DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

GROUNDWATER SURVEY

Ivy Tanks Motel

by

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GEOLOGIST
HYDROGEOLOGY SECTION

6th August, 1970

Rept.Bk.No.70/116

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Rept.Bk.No.70/116
G.S.No.4505
Hyd.No.2264
D.M.No.655/70

GROUNDWATER SURVEY

Location

General: Eyre Highway, near Head of Great Australian Bight.

Hundred: -

Section: - Grid C6

Name of Property: Ivy Tanks Motel

Owner: R.J. Martin

Postal Address: Box 107, Ceduna, 5690, S.A.

Telephone No: -

Requirements

Water required for: Domestic and washing and ablutions

Quantity: 100 g.p.h. or better

Quality: -

Other factors: -

HYDROGEOLOGICAL REPORT

Physiography and Land Use

The motel is situated on the eastern edge of the Nullabor plain. To the north and west the ground surface is almost perfectly flat.

South and southeast from the motel irregular dunes occur, giving an undulating topography with up to 50ft. difference in height between dune crests and intervening depressions.

Climate

Nearest rainfall station: Yunta Mission

Mean annual rainfall: 9 inches

Surface Hydrology:

Streams: None observed

Geology

Soil Cover: Sands loam, generally thin. Poor siliceous sand on dune ridges.

Rock Units:
1. Recent sand dunes.
2. Nullabor Limestone.
3. Sedimentary sands and gravels.
4. Archaean gneiss and schist.

Lithology:

1. Siliceous sand dunes, mainly fixed by vegetation.
2. Nullabor Limestone is a dense limestone, about 250-300 feet thick. It is commonly cavernous, and has a re-cemented crust at the surface.
3. The sedimentary sequence consists of unconsolidated sands and gravels, with interbedded clay and lignite. It is separated from the overlying Nullabor Limestone by thick clay and shale.
4. Archaean gneiss and schist occur at depths of 500-600ft.

Direction and Amount of Dip: Horizontal.

Aquifer Assessment

Type: 1. Nullabor Limestone contains groundwater at a depth of approximately 150-200ft. However this water is generally saline, and in many places the dissolved salt content exceeds 14,000 parts per million. Supplies of the order of 500-1,000 gallons per hour are available.

2. Sands and gravels contain water under artesian pressure. Salinity is commonly less than 10,000 parts per million. Depth to water is about 500ft.

Extent: Both aquifers are thought to underlie the entire area.

Potential Recharge:

1. Nullabor Limestone, Recharge is by direct downward percolation of rainfall. However because of the low annual rainfall, and considerable depth to the water level, salinities are high and better quality water might be obtained when surface run-off is concentrated by dune slopes into depressions.

2. Recharge to the sands and gravels is thought to occur at considerable distance to the east and north, where these sediments outcrop.

Borehole Site Location:

General: A site was indicated near the foot of the sand dune ridge immediately south of the motel.

Proposed Depth: 200ft.

Probable Log: Nullabor Limestone

Expected Yield: 500 gallons per hour

Expected Quality: up to 10,000 parts per million.

Reason for location: Recharge in this area might be enhanced by surface run-off.

Drilling and Testing Recommendations

Drilling Hazards: Cavernous limestone.

Salinity might increase with depth.

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JACP:PMM
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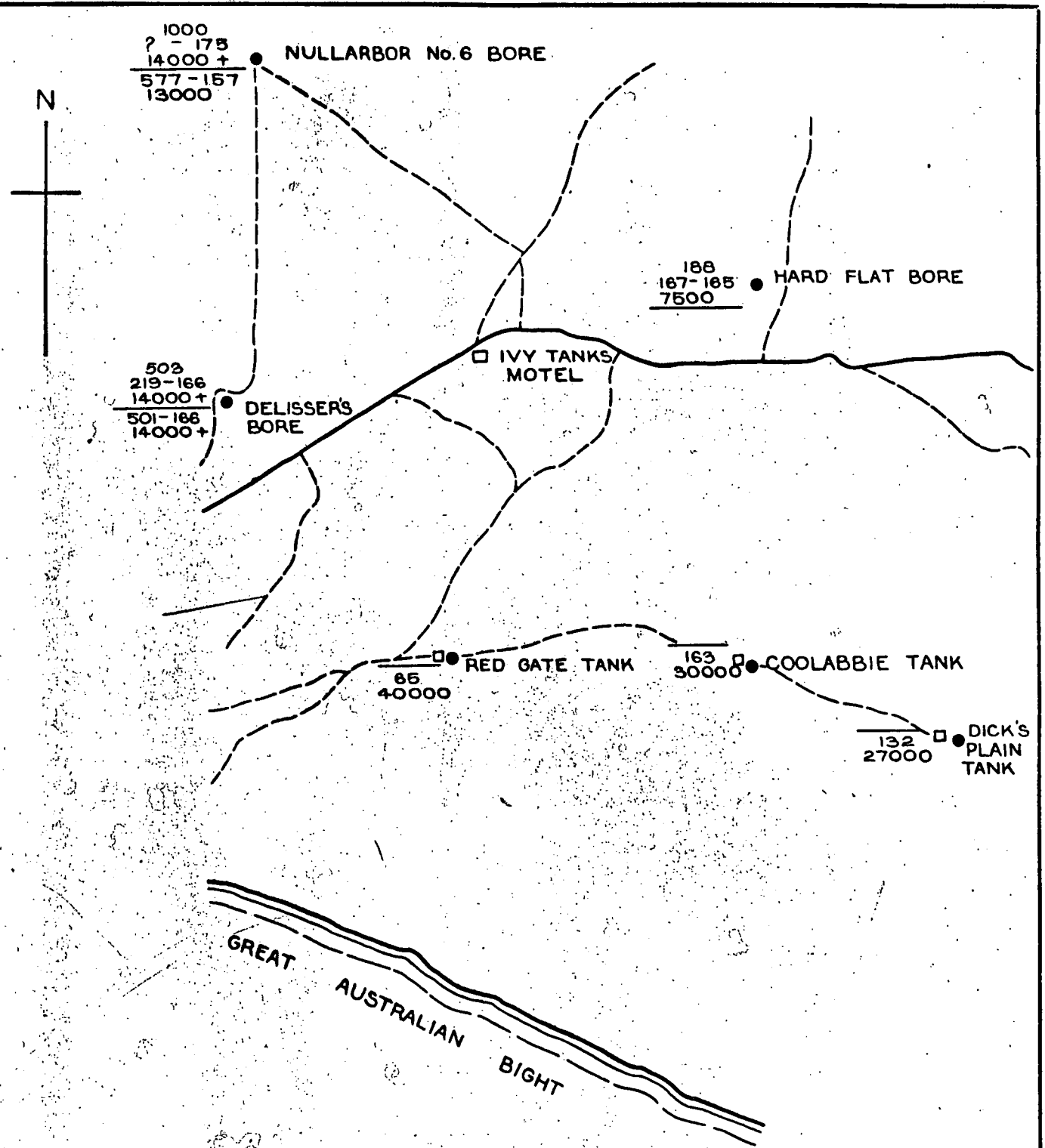

	DEPARTMENT OF MINES — SOUTH AUSTRALIA	Scale: 4 miles to 1 inch.
Compiled: J.A.C.P.	GROUNDWATER SURVEY IVY TANKS MOTEL NULLARBOR PLAINS (R.J. MARTIN)	Date: 4 Aug. '70
Drn. S.L.T. | Ckd. L.V.W.		Drg. No. S7892 A+D
S.G.M.		

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