

UR1976_03

1976/3. Test pits on T.E. Atkinson's property, Don.

W.L. Matthews

Six test pits were dug on this property [DQ419401] to examine the sub-surface material and groundwater conditions. The owner proposes to subdivide the land into 5 blocks of varying size. The exact boundaries of the various blocks are unknown but it is planned to include most of the steeper north-eastern half in one block, with the remainder of the land on the north-western side of the creek together with a strip on the south-eastern side of the creek, in another block. Three much smaller blocks of 0.5-1.0 ha front on the south-western half of the land that adjoins the Forth main road. A house is presently under construction on one of these blocks. The test pits (fig. 1) were dug at flatter locations within a generally moderately steep terrain. The logs of the holes are given in Appendix 1.

Test pits 1, 3, 4 and 5 encountered Permian rocks (probable Permian in test pit 5), whilst test pit 2 struck weathered basalt or basalt derived debris from a nearby old slip. Test pit 6 penetrated material which may be weathered basalt although it is surrounded by grey soil similar to that derived from Permian rocks. It is possible that Tertiary sediments occur beneath the Tertiary basalt and overlying Permian rocks, this being supported by the occurrence of two greybilly-like boulders near test pit 6.

CONCLUSIONS

Houses could be built with reasonable safety on each block providing some precautions are taken. Houses should be sited in the positions of the test pits in most cases, with the exception of test pit 2 which is an unsuitable site due to its proximity to an old landslip. A site should also be selected a little downslope from test pit 6 (but not near the water course which traverses it from the road).

Only one house should be built on each of the proposed blocks; any more intensive development requires more detailed investigations. In developing the blocks, excavations around the slopes for access roads and house sites should be kept to a minimum and where they are necessary, should be supported soon after digging. Surface drainage on the slopes should not be inhibited by development and areas where such drainage builds up, should be drained to prevent water build up in the soil. Seepages, particularly near any of the proposed house sites should be drained. Sullage and water from septic tanks should not be dispersed near the house sites.

REFERENCE

MATTHEWS, W.L. 1975. Stability of T.E. Atkinson's property, Don. *Unpubl.Rep. Dep.Mines Tasm.* 1975/62.

[30 January 1976]

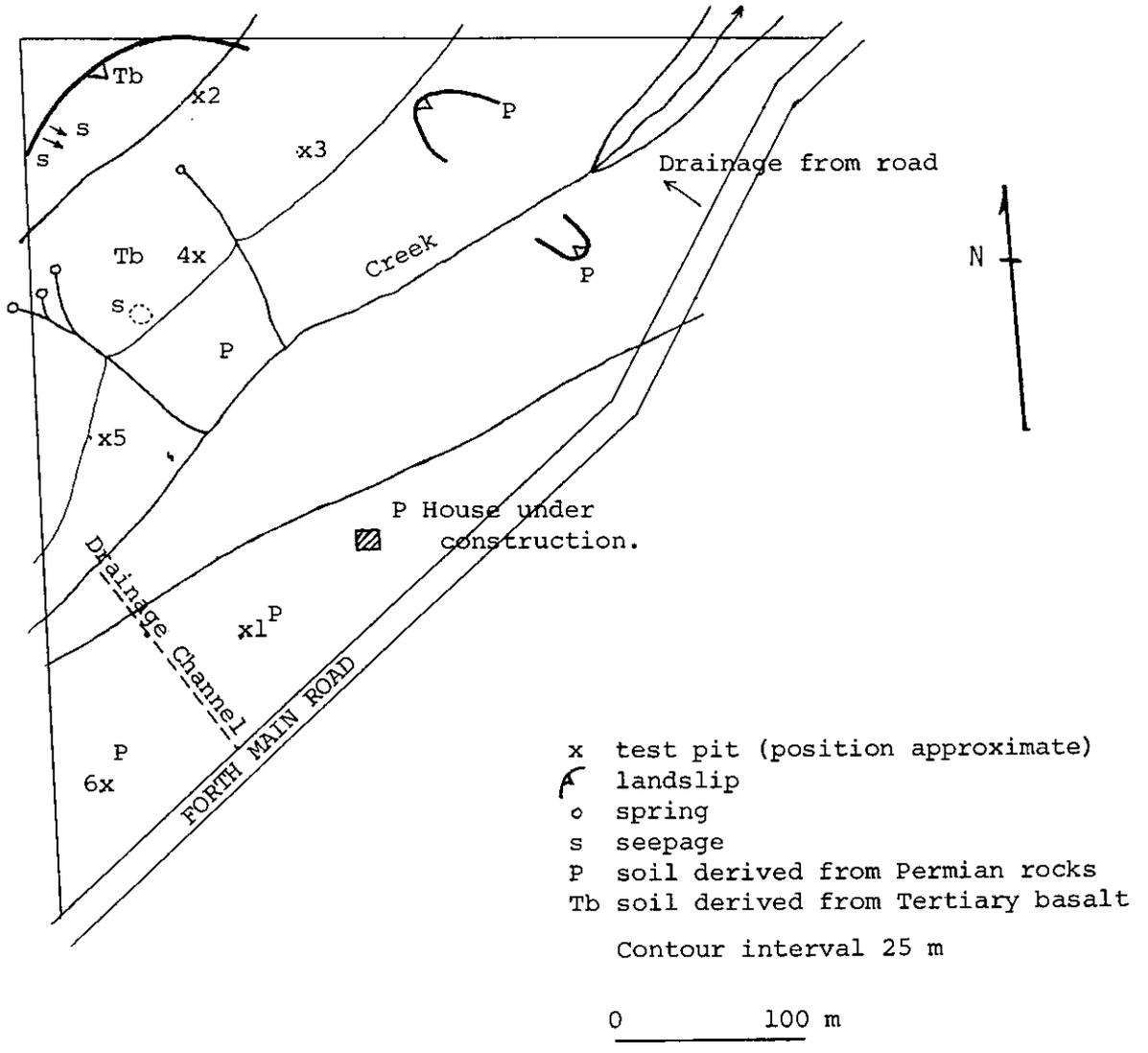


Figure 1. Sketch map of T.E. Atkinson's property, Don.

5 cm

1/3

APPENDIX 1

<i>Hole 1</i>	<i>Description</i>
<i>Depth (m)</i>	
0-0.3	Grey silty soil.
0.3-0.8	Grey silty clay, fractured and fairly dry.
0.8-1.2	Grey and brown friable silty clay, a little damp.
1.2-2.4	Grey and brown mottled, fairly hard siltstone (Permian) occasional erratics, poorly bedded.
 <i>Hole 2</i>	
0-0.3	Brown grey crumbly soil.
0.3-1.5	Red brown clay, occasional fragments of weathered basalt near surface. Crumb structure passing into more compact clay, becoming moist. Large unweathered basalt boulders towards base.
 <i>Hole 3</i>	
0-0.5	Fractured dry grey brown soil.
0.5-1.5	Grey brown mottled silty clay (probably Permian derived but not unlike deeply weathered basalt). Some definite Permian zones extending up into the clay.
1.5-1.8	Weathered Permian material passing into less weathered light blue grey siltstone, no bedding visible.
 <i>Hole 4</i>	
0-0.5	Fractured crumbly dark grey brown soil becoming moist towards base.
0.5-0.9	Plastic grey silty clay, moderate hardness.
0.9-1.2	Friable grey and light brown silty clay, moist.
1.2-1.5	Blue grey and brown mottled siltstone (Permian) poorly bedded, hard at base.
 <i>Hole 5</i>	
0-0.8	Dark grey brown-red brown fractured clay soil (basalt derived) very occasional quartz pebbles, becoming moist at base.
0.8-1.4	Mottled yellow and chocolate brown silt and clay (Permian and basalt?), friable and fairly hard.
1.4-1.8	Cream and light brown mottled siltstone, some sand size particles, some muscovite. Probably mainly quartz fragments, very little clay, fairly compact. Probably weathered Permian?
 <i>Hole 6</i>	
0-0.5	Silty mid grey brown clay soil, a few quartz fragments, dry.
0.5-2.0	Mottled red, brown and clayey material, fractured towards top, becoming moist towards base, friable but dominant component is probably clay.