AUSTRAL EXPLORATION PTY. LIMITED

REPORT ON THE PROSPECTING OF ALLUVIAL TIN AREAS AROUND HORSESHOE CREEK, NORTHERN TERRITORY.

6TH JUNE 1966 TO 29TH AUGUST 1966.
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REPORT ON THE PROSPECTING OF ALUVIAL TIN AREAS
AROUND HORSESHOE CREEK, NORTHERN TERRITORY.

INTRODUCTION

This report concerns the prospecting of a number of shallow alluvial tin deposits in the Horseshoe Creek Tin Field, Northern Territory, carried out by a party under the supervision of Mr. R.C. Clare between the 5th June and the 29th August, 1966.

The areas are described in reports of inspections by A.G. Palmer (25th August, 1962) and the writer (30th October, 1964) and were held under Authorities to Prospect Nos.1181 and 1390 by Austral Malay Tin Limited on behalf of this company.

PROSPECTING

The areas consist of a large number of shallow alluvial deposits spread out over a wide area in the Horseshoe Creek Tin Field. Previous inspections revealed coarse stony wash overlain by several feet of silt, and carrying, where exposed, interesting though erratic tin content. It was hoped that a collection of individually small deposits might be shown to contain a worthwhile yardage of wash that could be profitably mined and treated at a central plant.

As the information already gained by inspections was limited, initial drilling was of a scouting nature to determine whether accurate valuation was warranted. As will be seen below, no work beyond the scouting stage was attempted.

Drilling was carried out using a Calweld earth drill belonging to the company, with a 2' diameter bucket. This proved capable of handling the coarse, angular wash except in 4 out of the 153 holes drilled. In these cases the holes were reamed to 3' diameter, allowing a man to descend and break the wash by hand drilling and firing with small charges of explosives.

Total depth drilled in the eight (8) areas tested was 1,350 feet.

The method of sampling employed for this scout drilling stage was as follows. Material from each hole was stacked in two separate heaps corresponding to overburden and wash and the depth of each class of material was logged. Panning of a large number of small samples established that only the coarse gravels contained any appreciable tin content and this material only was classed as wash and valued.

On the completion of a hole, the heap of wash was thoroughly mixed by shovel and a sample of a level prospecting dish removed by successive quartering. This was panned at the drill site, tailings from the first panning being retreated and the combined concentrate cleaned, dried and weighed. From this weight values for wash and full depth of the hole were calculated.

As a check on this method a sample from one hole was valued first by this method and then by treating the whole core (except the prospecting dish split out as above) in the mobile alluvial bulk sampling plant. Results were calculated at 5.1 and 5.2 lbs. per cubic yard respectively, which was considered sufficiently close agreement for the scouting stage.

NATURE OF GROUND

This was similar throughout with brown dry silt overlying coarse angular stony wash which at Emerald Creek was predominantly of quartz, in other areas of shale. Bottom in all cases was soft grey shale. The cassiterite recovered was of medium to coarse
grain size, subangular in shape and ruby, black and amber in colour. There was little other heavy mineral.

RESULTS

In all, eight localities were tested. Depths and values of all bores are shown on Plans Nos. FC1 to PC7 attached.

It will be seen that, although a number of bores show an interesting tin content, values were erratic and no sections showed average values approaching an economic grade.

The deposits drilled represent only a small proportion of the total alluvium in the area held under Authorities to Prospect but were selected for proximity to known sources of tin and were considered to be the most promising sections.

As the results obtained offered so little encouragement, no attempt was made to test the remainder of the field.

Values shown have not been corrected for assay but, from field tests, it was estimated that very little correction would be required.

CONCLUSIONS

It is considered that none of the areas tested would support a profitable mining operation of reasonable size under present conditions.

COST

Total field expenditure on the areas amounted to $12,468.

T.J. NUNAN.
### Summary of Boring Results

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<th>Depth (ft)</th>
<th>0</th>
<th>0.01</th>
<th>0.02</th>
<th>0.03</th>
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<tbody>
<tr>
<td>Depth (m)</td>
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<td></td>
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</tr>
<tr>
<td>Value (in ft)</td>
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</tr>
<tr>
<td>Value (in m)</td>
<td>0</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note:**
- U.S. = Unsubstantiated.
- N.S. = Not sampled.
- Leg 5 of drill cores.

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**Austral Malay Tin Ltd.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Drawn</th>
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<tbody>
<tr>
<td>RC1A</td>
<td>Emerald Creek</td>
<td></td>
</tr>
<tr>
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<td>Northern Territory</td>
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</tr>
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<td></td>
<td>Plan Showing: Position &amp; Numbers of Bore and Summary of Boring Results</td>
<td></td>
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**Date:** 9-9-66

**Scale:** 1:4,800