

C1

COMMONWEALTH OF AUSTRALIA

---

DEPARTMENT OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES  
GEOLOGY AND GEOPHYSICS

---

**RECORDS:**

---

1942/34

The Sea-Elephant tin deposit, King Island,  
Tasmania.

by

P.B. Nye

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

DEPARTMENT OF SUPPLY & SHIPPING.

Mineral Resources Survey.

THE SEA ELEPHANT TIN DEPOSIT, KING ISLAND, TASMANIA.

Report No. 1942/34.

This report is based entirely on the following typewritten report obtained from the Mines Department of Tasmania.

SCOTT, J. B. (State Mining Engineer), Report on Mineral Leases 79 P/M, 80 P/M, 82 P/M, 83 P/M, 78 P/M, 71 P/M, 64 P/M, 65 P/M, 66 P/M and 107 P/M, King Island, chartered in the name of the Sea Elephant Prospecting Association, 6th December, 1926.

The Sea Elephant tin deposit is situated about five miles west from Sea Elephant Bay on the east coast, and 16 miles by road from Currie, the chief port on the west coast.

The deposit consists of sand and clay overlying tin-bearing drift. The clay is not everywhere present and, in many places, the sand directly overlies the drift. The drift consists largely of more or less angular fragments of quartz, slate and schist, the fragments ranging up to 12 inches and having an average size not exceeding 2 inches. The bedrock is mica schist.

The thickness of the deposit ranges up to at least 20 feet, but is usually much smaller. The thickness of the drift is fairly uniform and it is the overburden of sand that causes the range in thickness. On an area of 50 acres that was tested by boring, the thickness of the overburden was 2.7 feet, the thickness of the drift was 3.48 feet and the total thickness 6.18 feet.

In 1926 the lessees tested, by boring and shaft sinking, an area of approximately 320 acres. Over 600 bores and 100 prospecting shafts were put down on this area, and boring was still in progress at the time of Mr. J. B. Scott's visit. The testing proved that not all the area contained profitable tin-bearing ground. Further it proved that the tin-bearing ground has a general course from north-west to south-east and that the tin ore was irregularly distributed in the drift. An area of approximately 50 acres was proved to have an average depth of 6.18 feet and an average tin content of 1/13 lb. per cubic yard. To the south-east of the 50 acres, an area of 21 acres was proved to have an average depth of 10.98 feet and an average tin content of 0.9 lb. per cubic yard. From the above figures it was calculated that the 50 acres contained 251.5 tons, and the 21 acres 149.1 tons of tin, the total tin content of the 71 acres being 400.4 tons. The term "tin" was used in Scott's report and it was not made clear whether it referred to metallic tin or to tin oxide (cassiterite), but it is probable that the term referred to tin oxide.

The cassiterite has an average grain size of 1/32 inch, and ranges up to 1/2 inch in size. The cassiterite concentrates are high grade.

The following extract describes the conditions regarding method of working and possible water supply.

"The ground being low-lying with very little fall it will be necessary to elevate the material to be worked in order to dispose of the tailings. The drift is suitable for treatment by the established method of hydraulic sluicing and elevation by gravel pump. Power will be required for both nozzle and gravel pumps there being no natural head pressure available from the water supply. The limited

quantity of water available will render it essential to make provision for use of 'return' water.

The only water supply available in the vicinity of the leases is from the small creek which flows through the property. In the wet season the quantity running in the creek should be sufficient for all purposes, but in order to ensure a continuity of operations it will be necessary to make some provision for storage by constructing a series of dams along the course of the creek. The facilities for carrying out this work are favourable at a reasonable cost.

The Sea Elephant River which is situated about a mile south-west of the central portion of the leases carries a fair volume of water which could be utilised if that of the creek should prove to be inadequate. To make use of the water from the river would necessitate provision for considerable addition to the amount of power needed, as a pumping station would be required to raise the water to the requisite height for use in the face. The difference in altitude between the general level of the ground in the vicinity of the camp and the Sea Elephant River is approximately 66 feet. The rainfall recorded at Currie on the west coast of the Island taken over a period of ten years is 33 inches; inland it is stated to be at least six inches higher. The official records show a fairly general distribution of the rainfall throughout the year."

It would, therefore, appear that the Sea Elephant deposits contain approximately 400 tons of cassiterite and that there are no insuperable difficulties to prevent the working of the deposits. The grades as reported by the former boring campaign are such that the working could probably be profitably conducted at the present price of tin. If it is desired to increase production of tin in Australia, this deposit is worthy of consideration.

CANBERRA A.C.T.  
10/12/42.

*P. B. Nye*  
P. B. NYE.  
ASSISTANT DIRECTOR.