ABSTRACT

Following on from previous work in ELs 3625-3627, two programmes were carried out during the 1987 field season.

Kratos Exploration Pty Limited undertook bulk stream sediment sampling (3-4 tonne samples) and processed the samples through a Kimberley diamond pan to recover heavy minerals amenable to such gravity concentration, especially gold and diamonds. Only two samples showed gold (<0.5 mm) and no diamonds were recovered.

Rock chip sampling over 6 reconnaissance grids and fine sediment stream sampling were carried out to test for the presence of fine grained gold and platinum group mineralization having a grainsize too fine for normal gravity concentration methods. A number of anomalies requiring follow-up (assuming continuing title to the area is granted) were located.

Core from earlier drilling, and high uranium grade grab samples were also assayed for Au and Pt metals. Some higher values were noted.

A bulk sample of the Metre Conglomerate, which occurs in Westmoreland Formation unit Ptw₄, was tested for Au, but results were negative.

Central Electricity Generating Board Exploration (Australia) Pty Ltd drilled two holes at Cobar II without significant result, examined dyke material from the NE Westmoreland dyke and assayed a representative sample of the Metre Conglomerate.
PANDANUS CREEK AREA

EXPLORATION LICENCES 3625 - 3627

1987 FIELD PROGRAMME REPORT

Kratos Exploration Pty Ltd
August 1988
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    NE Westmoreland
Stream Sediment Sampling
Metre Conglomerate Bulk Sample
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1987 CEGBEA PROGRAMME
    Cobar II
    Dyke Material
    Metre Conglomerate

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<td>6b</td>
<td>Sample Values</td>
<td></td>
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<td>Sample Values</td>
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</table>
INTRODUCTION

Exploration for uranium has been carried out in the Pandanus Creek region of the Northern Territory since the first discoveries in the region by prospectors during the mid 1950s.

Kratos has been actively exploring in the region since 1975. During the period September 1976 to July 1980, the programme was conducted in Joint Venture with Minatome Australia Pty Limited and Wyoming Mineral Corporation (MKW Programme). In August 1980, Bridge Oil Limited joined the Joint Venture (MKWB Programme). Wyoming Mineral Corporation withdrew from the Joint Venture in September 1981 (MKB Programme).

In 1982 Total Mining Australia Pty Ltd took over the operations of Minatome Australia Pty Ltd and the MKB Joint Venture became the TBK Joint Venture. In May 1984 Total withdrew from the Joint Venture leaving the two remaining partners - Kratos and Bridge - to continue the programme (KB Programme).

In June 1984, Kratos and Bridge concluded a Heads of Agreement with Stockdale Prospecting Ltd covering solely exploration for diamonds within the Exploration Licences. Following the completion of their minimum specified programme Stockdale terminated this agreement.

Since July 1984, continuing exploration for uranium has been undertaken by Central Electricity Generating Board Exploration (Australia) Pty Ltd (CEGBEA) under the general terms of a letter of intent in advance of conclusion of a formal joint venture agreement. CEGBEA ceased its participation in ELs 3625-3627 in November 1987 after appraising the results of its 1987 drilling programme.

Following a revision of the terms under which Central Electricity Generating Board Exploration (Australia) Pty Ltd had agreed to undertake exploration within ELs 3625-3627, Kratos Exploration Pty Ltd renewed its exploration activities in the Licence areas. This revision provided that CEGBEA would
explore the Licences area specifically for uranium ore bodies. Kratos' programme was therefore directed towards a search for diamonds, gold and platinoid minerals. This programme had been commenced in 1983 but was postponed when CEGBEA became operator of the joint venture exploration programme. Preliminary results at that time clearly indicated the prospective nature of the Licence area for these minerals.

The three Exploration Licences originally granted to Kratos Exploration Pty Limited, a wholly owned subsidiary of Kratos Uranium NL, in the period 1974-1978 were as follows:

<table>
<thead>
<tr>
<th>Exploration Licence No.</th>
<th>Granted</th>
<th>Concluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1017</td>
<td>6.8.74</td>
<td>Expired 6.8.79</td>
</tr>
<tr>
<td>1016</td>
<td>10.5.76</td>
<td>Surrendered 14.4.82</td>
</tr>
<tr>
<td>1074</td>
<td>8.8.78</td>
<td>Surrendered 8.8.79</td>
</tr>
</tbody>
</table>

On 30th June 1982, three new Exploration Licences were granted to Kratos Exploration Pty Limited over the same ground as had been held immediately previously as EL 1016. Details are as follows (Fig 1):

<table>
<thead>
<tr>
<th>Exploration Licence No.</th>
<th>Area (approx) (sq km)</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original</td>
<td>Current</td>
</tr>
<tr>
<td>3625</td>
<td>3.26</td>
<td>3.26</td>
</tr>
<tr>
<td>3626</td>
<td>35.90</td>
<td>16.30</td>
</tr>
<tr>
<td>3627</td>
<td>29.38</td>
<td>16.30</td>
</tr>
<tr>
<td></td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td>68.54</td>
<td>62.99</td>
</tr>
</tbody>
</table>

The Queensland Boundaries Declaration Act 1982 (assented to on 18th November 1982) purported to fix the Queensland/Northern Territory border at a line surveyed on the ground last century which, in the Pandanus Creek area, lies some 600 metres to the west of the 138th meridian of longitude. As EL 3626 adjoins
the border, this Act, if not invalidated, has the effect of removing a strip of land 600 metres wide from the eastern edge of the Exploration Licence. Title to this strip, which contains the highest grade uranium mineralization discovered to date in the area by the Kratos joint venture, was then granted to another company under Queensland mining legislation.

LOCATION AND ACCESS

The locations of EL's 3625, 3626 and 3627, all of which lie within Wollogorang Pastoral Lease, are shown in Figure 1.

Ground access to the area may be achieved either through Mount Isa and Doomadgee Mission in Queensland, or via Borroloola in the Northern Territory.

The area is affected by monsoonal rains during the summer period. Present access roads are impassable during this period and hence field work can only be carried out during the winter dry season.

REGIONAL GEOLOGY

The Pandanus Creek-Westmoreland province lies in the zone where the Wearyan Shelf of the McArthur Basin abuts the Murphy Tectonic Ridge, which is basement to the Carpentarian sediments of the Basin (Figs 2 and 3). The generalised sequence is as follows:

Cainozoic

Soil, laterite, alluvium.

Unconformity.

Cretaceous

Mullaman Beds (JKm): Cobble and boulder conglomerate, sandstone, claystone.

Unconformity.

Middle

Seigal Volcanics (Pts): Amygdaloidal and
Fig. 2

Fig. 3

Tectonic Units in Pandanus Creek/Westmoreland Province.
(From B.M.R. Record 1975-88).
Proterozoic

massive basalt; minor siltstone and sandstone interbeds. Thickness 1,100-1,600 metres.

Silstone Member 0-7 metres: Fine sandstone to claystone; includes both finely laminated and massive varieties. May have a volcanic component. Colour variously buff, chocolate or mottled light green and maroon.

Westmoreland Formation (Ptw) 700+ metres:
Unit 4 - Quartz sandstone, lithic quartz sandstone, thick cobble conglomerate beds and pebble conglomerate. Hall (1977) estimated the thickness of this Unit as 200-250 metres. Drilling showed it to be 150-170 metres at N.E. Westmoreland and 115 metres at El Hussen.
Unit 3 - Comprises two thick beds of cobble and boulder conglomerate, separated by 80 metres of arkosic sandstone. Hall (1977) reports a thickness of approximately 204 metres.
Unit 2 - Quartz sandstone, arkosic sandstone, cobble and pebble conglomerate. Accurate thickness measurement is not possible due to nature of outcrop. Estimates have varied from 450+/-100 metres (BMR) to a measurement of 1,150 metres made by Hall (1977) but regarded by him as suspect due to extensive Cretaceous cover and possible repetition by faulting. Urangesellschaft believes the Unit may be of the same order of thickness as the other Units in the Formation, ie about 200 metres.
Unit 1 - Comprises basal breccia and volcanic conglomerate, grading upwards into orange lithic sandstone and orthoquartzite. Thickness 130 metres.

Lower Proterozoic Murphy Metamorphics (Plm): Quartz-albite-biotite-chlorite schists and muscovite gneiss.

The Murphy Metamorphics, Cliffdale Volcanics and Nicholson Granite Complex form the Murphy Tectonic Ridge, an east-north-east trending belt 150km long and up to 25km wide. It is basement to the Carpentarian Tawallah Group, which unconformably overlies the Ridge on its north-western side, and to the Carpentarian Pickling and South Nicholson Groups, which overlie it in the south.

The individual members of the succession have been described in detail in Kratos' 1978 report, and correspond with the sequence as mapped by BMR (see Seigal 1:100,000 Sheet). Detailed studies of: 1) the sedimentology of the Westmoreland Conglomerate, and 2) the petrology and geochemistry of the Seigal Volcanics, have also been undertaken by the Northern Territory Geological survey (Wygralak et al, 1986 and Darby P.R., 1986 respectively).

PREVIOUS WORK

Details of the geology of the Exploration Licence areas and of previous programmes of work carried out in them are contained in the following Company reports:

Exploration Report and Analysis of Results EL 1017, Pandanus Creek Area, N.T., 1975 March 1976

Uranium Exploration Programme, Pandanus Creek Area, N.T., EL's 1016 and 1017, 1976 May 1977
Stratigraphy of the Westmoreland Conglomerate,
EL's 1016 and 1017, N.T. L.R. Hall December 1977

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
EL's 1016 and 1017, 1977 February 1978

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
EL's 1016, 1017 and 1074, 1978 March 1979

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
EL's 1016 and 1017 March 1980

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
EL 1016 April 1981

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
EL 1016 May 1982

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
1982, EL's 3625, 3626 and 3627 June 1983

Uranium Exploration Programme, Pandanus Creek Area, N.T.,
1983, EL's 3625, 3626 and 3627 June 1984

Initial Interpretation of Geophysical Data EL 3625, 3626
and 3627. Pandanus Area Calvert Hills 1/ x 1.5/

Report on Geophysical Structure and Stratigraphy
North-east Pandanus Creek, Northern Territory.
CEGBEA Report 1984/2.

Exploration Licences 3625, 3626, 3627 held by Kratos
Exploration Pty Ltd in the Calvert Hills 1/ x 1.5/
Quadrangle. Annual Report to the NT Department of

Kratos Pandanus Creek Project. Report on the 1985 Field
Season in the Westmoreland Uranium Province, Northern Territory, Australia. CEGBEA Report 1986/3.


**CHRONOLOGICAL PROGRAMME SUMMARY**

**1975 Programme**

The only Exploration Licence held by Kratos in 1975 was EL 1017, to the north of the present EL's 3625-3627. This Licence was not, at that stage, part of the MKW programme.

Kratos carried out reconnaissance testing by way of a systematic combined track etch/radiometric/geochemical soil sampling survey together with preliminary examination of two previously known occurrences of secondary uranium mineralization near the southern boundary of the Licence (McGuinness and White Horse prospects).

The work carried out in 1975 can be regarded as a large scale orientation survey which was aimed at testing the methods of exploration to be used later in a full-scale programme in the area. Various graphical and mathematical techniques were used to analyse the results obtained.

Briefly, the methods used highlighted anomalous areas around the two known prospects and suggested that there could be geochmically anomalous zones in the soil covered parts of the
area.

1976 Programme

In 1976, after granting of EL 1016, geological mapping of the eastern part of this Exploration Licence was carried out at 1:25,000 scale using a helicopter and a map of the remainder of the area was prepared at the same scale using photointerpretation combined with ground observations.

An extensive grid (JN Grid) was laid over the JN Fault at NE Westmoreland, which was known to contain pitchblende mineralization. Radiometric readings, geochemical soil sampling, VLF measurements, track etch and emanometry measurements and some magnetic measurements were carried out over this Grid.

Geological, geophysical and geochemical surveys were carried out also over smaller grids at the Calvert South and Calvert North prospects, and several geophysical test surveys were run over the Cobar II mine area.

A programme of reconnaissance radiometric/geochemical traverses over soil-covered parts of the area was commenced.

As expected, geophysical and geochemical anomalies were outlined in the three prospect areas gridded.

1977 Programme

Detailed stratigraphic and structural mapping of the Westmoreland Formation was undertaken in 1977. This work included the measurement of 26 stratigraphic sections in various parts of the area, and preparation of a generalised composite section. Mapping of the Cliffdale Volcanics was also undertaken.
Detailed geological, geophysical and geochemical surveys were carried out over extensive grids at the three main prospect areas (NE Westmoreland, El Hussen and Cobar II). Similar surveys were carried out over smaller grids at three other prospects showing less extensive surface uranium mineralization, viz McGuinness, Kings Ransom and Maniws.

Preliminary reconnaissance drilling (three percussion holes) was undertaken at the end of the season at the El Hussen prospect. Two vertical holes (150 and 136.5 metres respectively) were drilled into the sedimentary sequence on the north-eastern side of the El Hussen Fault. The third hole was angled at 60 degrees to intersect the Fault; it had to be stopped at 94.5 metres due to excessive inflow of water.

The programme of reconnaissance traverses over soil-covered areas was continued and a complete radiometric grid coverage of the Seigal Volcanics/Westmoreland formation contact from NE Westmoreland to El Hussen (20km) was commenced.

1978 Programme

During the 1978 field season, a major percussion/diamond drilling programme totalling 9,483 metres was carried out.

Of the total, 7,773 metres was drilled by percussion using a Foxmobile dual-purpose rig and, for a short period, a Gryphon percussion rig. An Airtrac rig was used to drill 986 metres of shallow percussion holes in locations which the larger rigs could not reach. The 724 metres of NQ diamond coring completed was carried out by the Foxmobile rig.

Four stratigraphic diamond holes (two at NE Westmoreland and one each at Cobar II and El Hussen) were designed to provide detailed information on the lithologies and thicknesses of the geological units intersected. Diamond coring was also undertaken in three other holes at NE Westmoreland to test the JN Fault and a mineralized intersection obtained in a
percussion hole.

The percussion drilling was planned essentially as a series of profiles across the mineralized fault zones at NE Westmoreland and Cobar II and across the El Hussen Fault and Westmoreland Formation/Seigal Volcanics contact at El Hussen. Each profile comprised three or four holes, spaced about 150 metres apart. The distance between the profiles varied from 200 to 675 metres.

The reconnaissance Airtrac drilling was carried out on the Westmoreland Formation sandstone dip slope at NE Westmoreland, at Cobar II and at the Calvert North and Calvert South prospects.

Details of the drilling undertaken at each prospect are set out below:

<table>
<thead>
<tr>
<th>Prospect</th>
<th>No. of Holes</th>
<th>Diamond</th>
<th>Percussion</th>
<th>Airtrac</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE Westmoreland</td>
<td>47</td>
<td>493</td>
<td>4,049</td>
<td>320</td>
<td>4,862</td>
</tr>
<tr>
<td>Cobar II</td>
<td>14</td>
<td>108</td>
<td>1,479</td>
<td>33</td>
<td>1,620</td>
</tr>
<tr>
<td>El Hussen</td>
<td>16</td>
<td>123</td>
<td>2,245</td>
<td></td>
<td>2,368</td>
</tr>
<tr>
<td>Calvert North</td>
<td>6</td>
<td></td>
<td></td>
<td>328</td>
<td>328</td>
</tr>
<tr>
<td>Calvert South</td>
<td>8</td>
<td></td>
<td></td>
<td>305</td>
<td>305</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
<td><strong>724</strong></td>
<td><strong>7,773</strong></td>
<td><strong>986</strong></td>
<td><strong>9,483</strong></td>
</tr>
</tbody>
</table>

The 1978 drilling programme was undertaken to test for stratiform uranium orebodies comparable to the Jack, Garee and Langi Lenses straddling the Red Tree Fault across the border in Queensland. It did not intersect any significant mineralization of this type in the prospect areas tested.

Where present, the Siltstone Member at the top of Unit 4 of the Westmoreland formation was found to contain low uranium values,
especially at NE Westmoreland. It was concluded that it was
doubtful if this member could host an orebody, but that
economic concentrations could possibly be developed in the
underlying sandstones if physico-chemical conditions were
favourable.

Intersections of interest obtained in 1978 were, in every case,
associated with fault structures and/or quartz veining.

1979 Programme

(1) During 1979, a three-part programme was undertaken, viz:
Radiometric and geological gridding of the exposed
contact between the Westmoreland Formation and the
overlying Seigal Volcanics from NE Westmoreland to
El Hussen (Contact Survey) was completed.
(2) Reconnaissance radiometric and geological gridding was
carried out over the photointerpreted southern extension
of the Southern Comfort Lineament into the Cliffdale
Volcanics to the south of NE Westmoreland.
(3) Exhaustive analysis of all data on the area was
undertaken with a view to determining whether any
drilling targets in addition to the known prospects
existed in the area.

The Contact Survey accurately positioned several previously
known uranium occurrences, and located three previously unknown
occurrences. Although none of these showed surface
mineralization approaching that found at the three main
prospect areas (NE Westmoreland, Cobar II and El Hussen), it
was recommended that, because several of them were associated
with prominent faulting, at least one should be tested by
drilling.

The Contact Survey demonstrated clearly that the Seigal
Volcanics/Westmoreland Formation contact contains anomalous
uranium values only in close proximity to structures containing
uranium mineralization.
No anomalous radioactivity was recorded over the postulated southern extension of the Southern Comfort Lineament.

**1980 Programme**

Following the complete reassessment of the area carried out in 1979, a forward programme comprising four main elements was proposed, viz:

1. Continued Testing of the JN Fault by systematic reconnaissance drilling (JN Grid).

2. Detailed radiometric gridding, followed by drilling, of the more important prospects south of the Main Range at NE Westmoreland, ie Southern Comfort, Jim Beam, Jacques and Jacksons Pit.

3. Drilling of a stratigraphic hole to determine the depth to basement, and the nature of the basement rocks, in the Jim Beam/Jacques area.

4. Follow-up detailed radiometric gridding of the anomalies defined by the Contact Survey.

In the event, work in 1980 was restricted to Items (1), (2) and (4) above and, in each case, portion only of the proposed programme could be completed. The drilling programme had to be severely curtailed due to late arrival of the drill rig, and its inability to negotiate the access road to the prospects south of the Main Range.

Continued drilling of the JN Grid was restricted to 24 vertical percussion holes totalling 1,634 metres. It was not possible to drill any angled holes through the JN Fault as the rig used was only capable of drilling vertical holes.

All but four of the holes drilled in 1980 were put down in that
part of the JN Grid where the prospective Westmoreland Formation rocks are overlain by a relatively thin cover of Seigal Volcanics - arbitrarily taken as the zone from the exposed Pts/Ptw contact to JN 2000N, where the depth of cover is about 55-60 metres.

Of the twenty holes drilled in the zone described above, nine intersected 1 metre intervals assaying in excess of 150 ppm U. Of these, five holes gave intersections assaying in excess of 1 lb U3O8/long ton (approx 380 ppm U).

Hole WPD-45 (JN 1725N Profile) gave an average grade of 1.8 lb U3O8/long ton (approx 680 ppm U) over 11 metres from 47-58 metres and 6.8 g Au/tonne (AAS assay) over 4 metres from 53-57 metres.

In the second part of the 1980 drilling programme on the JN Grid, it had been intended to continue testing from JN 2000N to the most north-easterly profile drilled during 1978 (JN 2500). Due to reduced drilling time three holes only were drilled, all on Profile JN 2325N.

In Hole WPD-59 the 5-metre interval 60-65 metres averaged 1 lb U3O8/long ton, including two 1-metre sections grading 1.64 and 1.27 lb U3O8/long ton respectively.

In the third part of the planned 1980 drilling programme on the JN Grid, it had been intended to test whether the dip of the Pts/Ptw contact remained constant further to the north-east of JN 2500N and, at the same time, to test anomalies defined by the 1976 track etch survey along the JN Baseline. Due to the onset of heavy wet season rains, only one hole (WPD-60 on Profile JN 3400N) was completed. The nearest drillhole to WPD-60 was 900 metres to the south-west along the strike of the JN Fault.

Hole WPD-60 intersected a 3-metre section at 115-118 metres depth containing of the order of 40 lb U3O8/long ton (approx 15 kg U/tonne). In addition, the 4-metre interval 116-120 metres
gave 4.7 g Au/tonne by AAS assay. A check fire assay of a bulk split from the interval 117-118 metres returned 6.9 g Au/t.

In the surface programme carried out in 1980, radiometric grids were completed at the four main southern prospects at NE Westmoreland, ie Southern Comfort, Jim Beam, Jacksons Pit and Jacques. This work allowed planning for drilling of these prospects to proceed.

A radiometric grid was also completed at the Rocky Creek prospect (Contact Survey).

1981 Programme

The programme carried out during the 1981 dry season comprised the following elements:

(1) Continued testing along the JN Fault at NE Westmoreland by drilling.

(2) Drilling of the southern prospects at NE Westmoreland ie Southern Comfort, Jim Beam and Jacksons Pit.

(3) Soil radon surveys to trace known and postulated fault zones in areas of soil cover at the Southern Comfort and Waterfall Creek prospects.

(4) Detailed follow-up radiometric gridding of prospects defined by the Contact Survey with initial drilling of one (Waterfall Creek).

Total drilling was 9,728 metres, comprising 8,319 metres of percussion drilling and 1,409 metres of diamond drilling.

A summary of the drilling undertaken at each prospect is set out below:
### Drilling (m)

<table>
<thead>
<tr>
<th>Prospect</th>
<th>No. of Holes</th>
<th>Diamond (m)</th>
<th>Percussion (m)</th>
<th>Total (m)</th>
</tr>
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<tbody>
<tr>
<td>NE Westmoreland</td>
<td></td>
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</tr>
<tr>
<td>JN Grid</td>
<td>54</td>
<td>826</td>
<td>6,146</td>
<td>6,972</td>
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<tr>
<td>Southern Comfort</td>
<td>13</td>
<td>463</td>
<td>976</td>
<td>1,439</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>5</td>
<td>120</td>
<td>573</td>
<td>693</td>
</tr>
<tr>
<td>Jacksons Pit</td>
<td>3</td>
<td>426</td>
<td></td>
<td>426</td>
</tr>
<tr>
<td>Contact Survey</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Waterfall Creek</td>
<td>2</td>
<td></td>
<td>198</td>
<td>198</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>77</strong></td>
<td><strong>1,409</strong></td>
<td><strong>8,319</strong></td>
<td><strong>9,728</strong></td>
</tr>
</tbody>
</table>

Following the 1980 programme, the JN Grid was divided into three zones for ease of reference. Two of these (Mageera and Oogoodoo) are considered to warrant further testing.

The Mageera Zone (JN 1600-2500N), adjacent to outcropping Westmoreland Formation and therefore having the shallowest cover of Seigal Volcanics, includes the mineralization centered on Hole WPD-45.

The Oogoodoo Zone (JN 3100-4040N) is furthest from outcropping Westmoreland Formation and therefore has the thickest cover of Seigal Volcanics. It includes the mineralization centered on Hole WPD-60.

The Intermediate Zone (JN 2500-3100N) lies between the other two Zones and appears to have less potential for economic mineralization.

Of the 13 holes drilled in the Mageera Zone, five (WDDs 96 and 98, WPDs 66, 67 and 71) gave intersections close to, or better than 1 metre at 1 lb U308/long ton (approx 380 ppm U). One of these, WPD-98, gave 3 metres averaging 1.17 lb U308/long ton (approx 445 ppm U).
Of the 31 holes collared in the Oogoodoo Zone, 28 were completed, 2 were precollared by percussion but not completed, and 1 collapsed at shallow depth. Eight (WDDs 97, 99 and 105, WPDs 82, 88, 100, 104, 107) gave intersections close to, or better than, 1 metre at 1 lb U3O8/long ton (approx 380 ppm U).

The best intersections were:

WPD-88
122-142 m 664 ppm U (1.75 lb U3O8/long ton)
including 125-126 m 1,550 ppm U (4.10 lb U3O8/long ton)

WDD-105
177-178 m 540 ppm U (1.42 lb U3O8/long ton)
183.5-184 m 2,300 ppm U (6.08 lb U3O8/long ton),
11.2 ppm Au and 4 ppm Ag
184-184.5 m 520 ppm U (1.37 lb U3O8/long ton)

WDD-99
129-131.5 m 854 ppm U (2.25 lb U3O8/long ton)
including 130-130.5 m 1,700 ppm U (4.49 lb U3O8/long ton)

WPD-82
101-103 m 700 ppm U (1.85 lb U3O8/long ton)
108-110 m 390 ppm U (1.03 lb U3O8/long ton)

Of the 10 holes drilled in the Intermediate Zone, none gave an intersection close to, or better than, 1 metre at 1 lb U3O8/long ton (approx 380 ppm U).

The 13 holes drilled into the Southern Comfort Lineament gave elevated uranium and copper values, but not of ore grade. The Lineament proved difficult to detect in percussion chips.
The best intersections were:

SCP-D-1
86-88 m 290 ppm U  (0.77 lb U3O8/long ton)  
and 3,500 ppm Cu

SCDD-1
108-110 m 1,800 ppm Cu
121-122 m 290 ppm U  (0.77 lb U3O8/long ton)

SCDD-4
38-39 m 360 ppm U  (0.95 lb U3O8/long ton)  
and 2,900 ppm Cu

Three of the five holes drilled at the Jim Beam prospect gave elevated uranium and copper values but these were not of ore grade:

JBDD-1
44-46 m 100 ppm U  (0.26 lb U3O8/long ton)  
and 0.1 ppm Au

JBPD-1
54-55 m 220 ppm U  (0.58 lb U3O8/long ton)  
and 0.2 ppm Au

JBPD-3
1-2 m 160 ppm U  (0.42 lb U3O8/long ton),  
0.1 ppm Au and 1,000 ppm Cu
10-11 m 100 ppm U  (0.26 lb U3O8/long ton)  
and 0.65 ppm Au
26-27 m 150 ppm U  (0.40 lb U3O8/long ton)  
and 0.15 ppm Au

The three holes drilled at Jacksons Pit did not intersect any mineralization of significance, the highest assay value being 150 ppm U (0.4 lb U3O8/long ton) at 52-54m in JPPD-3.

The two holes drilled as an initial test of the Waterfall Creek
prospect returned low uranium values only, the highest assay being 90 ppm U (0.24 lb U3O8/long ton) over the interval 12-13m in WCPD-1. Gold and silver values in both holes were, however, above background.

During the course of the 1981 field programme geological mapping was carried out at six prospects, with radiometric surveys at five of these, ROAC radon surveys were undertaken on the Southern Comfort North grid, and at Waterfall Creek. Soil mercury traverses were run on the Southern Comfort North and JN grids to assess the usefulness of this method as a prospecting tool in the area.

1982 Programme

Exploration Licences 3625-3627 were granted on 30 June 1982. The 1982 programme was carried out after this date. The work was funded by the three partners in the TKB Joint Venture in accordance with their percentage equity interests and Kratos continued as Operator.

The Joint Venture had expended about $350,000 exploring the 600m wide "border strip" in which WPD-60 is situated but, in view of the annexation of this ground by Queensland, further exploration of the Oogoodoo Zone of the JN Grid could not be countenanced. The 1982 programme was therefore concentrated in other areas of the Exploration Licences.

Work was carried out in two main areas viz; Southern Comfort North (SCN) and Cobar II (CT), in EL's 3626 and 2627 respectively. As these two prospects lie in areas where the Seigel Volcanics mask the location of the target structure, the programme comprised the evaluation of a number of geophysical techniques which were thought to have the capability to detect and delineate target structures in this environment. Two radiometric traverses were also run along prominent structural features in EL 3625.
The techniques employed included ground magnetics, EM conductivity and dc resistivity depth soundings.

As orientation sampling over areas of known mineralization had shown a reasonable correlation between geochemical mercury (Hg) in soil and the mineralization sought, soil samples collected during the earlier ROAC survey on the SCN grid were analysed for Hg.

An analysis of the Landsat data for the area was undertaken in a further attempt to locate target structures in areas of Seigal Volcanics cover. It was also felt that this data might highlight structures which penetrated to the Basement.

The results of the various surveys undertaken indicated that each of the methods employed highlighted a number of linear trends. These trends are interpreted to indicate faulting, with possible dyke material infilling. In the case of the magnetic surveys, modelling of these features provides some indication of the attitude of the structure. However, no assessment of the presence or otherwise of mineralization can be made from this data. Conversely, the features highlighted by the Hg and ROAC surveys provide a possible indication of the presence of mineralization but can not provide details relating to the disposition of that mineralization. Thus it was concluded that by careful examination and comparison of the data from each of the techniques used, it should be possible to assess the significance of each individual postulated target.

Although the surveys carried out during the 1982 programme successfully highlighted possible target structures, the data was not sufficiently extensive to fully define the features concerned. It did, however, provide a good database to which survey data from subsequent programmes could be added to more fully define the structures of interest.
1983 Programme

Exploration Licences 3625-3627 were taken up principally to search for uranium and uranium/gold mineralization. It was also recognised that the area had potential for diamonds.

The 1983 programme in the area continued on from systematic geological, geochemical and geophysical surveys and substantial drilling programmes.

The 1983 programme was a continuation and expansion of the ground geophysical surveys of selected areas commenced in 1982. This work was based on the observed relationship in the area between mineralization and faulting, especially where igneous dyke material is present in a fault zone. An airborne radiometric and magnetic survey was carried out in association with Uranerz Australia Pty Ltd and magnetic and conductivity surveys were carried out at the NE Westmoreland and Cobar II prospects.

Results obtained during the 1983 programme confirmed that ground magnetic and conductivity surveys can be used to trace fault structures, which carry the mineralization in the area, in areas of soil/Seigel Volcanics cover.

When used in association with a geochemical survey method (ROAC and/or Hg) such ground geophysical surveys were determined to be valuable tools for defining drilling targets.

It was concluded that, after further definition, a number of the geophysical/geochemical anomalies indicated by the results of the 1983 programme would warrant testing by drilling.
1984-86 Programme

CEGBEA commenced exploration in the EL 3625, 3626 and 3627 areas in mid 1984.

This exploration was part of a CEGBEA programme to examine and explore the Pandanus Creek-Westmoreland Province for uranium through joint venture and farm-in arrangements with existing tenement holders and, where possible, through exploration on tenements acquired by CEGBEA in its own right.

CEGBEA's approach to this exploration involved both:

1) large scale geophysical, geological and geochemical surveys (principally through a joint venture with Uranerz Australia Pty Ltd) to locate mineralization not already found by previous explorers who have worked in the area, and to gain new insight into the nature and distribution of uranium and other mineralization in the province

and

2) an examination of areas of known mineralization selected on the basis of various criteria, but particularly as a result of the use of geophysical data processing procedures of a nature and/or precision which had not been used before.

In 1984 Stockdale took three reconnaissance samples from major drainages in the area. After processing, the concentrates were examined in the company's laboratory but no diamonds or kimberlite indicator minerals were recovered.
1986 Programme

Preliminary results of Kratos' exploration directed towards styles of mineralization other than those containing uranium, had indicated the prospectivity of the Pandanus Creek region. In addition, results of work in the general region by others, including the Northern Territory Geological Survey (NTGS) (Amaetal 1984) and Australian Diamond Exploration NL (1984) had further highlighted this prospectivity.

The 1986 programme sought to detect any indications of the presence of possible diamond, gold and platinoid mineral source rocks within the area by testing bulk samples from streams draining the area.

Sampling was proposed at 22 selected sites but, due to mechanical problems, only 14 samples were collected and subsequently treated. Two heavy mineral concentrates + and − 0.5mm were obtained and examined from each of the samples. The composition of grains contained in these concentrates were suggestive of the possible presence within the area of source rocks which were either initially derived from the mantle and were therefore potentially diamondiferous, or which sampled mantle derived, potentially diamondiferous, material during the volcanic cycle.

The presence of auriferous material in the current drainage cycle was also confirmed but not quantified.

1987 KRATOS PROGRAMME

Organisation

As with previous Kratos exploration programmes in the area, the 1987 programme was organised out of Sydney via Mt Isa. The field programme was undertaken by R Dehaan (Field Manager) and three assistants.
J R Stewart of Kratos joined the field party during the initial orientation period of the programme and undertook sampling of the core from JBDD1 and some preliminary rock chip sampling. During this period, a meeting with W Frazer of CEGBEA was held to review the uranium exploration undertaken and results obtained by CEGBEA.

The base camp used previously at Sandy Hollow was re-established for the duration of the field season. The water supply at this site was only just sufficient for field party consumption and processing of samples.

**Bulk Sampling Programme**

Exploration Technique

Sample sites were proposed prior to the commencement of the field programme to provide a coverage of all drainages in the areas of Exploration Licences 3625-3627 (Plate 1). So as to minimize the need to construct access tracks, these sites were selected as near as possible to existing tracks. The exact sampling location at each site was determined in the field by seeking locations where accumulation of heavy minerals was likely to have occurred. These were commonly point bars or the inside loop of active but dry streams. Wherever possible at these locations, gravels immediately overlying bedrock, ie basal gravels, were sampled (see Appendix 1 for details). In addition, a second sample of fine clay material was collected at each site to test for the presence of fine grained gold (see later).

A front-end-loader was used to excavate material at the selected sampling locations. This machine was hired from Pavex Constructions. The excavated sample was transported to a central processing location established on Cobar II Creek at Sandy Hollow camp using a 2 tonne Toyota Dyna tiptruck. At the processing site the samples were dumped onto a plastic sheet to avoid contamination. These samples were of the order of 3-4
tonnes in size.

The samples were treated using a 1.8m diameter Kimberley type diamond pan. This pan was set up to operate at between 16 and 21rpm so as to achieve a peripheral speed of between 91 and 122m/min. Material was fed to the pan by shovel onto an inclined square mesh screen at the rate of approximately 1.5 tonnes per hour. The theoretical maximum throughput of such a pan is of the order of 3 to 6 tonnes per hour depending on the nature of the feed material. It requires an approximate power input of 5hp.

The concentrate from the samples treated was removed from the pan and sieved into +3mm, -3mm to +2mm and -2mm size fractions. The coarsest size fraction was jigged on the sieve before picking by hand in the field. The finer fractions were bagged for later treatment using a mobile greasetable facility.

The finer fractions from all samples were subsequently passed over the mobile greasetable on completion of the treatment using the pan, in order that clean water was available for this part of the programme. This facility incorporates a 0.5mm aperture desilting screen to precondition the sample. The underflow from this screen was collected and panned by hand or concentrated with a pinched sluice.

The pan or sluice concentrate of the screen underflow material together with the material retained on the greasetable were then further concentrated using a Bromoform (SG 2.96) heavy liquid separation after removal of magnetic material with a hand magnet. The float fraction from this procedure was discarded.
Results

Examination of the greasetable concentrates and -0.5mm pan concentrates was undertaken after completion of the field programme.

Gold grains were noted in two samples (Nos 14 & 16) from the vicinity of EL 3625. However, these grains were small in size (<0.5 mm) and sparse. Thus it can be concluded that there is unlikely to be a significant source of gold mineralization in the visible grainsize range anywhere in the drainage areas tested and the only locality highlighted for further follow up was the vicinity of EL 3625. This is not to say that the whole area should not be re-tested for the presence of fine gold, i.e. gold which is not amenable to concentration by normal gravity methods.

No diamonds or grains suspected of being diamonds were noted in any of the concentrates.

A number of the concentrates contained probable ilmenite and/or clinopyroxene grains similar to those obtained in the 1986 programme and subsequently analysed. In view of the significantly larger samples obtained in 1987 at most sites, viz 3-4 tonnes as opposed to 100-200kg, these minerals must be considered to be characteristic of the background host lithology in the area rather than from an atypical source within the background lithology.

Rock Chip Sampling

The rock chip sampling programme was designed as an initial reconnaissance test for the presence of fine grained gold and/or platinum group elements in the area covered by ELs 3625-3627. As a first step, it was decided to concentrate this initial sampling in areas where mineralization, i.e. uranium mineralization, had been identified previously.
Surface rock chip sampling was therefore carried out on reconnaissance grids established over the following six prospect areas (Plate 1), viz:

1) Jim Beam (JB) (Plates 2a & 2b)
2) Cobar II (CT & CTG) (Plates 3a & 3b)
3) Southern Comfort North (SCN) (Plates 4a & 4b)
4) North East Westmoreland (JN) (Plates 5a & 5b)
5) Kings Ransom (KR) (Plates 6a & 6b)
6) Milestone (M) (Plates 7a & 7b)

Where possible, the rock chip sampling pattern was planned to be related to known points on pre-existing survey grids. However, due to the effects of time and termites, this was not always possible. Grid designations used during 1987 do not in all cases correspond to those used in previous years.

The samples obtained during the rock chip sampling programme were analysed for Au, Pt and Pd by fire assay. In general, the assay results were low, the majority being below the limits of detection (Au 114 of 147 samples; Pt 111 of 147, and Pd 38 of 147).

Analysis of the assay values suggests that the Au and Pt are log normally distributed whereas the Pd values are bimodally distributed. On a strictly mathematical interpretation, there are no truly anomalous samples as the higher values may be accounted for within the expected statistical variation. However, within each individual grid area there appear to be clusters of higher values for one or other (sometimes several) of the elements analysed as described below.

1) Jim Beam: Three elevated gold values (highest 0.08ppm) occur in the vicinity of the surface radiometric anomaly. All Pt values are <5ppb; 4 Pd values are 1ppb, the remainder <1ppb.

2) Cobar II: On the relatively small CTG grid, elevated values (maxima Au 0.01ppm, Pt 10ppb and Pd 13ppb) tended to cluster around Cobar II Creek in the vicinity of drillhole CPD-3.
These sample sites all lie within the basic volcanic rocks of the Seigal Volcanics along the projected strike to the north of the mineralized en echelon shears at Cobar II and Old Parr.

Further to the north-east, in the second area gridded in the general Cobar II locality, results confirmed a zone of elevated Au soil geochemical values highlighted by an earlier survey. Maxima were Au 0.02ppm, Pt 10ppb, Pd 9ppb. The reason for this zone of elevated values, which may lie just outside the limits of EL 3627, is not known.

3) Southern Comfort North: Only one Au value (0.01ppm) and two Pt values (both 5ppb) were above the respective limits of detection. Pd values were more varied, the highest being 10ppb. There was no particular pattern to the higher values.

4) North East Westmoreland: This grid covers part of the Mageera Zone of the original JN Grid in the vicinity of the high grade U and Au intersections made in WPD-45. Elevated Au (0.01ppm) and Pt (maximum 10ppb) values were obtained in the samples overlying the area of known U/Au mineralization at depth. An isolated high Au value (0.04ppm) occurred at the SW end of the grid.

5) Kings Ransom: The two highest Au values (both 0.02ppm) both lie to the east of the old shaft. A second zone of slightly higher Au values (0.01ppm) is located at the southern end of the grid. The highest Pt value (10ppb), on the other hand, occurs to the north of the old shaft close to the highest Pd value (18ppb).

6) Milestone: Although all values are relatively low, the northern side of Milestone has consistently higher Au and Pt values than elsewhere on the grid.
Core Sampling

Selected core from previous drilling at Jim Beam and NE Westmoreland was sampled for gold and platinum group metals.

The samples were obtained by splitting the intervals concerned with a bolster and hammer. In most cases the sample interval was approximately 1m.

All samples were assayed for gold, platinum and palladium at lower limits of detection of 10, 5 and 1ppb respectively.

Detailed descriptions of the intervals sampled are given in Appendix 2 and the assay results are given in Appendix 3.

Jim Beam

The geological setting of the Jim Beam prospect would appear to be similar to that of the Coronation Hill deposit. In particular, immediately to the north of the area drilled previously, there is a brick red feldspar porphyry identical in hand specimen to the one at Coronation Hill which carries most of the platinum/palladium mineralization. Further, drillhole JBDD1 intersected some 55m of volcanoclastic (?) breccia which would appear, in hand specimen, virtually identical to the "mass debris flow conglomerate" which occurs at Coronation Hill.

Drillhole JBDD1 was precollared by percussion to 52m and then drilled to completion at 171.1m by diamond coring.

Only the zone 42-48m of the percussion precollar was assayed for Au, with the interval 42-43m giving 0.08ppm Au and the interval 44-46m giving 0.6ppm Ag. Only five samples from the cored section of the hole (each representing 0.5m) were assayed for Au, each giving 0.01ppm.

Samples from the percussion holes drilled at Jim Beam gave
maximum values as follows:

<table>
<thead>
<tr>
<th>Location</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>JB PD1</td>
<td>0.20 ppm</td>
</tr>
<tr>
<td>JB PD3</td>
<td>0.65 ppm</td>
</tr>
</tbody>
</table>

Again, only a relatively small number of samples were assayed for gold.

Later, the NT Geological Survey reported that a surface sample of "altered tuff" from Jim Beam assayed 10.1ppm Au and a surface sample held in Kratos' Sydney office was found to assay 3.1ppm Au.

No percussion chips remained, but the diamond core from JBDD1 was available. It was therefore decided to assay a further selected suite of samples from this core for gold and platinum group metals.

Each variation in rock type intersected in JBDD1 was sampled and seven samples were taken at roughly equal intervals throughout the main breccia unit from 116.81m to 150.03m.

The results show three zones of elevated gold values - around 56m, 109-121m and 158-172m. None of the values approach ore grade, but they are clearly anomalous. Pt and Pd values were low throughout. These results are, of course, incomplete because selected intervals only were assayed.

NE Westmoreland

To test further for the possibility of Witwatersrand-type placer gold in the Westmoreland Formation, two samples of Westmoreland Formation Unit Ptw3 conglomerate were taken from drillhole WDD1, a stratigraphic diamond hole drilled near the NT/Queensland border at NE Westmoreland.

The two samples gave low values for all three elements.
Stream Sediment Sampling

As stated in the section dealing with the bulk stream sediment sampling programme, a sample of fine grained clayey material was also collected at each site to test for the presence of fine gold, as distinct from gold of a grain size which would be recovered in the diamond pan.

These samples were collected carefully, in most cases from the top several centimetres of a clay layer underlying a cobble/boulder train. The clay adhering to each cobble/boulder was carefully brushed off and retained in the sample. The method of sampling was based on the assumption that the hydraulic conditions in which fine gold would settle would be those in which clay particles could settle to form a clay layer. Cobbles/boulders would act as an additional trapping mechanism.

About 7kg was collected from each site and a subsample was sent to Comlabs for AAS analysis. The results are given in Appendix 4.

The only results which appeared to be of significance were the values at sample sites 5 and 6 (8 and 10 ppb respectively) which indicate a possible trail of interest in the Milestone/Kings Ransom area (see Plate 1).

Similar stream sediment sampling was also carried out in two other specific areas, viz in the vicinity of EL 3625 and in the Cliffdale Volcanics "window" (Jim Beam area).

In the case of the EL 3625 area, this sampling was carried out to follow up the identification of gold in the -0.5 mm fraction in samples 14 and 16 of the bulk stream sediment sampling programme. (It is interesting to note that the corresponding fine fraction stream sediment samples gave values of only 4 and <2 ppb respectively).

In this area, Westmoreland Formation sandstones overlie basal
Seigal Volcanics. The western sample trail (proceeding upstream) gave value of <5, <5, 5, <5, 10, <5 and <5 ppb. The highest value (10 ppb) was recorded in the vicinity of the intersection of the two major faults in this Exploration Licence area. This value warrants follow-up.

In the case of the eastern sample trail, all values were <5 ppb Au.

The other area sampled was in the Cliffdale Volcanics "window" south of the Main Range, which includes the Jim Beam prospect.

The values recorded were significantly higher than those recorded elsewhere. The highest value (40 ppb) was recorded in a stream draining the large andesitic intrusive within the area of outcrop of the Cliffdale Volcanics. The second highest value (15 ppb) was recorded from a stream draining the Westmoreland Formation/Cliffdale Volcanics unconformity in the vicinity of Southern Comfort. This drainage is largely outside EL 3626.

**Meatre Conglomerate Bulk Sample**

A bulk sample was taken from Meatre Conglomerate outcrop in the hillside immediately west of Sandy Hollow campsite. The unit was sampled completely from top to bottom and the sandstone surface underlying the conglomerate was brushed clean with a broom at the conclusion of the sampling.

The total sample taken was 230 kg. Approximately 60% of the material excavated, being cleaned cobbles, was rejected at the sampling site. The remainder of the sample was then crushed by hand in a steel bowl using a hammer. The crushed material was sieved at 6 mm and 3 mm and the coarser fractions examined by eye. No minerals or fragments of interest were present. The -3 mm material (constituting about 20 kg of the original 230 kg sample) was panned by hand and then sieved at 2 mm. No grains of interest were present in the -3 to +2 mm panned concentrate.
The -2mm panned concentrate contained numerous black grains.

The sample from which the NT Geological Survey recovered three gold grains (Ahmad, Hallenstein & Wygralk, 1984) is believed to have come from the same unit in the same locality (Wygralk pers comm). However, the Survey's sample was crushed and jigged in the laboratory prior to examination of its heavy mineral content. This was clearly a more refined technique than that used in the present instance.

Analysis of High Grade Grab Samples

Prior to the field programme, 12 high grade grab samples (including several samples from drillhole material) were assayed for U, Au, Pt and Pd to try and assess the possible potential of the area for these elements.

The results are given in Appendix 5. It will be seen that the results for Au, Pt and Pd are, in general, relatively low considering the very high uranium content of some of the samples. This could, of course, be due to the highest grade gold and/or platinum group mineralization being spatially separated from the highest grade uranium mineralization.

The highest gold value was 3.1ppm in the sample from Jim Beam. The highest platinum value was 11ppb in the sample from Jacques. The highest palladium value was 15ppb in the sample from Waterfall Creek.

1987 CEGBEA PROGRAMME

Cobar II

During September-October 1987, CEGBEA drilled two diamond holes (each with a short percussion precollar) at the Cobar II prospect (Fig 4). These holes were drilled on the recommendation of Uisdean Michie, Principal Geologist, CEGB London.
The purpose of the first hole was to reconnoitre down pitch from the known Cobar II mineralization. The other, located 100m south of the first, was to test between the two known surface occurrences of mineralization at Cobar II and Old Parr. Both holes were to have intersected the Cobar II-Old Parr Shear Zone in Westmoreland Formation sediments about 45m below the Seigal Volcanics/Westmoreland Formation contact. It was expected that each would be drilled to a total depth of 200m.

The earlier access tracks were upgraded and the drill sites located for pad preparation by tape and clinometer survey. Because of the steep hillsides, it was not possible to locate the drill sites at the optimum elevations. An accurate theodolite survey was later carried out while drilling was in progress. The datum adopted for this survey was the collar at Blackwells No 1 shaft at assumed local co-ordinates of 1000E, 1000N and RL1000.0.

Detailed logs and assay data are given in Appendix 6. Summary data is as follows:

Hole 87 CII DH1 (Fig 5)

<table>
<thead>
<tr>
<th>Location</th>
<th>103.85m S of Blackwells Shaft, 73.52m E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azimuth</td>
<td>270 degrees (true)</td>
</tr>
<tr>
<td>Declination</td>
<td>60 degrees</td>
</tr>
<tr>
<td>Drilling Method</td>
<td>0-30m percussion</td>
</tr>
<tr>
<td></td>
<td>30-210m diamond</td>
</tr>
<tr>
<td>Survey</td>
<td>No down hole survey carried out</td>
</tr>
<tr>
<td>Geology</td>
<td>0-58.10m Seigal Volcanics</td>
</tr>
<tr>
<td></td>
<td>58.10-210m Westmoreland Formation</td>
</tr>
<tr>
<td></td>
<td>(Metre Conglomerate at 123m approx)</td>
</tr>
<tr>
<td>Probe</td>
<td>No significant anomalous radioactivity</td>
</tr>
<tr>
<td></td>
<td>was recorded</td>
</tr>
</tbody>
</table>
Assays

Intervals assayed were:

56.1-62.1m (Pts/Ptw interface at 58.1m)
Highest U value 65ppm over 1m
Other elements low
Highest Au value 18ppb over 0.5m

123.2-126.2
(Metre Conglomerate 123.2-126.0m)
All values were low, eg U >3ppm, Au <8ppb

Comment

The elevation of the site was too low to achieve a satisfactory intersection of the Cobar II-Old Parr Shear Zone, ie within 30m of the Pts/Ptw contact. However, no significant alteration was noted in the hole drilled. It was not possible to drill a hole angled at a shallower angle (say 50 degrees) with the H22 drill rig used.

Hole 87 CII DH2 (Fig 6)

Location 193m S of Blackwells Shaft, 103.8m E
Azimuth 270 degrees (true)
Declination 60 degrees
Drilling Method 0-6 non coring
6-128m diamond

Survey Eastman single shot camera survey at 117m
(azimuth 271 degrees true, declination 60 degrees)

Geology 0-54.6m Seigal Volcanics
54.6-128m Westmoreland Formation
(Metre Conglomerate at 123.5m)

Probe No significant anomalous radioactivity
was recorded

Assays

Intervals assayed were:

50.1-58.1 \((\text{Pts/Ptw interface at 54.6m})\)
Highest U value 30ppm over 0.5m
Other elements low
Highest Au value 37ppb over 0.5m

122.5-126.5
(Metre Conglomerate 123.5-125.4m)
All values were low, eg U <3ppm
Highest Au value 23ppb over 1m

Comment

The hole was abandoned at 128m without intersecting the Cobar II-Old Parr Shear Zone after the penetration rate became very slow in hard silicified quartzite and the water supply was exhausted.

Four samples of drill core were sent for petrographic analysis but were lost in transit.

Dyke Material

A sample of "dyke material" from 105m depth in Kratos drillhole WDD98 at NE Westmoreland was assayed and studied petrographically by Dr Roger Townend of Analabs.

The assay results are set out in Appendix 7. It will be seen that the rock is anomalous in uranium (80ppm) and boron (237ppm). The gold content of the sample was 27ppb.

Dr Townend's description is as follows:

Thin section

\[ \text{K feldspar} \quad 25-35\% \]
Sericite 25-35%
Quartz 15-20%
Rutile 3-5%
Goethite 3-5%
Apatite <1%

This is a partly altered igneous rock which shows a weak palimpsest porphyritic texture. The former feldspar laths are totally sericitised, with the maximum dimensions to 0.7mm. The altered sericite bodies are associated with fresh K feldspar that is always dusted with iron oxide. It appears to be allotriomorphic to the former plagioclase. Quartz is equally fine and sporadic.

The slide has an abundance of secondary rutile that forms relic grids. Apatite was detected by SEM. There are barren quartz veins. The quantity of TiO₂ is more in keeping with a basic rock, suggesting the possibility that the fresh K feldspar is metasomatic.

The rock may be referred to as an altered potassic intrusive.

Metre Conglomerate

This unit is a moderately to well sorted polymictic cobble, pebble and occasional boulder conglomerate of fairly uniform one metre thickness in the upper part of the topmost unit of the Westmoreland Formation (PtW4). In the Sandy Hollow-Cobar II area, it is about 55-60m vertical depth below the Seigal Volcanics/Westmoreland Formation contact.

The unit was intersected in both holes drilled at Cobar II in 1987 but, in order to further test its possible prospectivity for gold, a representative sample of the unit was collected by CEGBEA over a 1.2m interval from a site near Sandy Hollow Camp. This sample was assayed for gold and a wide range of trace elements but no values were of significance (see Appendix 7). The Au content was <5ppb.
CONCLUSIONS

Kratos' 1987 stream sediment and rock chip sampling programmes gave gold and platinum group results which warrant follow up. Such follow up should be based on the assumption that any worthwhile precious metals mineralization in the area will very likely be in a grainsize range below that amenable to gravity concentration prospecting methods. The possible importance of such fine grained precious metals mineralization has been highlighted by the major resource of this type currently being developed at Coronation Hill.

Although in general disappointing, CEGBEA's drilling programme at Cobar II yielded some geochemically anomalous gold values. No assays were undertaken for platinum group elements.

It is recommended that applications be made for renewed title to the area covered by ELs 3625-3627.
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"Paleoplacer Potential in the Mid-Proterozoic of the Northern Territory - A Study of the Westmoreland Conglomerate" Darwin Conference, 1984 Australasian Institute of Mining & Metallurgy pp 357-366

Australian Diamond Exploration N.L. 1984
Prospectus dated 26th November 1984

Darby P.R. 1986
"Petrology and Geochemistry of Igneous Rocks of the Tawallah Group, in the Southeastern part of the McArthur Basin, N.T." Technical Report 86/10 N.T. Department of Mines and Energy

Deer W.A., Howie R.A. and Zussman J. 1986

Ahmad M., Hallenstein C.P. and Wygralk A. 1984
APPENDIX 1

KRATOS BULK SAMPLING PROGRAMME:
SAMPLE DETAILS
SAMPLE NO: 4  EXCAVATION DATE: 10/10/87
WEIGHT: 4 tonne  DEPTH: 150 cm
DESCRIPTION: Coarse gravel very stoney with angular pieces to brown clay bottom (dry sample).

COARSE (+10 cm) 2%
MEDIUM (5-10 cm) 8%
SMALL -5 cm 20% (approx)
SANDY/PEBBLES 50%
CLAY 30%

PROCESS DATE: 20/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 100 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 120 kg
FINES (-\(\frac{3}{8}\) mm) 130 kg

DATE OF GREASE TABLING: 29/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Walls of sampling pit kept collapsing during removal of sample but appropriate material was recovered.
SAMPLE NO: 5  EXCAVATION DATE: 10/10/87
WEIGHT: 4 tonne  DEPTH: 1 m
DESCRIPTION: Small to medium gravel, brown decomposed green clay/rock base.

COARSE (+10 cm) -
MEDIUM (5-10 cm) 10%
SMALL -5 cm 10% (approx)
SANDY/PEBBLES 60%
CLAY 20%

PROCESS DATE: 20/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 50 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 150 kg
FINES (-0.5 mm) 150 kg

DATE OF GREASE TABLING: 28/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: Flagging tape and alloy tag on tree at junction of two branches.
SAMPLE NO: 6  EXCAVATION DATE: 10/10/87
WEIGHT: 4.5 tonne  DEPTH: 50 cm
DESCRIPTION: Brown sand loam on yellow clay base at edge of runoff amidst boulders which were first removed by backhoe (dry sample).

COARSE (+10 cm)  5%
MEDIUM (5-10 cm) 10%
SMALL ≤5 cm 30% (approx)
SANDY/PEBBLES 40%
CLAY 15%

PROCESS DATE: 21/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm  90 kg
2-3 mm (+2 mm)  60 kg
-2 mm (-2 mm)  100 kg
FINES (-½ mm)  150 kg

DATE OF GREASE TABLING: 29/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Photo take of sampled site after excavation facing 155° towards waterfall camp.
SAMPLE NO: 7  EXCAVATION DATE: 10/10/87
WEIGHT: 4 tonne  DEPTH: 1 m
DESCRIPTION: Yellow/brown light gravel on yellow/brown clay base (dry sample).

COARSE (+10 cm) -%
MEDIUM (5-10 cm) -%
SMALL -5 cm 20% (approx)
SANDY/PEBBLES 60%
CLAY 20%

PROCESS DATE: 20/10/87
WEIGHT OF SIEVED CONCENTRATES: 350 kg
+3 mm 50 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 100 kg
FINES (-0.5 mm) 150 kg

DATE OF GREASE TABLING: 29/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS:
SAMPLE NO: 9  EXCAVATION DATE: 12/10/87
WEIGHT: 3 tonne  DEPTH: 1 m
DESCRIPTION: Sandy gravel on yellow clay base (dry sample).

COARSE (+10 cm)  -%
MEDIUM (5-10 cm)  5%
SMALL -5 cm  5% (approx)
SANDY/PEBBLES  60%
CLAY  30%

PROCESS DATE: 16/10/87

WEIGHT OF SIEVED CONCENTRATES: 350 kg
+3 mm  100 kg
2-3 mm (+2 mm)  50 kg
-2 mm (-2 mm)  100 kg
FINES (-1/2 mm)  100 kg

DATE OF GREASE TABLING: 18/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Very sandy edge of creek and truck forced to tip load to get out. Sample reloaded with bucket. Visible mineralised veins possibly barite in banks on decomposed base rock.
SAMPLE NO: 10  EXCAVATION DATE:

WEIGHT: 4 tonne  DEPTH: 40 cm

DESCRIPTION: Coarse gravels intermixed with fines on a yellow clay base. Large rocks were first removed by backhoe (dry sample).

COARSE (+10 cm)  5%
MEDIUM (5-10 cm)  10%
SMALL ~5 cm  15% (approx)
SANDY/PEBBLES  45%
CLAY  25%

PROCESS DATE: 21/10/87

WEIGHT OF SIEVED CONCENTRATES: 350 kg
+3 mm  50 kg
2-3 mm (+2 mm)  50 kg
~2 mm (~2 mm)  100 kg
FINES (~½ mm)  150 kg

DATE OF GREASE TABLING: 30/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF ~2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS:
SAMPLE NO: 12                        EXCAVATION DATE: 12/10/87
WEIGHT: 4 tonne                       DEPTH: 75 cm
DESCRIPTION: Sandy gravel on yellow clay base. Stream approx 1.5 m wide.

COARSE (+10 cm)  -% 
MEDIUM (5-10 cm) -%
SMALL -5 cm      5% (approx)
SANDY/PEBBLES    55%
CLAY             40%

PROCESS DATE: 17/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm  100 kg
2-3 mm (+2 mm)  50 kg
-2 mm (-2 mm)  100 kg
FINES (-1/2 mm) 150 kg

DATE OF GREASE TABLING: 25/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Bush on south side flagged. (Possibly on wrong creek).
SAMPLE NO: 13                      EXCAVATION DATE: 12/10/87

WEIGHT: 4 tonne                       DEPTH: 40 cm

DESCRIPTION: White to yellow sand on yellow clay base (dry sample).

COARSE (+10 cm) -%
MEDIUM (5-10 cm) -%
SMALL -5 cm 2% (approx)
SANDY/PEBBLES 68%
CLAY 30%

PROCESS DATE: 17/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 50 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 150 kg
FINES (-\frac{1}{2} mm) 150 kg

DATE OF GREASE TABLING: 27/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: Difficulty in getting truck out of sandy creek but eventually OK.
SAMPLE NO: 14
EXCAVATION DATE: 12/10/87
WEIGHT: 3.5 tonne
DEPTH: 1 m
DESCRIPTION: Yellow sand and clay on clay base after removing large overlying rocks (dry sample).

COARSE (+10 cm) -%
MEDIUM (5-10 cm) 5%
SMALL -5 cm 20% (approx)
SANDY/PEBBLES 60%
CLAY 15%

PROCESS DATE: 22/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 100 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 150 kg
FINES (-½ mm) 100 kg

DATE OF GREASE TABLING: 26/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: Visible Au in -½ mm concentrate. Sydney notified.
SAMPLE NO: 15  
EXCAVATION DATE: 12/10/87

WEIGHT: 3.5 tonne  
DEPTH: 60 cm

DESCRIPTION: Coarse sandy gravel on green clay/rock base (dry sample).

COARSE (+10 cm) -%  
MEDIUM (5-10 cm) 5%  
SMALL -5 cm 10% (approx)  
SANDY/PEBBLES 65%  
CLAY 20%

PROCESS DATE: 22/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 100 kg  
2-3 mm (+2 mm) 50 kg  
-2 mm (-2 mm) 150 kg  
FINES (-5 mm) 100 kg

DATE OF GREASE TABLING: 26/10/87

BAGS OF +2 mm GR/T REJECT: 1  
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: Sample taken from centre stream. Tracer in centre flagged and tagged.
SAMPLE NO: 16                        EXCAVATION DATE: 12/10/87
WEIGHT: 4 tonne                        DEPTH: 50 cm
DESCRIPTION: Brown/purple Sandy gravel with angular volcanic material (dry smape).

COARSE (+10 cm) -
MEDIUM (5-10 cm) -
SMALL -5 cm 20% (approx)
SANDY/PEBBLES 50%
CLAY 30%

PROCESS DATE: 19/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm 100 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 100 kg
FINES (-½ mm) 150 kg

DATE OF GREASE TABLING: 27/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: A small speck of Au visible in the -½ mm concentrate. 4 traces used (3 x 2 mm cubes and 1 x 5 mm cube). 1 x 2 mm lost.
SAMPLE NO: 17

EXCAVATION DATE: 12/10/87

WEIGHT: 3.5 tonne

DEPTH:

DESCRIPTION: Brown/black sandy gravel with little coarse stone (dry sample).

COARSE (+10 cm) -%

MEDIUM (5-10 cm) 2%

SMALL -5 cm 18% (approx)

SANDY/PEBBLES 60%

CLAY 20%

PROCESS DATE: 23/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg

+3 mm 50 kg

2-3 mm (+2 mm) 50 kg

-2 mm (-2 mm) 150 kg

FINES (~½ mm) 150 kg

DATE OF GREASE TABLEING: 28/10/87

BAGS OF +2 mm GR/T REJECT: 1

BAGS OF -2 mm GR/T REJECT: 2 (very heavy)

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS:
SAMPLE NO: 18  EXCAVATION DATE: 10/10/87

WEIGHT: 4 tonne  DEPTH: 

DESCRIPTION: Granular clay mix with sand with little stone visible but sizeable clay lumps (dry sample).

COARSE (+10 cm) -%  
MEDIUM (5-10 cm) -%  
SMALL -5 cm 5% (approx)  
SANDY/PEBBLES 60%  
CLAY 35%  

PROCESS DATE: 19/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg  
+3 mm 100 kg  
2-3 mm (+2 mm) 50 kg  
-2 mm (-2 mm) 150 kg  
FINES (-½ mm) 100 kg  

DATE OF GREASE TABLING: 28/10/87

BAGS OF +2 mm GR/T REJECT: 1  
BAGS OF -2 mm GR/T REJECT: 3  

TOTAL BAGS/SAMPLE: 4  

OTHER DETAILS: 4 orange tracers used (1 barrel and 3 x 2 mm cubes). 1 barrel and 2 cubes recovered. 1 x 2 mm cube lost.
SAMPLE NO: 19  

EXCAVATION DATE: 10/10/87

WEIGHT: 3.5 tonne  

DEPTH: 50 cm

DESCRIPTION: Brown sandy gravel with some angular stone on yellow/brown clay base (dry sample). Centre run of stream.

COARSE (+10 cm) 5%

MEDIUM (5–10 cm) 5%

SMALL −5 cm 20% (approx)

SANDY/PEBBLES 60%

CLAY 10%

PROCESS DATE: 23/10/87

WEIGHT OF SIEVED CONCENTRATES: 380 kg

+3 mm 110 kg

2–3 mm (+2 mm) 50 kg

−2 mm (−2 mm) 120 kg

FINES (−½ mm) 100 kg

DATE OF GREASE TABLING: 30/10/87

BAGS OF +2 mm GR/T REJECT: 1

BAGS OF −2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Selected site was best access to loading and was taken to clay base.
SAMPLE NO: 20  EXCAVATION DATE: 12/10/87
WEIGHT: 3 tonne  DEPTH: 40 cm
DESCRIPTION: White/yellow sandy clay on sandstone base with little coarse material (dry sample).

COARSE (+10 cm)  -%
MEDIUM (5-10 cm) -%
SMALL  -5 cm  5% (approx)
SANDY/PEBBLES  90%
CLAY  5%

PROCESS DATE: 17/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg
+3 mm  120 kg
2-3 mm (+2 mm)  60 kg
-2 mm (-2 mm)  120 kg
FINES (-1/2 mm)  100 kg

DATE OF GREASE TABLING: 27/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: Truck became bogged in dry sand and after towing with backhoe had to tip, shift and be reloaded.
SAMPLE NO: 21  EXCAVATION DATE: 12/10/87
WEIGHT: 4 tonne  DEPTH: 60 cm
DESCRIPTION: Red/brown sandy gravel with clay base from centre of stream (dry sample).

COARSE (+10 cm) -
MEDIUM (5–10 cm) -
SMALL -5 cm 15% (approx)
SANDY/PEBBLES 60%
CLAY 25%

PROCESS DATE: 19/10/87

WEIGHT OF SIEVED CONCENTRATES: 450 kg
+3 mm 100 kg
2–3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 100 kg
FINES (-\(\frac{1}{8}\) mm) 200 kg

DATE OF GREASE TABLING: 26/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 2

TOTAL BAGS/SAMPLE: 3

OTHER DETAILS: No particularly suitable trapsites were in evidence and sample was taken from centre stream on clay base. 4 tracers used and 2 only recovered. All 2mm cubes.
SAMPLE NO: 22

EXCAVATION DATE: 9/10/87

WEIGHT: 4.5 tonne

DEPTH: 2 m

DESCRIPTION: Grey/white clay with coarse stone and sand (wet sample).

COARSE (+10 cm) 10%
MEDIUM (5-10 cm) 10%
SMALL -5 cm 10% (approx)
SANDY/PEBBLES 50%
CLAY 20%

PROCESS DATE: 23/10/87

WEIGHT OF SIEVED CONCENTRATES: 400 kg

+3 mm 100 kg
2-3 mm (+2 mm) 50 kg
-2 mm (-2 mm) 150 kg
FINES (-1/2 mm) 150 kg

DATE OF GREASE TABLING: 29/10/87

BAGS OF +2 mm GR/T REJECT: 1
BAGS OF -2 mm GR/T REJECT: 3

TOTAL BAGS/SAMPLE: 4

OTHER DETAILS: 4 tonne only processed. Only wet sample excavated. Not part of original samples but included on Ross's suggestion and my own since dam site was needed.
APPENDIX 2

KRATOS CORE SAMPLING PROGRAMME:
DETAILED INTERVAL DESCRIPTIONS
APPENDIX 2

PANDANUS CREEK: CORE SAMPLING - GEOLOGICAL DESCRIPTIONS

Jim Beam
Drillhole JBDD1

56.5 - 56.9 m  Heavily chloritised quartz/haematite vein about 2 mm thick at about 56.6 m. At 56.75 m a 2.5 mm quartz vein is present. The rock has the general appearance of a chloritised dacitic? volcanic.

62.8 - 64.0 m  Fairly consistently mottled haematitic and chloritic alteration zone.

64.04 - 64.44 m  Greenish coloured rubble breccia with fragments of quartzite, etc. Looks like a crumbly fine conglomerate but the fragments are angular.

64.44 - 65.20 m  Mottled haematitic, purple coloured tuff?

65.20 - 65.90 m  Breccia. General appearance is very streaky with greenish-yellow streaks (chlorite) which "flow" around sub-angular to sub-rounded fragments.

72.70 - 73.40 m  Purplish rock mottled in light and dark hues with prominent pale greenish-yellow veining, which seems mainly chlorite.

82.07 - 83.00 m  Heavily chloritised breccia. The breccia fragments seem to be completely replaced by darker green chlorite as distinct from the yellowish green variety referred to above. The first 60 cm of this interval to 82.67 m is virtually a quartz rock with extensive chlorite plus an area of vughs containing crystals of quartz and pyrite.

87.33 - 87.97 m  Breccia comprised of purplish angular fragments with quartz in between. Shows moderate to heavy chloritisation by pale yellow-green chlorite.

95.09 - 96.32 m  Note 95.24 - 95.41 m removed in its entirety by Uranerz Australia Ltd. Purplish rock with numerous quartz-filled fractures and lighter coloured parallel streaks which look like original volcanic banding.

99.70 - 100.35 m  Mottled purple/pinkish-purple rock extensively chloritised by light yellow-green chlorite. Actual core length by measurement appears to be about 60 cm.
109.31 - 109.63 m Change in appearance of rock - appears to be largely felspathised(?) with pinkish felspar(?) and chlorite. Is sub-parallel orientation of what appears to be remaining original rock material, some quartz veins, pink material (nature?) and chlorite.

116.81 - 117.80 m Spectacular breccia with variety of fragments including green (not yellow-green) chloritised fragments.

119.05 - 119.97 m As for previous interval.

119.97 - 120.93 m As for previous interval, but very rubbly first 16 cm.

126.15 - 126.97 m As for 116.81 - 117.80 m.

132.14 - 132.95 m Note 132.00 - 132.14 m already cut and half core taken. As for previous interval.

136.08 - 136.92 m As for previous interval.

142.15 - 142.99 m As for previous interval.

150.03 - 151.00 m Rock changes to more brown, iron-stained appearance and is also softer and more crumbly. Note previous sample 151.00 - 152.00 m approximately consisted of brown, heavily iron-stained material for about 20 cm, then mottled brown and green volcanic rock showing heavy chloritisation.

157.78 - 158.82 m Much finer grained breccia of similar type to previous interval. Thin veins of quartz and iron-stained material of the order of 1 mm thick are present.

159.70 - 160.32 m Deep purplish brown, very crumbly, heavily iron-stained breccia.

170.15 - 171.70 (EOH) m Fine grained breccia for 16 cm, then 25 cm of coarser breccia. The last part of the interval to EOH is relatively coarse breccia. The breccia is still of the same general appearance and contains pink/red, iron-stained fragments, green chloritised fragments and fine quartz veins. The quartz fragments and red fragments (altered felspar or acid igneous rock) are all angular and are set in a chloritic matrix traversed by fine quartz veins.
North East Westmoreland

Drillhole WDD1

186.00 - 187.34 m  Conglomerate (Top of PtW3)
200.00 - 201.00 m  Conglomerate (PtW3)
APPENDIX 3

KRATOS CORE SAMPLING PROGRAMME:
ASSAY RESULTS
APPENDIX 3

PANDANUS CREEK: CORE SAMPLING - ASSAY RESULTS

<table>
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<th>Interval (m)</th>
<th>Assay Values</th>
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<td>159.70-160.32</td>
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APPENDIX 4

KRATOS STREAM SEDIMENT SAMPLING:
ASSAY RESULTS
## PANDANUS CREEK

### STREAM SEDIMENT SAMPLING: ASSAY RESULTS

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<td></td>
<td>16</td>
<td>&lt;2</td>
</tr>
<tr>
<td></td>
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<td>&lt;2</td>
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<td></td>
<td>18</td>
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<td>&lt;2</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>&lt;2</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>&lt;2</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>&lt;2</td>
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<tr>
<td></td>
<td>24</td>
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<tr>
<td><strong>EL 3625</strong></td>
<td>871012</td>
<td>&lt;5</td>
</tr>
<tr>
<td></td>
<td>871013</td>
<td>&lt;5</td>
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<td>&lt;5</td>
</tr>
<tr>
<td></td>
<td>871015</td>
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<tr>
<td></td>
<td>871016</td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>871018</td>
<td>&lt;5</td>
</tr>
<tr>
<td></td>
<td>871019</td>
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<td>871020</td>
<td>&lt;5</td>
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<td></td>
<td>871021</td>
<td>&lt;5</td>
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<td></td>
<td>871022</td>
<td>&lt;5</td>
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<td>871023</td>
<td>&lt;5</td>
</tr>
<tr>
<td></td>
<td>871024</td>
<td>5</td>
</tr>
<tr>
<td>Area</td>
<td>Sample No</td>
<td>Au (ppb)</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Cliffdale Volcanics</td>
<td>871001</td>
<td>40</td>
</tr>
<tr>
<td>&quot;Window&quot; (Jim Beam area)</td>
<td>871002</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>871003</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>871004</td>
<td>10</td>
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<td></td>
<td>871005</td>
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<td></td>
<td>871007</td>
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</tr>
<tr>
<td></td>
<td>871008</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>871009</td>
<td>&lt;5</td>
</tr>
<tr>
<td></td>
<td>871010</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>871011</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Sample No.</td>
<td>Location</td>
<td>Notes</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>PC 9</td>
<td>Southern Comfort North</td>
<td>Dyke material from outcrop at 600N on SCN grid. Light red/brown colour</td>
</tr>
<tr>
<td>PC 10</td>
<td>NE Westmoreland</td>
<td>WPDH3, 21-22 m. Sieve oversize</td>
</tr>
<tr>
<td>PC 11</td>
<td>Waterfall Creek</td>
<td>Sample WC003. Portion of sample cut for thin section. Grey with reddish dyke about 1.3 cm wide in central part of sample</td>
</tr>
<tr>
<td>PC 12</td>
<td>Southern Comfort</td>
<td>SCDD1, 124 m. Part of petrological sample</td>
</tr>
</tbody>
</table>

Detection limit

Results in ppm unless otherwise indicated
APPENDIX 5

KRATOS HIGH GRADE (U) GRAB SAMPLES:
ASSAY RESULTS
## APPENDIX 5

### PANDANUS CREEK: ANALYSIS OF HIGH GRADE GRAB SAMPLES

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Location</th>
<th>Notes</th>
<th>U</th>
<th>Au</th>
<th>Pt</th>
<th>Pd</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC 1</td>
<td>El Hussen</td>
<td>Hemalite/yellow uranium ochre?/pitchblende?</td>
<td>10.9%</td>
<td>0.015</td>
<td>&lt;0.005</td>
<td>0.008</td>
</tr>
<tr>
<td>PC 2</td>
<td>McGuinness</td>
<td>Red/brown iron-stained rock with secondary uranium mineralization (torbernite?)</td>
<td>4060</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PC 3</td>
<td>Jacques</td>
<td>Iron-stained gossanous sandstone with secondary U mineralization (torbernite?)</td>
<td>1.26%</td>
<td>0.065</td>
<td>0.011</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PC 4</td>
<td>Cobar II</td>
<td>Heavy haematitic primary ore</td>
<td>5.20%</td>
<td>0.030</td>
<td>&lt;0.005</td>
<td>0.008</td>
</tr>
<tr>
<td>PC 5</td>
<td>Joint South</td>
<td>Sample JS342. Red/brown dyke rock with white (quartz) veining</td>
<td>385</td>
<td>0.030</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PC 6</td>
<td>Zig Zag Area</td>
<td>Red/brown iron-stained sandstone with secondary U mineralization</td>
<td>2000</td>
<td>0.030</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PC 7</td>
<td>Jim Beam</td>
<td>Red/brown iron-stained material with yellow secondary U mineralization</td>
<td>2.24%</td>
<td>3.10</td>
<td>0.008</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PC 8</td>
<td>NE Westmoreland</td>
<td>Sample from WDD98, 99.02-99.12 m Dyke - grey/fawn colour</td>
<td>360</td>
<td>0.035</td>
<td>0.007</td>
<td>&lt;0.005</td>
</tr>
</tbody>
</table>

Results in ppm unless otherwise indicated.
APPENDIX 6

CEGBEA DRILLING PROGRAMME:
LOGS AND ASSAY VALUES
### CEGB EXPLORATION (AUSTRALIA)
#### DRILLHOLE RECORD SUMMARY SHEET

**HOLE NO.** S 708714

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>Rondell Creek SIV</th>
<th>AREA</th>
<th>Kapooka EL 3627</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE COMMENCED</td>
<td>11 September 1982</td>
<td>DATE COMPLETED</td>
<td>20 September 1982</td>
</tr>
<tr>
<td>LOCATION</td>
<td>Cobral II - Old Park Passers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLLAR CO-ORDS</td>
<td>896.15 mN, 1073.62 mE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLLAR RL</td>
<td>782.5 m</td>
<td>AZIMUTH</td>
<td>220°</td>
</tr>
<tr>
<td>TOTAL DEPTH</td>
<td>210 m</td>
<td>WATER TABLE</td>
<td>NR</td>
</tr>
<tr>
<td>PRECOLLAR DEPTH</td>
<td>3 m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SUMMARY OF RESULTS

<table>
<thead>
<tr>
<th>METERAGE</th>
<th>GEOLOGICAL DESCRIPTION</th>
<th>METERAGE</th>
<th>MINERALIZATION &amp; ALTERATION</th>
<th>ASSAYS (ppm)</th>
<th>SAMPLE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td>Length</td>
<td></td>
<td>U, Th, Ca, Pb, Zn, Cu, Ag, Au</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>35.56</td>
<td>36.57</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
<td></td>
</tr>
<tr>
<td>35.56</td>
<td>38.8</td>
<td>38.82</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
<td></td>
</tr>
<tr>
<td>38.82</td>
<td>40.8</td>
<td>40.82</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
<td></td>
</tr>
<tr>
<td>40.82</td>
<td>48.0</td>
<td>48.0</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
<td></td>
</tr>
<tr>
<td>48.0</td>
<td>80</td>
<td>80</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
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<td>80</td>
<td>50</td>
<td>50</td>
<td>5.5</td>
<td>10, 45, 5, 25, 15, 15, 0.5, 0.25</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OBJECTIVE OF HOLE</th>
<th>REMARKS</th>
<th>HOLE SURVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>To intersect the Cobral II - Old Park Shear Zone at about 30-40 m below Nth/FwRw contact</td>
<td>This hole was not surveyed</td>
<td>Method Depth Az. Dip</td>
</tr>
</tbody>
</table>

**NOTE:** The hole was not surveyed because of the steep gradient, the hole could not be sized at a usable elevation. For addition the declination at collar could no be shallowed because of short arc couplings at the mast. The hole probably intersected the shear at 10m, but no significant alteration was apparent.
<table>
<thead>
<tr>
<th>METERAGE</th>
<th>GEOLOGICAL DESCRIPTION</th>
<th>METERAGE</th>
<th>MINERALISATION &amp; ALTERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>85</td>
<td>Coarse grits - Fine pebble conglomerate, poorly sorted</td>
<td>61.1</td>
<td>61.6</td>
</tr>
<tr>
<td>96.5</td>
<td>Appearance of occasional quartzy pebbles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>79. Organisational cobble cap clasts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bedding 70° &amp; 10° to 102.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108.2</td>
<td>38. Increase in cobble and pebble frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>6.5. Poorly sorted pebble conglomerate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>4.7. Medium sandstone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128.2</td>
<td>1.0 Organ sandstone - grt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>129.2</td>
<td>1.0 Organ sandstone - grt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>133.2</td>
<td>&quot;Matte Conglomerate&quot; Marker</td>
<td>133.2</td>
<td>146.2</td>
</tr>
<tr>
<td>146.0</td>
<td>1.0 Medium - coarse grits - fine poorly sorted conglomerate</td>
<td>146.2</td>
<td>146.2</td>
</tr>
<tr>
<td>150</td>
<td>1.0 Medium - coarse grits / sandstone, oo pebbles and asbes</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Bedding 55° &amp; 60° @ 152.6m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bedding 55° &amp; 60° @ 151.5m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bedding 55° &amp; 60° @ 147.2m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bedding 60° &amp; 60° @ 135.5m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ 183m 10cm shaw v weak pale oolitic alteration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.0</td>
<td>End</td>
<td></td>
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</tr>
</tbody>
</table>
### CEGB Exploration (Australia)

#### Drillhole Record Summary Sheet

**Hole No.:** B74TD12  
**Date Commenced:** 25 September 1987  
**Date Completed:** October 1987  
**Drill:** H22  
**Driller:** Jack Schubert  
**Location:** Cabora II - Old Por Shear Zone  
**Collar Co-ords:** E 1103.8, N 802.41  
**Dip at Collar:** -60°  
**Core Sizes:** No. From 6 To 12  
**Water Table:** N/R  
**Total Depth:** 138 m (measured)  
**Precollar Depth:** 6 m

---

#### Summary of Results

<table>
<thead>
<tr>
<th>Meterage</th>
<th>Geological Description</th>
<th>Mineralization &amp; Alteration</th>
<th>Assays (ppm)</th>
<th>Sample Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td>Length</td>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>6</td>
<td>Strongly weathered basalt (now caring)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>9.5</td>
<td>3.5</td>
<td>Strongly weathered basalt</td>
<td></td>
</tr>
<tr>
<td>9.5</td>
<td>16</td>
<td>6.5</td>
<td>Moderately weathered, broken basalt</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>21</td>
<td>5</td>
<td>Slightly weathered, broken basalt</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>32</td>
<td>11</td>
<td>Free to medium grey green hornblende, rare of vein</td>
<td>Fracture zone 32-6.375m</td>
</tr>
<tr>
<td>32</td>
<td>33.6</td>
<td>1.6</td>
<td>Medium volcanics, occasional amygdules, silica filled</td>
<td></td>
</tr>
<tr>
<td>33.6</td>
<td>34.5</td>
<td>0.9</td>
<td>Fracture (filled)</td>
<td>@ 34.5m</td>
</tr>
<tr>
<td>34.5</td>
<td>43.1</td>
<td>8.6</td>
<td>Medium volcanics, occasional hornblende, rare of vein</td>
<td>Fracture 43-48.2m</td>
</tr>
<tr>
<td>43.1</td>
<td>48.0</td>
<td>4.9</td>
<td>Medium volcanics, occasional hornblende, rare of vein</td>
<td>Fracture 48-49.2m</td>
</tr>
<tr>
<td>48.0</td>
<td>51.1</td>
<td>3.1</td>
<td>Medium - coarse amygduleal basalt</td>
<td></td>
</tr>
<tr>
<td>51.1</td>
<td>52.5</td>
<td>1.4</td>
<td>Medium - coarse amygduleal basalt</td>
<td></td>
</tr>
</tbody>
</table>

#### Objective of Hole

To intersect the Cabora II - Old Por Shear Zone at about 30-40m below base of contact

#### Remarks

The hole was abandoned following very poor rates of penetration in highly siliceous and pebbly conglomerates, sandstone from 110m, and in addition, the water supply became exhausted.

#### Hole Number

C880/317
<table>
<thead>
<tr>
<th>METERAGE</th>
<th>GEOLOGICAL DESCRIPTION</th>
<th>METERAGE</th>
<th>MINERALISATION &amp; ALTERATION</th>
<th>HOLE NO. 82 CL D162</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.5</td>
<td>57.5</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51.5</td>
<td>61.5</td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54.5</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56.5</td>
<td>55.5</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55.5</td>
<td></td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.5</td>
<td></td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.5</td>
<td></td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62.5</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.5</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.5</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample 56.52 @ 15m
Yeh photography
APPENDIX 7

CEGBEA ASSAY RESULTS:
DYKE MATERIAL AND METRE CONGLOMERATE
# A. METAL AND RADIOACTIVITY ANALYSES

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>AMG Co-ords</th>
<th>Sample Type</th>
<th>Width (m)</th>
<th>Radioactivity (Total)</th>
<th>Analyses (p.p.m.)</th>
<th>ppb</th>
<th>%</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>5566</td>
<td>Easting</td>
<td>Northing</td>
<td>U eU Th eTh eK Cu Pb Zn Co Ni Cr Mn Ag Au</td>
<td>No Fe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>64</td>
<td>25 20 40 13 30 140</td>
<td>X</td>
<td>27</td>
<td>-160 140</td>
</tr>
<tr>
<td>5567</td>
<td>12</td>
<td>12</td>
<td>2</td>
<td>7.6</td>
<td>5 5 10 13 25 40</td>
<td>X</td>
<td></td>
<td>&lt;5 0.59</td>
</tr>
</tbody>
</table>

**Analytical method**

| 146         | 1301        | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |

**Detection limit**

| 101 | 1 | 5 | 5 | 5 | 20 | 5 | 5 | 0.2 |
## B. Silicate and Trace Element Analyses

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Analyses (%)</th>
<th>Analyses (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Al2O3</td>
<td>SiO2</td>
</tr>
<tr>
<td>5566</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>44.0</td>
<td>23.7</td>
</tr>
<tr>
<td>5567</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>620</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Analytical Method
- Acid Digestion
- Detection Limit
  - 1.0 ppm
  - 0.01 ppm
  - 0.001 ppm

### Average Crust
- 15
- 20
- 375
- 135
- 15
- 30