ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

1980 ANNUAL REPORT

ON EL 2212

FINKE BAY
NORTHERN TERRITORY

M.F. HARRIS
February 1981
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LOCATION & ACCESS

Finke Bay EL 2212 is located approximately 120 km due east of Darwin and covers part of the Carmor Plains. Fig 1. Access is from Pt. Stuart Station-meatworks on sandy tracks to Pt. Stuart. Access onto the Carmor plain which is blacksoil is restricted entirely to the dry season.

REGIONAL GEOLOGY

Regional Studies have interpreted the limited geological evidence in the light of regional gravity. This revealed a gravity high offshore which implies a gneiss done with basal Cahill Formation onshore. The regional setting is inferred to be the same as for the East Alligator Rivers lode uranium deposits which are the exploration target sought.

CRA AEROMAGNETIC SURVEY

CRA previously flew a block which included the area covered by EL 2212. The information was made available from records and has been interpreted for litho structural information. Plan 907-7.

The area is remarkably quiet magnetically and apart from a couple of NE trending dykes there is no evidence of lithologic contacts or prominent structural features.

GRAVITY SURVEY

A gravity survey was completed in July 1980. Station separation was adjusted to give close coverage near to the coast. Plan 907-11. A La Coste and Romberg gravimeter was used under contract with Geoterrex.

The Bouger gravity readings were contoured and showed an apparent gravity ridge on the southern part of the survey area with values dropping to the north. This implies a basin structure with irregular relief. This basin may represent the gneissic dome.

The gravity data on traverse line 1 was modelled with the iterative basement modelling routine of Geospex plus some manual adjustment. The relative location of the basement outcrop point is important in determining the depth extent on the south west margin.

Fig 2 (File 41) is the traverse line profile modelled with an assumed outcrop point of the gneiss dome approximately 700 metres offshore. This infers a depth of 500 ± metres to the basement at the point where hole FB 7 was drilled and 400 ± metres at the point where hole FB 8 was drilled. Plan 907-11. Further south the gravity modelling inferred a depth to basement of 800 ± metres.

LOCAL GEOLOGY

Plan 907-7 shows the distribution of Mt. Hooper Beds Pph. This is mostly inferred but a few sparse outcrops were located during helicopter reconnaissance.

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RAB DRILLING

24 shallow holes were completed. They are shown on Plan 907-11 prefixed FB. The rig was a Pioneer Mole and was only capable of drilling 60 metres in ideal conditions. Average depth of holes at Finke Bay was less than 30 metres. Maximum depth was 48 metres in FB2.

In all cases the holes failed to hit bedrock. They generally encountered unconsolidated sand and black-soil clay. The sand is commonly shell grit and indicates a recent strand line system covers most of the Carmor Plain. Appendix 1 lists the drill hole locations and results.

PLANS

It will be necessary to use a rig with the capacity to drill through unconsolidated sand to depths of 200 metres to determine the nature of the basement. Several wildcat stratigraphic holes would be required as no obvious target exists from the geological and geophysical information available. A proposal for further drilling is anticipated for next dry season.

M.F. HARRIS
MEMORANDUM

M. Harris

PERTH MINERALS
12 November 1980

YOUR REF:

OUR REF:

SUBJECT:

FINKE BAY 907A
RAB HOLE SUMMARY
OCTOBER 1980

8/10/80 - LINE 3
FB1  34 m

10/10/80
FB2  48 m
FB3  36 m
FB4  18 m

11/10/80 - LINE 3
FB5  34 m
FB6  36 m
FB7  32 m

12/10/80 - LINE 3
FB8  34 m
FB9  20 m
FB10 32 m

13/10/80 - LINE 3 & 2
FB11 26 m
FB12 28 m
FB13 16 m

14/10/80 - LINE 4
FB14 30 m
FB15 16 m
FB16 18 m

15/10/80 - LINE 4 & 5
FB17 16 m
FB18 26 m
FB19 34 m

16/10/80 - LINES 5 & 2
FB20 20 m
FB21 38 m
FB22 30 m

17/10/80 - LINE 2
FB23 16 m
FB24 36 m
FB1: 0 - 4 m Brown clay with iron stained chips, very mottled.
4 - 10 m Yellow clay, quartz chips.
10 - 34 m River sand, high quartz content, cream by colour.
     * 34 m deep, 3½ hous.

FB2: 0 - 6 m Grey clay.
6 - 48 m Grey silt with clay content.
     * 6 hours.

FB3: Location 10-20 m south of peg 15.
     0 - 12 m Silt, black clay, lot of shell material.
     12 - 24 m Grey sandy silt with abundant shell material.
     24 - 36 m Sand creamy in colour, gritty, looks like river sand.

Hole abandoned due to cuttings falling back down hole.
     * 4 hours.

FB4: Location 100 m south of peg 15.
     0 - 2 m Shellgrit.
     2 - 10 m Black clay with shellgrit.
     10 - 16 m Black silty sand.

Abandoned due to hole blowing out.
     * 2½ hours.

FB5: Located 100 m south east of peg 15.
     0 - 2 m Shellgrit.
     2 - 8 m Grey clay.
     8 - 20 m Brown silt, shell fragments.
     20 - 26 m Brown silt, sandy, shell fragments, water hit.
     26 - 34 m Coarser brown silt, sandy, gritty.
     * 3½ hours.

FB6: Located 20 m south of peg 168.
     0 - 2 m Topsoil.
     2 - 6 m Black clay.
     6 - 10 m Gravel clay, water hit at 8 m.
     10 - 36 m Beach sand and grit.

Hole terminated due to caveins.
**FB7:** Located north of peg 198.

0 - 2 m  Top soil and red clay.
2 - 4 m  Red clay.
4 - 14 m Brown sandy silt some clay.
14 - 20 m Creamy-brown silt, high clay content.
20 - 32 m Sandy with red clay and quartz. Hard layer at 28-30 m.

Drill blocked, couldn't penetrate.

**FB8:** Located 750 m south of 198.

0 - 2 m  Red clay.
2 - 6 m  Red clay, some small stones.
6 - 10 m Red-brown silt, high clay content.
10 - 24 m Sandstone type fragments, some clay.
24 - 34 m Sandy, clay and quartz present.

Hole closed due to water blockage.
Water at 10-20 m reasonably fresh.

3 hours.

**FB9:** Located 200-300 m south of peg 199.

0 - 2 m  Grey clay.
2 - 6 m  Red clay.
6 - 8 m  Red clay and silt.
8 - 16 m Cream-brown silt with some sand.
16 - 20 m Cream-brown silt, high clay content.

Hole blocked, drill couldn't go further.

1½ hours.

**FB10:** Located 100 m south of peg 206.

0 - 2 m  Top soil.
2 - 6 m  Red clay.
6 - 20 m Brown silt, sandstone present.
20 - 24 m Brown silt, pebbles and sand.
24 - 28 m Grey sand, grey clay, some sandstone.
28 - 32 m Light brown sand, grey flakes.

Hard area hit, drill couldn't penetrate.

3 hours.
FB11: Located 2.5 kilometres south of peg 206.
0 - 2 m  Grey clay.
2 - 6 m  Brown-red clay.
6 - 14 m  Creamy silt, clay present.
14 - 26 m  Red-brown sand, some silt, stones and clay.

Hole finished due to collapsing of wall.
1½ hours.

FB12: Located 3.5 kilometres south of peg 206.
0 - 4 m  Grey clay.
4 - 12 m  Creamy brown clay, some silt and pebbles.
12 - 14 m  Creamy brown clay, with some grey clay.
14 - 18 m  Brown clay, gritty.
18 - 22 m  Brown silt with some red clay.
22 - 28 m  Brown sand, some clay.

Hole finished, drill couldn't penetrate clay below 28 m, very slow before that.
2 hours, 40 minutes.

FB13: Located at peg 29.
0 - 2 m  Shellgrit.
2 - 8 m  Grey clay.
8 - 10 m  Brown grey silt, clay, gritty with small stones present.
10 - 16 m  Grey sand with stones, quartz and clay lumps present.

Hole finished due to wall collapsing.
1½ hours.

FB14: Located 20 m south of peg 175.
0 - 2 m  Grey clay.
2 - 8 m  Red clay.
8 - 14 m  Grey silt, some clay.
14 - 22 m  Grey-brown sand, silt, gritty, shell material present.
22 - 26 m  Yellow brown silt.
26 - 30 m  Brown sand, gritty, quartz and small stones present.

Hole finished as drill wasn't penetrating.
2½ hours.
FB15: Located 2.3 kilometres north of peg 209.

0 - 4 m   Clay grey in colour.
4 - 6 m   Black clay.
6 - 12 m  Brown clay, small pebbles.
12 - 16 m Black silt, gritty. Water at 22 m.
Hole washed out, kept collapsing.
   1 hour, 10 minutes.

FB16: Located 1.3 kilometres north of peg 209.

0 - 2 m   Grey clay.
2 - 4 m   Grey clay and pebbles. Water at 4 m.
4 - 18 m  Pebbles, brown sand in small amounts.
Hole finished as drill wasn't penetrating.
   1½ hours.

FB17: Located 300 m north of peg 209.

0 - 8 m   Grey clay.
8 - 16 m  Grey silt.
Water not hit, hole finished due to continuous collapsing of wall.
   1 hour.

FB18: Located at peg 176.

0 - 4 m   Grey clay.
4 - 6 m   Pebbles.
6 - 26 m  Sand, with some silt and sandstones present.
          Sand brown.
Water at 8 m, salty. Hole finished as was not penetrating.
   1 hour, 10 minutes.

FB19: Located 1.1 kilometres south of peg 176.

0 - 8 m   Grey clay.
8 - 24 m  Brown clay, high sand content.
24 - 34 m Creamy-brown sand, some clay present.
Water hit at 14 m, reasonably fresh.
Hole finished due to caving.
   2½ hours.

FB21: Located at peg 195.

0 - 12 m  Grey clay.
12 - 14 m Sandstone, sand in grey mud.
14 - 20 m Grey mud, fine grains of sand.
A great deal of water injection used.
Hole finished due to caving.
   1 hour and 45 minutes.
FB22: Located on peg 170.

0 - 4 m Red sand.
4 - 12 m Creamy sand, clay content.
12 - 20 m Grey clay lumps, some white sand present.
20 - 28 m Light brown sand, some small pieces of sandstone.
28 - 30 m Brown sand, sandstone pieces.

Water hit at 16 m.

Hole finished as drill stopped penetrating. 1¾ hours.

FB23: Located at peg 12.

0 - 2 m Red clay.
2 - 14 m Pebbles, stones, quartz content.
14 - 16 m Brown silt, gritty.

Water not hit.

Hole finished as it was collapsing from top. 1¾ hours.

FB24: Located 1 km south of peg 12.

0 - 2 m Red clay.
2 - 18 m Brown clay, some pebbles present.
18 - 24 m Brown silt, gritty, some pebbles.
24 - 32 m Brown sand, some sandstone pieces.
32 - 36 m Light brown sand.

Water hit at 16 m.

Hole finished as it was caving in at the top.

PROGRAMME FINISHED FRIDAY 17/10/80

M. Ausma APA
14/11/80