WATER DIVISION
Investigation Branch
Groundwater Section
REPORT NO 40/84 D

BORE COMPLETION REPORT
BORE 22899 12/13
NAMURGADABU OUTSTATION

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HYDROGEOLOGIST
NOVEMBER 1984

5:KARP
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1. INTRODUCTION

This report provides details of construction and pumping recommendations for the bore drilled on Namurgadabu outstation.

The outstation is situated some 350 km east of Darwin at AMG co-ordinates 943 533 (Tomkinson 1:100 000 sheet 5773).

Population of the outstation fluctuates between 20 and 50 people.

Bores 22898, 22899, 23190, 23191, 23192 and 23193 were drilled. Bore 22899 was successful.

The work was carried out in September 1984 on behalf of the Department of Community Development and involved preliminary investigation, construction and testing of the production bore.

2. HYDROGEOLOGY

The outstation is situated in the northern part of Arafura Basin. The Mullaman Beds of Lower Cretaceous age unconformably overlie rocks of the Raiwalla Shale of Upper Proterozoic.

The Mullaman Beds are composed of siltstone, claystone and sandstone. The rocks are horizontal and commonly deeply laterised. The Raiwalla Shale is mainly composed of fissily grey, green and purple shale, siltstone and fine grained sandstone.

Bore 22899 was drilled in the Raiwalla Shale to the depth of 80 m. The aquifer was struck between 26.7 m and 29.0 m of depth.

3. RESULTS

Six bores were drilled but only 22899 was constructed with steel casing and stainless steel screen.

Eight hour constant discharge test and recovery test was conducted and a water sample taken.

This bore is recommended for the construction of a windmill as the supply is 0.3 L/s.

The water quality is considered suitable for human consumption.

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4. RECOMMENDATIONS

Recommendations for pumping

The recommendations for pumping of the bore is presented in the table below.

<table>
<thead>
<tr>
<th>BORE</th>
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<tr>
<td>BORE MAX. CONTINUOUS PUMPING RATE</td>
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<tr>
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<tr>
<td>22899</td>
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</table>

These recommendations are based on available hydraulic and hydrologic data considered safe, but not conservative.

Exceeding the pumping rate will fork the bore which may lead to pump problems.

Recommendations for finishing and protecting of bores

Attention to the following points will ensure a long and safe life for the bore supply and help prevent pollution of the groundwater resource.

(1) Construct a concrete apron around the bore-head approximately 2 m in diameter.

(2) Prevent drainage of surface flow and waste water to the bore in the vicinity of the bore.

(3) Prevent spillage of fuel and oil on the ground around the bore.

(4) First tap on the pipeline should not be less than 5 m from the bore-head.

(5) Seal the space between casing and pump equipment to prevent ingress of vermin, dirt and pollutants.

(6) If the bore should be no longer required, the casing is to be securely capped and the bore backfilled.

(7) Maintain pumping equipment in good order to prevent pollution.

In addition, please ensure that the BORE IDENTIFICATION TAG is retained securely when the bore is equipped. This is best done by setting the bore cap into the concrete surround when it is cut off to allow equipping of the bore.
DEPTH BORE GRAPHIC STRATA DESCRIPTION (m) CONSTRUCTION LOG

AQUIFERS (WATER STRUCK)

<table>
<thead>
<tr>
<th>DEPTH (m)</th>
<th>BORE CONSTRUCTION</th>
<th>GRAPHIC LOG</th>
<th>STRATA DESCRIPTION</th>
<th>AQUIFERS</th>
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<tr>
<td>0.64</td>
<td></td>
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<td>SANDY CLAY: red, brown</td>
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<tr>
<td>0</td>
<td>152 mm CASING</td>
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<td>CLAY: red, brown</td>
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</tr>
<tr>
<td>0</td>
<td>PACKER</td>
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<td>SILTSTONE: red, brown</td>
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<tr>
<td>0.3 L/s</td>
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<td></td>
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<td>SWL 11.4</td>
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COMPOSITE LOG OF BORE 22899