Section

Rept. Bk. No. 60/108
G.S. No. 3154
D.M. 170/65
E.G. No. 65-19

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

ENGINEERING AND SOILS GEOLOGY SECTION

REPORT ON SITE INVESTIGATION
PROPOSED HOUSING SUBDIVISION - DARLINGTON
Section 124, Hundred Noarlunga

by

R. D. Steel
Assistant Senior Geologist

27th May, 1965

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REPORT ON SITE INVESTIGATION
PROPOSED HOUSING SUBDIVISION - DARLINGTON
Part Section 124, Hundred Noarlunga

INTRODUCTION

The request to investigate the site of a proposed housing subdivision for M.J. and M.A.G. Sargent in Part Section 124, Hundred Noarlunga, was received in a letter dated 10th February, 1965 from the Town Planner's office.

Investigations have been confined to an examination of surface exposures and a number of soil profiles revealed in excavations at the Northern end of the estate.

RESULTS OF INVESTIGATIONS

The area proposed for subdivision occupies a position on the crest and higher gully slopes of a single N-S trending ridge, and ranges in elevation between 450 and 570 feet above sea level. The surface gradients are generally uniform and average perhaps 1 in 10 (6°).

Slate bedrock of the Tapley Hill Formation outcrops prominently on the upper ridge crest areas and more sporadically on the lower slopes. Elsewhere the slate is covered by soil and float to an unknown but generally shallow depth (less than 4 feet).

Where exposed in outcrop, the slate is grey to bluish-grey, thinly bedded to finely laminated and slightly to moderately weathered. The bedding dips 30° west, but is mainly obscured by a prominent N-S trending cleavage, with steep (40 - 70°) easterly dips.

The soil profile is revealed in a number of homesite excavations along the northern boundary of the estate. It consists of a dark grey or red-brown silty clay or clay loam, with abundant

kunkarised slate fragments.

A discontinuous kunkar horizon is usually present at depth less than 1 foot, but may also be exposed at the surface on some parts of the lower slopes. The kunkar grades down into a light brown weakly cemented marl (completely weathered slate in situ). The underlying rock is present at depth between 2 and 4 feet from the surface and is moderately to highly weathered near the top, with numerous closely spaced joints, but becomes more massive and little weathered at shallow depth.

CONCLUSIONS

As bedrock is either exposed or present at shallow depth over most of the estate and surface gradients are usually less than 1:10 (6°), faces of road cuttings or other excavations made into the firm rock, should be stable at fairly steep angles.

Where exposed along the northern boundary of the subdivision, the soil mantle and underlying highly to completely weathered rock material are standing at steep batter angles and do not appear to have suffered any appreciable erosion since excavation.

The subdivider intends to install a common effluent drain to remove all domestic waste waters. However some surface drainage from natural or artificial sources may tend to accumulate and move downhill along the soil-rock interface. This water should be intercepted and diverted.

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