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Proposed diamond drilling at Etna Stone Pty Ltd, Pontville

by V. M. Threader

The proprietors of Etna Stone Pty Ltd wish to prove additional sandstone reserves at their Pontville quarry to enable them to tender for a contract requiring 30,000 cubic feet of unfractured stone free of colour variation.

Surveyor G. Benn has prepared a map showing the positions of the existing quarry and a defunct quarry, adjacent to which a new quarry is proposed. The map also shows the recommended drilling programme which has been pegged out on the ground (fig. 1).

Geophysicist D. Leaman has examined the proposed area by seismic survey and has reported that the relative joint frequency was least in the vicinity of the defunct quarry.

The principal joint directions in the two quarries are:

- Northeast-southwest, range 060-085°M with a steep northerly dip (i.e. 073-090°T); and
- Northwest-southeast, range 145-175°M with a steep easterly dip (i.e. 158-188°T).

The seismic survey indicated directions of 096° and 171-176°T which is a comparable result. The first mentioned direction in each case is predominant.

The recommended drilling programme comprises two lines of four holes in two directions across a 100 feet square aligned with the principal joint directions. Each hole should be inclined at 45° in the direction indicated, to intersect the greater number of joints, and drilled to 35 feet (a vertical depth of 25') to effect a complete coverage on each line.

It should be noted that the whiteness of the stone in the defunct quarry is probably due to leaching of cement and consequent weakening of the stone.

It is possible that the better quality stone, which occurs below the weathered stone as mentioned in the geophysicists report, will be more highly and irregularly coloured.

The volume of the block of ground shown on the map to a depth of 25 feet is 250,000 cubic feet which is more than sufficient to provide the required amount of stone after allowing for overburden and quarrying losses, provided that the desired quality can be proven. It may therefore be found possible to drill fewer holes if the earlier drilling produces favourable results.

The full drilling programme would amount to 280 feet of drilling for say 135,000 cubic feet of stone or 0.6 cents per cubic foot of quarried stone at a contract drilling rate of $7/ft.

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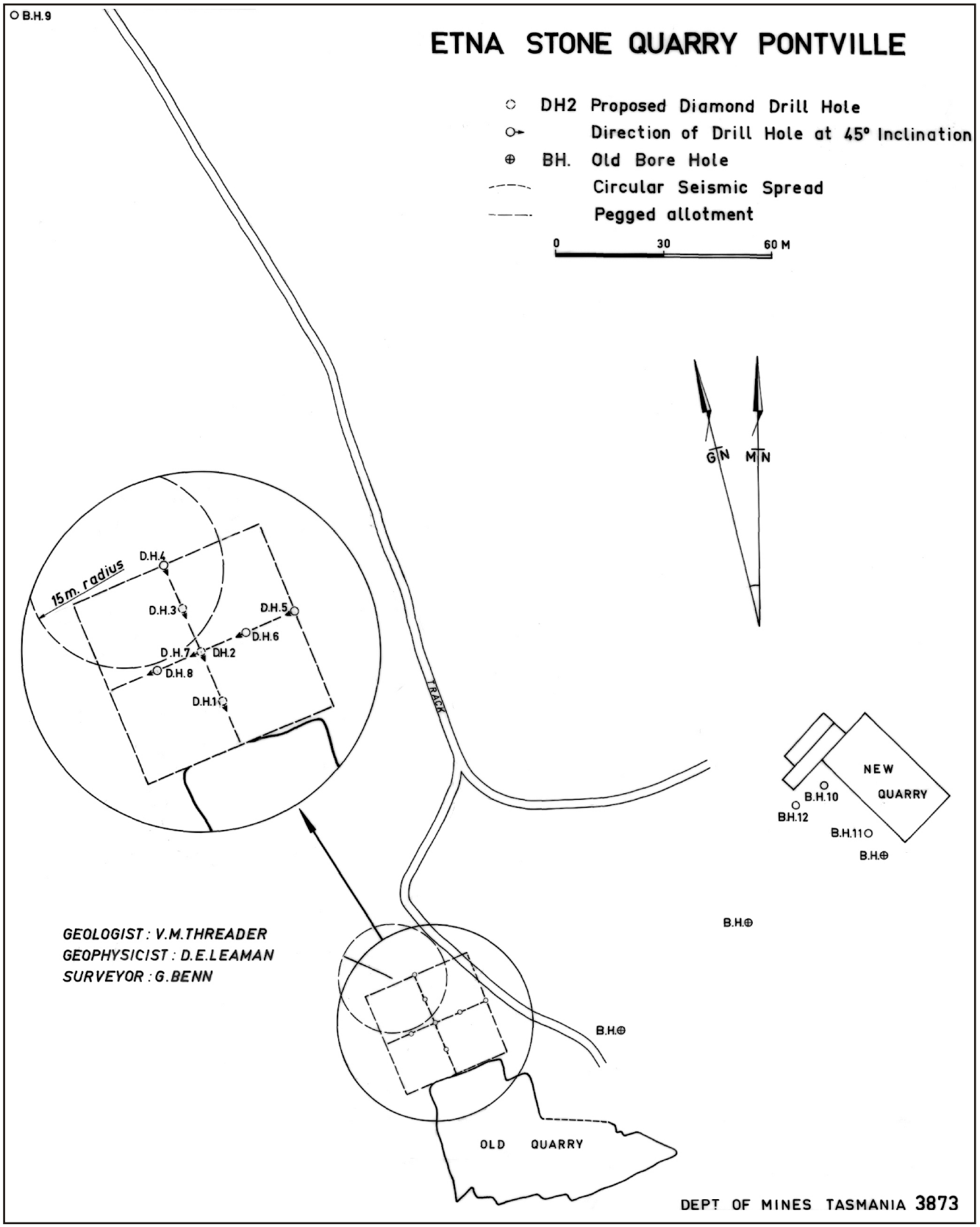
B.H.9
ETNA STONE QUARRY PONTVILLE
DH2 Proposed Diamond Drill Hole
Direction of Drill Hole at 45° Inclination
BH. Old Bore Hole
Circular Seismic Spread
Pegged allotment
0 30 60 M
G N
M N
15m. radius
D.H.4
D.H.3
D.H.5
D.H.6
D.H.7
DH.2
D.H.8
D.H.1
TRACK
NEW QUARRY
B.H.10
B.H.12
B.H.11
B.H.
B.H.
B.H.
OLD QUARRY
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GEOPHYSICIST : D.E.LEAMAN
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Figure 1