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APPENDIX 18

INVESTIGATION OF AN INDUCED POLARISATION ANOMALY -

SHEPHERD AND MURPHY GRID - G. WESTE

The time domain electrical induced polarisation gradient array survey carried out over most of the Shepherd and Murphy grid by Scintrex Pty. Ltd. located a chargeability anomaly with a peak extending from 1150 m E/138 m N to 1350 m E/80 m N (drng. No. 78-145).

The rocks outcropping in the area are strongly fractured "Moina Sandstone" adjacent to the Bismuth Creek fault. To help determine the nature of this anomaly a pole - dipole survey was carried out along grid lines 1100 E, 1150 E, 1200 E, 1250 E, and 1300 E in February 1975 by Comalco personnel. A three array spacing was maintained and potential electrode spacings of 25 m and 50 m were used to measure variations in the anomaly's character with depth. The equipment used was a 2.5kw transmitter with a Scintrex IPR7 receiver .

GRADIENT ARRAY DATA - (See drg Nos. 78-147 & 148)

<u>Peak Location</u>	<u>Chargeability</u> (ms)	<u>Approx.</u> <u>Depth (m)</u>	<u>Resistivity</u> (Ω .m)
1150 E/138 N	31	50	2000
1250 E/100 N	30	35	2000
1350 E/ 80 N	29	50	1800

POLE-DIPOLE DATA - (See attached profiles)

Line 1100 E.

The chargeability and shape of the source changes little with depth. The source may dip steeply south and the top is probably shallower than 25 m as there are indications of a secondary peak developing.

Line 1150 E.

The profile data indicates that the maximum depth to the chargeable zone is about 25 m shown by a twin peak at 50 m and a single peak at 25 m. The chargeability appears to be greater at 25 m than at 50 m. The exact relationship of chargeability to resistivity is not very clear but if the peaks do correspond then the source is relatively resistive and may dip steeply to the south. Overall the resistivities are lower than expected.