APPENDIX 1

BARFUSS CORPORATION

EL 24552

A Report prepared for Barfuss Corporation entitled

An analysis of airborne radiometric data from the Harts Range, N.T

BY

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May 2006
An analysis of airborne radiometric data from the Harts Range, N.T for anomalous uranium response for Barfuss Corporation Limited

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1. Introduction

The area investigated is that covered by EL24552 and EL25063 in the Harts Range area of the Northern Territory. It is almost 60km in the east-west direction and 35km in the north-south direction. Data from six airborne geophysical survey subsets were investigated as part of the study, covering parts of four 1:250,000 geological sheets, Alice Springs, Alcoota, Illogwa Creek and Huckitta. The location of the survey subsets is shown in figure 1.

The surveys were flown at different times and have different acquisition specifications. They consist of data acquired by the NTDM and other exploration companies, including, PNC (Exploration) Pty. Ltd., Endras Trust No.2 Pty. Ltd., CRA Exploration Pty. Ltd., and Pasminco. Therefore it was decided to examine the data from each survey separately rather than amalgamate them into a single unit. All surveys except the Huckitta survey used a calibrated radiometric measuring system and the radioelement response is given as total radioelements in parts per million (ppm), potassium in percent, uranium in ppm and thorium in ppm. Results from the Huckitta survey are given as counts per minute (cpm) for total count response, potassium, uranium and thorium.

The purpose of the study was to locate and identify anomalous uranium. Therefore the response from potassium and thorium and many of the radiometric ratios were not examined in the detail they would have been if the purpose was a full lithological and structural study.

For each of the subsets, the mean and median values for uranium were calculated and a background value defined. This was related to each of the measured values and a “times background” value calculated. These background values are as follows:

- AlcAS-2 2.3ppm uranium
- AlcAS-3 2.3ppm uranium
- AlcAS-d 2.8ppm uranium
- AlcAS-e 3.1ppm uranium
- AlcAS-k 3.1ppm uranium
- Huckitta 22cpm

The variation within the first five subsets may be due to different geology, i.e. a greater exposure of granite or increased radioactive material in the regolith; or variations in the instrument calibration and corrections applied for Compton Scattering, etc. However, it is another reason for examining each subset separately rather than combining them all and averaging the background value.

The parameter “uranium above background” is shown for the six areas in figures 2 to 7. These figures are at a scale of 1:250,000 and show the location of areas considered to have an anomalous uranium response. The topography and mineral occurrences are shown in figure 15 at the same scale. The exploration license boundaries are also shown in this figure.
An analysis of airborne radiometric data from the Harts Range, N.T., for anomalous uranium response, for Barfuss Corporation Limited. Hugh Rutter, June

2. Areas anomalous in uranium response.

For each anomalous area the uranium above background, uranium values and thorium values are compiled at a scale of 1: 100,000. This allows an easy correlation with the geology, topography and mineral occurrences, presented at the same scale in figures 15 and 16.

2.1. Anomalous area 1 (figure 8)

There is an extensive area with uranium values greater than twice background with numerous spot value of 2½ times background and the highest of 3½ times background at the location 498500E 7425700N; uranium values peak at 8ppm at this location. The geology is shown as the Brady Gneiss of the Harts Range Group which consists of biotite-muscovite quartz-rich schist and gneiss, commonly garnet bearing, with pegmatite. The trend of the anomalous uranium parallels the boundary of this unit which suggests that it is related to a particular horizon within the Brady Gneiss. The arcuate strike length is about 10km. Preliminary ground inspection is recommended at the location given above.

Note that the highest uranium values are outside the current tenement boundary

2.2. Anomalous area 2 (figure 9)

There is an extensive area with uranium values greater than twice background with numerous spot value of 3 times background and the highest of 4.2 times background at the location 481500E 7422600N; uranium values peak at slightly more than 8ppm at this location. The geology is shown as Bungitina Metamorphics within the Strangways Metamorphic Complex, consisting of quartzofelspathic gneiss, mafic granulite, biotite gneiss; some amphibolite, hornblende or clinopyroxene bearing quartz-plagioclase rock, garnet biotite gneiss, porphyroblastic feldspar gneiss.

The anomalous zone around the coordinates given above has a strike length of 1200m and a width of 400m. It lies on the track halfway between the Virginia Cu occurrence and the Oonagalabi Zn, Pb, Cu Prospect. Also, there are many other locations within this anomalous area further to the south.
2.3. Anomalous area 3 (figure 10)

This is a smaller area with uranium values up to 3 times background at 506400E 7446600N where the uranium is calculated to be 6.2ppm. The geology is shown as the Bruna Gneiss within the Harts Range Group, consisting of porphyroblastic-felspar granitic gneiss and granitic gneiss. Only at this location is the Bruna gneiss anomalous in uranium suggesting the presence of a different rock unit or mineralogy. The key part has a strike length of 500m and a width of about 100m.

2.4. Anomalous area 4 (figure 11)

This is an extensive area indicating anomalous uranium. The three peaks are at:

- 456000E 7439700N : 4.2 x background with 9ppm uranium
- 458000E 7441800N : 3.6 x background with 7.5ppm uranium
- 459600E 7444100N : 3.5 x background with 7.4ppm uranium

Each of these three has considerable dimensions ranging from 600m to 2000m in strike length and 200m to 600m in width. The geology is rather unclear but they appear to relate to the Gough Dam Schist Zone which consists of amphibolite, calc-silicate rock and rare kyanite mica schist. It is suggested on the 1: 250,000 geological map that they may be reactivated Proterozoic fault zones.

2.5. Anomalous area 5 (figure 12)

There are three isolated anomalies within this area. They are located as follows:

- 415200E 7433700N : 3.2 x background with 9ppm uranium
- 516100E 7433100N : 2.6 x background with 7.4ppm uranium
- 513900E 7438100N : 2.6 x background with 7.4ppm uranium

All three are spot anomalies with apparent dimensions no greater than 200m. They appear to be related to faulting in the Bruna and Brady Gneiss.

2.6. Anomalous area 6 (figure 13)

This is an arcuate zone with at least four parts with in excess of 2.5 times background in uranium with the highest at 3.5 times background. The locations are as follows:

- 464000E 7440300N : 3.5 x background with 10.5ppm uranium
- 463000E 7441900N : 2.8 x background with 9ppm uranium
- 462000E 7442700N : 2.8 x background with 9ppm uranium
- 459700E 7444100N : 2.8 x background with 9ppm uranium
Each centre has approximate dimensions of 200m by 400m. They appear to fall within a quartzofelspathic gneiss with lenses of mafic granulite and some biotite gneiss and cordierite garnet-bearing quartzofelspathic gneiss. The arcuate relationship may be misleading as they also appear to relate to mapped faulting.

2.7. Anomalous area 7 (figure 14)

This is a small uranium response located within the Huckitta survey at 501800E 7455700N. It has an amplitude of 2.6 times background. It is within the Bungitina Metamorphics and is an extension of the anomalous area 1.

3. Conclusion and recommendations

Within the areas selected as having anomalous levels of uranium there are 12 locations listed requiring further consideration. It may be possible to gain information from the reports of previous explorers but it should be remembered that these reports were written at a time when the economic conditions relating to uranium mineralization were quite different to what they are today.

Ground inspection is recommended. This requires the use of a differential spectrometer to locate the radioactive source prior to a geological investigation and evaluation.

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Figure 1

Barfuss Corporation
Harts Range Area, NT
Radiometric Survey (subsets) Areas
March 2006
(with 2km AMG grid)
1:250,000
Figure 2

Index to 1: 250,000 Scale Sheets

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Springs</td>
</tr>
<tr>
<td>Illogwa Creek</td>
</tr>
<tr>
<td>Alcoota Huckitta</td>
</tr>
</tbody>
</table>

Uranium in ppm above background for the AlcAs-2 Survey

Background is 2.3 ppm

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Uranium in ppm above background for the AlcAs-3 Survey
Background is 2.3 ppm

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Index to 1: 250,000 Scale Sheets

Alcoota Huckitta Alice Springs Bogo Creek

Anomalous Area 4
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Uranium in ppm above background for the AlcAs-d Survey

Background is 2.8 ppm

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Figure 4
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Uranium in ppm above background for the AlcAs-e Survey

Background is 3.1 ppm

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Index to 1: 250,000 Scale Sheets

part of Alice Springs

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Uranium in ppm above background for the AlcAs-k Survey

Background is 3.1 ppm

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Figure 6
Index to 1: 250,000 Scale Sheets

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Uranium in ppm above background for the Huckitta Survey

Background is 22 cpm

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The boundary of EL 24552 is shown in blue
The boundary of EL 25063 is shown in purple

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Area 1 from the AlcAs-2 Survey.
Uranium, Uranium above background and Thorium

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