

UR1975-61

Stability of M.E. Steward's land, Don.

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Mr Steward owns land adjoining Waverley Road about 500 m north of the Bass Highway bridge over the Don River. The area of land is about 4 ha and has been subdivided into six blocks, two of which are very steep. The Devonport Council asked the Department of Mines for a report on the stability of the two steep blocks (fig. 1, blocks 2, 6).

RELIEF AND GEOLOGY

The landsurface rises sharply to the west of the Waverley Road for 40-50 m at slopes of about 25-30°. The landsurface flattens further to the west to a dissected plateau and this flatter land underlies the remaining blocks.

The steep slope is underlain at depth by Permian sandstone but this crops out only very rarely. It is a fawn to light grey rock and where exposed in a road cutting north of the proposed subdivision it is poorly bedded and has a hackly fracture. Further up the slope and underlying the plateau, deeply weathered Tertiary basalt occurs. The steep slopes are underlain by soil and talus from the weathering of the Permian rocks and the overlying basalt. The thickness of this soil and talus is unknown.

DISCUSSION OF STABILITY

Near the north-eastern corner of Block 6 near the road there is a strong seepage with soft ground around it that might have been subject to some movement in the past. Near the south-eastern corner of the block, there is a shallow valley which may represent a very old landslide. There is some flatter land in the north-western part of the block which is underlain by weathered basalt. It slopes at an average angle of 18°. Even this slope is relatively steep and there is some risk of instability.

Block 2 is a much smaller area of land which has an overall slope of about 27° except for a narrow flatter area near the road and where the present house is situated. There is a fairly strong seepage coming from near the top of the block and flowing diagonally down the slope behind the house.

Slips in the Permian rocks are not unknown and Burns (1963) mapped areas of these rocks to the south of the Bass Highway as being affected by slips. Although a house has been on one of the blocks for some time, and has been unaffected by landslips, the presence of seepages and steep slopes underlain by talus indicates that unstable conditions are possible. It is likely that any slips that may form would probably be of a shallow nature (i.e. soil and debris slipping on bedrock). There is thus some risk of landslips affecting Blocks 2 and 6. If the subdivision was modified to include part of the flatter land of Block 5 in Block 6, replacing the land taken with some of the steeper land of Block 6, this would allow homes to be built on flatter land on both blocks. A similar modification could not be undertaken with Block 2 as Block 4 is already sold and has a house built on it. The risk of instability on Blocks 2 and 6 could be lessened by the planting of trees.

REFERENCE

BURNS, K.L. 1963. Geological atlas 1 mile series. Zone 7 sheet 29 (8115N). Devonport. Department of Mines, Tasmania.

[18 September 1975]

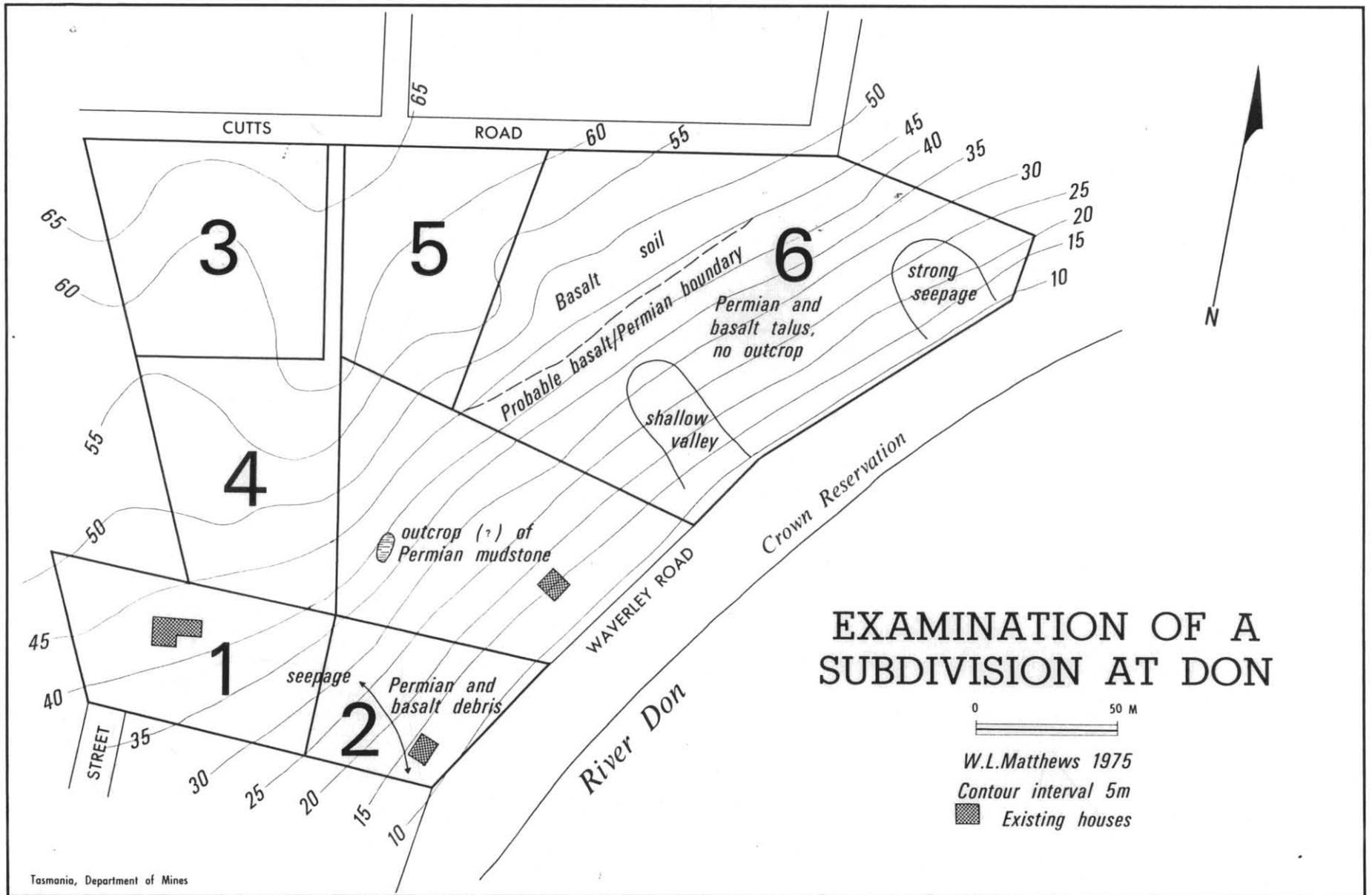


Figure 1.

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