

DEPARTMENT OF MINES  
SOUTH AUSTRALIA

RIB 66/34.

WATER SUPPLY - PUTTAPA ZINC PROSPECT

Grid J.5

- Electrolytic Zinc Co. A/sia Ltd. -

by

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P PLANS

<u>PLAN No.</u>	<u>Title</u>	<u>Scale</u>
68-104	Water Supply - Puttapa Zinc Prospect (E.Z. Co.)	1 mile = 1000 feet

Rept. Bk. No. 66/34  
G.S. No. 3896  
Hyd. No. 1974  
D.M. 136/68

25th January, 1968

Rept. Ez. No. 66/54  
O.S. No. 3896  
Byd. No. 1974  
D.H. 136/60

**WATER SUPPLY - PUTTAPA ZINC PROSPECT**

**Grid J.5**

**- Electrolytic Zinc Co. A/sia. Ltd. -**

**INTRODUCTION**

In company with Mr. P. McPaul (E.Z. Co.) an inspection was undertaken on January 18th, 1968 to advise on the provision of a water supply at the Puttapa zinc prospect where exploration of a zinc-lead deposit is being conducted by the E.-Z. Co. Small supplies of water are needed immediately for drilling and ablutions but when mining operations commence (possibly within 12 months) the requirements will be much greater.

The deposits are located  $8\frac{1}{2}$  miles due south of Copley and some  $1\frac{1}{2}$  miles east of the railway which connects Harroo and Port Augusta by standard gauge track.

**GEOLOGICAL SETTING**

Concentrations of zinc (as willemite) with lead, vanadium, manganese and iron occur as weathering residuals and replacement deposits with Cambrian Ajax Limestone in an area of great structural disturbance. The accompanying plan (68-104) shows the disposition of the various units of the Adelaide System and succeeding Cambrian formations. The strata are contorted and often truncated by faults in a zone marginal to the major E-W Fault.

## EXISTING WATER SUPPLIES

Present supplies of water for diamond drilling purposes are drawn from Hunter Bore No.2 situated near the northern boundary of Puttapa pastoral station. This 6 inch diameter bore drilled by the Department of Mines in 1953, is 146ft. deep and cased to 120 ft. Water containing 316 grains/gallon dissolved salts is drawn from sandstone-quartzite adjacent to a fault separating Pound Quartzite from Ajax Limestone. A 2-hour bailer test proved a supply in excess of 400 gallons/hour.

The abandoned Ajax Bore, situated about 200 yards from the Ajax Copper Mine, was drilled by Horwood Bagshaw Ltd. for the E. & W.S. Dept. in 1943 to a depth of 103ft. 6 ins. The bore is reported to have intersected "diorite, dolomite and quartzite" - apparently Calluna Beds to the east of the fault adjacent to the Ajax Mine. The water which contained 100 grains per gallon saline matter was tested at 1,000 gallons per day which is the same as that recorded from the main shaft of the Ajax Mine.

A high capacity supply might be provided from the Sliding Rock - Leigh Creek pipeline which passes within  $4\frac{1}{2}$  miles of the deposit. This formerly served as the water supply for Leigh Creek Coalfield prior to the construction of Arcana Dam. Salinity of this water, pumped from several bores at Sliding Rock, contained about 85 grains/gallon.

## RECOMMENDATIONS

As the company wish to preserve the existing pastoral water supply of Hunter's Bore No.2 an alternative bore site has been selected adjacent to the creek 300 yards south east of the Ajax Mine. Boring to a depth of 150 ft. is expected to provide small supplies of potable water from the Ajax Limestone. The rock is expected to be hard and will require little casing.

A permanent high capacity water supply would be provided by the pipeline which connects Sliding Rock with Leigh Creek - this would require some 5 miles of piping to connect to the prospect, and the concurrence of the Electricity Trust of South Australia who maintain the line.

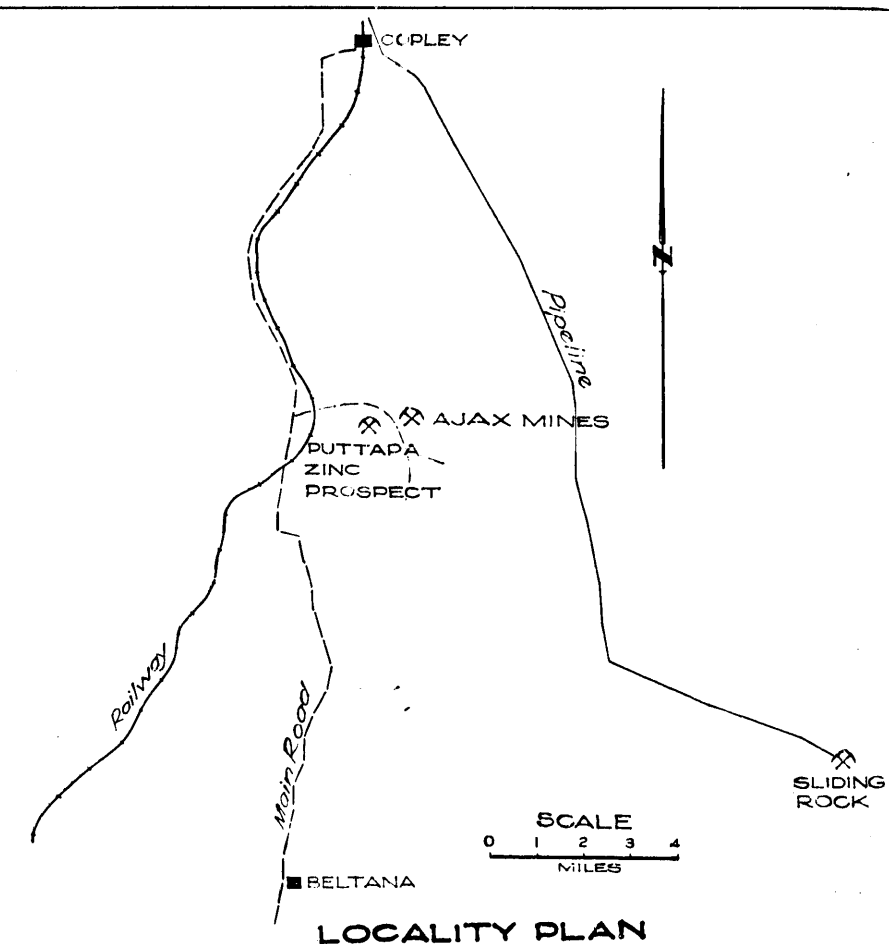
*R.E. Johns*

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#### REFERENCES

- JOHNS, R.E. (1953) Underground Water Supplies, Puttapa Station (unpub.)
- PARKIN, L.W. (1952) Copley geological map (1 inch = 1 mile series)
- WHITEHEAD, S. (1966) Report on Beltana Concessions (SHL 113, 136, 142) D.M. Env. 732 (Unpub.)



- LEGEND**
- Quaternary Alluvium & Soils
  - Ajax Limestone
  - Parachilna Formation (*Friable sandstone-quartzite*)
  - Pound Quartzite
  - Wonoka Formation (*Shales with dolomite bands. Conglomerate & quartzite*)
  - Bunyeroo Formation (*Purple shale with minor dolomite.*)
  - Copley Quartzite
  - Callanna Beds (*Quartzites, shales, dolomites*)
  - Zinc Deposits
  - Limonite Scree
  - Fault
  - Road, track
  - 60° Strike & dip of bedding
  - Railway

SCALE  
0 1000 2000 3000  
FEET

DEPARTMENT OF MINES - SOUTH AUSTRALIA	
<b>WATER SUPPLY PUTTAPA ZINC PROSPECT ELECTROLYTIC ZINC CO.</b>	
Drn. R.K. Tol. G.M. Chd. P.H. Director of Mines	SCALE: 1/1000' to 1/1000' H. <div style="border: 1px solid black; padding: 2px; text-align: center; font-weight: bold;">68-104</div> C.F. DATE: 12 FEB