

Department of Mines
South Australia

REPORT ON SUITABILITY OF PROPOSED SUB-DIVISION

PT. SECTION 874, HD. ADELAIDE

Town Planner's Office

BLACKWOOD

This area was inspected on 5/1/60.

RECOMMENDATIONS:

Advice on the size and suitability of proposed allotments in Pt. Section 874 for C. L. Winger.

LOCATION, TOPOGRAPHY:

Situated within $\frac{1}{2}$ mile of Blackwood railway station ^{north} the property occupies the western and northern slopes of a gully adjoining a small creek trending south westerly through Section 874.

Maximum elevation of the proposed sub-division lies at approximately 1,000 feet above sea level.

Average rainfall in the area is approximately 29 inches per annum.

GEOLOGY, HYDROLOGY:

Bedrock of Precambrian age forming part of the Sturtian Series (Adelaide System) outcrops or occurs at shallow depth in the area. The rocks consist predominantly of slates with occasional thin quartzites dipping generally easterly at angles of 30° - 40° . Overlying bedrock, particularly in the higher parts of the area in the vicinity of Blackwood is a thin deposit of Tertiary lateritic gravel. In the gullies and lower parts of the area bedrock is overlain by alluvial sand, clay and gravel, partly derived from the slates and partly from the lateritic deposits.

Within the property the slates are poorly outcropping and are strongly weathered near the surface, giving rise to a clayey soil. Bedrock is obscured by alluvial clay and gravel

along the gully which forms the south eastern boundary of the proposed sub-division. Because of the clayey soil, which is somewhat impervious, much of the rain falling on the area would tend to run off. However, if the soil should become saturated, soil creep may become a problem particularly on the steeper slopes.

Disposal of septic tank effluent into shallow pits would tend to increase soil moisture, particularly where there are a number of relatively small allotments on the slope of a hill. Although the slates generally are not strongly fractured it should be possible to obtain drainage by drilling into these rocks. However, a considerable number of bores would be necessary for the proposed sub-division. Bores will drain satisfactorily only if the fluid to be drained is free of soap or grease as otherwise the openings in the rocks, on which drainage depends, would soon become blocked.

Soil moisture may also be considerably increased by roof run-off, which tends to be concentrated in small areas. Run-off from paved areas, such as roads, will also need to be efficiently disposed of to reduce soil moisture. When water is laid on to the area, garden watering will have a considerable effect on the degree of soil moisture. Excessive watering could cause the subsoil to become saturated, with increased risk of soil creep.

Under these conditions it is considered that the proposed allotments should be somewhat larger, preferably at least $\frac{1}{2}$ acre in area. This seems particularly desirable for the area occupied by allotments 59-63 and 70-113. This area has the steepest slope of the proposed subdivision and although surface run-off is rapid, there is a considerable risk of soil creep. With larger allotments it should be possible to dispose of septic tank effluent through shallow pits as there is a lesser possibility of the soil becoming saturated.

It is also considered that the soil and alluvium along the main gully would tend to become saturated following

a wet winter, particularly if run-off is increased in the upper part of the area. It is therefore suggested that allotments 114-117 and 118-124 should not be included in the proposed sub-division.

Provided adequate surface drains are constructed the northern part of the area appears to be suitable for the proposed sub-division. However, it is considered that larger allotments would be preferable. It is suggested that a drain should be allowed for between the boundaries of blocks 1-7 and 10-18. Such a drain would remove excess water rapidly from this area.

CONCLUSIONS AND RECOMMENDATIONS:

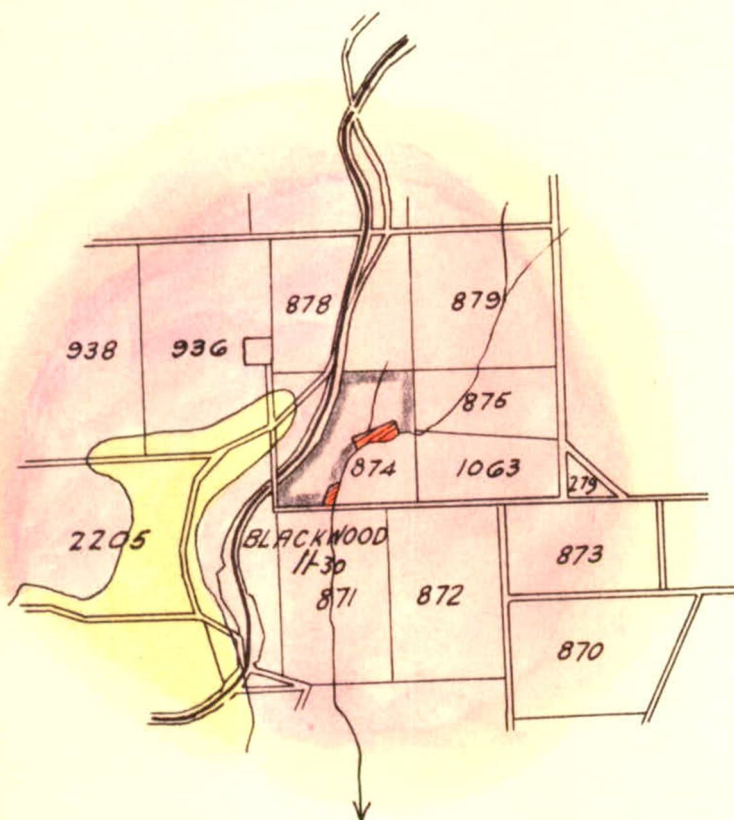
The area generally appears to be suitable for sub-division, provided it is adequately drained. It is considered that the allotments should have a larger area, particularly where the slopes are steep. It is therefore suggested that the area of allotments 59-63 and 78-113 should be subdivided into larger allotments, preferably of $\frac{1}{4}$ acre area.

An area along the creek including allotments 114-117 and 118-124 is considered to be unsuitable for subdivision because of the possibility of waterlogging.

With allotments of larger area disposal of septic tank effluent by means of shallow pits or holes is not expected to cause a marked increase of soil moisture.

RG3:CKRF
2/2/60

R. G. Shepherd
R. G. SHEPHERD
GEOLOGIST
HYDROLOGIST



Tertiary:

Lateritic gravel & Sandstone

Sturtian Series (Precambrian)

Laminated Slates

Area considered suitable for subdivision

To accompany report by R.G. Shepherd

S.A. DEPARTMENT OF MINES

Approved	Passed	Drn.	DRAINAGE INSPECTION PT. SEC. 874 Hd. ADELAIDE TOWN PLANNER	D.M.	Scale 40 ch. to 1 in
		Tcd.		Req.	52352
		Ckd.			H & G
Director		Exd.			Date 13-1-60