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TITLE: REPORT ON DRILLING OF PORTION
OF THE GREENBUSHES TINFIELD

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REPORT ON DRILLING OF PORTION OF THE GREENBUSHES TINFIELD

by

W. N. MacLeod, D. Sc., Senior Geologist

Record No. 1962/2.

INTRODUCTION

Two areas within the Greenbushes Tinfield have been sampled following a request by the Shire Council for their alienation. These areas are as follows:

1. Location 10441. This covers an area of approximately 363 acres immediately west of the railway station and about one mile and a half north-west of Greenbushes Townsite.
2. A smaller area of approximately 30 acres in Scandinavian Gully, bounded on the west by Garden Areas 22 and 42, and on the east by Dredging Claim 82, situated about one mile ENE of Greenbushes Townsite.

These two areas were sampled by the writer in March, 1962. A truck-mounted auger drill was used to sample the alluvium and surface samples were taken from old workings and prospecting pits. Twenty seven holes were drilled in Loc. 10441 and a further 12 holes in Scandinavian Gully. The distribution of the holes is shown on the accompanying plan.

LOCATION 10441

Geology

Location 10441 is devoid of outcrops and the greater part of the surface is covered by laterite or unconsolidated lateritic rubble. Drilling has indicated that the eastern half of the area is underlain by granitic rocks and the western section by greenstone. The greenstone is deeply decomposed. In borehole No. 4 the drill penetrated 96 feet of pale greenish clay without reaching hard rock, and depths of decomposition of at least 40 feet were found on the northern side.

The Older Alluvium, from which the bulk of the cassiterite in the Greenbushes district has been won, is of limited distribution and appears to be confined to a strip about 15 chains wide between the old workings and the easternmost corner of the block near Loc. 11311. The alluvium may well extend some distance to the west beneath the cover of laterite.

At the workings the alluvium is about 10 feet thick and mainly consists of sandy clay with abundant ironstone nodules. These workings are about 3 chains long and one chain wide. There are numerous shallow trenches and prospecting pits in the vicinity.

Sampling

Owing to the inability of the drill to penetrate the laterite capping, sampling by drilling was restricted to the flanks of the cover. Unfortunately in the critical area west of the old workings the laterite is particularly well developed and no samples could be obtained. Elsewhere the laterite is thinly overlain with sand or pisolitic ironstone rubble and was rarely penetrable below depths of 6 feet. No cassiterite was detected in any sample of the surficial material overlying the laterite.

Most of the borehole samples were washed in the field and no cassiterite was detected. Samples from seven of the apparently more promising holes were assayed at the Government Chemical Laboratories and no cassiterite was recorded from any of these. (Boreholes 4, 15, 16, 17, 20, 21 and 23).

The Older Alluvium in the workings carries cassiterite up to about 1 lb/c.yd and minor amounts were detected in concentrates from pits in the alluvium near these workings. This is the only area within the entire Location which has proved to be tin-bearing.

Concentrates from various localities within the area were qualitatively examined at the Government Chemical Laboratories. Ilmenite, leucoxene and iron oxides are the main constituents of the heavy mineral fractions with accessory amounts of tourmaline,

spinel, magnetite, cassiterite, zircon and staurolite.

Recommendations

The investigation has established that there is at least 30 acres of tin-bearing alluvium in this location in the east-central section. This alluvium may extend to the west beneath the cover of laterite. In view of this it cannot be recommended that the area be alienated. However, the north-western section of the Location, west of the road between the cemetery and the railway line carries no tin and could be released. Owing to the heavy and extensive laterite it is doubtful whether more than a relatively small portion of the Location would be suitable for orcharding purposes and this area coincides with the tin-bearing alluvium.

SCANDINAVIAN GULLY

Geology

The creek flowing eastwards in Scandinavian Gully has cut well below the laterite capping and traverses a broad flat underlain by decomposed greenstone. There are no significant accumulations of alluvium, either Older or Younger along the course of the creek or in the valley walls west of the western boundary of Dredging Claim 82. The Garden Areas 22 and 42 at the head of the valley are partially covered with laterite but carry no accumulations of alluvium.

Sampling

Twelve holes were drilled in this area; six on each side of the valley aligned roughly parallel to the course of the creek. No alluvium was detected in any of the holes. Brown clay with occasional ironstone nodules, 6 to 12 feet thick, overlies decomposed greenstone. Samples of the surficial material from three of the boreholes, Nos. 3, 6 and 7, were assayed at the Government Chemical Laboratories and no cassiterite was recorded. Hole No. 6 is near the eastern boundary of the area and passed through about 6 feet of alluvium beneath the clay. This alluvium is presumed to be continuous with that exposed in the old workings on Dredging Claim 82, but yielded no cassiterite

on assay.

The alluvium in D.C. 82 has accumulated to a depth of about 15 feet. Samples washed in the field indicated a low cassiterite content of the order of 0.5 lb/c.yd. A concentrate from this claim was examined at the Government Chemical Laboratories and found to contain iron oxides, cassiterite, ilmenite, leucoxene with minor tourmaline and spinel.

Recommendation

In view of the absence of any tin-bearing alluvium west of D.C. 82 it is recommended that the area west of the dredging claim and including Garden Areas 22 and 42 be alienated ^{from} for mining purposes. The area which could be released is outlined on the accompanying plan.

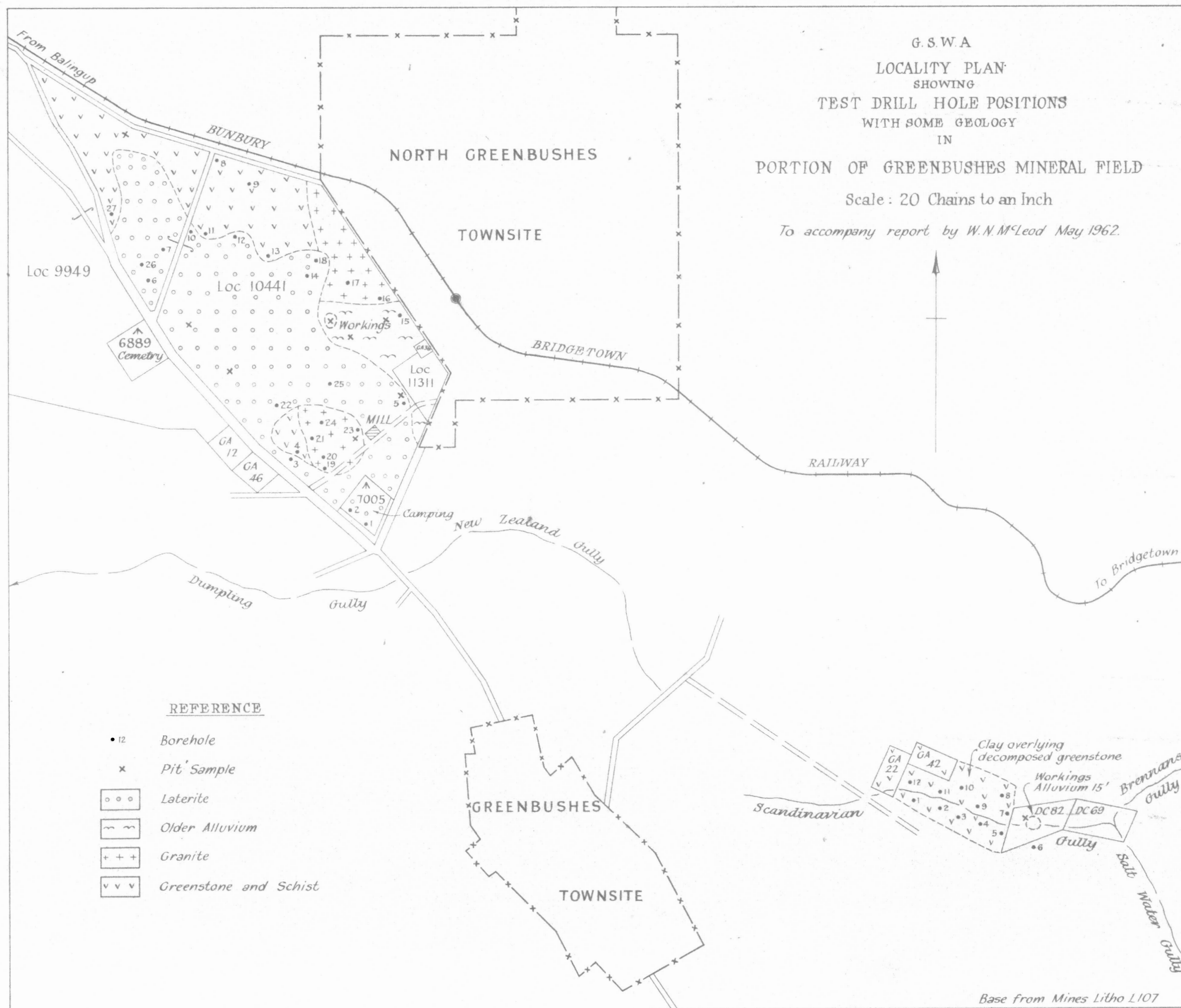
4.5.62.

(W.N.MacLeod)
SENIOR GEOLOGIST

G.S.W.A
LOCALITY PLAN
SHOWING
TEST DRILL HOLE POSITIONS
WITH SOME GEOLOGY
IN
PORTION OF GREENBUSHES MINERAL FIELD

Scale: 20 Chains to an Inch

To accompany report by W.N. McLeod May 1962.



REFERENCE

- 12 Borehole
- x Pit Sample
- ooo Laterite
- ~ ~ ~ Older Alluvium
- + + + Granite
- v v v Greenstone and Schist

Base from Mines Litho L107