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B.H.P. Co. Ltd

HUSKISSON RIVER TASMANIA

REPORT ON RECONNAISSANCE GEOLOGY AND STREAM SAMPLING, FOR

THE BROKEN HILL PROPRIETARY CO LTD, OCTOBER 1980

OPEN FILE

By R Follock.

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THIS REPORT IS A DUPLICATE OF APPENDIX 3 OF TCR 82-1704

1. INTRODUCTION

The lease of 17 km² is centred on the Huskisson River a tributary of the Pieman, 15 km north of Renison Bell in Western Tasmania.

Access to the area is via a road system developed by Comstaff from the Boco siding on the Murchison Highway, approximately 12 km to the eastern lease boundary. The last few kms of the road are passable only to 4WD vehicles. In addition, an all weather logging road provides access to the northern end of the lease in the vicinity of Ross Creek, from the Hatfield River on the Murchison Highway.

The area has been previously prospected. Flagging tape was frequently seen in streams, with the exception of the Webbs Creek system. No sign of gridding or other follow up work to this stream sampling was evident.

The area is covered by dense temperate rainforest dominated by myrtles, sassafras and mature Eucalypts. Generally the understory is limited to ferns, and foot access is relatively easy.

Two principal geological units were recognized: 1) the Cambrian to Precambrian? (a possible correlate of the Crimson Creek Group); 2) Ordovician to Silurian sediments (including limestones) of the Huskisson Syncline. The Devonian Meredith granite outcrops approximately 2 - 3 km to the north of the northern lease boundary.

2. SAMPLING

A total of 59 stream sediment samples were taken, giving an overall sampling density of 3.5 per km². The optimum of 5 per km² was not attained due to the extent of recent gravel cover in the Webb's Creek Valley.

Samples Hus 1-32 were sieved to -20 mesh, and Hus 33-59 to -40 mesh. The latter to reduce weight for easier kyak transport. Sieves and collecting dishes were nylon and plastic.

Sample locations were marked with:

- orange flagging tape labelled e.g. BHP 02
- permatags labelled e.g. 02 Oct. '80
B.H.P.

Sample bags marked e.g. EL 32/79
02

Rock sample bags were marked with the lease number, the closest stream sample and grid co-ordinates of the Australian Map Grid (see appendices).

3. GEOLOGY

A) Cambrian - Precambrian

The oldest stratigraphic unit in the area is composed of black - grey silt-stones and micaceous quartzites which are most likely lower Cambrian to upper Precambrian in age. The sediments dip steeply, are frequently sheared, and the quartzites are intensely quartz veined in places.

These sediments form the western limb of a north trending anticline which runs the full extent of the eastern lease boundary.

To the west the sediments are probably conformably overlain by pink to grey, poorly bedded tuffaceous greywackes and siltstones, a correlate of the lower Cambrian Crimson Creek Argillite. Occasional outcrops of grey to red cherts occur near the base of this unit. Fine grained, weakly magnetic gabbroic rocks occur as thin sill like bodies less than 5m thick in the greywackes and siltstones. These are the only igneous rocks found in the E.L.

The Crimson Creek rocks may be contained in a northerly trending syncline 1.5 km wide, the western edge of this structure is exposed in the southern central part of the E.L.

There is a marked difference between vegetation types on the siltstones and quartzites, and the siltstone and greywackes. The soils on the latter are deep, red-brown clays, supporting a dense cover of myrtles, sassafras, leatherwoods and Eucalypts with a fern dominated understory. Quartzite derived soils are of poorer quality, the dominant trees are as above with the addition of Celery-Top pines and Cheese Woods. The understory is more diverse and thicker e.g. horizontal, native plum, various epacrids and cutting grass.

B) Ordovician - Silurian

To the west of the Huskisson River a quartz pebble conglomerate and sandstone unconformably overlie Cambrian greywackes. These basal Ordovician sediments are less than 10m thick in observed exposures, but appear to persist as a low strike ridge throughout the lease. Dips are 45-50° to the west.

A correlate of the Gordon Limestone 400-500m thick conformably overlies the basal quartzose sediments. The broad gravel filled valley of Webbs Creek is confined to this unit. Outcrops are poor, except in the lower 2 km where dips are steep to overturned. Typically, the limestone shows marked differential weathering between pure limestone and silty and dolomitic bands. Calcite veining and fossiliferous horizons are common.

The limestone is overlain to the west by steeply dipping sandstones with minor carbonate horizons, these may be Silurian sediments. They are the upper most stratigraphic unit in the lease running sub-parallel to the western boundary.

4. MINERALIZATION

Pyrite and minor quartz veining was the only mineralization observed in the lease. This was confined to the Cambrian and Precambrian rocks particularly the dark siltstones. Some massive pyrite was found in quartzites in Ross Creek just to the north of the licence (see appendices).

At some stream sample locations, abundant black heavy minerals were seen e.g. samples 21 and 22. This was tentatively identified as chromite.

It is possible that higher tin-tungsten assays may occur in Webbs Creek, a large component of the sediment in this system has been derived from a granite source outside the licence area. Samples 42, 43, 51, 54 are in this category. At sample location 51, quartz-tourmaline fragments are present.

APPENDIX 1ROCK DESCRIPTIONS AND LOCATIONS

<u>Co-ords</u>	<u>Stream Sample No.</u>	<u>Description</u>
5386 000N 373 200E	08 - 09	Quartz vein fragment locally derived, may have been pyritic.
5386 070N 373 030E	09 - 10	Silicified cherty gravels - Tertiary?
5386 830N 372 600E	11	Gabbro? Dark grey-green, fine grained, crystalline basic rock with disseminated pyrite and on joint faces. Weakly magnetic.
5387 200N 372 630N	14 - 15	Tuffaceous greywacke and siltstone pink-brown, alternating layers of silt and greywacke 1 cm thick the latter containing fragments of brown siltstone.
5387 180N 372 850E	15	Tuffaceous greywacke. Fine grained grey-green and laminated dark grey-black siltstone.
5387 100N 373 350E	18	Siltstone black, sheared with slickenside surfaces and minor quartz veining. Quartzite black, micaceous, occurring as thin beds in siltstone. Thread like pyrite and quartz veining.
5385 800N 372 100E	19	Black-dark grey siltstone with minor quartz veining and pyrite. Tuffaceous greywacke. grey-green quartzose with siltstone fragments <1 mm.
5385 450N 372 100E	23	Gabbro fine grained, slightly altered, weakly magnetic.
5387 800N 373 450E	25	Chert white to grey, bedding not apparent, strongly jointed.
5387 900N 373 250E	26 - 27	Siltstone grey-brown.
5388 470N 372 530E	29	Volcanic or greywacke? Fine-medium grained, grey-green with abundant, pale green lathe like crystals. Outcrop massive, irregularly jointed.

<u>Co-ords</u>	<u>Stream Sample No.</u>	<u>Description</u>
5388 700N 372 550E	30 - 31	Siltstone grey-black laminated with thin pyrite bands. Greywacke fine grained.
5380 000N 373 350E	36	Quartzite pale grey, medium grained poorly sorted, with dark siltstone shreds. Large (10 cm) irregular pyrite inclusions.
5389 650N 371 600E	37 - 38	Conglomerate composed of quartz pebbles <2 cm, subrounded in a coarse pink sandstone matrix. Quartzite medium grained poorly sorted.
5389 650N 371 570E	37 - 38	Geothite? crust on stream gravels.
5389 030N 373 000E	47 - 48	Gabbro slightly magnetic. Siltstone dark, thickly bedded with pyrite cubes.
5385 650N 371 400E		Limestone fine grained, dark grey with possible sandy dolomitic bands.
5386 230N 371 100E	58	Quartzite dark grey, fine, well bedded.

APPENDIX 2BOTANICAL SPECIES LIST

<u><i>Nothofagus cunninghamii</i></u>	Myrtle
<u><i>Atherosperma moschatum</i></u>	Sassafras
<u><i>Eucryphia lucida</i></u>	Leatherwood
<u><i>Phyllocladus asplenifolius</i></u>	Celery Top Pine
<u><i>Phebalium squameum</i></u>	Cheese-wood
<u><i>Anodopetalum biglandulosum</i></u>	Horizontal
<u><i>Cenarrhenes nitida</i></u>	Native Plum
<u><i>Gahnia</i></u>	Cutting Grass