Director

DEPARTMENT OF MINES, SOUTH AUSTRALIA.

RB 36/56

REPORT ON UNDERGROUND DRAINAGE, LYNDOCH PUBLIC SCHOOL, Pt. SEC.534, HD. BAROSSA.

This inspection was done on 23.9.53.

Requirements.

The Architect-in-Chief has requested advice on the possibility of disposing underground of the effluent from a proposed septic tank at Lyndoch Public School, at present attended by approximately 110 children.

Location, Topography etc.

The school is in the township of Lyndoch, and is situated on the northwestern flank of a gentle rise draining downwards to a depression several chains from the school boundary. The slope is sufficient to provide satisfactory drainage for surface runoff. Existing lavatory blocks are adjacent to the southeastern fence, upslope from the school.

Geology, Hydrology.

Rocks of Torrensian Age, mainly slates and sandy slates, underlie the area, in some places with a thin capping of Tertiary travertine. This latter does not occur near the school.

The older rocks have been subjected to considerable weathering, and no outcrops were observable in the immediate vicinity, so that their precise attitude could not be determined. It is known however that they strike in a general north-south direction and dip fairly steeply eastward, and this is borne out by a dip obtained in the railway cutting north of the school, where sandy phyllites outcrop under a travertine capping.

The soil around the school is a rather heavy sandy clay, and since the spoil of a very shallowwell nearby contains silty slate fragments, it is a reasonable assumption that the rocks underlying the soil mantle are slates or phyllites. Past experience has shown that although these are fairly dense in character, they are usually jointed to a sufficient

extent to render them fairly permeable in the mass, possibly sufficiently so to permit of their being used for drainage purposes.

The heavy clay subsoil, and the absence of any Tertiary limestone capping would, it is considered, prevent disposal of effluent by shallow soakage. Local enquiries show that difficulty in this regard is experienced with small domestic installations under comparable conditions. Surface discharge cannot readily be resorted to, because the land surface slopes downward towards an occupied area.

It is thought however that a reasonable possibility exists of disposal in a bore to a depth of perhaps 150-200 feet, and it is suggested, that such a bore be constructed, and either cased with slotted casing for most of the depth, or left open below the depth at which rock occurs.

Lyndoch has a town water supply, and groundwater is not used for any domestic purposes, so the possibility of pollution will not arise.

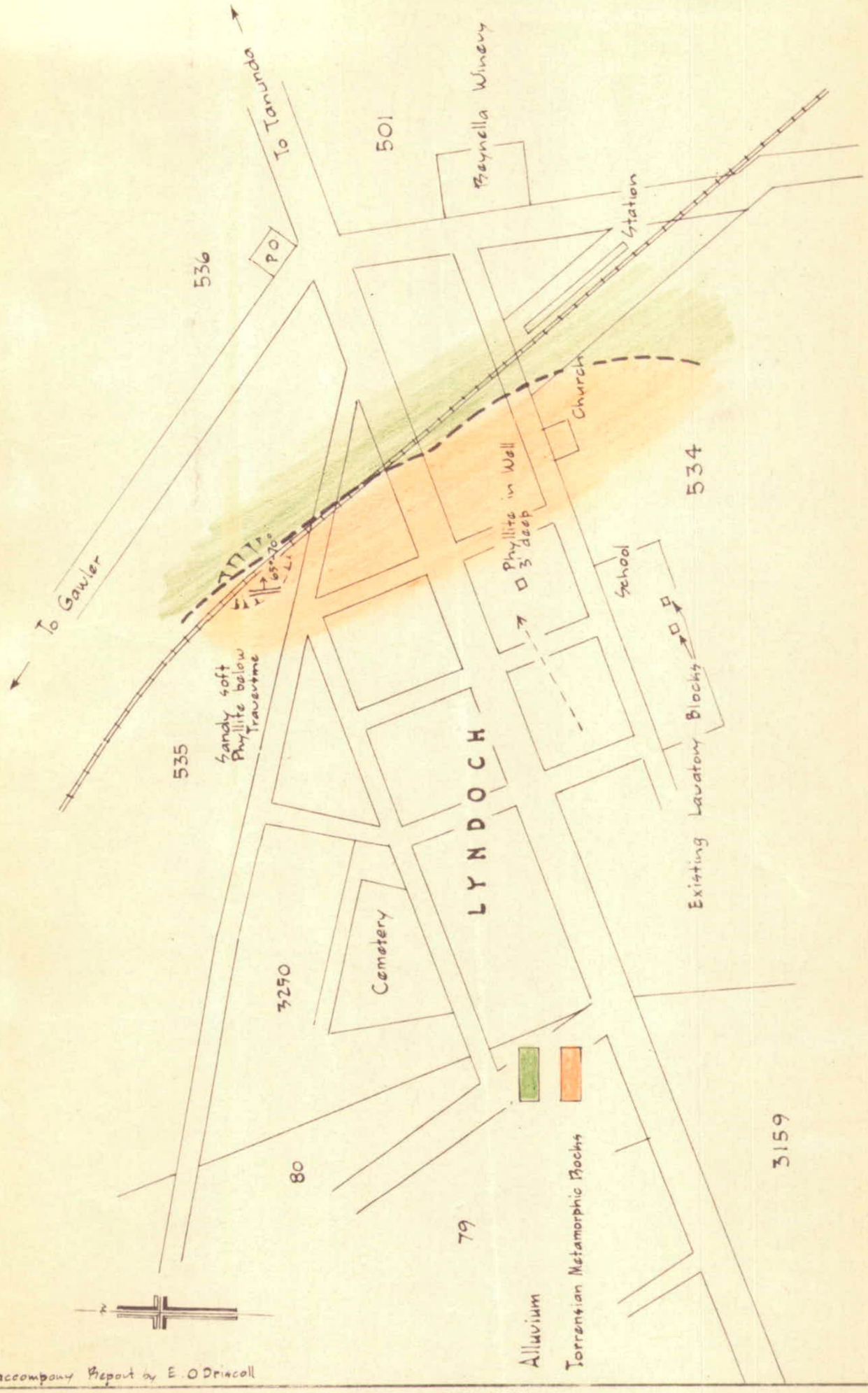
Conclusion and Recommendation.

Shallow surface soakage is unlikely to be successful in the clay subsoil.

There is a reasonable possibility of disposing of the Septic tank effluent by means of a bore to 150-200 feet, but ablutions effluent should not be mixed with it. The bore could be sited near the existing lavatory blocks along the southern fence. Cost of construction is estimated at £350-£400. If undertaken, it is suggested that the drainage capacity of the bore be established before any expenditure on other works is undertaken.

W. O'Driscoll 28/9/53

SENIOR GEOLOGIST.
HYDROLOGY



To accompany Report by E. O Driscoll

S. A. DEPT. OF MINES

Approved	Passed	Date	UNDERGROUND WATER SURVEY LYNDOCH PUBLIC SCHOOL DRAINAGE INVESTIGATION	D.M.	Scale 10 Chn. to 1 inch S 831 Ha 3 Date 25.9.53
Surveyor	C.D.	Ex.		Engr.	