DEPARTMENT OF MINES SOUTH AUSTRALIA

DRAINAGE DISPOSAL AT TEROWIE RAILWAYS HOSTEL

Purpose of Inspection

Terowies Railways Hostel was visited on 2.2.53 to investigate the possibility if disposing underground of both septic tank effluent and waste from the kitchen and ablutions block.

Present Disposal Method.

All effluent is discharged in to shallow pits, and a small pump has been so mounted that it can, as required, pump either the septic tank effluent or the waste water into a three inch pipe some six to seven chains in length. This pipe takes the effluent away to the eastward into an open earth drain, which lends to an abandoned excavation originally constructed as a reservoir.

Since this arrangement was first made, railway cottages have been erected on land adjacent to the drain, and complaints have been received from the occupants regarding both an offensive small, and the presence of mosquitoes which are believed to use the drain as a breeding ground.

When inspected, an offensive smell was noticeable, and stagnant and slimy water was lying in the drain over its whole length. The flow in the drain is restricted by vegetation growth, and the gradient is limited because the drain outfall is over a large concrete spillway in the old reservoir.

Hydrology etc.

Local rainfall is about 12 inches per year.

The terrain is flat, and an auger hole put down for 12 feet in the Hostel yard penetrated red sandy clay and then heavy clay with some nodular travertine.

On the plain around and in the town, numbers of wells exist, as well as occasional bores. Groundwater is readily obtainable in limited supply, generally 100-800 gallons per hour, at depths of 20 to 35 feet, but is mostly recorded as occuring in sandy clay. There is no record of any sand or gravel beds occuring the sandy clay being almost certainly a product of the weathering of the slates and

phyllites which underlie the whole area.

When bores are continued beyond the shallow water supply, they penetrate the phyllites and slates, and water is usually obtained at depths of 60 to 120 feet, again in limited supply. All waters obtained are normally suitable for the restricted waterin of some garden plants and are so used by the inhabitants.

No details were obtainable locally of the Langley's bore mentioned by the Chief Engineer, S.A.R. in his letter of 31-10-52 as the owner was away. Information from the railways Dept. at Peterborough is the effect that the bore is 160 feet in depth, and the water had a salinity of 250.7 grains per gallon. There is no record of the supply.

It is known that during it s occupancy of the sports ground (adjoining the Railway reserve on its western side) by the Dept. of the Army and private contractor drilled at least one bore for drainage purposes. This project was a failure, and septic tank and ablutions effluent from the Army camp was disposed of by spreading on the natural surface and allowing it to soake away.

I was unable to obtain any definite figures as the the qu ntity of effluent disposed of from the railway Hostel, but some 70 men are encamped there, and I think it probable that it would exceed 2,000 gallons per day from all sources.

Disposal underground of this type of effluent would be rather difficult in a bore unless all grease and sediment were first separated from it, as otherwise clogging of the bore would occur. Even if this separation were satisfactorily done, it would b necessary for the bore to penetrate a suitably permeable stratum to permit of good lateral soakage. All available evidence is to the effect that the underlying basement rocks are covered only by a 60' to 100' mantle of weathered rock and soil derived from the bedrock, there being no gravels or sandbeds into which good soakage could be expected.

CONCLUSIONS AND RECOMMENDATIONS

I am of opinion that underground drainage into a bore would not prove satisfactory.

The cost of drilling and casing a bore would probably compare

unfavourably with the cost of extending the existing 3 inch drainpipe further east towards the abandoned reservoir.

Disposal in the reservoir appears quite satisfactorym oresent complaints arising only from the proximity of an open drain to some of the railway houses. Piping the effluent past these houses should remedy the matter satisfactorily.

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HYDROLOGY

EPO'D/GC
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