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NOTES ON THE GREAT NORTHERN PLAINS ALLUVIAL TIN PROSPECT, TASMANIA.

1. This brief evaluation was undertaken at the request of Mr. D. B. Clarke, with a view to recommending an exploration programme on EL 19/77.

2. The reports available in the office of SANTOS Ltd. regarding previous mining operations and exploration programmes are mostly concerned with areas outside the boundaries of or exempted from EL 19/77. However, they have a direct bearing on the course of action that should be taken.

3. Regional Geology

The source of the alluvial tin deposits in the area is the granites of the Blue Tier batholith to the south and southeast of the area. There are several deep leads that start near the edge of this batholith and trend initially in a northwesterly to northeasterly direction. These possibly merge to some extent and turn north west towards the mouth of the Ringarooma River. It has been suggested that the drainage pattern has altered several times during the period of deposition of alluvial deposits, resulting in a wide distribution of alluvial tin mineralisation.

4. Previous Mining Operations

There have been many small scale sluicing operations along the southern edge of the Great Northern Plain to the north of the Ringarooma River. There is little information regarding production from these mines. It seems they were sited wherever physical conditions were conducive to low cost sluice mining, and thus were presumably of rather low grade.

It appears that these mines have long since ceased operation and in more recent years the valley of the Ringarooma River was dredged by Storeys Creek Tin N.L. in the general area of these old sluice mines. There is no data available on the grade of ground mined by this dredge.

5. Previous Exploration

There have been many exploration programmes conducted in this area over the last 80 years. This has been mostly drilling, but some geophysical work has been done in more recent years. The drilling programmes have been unco-ordinated and generally unreliable, and for most the records are poor or do not exist.

Details of some of these programmes are as follows:

(a) Utah (1966)

Initially, geophysical investigations were employed in an attempt to define areas of alluvial sedimentation and valleys in the bedrock. These failed, and widespread auger testing was tried, but results were far from definitive. Drilling was then undertaken, initially with a Failing 5500 rotary rig which was a failure and then with a cable tool rig. The only part of this extensive programme that is of interest here is a series of auger

5. (a) (cont.)

probing with follow up drilling in the Dugards-Boobyalla region. Apart from some holes adjacent to the old Dugards mine pit, only three holes showed significant tin values. Tin values were very erratic and no areas of good alluvial tin concentrations were discovered.

(b) Tasmanian Mines Department (1967)

Scout boring was undertaken in the area of Fosters Marsh using a churn drill and following correct alluvial drilling procedures. An area to the east of Fosters Marsh was calculated to contain about 8m.cu. yards at about 0.23 lbs/cu.yard of SnO₂. The tin values occurred in wash, with the best values near bedrock. Considering the patchy nature of the mineralization, a more detailed drilling programme in this area would very likely show the grade of this deposit to be somewhat lower than that calculated, although the volume of the reserves may be considerably higher. This deposit may possibly be an extension of the Scoloch and Macgregor deep leads, and is open-ended at the north and south.

(c) Ocean Mining (1966-67)

Seismic exploration in the Ringarooma Bay disclosed a possible submerged Pleistocene channel of the Ringarooma River. This was later confirmed by drilling. There is no record of this drilling available but it seems that a reserve of about 30m.cu.yards at 0.37 lb./cu. yard was indicated. This is open-ended to the north, where water depths become excessive. Tin values occur along a distinct linear trend extending seawards from near the current mouth of the Boobyalla Inlet.

(d) Wanex (1972-73)

Closely spaced drilling in the vicinity of the Macgregor workings showed mineralization to be very patchy and rather low grade. A reserve of about 2 million cubic yards at about 0.32 lb./cu. yard has been calculated in the region of the Mcgregor lead extending north from the Mcgregor workings. This seems to have been incorrectly calculated, however, as only holes with a high value were used with low grade holes in between ignored. Grades in the area are therefore probably much lower than calculated. There are no records of the drilling method used or the reliability of the results.

(e) Preussag (1979)

It was desired to prove up a large volume of ground averaging 0.30 lb./cu. yard, and the Fosters Marsh area was chosen as having the best prospects. Twenty three holes were drilled using a reverse circulation rig, selected probably for expediency of drilling with a sacrifice in the reliability of the results. Tin values were found in a shingle wash overlying soft weathered bedrock and overlain by barren sand, silt and clay. This is in general agreement with the results obtained by the Mines Department drilling in the same area. Only five holes gave values of 0.10 lb./cu. yard or better, with the best results in the same general area as that outlined by the Mines Department.

*bedrock**Relative unknown
? continuation?*

CONCLUSIONS

Extensive drilling on the Great Northern Plains have shown that alluvial tin mineralisation is very widespread, but of low grade and very patchy. In only one area is there a record of close spaced drilling viz. the McGregor lead area by Wanex. This has shown the mineralization on a fine scale to be very patchy, and this may well be the pattern for the whole area. If this is the case, then it will be difficult to locate even relatively small deposits of high grade ground. This situation has probably been brought about by the varying nature of the drainage pattern. The Ringarooma River, unconstrained by valley walls, has wandered over a wide area of the Great Northern Plains, not staying in one place for a length of time sufficient to concentrate alluvial tin of a grade and volume sufficient for economic exploitation. To the north of the area in Ringarooma Bay, however, this situation may not apply. The submerged valley of the Ringarooma River is apparently well defined, and reasonable tin values have been found in it. The tin in the bay probably came from the granites of the Blue Tier batholith either directly or from re-working of the alluvial tin onshore. If this valley could be traced onshore values should be higher than offshore being closer to the source.

RECOMMENDATIONS

In order to detect any onshore extension of the alluvial valley detected offshore by Ocean Mining, it is recommended that a line of holes be drilled in a NE direction in the vicinity of the mouth of the Ringarooma-Boobyalla Rivers. It should be sited in the field, giving regard to ease of access for the drill rig. Hole spacing should be 100m. so that at least two holes would fall in the channel should it be of economic width. A churn drill properly equipped for alluvial exploration should be used, with at least 40m of casing, as it is essential that bedrock be reached. 3½" casing with a 4½" drive shoe will be satisfactory, considering the exploratory nature of the programme. This drill line as described would entail about 20 holes. It could also be extended to the SW at a considerably wider spacing to test the Boobyalla River drainage. This river also drains extensive tin bearing granites and seems to be so far untested.

J. B. Westhoff

5 January 1981

Appendix to Hellyer Mining & Exploration

Monthly Report for Jan 1981 EC 19/77

Form-in with Neil Thomas of Mineral Holdings.

due marine
reconstruction?

bedrock
at least
again!