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Geological Mapping
of SPL 132
(Dundas)

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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MEMORANDUM

TO: Supervising Geologist W.C.M. DATE: 23rd May, 1977

FROM: Exploration Geologist NO:

SUBJECT: GEOLOGICAL MAPPING OF SPL 132 (DUNDAS) COPIES TO:

Approximately two weeks were spent mapping all access tracks and some stream beds. Since all the logging tracks are located at the Northern end of the SPL, this area has been well covered. However no work has yet been undertaken in the Southern Section.

In general correlation of rock types is good within the SPL. Two distinct series of rocks were observed, the true sediments to the West (part of the Dundas group) and volcano-sedimentary sequence to the East (part of the Rosebery group or possibly equivalent to the Primrose pyroclastics).

Eastern Volcano - Sedimentary Sequences

Units within this sequence are generally well defined, and appear to form a conformable sequence dipping west. The only exception to this is in the vicinity of White Spur Creek, where highly cleaved and contorted shales outcrop and cannot be correlated with rocks on either side.

To the East the sequence commences with a lower pyroclastic unit, mainly fine grained vitric/crystal tuff. Then passes into a lower sediment/sedimentary volcanic unit, this is composed of thick interbeds of grey to black shale and reworked tuff. Overlaying this is an upper pyroclastic unit which characterized by a thin but distinct ash flow unit near the top of this sequence. Further these volcanics seem to be thinning and becoming more reworked in appearance to the South. The upper sedimentary sequence overlies this and consits of thin well defined interbeds of dark grey to black shales, tuffaceous siltstone and sandstones and some primary tuffs. The interbeds show repetition of grading (sand, silt to shale) somewhat like thin turbidite units.

Overlaying the above sequence are the Dundas group sediments. Unfortunately the contact was not observed in the field. It is inferred that the contact is a fault and not conformable for the following reason.

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1) Apparent contortion (? drag folding) of shale near the inferred contact.

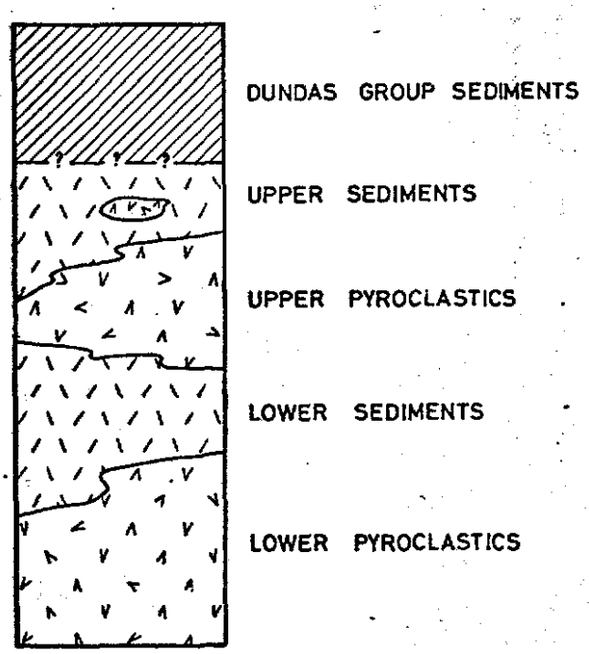
2) Distinct topographic change at the contact.

3) The inferred nature of this contact to the North.

Dundas Group Sediments

These are predominate cleaved dark grey to black slates and shale (with minor siltstone layers). They are characterized by the lack of tuffaceous material and general lack of structure. It is possible that these are tightly folded near the contact with the Eastern volcano-sedimentary unit.

SUGGESTED STRATIGRAPHIC COLUMN



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Correlation with the Hercules Mine Sequence

The units defined above in the Eastern volcano-sedimentary sequence correlate well with mapping undertaken earlier over White Spur. However good correlation has not yet been obtained from White Spur to Hercules. As this correlation is important to deciding on the economic potential of Dundas, further work will be necessary before a conclusive decision can be made.

At present the two most feasible interpretations are:-

1.) That the White Spur/Dundas volcano-sedimentary sequence does not correlate with Hercules. Probably representing part of the Rosebery group which is unconformable or faulted against the F/W rocks of Hercules.

2.) That the White Spur/Dundas volcano-sedimentary sequence does directly correlate with the Hercules host rocks but, is a more distal facies to the volcanics. This would however mean that the sediments (specifically the lower sedimentary sequence at Dundas) would have to be angularly correlated across the quartz-schist zone below the Hercules Mine. Some evidence does support this. Firstly the South Hercules mineralization lies in the line of this correlation and secondly bedding and cleavage are angularly different within the host rocks. Under this interpretation these volcano-sedimentary rocks at Dundas may be part of the Mt. Read volcanic where they interfinger with the sediments to the West.

Structure

In general the area shows a consistent moderate to steep dip to the West. Several good facing observations were made (based mainly on graded bedding, but also some good example scour marks and infilling, and bedding truncations). The upper sediments shows several good examples of intraformational slumping (slippage along incompetent beds prior to diagenisis).

Another area of highly contorted sediments exist in the White Spur Valley. However this is believed to be due to tight folding. It is also inferred from dip measurements that tight folding may occur at the Dundas group/volcano-sedimentary contact.

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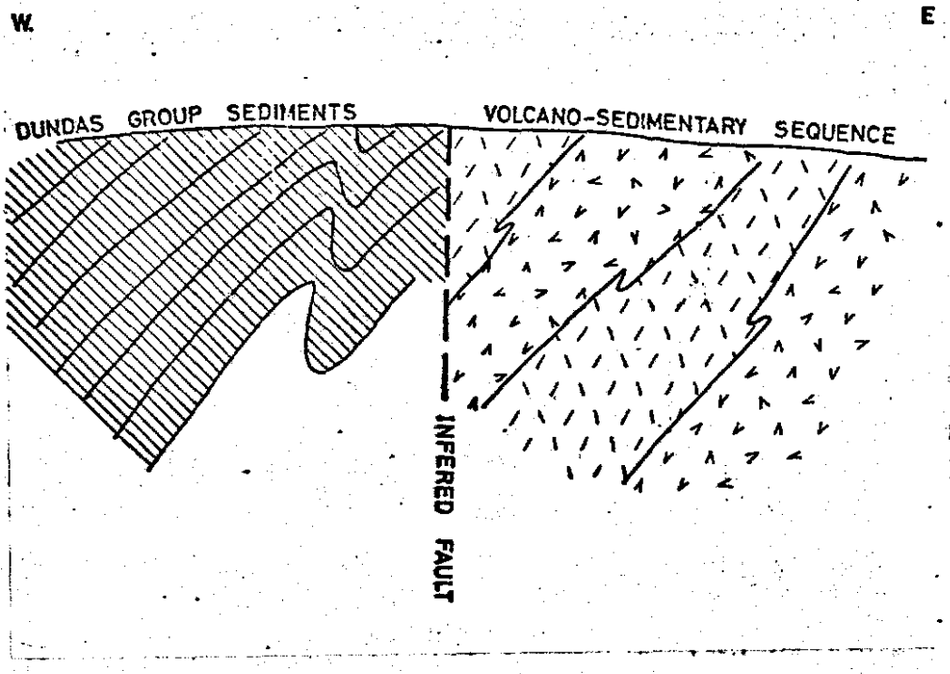
The apparent curving of units in the Eastern sequence is most probably due to topographic effects (i.e. a unit dipping uniformaly to the West will curve up into a valley draining to the East).

GENERALIZED STRUCTURE



Although it is possible that the structure is far more complex than this, the general good correlation of the volcano-sedimentary units, encourages a simple interpretation.

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Conclusions

1. The acid volcanic rocks are more extensive than previously thought, although the sequence is mainly a distal sedimentary equivalent of an active volcanic period.

2. The present interpretations of the geology are not encouraging to the discovery of a suitable 'host rock' unit for massive sulphide deposits.

3. Further work is needed in correlation of units from White Spur to the Hercules Mine area.

N.H. Hanson

NH:dc

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SPL. 132

ROCK TYPES

DUNDAS GROUP SEDIMENTS
- BLACK SHALES

EASTERN VOLCANO-SEDIMENTARY SEQUENCE
- SHALE & SILTSTONE
- SEDIMENTARY VOLCANICS (REWORKED TUFF)
- TUFF

ESTIMATED POSITION OF TRACKS ONLY

SHEET LAYOUT

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TOPOGRAPHIC DETAIL FROM STEREO PLOTS BY AUSTRALIAN AERIAL MAPPING PTY LTD

ELECTROLYTIC ZINC CO OF A'ASIA LTD

PROJECT DUNDAS TAS.

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DATE 28/10/76

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