D.M. 818/53.

DEPARTMENT OF MINES.

SOUTH AUSTRALIA.

RB 36/52

REPORT ON GROUNDWATER PROSPECTS ON SEC. I.E.C.,

HD. SEYMOUR - E. A. NEUMANN.

LOCATION: Three to four miles North-Northeast of Tailem Bend.

RAINFALL: Approximately 15 inches per annum.

TOPOGRAPHY: The Southwestern corner of the block has the lowest elevation, about 150 feet vertically below the crest of a rather broad rise crossing the centre of the property from west to east. At the northern end, the land commences to slope downwards to the north, being at the northern boundary some 90 feet vertically below the crest of the rise.

At least two marked depressions occur on the expanse of the rise.

GEOLOGY & HYDROLOGY.

Outcrops of granite have been observed to occur in several places to the west and northwest, those on Sec. 1M2 Hd. Seymour and 221 Hd. Burdett being at a considerable elevation.

Tertiary Sediments of the Murray Basin overlie the bedrock and yield wind mill supplies provided they form a thick enough cover. Bores reaching bedrock at less than 150 feet or so may be dry, depending on surface elevation.

North of the property, on adjacent lands in the Hundred of Ettrick, the water quality is suitable for stock purposes, the isohals plotted during previous Departmental surveys indicating that there is an embayment extending southwards where stock water occurs, and apparently terminating near the north end of the Section.

Good stock water has been obtained in a line of bores less than half a mile north of the Section, and there is also a good stock bore to the east on Sec. 2B.

Between these, however, and the southern boundary of the section, a number of bores constructed on Secs. 1EB, 1EC and 2A

have produced salt water. One at Mr. Neumann's house, for example, is much too saline for stock.

It appears therefore, that to have a reasonable chance of success, drilling will have to be confined to the northern part of the section, preferably as close to the north boundary as possible. This involves other considerations, however. The country is overlain by travertine and sand, and in order to reduce erosion hazards to a minimum, it is advisable to have the watering point as central as possible.

Moving the site southwards undoubtedly increases the risk of cutting salt water, but it is thought that at one point (SiteA) local topographic conditions may offset this. At that point there is quite an extensive depression, the floor of which is only some 10' to 15' above the lowest point on the northern boundary. The floor of the depression is sand underlain by a travertinous crust, which at one place has formed a sinkhole. Evidently considerable runoff collects in the depression and is lost by downward percolation, so that it is very likely that a significant sweetening of the groundwater will have occurred. For this reason it is suggested that the bore be located at Site A, which has been indicated to Mr. Neumann. If not successful, any future drilling should be as close to the north boundary as possible (Site B).

There is a smaller and rather more centrally situated depression further south, where a bore would be very advantageously situated for subdivision purposes, but it is considered that the chances of obtaining serviceable water are less than at Site A. Drilling there (Site C) should only be undertaken if an initial bore at A has proved successful, when a bore at C might be undertaken as a speculation.

There is no way of determining whether bedrock is at shallow depths under any of the sites, but subject to its non-occurrence, drilling should be continued until water is cut, probably at a depth of about 250 feet or even more. The bore will need to be fully cased.

SUMMARY.

Stock quality water only may be expected, and its occurrence confined to the northern part of the section.

Site A should be drilled first, and if this is not successful, either because of salt water or shallow bedrock, another attempt at B along the northern boundary is warranted.

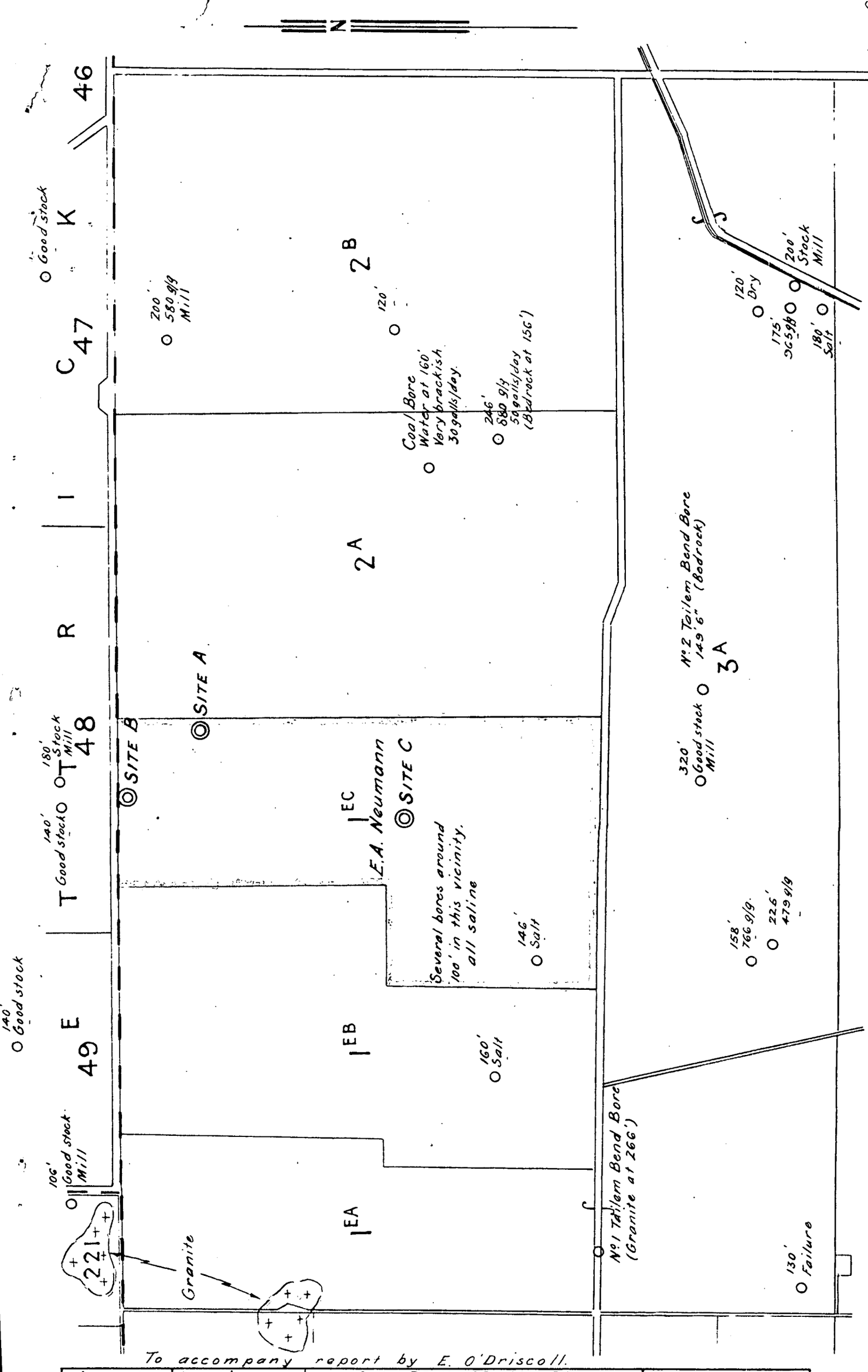
If A is successful, a bore at site C might be undertaken, but is considered rather speculative, as the quality may be saline.

Drilling will possibly be to a depth exceeding 250 foot.

S.W. O'Driscoll 15/9/53
SENIOR GEOLOGIST.

HYDROLOGY.

EPO'D:AK
14/9/53.



To accompany report by E. O'Driscoll.

Approved	Passed	Drn	S. A. DEPT. OF MINES	Scale - 40 chains to 1 inch
Director	C.D.	Trd Chd	UNDERGROUND WATER SURVEY SEC 1EC HD SEYMOUR	S 821