REPORT NO 77/85

COCKATOO LAGOON RESISTIVITY TRAVERSES
RECORD 85/7

P FURNESS
In late August, 1985 a number of short resistivity lines were completed in the vicinity of Cockatoo Lagoon, Ku-ring-gai Chase National Park. In the one and one half days of field activities one operator and two assistants completed 1.4 km of pay dipole apparent resistivity profiling at a station spacing of 50 metres (by measurements of apparent resistivity).

The object of the present survey was to identify drill holes suitable to provide a groundwater supply for the nearby ranger station at Cockatoo Lagoon.

Proceding west in the area defined towards the main objective was reported in H/L/G report 85/4.

The present work was directed at the investigation of several major structural elements in the area. Four specifically lines 4, 5 and 6 were designed to cross the faulted boundary separating rhyolite and granodiorite in the west from the sulfide porphyries at Brealy Knob Member rocks in the east (siltstone, sandstone and conglomerates).
Additionally, Unit 7 was located to cross a major fault mapped in the Hall's Bank Group rocks.

Aim

The present traverse was oriented at 90° to 60° to bore faults in the present rock to the north and west of Coorong Lagoon.

Instruments and Techniques

The Coorong Lagoon resistivity traverse was completed with a modern power d.c. resistivity system comprising:

1. a 50 watt d.c. transistron transducer, capable of outputting up to 3 kV per inch of voltage levels of up to 1200 volts, and

2. a Fluke 62C/V meter.

All profiles were completed with a 100:1 scale configuration with the following specifications:

1. a potential depth of 50 meters,
2. A potential dipole, current path separation of 100 m, and
depth
3. A minimum current vertical separation of 1000 m.

5. A station spacing of 50 m.

**Results**

See map 1 for the location of all profiles.

Map 1 shows the response of an extremely narrow feature (<< 50 m wide) at 500 m. The feature is probably a new vertical dih although this is not completely defined by the data.

Map 5 was completed along the Victoria Highway south of Beasley Knob. It shows the resistive remains of the Halls Creek Group metamorphics to the west and the more conductive effect of weathered alkaline gneiss? Beasley Knob Munsu rocks to the east. A very narrow conductive indication centered at 300 m could possibly reflect the buried fault zone separating the above two units.

Map 6 shows a similar pattern.
To line 5 with the uranium Halls Creek Group response to the west and the significantly more conductive Mt. Alexander response to the east. Again a very narrow conductive feature centered at 550 E could possibly reflect a higher fault separating these two units.

line 7 through Halls Creek Group rocks and the apparent discontinuity on this line are similar in magnitude to those observed previously at these rocks.

The line shows several poorly defined conductive indications which could possibly reflect in the breccia effects such as those produced by faulting. Yet the major of these conductive indications is located at 325 N. Note however the very real possibility that these features could represent geological noise deriving from the physical abnormal zone associated with the cowork at this location.