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SML 70

TARLTON KNOB

PROGRESS REPORTS TO LICENCE EXPIRY/SURRENDER FOR THE PERIOD 1/5/1964 TO 30/4/1966

Submitted by
Australian Selection (Pty) Ltd
1966

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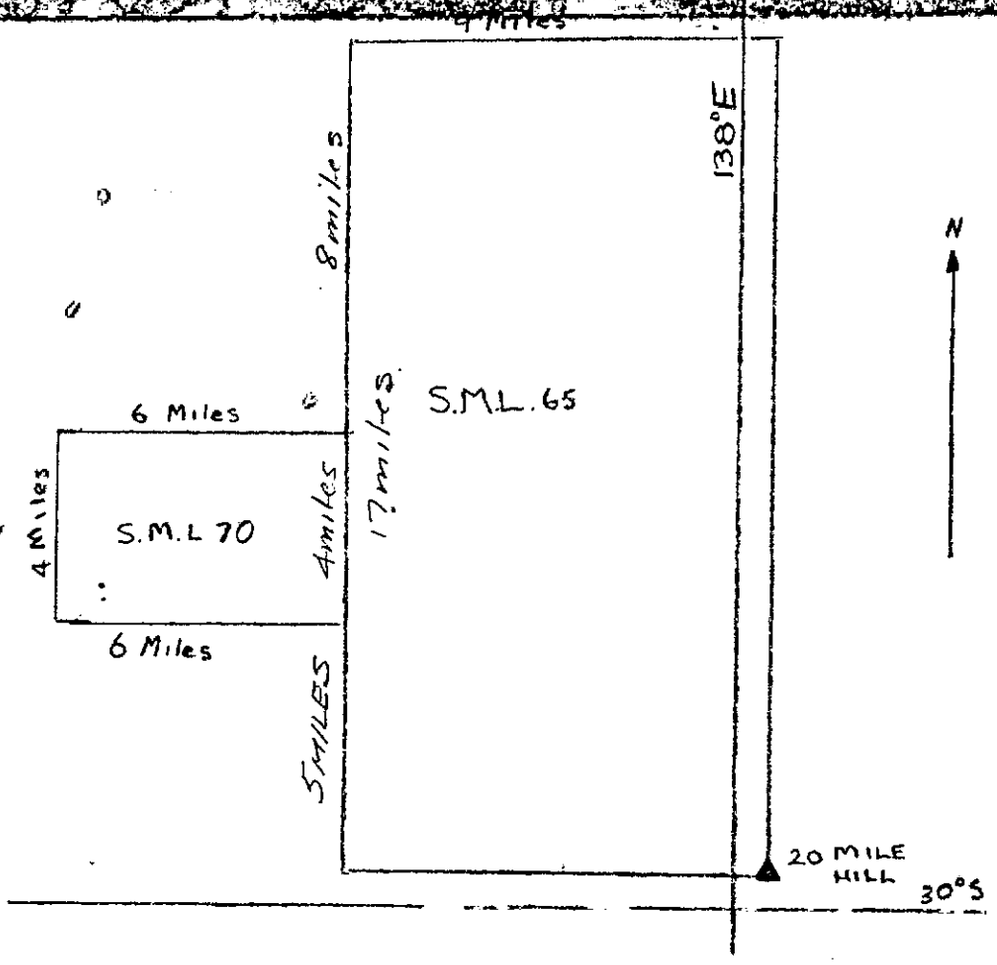
Facsimile: (08) 8204 1880

Government of South Australia
Primary Industries and Resources SA


4 Miles
8 miles
138°E
N
6 Miles
S.M.L. 65
17 miles
4 Miles
S.M.L 70
4miles
6 Miles
5MILES
20 MILE HILL
30°S

S.M.L 70 & 65

CONTENTS ENVELOPE 599. DM 1300/64 001

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TENEMENT HOLDER: Aust. Selection Pty. Ltd.

REPORTS:

ANDREWS, P.B. 1964.
Quarterly report for period ending 31/10/64. (pg. 3)
No Plans.

AUSTRALIAN SELECTION PTY. LTD. 1965
Report for period 30/1/65 S.M.L. 70 (pg. 4)
No Plans.

SAMPEY, D. 1965
Quarterly report for period ending 30/4/65.
(pg. 5)

Plans:

Drawing No. AS 207 Talton's Knob - Summary of progress as at 30 April, 1965. (599-5)

Drawing No. AS 262 Warra Warra prospect : Soil Sampling & Copper results (Contoured). (599-3)

SAMPEY, D., 1965 Quarterly report for period ending 31 July 1965.
(pgs.6-8)

Plans:

Drawing No. 296 Talton's Knob : Stream sediment sample locations (599-4)

Drawing No. AS 207
Talton's Knob: Summary of progress as at 31 July, 1965. (599-6)

Drawing No.AS 297
Stream sediment survey- Copper values. (599-1)

Drawing No. AS 263
Warra Warra prospect -geology. (599-2)

DRIESSON, A.J.B., 1965
Quarterly report for period ending 31 Oct. 1965 (pg. 9)

CONTENTS ENVELOPE 599 Conts.

Plans:

Drawing No. AS 207 Talton's Knob - Summary of progress as at 31 Oct., 1965 (599-7)

DRIESSON, A.J.B. 1966
Quarterly report for period ending 28 Feb 1966.
(pgs.10-12)

Plans:

Drawing No. AS 552 Talton's Knob- Regional Geology. (599-9)

Drawing No. AS 446 Warra Warra prospect - Copper results and geology. (599-8)

Plans that cannot be related to above reports .

Drawing No. AS 266 Talton's: Soil sampling - Copper results
(599-10)

AUSTRALIAN SELECTION (PTY.) LTD. 003

Special Mining Lease No. 70

Report for Period 1st August-31st October, 1964.

During the three months ended 31st October, 1964, a geological reconnaissance was carried out over SML 70.

It had been intended to carry out a geochemical survey during this period, but, pressure of work on the adjoining SML 65, resulting from the location of a number of interesting geochemical anomalies, prevented this.

The geological reconnaissance was carried out by geologists D. Sampey and A. J. B. Driessen.

P. B. ANDREWS
Exploration Manager.

AUSTRALIAN SELECTION (PTY) LIMITED

SPECIAL MINING LEASE NO.70 - TARLTON'S KNOB

Report for Period 1st November, 1964 - 31st January, 1965

In the northern part of the State, all field work has been suspended for the summer. Consequently no further progress has been made in this area.

It is intended, however, to commence soil sampling in this area during March and complete a drainage re-connaissance programme later in the field season.

AUSTRALIAN SELECTION (PTY.) LTD.

SPECIAL MINING LEASE NO. 70 - TARLTONS KNOB.

Report for Period 1st February - 30th April, 1965.

1. General:

Field work started in this area during April, 1965 and to date approximately 3 square miles have been covered by drainage sampling. Two adjacent areas have also been covered by soil grids (see AS 207). These are discussed below.

2. Warra Warra:

This is a group of old workings lying within a rather thin (200-300 ft.) stratigraphic unit on the south limb of an anticline which plunges very steeply to the south east.

Soil samples have been collected on a grid measuring 3,000 by 4,000 feet covering this area and the results of copper analysis are shown on AS 262. This map clearly illustrates the rather confined zone of mineralization and the relatively high copper content of the north limb of the anticline which strikes approximately along line WW132.

Geological mapping of the area is in progress.

3. Tarltons:

This is the name given to the soil grid which covers the northern limb of the Warra Warra anticline and runs at right angles to the Warra Warra grid. Analytical results for this grid are not yet available.

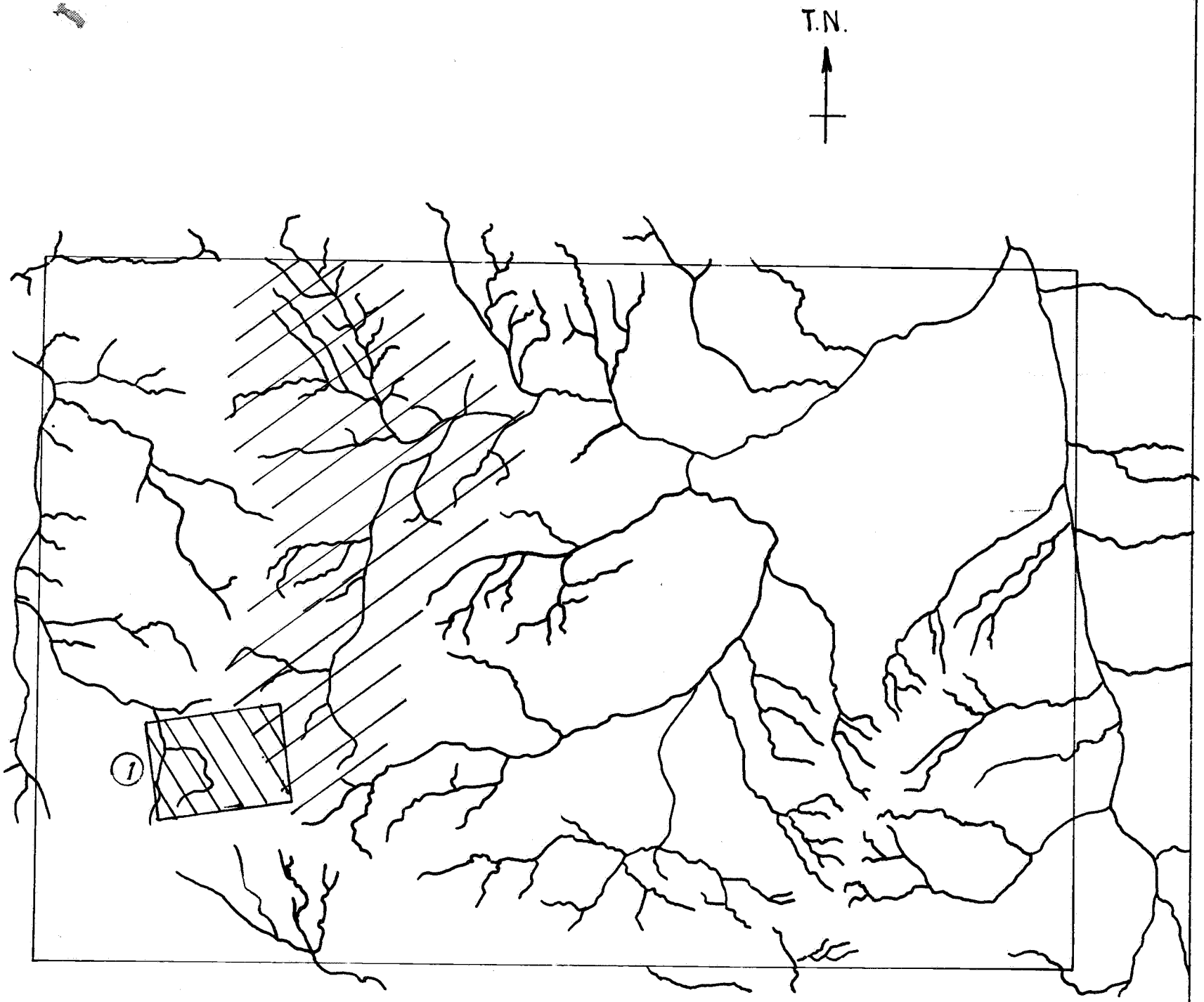
4. Future Work:

Stream sediment sampling of the whole special mining lease should be completed by end of September, 1965.

Geological mapping of the Warra Warra area is in progress and when this is completed some type of drilling will be undertaken.

Water for diamond drilling at Warra Warra is a problem as the nearest known suitable supply is 4 air miles away and 14 miles by track. Moreover there is little chance of obtaining drilling water in the immediate vicinity since the area is at the head of several drainage systems and the old workings are reported to have reached a depth of 265 feet without striking water.

D. SAMPEY
Geologist-in-Charge.



SCALE

1 1/2 0 1 2 3 4 5

Miles

KEY TO LOCALITIES.

(1) Warra Warra.

Area drainage sampled.

Area soil sampled.

AUSTRALIAN SELECTION Pty Ltd.

SPECIAL MINING LEASE No 70

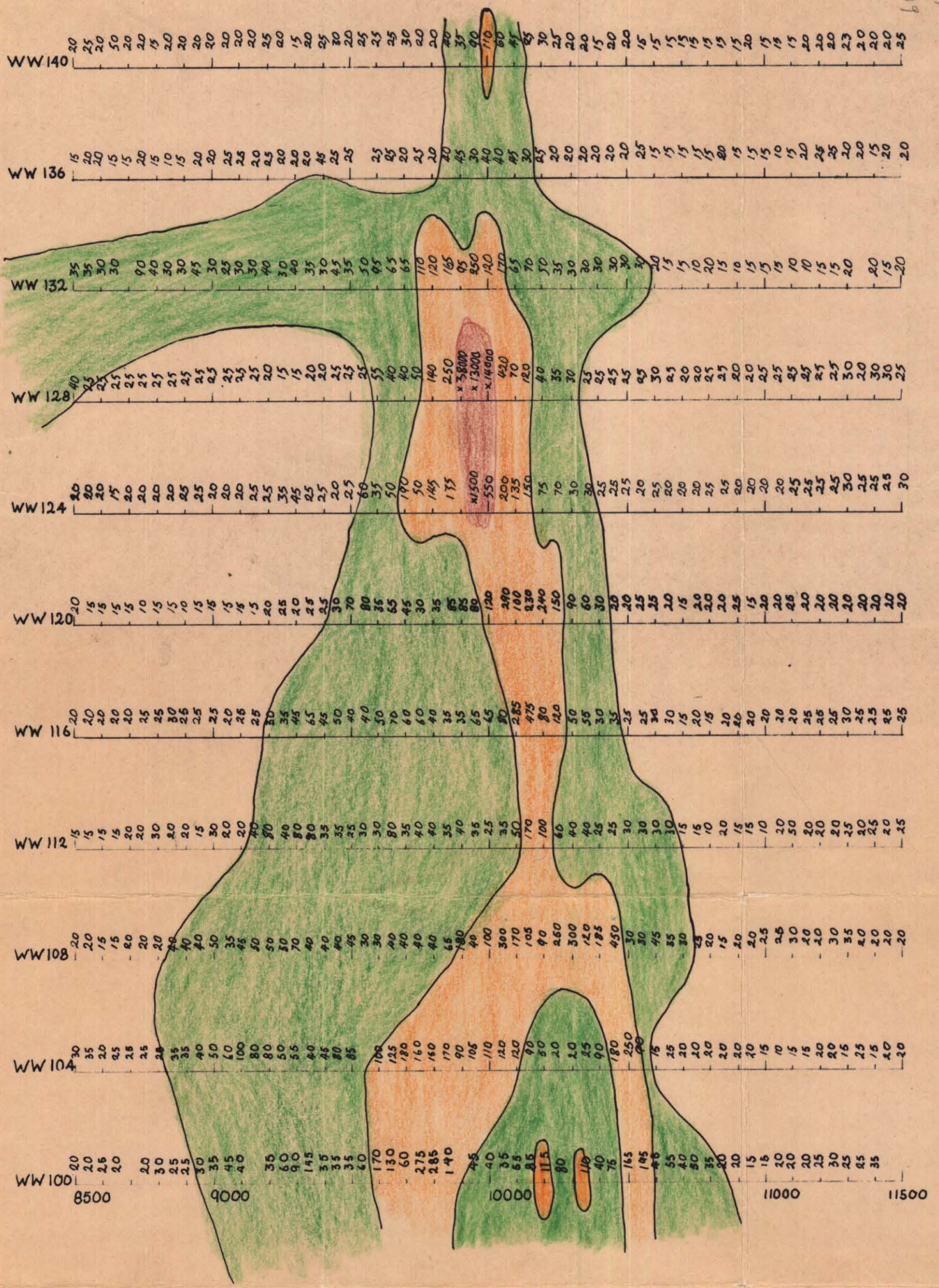
TARLTON'S KNOB

(1)

Summary of Progress as at 30th APRIL. 1965.

DWG. No AS 207

ENV. 599.-5



Perchloric acid soluble copper ppm.
Sample depth 3"

AUSTRALIAN SELECTION (Pty.) Ltd.	
FLINDERS RANGE PROJECT. SPECIAL MINING LEASE No. 70 WARRA WARRA SOIL SAMPLING. **COPPER RESULTS.** **(contour plot)**	
Scale: 1 inch : 400 ft.	Date: May 1965
Sampled by: W. Vlasblom. N. Roediger.	Plotted by: D. Petrovich.
Analysis by: W. Ismay. S. Tout. C. Sryer.	Drawn by. N. Roediger.
Checked by:	Dwg. No. AS 262

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AUSTRALIAN SELECTION (PTY) LIMITED

SPECIAL MINING LEASE NO. 70 - TARLTONS KNOB

Report for Period 1st May - 31st July 1965

006

1. GENERAL

Geological mapping of the Warra Warra area was completed, as also was the stream sediment sampling of the whole lease (see plan AS207).

2. DRAINAGE RECONNAISSANCE

Out of a total area of 24 square miles, only 2 square miles (8%) has yielded anomalous copper values in the stream sediments. The sample locations are presented on AS296 while the copper results are shown on AS297.

Geological examination of the anomalous areas is being carried out.

3. TARLTONS

The copper contents of soils in this area are shown on AS266, but indicate no anomalous results outside the overlap with the Warra Warra grid.

4. WARRA WARRA

This area has now been geologically mapped (see AS263) by A. Driessen, who reports as follows:

Geology

Since interesting copper values were only found in the Warra Warra grid, geological mapping was confined to this area.

The rocks in the area covered by the grid are mainly calcareous. They have been folded into a tight anticline which plunges at 45° in the direction of 096°. Beds in the south limb strike generally to 250° and dip south easterly at 60°-75°. The north limb strikes to 310° and the beds dip to the NNE at 60°-85°.

The map shows 5 beds of distinguishable lithologies which form the south limb of the anticline. Beginning with the lowest stratigraphically, these are:

1. Crenulated and interbedded olive green coloured dolomites and yellow dolomitic shales.

   The highest copper results of this bed are situated at WW 100/9800' and 9600'. Both samples are representative of an interbedded banded, limonitic jaspilite about 4-6 feet wide. These jaspilites appear to be secondary.

.../2

Director of Mines

2. Overlying the dolomitic shales is a distinctive bed of a fine grained feldspathic sandstone. This rock type usually appears bleached.

   All the old workings are located within this stratigraphic unit. Moreover, this stratigraphic unit also coincides with anomalous (100 ppm) copper results. Narrow white quartz veins, barren of copper, cut across the bedding of this unit. These veins are absent from the other beds.

3. This bed is composed of olive green coloured dolomites. The copper content of the soils overlying this rock are distinctly lower than those contained in the soils overlying the feldspathic sandstone. These dolomites contain bands of interbedded dolomitic shale and secondary silica.

4. A fine grained feldspathic sandstone, similar to 2. above, occurs as a 30' thick bed overlying the dolomites. In this case, however, the copper values of the soil are low.

5. The uppermost bed in the mapped area is a yellow dolomitic shale similar to 1 above. Olive green dolomites, quartzite and secondary silica also occur as interbedded lenses and bands.

   A study of the map shows the distribution of shallow Recent alluvium. The pattern of the copper distribution within the rocks appear to be neither distorted nor concealed by the presence of this alluvium.

   No regional mapping has been carried out. As a result, no definite age can be ascribed to these rocks. It is thought, however, that they belong to the Burra Group (Torrensian Age) but there is a possibility that they represent Willouran Age rocks in sequence.

Mineralization

There is a remarkable coincidence between anomalous copper values and the lower, fine grained feldspathic sandstone.)

The pattern of the workings indicate that the strike of the mineralization is parallel to the strike of the sedimentary rocks.

No sulphides have been seen and all observed mineralization has been malachite. This is often associated with quartz-limonite stringers which lie in the plane of bedding.

Furthermore, copper mineralization seems to be associated with lenses of shale which have been completely kaolinised. In such cases, small disc like rosettes of malachite occur distributed along the parting planes.

There is evidence that the zone of mineralization lines in a sheer plane which is parallel to the bedding. Furthermore, the mineralization appears to be concentrated in shoots within the shearing plane, and these shoots pitch steeply to the east.

../3

The maximum distance between the workings along strike is 2,800'. The maximum observed width of mineralization was approximately 6 feet.

The actual workings range from 3 foot deep pits to shafts, the deepest of which is reputed to be 227'.

The anomaly centred around WW 128/10,000 is caused by the spoil dumps of these workings.

An interesting feature of the copper results map is that the higher values follow the stratigraphy around the nose of the anticline.

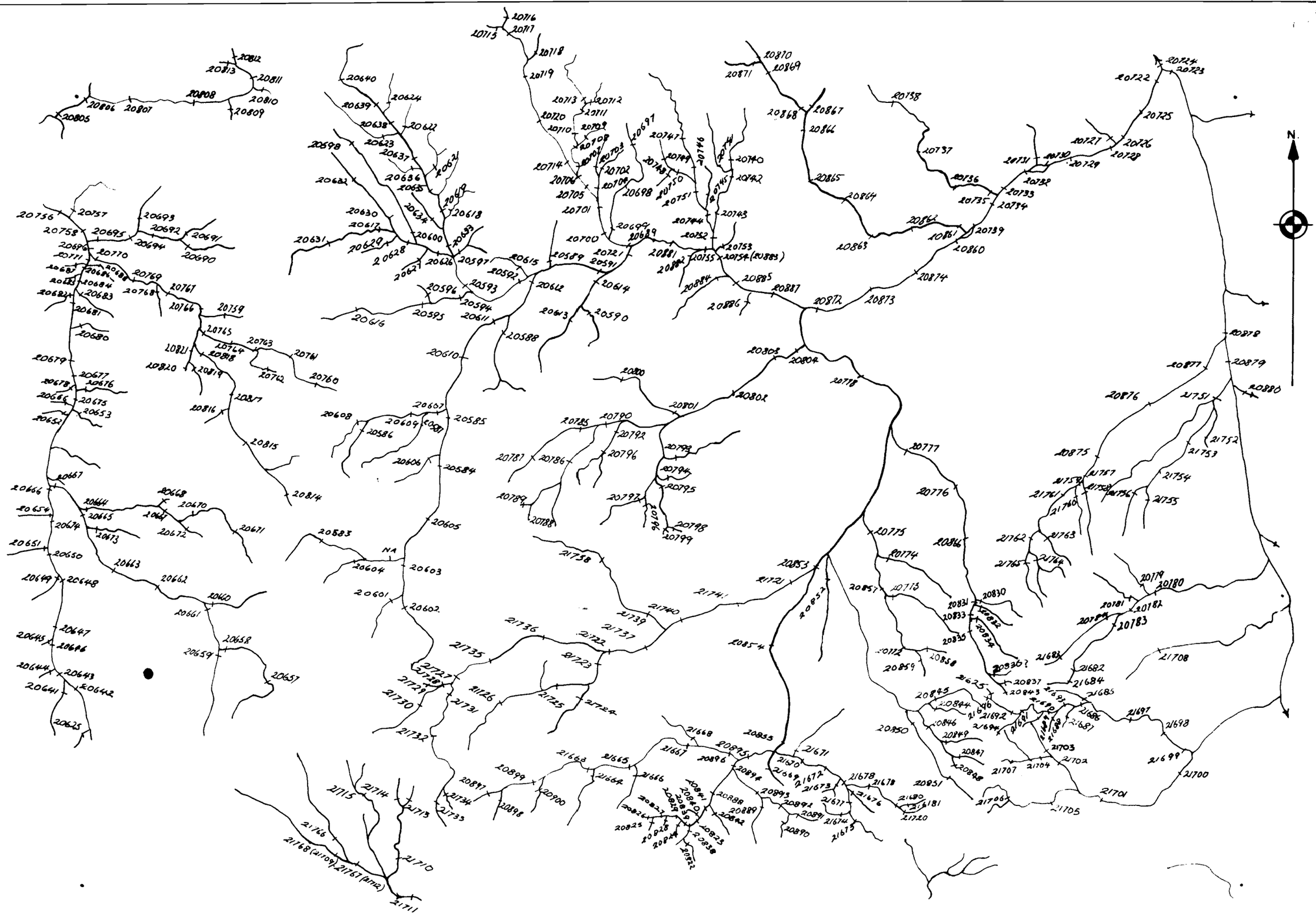
5. FUTURE WORK

It is planned to dig one trench across the mineralized zone at Warra Warra to establish the exact width of the mineralization. Future work at this prospect will depend upon the results of this trenching.

Geological examination of the stream sediment anomalies will also guide further work in those areas.

D. SAMPEY
Geologist in Charge

Plans AS207 (31st July 1965) 3
AS296 4.
AS297
AS263 6



AUSTRALIAN SELECTION(Pty) Ltd.

FLINDERS RANGE PROJECT.

SPECIAL MINING LEASE No. 70

TARLTON'S KNOB

STREAM SEDIMENT SAMPLE LOCATIONS

SCALE. 1inch to 1/2 mile DATE. July 1965

SAMPLED BY. W.Vlasblom. N.Roediger. P.Boucaut.

DRAWN BY. N. Roediger.

CHECKED BY. [signature] DRAWING NO. AS 296.

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8

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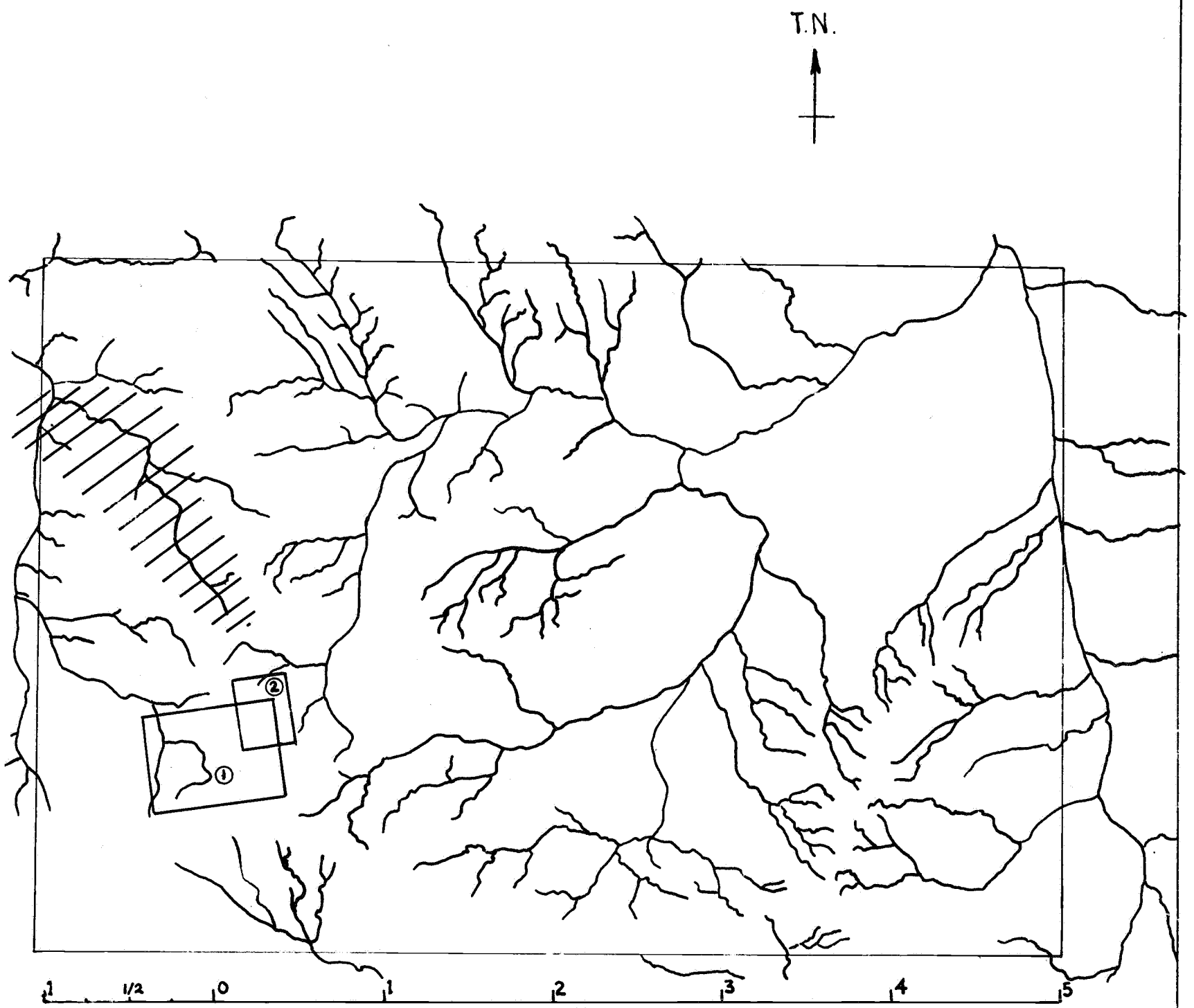

KEY TO LOCALITIES.

① Warra Warra.

② Tarltons.

☐ Areas soil sampled.

DRAINAGE SAMPLING

//// Areas of anomolous copper. (above 40p.p.m. Cu.)

Background. 10 to 25 p.p.m. Cu.

AUSTRALIAN SELECTION Pty Ltd.

SPECIAL MINING LEASE No 70

TARLTON'S KNOB

(3)

Summary of Progress as at 31st July. 1965.

DWG. Nº AS 207

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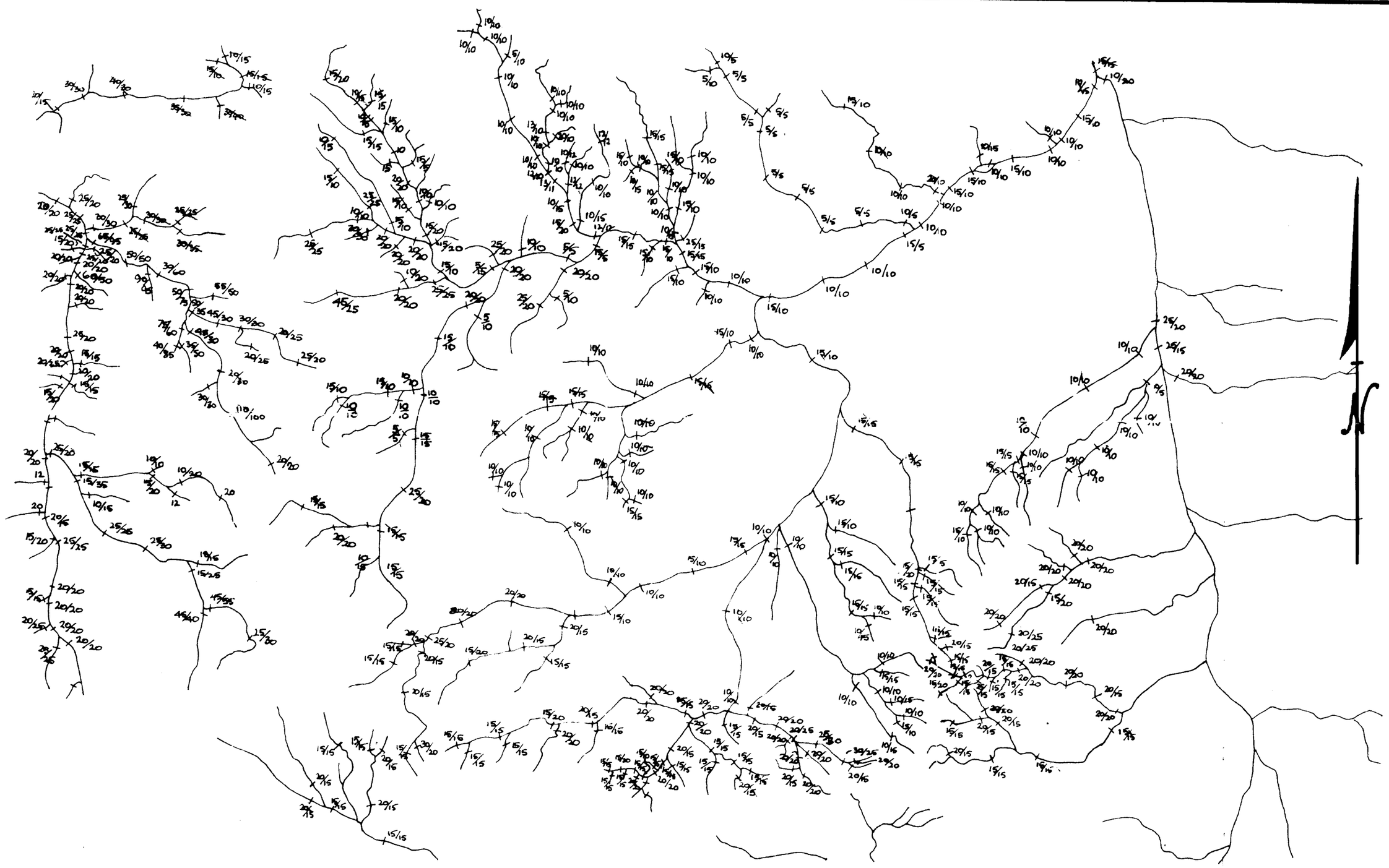
DM1300/64



AUSTRALIAN SELECTION (PTY.) LTD.

FLINDERS RANGE PROJECT
S.M.L 70

STREAM SEDIMENT SURVEY
COPPER VALUES.

mapped/compiled by :	date :
drawn by :	date :
traced by : O.W.N.	date : JULY 1965
SCALE : 2" = 1 MILE.	PLAN NO. : AS 297.

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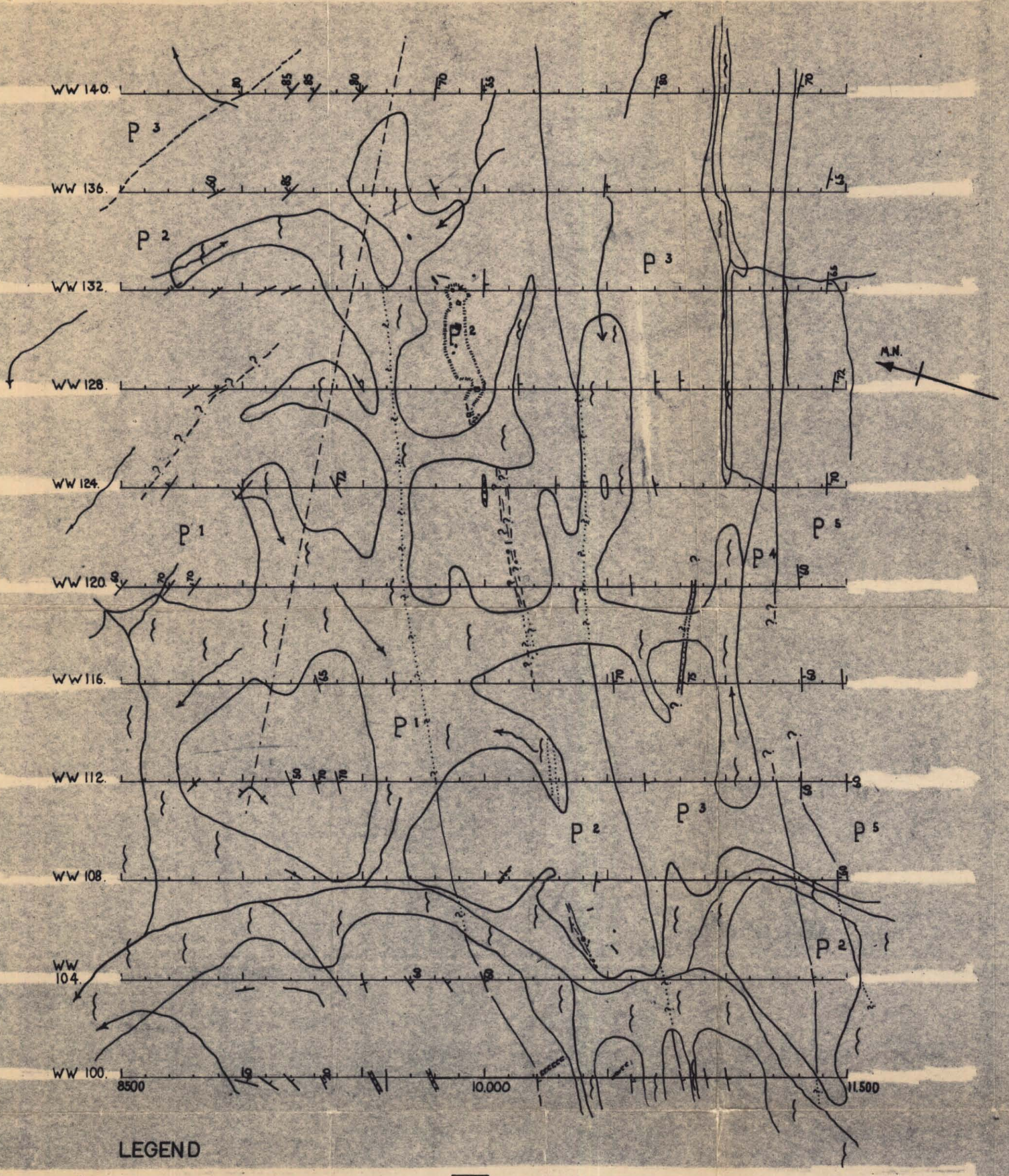

LEGEND

- geological contact definite.
- " " approximate.
- " " inferred.
- probable geological contact concealed.
- strike & dip of beds.
- trace of bedding.
- trace of axial plane of anticline.
- workings.
- spoil dump.
- creek.
- quartz vein
- jaspilite band.
- quartzite band.
- kaolinised shale band.

- recent alluvium.
- P 5 yellow dolomitic shales with some interbedded dolomite & quartzite.
- P 4 fine grained feldspathic? sandstone.
- P 3 olive green dolomite with some interbedded dolomitic shale.
- P 2 fine grained feldspathic? sandstone.
- P 1 Interbedded dolomites and dolomitic shales.

AUSTRALIAN SELECTION (Pty.) Ltd.

FLINDERS RANGE PROJECT.
SPECIAL MINING LEASE No.70

WARRA WARRA
GEOLOGY.

Scale: 1" : 400' Date: MAY 1965.
Geology by: A. DREISSEN Plotted by: A. DREISSEN.
Drawn by. N. Roediger.
Checked by Dwg. No. AS 263

DM 1300/62.

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AUSTRALIAN SELECTION (PTY) LIMITED

SPECIAL MINING LEASE NO. 70 - TARLTONS KNOB

Report for period 1st August-31st October 1965

1. GENERAL

One trench was dug at the old Warra Warra workings and two contour traverses were soil sampled to guide future work.

2. WARRA WARRA

One trench 95 ft. long and 4 ft. deep was dug from WW 130/9950 to 10045 feet (approx). Analytical results of the samples taken here are not yet available.

The rocks exposed in the trench are a series of very kaolinised shale and sandstone. Minor limonite staining and some cross cutting quartz stringers indicate the position of the "lode zone" in two sections of the trench. Only minor malachite mineralization is visible in these "lode zones".

3. OTHER WORK

Approximately 1 mile north of the Warra Warra workings, a bank traverse was soil sampled to test a stream sediment anomaly.

In addition, a straight line traverse 2700 feet long was soil sampled. This traverse is situated 1 mile N.E. of the Warra Warra workings. It will test the extension (adjoining syncline) of the stratigraphic unit contained in the Warra Warra soil grid and which shows anomalous copper values.

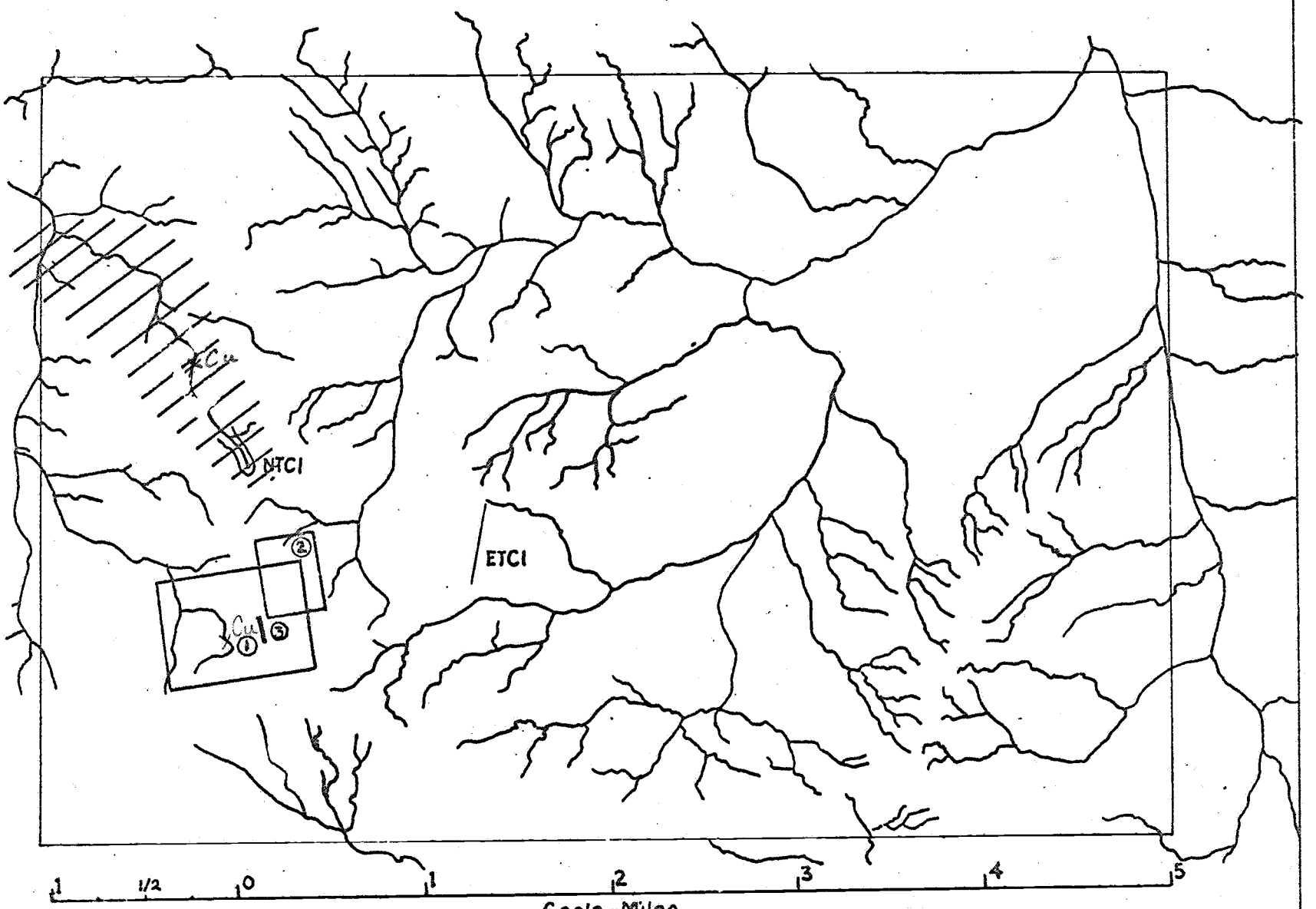
No analytical results of either soil traverses are available yet.

SUMMARY OF WORK CARRIED OUT

Trenching	
Lenth dug	95 ft.
No. of samples	20
Soil Sampling	
No. of samples	88
Staff	
As for SML	65
Maps Attached	
AS 207	

A.J.B. Driessen

T.N.



Scale–Miles.

KEY TO LOCALITIES.

① Warra Warra. ③ Trench

② Tarltons.

▭ Areas soil sampled.

DRAINAGE SAMPLING

//// Areas of anomolous copper. (above 40p.p.m. cu.)

Background. 10 to 25 p.p.m. cu.

AUSTRALIAN SELECTION Pty Ltd.

SPECIAL MINING LEASE No 70

TARLTON'S KNOB

Summary of Progress as at 31st OCT. 1965.

DWG. Nº AS 207

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ENV. 599.

SPECIAL MINING LEASE NO. 70 - TARLTONS KNOB

REPORT FOR PERIOD 1ST NOVEMBER 1965 - 28TH FEBRUARY, 1966.

GENERAL:

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During the quarter ended February 28th, 1966, no field work at all was done, but results became available for all 1965 field work.

Also with this report is Plan AS 552 which shows both the regional geology and the prospect locations.

A summary of all the prospects follows.

I. Warra Warra.

The results of soil sampling and the detailed geology were submitted with the quarterly report 1.5.65 to 31.7.65.

The results of trenching are now available and are included with this report. Copper values and the geology are correlated and presented on AS 446.

Samples with higher values up to 2500 p.p.m. Cu are coincident with quartz-limonite veins and stringers.

The most intense anomalous zone (>1% Cu), at least 4'6" wide, occurring in the extreme north end of the trench, is not fully tested because neither its full width nor its exact magnitude are known.

An optimistic estimation would be values of 1.5% - 2% Cu over a width of 10 feet.

II. North Tarlton.

The only other area of anomalous stream sediment samples occurs $1\frac{1}{2}$ miles north of the Warra Warra workings. In this area of $\frac{1}{2}$ square mile the stream sediments contain 50-60 p.p.m. copper. Several shallow workings occur in the area.

The most intense drainage anomaly, (100 p.p.m. Cu) at the extreme headwaters of a creek, was further tested by stream bank soil sampling (traverse NT CI). Analytical results were all of background proportions, the highest being 70 p.p.m. Cu. This sample was located close to a shallow pit containing vein quartz and some malachite. The stream sample was also taken near this pit.

III. East Tarlton.

A straight line traverse of soil samples, 2700 feet long, is situated 1 mile NE of Warra Warra workings.

This traverse, ETCI, was designed to test the extension (adjoining syncline) of the stratigraphic unit which contains the workings and anomalous copper values occurring in the Warra Warra soil grid.

../2

Only background values of 20-30 p.p.m. Cu were encountered.

More by coincidence than design, traverse NTCI sampled this same stratigraphic interval and similar negative results were obtained.

FUTURE WORK

Surface geochemical sampling of this area is now complete, and results have indicated that further testing at depth is required. However the exact technique of this exploration phase has not been decided yet. Diamond drilling costs are expected to be very high in this area due to the lack of water.

The Warra Warra Mine shaft is reputed to have reached a depth of 227' without having encountered water. The nearest supply of bore water is situated 12-15 miles away over very rough tracks.

A. J. B. Driessen.

18th February, 1966.

DM1300/64

012

MAPS ATTACHED

AS 446	Warra Warra Trench - Copper Results.
AS 552	SML 70 - Regional Geology & Prospect Locations.

WORK DONE:

Field work - Nil.

Laboratory work - approx. 100 determinations for copper.

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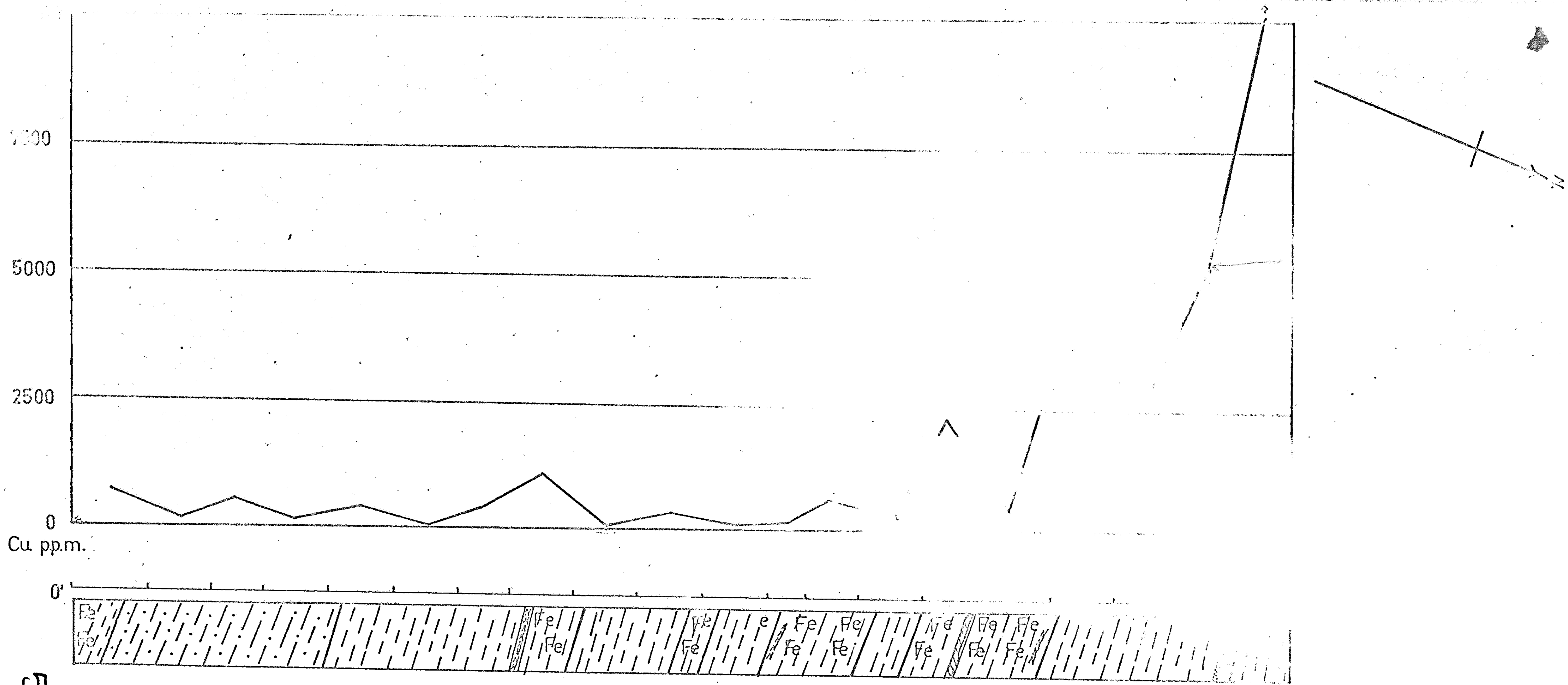


LEGEND.

- Kaolinised siltstone.
- Kaolinised sandstone.
- Kaolinised sandy siltstone.
- Iron stained kaolinised siltstone
- Quartz vein.

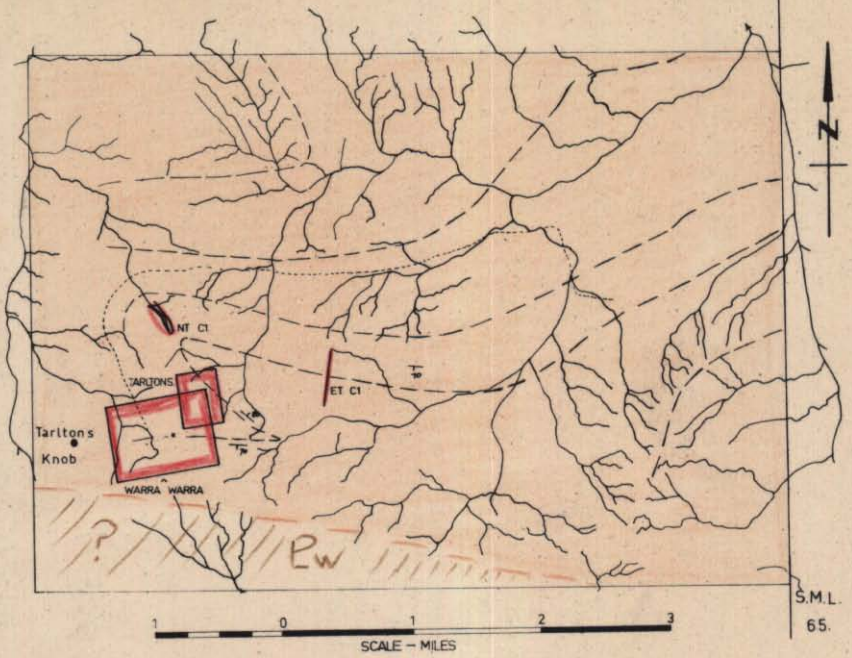
10 5 0 10 20

Scale. --Feet

AUSTRALIAN SELECTION (PTY.) LTD.

FLINDERS RANGE PROJECT. SML 70

WARRA WARRA.



REFERENCE

TORRENSIAN

Interbedded dolomitic shales, dolomites, and quartzites.

Dip and Strike of Bedding.

Trend of Bedding.

Soil Grid.

Track.

Workings.

Geology compiled from:

Airphoto interpretation and Geological field traverses.

AUSTRALIAN SELECTION (PTY.) LTD.	
FLINDERS RANGE PROJECT SPECIAL MINING LEASE No 70. TARLTONS KNOB. REGIONAL GEOLOGY.	
mapped/compiled by : A. Driessen.	date : SEPT. 1965.
drawn by : N. Roediger	date : DEC. 1965.
traced by : A. Driessen.	date : DEC. 1965.
SCALE : 2 inches = 1 mile	PLAN No. : AS 552

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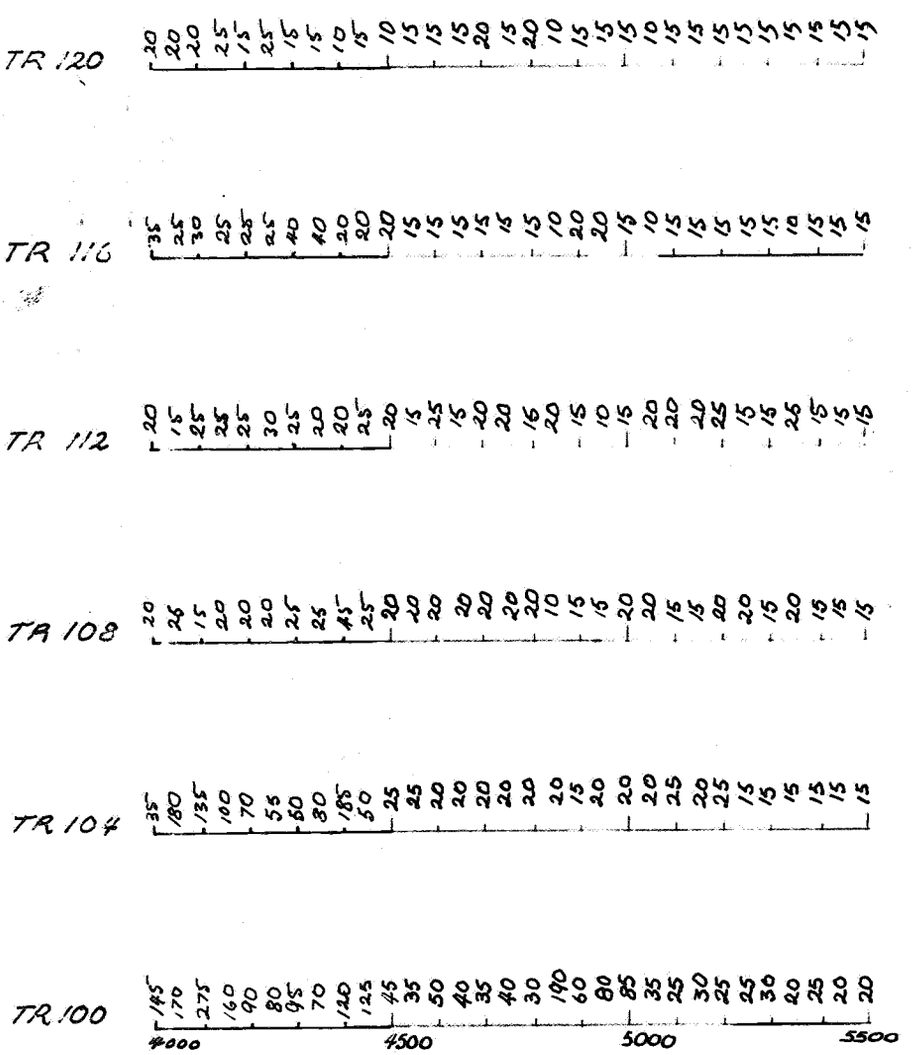

N ?

PERCHLORIC ACID SOLUBLE COPPER IN P.P.M.

SAMPLE DEPTH. 3"

AUSTRALIAN SELECTION (Pty.) Ltd.

FLINDERS RANGE PROJECT.
SPECIAL MINING LEASE No.70.

TARLTONS

SOIL SAMPLING. COPPER RESULTS
(Contour plot)

Scale: 1 inch : 400 feet Date: May 1965.
Sampled by: N. Roediger, W. Vlasblom, P. Rijk
Analysis by: W. Ismay, S. Tout, C. Gryer.
Plotted by: N. Roediger.
Drawn by: N. Roediger
Checked by:
Dwg. No.: AS. 266

599-10

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