2m	1590
		788	2- 3m	1610
		789	3- 4m	980
		790	4- 5m	1170
		791	5- 6m	1120
		792	6- 7m	1400

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
		793	7- 8m	1470
		794	8- 9m	1550
		795	9-10m	1500
		796	10-11m	1380
		797	11-12m	800
		798	12-13m	1140
		799	13-14m	1520
		800	14-15m	2510
		801	15-16m	3110
		802	16-17m	2520
		803	17-18m	1070
		804	18-19m	2590
		805	19-20m	2290
		806	20-21m	2600
		807	21-22m	3720
		808	22-23m	2520
		809	23-24m	1730
AT39	600N 040E	06.02.0810.5	0- 1m	920
		811	1- 2m	320
		812	2- 3m	220
		813	3- 4m	260
		814	4- 5m	750
		815	5- 6m	310
		816	6- 7m	610
		817	7- 8m	980
		818	8- 9m	1080
		819	9-10m	710
		820	10-11m	680
		821	11-12m	1250
		822	12-13m	1350
		823	13-14m	2020
		824	14-15m	2450
		825	15-16m	2130
		826	16-17m	1080
		827	17-18m	1980
		828	18-19m	1010
		829	19-20m	1270
		830	20-21m	910
		831	21-22m	350
		832	22-23m	490
		833	23-24m	790
		834	24-25m	410
		835	25-26m	230
		836	26-27m	200
		837	27-28m	220
		838	28-29m	140
		839	29-30m	100
		840	31-32m	100
		841	32-33m	60
		842	33-34m	70
		843	34-35m	60
		844	35-36m	90
		845	36-37m	30
		846	37-38m	40
		847	38-39m	Nil
		848	39-40m	50
		849	40-41m	50
		850	41-42m	90
		851	42-43m	40
		852	43-44m	60
		853	44-45m	60
		854	45-46m	70

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT40	600N 050E	06.02.0855.5	0- 1m	300
		856	1- 2m	880
		857	2- 3m	310
		858	3- 4m	890
		859	4- 5m	1200
		860	5- 6m	1070
		861	6- 7m	1000
		862	7- 8m	630
		863	8- 9m	840
		864	9-10m	1180
		865	10-11m	510
		866	11-12m	160
		867	12-13m	70
		868	13-14m	100
		869	14-15m	1220
		870	15-16m	940
		871	16-17m	1010
		872	17-18m	910
		873	18-19m	960
		874	19-20m	1240
		875	20-21m	110
		876	21-22m	140
		877	22-23m	70
		878	23-24m	150
		879	24-25m	80
		880	25-26m	90
		881	26-27m	40
		882	27-28m	40
		883	28-29m	140
		884	29-30m	90
		885	30-31m	60
		886	32-33m	50
		887	? 31-32m	80
		888	33-34m	100
		889	34-35m	60
		890	35-36m	100
		891	36-37m	60
		892	37-38m	60
		893	38-39m	60
		894	39-40m	60
		895	40-41m	70
		896	41-42m	70
		897	42-43m	70
		898	43-44m	80
AT41	600N 030W	06.05.5000.5	0- 1m	360
		5001	1- 2m	60
		5002	2- 3m	60
		5003	3- 4m	90
		5004	4- 5m	60
		5005	5- 6m	60
		5006	6- 7m	60
		5007	7- 8m	10
		5008	8- 9m	50
		5009	9-10m	90
		5010	10-11m	90
		5011	11-12m	110
		5012	12-13m	330
		5013	13-14m	2960
		5014	14-15m	2370
		5015	15-16m	1760
		5016	16-17m	1890
		5017	17-18m	2220
		5018	18-19m	1870
		5019	19-20m	5100

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT42	600N 040W	06.05.5020.5	1- 2m	50
		5021	2- 3m	20
		5022	3- 4m	20
		5023	4- 5m	20
		5024	5- 6m	50
		5025	6- 7m	20
		5026	7- 8m	30
		5027	8- 9m	30
		5028	9-10m	10
		5029	10-11m	50
		5030	11-12m	50
		5031	12-13m	20
		5032	13-14m	40
		5033	14-15m	30
		5034	15-16m	30
		5035	16-17m	60
		5036	17-18m	490
		5037	18-19m	1470
		5038	19-20m	1190
		5039	20-21m	820
AT43	600n 050W	06.05.5040.5	1- 2m	20
		5041	2- 3m	20
		5042	3- 4m	20
		5043	4- 5m	20
		5044	5- 6m	20
		5045	6- 7m	20
		5046	7- 8m	20
		5047	8- 9m	20
		5048	9-10m	20
		5049	10-11m	20
		5050	11-12m	20
		5051	12-13m	20
		5052	13-14m	30
		5053	14-15m	20
		5054	15-16m	20
		5055	16-17m	10
		5056	17-18m	10
		5057	18-19m	20
		5058	19-20m	30
		5059	20-21m	20
AT44	600N 060W	06.05.5060.5	1- 2m	60
		5061	2- 3m	60
		5062	3- 4m	40
		5063	4- 5m	40
		5064	5- 6m	40
		5065	6- 7m	30
		5066	7- 8m	60
		5067	8- 9m	50
		5068	9-10m	40
		5069	10-11m	60
		5070	11-12m	60
		5071	12-13m	90
		5072	13-14m	80
		5073	14-15m	40
		5074	15-16m	30
		5075	16-17m	20
		5076	17-18m	30
		5077	18-19m	40
		5078	19-20m	80
		5079	20-21m	40

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT45	600N 070W	06.05.5080.5	1- 2m	100
		5081	2- 3m	60
		5082	3- 4m	40
		5083	4- 5m	40
		5084	5- 6m	60
		5085	6- 7m	60
		5086	7- 8m	30
		5087	8- 9m	60
		5088	9-10m	40
		5089	10-11m	90
		5090	11-12m	40
		5091	12-13m	50
AT46	600N 080W	06.05.5092.5	1- 2m	90
		5093	2- 3m	100
		5094	3- 4m	50
		5095	4- 5m	50
		5096	5- 6m	60
		5097	6- 7m	50
		5098	7- 8m	30
		5099	8- 9m	50
		5100	9-10m	50
		5101	10-11m	140
		5102	11-12m	100
		5103	12-13m	410
		5104	13-14m	390
		5105	14-15m	300
		5106	15-16m	510
		5107	16-17m	330
		5108	17-18m	150
		5109	18-19m	110
		5110	19-20m	90
AT47	600N 090W	06.05.5111.5	1- 2m	480
		5112	2- 3m	220
		5113	3- 4m	230
		5114	4- 5m	100
		5115	5- 6m	150
		5116	6- 7m	90
		5117	7- 8m	120
		5118	8- 9m	180
		5119	9-10m	280
		5120	10-11m	350
		5121	11-12m	370
		5122	12-13m	360
		5123	13-14m	130
		5124	14-15m	210
		5125	15-16m	210
AT49	600N 110W	06.05.5249.5	0- 1m	14100
		5250	1- 2m	10400
		5251	2- 3m	4670
		5252	3- 4m	5800
		5253	4- 5m	2620
		5254	5- 6m	2390
		5255	6- 7m	2090
		5256	7- 8m	1030
		5257	8- 9m	1370
		5258	9-10m	1080
		5259	10-11m	1050
		5260	11-12m	790

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT50	600N 120W	06.05.5228.5	0- 1m	1400
		5229	1- 2m	20
		5230	2- 3m	550
		5231	3- 4m	930
		5232	4- 5m	1640
		5233	5- 6m	3440
		5234	6- 7m	39900
		5235	7- 8m	21400
		5236	8- 9m	19100
		5237	9-10m	15100
		5238	10-11m	3100
		5239	11-12m	4000
		5240	12-13m	2540
		5241	13-14m	3310
		5242	14-15m	4080
		5243	15-16m	4260
		5244	16-17m	2160
		5245	17-18m	2300
		5246	18-19m	7800
		5247	19-20m	2480
		5248	20-21m	1270
AT51	600N 130W	06.05.5226.5	1- 2m	5500
		5227	2- 3m	3710
AT52	600N 140W	06.05.5147.5	1- 2m	570
		5148	2- 3m	420
		5149	3- 4m	270
		5150	4- 5m	510
		5151	5- 6m	460
		5152	6- 7m	460
		5153	7- 8m	330
		5154	8- 9m	300
		5155	9-10m	300
		5156	10-11m	680
		5157	11-12m	420
		5158	12-13m	370
		5159	13-14m	410
		5160	14-15m	740
		5161	15-16m	800
		5162	16-17m	560
		5163	17-18m	610
		5164	18-19m	700
		5165	19-20m	470
		5166	20-21m	410
AT53	600N 150W	06.05.5126.5	0- 1m	130
		5127	1- 2m	230
		5128	2- 3m	190
		5129	3- 4m	80
		5130	4- 5m	110
		5131	5- 6m	180
		5132	6- 7m	150
		5133	7- 8m	130
		5134	8- 9m	110
		5135	9-10m	100
		5136	10-11m	80
		5137	11-12m	70
		5138	12-13m	90
		5139	13-14m	120
		5140	14-15m	90
		5141	15-16m	90
		5142	16-17m	90
		5143	17-18m	120

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT54	900N 00E	5144	18-19m	200
		5145	19-20m	170
		5146	20-21m	120
		06.05.5167.5	1- 2m	100
		5168	2- 3m	80
		5169	3- 4m	90
		5170	4- 5m	80
		5171	5- 6m	70
		5172	6- 7m	90
		5173	7- 8m	60
		5174	8- 9m	60
		5175	9-10m	60
		5176	10-11m	70
		5177	11-12m	70
		5178	12-13m	60
		5179	13-14m	70
		5180	14-15m	80
		5181	15-16m	90
		5182	16-17m	80
		5183	17-18m	80
AT55	900N 010E	06.05.5184.5	1- 2m	570
		5185	2- 3m	110
		5186	3- 4m	110
		5187	4- 5m	80
		5188	5- 6m	80
		5189	6- 7m	100
		5190	7- 8m	100
		5191	8- 9m	110
AT56	900N 020E	06.05.5192.5	1- 2m	460
		5193	2- 3m	480
		5194	3- 4m	540
		5195	4- 5m	530
		5196	5- 6m	810
		5197	6- 7m	1170
		5198	7- 8m	1420
		5199	8- 9m	1800
		5200	9-10m	1440
		5201	10-11m	870
		5202	11-12m	550
		5203	12-13m	460
		5204	13-14m	400
		5205	14-15m	270
		5206	15-16m	250
		5207	16-17m	180
		5208	17-18m	150
		5209	18-19m	140
		5210	19-20m	120
AT57	900N 030E	06.05.5211.5	1- 2m	770
		5212	2- 3m	410
		5213	3- 4m	490
		5214	4- 5m	1390
		5215	5- 6m	1540
		5216	6- 7m	1230
		5217	7- 8m	1640
		5218	8- 9m	1760
		5219	9-10m	1290
		5220	10-11m	1200
		5221	11-12m	1850
		5222	12-13m	1830

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT58	1000N 00E	5223	13-14m	1960
		5224	14-15m	1910
		5225	15-16m	1640
		06.05.5261.5	0- 1m	Nil
		5262	1- 2m	Nil
		5263	2- 3m	Nil
		5264	3- 4m	Nil
		5265	4- 5m	Nil
		5266	5- 6m	Nil
		5267	6- 7m	100
		5268	7- 8m	20
		5269	8- 9m	110
		5270	9-10m	30
		5271	10-11m	Nil
		5272	11-12m	Nil
		5273	12-13m	40
		5274	13-14m	Nil
		5275	14-15m	Nil
		5276	15-16m	Nil
		5277	16-17m	Nil
		5278	17-18m	Nil
		5279	18-19m	Nil
		5280	19-20m	Nil
AT59	1000N 050E	06.05.5281.5	0- 1m	560
		5282	1- 2m	800
		5283	2- 3m	1130
		5284	3- 4m	820
		5285	4- 5m	1120
		5286	5- 6m	1720
		5287	6- 7m	1170
		5288	7- 8m	1400
		5289	8- 9m	2370
		5290	9-10m	1270
		5291	10-11m	990
		5292	11-12m	620
		5293	12-13m	430
		5294	13-14m	650
AT60	1000N 100E	06.05.5295.5	0- 1m	690
		5296	1- 2m	320
		5297	2- 3m	270
		5298	3- 4m	290
		5299	4- 5m	160
		5300	5- 6m	130
		5301	6- 7m	250
		5302	7- 8m	640
		5303	8- 9m	820
		5304	9-10m	480
		5305	10-11m	200
		5306	11-12m	290
		5307	12-13m	130
		5308	13-14m	50
		5309	14-15m	150
AT61	1000N 150E	06.05.5311.5	0- 1m	110
		5312	1- 2m	20
		5313	2- 3m	30
		5314	3- 4m	70
		5315	4- 5m	10
		5316	5- 6m	10
		5317	6- 7m	10

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT62	1000N 200E	5318	7- 8m	50
		5319	8- 9m	10
		5320	9-10m	60
		5321	10-11m	60
		5322	11-12m	70
		5323	12-13m	140
		06.05.5324.5	0- .1m	100
		5325	1- 2m	170
		5326	2- 3m	90
		5327	3- 4m	80
		5328	4- 5m	60
		5329	5- 6m	100
		5330	6- 7m	80
		5331	7- 8m	40
		5332	8- 9m	30
		5333	9-10m	30
		5334	10-11m	50
		5335	11-12m	50
		5336	12-13m	50
		5337	13-14m	60
		5338	14-15m	70
		5339	15-16m	70
		5340	16-17m	110
		5341	17-18m	100
		5342	18-19m	110
		5343	19-20m	70
		5344	20-21m	110
		5345	21-22m	90
		5346	22-23m	80
		5347	23-24m	100
		5348	24-25m	130
		5349	25-26m	130
		5350	26-27m	110
		5351	27-28m	130
AT63	1000N 250E	06.05.5352.5	0- 1m	80
		5353	1- 2m	80
		5354	2- 3m	80
		5355	3- 4m	110
		5356	4- 5m	80
		5357	5- 6m	100
		5358	6- 7m	90
		5359	7- 8m	70
		5360	8- 9m	50
		5361	9-10m	50
		5362	10-11m	50
		5363	11-12m	50
		5364	12-13m	10
		5365	13-14m	Nil
		5366	14-15m	Nil
		5367	15-16m	Nil
		5368	16-17m	Nil
AT64	1000N 300E	06.05.5369.5	0- 1m	20
		5370	1- 2m	20
		5371	2- 3m	20
		5372	3- 4m	60
		5373	4- 5m	30
		5374	5- 6m	10
		5375	6- 7m	60
		5376	7- 8m	30
		5377	8- 9m	120
		5378	9-10m	80

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT65	1000N 350E	5379	10-11m	40
		5380	11-12m	60
		5381	12-13m	30
		5382	13-14m	50
		5383	14-15m	40
		5384	15-16m	50
		5385	16-17m	60
		5386	17-18m	50
		5387	18-19m	40
		5388	19-20m	60
		5389	20-21m	60
		06.05.5390.5	0- 1m	30
		5391	1- 2m	10
		5392	2- 3m	20
		5393	3- 4m	10
		5394	4- 5m	10
		5395	5- 6m	10
		5396	6- 7m	10
		5397	7- 8m	10
		5398	8- 9m	10
		5399	9-10m	10
		5400	10-11m	10
		5401	11-12m	10
		5402	12-13m	20
		5403	13-14m	10
		5404	14-15m	10
		5405	15-16m	10
		5406	16-17m	10
		5407	17-18m	10
		5408	18-19m	10
		5409	19-20m	10
		5410	20-21m	10
AT66	1000N 400E	06.05.5411.5	0- 1m	10
		5412	1- 2m	20
		5413	2- 3m	20
		5414	3- 4m	10
		5415	4- 5m	0.0
		5416	5- 6m	30
		5417	6- 7m	10
		5418	7- 8m	10
		5419	8- 9m	10
		5420	9-10m	10
		5421	10-11m	10
		5422	11-12m	Nil
		5423	12-13m	10
		5424	13-14m	10
		5425	14-15m	10
		5426	15-16m	10
AT67	1300N 410E	06.05.5427.5	0- 1m	30
		5428	1- 2m	20
		5429	2- 3m	20
		5430	3- 4m	20
		5431	4- 5m	30
		5432	5- 6m	40
		5433	6- 7m	20
		5434	7- 8m	20
		5435	8- 9m	20
		5436	9-10m	30
		5437	10-11m	30
		5438	11-12m	30
		5439	12-13m	20

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT68	1300N 420E	5440	13-14m	20
		5441	14-15m	10
		5442	15-16m	10
		5443	16-17m	20
		5444	17-18m	20
		5445	18-19m	10
		5446	19-20m	10
		06.05.5551.5	0- 1m	70
		5552	1- 2m	50
		5553	2- 3m	50
		5554	3- 4m	50
		5555	4- 5m	60
		5556	5- 6m	60
		5557	6- 7m	60
		5558	7- 8m	70
		5559	8- 9m	70
		5560	9-10m	70
		5561	10-11m	70
		5562	11-12m	70
		5563	12-13m	70
		5564	13-14m	80
		5565	14-15m	80
		5566	15-16m	80
		5567	16-17m	80
		5568	17-18m	90
		5569	18-19m	No Sample
		5570	19-20m	90
AT69	1300N 430E	06.05.5571.5	0- 1m	100
		5572	1- 2m	120
		5573	2- 3m	120
		5574	3- 4m	100
		5575	4- 5m	120
		5576	5- 6m	30
		5577	6- 7m	20
		5578	7- 8m	30
		5579	8- 9m	30
		5580	9-10m	50
		5581	10-11m	60
		5582	11-12m	50
		5583	12-13m	230
		5584	13-14m	200
		5585	14-15m	120
		5586	15-16m	110
		5587	16-17m	100
		5588	17-18m	90
		5589	18-19m	70
		5590	19-20m	80
AT70	1300N 440E	06.05.5591.5	0- 1m	50
		5592	1- 2m	60
		5593	2- 3m	60
		5594	3- 4m	40
		5595	4- 5m	40
		5596	5- 6m	200
		5597	6- 7m	100
		5598	7- 8m	90
		5599	8- 9m	60
		5600	9-10m	60
		5601	10-11m	50
		5602	11-12m	40
		5603	12-13m	50

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT71	1300N 450E	5604	13-14m	70
		5605	14-15m	60
		5606	15-16m	70
		5607	16-17m	70
		5608	17-18m	80
		5609	18-19m	80
		5610	19-20m	80
		5611	20-21m	70
		06.05.5612.5	0- 1m	80
		5613	1- 2m	80
		5614	2- 3m	80
		5615	3- 4m	50
		5616	4- 5m	80
		5617	5- 6m	80
		5617	6- 7m	80
		5618	7- 8m	90
		5619	8- 9m	70
		5620	9-10m	70
		5621	10-11m	70
		5622	11-12m	150
		5623	12-13m	100
		5624	13-14m	120
		5625	14-15m	50
AT72	1300N 400E	06.05.5447.5	0- 1m	50
		5448	1- 2m	30
		5449	2- 3m	20
		5450	3- 4m	40
		5451	4- 5m	20
		5452	5- 6m	30
		5453	6- 7m	120
		5454	7- 8m	50
		5455	8- 9m	20
		5456	9-10m	30
		5457	10-11m	50
		5458	11-12m	40
		5459	12-13m	30
		5460	13-14m	20
		5461	14-15m	20
		5462	15-16m	150
AT73	1300N 390E	06.05.5463.5	0- 1m	40
		5464	1- 2m	20
		5465	2- 3m	30
		5466	3- 4m	20
		5467	4- 5m	10
		5468	5- 6m	20
		5469	6- 7m	30
		5470	7- 8m	80
		5471	8- 9m	30
		5472	9-10m	10
		5473	10-11m	40
		5474	11-12m	20
		5475	12-13m	20
		5476	13-14m	20
		5477	14-15m	20
		5478	15-16m	30
		5479	16-17m	30
		5480	17-18m	20
		5481	18-19m	40
		5482	19-20m	40
		5483	20-21m	1180

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT74	1300N 380E	06.05.5484.5	0- 1m	120
		5485	1- 2m	30
		5486	2- 3m	10
		5487	3- 4m	10
		5488	4- 5m	20
		5489	5- 6m	30
		5490	6- 7m	30
		5491	7- 8m	30
		5492	8- 9m	20
		5493	9-10m	10
		5494	10-11m	10
		5495	11-12m	20
		5496	12-13m	50
		5497	13-14m	1350
		5498	14-15m	8100
		5499	15-16m	1470
		5500	16-17m	720
		5501	17-18m	330
AT75	1300N 370E	06.05.5502.5	0- 1m	200
		5503	1- 2m	60
		5504	2- 3m	60
		5505	3- 4m	220
		5506	4- 5m	910
		5507	5- 6m	4500
		5508	6- 7m	26200
AT76	1300N 360E	06.05.5509.5	0- 1m	540
		5510	1- 2m	250
		5511	2- 3m	230
		5512	3- 4m	200
		5513	4- 5m	320
		5514	5- 6m	200
		5515	6- 7m	220
		5516	7- 8m	590
		5517	8- 9m	560
		5518	9-10m	390
		5519	10-11m	370
		5520	11-12m	630
		5521	12-13m	880
		5522	13-14m	770
		5523	14-15m	790
		5524	15-16m	410
		5525	16-17m	390
		5526	17-18m	310
		5527	18-19m	160
		5528	19-20m	220
		5529	20-21m	140
AT77	1300N 350E	06.05.5530.5	0- 1m	70
		5531	1- 2m	50
		5532	2- 3m	110
		5533	3- 4m	100
		5534	4- 5m	120
		5535	5- 6m	60
		5535	6- 7m	50
		5536	7- 8m	50
		5537	8- 9m	50
		5538	9-10m	50
		5539	10-11m	60
		5540	11-12m	80
		5541	12-13m	70
		5542	13-14m	70

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT78	1300N 340E	5543	14-15m	130
		5544	15-16m	60
		5546	16-17m	90
		5547	17-18m	60
		5548	18-19m	50
		5549	19-20m	130
		5550	20-21m	130
AT78	1300N 340E	06.05.5626.5	0- 1m	30
		5627	1- 2m	40
		5628	2- 3m	30
		5629	3- 4m	30
		5630	4- 5m	30
		5631	5- 6m	30
AT79	1300N 330E	06.05.5632.5	0- 1m	50
		5633	1- 2m	50
		5634	2- 3m	50
		5635	3- 4m	40
		5636	4- 5m	50
		5637	5- 6m	30
		5638	6- 7m	50
		5639	7- 8m	30
		5640	8- 9m	50
		5641	9-10m	1400
		5642	10-11m	470
		5643	11-12m	240
		5644	12-13m	100
		5645	13-14m	80
		5646	14-15m	80
AT80	1300N 320E	06.05.5647.5	0- 1m	910
		5648	1- 2m	230
		5649	2- 3m	80
		5650	3- 4m	60
		5651	4- 5m	70
		5652	5- 6m	50
		5653	6- 7m	100
		5654	7- 8m	150
		5655	8- 9m	100
AT81	1300N 310E	06.05.5656.5	0- 1m	80
		5657	1- 2m	70
		5658	2- 3m	80
		5659		No sample
		5660	3- 4m	30
		5661	4- 5m	120
		5662	5- 6m	30
		5663	6- 7m	40
		5664	7- 8m	60
		5665	8- 9m	30
		5666	9-10m	90
		5667	10-11m	90
		5668	11-12m	140
		5669	12-13m	60
		5670	13-14m	70
		5671	14-15m	50
		5672	15-16m	30
		5673	16-17m	30
		5674	17-18m	80
		5675	18-19m	90
		5676	19-20m	70

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT82	1300N 300E	06.05.5677.5	0- 1m	340
		5678	1- 2m	190
		5679	2- 3m	130
		5680	3- 4m	390
		5681	4- 5m	110
		5682	5- 6m	110
		5683	6- 7m	100
		5684	7- 8m	80
		5685	8- 9m	1260
		5685	9-10m	120
		5687	10-11m	110
		5688	11-12m	120
		5689	12-13m	90
		5690	13-14m	160
		5691	14-15m	60
		5695	15-16m	80
		5693	16-17m	80
		5694	17-18m	80
		5695	18-19m	90
		5696	19-20m	100
		5697	20-21m	60
AT82	1300N 300E	06.05.5677.5	0- 1m	320
		5678	1- 2m	190
		5679	2- 3m	120
		5680	3- 4m	720
		5681	4- 5m	60
		5682	5- 6m	100
		5683	6- 7m	70
		5684	7- 8m	30
		5685	8- 9m	1320
		5686	9-10m	10
		5687	10-11m	100
		5688	11-12m	60
		5689	12-13m	60
		5690	13-14m	70
		5691	14-15m	80
		5692	15-16m	100
		5693	16-17m	90
		5694	17-18m	80
		5695	18-19m	100
AT82	1300N 300E	06.05.5677.5	0- 1m	210
		5678	1- 2m	180
		5679	2- 3m	80
		5680	3- 4m	90
		5681	4- 5m	50
		5682	5- 6m	110
		5683	6- 7m	60
		5684	7- 8m	70
		5685	8- 9m	60
		5686	9-10m	60
		5687	10-11m	100
		5688	11-12m	70
		5689	12-13m	50
		5690	13-14m	60
		5691	14-15m	40
		5692	15-16m	90
		5693	16-17m	90
		5694	17-18m	110
		5695	18-19m	70
		5696	19-20m	110
		5697	20-21m	110

PRINCESS ROYAL PERCUSSION DRILLING ASSAYS

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HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu	
T82	1300N 300E	06.05.5677.5	0- 1m	DUPLICATE ANALYSES	
		5678	1- 2m	340	(320)
		5679	2- 3m	190	(190)
		5680	3- 4m	130	(120)
		5681	4- 5m	390	(720)
		5682	5- 6m	110	(60)
		5683	6- 7m	110	(100)
		5684	7- 8m	100	(70)
		5685	8- 9m	80	(30)
		5685	9-10m	1260	(1320)
		5687	10-11m	120	(10)
		5688	11-12m	110	(100)
		5689	12-13m	120	(60)
		5690	13-14m	90	(60)
		5691	14-15m	160	(70)
		5695	15-16m	60	(80)
		5693	16-17m	80	(100)
		5694	17-18m	80	(90)
		5695	18-19m	80	(80)
		5695	19-20m	90	(100)
		5696	20-21m	100	(110)
		5697		60	(90)
T82	1300N 300E	06.05.5677.5	0- 1m	DUPLICATE SAMPLES	
		5678	1- 2m	310	210
		5679	2- 3m	190	180
		5680	3- 4m	120	80
		5681	4- 5m	120	90
		5682	5- 6m	100	50
		5682	6- 7m	120	110
		5683	7- 8m	90	60
		5684	8- 9m	80	70
		5685	9-10m	1330	60
		5686	10-11m	60	60
		5687	11-12m	60	100
		5688	12-13m	80	70
		5689	13-14m	100	50
		5690	14-15m	100	60
		5691	15-16m	70	40
		5692	16-17m	90	90
		5693	17-18m	90	90
		5694	18-19m	90	110
		5695	19-20m	100	70
		5696	20-21m	70	110
		5697		90	110

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT83	1400N 400E	06.05.5821.5	0- 1m	70
		5822	1- 2m	50
		5823	2- 3m	80
		5824	3- 4m	430
		5825	4- 5m	110
		5826	5- 6m	40
		5827	6- 7m	30
		5828	7- 8m	70
		5829	8- 9m	2260
		5830	9-10m	670
		5831	10-11m	100
		5832	11-12m	110
		5833	12-13m	100
		5834	13-14m	40
		5835	14-15m	70
		5836	15-16m	80
		5837	16-17m	30
		5838	17-18m	40
		5839	18-19m	40
		5840	19-20m	60
		5841	20-21m	70
AT84	1400N 390E	06.05.5800.5	0- 1m	550
		5801	1- 2m	280
		5802	2- 3m	40
		5803	3- 4m	40
		5804	4- 5m	30
		5805	5- 6m	80
		5806	6- 7m	70
		5807	7- 8m	40
		5808	8- 9m	40
		5809	9-10m	70
		5810	10-11m	50
		5811	11-12m	30
		5812	12-13m	70
		5813	13-14m	100
		5814	14-15m	60
		5815	15-16m	30
		5816	16-17m	10
		5817	17-18m	60
		5818	18-19m	20
		5819	19-20m	30
		5820	20-21m	30
AT85	1400N 380E	06.05.5780.5	1- 2m	210
		5781	2- 3m	100
		5782	3- 4m	90
		5783	4- 5m	50
		5784	5- 6m	60
		5785	6- 7m	110
		5786	7- 8m	80
		5787	8- 9m	70
		5788	9-10m	60
		5789	10-11m	50
		5790	11-12m	70
		5791	12-13m	90
		5792	13-14m	100
		5793	14-15m	90
		5794	15-16m	60
		5795	16-17m	60
		5796	17-18m	40
		5797	18-19m	80
		5798	19-20m	20
		5799	20-21m	50

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT86	1400N 370E	06.05.5760.5	1- 2m	70
		5761	2- 3m	70
		5762	3- 4m	100
		5763	4- 5m	190
		5764	5- 6m	60
		5765	6- 7m	80
		5766	7- 8m	90
		5767	8- 9m	80
		5768	9-10m	70
		5769	10-11m	40
		5770	11-12m	30
		5771	12-13m	30
		5772	13-14m	40
		5773	14-15m	30
		5774	15-16m	20
		5775	16-17m	40
		5776	17-18m	70
		5777	18-19m	20
		5778	19-20m	20
		5779	20-21m	20
AT87	1400N 350E	06.05.5739.5	0- 1m	90
		5740	1- 2m	110
		5741	2- 3m	120
		5742	3- 4m	70
		5743	4- 5m	80
		5744	5- 6m	80
		5745	6- 7m	60
		5746	7- 8m	40
		5747	8- 9m	40
		5748	9-10m	50
		5749	10-11m	50
		5750	11-12m	40
		5751	12-13m	50
		5752	13-14m	50
		5753	14-15m	50
		5754	15-16m	60
		5755	16-17m	60
		5756	17-18m	40
		5757	18-19m	30
		5758	19-20m	10
		5759	20-21m	10
AT88	1400N 340E	06.05.5719.5	0- 1m	80
		5720	1- 2m	100
		5721	2- 3m	110
		5722	3- 4m	100
		5723	4- 5m	100
		5724	5- 6m	100
		5725	6- 7m	60
		5726	7- 8m	80
		5727	8- 9m	80
		5728	9-10m	90
		5729	10-11m	120
		5730	11-12m	100
		5731	12-13m	60
		5732	13-14m	50
		5733	14-15m	80
		5734	15-16m	70
		5735	16-17m	90
		5736	17-18m	60
		5737	18-19m	50
		5738	19-20m	30

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT89	1400N 330E	06.05.5698.5	0- 1m	130
		5699	1- 2m	80
		5700	2- 3m	80
		5701	3- 4m	80
		5702	4- 5m	90
		5703	5- 6m	50
		5704	6- 7m	50
		5705	7- 8m	60
		5706	8- 9m	120
		5707	9-10m	200
		5708	10-11m	100
		5709	11-12m	70
		5710	12-13m	80
		5711	13-14m	50
		5712	14-15m	60
		5713	15-16m	50
		5714	16-17m	30
		5715	17-18m	50
		5716	18-19m	50
		5717	19-20m	30
		5718	20-21m	30
AT90	1500N 400E	06.05.5842.5	1- 2m	60
		5843	2- 3m	50
		5844	3- 4m	30
		5845	4- 5m	30
		5846	5- 6m	20
		5847	6- 7m	70
		5848	7- 8m	30
		5849	8- 9m	30
		5850	9-10m	30
		5851	10-11m	20
		5852	11-12m	130
		5853	12-13m	410
		5854	13-14m	9800
		5855	14-15m	15900
		5856	15-16m	1040
		5857	16-17m	710
		5858	17-18m	190
		5859	18-19m	120
		5860	19-20m	130
		5861	20-21m	90
AT91	1500N 390E	06.05.5862.5	0- 1m	190
		5863	1- 2m	50
		5864	2- 3m	50
		5865	3- 4m	30
		5866	4- 5m	70
		5867	5- 6m	310
		5868	6- 7m	320
		5869	7- 8m	70
		5870	8- 9m	60
		5871	9-10m	50
		5872	10-11m	40
		5873	11-12m	50
		5874	12-13m	130
		5875	13-14m	40
		5876	14-15m	60
		5877	15-16m	40
		5878	16-17m	50
		5879	17-18m	80
		5880	18-19m	90
		5881	19-20m	70
		5882	20-21m	30

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT92	1500N 380E	06.05.5883.5	0- 1m	110
		5884	1- 2m	60
		5885	2- 3m	10
		5886	3- 4m	80
		5887	4- 5m	160
		5888	5- 6m	200
		5889	6- 7m	260
		5890	7- 8m	210
		5891	8- 9m	140
		5892	9-10m	70
		5893	10-11m	10
		5894	11-12m	10
		5895	12-13m	10
		5896	13-14m	10
		5897	14-15m	20
		5898	15-16m	30
		5899	16-17m	60
		5900	17-18m	50
		5901	18-19m	10
		5902	19-20m	10
		5903	20-21m	20
AT93	1500N 370E	06.05.5904.5	0- 1m	330
		5905	1- 2m	210
		5906	2- 3m	550
		5907	3- 4m	6900/6300
		5908	4- 5m	71000/67000
		5909	5- 6m	3330
		5910	6- 7m	660
		5911	7- 8m	440
		5912	8- 9m	360
		5913	9-10m	550
		5914	10-11m	1230
		5915	11-12m	60
		5916	12-13m	630
		5917	13-14m	440
		5918	14-15m	110
		5919	15-16m	120
		5920	16-17m	260
		5921	17-18m	90
		5922	18-19m	70
		5923	19-20m	30
		5924	20-21m	20
AT94	1500N 360W	06.05.5925.5	0- 1m	30
		5926	1- 2m	20
		5927	2- 3m	30
		5928	3- 4m	30
		5929	4- 5m	30
		5930	5- 6m	60
		5931	6- 7m	50
		5932	7- 8m	40
		5933	8- 9m	1220
		5934	9-10m	130
		5935	10-11m	100
		5936	11-12m	120
		5937	12-13m	30
		5938	13-14m	20
		5939	14-15m	100
		5940	15-16m	10
		5941	16-17m	10
		5942	17-18m	20
		5943	18-19m	40
		5944	19-20m	30
		5945	20-21m	60

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT95	1500N 350E	06.05.5946.5	0- 1m	110
		5947	1- 2m	200
		5948	2- 3m	260
		5949	3- 4m	340
		5950	4- 5m	270
		5951	5- 6m	350
		5952	6- 7m	1130
		5953	7- 8m	1410
		5954	8- 9m	2040
		5955	9-10m	1490
		5956	10-11m	830
		5957	11-12m	740
		5958	12-13m	300
		5959	13-14m	110
		5960	14-15m	340
		5961	15-16m	90
		5962	16-17m	70
		5963	17-18m	60
		5964	18-19m	50
		5965	19-20m	60
		5966	20-21m	40
AT96	1500N 340E	06.05.5967.5	1- 2m	62001/62000
		5968	2- 3m	2740
		5969	3- 4m	1820
		5970	4- 5m	1280
		5971	5- 6m	960
		5972	6- 7m	1360
		5973	7- 8m	820
		5974	8- 9m	500
		5975	9-10m	260
		5976	10-11m	300
		5977	11-12m	290
		5978	12-13m	110
		5979	13-14m	120
		5980	14-15m	150
		5981	15-16m	230
		5982	16-17m	190
		5983	17-18m	160
		5984	18-19m	260
		5985	19-20m	90
		5986	20-21m	60
AT97	1500N 330E	06.05.5987.5	0- 1m	60
		5988	1- 2m	30
		5989	2- 3m	30
		5990	3- 4m	30
		5991	4- 5m	40
		5992	5- 6m	70
		5993	6- 7m	370
		5994	7- 8m	60
		5995	8- 9m	60
		5996	9-10m	70
		5997	10-11m	60
		5998	11-12m	80
		5999	12-13m	80
		6000	13-14m	200
		6001	14-15m	130
		6002	15-16m	70
		6003	16-17m	60
		6004	17-18m	80
		6005	18-19m	80
		6006	19-20m	110
		6007	20-21m	10

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT98	1500N 320E	06.05.6008.5	0- 1m	20
		6009	1- 2m	60
		6010	2- 3m	370
		6011	3- 4m	360
		6012	4- 5m	30
		6013	5- 6m	60
		6014	6- 7m	30
		6015	7- 8m	10
		6016	8- 9m	10
		6017	9-10m	10
		6018	10-11m	60
		6019	11-12m	70
		6020	12-13m	110
		6021	13-14m	40
		6022	14-15m	40
		6023	15-16m	20
		6024	16-17m	20
		6025	17-18m	20
		6026	18-19m	40
		6027	19-20m	10
		6028	20-21m	10
AT99	1500N 310E	06.05.6029.5	0- 1m	60
		6030	1- 2m	90
		6031	2- 3m	90
		6032	3- 4m	120
AT100	1500N 300E	06.05.6033.5	0- 1m	30
		6034	1- 2m	20
		6035	2- 3m	20
AT104		06.05.0899.5	0- 1m	240
		900	1- 2m	60
		901	2- 3m	110
		902	3- 4m	260
		903	4- 5m	390
		904	5- 6m	210
		905	6- 7m	170
		906	7- 8m	150
		907	8- 9m	90
		908	9-10m	150
		909	10-11m	250
		910	11-12m	460
		911	12-13m	600
		912	13-14m	1550
AT105		06.05.0913.5	0- 1m	120
		914	1- 2m	80
		915	2- 3m	120
		916	3- 4m	100
		917	4- 5m	480
		918	5- 6m	790
		919	6- 7m	1420
		920	7- 8m	7800
		921	8- 9m	9900
		922	9-10m	14400
		923	10-11m	12900
		924	11-12m	10600
		925	12-13m	7000
		926	13-14m	2090
		927	14-15m	840
		928	15-16m	920
		929	16-17m	1420
		930	17-18m	590

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT106		931	18-19m	630
		932	19-20m	920
		933	20-21m	830
		06.05.0934.5	0- 1m	460
		935	1- 2m	170
		936	2- 3m	110
		937	3- 4m	200
		938	4- 5m	120
		939	5- 6m	110
		940	6- 7m	80
		941	7- 8m	190
		942	8- 9m	120
		943	9-10m	130
		944	10-11m	100
		945	11-12m	120
		946	12-13m	230
		947	13-14m	140
		948	14-15m	80
		949	15-16m	60
		950	16-17m	70
		951	17-18m	210
		952	18-19m	170
		953	19-20m	170
		954	20-21m	190
		955	21-22m	240
		956	22-23m	320
		957	23-24m	340
		958	24-25m	190
		959	25-26m	200
		960	26-27m	220
		961	27-28m	170
		962	28-29m	200
AT107		06.02.0963.5	0- 1m	770
		964	1- 2m	390
		965	2- 3m	90
		966	3- 4m	100
		967	4- 5m	70
		968	5- 6m	90
AT108		06.02.0969.5	0- 1m	2050
		970	1- 2m	1120
		971	2- 3m	1360
		972	3- 4m	600
		973	4- 5m	710
		974	5- 6m	1020
		975	6- 7m	1930
		976	7- 8m	1520
		977	8- 9m	1260
		978	9-10m	1270
		979	10-11m	1150
		980	11-12m	1600
		981	12-13m	1260
		982	13-14m	2190
		983	14-15m	3990
		984	15-16m	3250
AT109		06.02.0985.5	0- 1m	2260
		986	1- 2m	670
		987	2- 3m	750
		988	3- 4m	1040
		989	4- 5m	1190

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT110		990	5- 6m	1310
		991	6- 7m	760
		992	7- 8m	1230
		993	8- 9m	830
		994	9-10m	1230
		995	10-11m	1040
		996	11-12m	2070
		997	12-13m	1710
		998	13-14m	2360
		999	14-15m	1260
		1000	15-16m	5000
		1001	16-17m	5000
		1002	17-18m	2770
		1003	18-19m	1900
		1004	19-20m	2590
		1005	20-21m	2650
		1006	21-22m	1680
		1007	22-23m	1660
		1008	23-24m	1680
		06.02.1009.5	0- 1m	1780
		1010	1- 2m	830
		1011	2- 3m	650
		1012	3- 4m	1450
		1013	4- 5m	1280
		1014	5- 6m	1500
		1015	6- 7m	1570
		1016	7- 8m	2240
		1017	8- 9m	2860
		1018	9-10m	980
		1019	10-11m	530
		1020	11-12m	930
		1021	12-13m	1920
		1022	13-14m	2110
		1023	14-15m	1900
		1024	15-16m	2670
		1025	16-17m	1120
		1026	17-18m	130
		1027	18-19m	60
		1028	19-20m	50
		1029	20-21m	80
		1030	21-22m	30
		1031	22-23m	30
		1032	23-24m	30
		1033	24-25m	40
		1034	25-26m	40
		1035	26-27m	30
		1036	27-28m	10
		1037	28-29m	20
		1038	29-30m	30
		1039	30-31m	20
		1040	31-32m	20
		1041	32-33m	30
		1042	33-34m	30
		1043	34-35m	40
		1044	35-36m	40
		1045	36-37m	40
		1046	37-38m	160
		1047	38-39m	60
		1048	39-40m	40
		1049	40-41m	30
		1050	41-42m	60
		1051	42-43m	40
		1052	43-44m	220
		1053	44-45m	60
		1054	45-46m	40

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT 111	700N 70E	06.07.0822/5	0- 1	460
		.0823	1- 2	510
		.0824	2- 3	680
		.0825	3- 4	280
		.0826	4- 5	1450
		.0827	5- 6	1070
		.0828	6- 7	1000
		.0829	7- 8	620
		.0830	8- 9	930
		.0831	9-10	540
		.0832	10-11	370
		.0833	11-12	60
		.0834	12-13	40
		.0835	13-14	100
		.0836	14-15	40
		.0837	15-16	20
		.0838	16-17	20
		.0839	17-18	40
		.0840	18-19	10
		.0841	19-20	40
		.0842	20-21	40
		.0843	21-22	10
		.0844	22-23	50
		.0845	23-24	20
		.0846	24-25	40
		.0847	25-26	20
		.0848	26-27	50
		.0849	27-28	20
		.0850	28-29	20
		.0851	29-30	10
		.0852	30-31	40
AT 112	700N 80E	06.02.1055/5	0- 1	800
		.1056	1- 2	940
		.1057	2- 3	640
		.1058	3- 4	1970
		.1059	4- 5	1210
		.1060	5- 6	580
		.1061	6- 7	430
		.1062	7- 8	170
		.1063	8- 9	50
		.1064	9-10	70
		.1065	10-11	30
		.1066	11-12	30
		.1067	12-13	30
		.1068	13-14	40
		.1069	14-15	40
		.1070	15-16	30
		.1071	16-17	40
		.1072	17-18	120
		.1073	18-19	120
		.1074	19-20	240
		.1075	20-21	400
		.1076	21-22	1070
		.1077	22-23	150
		.1078	23-24	50
		.1079	24-25	60
		.1080	25-26	70
		.1081	26-27	50
		.1082	27-28	60
		.1083	28-29	50
		.1084	29-30	50
		.1085	30-31	60
		.1086	31-32	40
		.1087	32-33	60
		.1088	33-34	270
		.1089	34-35	30
		.1090	35-36	30

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT 112	700N 80E	06.02.1091/5	36-37	50
		.1092	37-38	30
		.1093	38-39	80
		.1094	39-40	20
		.1095	40-41	40
AT 113	700N 90E	06.07.0782/5	0- 1	30
		.0783	1- 2	40
		.0784	2- 3	10
		.0785	3- 4	60
		.0786	4- 5	40
		.0787	5- 6	70
		.0788	6- 7	10
		.0789	7- 8	10
		.0790	8- 9	10
		.0791	9-10	10
		.0792	10-11	10
		.0793	11-12	10
		.0794	12-13	10
		.0795	13-14	30
		.0796	14-15	20
		.0797	15-16	10
		.0798	16-17	10
		.0799	17-18	40
		.0800	18-19	30
		.0801	19-20	20
		.0802	20-21	100
		.0803	21-22	30
		.0804	22-23	30
		.0805	23-24	30
		.0806	24-25	90
		.0807	25-26	50
		.0808	26-27	40
		.0809	27-28	40
		.0810	28-29	50
		.0811	29-30	60
		.0812	30-31	30
		.0813	31-32	20
		.0814	32-33	50
		.0815	33-34	20
		.0816	34-35	20
		.0817	35-36	20
		.0818	36-37	20
		.0819	37-38	20
		.0820	38-39	50
		.0821	39-40	30
AT 115	800N 00E	06.05.6069/5	0- 1	350
		.6070	1- 2	180
		.6071	2- 3	110
		.6072	3- 4	20
		.6073	4- 5	60
		.6074	5- 6	230
		.6075	6- 7	220
		.6075	7- 8	330
		.6077	8- 9	1880
		.6078	9-10	1610
		.6079	10-11	1090
		.6080	11-12	1390
		.6081	12-13	1180
		.6082	13-14	5600/5300
		.6083	14-15	6300/6200
		.6084	15-16	2260

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT 116	800N 010E	06.05.6085/6	0- 1	430
		.6086	1- 2	140
		.6087	2- 3	530
		.6088	3- 4	230
		.6089	4- 5	140
		.6090	5- 6	120
		.6091	6- 7	140
		.6092	7- 8	70
		.6093	8- 9	80
		.6094	9-10	40
		.6095	10-11	220
		.6096	11-12	170
		.6097	12-13	160
		.6098	13-14	90
AT 117	800N 020E	06.05.6099/5	0- 1	1190
		.6100	1- 2	590
		.6101	2- 3	720
		.6102	3- 4	300
		.6103	4- 5	200
		.6104	5- 6	350
		.6105	6- 7	180
		.6106	7- 8	200
		.6107	8- 9	210
		.6108	9-10	130
		.6109	10-11	110
AT 118	800N 030E	06.02.1096/5	0- 1	6500/6700
		.1097	1820 1	
		.1098	2- 3	5200/5300
		.1099	3- 4	3300
		.1100	4- 5	1180
		.1101	5- 6	1550
		.1102	6- 7	1770
		.1103	7- 8	1360
		.1104	8- 9	550
		.1105	9-10	430
		.1106	10-11	580
		.1107	11-12	380
		.1108	12-13	330
		.1109	13-14	320
		.1110	14-15	280
AT 119	800N 040E	06.02.1111/5	0- 1	520
		.1112	1- 2	1250
		.1113	2- 3	1000
		.1114	3- 4	700
		.1115	4- 5	620
		.1116	5- 6	1500
		.1117	6- 7	1340
		.1118	7- 8	1070
		.1119	8- 9	1500
		.1120	9-10	1700
		.1121	10-11	1670
		.1122	11-12	1080
AT 120	800N 050E	06.02.1123/5	0- 1	810
		.1124	1- 2	540
		.1125	2- 3	520
		.1126	3- 4	960
		.1127	4- 5	960
		.1128	5- 6	510
		.1129	6- 7	570
		.1130	7- 8	510
		.1131	8- 9	380
		.1132	9-10	540

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT127	1600N 350E	06.05.6036.5	0- 1m	30
		6037	1- 2m	30
		6038	2- 3m	60
		6039	3- 4m	120
		6040	4- 5m	150
		6041	5- 6m	90
		6042	6- 7m	50
		6043	7- 8m	40
		6044	8- 9m	50
		6045	9-10m	50
		6046	10-11m	20
		6047	11-12m	70
		6048	12-13m	110
		6049	13-14m	130
		6050	14-15m	130
		6051	15-16m	220
		6052	16-17m	1380
		6053	17-18m	1020
		6054	18-19m	830
		6055	19-20m	900
		6056	20-21m	750
AT128	1600N 340E	06.05.6057.5	0- 1m	40
		6058	1- 2m	30
		6059	2- 3m	50
		6060	3- 4m	70
		6061	4- 5m	250
		6062	5- 6m	1270
		6063	6- 7m	1540
		6064	7- 8m	720
		6065	8- 9m	400
		6066	9-10m	170
		6067	10-11m	300
		6068	11-12m	510
AT131	655N 120W	06.05.6110.5	0- 1m	240
		6111	1- 2m	240
		6112	2- 3m	310
		6113	3- 4m	740
		6114	4- 5m	460
		6115	5- 6m	510
		6116	6- 7m	340
		6117	7- 8m	310
		6118	8- 9m	220
		6119	9-10m	240
		6120	10-11m	160
		6121	11-12m	230
		6122	12-13m	290
		6123	13-14m	420
AT132	655N 110W	06.05.6124.5	0- 1m	1590
		6125	1- 2m	730
		6126	2- 3m	1310
		6127	3- 4m	780
		6128	4- 5m	1900
		6129	5- 6m	670
		6130	6- 7m	1180
		6131	7- 8m	1340
		6132	8- 9m	570
		6133	9-10m	630
		6134	10-11m	450
		6135	11-12m	300
		6136	12-13m	630
		6137	13-14m	470
		6138	14-15m	440

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT133	655N 100W	6138	15-16m	440
		6139	16-17m	250
		6140	17-18m	200
		06.05.6141.5	0- 1m	80
		6142	1- 2m	30
		6143	2- 3m	40
		6144	3- 4m	40
		6145	4- 5m	40
		6146	5- 6m	90
		6147	6- 7m	190
		6148	7- 8m	10
		6149	8- 9m	10
		6150	9-10m	20
		6151	10-11m	10
		6152	11-12m	40
		6153	12-13m	20
		6154	13-14m	20
		6155	14-15m	240
AT134	655N 90W	06.05.6156.5	0- 1m	80
		6157	1- 2m	70
		6158	2- 3m	50
		6159	3- 4m	120
		6160	4- 5m	170
		6161	5- 6m	240
AT135	655N 80W	06.05.6162.5	0- 1m	80
		6163	1- 2m	20
		6164	2- 3m	20
AT136	579N 140W	06.05.6165.5	0- 1m	220
		6166	1- 2m	120
		6167	2- 3m	140
		6168	3- 4m	270
		6169	4- 5m	90
		6170	5- 6m	220
		6171	6- 7m	220
		6172	7- 8m	220
		6173	8- 9m	230
AT137	579N 130W	06.05.6174.5	0- 1m	700
		6175	1- 2m	800
		6176	2- 3m	1130
		6177	3- 4m	1090
		6178	4- 5m	770
		6179	5- 6m	620
		6180	6- 7m	500
		6181	7- 8m	90
		6182	8- 9m	620
		6183	9-10m	390
		6184	10-11m	1340
		6185	11-12m	690
AT138	579N 120W	06.05.6186.5	0- 1m	1260
		6187	1- 2m	2640
		6188	2- 3m	1720
		6189	3- 4m	620
		6190	4- 5m	660
		6191	5- 6m	530
		6192	6- 7m	390
		6193	7- 8m	870

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT139	579N 110W	6194	8- 9m	550
		6195	9-10m	420
		6196	10-11m	9400/8300
		6197	11-12m	620
		6198	12-13m	360
		6199	13-14m	400
		6200	14-15m	720
		6200	15-16m	750
		6202	16-17m	1790
		6203	17-18m	1280
		6204	18-19m	550
		6205	19-20m	420
		6206	20-21m	290
		06.05.6207.5	0- 1m	380
		6208	1- 2m	850
		6209	2- 3m	560
		6210	3- 4m	410
		6211	4- 5m	1630
		6212	5- 6m	220
		6213	6- 7m	610
		6214	7- 8m	420
		6215	8- 9m	220
		6216	9-10m	410
		6217	10-11m	1000
		6218	11-12m	190
		6219	12-13m	270
		6220	13-14m	500
		6221	14-15m	450
AT140	579N 100W	06.05.6222.5	0- 1m	50
		6223	1- 2m	80
		6224	2- 3m	60
		6225	3- 4m	20
		6226	4- 5m	20
		6227	5- 6m	40
		6228	6- 7m	30
		6229	7- 8m	30
		6230	9-10m	30
		6231	10-11m	60
		6232	11-12m	40
		6233	12-13m	50
		6234	13-14m	30
		6235	14-15m	100
		6236	15-16m	80
		6237	16-17m	120
		6238	17-18m	70
		6239	18-19m	50
		6240	19-20m	30
		6241	20-21m	40
		6242	21-22m	30
AT145	100N 050E	06.05.6243.5	0- 1m	830
		6244	1- 2m	80
		6245	2- 3m	90
		6246	3- 4m	90
		6247	4- 5m	240
		6248	5- 6m	60
		6249	6- 7m	190
		6250	7- 8m	130
		6251	8- 9m	80
		6252	9-10m	190
		6253	10-11m	230
		6254	11-12m	360

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT146	100N 040E	06.05.6255.5	0- 1m	230
		6256	1- 2m	260
		6257	2- 3m	380
		6258	3- 4m	280
		6259	4- 5m	160
		6280	5- 6m	70
		6261	6- 7m	100
		6262	7- 8m	140
		6263	8- 9m	260
		6264	9-10m	390
		6265	10-11m	710
AT147	100N 030E	06.05.6266.5	0- 1m	250
		6267	1- 2m	370
		6268	2- 3m	410
		6269	3- 4m	130
		6270	4- 5m	230
		6271	5- 6m	280
		6272	6- 7m	620
		6273	7- 8m	550
		6274	8- 9m	430
		6275	9-10m	200
		6276	10-11m	440
		6277	11-12m	300
AT148	100N 020E	06.05.6278.5	0- 1m	700
		6279	1- 2m	640
		6280	2- 3m	580
		6281	3- 4m	1140
		6282	4- 5m	1480
		6283	5- 6m	1500
		6284	6- 7m	1280
		6285	7- 8m	2600
		6286	8- 9m	3140
		6287	9-10m	2070
		6288	10-11m	910
		6289	11-12m	790
		6290	12-13m	130
		6291	13-14m	540
		6292	14-15m	550
AT149	100N 010E	06.05.6294.5	0- 1m	250
		6295	1- 2m	840
		6296	2- 3m	270
		6297	3- 4m	520
		6298	4- 5m	350
		6299	5- 6m	190
		6300	6- 7m	110
		6301	7- 8m	120
		6302	8- 9m	300
		6303	9-10m	340
		6304	10-11m	300
		6305	11-12m	250
		6306	12-13m	280
		6307	13-14m	120
		6308	14-15m	230
		6309	15-16m	210
		6310	16-17m	150
		6311	17-18m	150

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERNAL	ppm Cu
AT150	100N 00E	06.05.6312.5	0- 1m	320
		6313	1- 2m	1300
		6314	2- 3m	260
		6315	3- 4m	240
		6316	4- 5m	180
		6317	5- 6m	160
		6318	6- 7m	100
		6319	7- 8m	100
		6320	8- 9m	60
AT151	100N 010W	06.05.6321.5	0- 1m	90
		6322	1- 2m	350
		6323	2- 3m	550
		6324	3- 4m	560
		6325	4- 5m	310
		6326	5- 6m	430
		6327	6- 7m	310
		6328	7- 8m	320
		6329	8- 9m	660
		6330	9-10m	470
		6331	10-11m	550
		6332	11-12m	330
		6333	12-13m	630
		6334	13-14m	450
		6335	14-15m	200
		6336	15-16m	440
		6337	16-17m	100
		6338	17-18m	220
AT152	100N 020W	06.05.6334.5	0- 1m	1380
		6340	1- 2m	390
		6341	2- 3m	410
		6342	3- 4m	290
		6343	4- 5m	310
		6344	5- 6m	200
		6345	6- 7m	150
		6346	7- 8m	210
		6347	8- 9m	120
		6348	9-10m	580
		6349	10-11m	410
		6350	11-12m	580
		6351	12-13m	690
		6352	13-14m	350
AT153	100N 030W	06.05.6353.5	0- 1m	190
		6354	1- 2m	470
		6355	2- 3m	480
		6356	3- 4m	380
		6357	4- 5m	440
		6358	5- 6m	580
		6359	6- 7m	450
		6360	7- 8m	600
AT154	100N 40W	06.05.6361.5	0- 1m	2110
		6362	1- 2m	380
		6363	2- 3m	550
		6364	3- 4m	1660
		6365	4- 5m	740
		6366	5- 6m	2030
		6367	6- 7m	1240

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 155	200N 60W	06.07.0010.5	0- 1	110
		.0011	1- 2	140
		.0012	2- 3	70
		.0013	3- 4	50
		.0014	4- 5	60
		.0015	5- 6	30
		.0016	6- 7	30
		.0017	7- 8	50
		.0018	8- 9	70
		.0019	9-10	80
		.0020	10-11	50
		.0021	11-12	30
		.0022	12-13	20
		.0023	13-14	50
		.0024	14-15	30
		.0025	15-16	60
		.0026	16-17	90
		.0027	17-18	60
		.0028	18-19	50
		.0029	19-20	100
		.0030	20-21	70
		.0031	21-22	60
		.0032	22-23	40
		.0033	23-24	30
		.0034	24-25	40
		.0035	25-26	70
		.0036	26-27	70
		.0037	27-28	30
		.0038	28-29	60
		.0039	29-30	20
AT 156	200N 180W	06.07.0040.5	0- 1	90
		.0041	1- 2	100
		.0042	2- 3	110
		.0043	3- 4	120
		.0044	4- 5	90
		.0045	5- 6	80
		.0046	6- 7	120
		.0047	7- 8	80
		.0048	8- 9	90
		.0049	9-10	140
		.0050	10-11	190
		.0051	11-12	70
		.0052	12-13	150
		.0053	13-14	170
		.0054	14-15	140
		.0050	15-16	60
		.0056	16-17	70
		.0057	17-18	130
		.0058	18-19	120
		.0059	19-20	100
		.0060	20-21	110
		.0061	21-22	90
		.0062	22-23	120
		.0063	23-24	90
		.0064	24-25	110
		.0065	25-26	170
		.0066	26-27	80
		.0067	27-28	60
		.0068	28-29	80
		.0069	29-30	80

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HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 157	200N 190W	06.07.0070.5	0- 1	140
		.0071	1- 2	110
		.0072	2- 3	60
		.0073	3- 4	30
		.0074	4- 5	20
		.0075	5- 6	60
		.0076	6- 7	90
		.0077	7- 8	150
		.0078	8- 9	10
		.0079	9-10	10
		.0080	10-11	10
		.0081	11-12	180
		.0082	12-13	30
		.0083	13-14	70
		.0084	14-15	70
		.0085	15-16	70
		.0086	16-17	60
		.0087	17-18	60
		.0088	18-19	60
		.0089	19-20	230
		.0090	20-21	150
		.0091	21-22	600
		.0092	22-23	240
		.0093	23-24	130
		.0094	24-25	190
AT 158	200N 200W	06.07.0095.5	0- 1	280
		.0096	1- 2	140
		.0097	2- 3	90
		.0098	3- 4	140
		.0099	4- 5	520
		.0100	5- 6	90
		.0101	6- 7	90
		.0102	7- 8	90
		.0103	8- 9	90
		.0104	9-10	70
		.0105	10-11	110
		.0106	11-12	50
		.0107	12-13	50
		.0108	13-14	50
		.0109	14-15	50
		.0110	15-16	50
		.0111	16-17	70
		.0112	17-18	50
		.0113	18-19	140
		.0114	19-20	60
		.0115	20-21	50
		.0116	21-22	230
		.0117	22-23	150
		.0118	23-24	110
		.0119	24-25	540
		.0120	25-26	110
		.0121	26-27	90

PRINCESS ROYAL PERCUSSION DRILLING ASSAYS

0309

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 159	200N 320W	06.07.0122.5	0- 1	190
		.0123	1- 2	30
		.0124	2- 3	30
		.0125	3- 4	30
		.0126	4- 5	70
		.0127	5- 6	210
		.0128	6- 7	660
		.0129	7- 8	330
		.0130	8- 9	230
		.0131	9-10	90
		.0132	10-11	50
		.0133	11-12	30
		.0134	12-13	50
		.0135	13-14	30
		.0136	14-15	40
		.0137	15-16	50
		.0138	16-17	20
		.0139	17-18	20
		.0140	18-19	10
		.0141	19-20	50
		.0142	20-21	170
		.0143	21-22	100
		.0144	22-23	120
		.0145	23-24	50
		.0146	24-25	20
		.0147	25-26	60
		.0148	26-27	50
		.0149	27-28	20
		.0150	28-29	30
		.0151	29-30	60
AT 160	200N 325W Inclined 70°E	06.07.0152.5	0- 1	50
		.0153	1- 2	100
		.0154	2- 3	20
		.0155	3- 4	40
		.0156	4- 5	20
		.0157	5- 6	20
		.0158	6- 7	50
		.0159	7- 8	30
		.0160	8- 9	40
		.0161	9-10	70
		.0162	10-11	40
		.0163	11-12	40
		.0164	12-13	50
		.0165	13-14	50
		.0166	14-15	20
		.0167	15-16	40
		.0168	16-17	20
		.0169	17-18	40
		.0170	18-19	20
		.0171	19-20	20
		.0172	20-21	10
		.0173	21-22	10
		.0174	22-23	50
		.0175	23-24	40
		.0175	24-25	50
		.0177	25-26	40

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 160	200N 325W Inclined 70°E	06.07.0178.5	26-27	30
		.0179	27-28	50
		.0180	28-29	20
		.0181	29-30	70
		.0182	30-31	30
AT 161	100N 50W	06.07.0182.5	0- 1	460
		.0183	1- 2	1,370
		.0184	2- 3	1,870
		.0185	3- 4	1,380
		.0186	4- 5	1,180
		.0187	5- 6	600
		.0188	6- 7	740
		.0189	7- 8	470
AT 162	500N 10W	06.07.0197.5	0- 1	530
		.0198	1- 2	730
		.0199	2- 3	230
		.0200	3- 4	410
		.0201	4- 5	250
		.0202	5- 6	140
		.0203	6- 7	110
		.0204	7- 8	110
		.0205	8- 9	170
		.0206	9-10	200
		.0207	10-11	110
		.0208	11-12	110
		.0209	12-13	150
		.0210	13-14	130
		.0211	14-15	130
		.0212	15-16	220
		.0213	16-17	550
		.0219	17-18	860
		.0215	18-19	450
		.0216	19-20	410
AT 163	500N 50W	06.07.0217/5	0- 1	320
		.0218	1- 2	240
		.0219	2- 3	220
		.0220	3- 4	230
		.0221	4- 5	140
		.0222	5- 6	310
		.0023	6- 7	280
		.0224	7- 8	410
		.0225	8- 9	150
		.0226	9-10	160
		.0227	10-11	170
		.0228	11-12	310
		.0229	12-13	650
		.0230	13-14	550
AT 164	500N 70W	06.07.0231/5	0- 1	640
		.0232	1- 2	930
		.0233	2- 3	910
		.0234	3- 4	1140
		.0235	4- 5	1250
		.0236	5- 6	760
		.0237	6- 7	500
		.0238	7- 8	500

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 164	500N 70W	06.07.0239/5	8- 9	330
		.0240	9-10	510
		.0241	10-11	620
		.0242	11-12	480
		.0243	12-13	390
		.0244	13-14	210
		.0245	14-15	250
		.0246	15-16	190
		.0247	16-17	160
AT 165	600N 60E	06.07.0248/5	0- 1	1960
		.0249	1- 2	1710
		.0250	2- 3	1620
		.0251	3- 4	2320
		.0252	4- 5	2170
		.0253	5- 6	780
		.0254	6- 7	840
		.0255	7- 8	790
		.0256	8- 9	1950
		.0257	9-10	1160
		.0258	10-11	1320
		.0259	11-12	3360
		.0260	12-13	870
		.0261	13-14	340
		.0262	14-15	240
		.0263	15-16	160
		.0264	16-17	160
		.0265	17-18	110
		.0266	18-19	80
		.0267	19-20	110
		.0268	20-21	70
		.0269	21-22	100
		.0270	22-23	140
		.0271	23-24	150
		.0272	24-25	110
		.0273	25-26	180
		.0274	26-27	130
		.0275	27-28	140
		.0276	28-29	220
		.0277	29-30	110
AT 166	600N 30W	06.07.0278/5	0- 1	110
		.0279	1- 2	40
		.0280	2- 3	170
		.0281	3- 4	70
		.0282	4- 5	50
		.0283	5- 6	50
		.0284	6- 7	40
		.0285	7- 8	50
		.0286	8- 9	50
		.0287	9-10	50
		.0288	10-11	50
		.0289	11-12	50
		.0290	12-13	50
		.0291	13-14	80
		.0292	14-15	220
		.0293	15-16	600
		.0294	16-17	960

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 167	450N 50E	06.07.0295/5	0- 1	150
		.0296	1- 2	80
		.0297	2- 3	110
		.0298	3- 4	70
		.0299	4- 5	80
		.0300	5- 6	70
		.0301	6- 7	60
		.0302	7- 8	50
		.0303	8- 9	70
		.0304	9-10	70
AT 168	450N 40E	06.07.0305/5	0- 1	80
		.0306	1- 2	90
		.0307	2- 3	60
		.0308	3- 4	60
		.0309	4- 5	50
		.0310	5- 6	50
		.0311	6- 7	40
		.0312	7- 8	40
		.0313	8- 9	40
		.0314	9-10	30
		.0315	10-11	50
		.0316	11-12	30
		.0317	12-13	100
		.0318	13-14	160
		.0319	14-15	80
		.0320	15-16	30
		.0321	16-17	40
		.0322	17-18	30
		.0323	18-19	20
		.0324	19-20	20
		.0325	20-21	20
		.0326	21-22	20
		.0327	22-23	70
		.0328	23-24	50
		.0329	24-25	40
		.0330	25-26	50
		.0331	26-27	40
		.0332	27-28	140
		.0333	28-29	130
		.0334	29-30	90
AT 169	450N 30E	06.07.0335/5	0- 1	610
		.0336	1- 2	1300
		.0337	2- 3	1050
		.0338	3- 4	460
		.0339	4- 5	510
		.0340	5- 6	980
		.0341	6- 7	630
		.0342	7- 8	230
		.0343	8- 9	170
		.0344	9-10	80
		.0345	10-11	150
		.0346	11-12	330
		.0347	12-13	180
		.0348	13-14	160
		.0349	14-15	100
		.0350	15-16	70
		.0351	16-17	150

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 169	450N 30E	06.07.0352/5	17-18	330
		.0353	18-19	90
		.0354	19-20	90
		.0355	20-21	80
		.0356	21-22	130
		.0357	22-23	410
		.0358	23-24	940
		.0359	24-25	1000
		.0360	25-26	1960
		.0361	26-27	430
		.0362	27-28	730
		.0363	28-29	140
		.0364	29-30	160
AT 170	450N 20E	06.07.0365/5	0- 1	1590
		.0366	1- 2	1900
		.0367	2- 3	1520
		.0368	3- 4	1200
		.0369	4- 5	1280
		.0370	5- 6	690
		.0371	6- 7	380
		.0372	7- 8	160
		.0373	8- 9	360
		.0374	9-10	340
		.0375	10-11	930
		.0376	11-12	740
		.0377	12-13	4200
		.0378	13-14	51000
		.0379	14-15	2900
		.0380	15-16	390
		.0381	16-17	370
		.0382	17-18	340
		.0383	18-19	7000
		.0384	19-20	2000
		.0385	20-21	6100
		.0386	21-22	720
		.0387	22-23	170
		.0388	23-24	300
		.0389	24-25	240
		.0390	25-26	640
		.0391	26-27	1220
		.0392	27-28	180
		.0393	28-29	180
		.0394	29-30	240
AT 171	450N 10E	06.07.0395/5	0- 1	5050
		.0396	1- 2	7200
		.0397	2- 3	8600
		.0398	3- 4	8200
		.0399	4- 5	20600
		.0400	5- 6	23000
		.0401	6- 7	10400
		.0402	7- 8	3560
		.0403	8- 9	4800
		.0404	9-10	1290
		.0405	10-11	750
		.0406	11-12	710
		.0407	12-13	1080
		.0408	13-14	330
		.0409	14-15	210

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 171	450N 10E	06.07.0410/5	15-16	290
		.0411	16-17	75000
		.0412	17-18	1460
		.0413	18-19	580
		.0414	19-20	280
		.0415	20-21	400
		.0416	21-22	490
		.0417	22-23	1290
		.0418	23-24	1010
		.0419	24-25	650
		.0420	25-26	470
		.0421	26-27	150
		.0422	27-28	110
		.0423	28-29	130
		.0424	29-30	130
AT 172	450N 00E	06.07.0426/5	0- 1	860
		.0426	1- 2	560
		.0427	2- 3	400
		.0428	3- 4	510
		.0429	4- 5	420
		.0430	5- 6	390
		.0431	6- 7	660
		.0432	7- 8	720
		.0433	8- 9	700
		.0434	9-10	860
		.0435	10-11	790
		.0436	11-12	970
		.0437	12-13	650
		.0438	13-14	370
		.0439	14-15	480
		.0440	15-16	110
		.0441	16-17	110
		.0442	17-18	70
		.0443	18-19	60
		.0444	19-20	40
		.0445	20-21	70
		.0446	21-22	410
		.0447	22-23	100
		.0448	23-24	90
		.0449	24-25	60
		.0450	25-26	120
		.0451	26-27	120
		.0452	27-28	370
		.0453	28-29	170
		.0454	29-30	60
AT 173	550N 00E	06.07.0455/5	0- 1	7500
		.0456	1- 2	2300
		.0457	2- 3	6850
		.0458	3- 4	2175
		.0459	4- 5	1420
		.0460	5- 6	760
		.0461	6- 7	410
		.0462	7- 8	620
		.0463	8- 9	480

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 174	550N 20E	06.07.0464/5	0- 1	3000
		.0465	1- 2	1920
		.0466	2- 3	2300
		.0467	3- 4	1910
		.0468	4- 5	1480
		.0469	5- 6	1060
		.0470	6- 7	2325
		.0471	7- 8	1960
		.0472	8- 9	1200
		.0473	9-10	2575
		.0474	10-11	1.98%
		.0475	11-12	2.16%
		.0476	12-13	0.95%
		.0477	13-14	0.79%
		.0478	14-15	1.82%
		.0479	15-16	1.67%
		.0480	16-17	0.88%
		.0481	17-18	6650
		.0482	18-19	5700
		.0483	19-20	4150
		.0484	20-21	1480
		.0485	21-22	6200
		.0486	22-23	4525
		.0487	23-24	7250
AT 175	550N 30E	06.07.0488/5	0- 1	1650
		.0489	1- 2	2075
		.0490	2- 3	2175
		.0491	3- 4	2450
		.0492	4- 5	1900
		.0493	5- 6	1825
		.0494	6- 7	3325
		.0495	7- 8	8400
AT 176	550N 40E	06.07.0496/5	0- 1	500
		.0497	1- 2	840
		.0498	2- 3	400
		.0499	3- 4	720
		.0500	4- 5	1830
		.0501	5- 6	880
		.0502	6- 7	1710
		.0503	7- 8	1720
		.0504	8- 9	1900
		.0505	9-10	280
		.0506	10-11	450
		.0507	11-12	400
		.0508	12-13	150
		.0509	13-14	80
		.0510	14-15	130
		.0511	15-16	80
		.0512	16-17	70
		.0513	17-18	220
		.0514	18-19	70
		.0515	19-20	50
		.0516	20-21	70
		.0517	21-22	70
		.0518	22-23	80
		.0519	23-24	60
		.0520	24-25	50

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 176	550N 40E	06.07.0521/5	25-26	40
		.0522	26-27	50
		.0523	27-28	90
		.0524	28-29	80
		.0525	29-30	60
		.0526	30-31	40
		.0527	31-32	50
		.0528	32-33	60
		.0529	33-34	50
		.0530	34-35	80
		.0531	35-36	100
		.0532	36-37	50
		.0533	37-38	50
		.0534	38-39	60
AT 177	550N 50E	06.07.0535/5	0- 1	550
		.0536	1- 2	2460
		.0537	2- 3	830
		.0538	3- 4	560
		.0539	4- 5	440
		.0540	5- 6	590
		.0541	6- 7	680
		.0542	7- 8	570
		.0543	8- 9	330
		.0544	9-10	80
		.0545	10-11	80
		.0546	11-12	220
		.0547	12-13	40
		.0548	13-14	30
		.0549	14-15	60
		.0550	15-16	60
		.0551	16-17	80
		.0552	17-18	60
		.0553	18-19	30
		.0554	19-20	240
		.0555	20-21	220
		.0556	21-22	380
		.0557	22-23	160
		.0558	23-24	140
		.0559	24-25	240
		.0560	25-26	90
		.0561	26-27	80
		.0562	27-28	80
		.0563	28-29	160
		.0564	29-30	180
		.0565	30-31	70
		.0566	31-32	50
		.0567	32-33	60
		.0568	33-34	90
		.0569	34-35	60
		.0570	35-36	60
		.0571	36-37	60
		.0572	37-38	60
		.0573	38-39	90
		.0574	39-40	130
		.0575	40-41	100
		.0576	41-42	80
		.0577	42-43	70
		.0578	43-44	130

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 177	550N 50E	06.07.0579/5	44-45	130
		.0580	45-46	190
		.0581	46-47	50
AT 178	550N 60E	06.07.0582/5	0- 1	160
		.0583	1- 2	200
		.0584	2- 3	200
		.0585	3- 4	110
		.0586	4- 5	100
		.0587	5- 6	60
		.0588	6- 7	80
		.0589	7- 8	90
		.0590	8- 9	90
		.0591	9-10	40
		.0592	10-11	60
		.0593	11-12	40
		.0594	12-13	60
		.0595	13-14	40
		.0596	14-15	30
		.0597	15-16	40
		.0598	16-17	30
		.0599	17-18	40
		.0600	18-19	40
		.0601	19-20	60
		.0602	20-21	60
		.0603	21-22	60
		.0604	22-23	40
		.0605	23-24	40
		.0606	24-25	60
		.0607	25-26	320
		.0608	26-27	40
		.0609	27-28	60
		.0610	28-29	90
		.0611	29-30	50
		.0612	30-31	50
		.0613	31-32	60
		.0614	32-33	80
		.0615	33-34	30
		.0616	34-35	130
		.0617	35-36	10
		.0618	36-37	50
		.0619	37-38	90
		.0620	38-39	210
		.0621	39-40	100
		.0622	40-41	120
AT 179	650N 00E	06.07.0623/5	0- 1	1110 (1380)
		.0624	1- 2	1210 (1380)
		.0625	2- 3	1210 (1290)
		.0626	3- 4	1150 (1340)
		.0627	4- 5	1410 (1530)
		.0628	5- 6	1290 (1710)
		.0629	6- 7	1370 (1430)
		.0630	7- 8	1190 (1070)
		.0631	8- 9	150 (150)
		.0623	9-10	250 (200)
		.0623	10-11	200 (160)
		.0634	11-12	150 (130)
		.0635	12-13	430 (160)

DUPLICATES
 1110 (1380)
 1210 (1380)
 1210 (1290)
 1150 (1340)
 1410 (1530)
 1290 (1710)
 1370 (1430)
 1190 (1070)
 150 (150)
 250 (200)
 200 (160)
 150 (130)
 430 (160)

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 179	650N 00E	06.07.0636/5	13-14	190 (120)
		.0637	14-15	190 (90)
		.0638	15-16	180 (110)
		.0639	16-17	150 (110)
		.0640	17-18	170 (190)
		.0641	18-19	220 (220)
		.0642	19-20	230 (140)
		.0643	20-21	200 (130)
		.0644	21-22	270 (100)
		.0645	22-23	390 (210)
		.0646	23-24	280 (130)
		.0647	24-25	110 (80)
		.0648	25-26	240 (180)
		.0649	26-27	180 (150)
		.0650	27-28	130 (110)
		.0651	28-29	80 (60)
		.0652	29-30	60 (40)
		.0653	30-31	130 (30)
		.0654	31-32	190 (160)
		.0655	32-33	130 (110)
		.0656	33-34	100 (60)
AT 180	650N 10E	06.07.0657/5	0- 1	530
		.0658	1- 2	610
		.0659	2- 3	480
		.0660	3- 4	480
		.0661	4- 5	400
		.0662	5- 6	440
		.0663	6- 7	260
		.0664	7- 8	290
		.0665	8- 9	390
		.0666	9-10	660
		.0667	10-11	610
		.0668	11-12	680
		.0669	12-13	370
		.0670	13-14	250
		.0671	14-15	200
		.0672	15-16	210
		.0673	16-17	210
		.0674	17-18	230
		.0675	18-19	560
		.0676	19-20	350
		.0677	20-21	300
AT 181	650N 20E	06.07.0678/5	0- 1	1770
		.0679	1- 2	1870
		.0680	2- 3	1580
		.0681	3- 4	2080
		.0682	4- 5	2540
		.0683	5- 6	3550
		.0684	6- 7	2980
		.0685	7- 8	3840
		.0686	8- 9	3640
		.0687	9-10	2300
		.0688	10-11	4210
		.0689	11-12	3530
		.0680	12-13	4500
		.0691	13-14	5260
		.0692	14-15	5460

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 182	650N 30E	06.07.0693/5	0- 1	1250
		.0694	1- 2	1710
		.0695	2- 3	1340
		.0696	3- 4	1200
		.0697	4- 5	620
		.0698	5- 6	620
		.0699	6- 7	460
		.0700	7- 8	1080
		.0701	8- 9	1830
		.0702	9-10	1080
		.0703	10-11	970
		.0704	11-12	1090
		.0705	12-13	880
		.0706	13-14	1710
		.0707	14-15	2460
		.0708	15-16	3000
		.0709	16-17	2300
AT 183	650N 40E	06.07.0710/5	0- 1	740
		.0711	1- 2	530
		.0712	2- 3	750
		.0713	3- 4	970
		.0714	4- 5	910
		.0715	5- 6	940
		.0716	6- 7	1060
		.0717	7- 8	1430
		.0718	8- 9	1280
		.0719	9-10	1210
		.0720	10-11	1350
		.0721	11-12	670
		.0722	12-13	270
		.0723	13-14	770
		.0724	14-15	520
		.0725	15-16	770
		.0726	16-17	1510
		.0727	17-18	1330
		.0728	18-19	2680
		.0729	19-20	2750
AT 184	650N 50E	.0730	20-21	2800
		.0731	21-22	2450
		06.07.0733/5	0- 1	940
		.0733	1- 2	1390
		.0734	2- 3	350
		.0735	3- 4	190
		.0736	4- 5	290
		.0737	5- 6	420
		.0738	6- 7	1020
		.0739	7- 8	1000
		.0740	8- 9	510
		.0741	9-10	360
		.0742	10-11	430
		.0743	11-12	340
		.0744	12-13	930
		.0745	13-14	210
		.0746	14-15	280
		.0747	15-16	360

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 184	650N 50E	06.07.0748/5	16-17	190
		.0749	17-18	820
		.0750	18-19	1030
		.0751	19-20	5160
		.0752	20-21	4840
		.0753	21-22	860
		.0754	22-23	500
		.0755	23-24	150
		.0756	24-25	60
		.0757	25-26	60
		.0758	26-27	60
		.0759	27-28	340
		.0760	28-29	90
		.0761	29-30	40
		.0762	30-31	40
		.0763	31-32	10
		.0764	32-33	50
		.0765	33-34	30
		.0766	34-35	40
		.0767	35-36	100
		.0768	36-37	60
		.0769	37-38	270
		.0770	38-39	110
		.0771	39-40	140
		.0772	40-41	60
		.0773	41-42	90
		.0774	42-43	100
		.0775	43-44	100
		.0776	44-45	80
		.0777	45-46	80
		.0778	46-47	60
		.0779	47-48	60
		.0780	48-49	90
		.0781	49-50	60
AT 185	750N 60E	06.07.0853/5	0- 1	2650
		.0854	1- 2	2660
		.0855	2- 3	1390
		.0856	3- 4	1580
		.0857	4- 5	1750
		.0858	5- 6	3180
		.0859	6- 7	2030
		.0860	7- 8	1750
		.0861	8- 9	1490
		.0862	9-10	1890
		.0863	10-11	1840
		.0864	11-12	1420
		.0865	12-13	1100
		.0866	13-14	1500
		.0867	14-15	3810
		.0868	15-16	2280
		.0869	16-17	1970
		.0870	17-18	2120
		.0871	18-19	1650
		.0872	19-20	2530
		.0873	20-21	3440

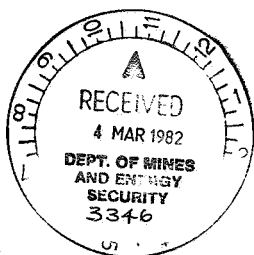
HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 186	750N 45E	06.06.0874/5	0- 1	2480
		.0875	1- 2	5150
		.0876	2- 3	7950
		.0877	3- 4	1775
		.0878	4- 5	9600
AT 187	750N 30E	06.07.0879/5	0- 1	881
		.0880	1- 2	694
		.0881	2- 3	705
		.0882	3- 4	884
		.0883	4- 5	805
		.0884	5- 6	1076
		.0885	6- 7	1345
		.0886	7- 8	1435
		.0887	8- 9	1390
AT 188	800N 100E	06.07.0888/5	0- 1	291
		.0889	1- 2	68
		.0890	2- 3	64
		.0891	3- 4	154
		.0892	4- 5	117
		.0893	5- 6	35
		.0894	6- 7	49
		.0895	7- 8	74
		.0896	8- 9	49
		.0897	9-10	37
		.0898	10-11	15
		.0899	11-12	25
		.0900	12-13	44
		.0901	13-14	31
		.0902	14-15	105
		.0903	15-16	67
		.0904	16-17	33
		.0905	17-18	33
		.0906	18-19	25
		.0907	19-20	35
		.0908	20-21	35
		.0909	21-22	50
		.0910	22-23	34
		.0911	23-24	23
		.0912	24-25	23
		.0913	25-26	28
		.0914	26-27	36
		.0915	27-28	90
		.0916	28-29	33
		.0917	29-30	15
		.0918	30-31	165
		.0919	31-32	50
		.0920	32-33	55
		.0921	33-34	55
		.0922	34-35	25
AT 189	800N 90E	06.07.0923/5	0- 1	1000
		.0924	1- 2	463
		.0925	2- 3	177
		.0926	3- 4	140
		.0927	4- 5	200
		.0928	5- 6	288
		.0929	6- 7	155
		.0930	7- 8	165

HOLE NO.	CO-ORDINATES	SAMPLE NO.	INTERVAL	ppm Cu
AT 189	800N 90E	06.07.0931/5	8- 9	107
		.0932	9-10	33
		.0933	10-11	55
		.0934	11-12	28
		.0935	12-13	23
		.0936	13-14	33
		.0937	14-15	45
		.0938	15-16	40
		.0939	16-17	38
		.0940	17-18	33
		.0941	18-19	40
		.0942	19-20	30
		.0943	20-21	40
		.0944	21-22	40
AT 190	800N 80E	06.07.0945/5	0- 1	917
		.0946	0- 1	1198
		.0947	1- 2	1468
		.0948	2- 3	891
		.0949	3- 4	504
		.0950	4- 5	886
		.0951	5- 6	748
		.0952	6- 7	940
		.0953	7- 8	688
		.0954	8- 9	1338
		.0955	9-10	1500
		.0956	10-11	2005
		.0957	11-12	3040
		.0958	12-13	3550
		.0959	13-14	1071
		.0960	14-15	1350
		.0961	15-16	1414
		.0962	16-17	1582
		.0963	17-18	1042
		.0964	18-19	735
AT 191	800N 60E	06.07.0970/5	0- 1	405
		.0971	1- 2	3240
		.0972	2- 3	2900
		.0973	3- 4	958
		.0974	4- 5	1833
		.0975	5- 6	930
		.0976	6- 7	563
		.0977	7- 8	790
		.0978	8- 9	808
AT 192	800N 70E	06.07.0979/5	0- 1	3410
		.0980	1- 2	1134
		.0981	2- 3	492
		.0982	3- 4	1732
		.0983	4- 5	1923
		.0984	5- 6	1558
		.0985	6- 7	364
		.0986	7- 8	1295
		.0987	8- 9	1455
		.0988	9-10	994
		.0989	10-11	941
		.0990	11-12	1029

EXPLORATION LICENCE NO. 804

QUARTERLY REPORT TO

11-11-81



PROGRAMME1. Princess Royal

Six costeans were dug on September 7/8th utilizing a KATO hydraulic excavator. They were oriented grid E-W at 100m intervals, of nominal 25m length and maximum depth was 7m. VIZ:-

Line 300mN	25m	Line 600mN	25m
400mN	17m	700mN	25m
500mN	26m	800mN	33m

Continuous channel sampling of the northern wall, 1m above the floor, was carried out in all costeans and samples of 1m length submitted for Cu determination - results appended.

2. Edelweiss

At this prospect, 5 km S of Princess Royal, a series of irregular quartz veins occur over a length of 550m in thinly bedded dolomites - IC unit of the Burra sequence. They carry pods and disseminations of copper carbonates and a yellow-green vanadium mineral. Chalcopyrite and pyrite are also visible on the dump of a 170' vertical shaft at the southern end. Grab samples of dump material from the northernmost shaft varied between 0.2% Cu/0.13% V and 16.3% Cu/0.96% V.

Two vertical percussion holes were sunk by Southern Cross Exploration toward the northern end some years ago. Best intersections were 1300 ppm Cu and 140 ppm V (over 5'). As it seemed doubtful that these holes would have adequately tested the near vertically dipping mineralized zone two holes, depressed 64° and angled magnetic east and west from Southern Cross's PDH2, were drilled. Maximum values (over 1m) were only 243 ppm Cu, 160 ppm V and <0.01 ppm Au. A sketch plan and cross-section are appended. The prospect is considered of no further interest.

3. St. Elmo

This prospect lies 3 km SE of Edelweiss and is reached by travelling 1 km westerly (on foot) from the Burra-Robertstown road. Two groups of workings known as east and west are present.

The eastern workings consist of a 30' shaft with 60' long drive at the 12' level on a ferruginous quartz vein 6" to 20" wide and stained with copper carbonates. Reported production was 10 tons of hand sorted ore at 9.2% Cu. A 269' adit known as the Bosomworth Tunnel was driven 105' below the shaft collar but intersected only traces of copper in a 2' wide zone of brecciated dolomite with vein quartz 150' from the portal. Although the

- 2 -

literature suggests the lode may dip the opposite direction it is possible this latter mineralization is representative of the lode. No exploration potential is apparent.

The western workings consist of numerous small pits, a 60 foot adit and a 100 foot shaft with two crosscuts, distributed along a zone 150m in length and up to 10m wide. This zone contains numerous thin (5cm - 1m) irregular west dipping quartz stringers apparently conformable with the dolomite host rock. Copper carbonates and iron oxides are sporadically associated. Recorded production is 20 tons of unknown grade. It is reported that attempts have been made to work the deposit for gold but no values are recorded. It had been intended to test the western workings with a single hole, mainly from the point of view of gold potential. However, significant earthmoving would have been required for access, and following poor results at Edelweiss this was not considered warranted for such a low priority target.

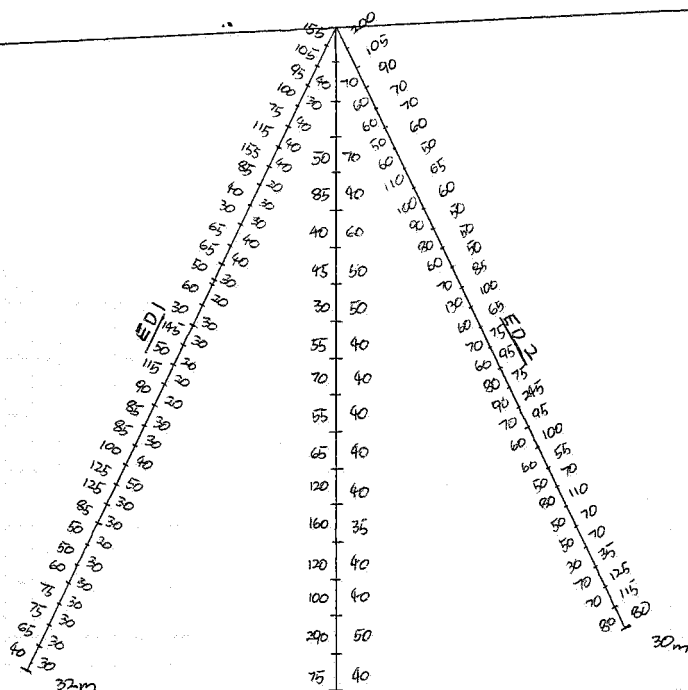
EXPENDITURE

Expenditure totalled \$13,565-14 as detailed in the attached statement.



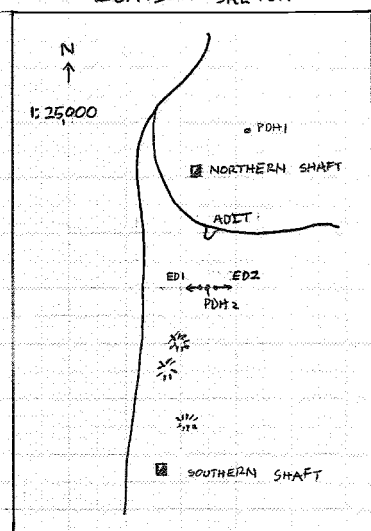
(K.F. Bampton)
CHIEF GEOLOGIST

KFB:BP
16-2-82



SOUTHERN CROSS
PDH2

LOCATION SKETCH

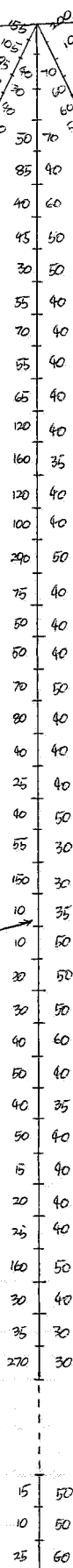


E.L. 804

EDLWEISS Cu-V PROSPECT

Scale 1:2500

50 ppm Cu
35 ppm V



E.L. 804 EXPENDITURE

	Quarter Ended 11-11-81	Total to Date
Salaries & Wages	\$7,784.73	\$22,306.44
Overhead @ 50%	\$3,892.37	\$11,153.22
Travel & Accommodation	-	\$26.22
Vehicle Expenses	\$201.51	\$320.50
+ 20¢/Km (1990 Km)	\$398.00	\$2,630.00
Field Supplies	\$621.38	\$1,226.51
Direct Office	-	\$128.65
Geochemistry Contract	\$27.15	\$230.60
In-house @ \$3/sample	-	\$3,001.00
Drilling Contract	-	-
In-house @ \$10/m (64m)	\$640.00	\$9,465.00
Lease/Legal Fees	-	-
Equipment Hire	-	\$675.80
Fuel	-	\$10.00
	<u>\$13,565.14</u>	<u>\$51,173.93</u>

Prior expenditure under E.L. 425 was \$58,405.03 bringing the total for the area to \$109,578.97.

EXPLORATION LICENCE NO. 804

FINAL REPORT

&

QUARTERLY REPORT TO

11-02-82



PROGRAMME

All work was confined to the Princess Royal copper prospect. The northern walls of the six costeans were geologically mapped (DWG. No. E14) and a 200 litre drum sample of mineralization was collected from the spoil heap of each, prior to back-filling.

All drilling and costean data were collated and ore reserve estimates made for the central mineralized zone between 300N and 700N - insufficient intersections were available for calculations on the north eastern flank zone or old main shaft pod to the west.

As a small area at Princess Royal was the only one within the licence to have given any encouragement, extension of the licence beyond the 11-2-82 expiry date was not felt justified. However, three contiguous claims were pegged on January 20th to retain title over the area of proven mineralization while metallurgical tests are carried out on the costean samples. It is considered that, if amenable to gravity concentration, this material could be utilized in conjunction with other sources, as a supplementary feed to the Burra plant.

ORE RESERVES

Ore outlines at 0.5% and 1.0% Cu cut-off were plotted on cross sections at 1:200 scale and a 1m dilution band added around the boundaries. Where average diluted grade was below the cut-off, - e.g. on 200S - the area was omitted from the calculations. From 550N to 700N mineralization was considered too narrow for a pit and thus only a 6m deep slot (for hydraulic excavator extraction) was considered at 1.0% Cu cut-off without dilution. For the remaining sections schematic two bench pits to 20m depth with approximate 45° slopes, were drawn and the area of mineralization within each planimetered, omitting the dilution band at pit limits. For 0.5% cut-off, sections 300N to 550N inclusive were considered and for 1.0% cut-off, sections 400N to 500N. The modified Simpson's Rule

$V_{1,2} = \frac{d}{3} (A_1 + A_2 + A_1A_2)$ was used to calculate volumes and a density factor of 2.5 tonne/m³ applied to derive tonnage. Average grades on each section were weighted by area to yield overall grade.

- 2 -

Calculations and drawings (E7) are appended. Results were :-

<u>CUT-OFF</u>	<u>GRADE</u>	<u>TONNAGE</u>	<u>WASTE</u>	<u>STRIPPING RATIO</u>
0.5%	1.16%	86 700	61 800t	0.7:1
1.0% (PIT)	2.33%	13 200	10 900t	0.8:1
1.0%	1.42%	3 000	1 000t	0.3:1

These figures are not considered final, as drilling of the mineralized zone at 5m spacing could be expected to indicate continuation of a narrow steeply dipping higher grade vein to greater depth, allowing a further bench. However, no commitment to such detailed outlining has been taken pending the outcome of the concentration tests.

EXPENDITURE

Expenditure totalled 17,260.73 as detailed in Appendix 3.

KFB:BP
7-4-82


(K.F. Bampton)
CHIEF GEOLOGIST

APPENDIX 1TONNAGE CALCULATIONS0.5% CUT-OFF

a)	<u>Areas (m2)</u>	<u>Grade (% Cu)</u>	<u>Ore</u>	<u>Waste</u>
	300 N	0.68	151.20	333.60
	400 N	1.09	42.80	2.80
	450 N	0.94	68.00	0.00
	500 N	2.22	139.60	15.20
	550 N	0.97	285.80	165.60

Average grade 1.16% Cu

b)	<u>Volumes (m3)</u>		
	250 N - 300 N	2,520	5,560
	300 N - 400 N	9,148	12,232
	400 N - 450 N	2,745	46
	450 N - 500 N	5,083	253
	500 N - 550 N	10,419	3,849
	550 N - 600 N	4,764	2,760
	TOTAL	34,679	24,700

c)	Tonnages. At 2.5 t/m3	86,697	61,750

- 2 -

1.0% CUT-OFF (PIT)

a) <u>Areas (m2)</u>	<u>Grade (% Cu)</u>	<u>Ore</u>	<u>Waste</u>
400 N	1.30	29.80	7.20
450 N	1.56	24.60	42.20
500 N	3.04	70.0	50.00
Average Grade	2.33% Cu		
b) <u>Volumes (m3)</u>			
350 N - 400 N		496.60	120.00
400 N - 450 N		1.357.83	1.113.85
450 N - 500 N		2.268.28	2.302.16
500 N - 550 N		1.166.66	833.33
TOTAL		5.289.37	4.369.34
c) Tonnages		13.223t	10.923t

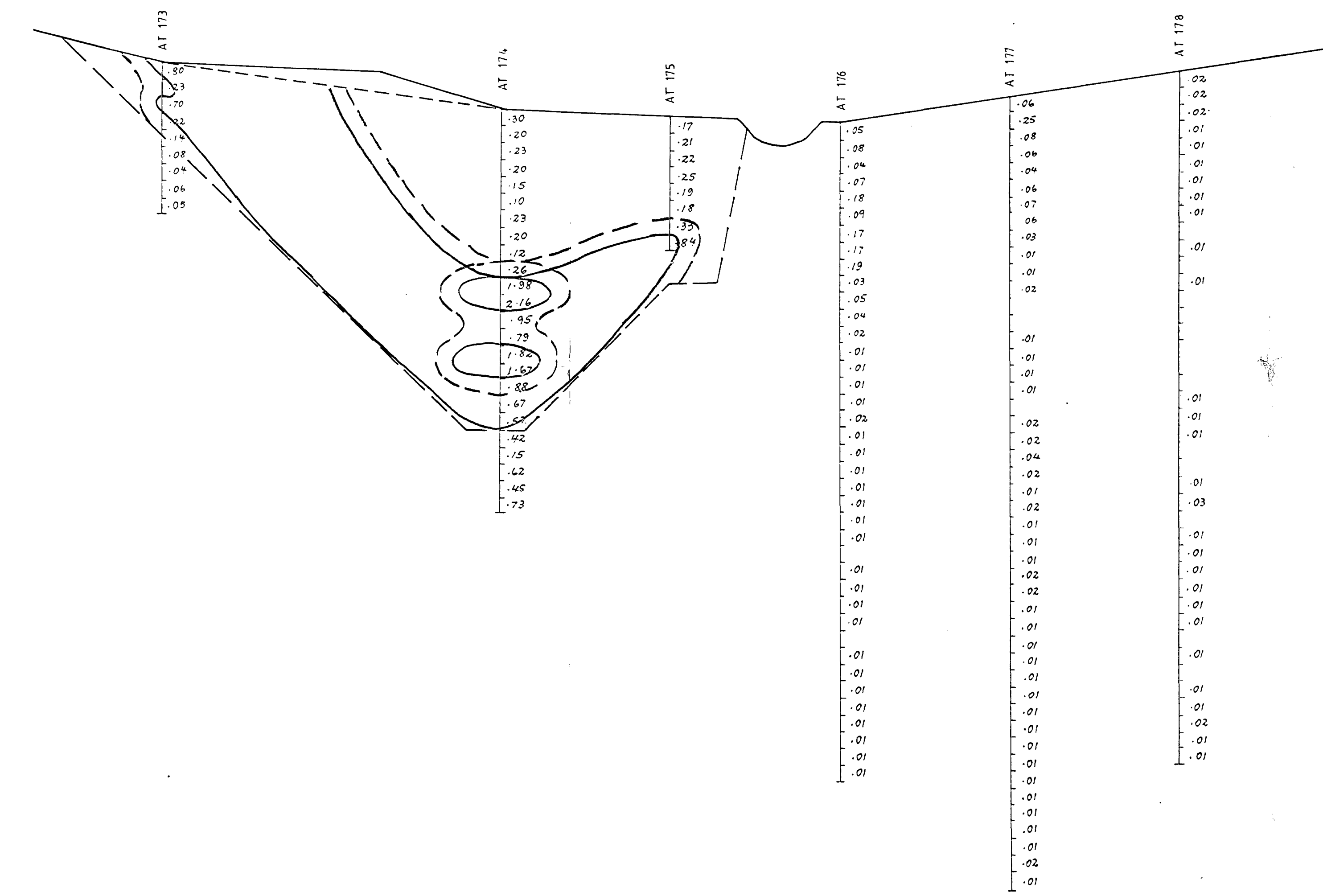
1.0% CUT-OFF (SLOT)

a) <u>Areas (m2)</u>	<u>Grade (% Cu)</u>	<u>Ore</u>	<u>Waste</u>
579 N	1.62	27.90	0.00
600 N	1.01	9.90	3.30
700 N	1.23	8.14	3.86
Average Grade	1.42% Cu		
b) <u>Volumes (m3)</u>			
579 N - 600 N		381.00	23.00
600 N - 700 N		900.00	357.00
TOTAL		1.281.00	380.00
c) Tonnages		3.203.00t	950.00t

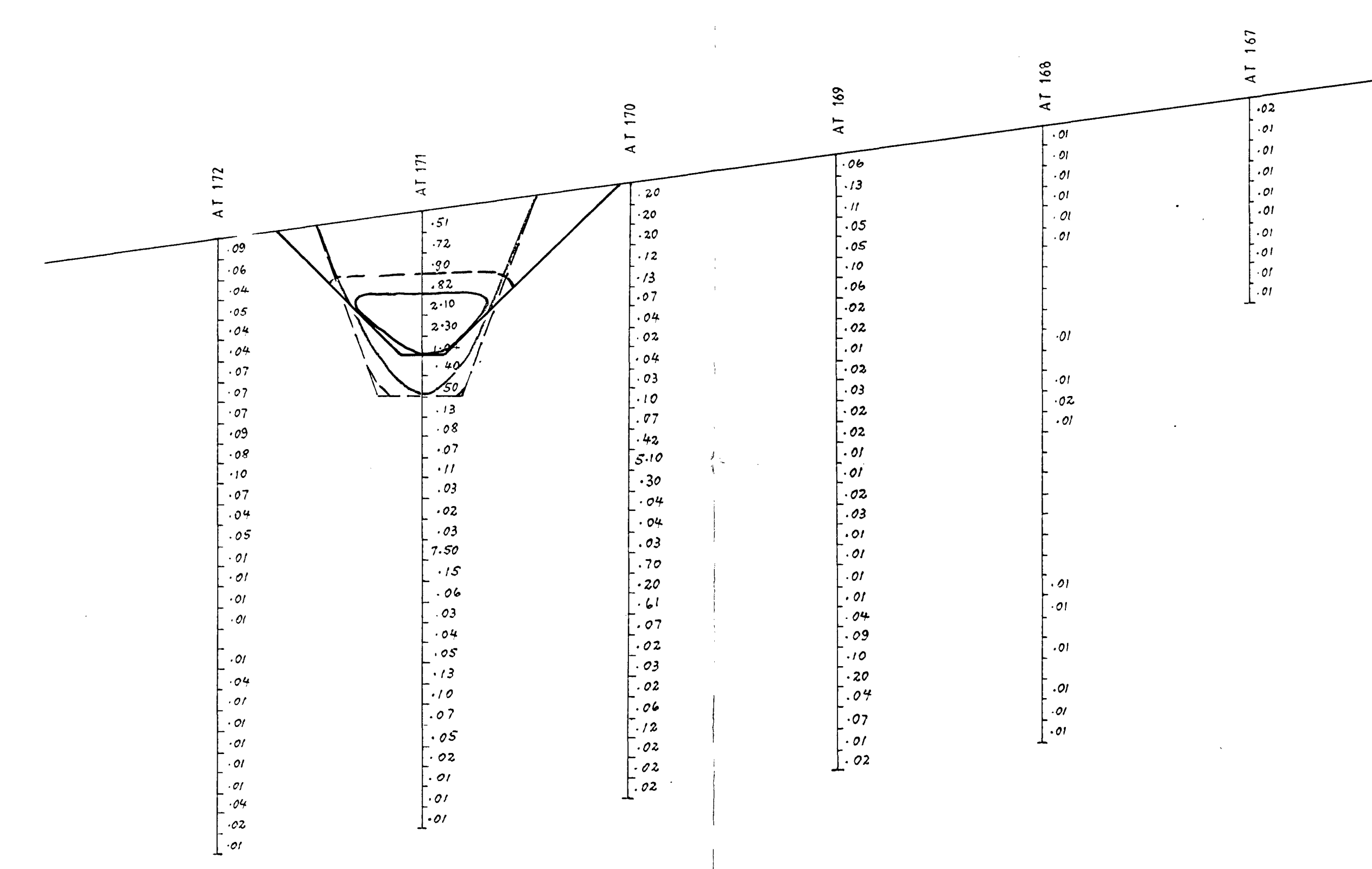
APPENDIX 2

DRAWINGS

- E5 Princess Royal - Geological Sketch Map 1:2000
- E6 Princess Royal - Drill Hole Overlay 1:2000
- E7 Princess Royal - Drill Hole Cross Sections 1:200 (9 sheets)
- E14 Princess Royal - Geological Sections of Costeans 1:100



550 N



450 N

00 E

050 E

- 0.5% Cu cut off
- 1.0% Cu cut off
- Dilution bands
- - - Pit outline 0.5% Cu cut off
- - - Pit outline 1.0% Cu cut off

NOTE - VALUES LESS THAN 0.01% Cu NOT SHOWN

3346-17

ADELAIDE & WALLAROO FERTILIZERS LTD. ADELAIDE, STH. AUST.									
PRINCESS ROYAL DRILL HOLE CROSS-SECTIONS 68DN-550N									
SCALE		1 : 200		DRA. No.		E 7 / 2A OF 9			
APPROVED		DRAWN <i>Platford</i>		TRACED		CHECKED			
ISSUE	REMARKS	DATE	DRN.	CKD.	DATE 4/12/81	ISSUE			

APPENDIX 3E.L. 804 EXPENDITURE

	Quarter ended 11-2-82	Total to Date
Salaries & Wages	\$10,306.88	\$32,613.32
Overhead @ 50%	5,153.44	16,306.66
Travel & Accommodation	-	26.22
Vehicle Expenses	-	320.50
+ 20¢/Km (4304 Km)	860.80	3,490.80
Field Supplies	387.56	1,614.07
Direct Office	-	128.65
Geochemistry		
Contract	315.00	545.60
In-House @ \$3/sample	-	3,001.00
Drilling		
Contract	-	-
In-House @ \$10/m	-	9,465.00
Lease/Legal Fees	37.05	37.05
Equipment Hire	200.00	875.80
Fuel	-	10.00
	\$17,260.73	\$68,434.66

Prior expenditure under E.L. 425 was \$58,405.03 bringing the total for the area to \$126,839.70.