

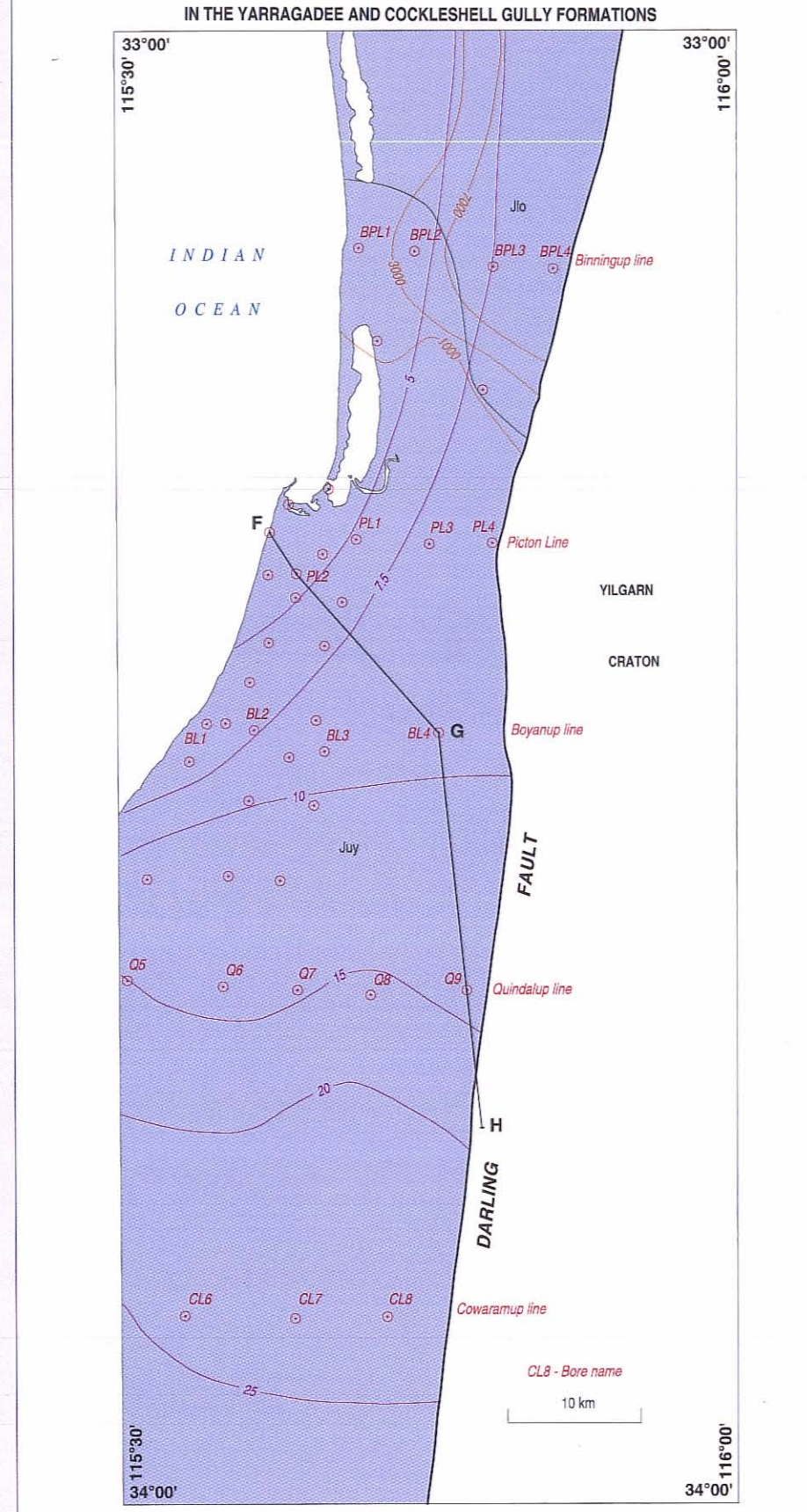
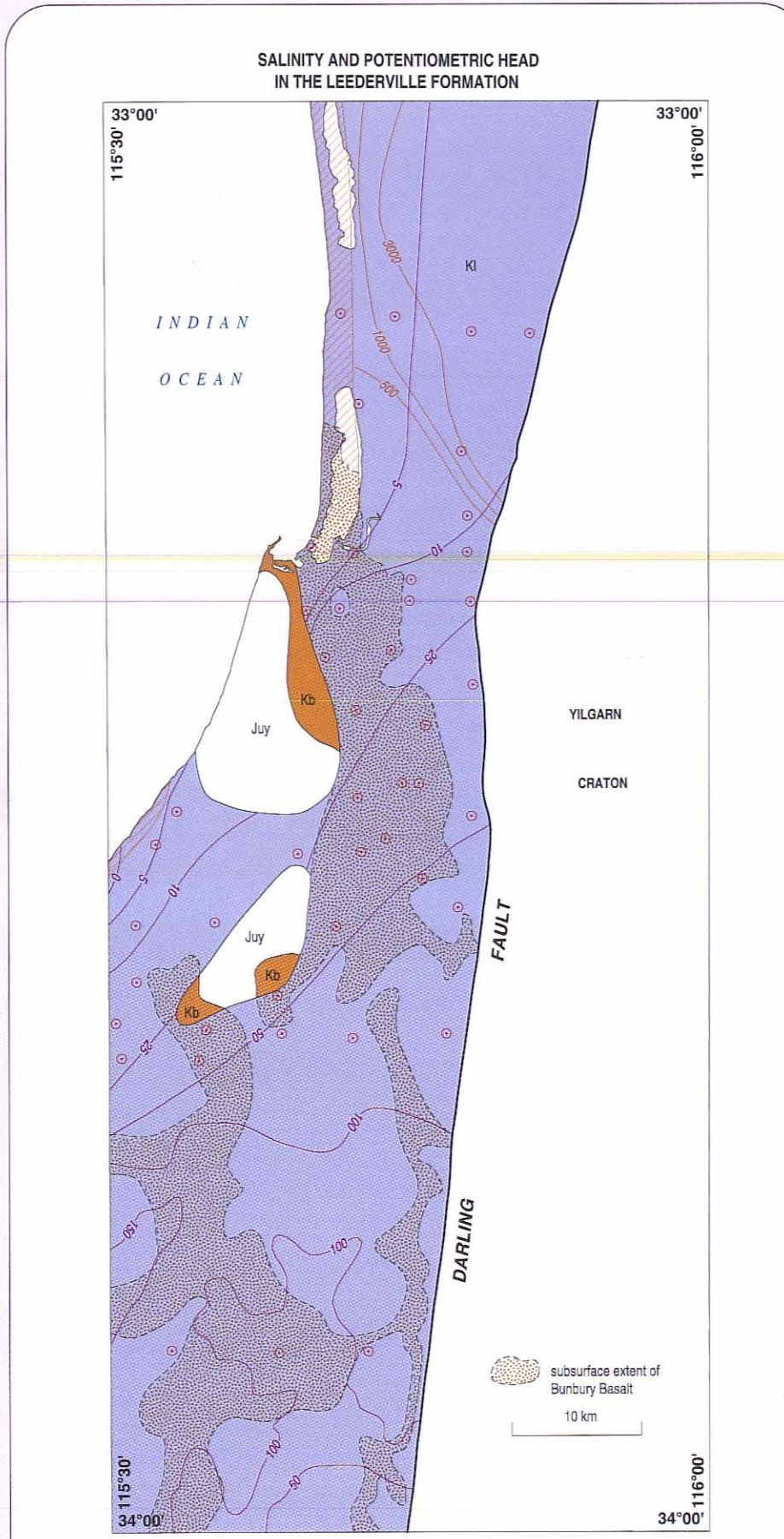
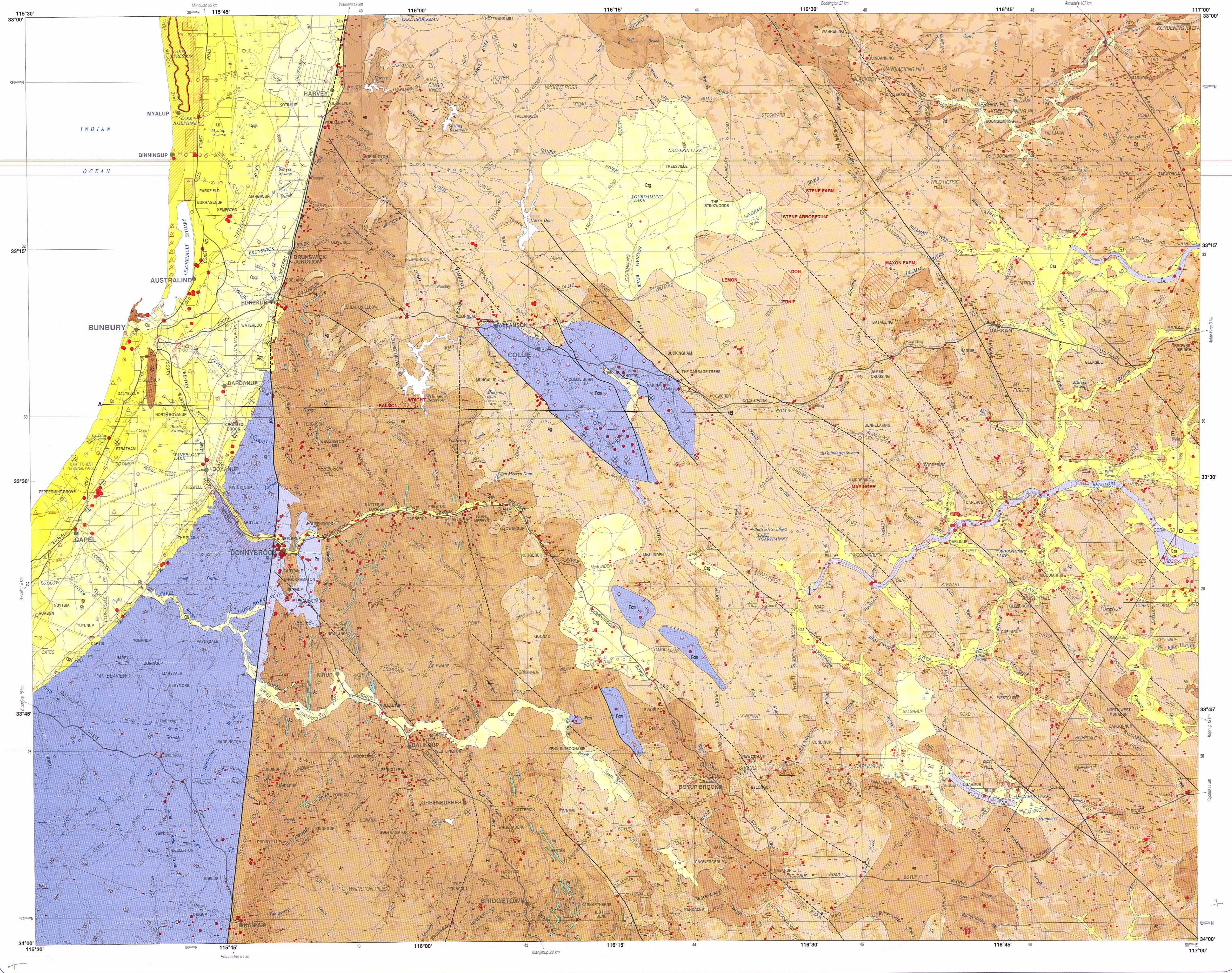
HYDROGEOLOGY: 1:250,000 COLLIE

COLLIE

WATER AND RIVERS COMMISSION

SHEET SI 50-6

1:250 000 HYDROGEOLOGICAL SERIES



REFERENCE

	Surface aquifer - karstic or unconsolidated, extensive or local, major to minor groundwater resources		Fractured rock aquifer - locally fractured and jointed, minor to major groundwater resources
	Sedimentary aquifer - minor to no groundwater resources		Fractured and weathered rocks - local aquifer, minor to no groundwater resources
	Sedimentary aquifer - major to minor groundwater resources, extensive to local unconfined and confined aquifers with irregular porosity, minor local unconfined and confined aquifers, local to extensive		Fractured and weathered rocks - local aquifer, minor to no groundwater resources
	Aquiclude - no groundwater resources		

HYDROGEOLOGY

QUATERNARY		Alluvium, silt, clay and clay deposited by modern drainage	Minor local aquifer: fresh to saline	
CHITZOIC		TAMBLER LESTERON - siltstone, calcarenite, calcified and leached to quartz sand	Major unconsolidated or karstic aquifer, generally fresh; salinized situation near coast	
		GULDFOND FORMATION - alluvial sand, clay and gravel with minor siltstone and shallow marine lenses	Minor local aquifer: fresh to brackish	
		YODANUP FORMATION - leached or leached beach sand and basal conglomerate	Minor aquifer: fresh to brackish	
		Aluminum and calcareous sand, silt, clay, gravel and minor lenses; coarse pebbles or gravel in weathered basement	Minor local aquifer: brackish to hypersaline	
		Conglomerate; quartzite or sandstone pebbles in a sandy clay matrix - variably identified	Minor aquifer: brackish	
		Alluvial deposits: broad tracts of sand, silt and gravel; locally identified	Minor aquifer: fresh to brackish	
		Laustrine or alluvial clay; restricted to paleosol (section only)	Aquiclude	
PERMIAN		Sand - restricted to paleosol; covered by paleosol (clay) and overlain by alluvium and calcareous	Minor to major aquifer: fresh to hypersaline	
		Sands and clays with the Quabup paleochannel	Minor aquifer: fresh to brackish	
CRETACEOUS		NAKINA FORMATION - fine-laminated sandstone, siltstone, claystone and conglomerate	Minor local aquifer: brackish to saline	
		WARBURG GROUP (including the LEEDERVILLE FORMATION) - interbedded sandstone, claystone and shale	Major aquifer: fresh to brackish	
MESOZOIC		BUNBURY BASALT - porphyritic basalt locally weathered to clay in subsurface	Aquiclude	
JURASSIC		YARRAGADEE FORMATION - interbedded sandstone, siltstone and shale	Major aquifer: mainly fresh	
TRIASSIC		COCKLESHELL GULLY FORMATION - interbedded sandstone, siltstone, shale and coal	Major aquifer: mainly brackish to saline	
PALAEZOIC	PERMIAN		DOONBYRON SANDSTONE - interbedded fossiliferous sandstone and shale with minor grit	Minor aquifer: fresh
		PERM	Coal measures - interbedded coal seams, sandstone and shale	Major aquifer: fresh to brackish
		SHOTS FORMATION - siltstone, claystone and mudstone with granitoid clasts overlying crystalline basement	Minor aquifer: brackish; fresh to brackish	
PROTEROZOIC		Mafic dyke and sill - fine to coarse grained, doleritic and gabbroic dykes; some xenoliths	Aquiclude	
		Quartz dyke	Minor local aquifer: fresh to saline	
ARCHAIC		Granitoid rock, porphyritic and even-grained outcrop (indicated by darker colour); subsurface generally weathered to clay and (indicated by lighter colour)	Minor local aquifer: fresh to saline	
		Quartzite - metamorphosed; locally fractured and jointed	Very minor local aquifer: fresh to saline	
		Quartzite - metamorphosed; locally fractured and jointed	Minor local aquifer: fresh to brackish	

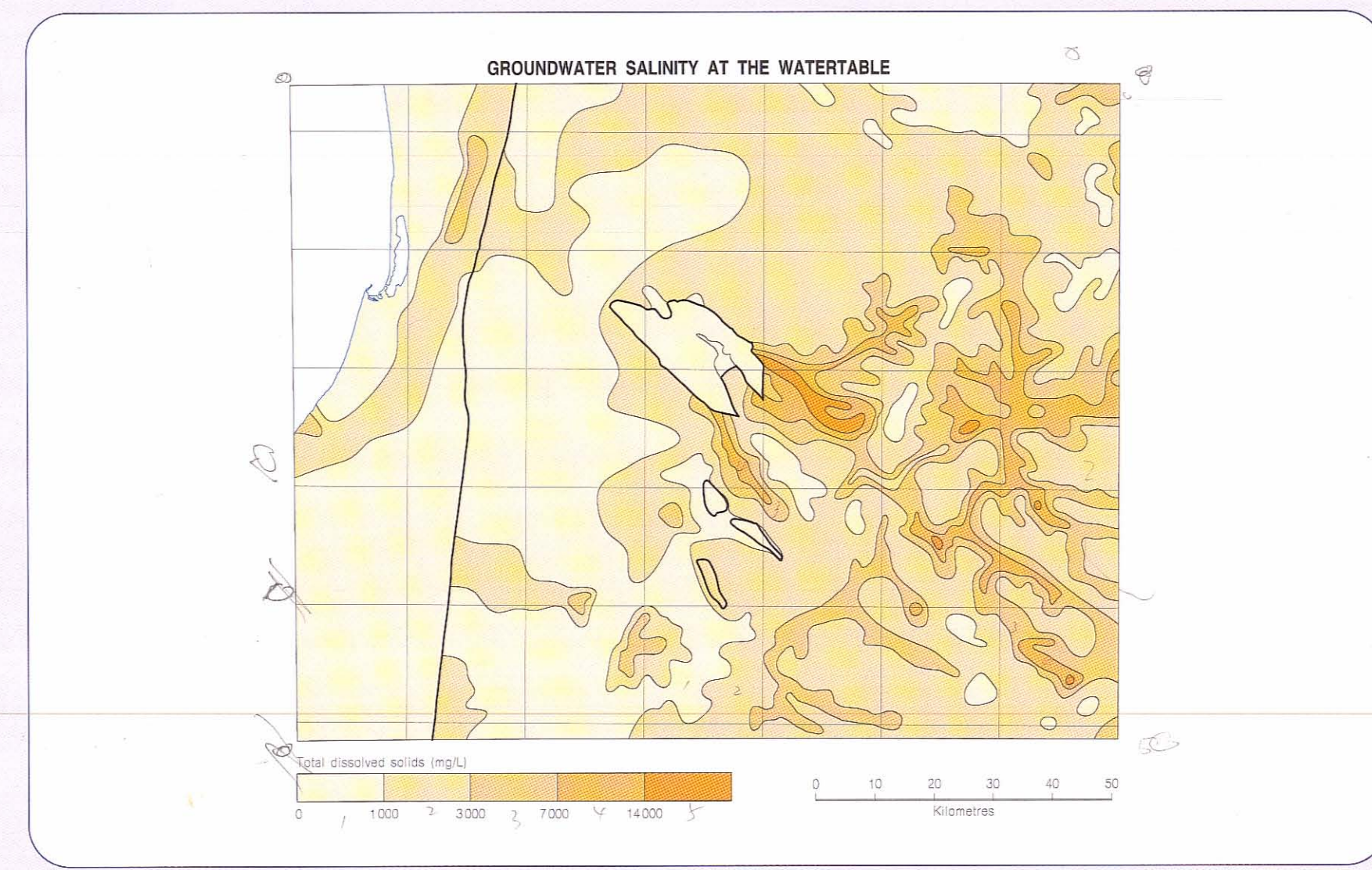
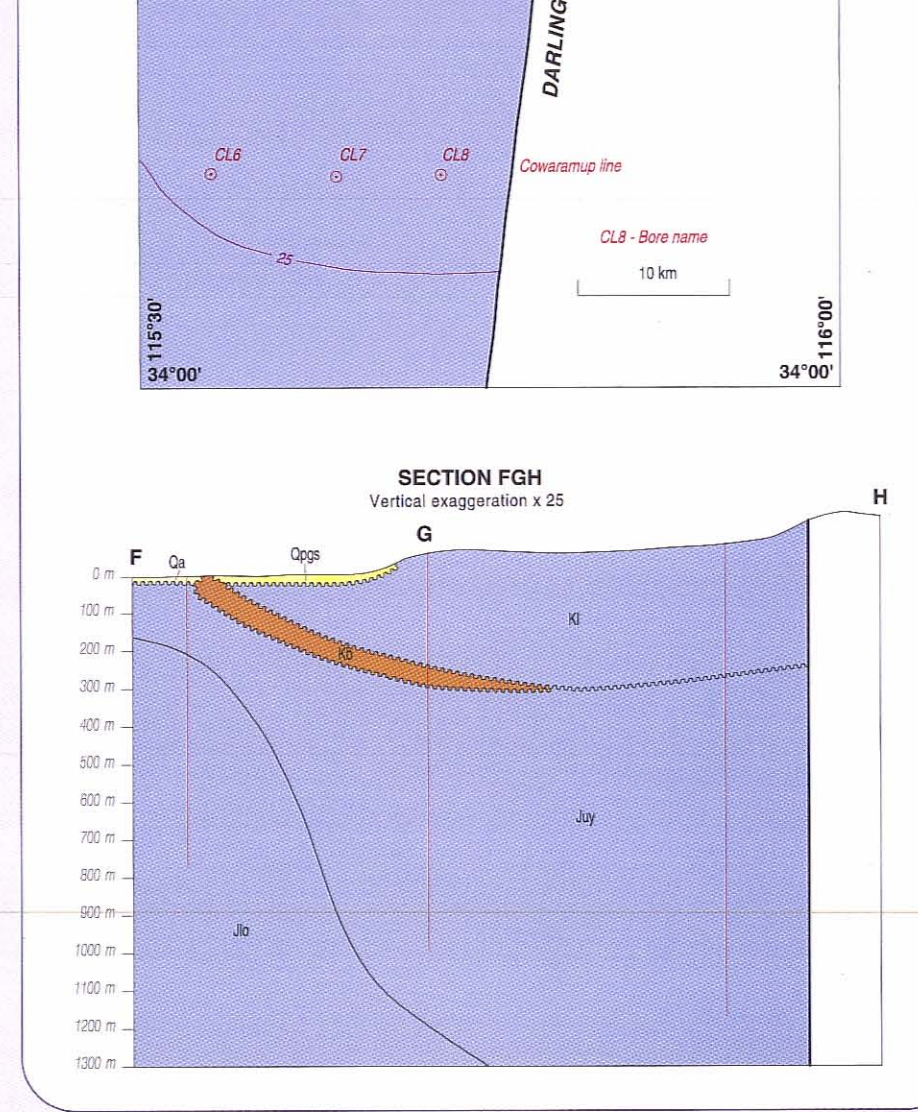
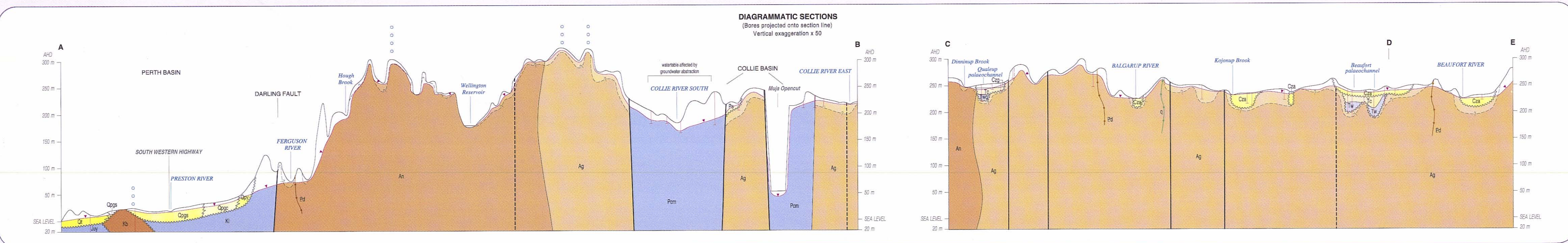
SYMBOLS

ARTIFICIAL FEATURES

- Water bore: yield > 50m³/day > 10m³/day monitoring > 50m³/day
- Water bore abandoned: yield < 50m³/day > 50m³/day
- Well: yield < 50m³/day > 50m³/day
- Associated coal seam drainage mine
- Quarry of mooring barge, experimental catchment with numerous bore
- Area of irrigation using groundwater
- Geological Survey Western Australia exploratory drilling line
- Water disposal site, abandoned

TOPOCADASTRAL INFORMATION

- Major road with national route marker
- Back
- Railway with siding
- Boundary population < 1000
- Boundary population 1000 - 10000
- Boundary population > 10000
- Locally
- Topographic contour, 50 metre interval (AHD) (Perth Basin only)
- Historical contour: major, minor (AHD)
- Retained park boundary



BORE DENSITY
Includes bore categories within 25km of coastline (not shown on main map):
• 200-400m, • 400-600m, • 600-800m, • 800-1000m, • 1000-1200m, • 1200-1400m, • 1400-1600m, • 1600-1800m, • 1800-2000m, • 2000-2200m, • 2200-2400m, • 2400-2600m, • 2600-2800m, • 2800-3000m, • 3000-3200m, • 3200-3400m, • 3400-3600m, • 3600-3800m, • 3800-4000m, • 4000-4200m, • 4200-4400m, • 4400-4600m, • 4600-4800m, • 4800-5000m

MEAN MONTHLY RAINFALL AT HARVEY AND EVAPORATION AT HARVEY

Month	Evaporation (mm)	Rainfall (mm)
Jan	180	100
Feb	170	100
Mar	160	100
Apr	150	100
May	140	100
Jun	130	100
Jul	120	100
Aug	110	100
Sep	100	100
Oct	110	100
Nov	120	100
Dec	130	100

MEAN MONTHLY RAINFALL AT DURANLIN AND EVAPORATION AT DURANLIN

Month	Evaporation (mm)	Rainfall (mm)
Jan	180	100
Feb	170	100
Mar	160	100
Apr	150	100
May	140	100
Jun	130	100
Jul	120	100
Aug	110	100
Sep	100	100
Oct	110	100
Nov	120	100
Dec	130	100

AVERAGE ANNUAL RAINFALL AND EVAPORATION

Location	Annual Rainfall (mm)	Annual Evaporation (mm)
Harvey	1000	1500
Duranlin	1000	1500

GEOLOGICAL STRUCTURE

SHEET INDEX

FREMANTLE SI 50-1	PERILUNA SI 50-2	COMMON SI 50-3
BUNBURY SI 50-4	COLLIE SI 50-5	DUNMULYING SI 50-7
BRIDGETOWN SI 50-6	PERSEUS SI 50-8	MT BARKER SI 50-11

HYDROLOGY BY C.I. McCOMBE, 1999
Geology by G.A. Wells and W. Walker, 1984
J.S. Myers, 1989

Edited by R. Coward and J. Petherick
Cartography by G. Douglas and S. Major
Water and Rivers Commission
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Phone (08) 9273 3200, Fax (08) 9273 3201
This map is also available in digital form.
The WRC recommended reference for this map is McCOMBE C.I., 1999,
Collie, WA, Sheet SI 50-6, Western Australia, Water and Rivers Commission,
1:250,000 Hydrogeological Series.

Government of Western Australia
MINISTER FOR WATER RESOURCES

WATER AND RIVERS COMMISSION
IN CHIEF EXECUTIVE OFFICER

SCALE 1:250 000

TRANSVERSE MERCATOR PROJECTION
Grid lines indicate 20 000 metres interval of the Australian Map Grid Zone 50

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