Report No. 48/105
D.M. 531/59
G.S. 1328
Hyd. 713

DEPARTMENT OF MINES
SOUTH AUSTRALIA.

REPORT ON GROUNDWATER PROSPECTS

PORT KENNY SCHOOL,
HD. WRIGHT.

This inspection was carried out with Mr.R.Shepherd on 14/4/59

REQUIREMENTS:

Advice on the possibility of obtaining underground water for use in the septic tank systems of the school and the residence. It is considered that 100 gallons per hour would be sufficient.

LOCATION AND TOPOGRAPHY:

Situated seventy yards north of the main road through the township of Port Kenny, the school land is on a flat plain which slopes gently towards the sea from a point north-east of the school. The area generally is slightly undulating, rising gently to the north of the township.

The mean annual rainfall of Port Kenny is approximately fifteen inches.

GEOLOGY AND HYDROLOGY:

Bedrock of granite, of Precambrian age is known to occur at shallow depth in the vicinity of Port Kenny. There are no outcrops in the area under survey, but further north coarse-grained porphyritic granite forms prominent hills.

Overlying bedrock is a calcareous sandstone or aeolianite which is approximately 30 feet thick, and is considered to be Pleistocene - Recent in age. At the surface a relatively thin deposit of dense travertine limestone occurs, and there are occasional soil covered flats.

The aeolianite is generally highly permeable and a good aquifer wherever it occurs along the West Coast, but the quality of the groundwater varies considerably, depending mainly on

conditions of replenishment. Analyses of samples from various wells and bores in the Port Kenny area show that salinity varies from about 200 to more than 600 grains per gallon. Water of this quality is considered suitable for use in a septic tank system. Where bedrock is shallow the aeolianite may not contain any water as is shown by two bores in the grounds of the Police Station. Both of these reached bedrock at a depth of about 27 feet and were dry. Groundwater therefore seems to occur only in local depressions in the bedrock.

A short distance to the southwest of the school property three bores yield water from aeolianite at a depth of approximately 25 feet. These bores yield a supply of 200 gallons per hour or more, but the salinity varies considerably. It appears that this group of bores, along with a bore drilled further north for Mr. E.C. Shipard which yielded water of 368 grains per gallon, are all situated within a bedrock depression. Similar conditions seem to occur on the southern side of the main road where the salinity of the shallow water varies considerably.

The rising ground north of the school may well indicate an area of bedrock high, and drilling in the northern part of the school grounds is therefore not recommended. It is considered that the best prospects of obtaining a small supply for the purpose required is by drilling in the southwest corner of the school property at the site shown on the plan. This is the closest point to the area where water is known to occur.

Drilling to a depth of approximately 30 feet will be necessary and if bedrock is encountered before any water is struck, then drilling should not proceed, since the granite, particularly where decomposed, is almost impervious and does not normally contain water.

CONCLUSIONS AND RECOMMENDATIONS:

Water suitable for use in a septic tank system may be obtained by drilling to a depth of approximately 30 feet at the site shown. Drilling further east or north is not recommended in view of the dry bores at the Police Station, and

the high ground north of the school possibly indicating an area of shallow bedrock.

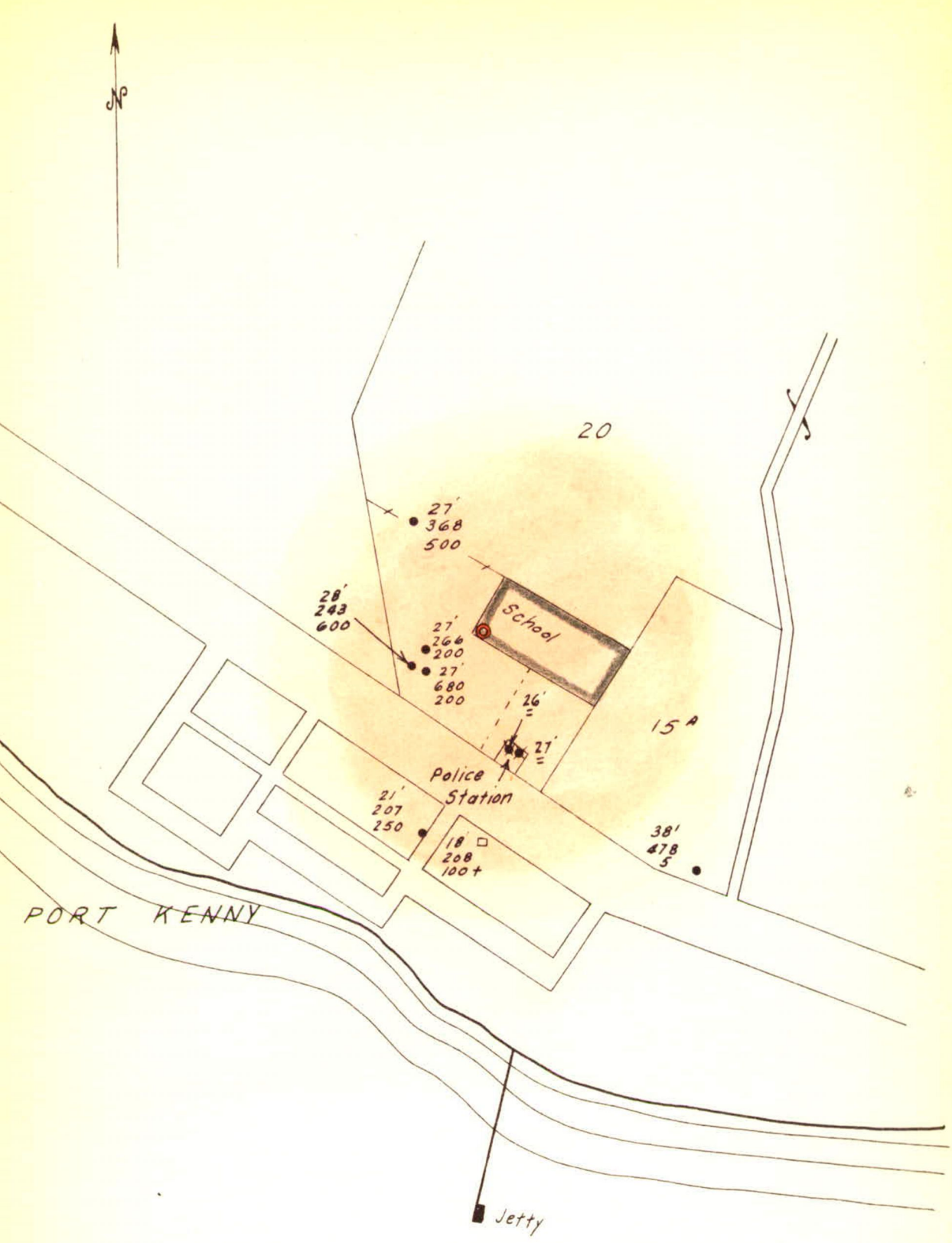
It may be possible to equip and use Mr. E.C. Shipard's bore situated a short distance north-east of the school property. Alternatively the existing bore supplying the school and Police Station may provide sufficient water if storage facilities are increased.

G. CRAWFORD

Geologist,

HYDROLOGY.

GC:SKT
27th April, 1959



Aeolianite with travertine capping.....

Suggested Bore Site.....

To accompany report by G. J. Crawford

S.A. DEPARTMENT OF MINES

Proved	Passed	Drn.	UNDERGROUND WATER SURVEY	D.M.	Scale 10 ch = 1"
		Tcd. A.W.	PT. KENNY SCHOOL	Req.	S2056
		Ckd. R.R.	Hd WRIGHT		Dg 21
Director		Exd.	EDUCATION DEPT.		Date 27-4-59

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