GEOLOGICAL CROSS-SECTION A-B

HORIZONTAL SCALE 1 : 250000

A — B

Olo
€Olj
€mt

GROUNDWATER RESOURCE AVAILABILITY

FRACTURED AND KARSTIC ROCKS - EXTENSIVE AQUIFERS

| €mt | Tindall Limestone | Limestone and siltstone | Unconfined aquifer of moderate yield potential. Suitable for domestic, industrial, pastoral and horticultural development. This aquifer provides the base flow for the Katherine, Fergusson, Douglas, Flora and King Rivers. Availability of groundwater based primarily on maintaining river baseflows. | **Expected Regional Resource Availability - 0.5 ML/Ha/yr** Bore yields typically 2-20 L/s. Higher yielding bores (up to 60 L/s) have been constructed depending on local aquifer characteristics. From available data of aquifer hydraulic characteristics it would appear that developments requiring large quantities (up to 230 L/s or 20 ML/day) of water are feasible. Based on a regional resource availability of 0.5 ML/Ha/year, development utilising 20 ML/day (or 7300 ML/year) will utilise the groundwater resource beneath 14600 Ha of land. |
| 5% | | | | |

| Olo | Oolloo Limestone | Dolomitic sandy limestone | Unconfined aquifer of moderate yield potential. Suitable for domestic, industrial, pastoral and horticultural development. This aquifer provides the base flow for the Daly River. Availability of groundwater based primarily on maintaining river baseflows. | **Expected Regional Resource Availability - 0.5 ML/Ha/yr** Bore yields typically in excess of 10 L/s. Higher yielding bores (up to 80 L/s) have been constructed depending on local aquifer characteristics. From available data of aquifer hydraulic characteristics it would appear that developments requiring large quantities (up to 230 L/s or 20 ML/day) of water are feasible. Based on a regional resource availability of 0.5 ML/Ha/year, development utilising 20 ML/day (or 7300 ML/year) will utilise the groundwater resource beneath 14600 Ha of land. |
| 5% | | | | |

€Olj	Jinduckin Formation	Limestone, siltstone and shale	Unconfined aquifer of low yield potential. Suitable for domestic, pastoral and small scale horticultural development. Availability of groundwater based primarily on sustaining rural production.	**Expected Regional Resource Availability - 0.2 ML/Ha/yr** Bore yields from Jinduckin Formation typically 0-5 L/s. Bore yields from Tindall Limestone typically 2-10 L/s. Higher yielding bores (up to 10 L/s from Jinduckin and up to 20 L/s from Tindall) have been constructed depending on local aquifer characteristics. Based on regional availability of 0.2 ML/Ha/year, a development utilising 2000 ML/year (enough for a 200 Ha crop) will utilise the resource beneath 10000 Ha of land.
K / €mt	Tindall Limestone overlain by Mullaman Beds	Limestone and siltstone		
2%				

| €mt | Tindall Limestone | Limestone and siltstone | Confined aquifer of low yield potential. Suitable for domestic, pastoral and small scale horticultural development. Availability of groundwater based primarily on maintaining pressure heads in the aquifer. | **Expected Regional Resource Availability - 0.05 ML/Ha/yr** Bore yields typically 10-30 L/s. Based on a regional resource availability of 0.05 ML/Ha/year, a development utilising 2000 ML/year (enough for a 200 Ha crop) will utilise the resource beneath 40000 Ha of land. |
| 0.5% | | | | |

Note :
- In times of baseflow conditions (after July) pumpage from rivers should be included in the availability of the adjacent groundwater resource.
- The red boxes have been included to indicate the percentage of the area underlain by each groundwater resource type that can be irrigated at 10 ML/Ha/year with the available groundwater resource. (eg. For the green box labelled Olo, 5% of the available area can be irrigated using that groundwater resource).

FRACTURED AND WEATHERED ROCKS - LOCAL AQUIFERS

- yield 0.5 to 5.0 L/s
- Insufficient groundwater resources to sustain developments requiring large quantities of water.

FRACTURED AND WEATHERED ROCKS WITH MINOR GROUNDWATER RESOURCES

- yield less than 0.5 L/s
- Insufficient groundwater resources to sustain developments requiring large quantities of water.

POTENTIAL IRRIGABLE AREA (BASED ON SURFACE WATER AVAILABILITY) AT GAUGE STATIONS LOCATIONS ASSUMING NO DEVELOPMENT OF EITHER GROUNDWATER OR SURFACE WATER RESOURCES UPSTREAM

GAUGE NO.	RIVER/CREEK NAME	POTENTIAL IRRIGABLE AREA UTILISING DRY SEASON RUN OF RIVER FLOW - Ha	POTENTIAL IRRIGABLE AREA UTILISING OFF STREAM STORAGE OF WET SEASON RUN OF RIVER FLOW - Ha
8140001	Katherine River	960	8400
8140008	Fergusson River	nil	900
8140019	Katherine River	nil	5100
8140042	Daly River	12000	32000
8140067	Daly River	2600	18000
8140044	Flora River	2200	3600
8140063	Douglas River	nil	900
8140152	Edith River	nil	500
8140159	Seventeen Mile Creek	nil	500
8140166	Fish River	nil	300
8140218	Katherine River	nil	3900
8200045	South Alligator River	nil	1800
9030176	Roper River	800	2400
8180026	Mary River	nil	600

Note :
Irrigation potentials have been estimated with a water requirement of 10 ML/Ha/year.

Both run of river and offstream storage potentials assume 50 % streamflow is always maintained for environmental purposes, without upstream use.

Run of river irrigation potentials give the irrigable area that can be supported by the dry season flow making allowance for environmental purposes and other uses.

Offstream storage irrigation potential is based on the volume of water in megalitres (ML) available per annum for offstream storage (based on 80% reliability).

The extent of the indicated irrigable area is based on farms that could possibly be irrigated by on-farm storage using 400 m radius ring tanks, after taking into account evaporation loss from the on-farm storage. Surplus flows in the streams are pumped during flood-flow periods (wet season Jan. - Apr.) to on-farm storage tanks, for use during the dry season.

LEGEND

- 50 km Radius Concentric Circles
- Run of River and Offstream Storage Potential
- Offstream Storage Potential
- Potential Damsite
- Stream Gauge
- Median Annual Rainfall - mm (adapted from Atlas of Australian Resources 1986)
- Mean Annual Runoff Range - mm
- Bore (cross-section only)
- Line of Cross-section
- River or Creek
- Major Road
- Gas pipeline
- Proposed Railway
- Reserves and National Parks Boundaries
- Cadastral Boundaries

LOCATION MAP

DARWIN
KATHERINE
Tennant Creek
Alice Springs

BLACK NUMBERED LINES ARE 50000 METRE INTERVALS OF THE MAP GRID OF AUSTRALIA, ZONE 53
PROJECTION : UNIVERSAL TRANSVERSE MERCATOR
HORIZONTAL DATUM : GDA 94
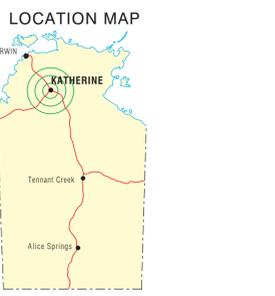
Note :
This map should only be used for regional planning. Do not use this map for assessment for water supply prospects on specific sites or individual blocks.

Map compiled by D Chin and J. Paiva, Natural Resources Division, from information within the Division and base maps of the Australian Geological Survey Organisation, Canberra, Australian Capital Territory, and the Northern Territory Geological Survey, Department of Mines and Energy. January 1998.

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Note:
This map was produced on the Geocentric Datum of Australia (GDA94)
GDA

WATER RESOURCE AVAILABILITY MAP
WITHIN 150 KM OF KATHERINE

Northern Territory Government
Department of Infrastructure, Planning and Environment
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