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OPEN FILE

REPORT ON DUNKLEY AREA

E.L. 42/71

WESTERN TASMANIA

R. SCHELLEKENS,
RENISON LIMITED

DATE: 7TH AUGUST, 1972.

AMG REFERENCE POINTS ADDED

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(i)

SUMMARY:

During March and April 1972 a reconnaissance stream sediment sampling programme was conducted over part of E.L. 42/71. Three anomalies were located. Reconnaissance geological mapping located three gossans in the area, one giving high tungsten values.

Further field work of a geophysical nature is recommended for 1972-73.

RECOMMENDATIONS:

It is recommended that further field work be carried out in the area of the three geochemical anomalies, and over the area of the Dunkley Fault. Anomalies should be further tested by soil sampling, and closer spaced stream sediment sampling. A grid system should be established over the Dunkley Fault area, and covered by geological mapping, soil sampling and ground magnetics. Further field work should depend on the results obtained, but if satisfactory would probably include IP and drilling.

A small grid should be established over the Tungsten gossan on the Dunkley Track and covered by geological mapping soil sampling, gossan sampling and a ground magnetics survey.

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REPORT ON THE DUNKLEY AREA E.L. 42/71INTRODUCTION:

The Dunkley area was acquired by Renison Limited, with the view to search for 'Renison Bell type' mineralisation (massive pyrrhotite - cassiterite mineralisation in replacement, and structural lodes).

The geology of this area is very similar to that at Renison Bell. Zeehan type mineralisation (silver - lead fissure lodes) may also occur in the area.

LOCATION AND ACCESS:

E.L. 42/71 is located approximately 4.5 kilometers west of Renison Bell and 6 kilometers north of Zeehan, on the West Coast of Tasmania. Access to the area is via the Renison Bell - Pieman River track, and then south along the old Dunkley Tramway. The Tramway was cleared during the year by a bulldozer, and can be negotiated by four wheel drive vehicles. Access from Zeehan is by foot along the Tramway - north from the old Montana Mine.

Most of the area is covered by heavy Tee-tree scrub, with some areas of thick rain forest in the north and southeast. Access away from the Dunkley Track is difficult and tracks need to be cut for easier access.

LAND TENURE:

E.L. 42/71 was originally granted on 23.8.71 in respect to an area of 17.7 sq. kms. and remained in force for 6 months. On 23.2.72 the licence was renewed for a further 6 months and reduced in area to 12.9 sq. kms. The licence remains in force until 23.8.72.

REGIONAL GEOLOGY:

Rocks in the general area consist of Precambrian - Cambrian sediments with Cambrian basic intrusives, and overlain by Upper Palaeozoic sediments. Precambrian Quartzites and Shales of the Oonah Quartzite Formation are conformably overlain by rocks of the Crimson Creek Formation (Cambrian shales, quartzites and minor Volcanics). During the Cambrian, basic igneous rocks were intruded, and partly altered to serpentinites by subsequent regional deformation. Silurian and Devonian sediments unconformably overlie the older rocks. Recent alluvium occurs along the river valleys.

Rocks in the area show evidence of structural deformation folding and faulting. Several faults occur in the area, the major one being the Dunkley Fault.

PREVIOUS EXPLORATION:

During the current exploration programme, several small trenches were located. These trenches were probably excavated during the early 1900's. In 1962 the Tasmanian Mines Department mapped the Zeehan area. In 1965 Aberfoyle Tin N.L. completed an airbourne magnetometer survey over most of the West Coast of Tasmania, and covered the Dunkley Area. Recently Comstaff Pty. Ltd. have prospected the area, but results of their exploration are unknown and unattainable.

RECONNAISSANCE GEOLOGY:

In conjunction with the geochemical sampling programme, geological mapping, on a reconnaissance scale, was conducted. Notes on rock types, dip and strikes, were collected at each geochemical sample position. Three gossans were located: on the Dunkley Track in the head waters of Parting Creek, near the Dunkley track, and ferruginous material on the mullock dump of a collapsed adit near the junction of Dunkley Creek and Western Rivulet.

A sample of the gossan in the head waters of Western Rivulet gave high tungsten values ($WO_3 - \frac{1}{2}\%$). Stream samples taken round the gossan gave only slightly anomalous tungsten values. The other gossans gave only low values for Sn, WO_3 , Cu and As. No signs of sulphides were found in any of the gossans.

Mullock from the Mines at Zeehan was used as tramway ballast - and this may be source of Pb contamination in the area.

GEOCHEMICAL SAMPLING PROGRAMME:

Reconnaissance stream sediment sampling was conducted over selected areas of E.L. 42/71. Bank samples were taken, and analysed for Sn, WO_3 , Cu and As. It was hoped that Cu, As, and WO_3 , may be useful as indicators of tin mineralisation. At the same time, streams pH's were tested - with the idea of locating any dolomitic beds in the area. These beds occur as host for pyrrhotite - cassiterite mineralisation at Renison Bell. Changes in pH may indicate the presence of dolomitic beds.

RESULTS OF THE SAMPLING PROGRAMME:

Values obtained from the geochemical sampling were generally very low and seem to indicate any mineralisation present may be at some depth below the surface, with no leakage to surface.

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- A. Tin - Background values were generally low (less than 10 p.p.m.), with a maximum value of 70 p.p.m. located on a small tributary of Parting Creek - near the western boundary of the licence. Minor Cu and WO_3 values were associated with the high tin sample.
- B. Tungsten - Background values were generally low - (less than 20 p.p.m.) with a maximum value of 175 p.p.m. from a stream draining the Dunkley Track near Dunkley Creek.

This sample may be contaminated by the Dunkley Tramway ballast.

This isolated value will need to be resampled before any reliance can be placed on the sample. Sampling of the gossan in the head waters of Western Rivulet gave high Tungsten values (WO_3 - $\frac{1}{2}\%$). Several samples in the immediate area gave low Tungsten values, but the rest of Western Rivulet gave above background values (1 - 3 x background).
- C. Copper - Only low values were recorded - the highest value being only 38 p.p.m.
- D. Arsenic - Only low values were recorded.

From the sampling data it can be seen that three low order anomalies were located:-

1. Wolfram-associated with gossan in the head waters of Parting Creek. Further work is needed in the immediate area of the gossan.
2. Wolfram-isolated value in a tributary of Dunkley Creek. This sample needs to be rechecked.
3. Tin-an isolated sample on a tributary of Parting Creek gave 70 pp.m. Sn, with low order anomalies of Cu and WO_3 . Further sampling in the area is required.

Results of the pH survey showed streams in the area have a pH of 6 - slightly acid environment. No pH anomalies were located.

GEOPHYSICAL EXPLORATION:

The 1965 airbourne magnetometer survey of Aberfoyle Tin N.L. located a series of intense anomalies over the belt of Cambrian basic and ultrabasic rocks, near Tunnel Hill.

This belt lies approximately 3 kilometers to the East of E.L. 42/71. In the Exploration Licence area, an anomaly is located over the Cambrian Sediments on the downthrown side of the Dunkley Fault.

As anomalies over pyrrhotite mineralisation are of low order - masking of any pyrrhotite derived anomalies may be expected by the ultrabasic rocks to the East. Reconnaissance ground magnetic surveys are needed to locate any anomalies that may be present.

FUTURE WORK:

During the second half of 1972 - 1973, it is recommended that the anomalies located during the original survey be resampled, and with further sampling in the immediate area of these anomalies. A metric grid system should be cut over the area of the Dunkley Fault.

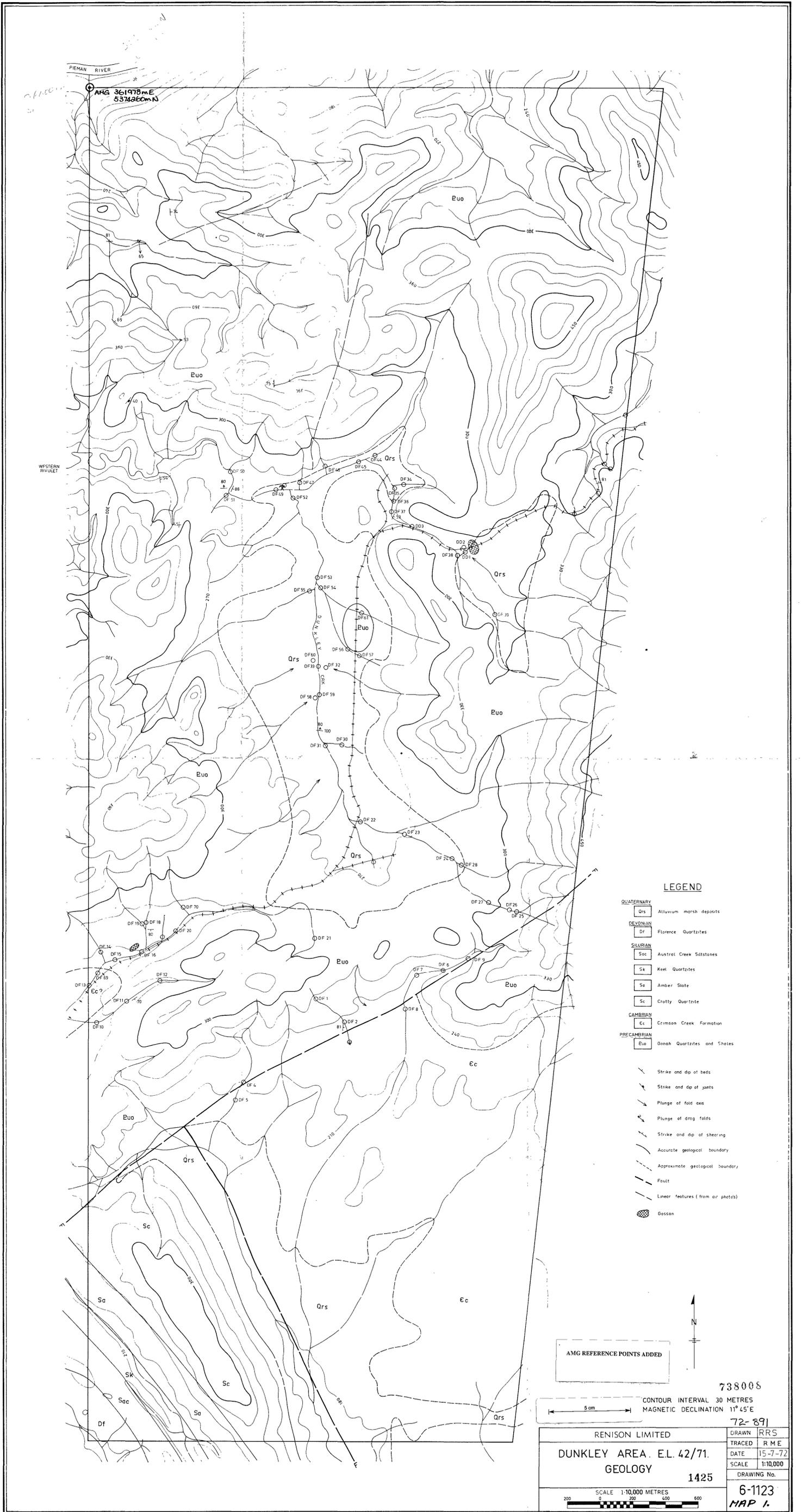
Ground magnetometer traverses should be carried out over all the grid lines using a station spacing of 30 meters. Soil sampling should be carried out at the same time as the magnetometer traverses. Any anomalies located should be covered by closer spaced magnetics and soil sampling.

An orientation survey on geochemical soil samples to determine the most useful size fractions for analysing is recommended prior to the commencement of the above programme.

If encouraging results are obtained over the anomalies, then further work in the form of IP and drilling - should be carried out.

ESTIMATED COST OF FUTURE FIELD WORK:

| | |
|--|--------|
| Line cutting 20 kilometers at \$40 per 300m. | \$2250 |
| Magnetometer survey 28 man days. | \$1000 |
| Soil sampling 28 man days. | \$1000 |
| Laboratory Costs \$2.50 per sample | \$1650 |
| Geological mapping 14 man days | \$ 500 |
| Drafting time and materials | \$ 350 |
| | <hr/> |
| TOTAL | \$6750 |
| | <hr/> |



LEGEND

- QUATERNARY**
- Qrs Alluvium marsh deposits
- DEVONIAN**
- Df Florence Quartzites
- SILURIAN**
- Sac Austral Creek Siltstones
- Sk Keel Quartzites
- Ss Amber Slate
- Sc Crofty Quartzite
- CAMBRIAN**
- Ec Crimmon Creek Formation
- PRECAMBRIAN**
- Eu0 Onah Quartzites and Shales

- Strike and dip of beds
- Strike and dip of joints
- Plunge of fold axis
- Plunge of drag folds
- Strike and dip of shearing
- Accurate geological boundary
- Approximate geological boundary
- Fault
- Linear features (from air photos)
- Gossan

AMG REFERENCE POINTS ADDED

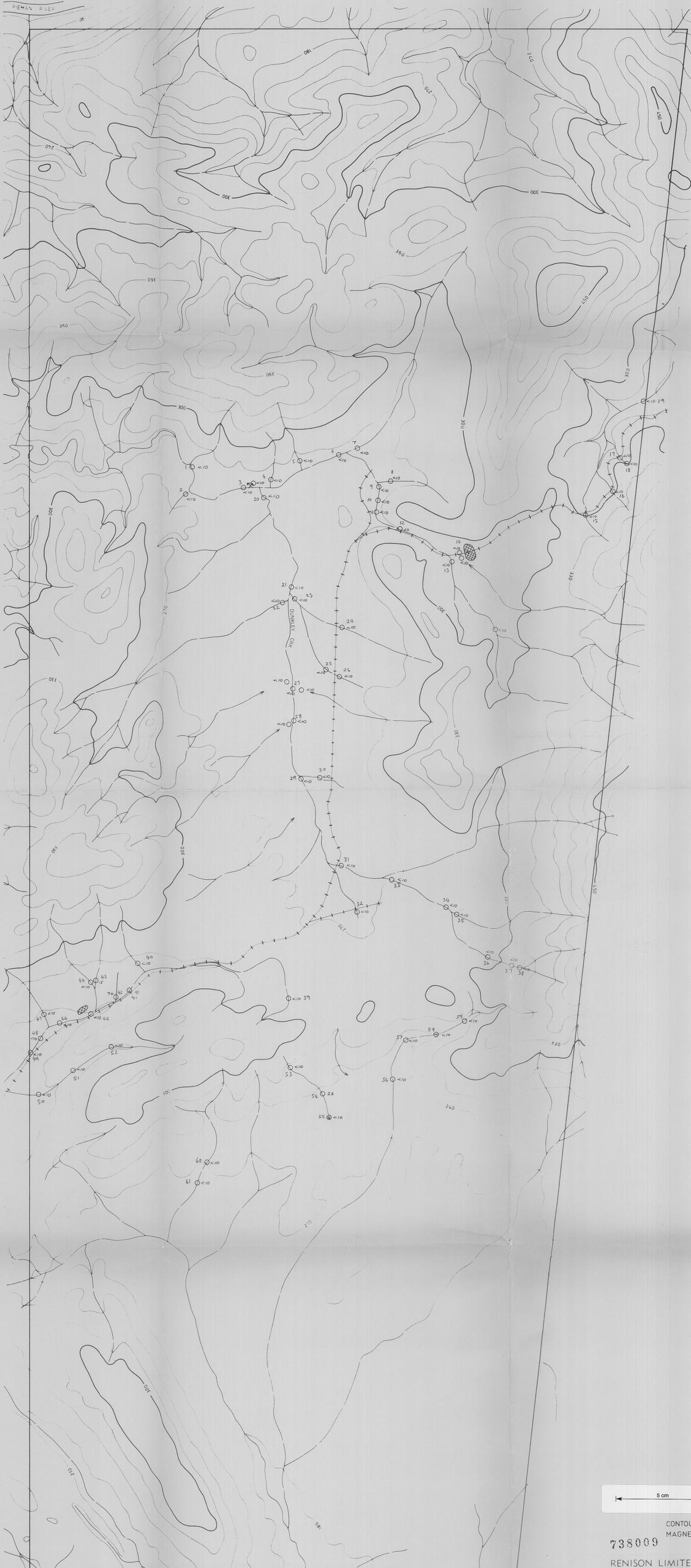


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CONTOUR INTERVAL 30 METRES
MAGNETIC DECLINATION 11° 45' E

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| | | |
|---------------------------|--|--------------------|
| RENISON LIMITED | | DRAWN RRS |
| DUNKLEY AREA, E.L. 42/71. | | TRACED R M E |
| GEOLOGY | | DATE 15-7-72 |
| 1425 | | SCALE 1:10,000 |
| SCALE 1:10,000 METRES | | DRAWING No. 6-1123 |
| | | MAP 1. |



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CONTOUR INTERVAL 30 METRES
MAGNETIC DECLINATION 11° 45' E

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RENISON LIMITED

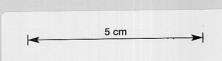
DUNKLEY AREA. E.L. 42/71.
GEOCHEMICAL SAMPLING — Sn (ppm.)

| | |
|-------------|----------|
| DRAWN | RRS |
| TRACED | |
| DATE | 23-7-72 |
| SCALE | 1:10,000 |
| DRAWING No. | |



6-2109

MAP 3.



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72-881

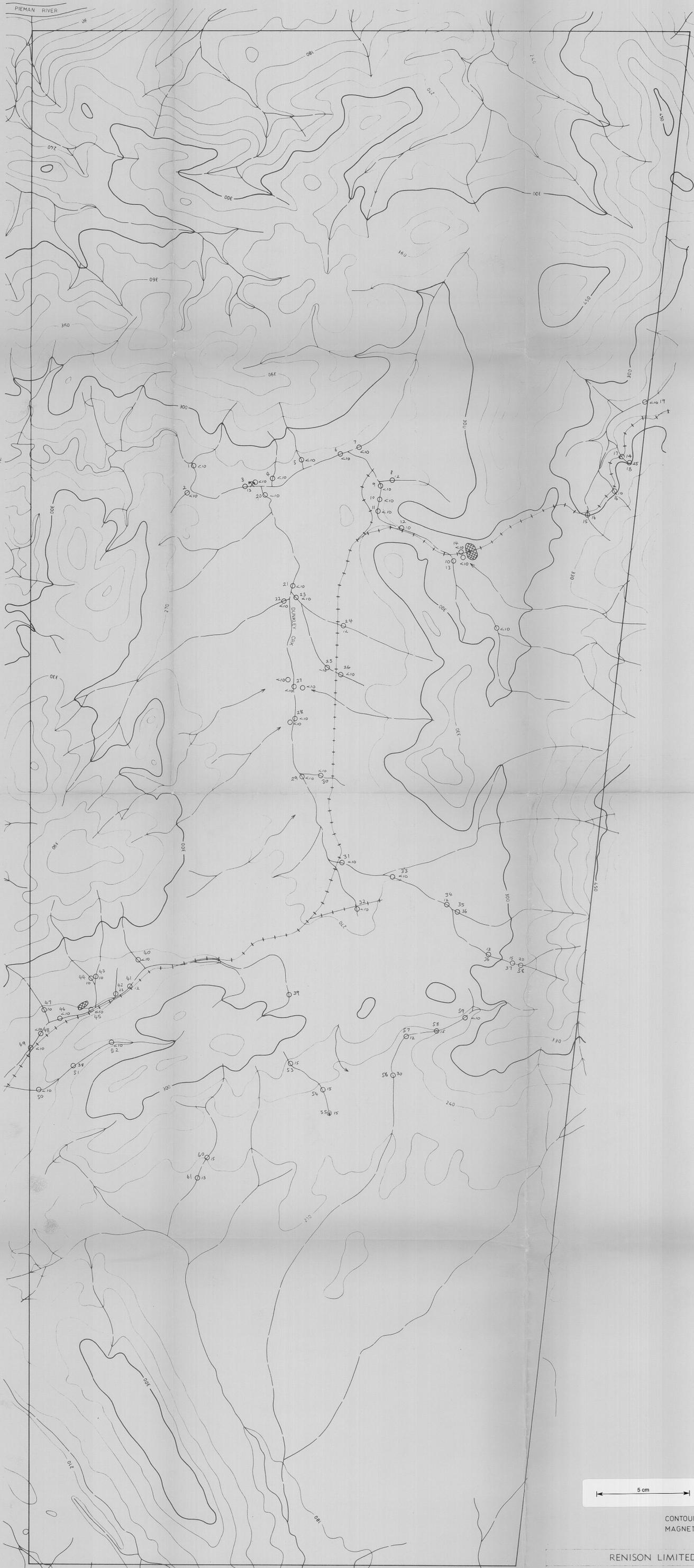
CONTOUR INTERVAL 30 METRES
MAGNETIC DECLINATION 11° 45' E

RENISON LIMITED
DUNKLEY AREA. E.L. 42/71.
GEOCHEMICAL SAMPLING — WO_3 (ppm.)

DRAWN RRS
TRACED
DATE 23-7-72
SCALE 1:10,000
DRAWING No.



6-2110
MAP 5

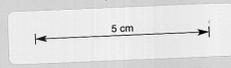
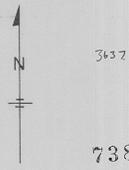
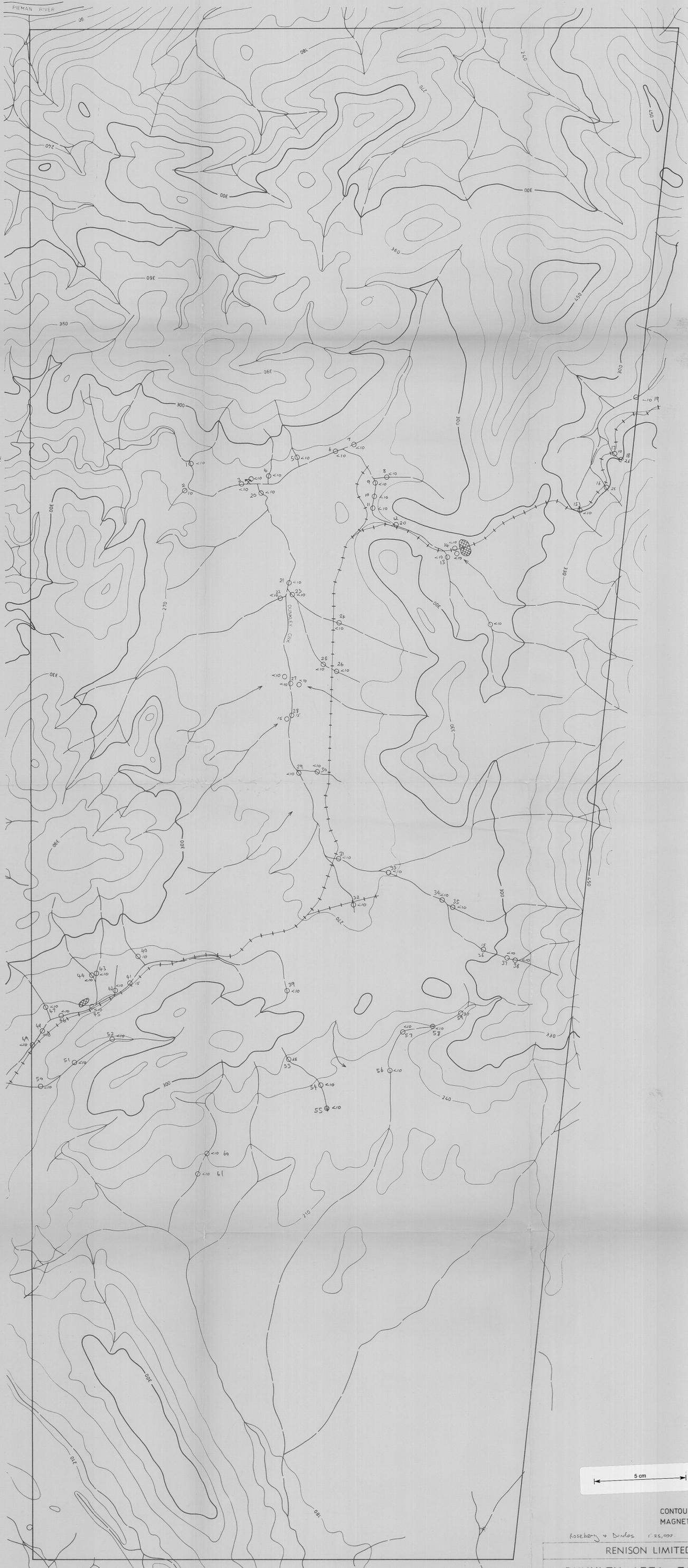


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CONTOUR INTERVAL 30 METRES
MAGNETIC DECLINATION 11° 45' E

| | | | |
|----------------------------------|--|-------------|----------|
| RENISON LIMITED | | DRAWN | RRS |
| DUNKLEY AREA. E.L. 42/71. | | TRACED | |
| GEOCHEMICAL SAMPLING — Cu (ppm.) | | DATE | 23-7-72 |
| | | SCALE | 1:10,000 |
| | | DRAWING No. | |
| SCALE: 1:10,000 METRES | | 6-2111 | |
| | | MAP 4 | |



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 738012
 72-881

CONTOUR INTERVAL 30 METRES
 MAGNETIC DECLINATION 11° 45' E

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|---------------------------------|----------|
| ROSEBERG & BUNDOS 1:25,000 | |
| RENISON LIMITED | |
| DRAWN | RRS |
| DUNKLEY AREA. E.L. 42/71. | |
| TRACED | |
| DATE | 23-7-72 |
| SCALE | 1:10,000 |
| GEOCHEMICAL SAMPLING —As (ppm.) | |
| DRAWING No. | |
| SCALE 1:10,000 METRES | |
| | |
| 6-2112 MAP 5 | |

