WATER DIVISION Investigation Branch Groundwater Section

BORE COMPLETION REPORT

BORE 22802

BING-BONG

Project Officer : D. Karp

June 1984

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Registered Bore No. 22802

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Registered Bore No. 22802

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Registered Bore No. 22802

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1. INTRODUCTION

This report provides details of construction and pumping recommendations for two bores drilled on Bing-Bong outstation.

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

The outstation is situated some 35 km south of Borroloola at AMG co-ordinates 349591 (Bing-Bong 1:100 000 - sheet 6166). Population of the outstation fluctuates between 20 to 30 people.

2. HYDROGEOLOGY

The region is located in the northern part of the McArthur Basin. It is covered by the Tawallah Group of the Middle Proterozoic.

investigation drilling was carried out in the The Masterton and Wollogorang Formations of Tawallah Group. The Masterton Formation is mainly composed of flaggy to blocky, white, pink and purple, medium, quartz sandstone, ferruginous sandstone feldspathic and flaggy, purple, sandstone, ferruginous siltstone. The Wollogorang Formation consists of laminated, grey, silty dolomite, purple-brown and green dolomitic silstone and shale.

The bore 22802 has been drilled. The bore intersected the Masterton Formation and entered the Wollogorang Formation. The water aquifer was reached at the interval between 34 m and 54 m within siltstone and shale of the Wollogorang Formation.

3. RESULTS

One bore was constructed with steel casing and perforated casing. Twenty four hour constant discharge tests and recovery tests were conducted and water samples taken.

Water quality is considered suitable for human consumption.

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4. RECOMMENDATIONS

Recommendations for pumping

The recommendations for pumping of the bores are presented in the table below.

BORE	MAX. CONTINUOUS PUMPING RATE	MAX. PUMP SETTING BELOW GROUND LEVEL	MIN. INTERNAL BORE DIAMETER	
22802	4.0 L/s	37 m	152 mm	

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

Exceeding the pumping rates will fork the bores 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.

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DEPARTMENT OF TRANSPORT AND WORKS WATER DIVISION

PUMPING PERFORMANCE CURVE

THIS DIAGRAM SHOWS THE EXPECTED DECLINE OF GROUNDWATER LEVEL AT VARIOUS PUMPING RATES (Q). IT PROVIDES A GUIDE TO SELECTION OF PUMP SETTING.



DEPARTMENT OF TRANSPORT AND WORKS WATER DIVISION

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WATER ANALYSIS		Laboratory Register No. 84/85/00	81
partment of Transport & Works		Date received in Laboratory 11/7/84	
Water Division, Darwin NT	Bottle No.	Time of Sampling Date of	Sampling
UCATION AND DETAILS	C51		/ 0 4
BONE LAGOON VIA BING BONG	RN 22802 D	EPTH 53.10 m DISCHARGE 4.5 L/s	
TEMPERATURE 31 CONDITION	410 MAP	6166 G.R. 338-582 WDD1141	RSP1764
Proposed water use:- Domestic, Stock, Irrig	gation, other (spec	ify)	
· · · · · ·	ANALYSI	S PHYSICAL	
ph	7.0	Colour (Hazen units)	
Specific conductance (microsiemens/cm at 25° C)	400	Turbidity (NTU's)	
Total dissolved solids (mg/I — by evaporation at 180° C)	270	Suspended solids (mg/l)	
	ANALYSIS -	· CHEMICAL (mg/l)	
Sodium, Na	36	Chloride, C1	26
Potassium, K	5	Sulphate, SO₄	6
Calcium. Ca	18		1
			217
	100		<u></u>
I TOTAL Hardness (as CaCO ₃)	133	Carbonate, CO ₃	
Total Alkalinity (as CaCO ₃)	178		0.4
X Iron, (total) Fe	2.5	Orthophosphate, PO ₄	·
Silica, SiO ₂	24	NaCl (calc. from chloride)	43
	ANALYSIS	ADDITIONAL (mg/1)	
Copper, Cu	Lead, Pb	Arsenic, As	
Manganese, Mn	Zinc, Zn	Cadmium, Cd	
Analysed By: G. JOHNSTON		Dat	e 25/7 /
	RE	MARKS	
he sample as analysed is considered suitable	e for:	Stock watering VEC/N	
		Slock watering — TES/N	
rigation — YES/NO		Other (specify) - YES/N	<u> </u>
Boxes marked thus X indicate levels considere	ed undesirable for o	Irinking water by the Northern Territory Department	of Health.
Note:— Advice and Water quality information	n can be obtained	by contacting the Senior Engineer Water Quality,	Darwin Phon
	A B CALIDELL Governm	ent Printer of the Northern Territory	