REVIEW OF THE SUMMER EXPLORATION PROGRAMME UNDERTAKEN IN E.L.2/63, WEST COAST, TASMANIA, 1968 - 1969

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1. INTRODUCTION

The summer exploration programme in E.L. 2/63 for 1968-1969 was directed principally with two aims in mind. These were:

(a) locating conformable tin-copper deposits in a large belt of Cambrian sediments in the western part of the exploration licence.

(b) locating nickel-copper deposits in the Wilson River Ultramafic Belt.

Four areas were examined in considerable detail and the results obtained were tied together to give an overall picture of the geology of the exploration licence (see L-69-1). These areas, where camps were located, were at Mt. Lindsay, at Camp 30, on the Wilson River, and on Ahearnes Creek. Work in the four areas consisted of line cutting, surveying, geological mapping, geophysics and geochemical soil sampling. Diamond drilling was undertaken at Mt. Lindsay and at Camp 30. In addition an airborne radiometric survey was conducted over potentially mineralised areas in the exploration licence and along the granite contact to the north.

(i) Previous Work in E.L. 2/63

Previous work in the exploration licence consisted of geological investigations and diamond drilling in the Mt. Lindsay area. A summary of this work has been given by Jessup (3). A programme of reconnaissance mapping and geochemical soil sampling was undertaken in the Camp 30 area during 1967-1968 and was described by Jessup and Chenhall (4). Some reconnaissance mapping was done during the summer of 1967-1968 in the Wilson River area and the Ahearnes Creek area. This has been reported by Eshuys and Etheridge (1) and Jessup and Chenhall (4). In addition in 1965 an aeromagnetic survey was flown over a large part of the West Coast as well as covering the exploration licence. The results of this survey have been interpreted and commented upon by Zarzavatjian (8).

(ii) Personnel

The personnel for the summer exploration programme included 1 geologist and 9 students. These students, whose work was generally of a high standard, consisted of 1 honours graduate in geology, 2 graduates in geology, 2 graduates in geophysics and 4 second year geology students. An apprentice surveyor

1 Geol Grads
2 Geophy Grads
4 students

and 4 field hands comprised the rest of the personnel. The party was divided into four groups for the work at the various camps. These camps were supplied and their activities co-ordinated by a field supervisor based in Waratah.

(iii) Access

Access to all camps was by helicopter from Renison Bell or by walking. A four wheel drive vehicular track had been constructed part of the way to the Pieman River from Renison Bell. During the year this track was upgraded and extended to the junction of the Pieman and Wilson Rivers. A flying fox across the Pieman River was installed by the Dept. of Works, but this did not function satisfactorily. A good walking track exists from the Pieman River to Mt. Lindsay, and during the programme this track was cleared of all fallen timber. Access by walking to Camp 30 and Ahearnes Creek is more difficult as the Wilson River has to be forded and tracks on the other side of the river are in a poor state of repair.

Communication between Mt. Lindsay, Camp 30 and Waratah was by means of A.W.A. Forestphone Radio Transceivers. These proved reliable and gave good service.

2. MT. LINDSAY

Exploration at Mt. Lindsay consisted firstly of follow up work to locate drilling targets on a magnetic anomaly (Anomaly 2) outlined by Eshuys and Etheridge (1) and Jessup (2). This work was followed by drilling and by examination of other magnetic anomalies.

The geology and exploration of the Mt. Lindsay area has been fully dealt with by Jessup (3) and only a brief summary is given here. Seven holes, totalling 2,896 ft., were drilled in the Anomaly 2 horizon. Wide zones of lode, strongly mineralised with actinolite, magnetite, and pyrrhotite were encountered. However, these contained very low values of tin and only traces of copper and tungsten. No increase was made to the established reserves of 362,000 tons of 0.85% tin.

Considerable exploration was undertaken over known magnetic anomalies. This involved over 35,000 ft. of line cutting, 80,000 ft. of magnetometer surveys, 50,000 ft. of self potential surveys, and the assay of over 1,200 geochemical soil samples. In addition considerable geological mapping and soil surveying was carried out.

As a result of this work the structure and stratigraphy of the Mt. Lindsay area has been re-interpreted. Several areas of interest have been defined that warrant further investigation. Scheelite has been recognised for the first time in the Mt. Lindsay mineralisation.

3. WILSON RIVER AREA

Exploration in the Wilson River area consisted of geological mapping, with some magnetometer surveys, and some limited geochemical soil sampling. Exploration was conducted in this area for two reasons. Firstly work by Eshuys and Etheridge (1) showed that the rocks in this area were at a similar stratigraphic horizon to rocks in the environs of Renison Bell. Secondly pyrite with other minor sulphides had been located in a few places, notably under the old bridge across the Wilson River.

Results of the work undertaken in the Wilson River area have been described by Roetz, Cameron, and Allen (7). No indications of mineralisation of any importance was found and it is recommended that no further work be done in this area.

4. CAMP 30

Exploration in the Camp 30 area consisted of geological mapping of the sediments to the west of the Wilson River Ultramafic Belt, and detailed geological mapping of the geochemically anomalous areas described by Jessup and Chenhall (4). Further geochemical sampling was undertaken and five shallow diamond drill holes were completed.

Results of the exploration have been described by Jordan (5). The five drill holes, totalling 150 ft. of drilling, intersected weathered and unweathered serpentinite. No sulphide minerals or oxidized nickel minerals were identified. Although some values of up to 2% nickel had been located in previous work the average grade of the core obtained was only 0.63% with values diminishing at depth.

The results of the investigations to date offer no encouragement for economic deposits of nickel contained either in oxidized material or as primary nickel sulphides. It is recommended that no further work be done in the area.

5. AHEARNES CREEK AREA

The geology of the Ahearnes Creek area has been described by Overton and Jordan. Initial interest in this area was due to the occurrence of disseminated sulphides reported by Jessup and Chenhall in gabbros and rodingites along the western contact of the Wilson River Ultramafic Belt. Work this year consisted of geological mapping along creeks across the contact and detailed mapping of the sediments to the west of the ultrabasic rocks. No mineralisation of any importance was disclosed although not much attention was paid to the mineralised gabbros.

6. DISCUSSION

Work at Camp 30 and at Ahearnes Creek during this programme did not disclose any nickel sulphides. The geochemical nickel anomalies at Camp 30 are believed to be largely due to sampling a dissected laterite surface at various horizons. However the picture has been complicated to some extent by the presence of transported overburden. Nickel and cobalt, because they tend to be concentrated in parts of a lateritic profile, are poor geochemical indicators in this area. More use should be made of copper, and arsenic if further exploration is undertaken over this ultrabasic belt of rocks.

The only areas where sulphides have been found in the Wilson River Ultramafic Belt are along the western contact. The eastern contact is strongly faulted; and although some faulting is believed to have also occurred on the western contact, disseminated mineralisation has been found in gabbros and rodingites at Ahearnes Creek and on the Harman River. These rocks, which are very similar to those in the area of the Cuni nickel mine near Zeehan, are well developed north of the Wilson River.

Geological traverses have been carried along tracks and down all major creeks flowing into the Wilson River. Rock types found consist mainly of a very monotonous sequence of chocolate and grey shales and greywackes. Because of the poor outcrop, structural complexity and absence of a marker horizon, it is impossible to propose a stratigraphy for the rocks in the lower reaches of the Wilson River. The rocks appear to differ from the established stratigraphic sequence at Mt. Lindsay because of the absence of volcanics and quartzites; The lithology in the Wilson River is similar to that of the Neagle Beds, and Salmon Creek Beds.

Access to the area is unsatisfactory, though at the present time the construction of a road to Mt. Lindsay is not warranted. However before any further drilling is undertaken there, a road will have to be built.

7. CONCLUSIONS AND RECOMMENDATIONS

1. Drilling at Mt. Lindsay has proved disappointing although several areas of interest warrant further investigation.

2. Drilling at Camp 30 did not disclose any nickel sulphides and it is recommended that no further work be done in the area.

3. No mineralisation of consequence was disclosed at either the Wilson River or at Ahearnes Creek and it is recommended that no further work be done in these areas.

4. A large portion of the Wilson River Ultramafic Belt has not been examined. Further work is warranted in the Harman River area especially along the western contact.

5. An examination should be made of the possibilities of the occurrence of scheelite in contact metamorphosed limestones (skarns) in the northern part of the exploration licence.

6. Access to Mt. Lindsay is unsatisfactory, but the area does not warrant the construction of a road at this stage.

7. An exploration programme based on students has proved very satisfactory and it is recommended that students be employed in any future programmes.

REFERENCES

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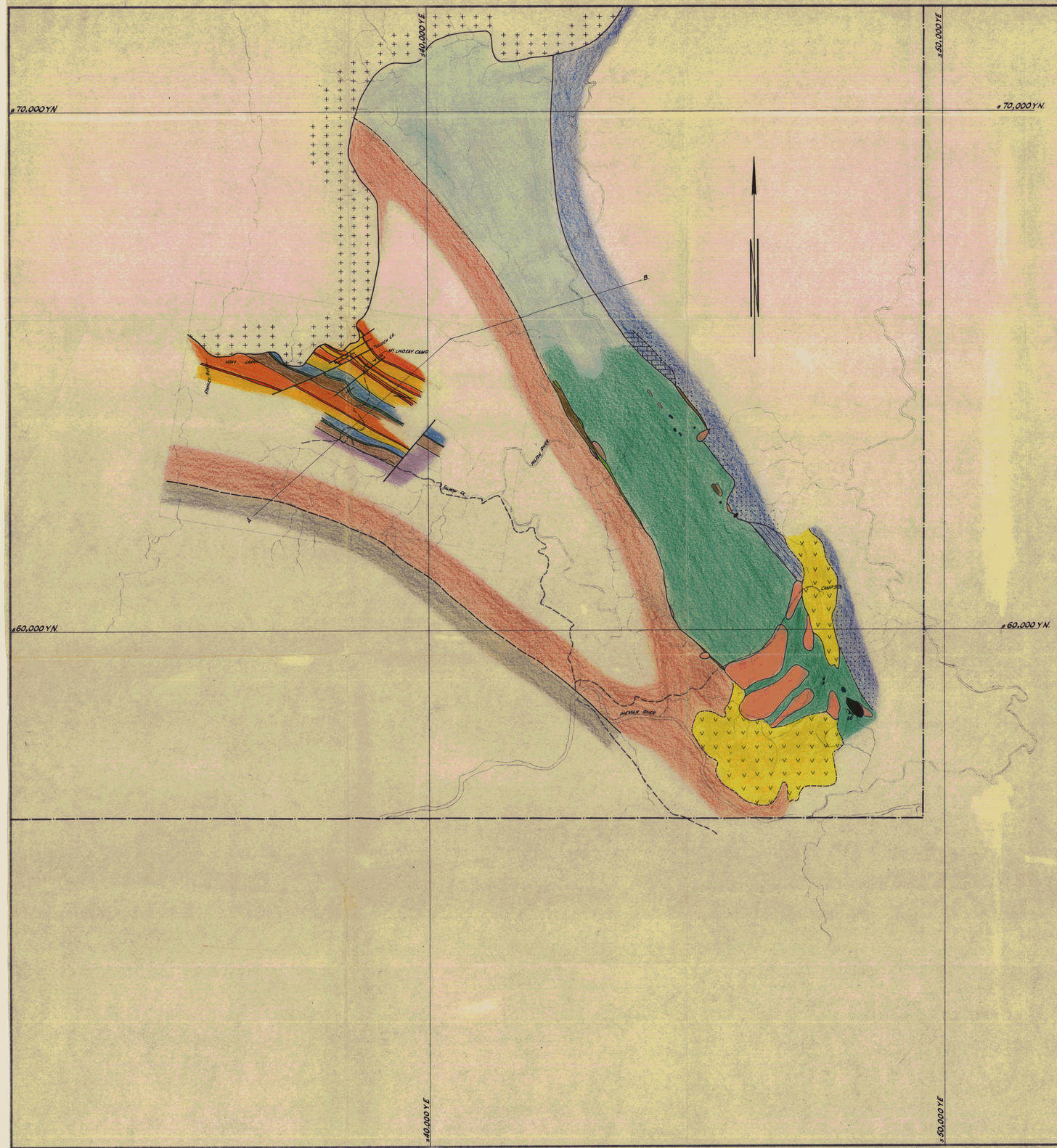

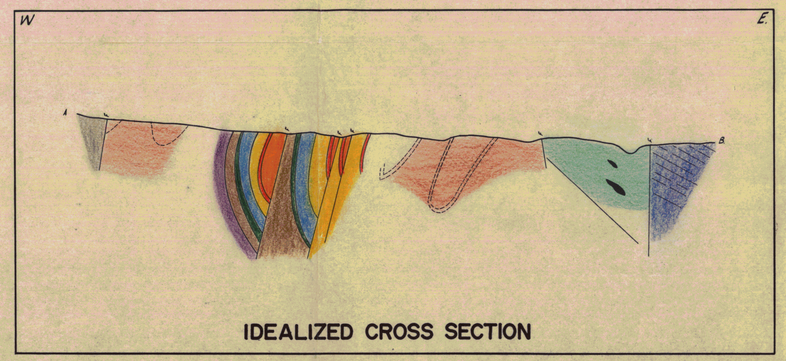

IDEALIZED CROSS SECTION

LEGEND

PLEISTOCENE	V	GLACIAL MORAINE
MIOCENE		LATERITE
DEVONIAN		FLORENCE SANDSTONE
SILURIAN		LIMESTONE AMBER SLATE GREY SHALE UNDIFFERENTIATED SILURIAN & DEVONIAN SEDIMENTS
CAMBRIAN MT. LINDSAY AREA		PARSONS HOOD BEDS O'BIENS FORMATION TULLOCH FORMATION MT. LINDSAY FORMATION ALSTON VOLCANICS NEAGLE BEDS SALMON CREEK BEDS UNDIFFERENTIATED (?) CAMBRIAN SEDIMENTS
PRE-CAMBRIAN		OONAH QUARTZITE
IGNEOUS ROCKS		
DEVONIAN-CARBONIFEROUS	+	MEREDITH GRANITE
CAMBRIAN		SERPENTINITE PYROXENITE AMPHIBOLITE BASIC IGNEOUS ROCKS UNDIFFERENTIATED BASIC & ULTRABASIC ROCKS.

c39008

1/2 mile 0 1/2 mile 1 mile
SCALE OF FEET

5 cm

ABERFOYLE TIN DEVELOPMENT PARTNERSHIP

INTERPRETIVE GEOLOGICAL MAP AND SECTION
MT. LINDSAY-WILSON RIVER AREA
TASMANIA

SURVEY	–	/ /
GEOLOGY	– A.JESSUP. ET.AL.	– / 68-69.
ENGINEERING	–	– / /
DRAWN	– CB/AJ.	– 1 / 5 / 69.
TRACED	– CB/NW.	– 1 / 5 / 69.
REFERENCE	–	
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