McDILLS
NORTHERN TERRITORY

SHEET SG/53—7 INTERNATIONAL INDEX
1 : 250,000 GEOLOGICAL SERIES—EXPLANATORY NOTES

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NORTHERN TERRITORY

SHEET SG/53—7 INTERNATIONAL INDEX

Compiled by A. J. Stewart

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Minister for National Development

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CANBERRA 1968
Explanatory Notes on the McDills
Geological Sheet

The McDills Sheet area is situated between latitudes 25° and 26° south, and
longitudes 135° and 136° 30' east, in the western part of the Simpson Desert.
The southern boundary of the sheet coincides with the South Australian
border. The only formed road in the area connects Andado homestead with
New Crown homestead in the Finke Sheet area to the west; the road con-
tinues north from Andado through the Hale River Sheet area, and eventually
reaches Allambi homestead in the Rodinga Sheet area, or Allua Well in the
Alice Springs Sheet area. The bulldozed roads parallel to the sand dunes
in the eastern half of the Sheet area were made during the seismic surveys
conducted by Geosurveys of Australia Pty Ltd in 1964. Access to the McDills
No. 1 Well is from Mount Dare homestead, in South Australia.

Andado, the only homestead in the area, raises beef cattle in the western half
of the area, where all bores, wells, and tanks are sited; the eastern half is
part of the Simpson Desert. A landing strip is situated at the homestead, and
a large claypan 1 mile west of Mount Etingambra is also used by light air-
craft. Andado communicates by wireless transceiver with the Royal Flying
Doctor Base at Alice Springs.

Previous Investigations

The bibliography at the end of the notes lists all known articles concerning
early exploration, geological, and geophysical investigations which have been
conscemed with the McDills Sheet area.

In 1885, Lindsay (1890), on his journey into Central Australia, arrived near
Mount Etingambra, and continued northeast in an attempt to cross the desert
country. He was unable to penetrate the sand dunes and had to pass around
the western side of the area. In 1904, Barclay (1916) travelled from
Anacoora Bore (sunk in 1900-01) to Mount Peebles, Crown Point (in the
Finke Sheet area), and then north to the eastern MacDonnell Ranges. He
returned down the Hale River to Anacoora Bore, then again moved north
to Mount Peebles and the MacDonnell Ranges. Day (1916) traversed north-
northwest from Anacoora Bore, and passed through Steele Gap in the Hale
River Sheet area. Another party from his expedition left Mount Peebles and
travelled up the Hale River, joining the first party near Illogwa Creek.
Madigan (1929) made two flights over the area during his aerial survey of the
Simpson Desert, and later wrote an account of the whole area, describing the
desert and the rocks around its margins (Madigan, 1938). In 1936, E. A. Colson journeyed east from Mount Etingambra to Poeppeps Corner and then to Birdsville. No published account of his trip exists.

The first work with any bearing on the geology of the McDills Sheet area was probably the identification of Lower Permian spores from the Crown Point Formation in Malcoms Bore, just to the north of the Sheet area (Balme, 1959; also in Evans, 1964). Frome-Broken Hill Company Pty Ltd secured a lease immediately to the west of the Sheet area, and Wulff (1960) included a few notes on the area in his description of the southeastern part of the Amadeus Basin. Ludbrook (1960) identified a fauna of Albanian age in samples of Rumbalara Shale from Yardhoke Bore (now called Homestead Bore).


The Commonwealth Scientific and Industrial Research Organisation included the McDills Sheet area in their land research survey of the Alice Springs region in 1956-57 (Perry et al., 1962). In 1962, the Bureau of Mineral Resources' Geophysical Branch conducted a reconnaissance gravity survey (Lonsdale & Flavelle, 1963) and an aeromagnetic survey (Quilty & Millsom, 1964) over the area. A total magnetic intensity map is available in published form (map reference G53/B1-21, 1963) from the Bureau of Mineral Resources. Terpstra & Evans (1963) found Lower Cretaceous microfossils in samples of Rumbalara Shale from Birthday Bore, and Terpstra (1964) examined the De Souza Sandstone from the same bore but could find no organic remains. A field party from the Bureau mapped the McDills Sheet area by helicopter in August 1964 (Wells, Ranford, Stewart, Cook, & Shaw, 1968), and Lloyd (1967) mentions the area in his account of the Tertiary geology of the Northern Territory.

PHYSIOGRAPHY

Mesas and low hills, alluvial plains, and sand dunes are the three main landforms in the McDills Sheet area. Three groups of mesas and low hills in the western half of the area provide the only surface outcrops; they are surrounded by extensive flat areas of alluvium. Sand dunes completely cover the eastern half; Mount Dear, in the southwest, is a group of dunes which rises higher than the surrounding dunes, but no solid rock is exposed. The land surface has a regional fall from about 600 feet above sea level in the north to about 400 feet in the south. The Finke River cuts across the southwestern corner, but only occasionally carries surface water.
STRATIGRAPHY

The Stratigraphy of the area is summarized in Table 1. The units older than the Rumbalara Shale are known only in waterbores and McDills No. 1 Well.

PALAEOZOIC

Cambrian

McDills No. 1 Well terminated at 10,515 feet in dolomite and limestone (glauconitic in places) with interbeds of red and grey shale and sandstone. These are similar sediments to those of the Pertoorrita Group (Prichard & Quinlan, 1962; revised by Ranford et al., 1966, and by Wells et al., 1968) which are exposed in the cores of the large northeast-trending anticlines in the northwestern part of the neighbouring Hale River Sheet area (Wells et al., 1968). The thickness penetrated in McDills No. 1 was 1491 feet.

Fragmentary shells of phosphatic brachiopods were recovered from core 30 (9634-9641 feet). They are referable to the South Australian species 'Micromitra' eteridgei (Tate) and 'Nisusia' compa (Tate) and indicate a Lower Cambrian age, probably early in the latter half of the epoch (Joyce Gilbert-Tomlinson in Amerada Petroleum Corp., 1965). The same fossils occur in the Todd River Dolomite in the northeastern part of the Amadeus Basin (Wells et al., 1968).

Ordovician to Devonian

Overlying the carbonates in McDills No. 1 is 815 feet of red and white fine to coarse-grained sandstone, overlain by 1120 feet of red-brown to white fine to coarse-grained subangular to subrounded friable cross-bedded sandstone. The upper 1120 feet is regarded as Mereenie Sandstone (Madigan, 1932; revised by Prichard & Quinlan, 1962). If this is the case, the unit probably extends well to the north and northwest to link with known outcrops of Mereenie Sandstone in the northwestern corner of the Hale River Sheet area and in the southeastern part of the Rodinga Sheet area. The Mereenie Sandstone is ?Silurian-Devonian in age. The age and lithological correlation of the lower 815 feet of sandstone are not known, and the sandstone has not been shown as a separate unit in the cross-section. It is tentatively regarded as Ordovician (on the map it is included in the Siluro-Devonian Mereenie Sandstone).

Devonian to Carboniferous

Overlying the ?Mereenie Sandstone in McDills No. 1 is 3300 feet of conglomerate, sandstone, siltstone, and shale, assigned to the Finke Group (Wells, Stewart, & Skwarko, 1966). The lowest 1290 feet of this group consists of conglomerate, pebbly sandstone, and sandstone, and is referred to, or at least correlated with, the Polly Conglomerate (Wells, Stewart, & Skwarko, 1966), though it is far thicker than the Polly Conglomerate at the type locality in the Finke Sheet area. The conglomerate in McDills No. 1 may not be continuous with the Polly Conglomerate, which in the Finke Sheet area appears to be more of a local filling of hollows. The conglomerate in the well is overlain by 1730 feet of Langra Formation (Wells, Stewart, &...
<table>
<thead>
<tr>
<th>Age</th>
<th>Rock unit</th>
<th>Lithology</th>
<th>Thickness (feet)</th>
<th>Stratigraphic relationships</th>
<th>Fossils</th>
<th>Water supply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quaternary</strong></td>
<td>Alluvium (Qa)</td>
<td>Alluvial clay, some sand and gravel.</td>
<td>About 100</td>
<td>—</td>
<td>—</td>
<td>Good water in favourable areas.</td>
</tr>
<tr>
<td></td>
<td>Sand (Qa)</td>
<td>Aeolian sand, red-brown to orange.</td>
<td>About 100</td>
<td>—</td>
<td>—</td>
<td>Above water table.</td>
</tr>
<tr>
<td><strong>Tertiary</strong></td>
<td>Etingambia Formation (Ts)</td>
<td>Pale yellow-brown coarse unsorted sandstone, pebble sandstone, granule and pebble conglomerate, some kaolinitic siltstone.</td>
<td>Up to 40</td>
<td>Disconformal on Rumbalara Shale; unconformable at Mount Etingambia.</td>
<td>—</td>
<td>Above water table.</td>
</tr>
<tr>
<td><strong>Mesozoic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Cretaceous</td>
<td>Rumbalara Shale (Kirt)</td>
<td>White, yellow-brown, and purple kaolinitic siltstone, white claystone, silty claystone, yellow ochreous claystone, and gypsiferous claystone. In McDills No. 1, dark grey glauconitic mudstone and siltstone and a few limestone beds.</td>
<td>1300†</td>
<td>Conformable or unconformable on De Souza Sandstone elsewhere.</td>
<td>None from outcrop; <em>Inoceramus</em> from McDills No. 1</td>
<td>Largely impermeable.</td>
</tr>
<tr>
<td><strong>Jurassic</strong></td>
<td>De Souza Sandstone* (Md)</td>
<td>Sandstone, fine to coarse, subangular, unconsolidated, pyritic towards base, porous, in part pebbly.</td>
<td>900†</td>
<td>Unconformable on older units elsewhere.</td>
<td>None</td>
<td>Excellent, large supplies of good water, artesian in south.</td>
</tr>
<tr>
<td>Lower Permian</td>
<td>Crown Point Formation* (Pc)</td>
<td>Interbedded white sandstone, poorly sorted, pyritic; pebbly sandstone; grey shale, pebble in some beds; a few feet of lignite at top.</td>
<td>1440†</td>
<td>Unconformable on Iduncowra Sandstone and Horseshoe Bend Shale elsewhere.</td>
<td>Spores from McDills No. 1 and Birthday Bore.</td>
<td>Sandstones should yield water if not too clayey, but unit is too deep for economic drilling.</td>
</tr>
<tr>
<td>Palaeozoic: Devonian to Carboniferous</td>
<td>Horseshoe Bend Shale (Pzh)</td>
<td>Red shale and siltstone, green shale and siltstone, some sandstone and calcareous sandstone.</td>
<td>280†</td>
<td>Conformable on Langra Formation in Finke Sheet area.</td>
<td>None</td>
<td>Generally impermeable.</td>
</tr>
<tr>
<td></td>
<td>Langra Formation (Pzn)</td>
<td>White, pink, orange, and red sandstone, very fine to coarse; interbedded with shale, including red and green shale near base.</td>
<td>1730†</td>
<td>Conformable on Polly Conglomerate in Finke Sheet area.</td>
<td>None</td>
<td>Too deep, and usually salty.</td>
</tr>
<tr>
<td></td>
<td>Polly Conglomerate (Pzo)</td>
<td>Red to buff conglomerate, with pebbles of shale, chert, granite, quartzite, and quartz in poorly sorted sandstone matrix, fine to coarse, subangular; a few red shale interbeds.</td>
<td>1290†</td>
<td>Identification uncertain. *Mereenie Sandstone in McDills No. 1. Probably thins to west.</td>
<td>None</td>
<td>Too deep.</td>
</tr>
<tr>
<td>STRATIGRAPHIC UNITS</td>
<td>STRATUM</td>
<td>IDENTIFICATION</td>
<td>DESCRIPTION</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>--------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>DEVONIAN</strong></td>
<td>Polly Conglomerate (Pzo)</td>
<td>1200†</td>
<td>Red to buff conglomerate, with pebbles of shale, chert, granite, quartzite, and quartz in poorly sorted sandstone matrix, fine to coarse, subangular; a few red shale interbeds.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DEVONIAN</strong></td>
<td>None.</td>
<td>Identification uncertain.</td>
<td>Unconformable on ?Mereenie Sandstone in McDills No. 1. Probably thins to west.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>?SILURIAN TO DEVONIAN</strong></td>
<td>Mereenie Sandstone* (Pzm)</td>
<td>1120†</td>
<td>Sandstone, red-brown, some white, fine to coarse, subangular to sub-rounded, friable, porous, locally slightly calcareous, cross-bedded, trace varicolored shale.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>?ORDOVICIAN</strong></td>
<td>None.</td>
<td>Identification uncertain.</td>
<td>Ordovician age in McDills No. 1 Well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>?ORDOVICIAN</strong></td>
<td>Unnamed Unit*</td>
<td>815†</td>
<td>Sandstone, white, pink, and red-brown, fine to coarse; subangular to well rounded, tough, locally gypseiferous and hematitic, some red and green shale and pebble conglomerate.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAMBRIAN</strong></td>
<td>Pertaaorrra Group* (Incl. Todd River Dolomite) (Cop)</td>
<td>1491†</td>
<td>Dolomite and limestone, very coarse to very fine-grained, with interbeds of red shale and sandstone. Glauconite in upper part.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAMBRIAN</strong></td>
<td>None.</td>
<td>Identification uncertain.</td>
<td>Overlies Pertaaorrra Group in McDills No. 1. Not differentiated in cross-section.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAMBRIAN</strong></td>
<td>None.</td>
<td>Well terminated in Pertaaorrra Group.</td>
<td>Lower Cambrian fossils at 9634-41 feet in well.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Subsurface only. †Thickness in McDills No. 1 Well.
Skwarko, 1966), consisting of orange, red, and white sandstone with interbeds of shale; the sandstone is pyritic in places. The top unit of the group in the well is the Horseshoe Bend Shale (David & Howchin, 1924; revised by Wells, Stewart, & Skwarko, 1966), composed of 280 feet of red and green shale, with a few interbeds of fine-grained sandstone.

![Diagram of geological formations](image)

*Fig. 1. Relationships of Pertnjara Group and Finke Group in the southeast Amadeus Basin.*

The Finke Group is correlated with the Pertnjara Group (Fig. 1) which crops out in the neighbouring Rodinga and Hale River Sheet areas.

**Lower Permian**

The Crown Point Formation (Ward, 1925; revised by Wells, Stewart, & Skwarko, 1966) overlies the Horseshoe Bend Shale in McDills No. 1, and consists of 1440 feet of sandstone, pebbly sandstone, and shale. Pyrite is common throughout the formation, and is probably authigenic. Lower Permian spores are present in core samples from the upper two-thirds of the formation, and Upper Carboniferous spores occur near the bottom of the formation (Evans, in Amerada Petroleum Corp., 1965).

**Mesozoic**

**Jurassic**

Overlying the Crown Point Formation in the McDills No. 1 Well is 900 feet of *De Souza Sandstone* (Sullivan & Opik, 1951), fine to coarse-grained, pebbly in places, and containing some pyrite in the lower part. The Jurassic age is only tentative and depends upon the correctness of the correlation of the De Souza Sandstone with an unnamed sandstone of very similar lithology in the Mount Anna area of South Australia (Wells, Stewart, & Skwarko, 1966). This unnamed sandstone contains perfectly preserved plant impressions which have been assigned an Upper Jurassic to Lower Cretaceous age (Wopfner & Heath, 1963). A Jurassic age is more likely for the De Souza Sandstone because it is known to be unconformable beneath the Lower Cretaceous Rumbalara Shale at several places in the Finke Sheet area (Wells, Stewart, & Skwarko, 1966).

**Lower Cretaceous**

The De Souza Sandstone is overlain by 1300 feet of dark grey glauconitic mudstone of the Rumbalara Shale (Sullivan & Opik, 1951). Outcrops are bleached to white and pale yellow siltstone. Some beds of purple and white
speckled siltstone contain angular fragments of white clay, up to 1 inch across. At localities McD 16 and McD 17, the weathered Rumbalara Shale is 20 feet thick and consists of angular pieces of silicified siltstone, claystone, and nodular ‘billy’ in a red-brown, ferruginous, gritty matrix. At McD 17, vertical solution tubes up to 5 feet long have formed in the weathered rock. The tubes are 3 inches in diameter and have a lining of white nodular silcrete.

**Cenozoic**

**Tertiary**

The *Etingambra Formation* (Wells et al., 1968) for the most part rests disconformably on the weathered and uneven surface of the Rumbalara Shale; at the type locality, Mount Etingambra, a low-angle unconformity between the two units is exposed. The Etingambra Formation has a maximum thickness of 40 feet, in the northern part of the McDills Sheet area. The top few feet have been converted to silcrete. The formation is correlated with the ‘Macumba Sandstone’ (unpublished name) in South Australia, which contains Lower Tertiary fossils.

**Quaternary**

Most of the McDills Sheet area is covered by the red aeolian sand dunes of the Simpson Desert. The dunes are now fixed by vegetation, except on their crests. They are up to 100 feet high and 50 miles long; the eastern sides are generally steeper than the western, but this is not everywhere pronounced. Around the areas of solid outcrop, extensive tracts of alluvium are present, and carry a surface litter of unscoured fragments of ferruginized Rumbalara Shale. These inner areas of alluvium are surrounded by alluvium without shale fragments, on which large numbers of small claypans are present; ironstone pisoliths (‘buckshot gravel’) have formed in the pans.

**GEOLOGICAL HISTORY**

The sediments of the Pertaoorrtja Group were deposited in a shallow sea, and were probably overlain by one or more formations of the Larapinta Group (Wells et al., 1968), which were later removed during epeiric uplift. In McDills No. 1 Well the Pertaoorrtja Group is overlain by an unnamed sandstone unit, followed by the Mercenie Sandstone, which appears to have been deposited in marine or transitional marine/freshwater conditions. In the northeastern part of the Amadeus Basin, the Mercenie Sandstone overlies the Pertaoorrtja Group with a regional unconformity, and the succeeding Pertnjura Group rests unconformably on the Mercenie Sandstone. In McDills No. 1 the Mercenie Sandstone is overlain by the Polly Conglomerate of the Finke Group. The conglomerate is probably a freshwater deposit, and the overlying Langra Formation and Horseshoe Bend Shale may also be non-marine. The sequence of conglomerate, sandstone, and shale presumably reflects the levelling of the landmass which provided the clastic material.

The distribution and thickness of the Mercenie Sandstone in the southeastern part of the Amadeus Basin indicate that the formation was deposited in two distinct but connected basins. One was centred in the Henbury Sheet area
to the northwest, the other in the Hale River/McDills Sheet areas. This supposition is based on isopachs drawn from measured thicknesses of the preserved formation. It is presumed that the pre-Pertnjara erosion did not radically alter the distribution of the Merenie Sandstone. The southern and eastern limits of the eastern basin are at present unknown. The two basins were connected in the north across the eastern part of the Rodinga Sheet area, around the northern end of a peninsula of Upper Proterozoic rocks. This peninsula extended northeastwards from the Kulgera-Umbeura area to the southeastern part of the Rodinga Sheet area, and separated the two basins in the south.

After the diastrophism and uplift in the (?Middle) Devonian, at the end of the deposition of the Merenie Sandstone, the peninsula was high enough to form a southern limit to the deposition of the lower part of the Pertnjara Group (Fig. 1). In the McDills Sheet area, on the eastern side of the peninsula, the Finke Group, beginning with the ?Polly Conglomerate, was deposited on top of the Merenie Sandstone. The peninsula was covered during the deposition of the Langra Formation and Horseshoe Bend Shale, which interfingered with the upper sediments of the Pertnjara Group to the northwest (Fig. 1). Thus the two freshwater basins, which were initially partly separated, coalesced as they filled to become one larger basin during the Carboniferous. The landmass which provided the bulk of the detritus was presumably the deformed and uplifted sediments of the Amadeus Basin to the north and northwest, the roots of which now form the MacDonnell Ranges.

At the close of the Carboniferous, and continuing into the Lower Permian, the Crown Point Formation was deposited during a period of glaciation. The exact environment of the formation cannot yet be determined, but it was probably non-marine. The Upper Permian, Triassic, and Lower and Middle Jurassic have left no sedimentary record in the area. Deposition did not commence again until late Jurassic or earliest Cretaceous time, when the freshwater De Souza Sandstone was laid down, followed by a marine transgression and deposition of the Aptian Rumbalara Shale.

A general uplift took place after the Aptian, and was followed by weathering and slight erosion of the upper surface of the Rumbalara Shale. In the lower Tertiary, the 'torrent gravels' of the Etingambra Formation were deposited. Weathering resumed, and by the middle Tertiary (Langford-Smith & Dury, 1965) a capping of silcrete several feet thick had formed on the Etingambra Formation, and on the tops of hills of Rumbalara Shale. Erosion in the upper Tertiary removed a great deal of the Etingambra Formation and the uppermost part of the Rumbalara Shale, leaving the remnants as mesas. In the Quaternary, the climate became drier and a cover of aeolian sand formed. The fixing of the dunes by vegetation and the deposition of alluvium around the mesas indicate a slight moistening of the climate in recent time.

**ECONOMIC GEOLOGY**

*Petroleum Exploration*

The regional gravity survey by the Bureau of Mineral Resources (Lonsdale & Flavelle, 1963) revealed two gravity maxima, and detailed surveys by Geosurveys (Denton & Dennison, 1960a, 1960b; Sprigg & Stackler, 1962;
Stackler, 1964a, 1964b, 1965) explored these further. Regional Bouger anomalies are shown in Figure 2. The sheet area covers part of a gravity feature known as the McDills Gravity Platform (Lonsdale & Flavelle, 1963). Seismic surveys over the larger anomaly, in the eastern half of the Sheet area, mapped a large closed anticline, the McDills Anticline, extending north-northeast from the Anacoorra Bore area (Yakunin, 1964a, 1964b, 1965a, 1965b). The McDills No. 1 Well was spudded on the crest of the anticline, and was abandoned at a depth of 10,515 feet without encountering hydrocarbons (Amerada Petroleum Corp., 1965).

Water Supply

Surface water in the McDills Sheet area is in particularly short supply, as the median annual precipitation over a ten-year period is only about 6 inches. A few earth tanks have been built, but unless replenished by a bore they are empty for most of the time.

Groundwater resources are more encouraging because of the existence of the clean and porous De Souza Sandstone. This sandstone lies well below the piezometric surface, and every bore that has reached it has produced water. The water rises to a considerable height in the bores, and is artesian in Anacoorra Bore. Some shallow bores and wells have been sunk in Quaternary alluvium, and these also produce good supplies of water. All known bore information is listed in Table 2, and was provided by M. Clark, Esq., of Andado homestead. The names of the bores shown on the map are those now in common use, but where other names exist, these are included in parentheses on the map and in the table.
TABLE 2 WATERBORE INFORMATION (from M. Clark, Andado homestead, pers. comm.)

<table>
<thead>
<tr>
<th>Bore name</th>
<th>Total depth in feet</th>
<th>Water level in feet</th>
<th>Strata penetrated</th>
<th>Water supply (gph)</th>
<th>Water quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEEP BORES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anacoora</td>
<td>ca 1200</td>
<td></td>
<td>Artesian</td>
<td>adequate</td>
<td>—</td>
</tr>
<tr>
<td>Birthday</td>
<td>580</td>
<td>110</td>
<td>All deep bores penetrated shale with interbeds of fine white sand up to 100 feet thick.</td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>Boundary</td>
<td>1400</td>
<td>70</td>
<td>After striking the sandstone aquifer, drilling was continued for only a few more feet in each case.</td>
<td>adequate</td>
<td>Slightly salty</td>
</tr>
<tr>
<td>Dakota</td>
<td>1600</td>
<td>240</td>
<td></td>
<td>adequate</td>
<td>Good</td>
</tr>
<tr>
<td>East</td>
<td>1120</td>
<td>50</td>
<td></td>
<td>adequate</td>
<td>Slightly salty</td>
</tr>
<tr>
<td>Homestead (Emu Hole, Yard Hole)</td>
<td>703</td>
<td>45</td>
<td></td>
<td>adequate</td>
<td>Good</td>
</tr>
<tr>
<td>Mayfields (Maryfields)</td>
<td>1200</td>
<td>55</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>North</td>
<td>560</td>
<td>70</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>Peebles</td>
<td>1300</td>
<td>70</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>West</td>
<td>650</td>
<td>70</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>SHALLOW BORES AND WELLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indinda (Endinda)</td>
<td>74</td>
<td>70</td>
<td>All shallow holes penetrated mainly clay overlying sand.</td>
<td>1000</td>
<td>Good</td>
</tr>
<tr>
<td>Indemina</td>
<td>80</td>
<td>60</td>
<td></td>
<td>3000 to 5000</td>
<td>Slightly brackish</td>
</tr>
<tr>
<td>McDills Bore and Well</td>
<td>57</td>
<td>45</td>
<td></td>
<td>1000</td>
<td>Good</td>
</tr>
<tr>
<td>Old Station Well</td>
<td>74</td>
<td>70</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
<tr>
<td>South Bore and Well</td>
<td>40</td>
<td>30</td>
<td></td>
<td>1000</td>
<td>Good</td>
</tr>
<tr>
<td>Whitewood</td>
<td>120</td>
<td>110</td>
<td></td>
<td>1200</td>
<td>Good</td>
</tr>
</tbody>
</table>

The extent and thickness of the De Souza Sandstone are not known, but the seismic surveys indicate that it is widespread, and it probably extends throughout the area beneath the capping of Rumbalara Shale. The shallowest drilling is in the western third of the Sheet area, where the depth to the De Souza Sandstone is between 600 and 1000 feet. Along the crest of the McDills Anticline, the depth to this formation is 1400 feet or more. Away from these areas, drilling will necessarily be deeper.

Water recovered during an artesian flow at 2375 feet in McDills No. 1 from Permian rocks contained 2423 ppm total salts. The well was completed as a water well with water flowing at an estimated 2000 gph from the De Souza Sandstone.
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*Unpublished company reports can be consulted at the Bureau of Mineral Resources, Canberra.