

# BARFUSS CORPORATION PTY LTD

HARTS RANGE PROJECT  
NORTHERN TERRITORY OF AUSTRALIA

ANNUAL TECHNICAL REPORT FOR  
EXPLORATION LICENCE GROUP  
GR-132/09  
ELs 25063 and 25430  
FOR THE YEAR ENDING 21st FEBRUARY 2015.

Author: A.R.Caughey  
Exploration & Discovery Services Pty Ltd

Date: 27 May, 2015

Licensee: Barfuss Corporation Pty Ltd

A.C.N. 006 917 666

Target Commodities: copper, gold, thorium, uranium, rare earth elements,  
gemstones, mica

1:250,000 MAP SHEETS: Alcoota SF 53-10, Huckitta SF 53-11,  
Alice Springs SF 53-14, Illogwa Creek SF 53-15

1:100,000 MAP SHEETS: Riddoch 5851, Delny 5852, Quartz 5951, Dneiper 5952

Datum / Zone: GDA94 / MGA zone 53

KEYWORDS: Harts Range, Arunta Block, Strangways Metamorphic Complex, Harts  
Range Group, Riddock Amphibolite, Gough Dam Schist Zone, uranium,  
thorium, rare earth elements, copper-gold, uranium, thorium, rare earth  
elements, niobium, tantalum, samarskite, ruby, gemstones, mica

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## LICENCE DETAILS:

Group (Technical) Reporting Number: GR - 132/09

Group Reporting Approval Date: 10 December 2009

Licence Numbers: EL 25063, EL 25430

Project Name: Harts Range

Licensee: Barfuss Corporation Pty Ltd

Licensee ACN: 006 917 666

### Licence details:

#### EL 25063

Anniversary Date: 19 November

Area: 40.77 square kilometres \*  
within 15 square blocks  
(1 minute x 1 minute longitude/latitude)

\* actual area, excluding Mineral Claims and EL25764 (formerly RO1357), is  
35.69 square kilometres.

#### EL 25430

Anniversary Date: 13 March

Area: 32.37 square kilometres  
within 13 square blocks \*  
(1 minute x 1 minute longitude/latitude)

\* excluding approx. 3 blocks, comprising *Reserve from Occupation* RO26349.

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## DIGITAL REPORT FILE:

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## **EXECUTIVE SUMMARY**

Exploration Licences 25063 and 25430 are part of Barfuss Corporation's Harts Range Project. The project also includes ELs 29690 and 25764, plus more recent licences ELs 29950 and 29920. Existing Mineral Claims are also considered part of the project. The Harts Range Project licences cover about 600 square kilometres, of which ELs 25063 and 25430 cover little more than 10%. EL25063 encloses or surrounds the Mineral Claims and the Hart Range Ruby Mine (over which Barfuss Corporation has Mineral Claim coverage). Licences 25063 and 25430 were granted, respectively, on 20 November 2006 and 13 March 2007.

Underlying geology through most of the project area consists of high-grade metamorphic rocks of the Arunta Block, including the Harts Range Group (part of the Late Proterozoic to Cambrian Irindina Province), with older Aileron Province rocks in the east ("Entia Dome") and west (Strangways Metamorphic Complex, including younger deformation in the Gough Dam Schist Zone).

Field activity to date has included reconnaissance mapping, extensive rock-chip sampling and detailed ground spectrometer surveying in a number of areas of interest. Detailed air-borne geophysical surveying is considered an optimal assessment tool for the Project area and selective drill testing with the company's own track-mounted diamond drill rig is being considered. More recent work has focused to some extent on specialised prospecting for possible muscovite mica resources, based on interest expressed by the Merck Group (Germany).

A significant number of prospects have been identified. These include:- rare earth element ("REE") prospects (+thorium, +/-uranium), principally the "Spinifex Gully" group of prospects in EL 25430; possible under-cover extension into EL 25430 from the extensive "Copper Queen" group of copper-gold prospects, investigated previously by Tanami Gold NL; and pegmatite dykes in EL 25063 (*and adjacent application 29690*) with very strong uranium-niobium-yttrium-tantalum(-REE) mineral enrichment (assays to over 10 % uranium). Significant interest has been shown by the Merck Group (Germany) in the muscovite deposits in the licence areas. Merck representatives have visited the project and sampled several areas for analysis, with a number of follow-up bulk samples sent to them, on request, for further analysis. Prospectivity for other minerals is indicated by, for example, the Harts Range Ruby Mine and a near-by vermiculite prospect (surrounded by ELs 25764 & 25063), and the extensive recent exploration for, and discovery of, copper-cobalt and nickel-copper mineralisation in the region, by Mithril Resources Limited.

Barfuss has been in on-going negotiations with a number of other companies regarding possible investment and joint ventures, including the Merck Group (noted above), and a separate prospective investor has travelled from Germany to inspect the project. A Chinese group has also considering investing in parts of the project (via DDM Capital, a Melbourne-based corporate advisory firm) and Barfuss has visited China for discussions. A Confidentiality Agreement has been signed with MMG Limited, which is interested in the project's nickel prospectivity.

Activities during the reporting period focussed on fieldwork exploration testing and prospecting for a range of mineralisation known for the area, including vermiculite, REE/thorium and gems and gem materials. No samples were submitted for outside analysis and no numerical results were generated.

The company regards the project as highly prospective and keen to resume significant exploration activity on it.

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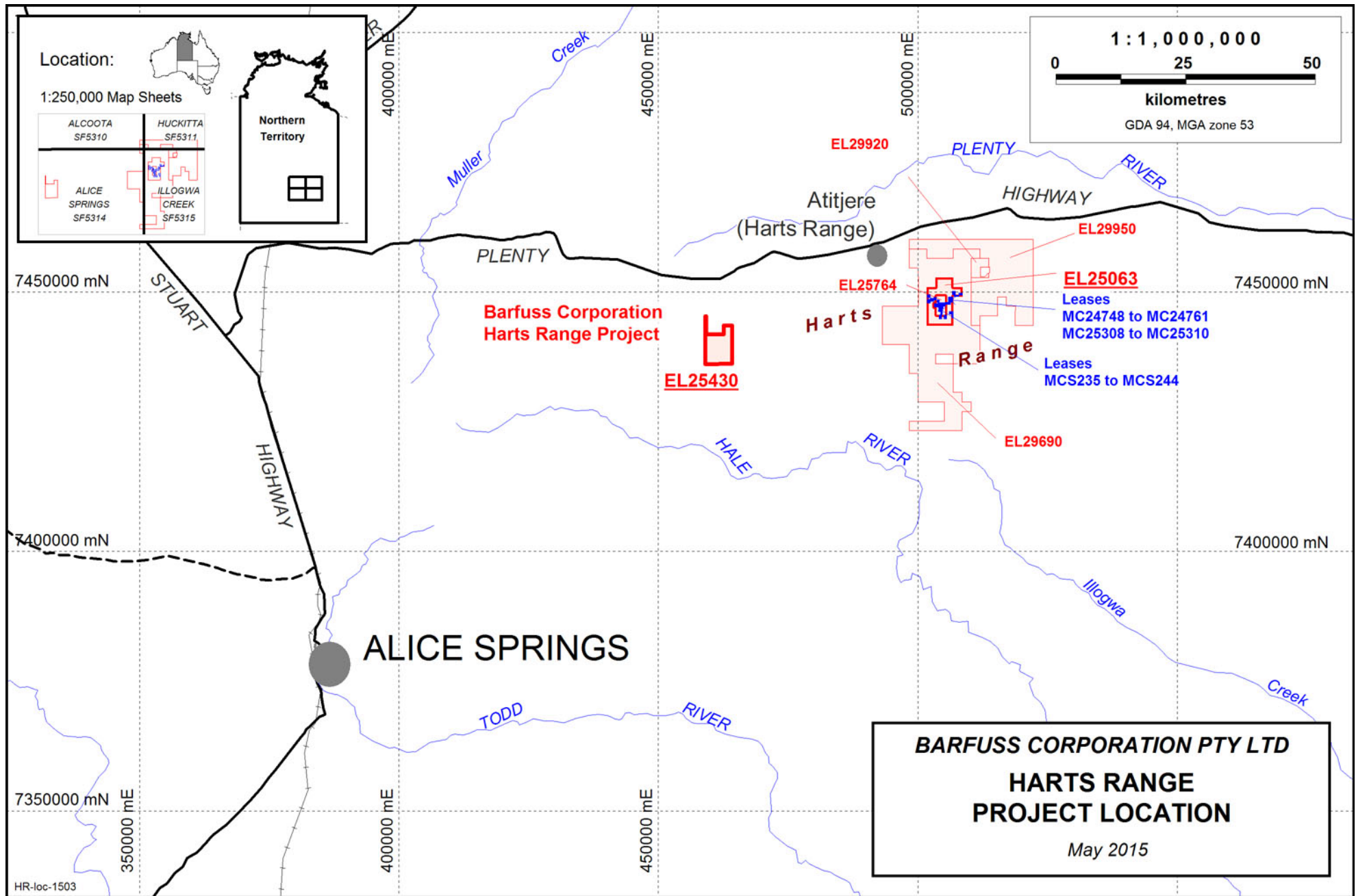


Figure 1

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## 1. INTRODUCTION & SUMMARY

Barfuss Corporation's Harts Range Project comprises ELs 29690, 25063, 25430 and EL 25764, plus newer licences EL 29950 and EL 29920, plus a number of Mineral Claims within the area of ELs 25063 and 25764.

- EL 25063 (40.77 square kilometres)
- EL 25430 (32.37 square kilometres)
- EL 25764 (6 square kilometres)
- EL 29690 (334.06 square kilometres)
- EL 29920 (10.03 square kilometres) (*granted 23 April 2014, during the period*)
- EL 29950 (192.7 square kilometres) (*granted 23 April 2014, during the period*)
- Mineral Claims MC 24748-24761 & 25308-25310 (621 hectares)

The exploration licences are contiguous, with the exception of EL25430, which lies to the west. The MCs are within the area of ELs 25063 and 25764. The company also has granted Mineral Claim coverage of the Harts Range Ruby Mine (MCS235-244, 172 hectares) which is also surrounded by EL 25764.

### **This report covers only grouped licences EL 25063 and EL 25430.**

The Harts Range Project lies in the southeast of the Northern Territory, roughly 100 to 160 kilometres northeast of Alice Springs (170 to 260 km by road, via the Plenty Highway) (Figure 1).

Topography and terrain in the Harts Range is frequently rugged, with relief up to 300 to 400 metres in some areas. Access is predominantly from the north via station tracks running south from the Plenty Highway. The rugged terrain generally restricts vehicle access to established tracks.

The project is in the Harts Range area, which is dominated by gneisses and amphibolites of the Riddock Amphibolite Member, part of the Harts Range Group in the Irindina Province (formerly considered Early Proterozoic, now recognised as Late Proterozoic to Cambrian), in Division 2 of the eastern Arunta Block. The project also covers adjacent rocks, predominantly schist, gneiss and some calcsilicates which also belong to the Harts Range Group. The far eastern part of the project also overlies the older Bruna and Entia Gneisses on the western flank of the "Entia Dome" (Aileron Province, Arunta Division 1).

EL 25430, to the southwest, is also underlain by older Aileron province rocks (Strangways Metamorphic Complex), though these are dominated here by younger deformation forming the Gough Dam Schist Zone. Geology is generally dominated by high-grade quartzofeldspathic gneisses and schist, with subordinate amphibolite and calcsilicates.

The Harts Range was a major area of pegmatite-related mica mining in the early-mid- 20<sup>th</sup> century. Other mining in the project area has generally been very small scale, targeting semi-precious gem minerals. Small-scale base metals mineralisation occurs in several areas, however, and some larger deposits have been identified. Base metal mineralisation in the region includes the Jervois copper deposits, to the northeast, the Molyhil Mine (scheelite-molybdenite (tungsten)) and the Oonagalabi copper-lead-zinc deposit.

Most recently, copper-gold mineralisation was investigated by Tanami Gold NL at its Copper Queen group of prospects in 2001-2005 (following earlier work by Kinex at its White Hill Dam prospect in 1984-1987), and Power Nuclear Corporation of Japan (PNC) explored the area for uranium in the 1990s (company reports are listed in the References at the end of this report). The Copper Queen prospects are now mostly east and northeast of Barfuss Corporation's EL25430, with some overlap. Areas investigated by PNC are also covered by the Project. Recent activity has included that of Mithril Resources Limited at its Huckitta Project (mostly

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south-east of the Barfuss Harts Range Project) where significant copper-cobalt and nickel-copper sulphide mineralisation is being investigated.

The Harts Range ruby deposit was found in the late 1970s and mined from then into the early 1980s by Hillrise Properties and Mistral Mines. Barfuss Corporation has mineral claim coverage of the ruby mine, which is surrounded by EL 25764, and has its site office and camp located there.

In addition to gemstones, and base and precious metals, the Harts Range is also prospective for a variety of industrial minerals. As well as the historic mica deposits, the Mud Tank vermiculite mine is 25-30 km to the west, other vermiculite deposits are known in the area, and potential garnet sand resources have been identified in the region. Barfuss Corporation has a vermiculite-rich deposit within its Ruby Mine mineral claims, within the Riddoch Amphibolite unit, and considers that there is potential for more such mineralisation within the project area.

Barfuss Corporation has conducted non-invasive work on the Harts Range Project leases. Several prospect areas have been identified in different areas of the licences. Investigations included analysis of available geophysical data, geological mapping, rock-chip sampling and ground spectrometer surveys. Several areas are recognised as significantly prospective, requiring further investigation. Rock-chip assays include some highly anomalous results. Numerous areas have been subject to reconnaissance and more detailed investigations, including mapping, rock-chip sampling and ground spectrometer surveys. Identified mineralisation and anomalism includes copper-gold, rare earth elements (REE), uranium, thorium and nickel. This work is documented in detail in previous Annual Reports for the various licences.

Barfuss Corporation's activities were severely curtailed for a number of years by: a protracted legal dispute, involving the freezing of funds earmarked for exploration, from 2007 to late 2009; the failure of a subsequent signed agreement with a South Korean corporation which was to invest \$12m on exploration of Barfuss' Harts Range project; protracted negotiations with a number of other companies, including D'Aguilar Gold Ltd, Commissioners Gold Ltd, the Merck Group (Germany), BOA Advisors Trust LLC (Indiana, USA), and a Chinese group (via a third party); and a very severe, near fatal, illness which afflicted Mr Uwe Barfuss, and required protracted hospitalisation, in 2010-2011.

Discussions are on-going with the Merck Group and the Chinese group, plus prospective German investors and other private investors, and Barfuss has received a written commitment to invest \$5 million in the Project. A Swiss investment group, known to have provided capital for diamond mining in Sierra Leone and gold mining in Mexico, has also approached Barfuss with a view to investing in the project. Barfuss has also signed a Confidentiality Agreement with MMG Limited, which is interested in the project's nickel prospectivity.

Field activity on exploration licences 25063 and 25430 during the reporting period included fieldwork exploration testing and prospecting for a range of mineralisation known for the area, including vermiculite, REE/thorium and gems and gem materials. No samples were submitted for outside analysis and no numerical results were generated.

Work being considered for the coming reporting period includes a detailed airborne survey over much of the Harts Range Project area and/or drilling, subject to the potential involvement of joint venture partner. Different companies with which Barfuss is in discussions are interested in different resources or commodities, so there may be potential for more than one additional company to become involved in the Project.

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Prospect areas warranting more immediate field investigation are detailed in section 4 of this report ( *Work Program for the Next Twelve Months*). Work may include further investigation of the Spinifex Gully group of REE-thorium(-uranium) prospects, the potential for extension(s) under cover to the west of the Copper Queen group of copper-gold and further investigation of the high-grade uranium-niobium-tantalum-yttrium-REE mineralisation in pegmatites at Bobs prospect and other areas.

Expenditure figures are provided in the separate Exploration Expenditure Reports which have been submitted for each exploration licence, for their respective reporting periods.



## 2. WORK CONDUCTED DURING THE REPORT PERIOD

Work conducted was dominantly fieldwork, comprising extensive exploration and prospecting, included screening, examination and testing of alluvial materials.

- EL 25063:
  - Prospecting for vermiculite occurrences (with no success).
  - Prospecting for extensions of “Bobs prospect” mineralisation (pegmatite-hosted high-grade REE-rich mineral, thought to be samarskite, or similar), assessing possible drill-testing target areas.
  - Prospecting the Spriggs Creek drainage system; screening alluvium for gems and gem materials; conducting microscopic examinations of the material, studying crystal structure and polish ability of the gem material.
  - Extensive prospecting for gems and gem materials, primarily ruby, aquamarine, turquoise and sphene.
  - Prospecting for further REE-rich mineral occurrences (such as at “Bobs prospect”) or other REE areas of interest.
- EL 25430:
  - Investigating for potential extensions of the “Spinifex Gully” prospect (REE/thorium) beneath sand cover.
  - Prospecting the Ongeva Creek drainage system; screening alluvium for gems and gem materials.
  - Extensive prospecting for gems and gem materials, primarily ruby, aquamarine, turquoise and sphene.
- General prospecting for gems and gem materials, of pegmatite dykes and fault systems; detailed study of prospective materials found, regarding host structures, crystal structure, colour, clarity, cutting and polishing suitability.

Other activities largely focussed on discussions with prospective joint venture partners and investors.

## 3. WORK PROGRAM FOR THE NEXT TWELVE MONTHS.

The next phases of work on the project will be partly subject to the involvement of potential joint venture partners. Different companies with which Barfuss is in discussions are interested in different resources or commodities, so there may be potential for more than one additional company to become involved in the project. Work to be conducted may be largely dependent on the interests of such companies.

The company is considering preliminary drill testing of selected prospects. Subject to funding and joint venture arrangements, a detailed geophysical survey (magnetic and radiometric) over much or all of the project area may also be conducted. This would help identify areas warranting more detailed investigation, and would aid in the geological interpretation of areas already of interest.

In addition, certain prospect areas warrant more immediate field investigation. Principal among these are, from

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west to east:

- The Spinifex Gully group of prospects in the north of EL 25430:- More detailed investigation of these REE/thorium prospects should include
  - Infill ground spectrometer surveying of areas less intensely surveyed previously.
  - Ground spectrometer surveying between the prospects identified to date.
  - Detailed geological mapping of the prospect areas (including detailed identification of potentially prospective areas concealed by alluvial cover).
  - More detailed and systematic rock-chip sampling to better delineate mineralised areas.
  - *The above work to proceed to drill testing.*
- Also in the north of EL 25430:- Assessment of the potential for concealed mineralisation along strike from the Copper Queen prospect, which lies to the east. Reconnaissance drilling in 2001 by Tanami Gold NL indicated copper anomalism here under cover (*Tanami's 'Westend' prospect*). This anomalism coincides with a distinct linear magnetic high (in open-file airborne geophysical data), along strike from the Copper Queen deposit. Published mapped geology suggests an attenuated and/or sheared large-scale fold closure structure here (a large open fold structure was interpreted here by Kinex in 1986). Such a structural setting might be favourable for thickening or enrichment of the Copper Queen copper-gold mineralisation, if it extends to this area, and the magnetic high may be a product of structure or mineralisation related to this. This may warrant follow-up drilling.
- In the southeast of EL 25063:- A very thick tourmaline-bearing pegmatite returned anomalous assay in prior, very minor, reconnaissance sampling. Assays were elevated in a suite of elements similar to that of the Cusp and Bobs mineralisation (with assays up to, for example, 195 ppm U). The size of this dyke (ca. 20-30<sup>+</sup> metres thick) is such that it might be an attractive target even at grades significantly lower than those at Cusp and Bobs. It warrants further investigation.
- East of EL 25063:- The area between Bobs prospect and Cusp prospect (formerly on EL24552, now within Barfuss EL application 29690) is of interest. These two prospects contain high-grade uranium-niobium-tantalum-yttrium-REE (rare earth element) mineralisation. Selective sampling of masses of samarskite(?) mineral have consistently returned assays of the order of over 7% uranium, over 4.75% yttrium, mostly over 7.5% niobium, over 4% tantalum and mostly over 4% REE (rich in the more valuable heavy REE). These two prospects comprise similar pegmatite bodies, along strike from one another. The intervening 1.6 kilometre strike length has not yet been investigated. Cusp and Bobs ( *and Mallex further south on EL application 29690*), all require further investigation also.

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Geological Consultant

27 May 2015

Exploration & Discovery Services Pty Ltd

*Member:*  
*Australasian Institute of GeoScientists (AIG),*  
*Geological Society of Australia (GSA),*  
*Society of Economic Geologists (SEG)*

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- 2003 to present: various statutory reports (Annual, Surrender) for Barfuss Corporation Pty Ltd Northern Territory licences, including
  - EL 24552
  - EL 25063
  - EL 25430
  - EL 25764
  - Group GR-131/09 (Mineral Claims MCS 235, 236, 237, 238, 239, 240, 241, 242, 243, 244; MC 24748, 24749, 24750, 24751, 24752, 24753, 24754, 24755, 24756, 24757, 24758, 24759, 24760, 24761; MC 25308, 25309, 25310)
  - Group GR-132/09 (ELs 24552, 25063, 25430)
  - Mineral Claims MCS 235, 236, 237, 238, 239, 240, 241, 242, 243, 244
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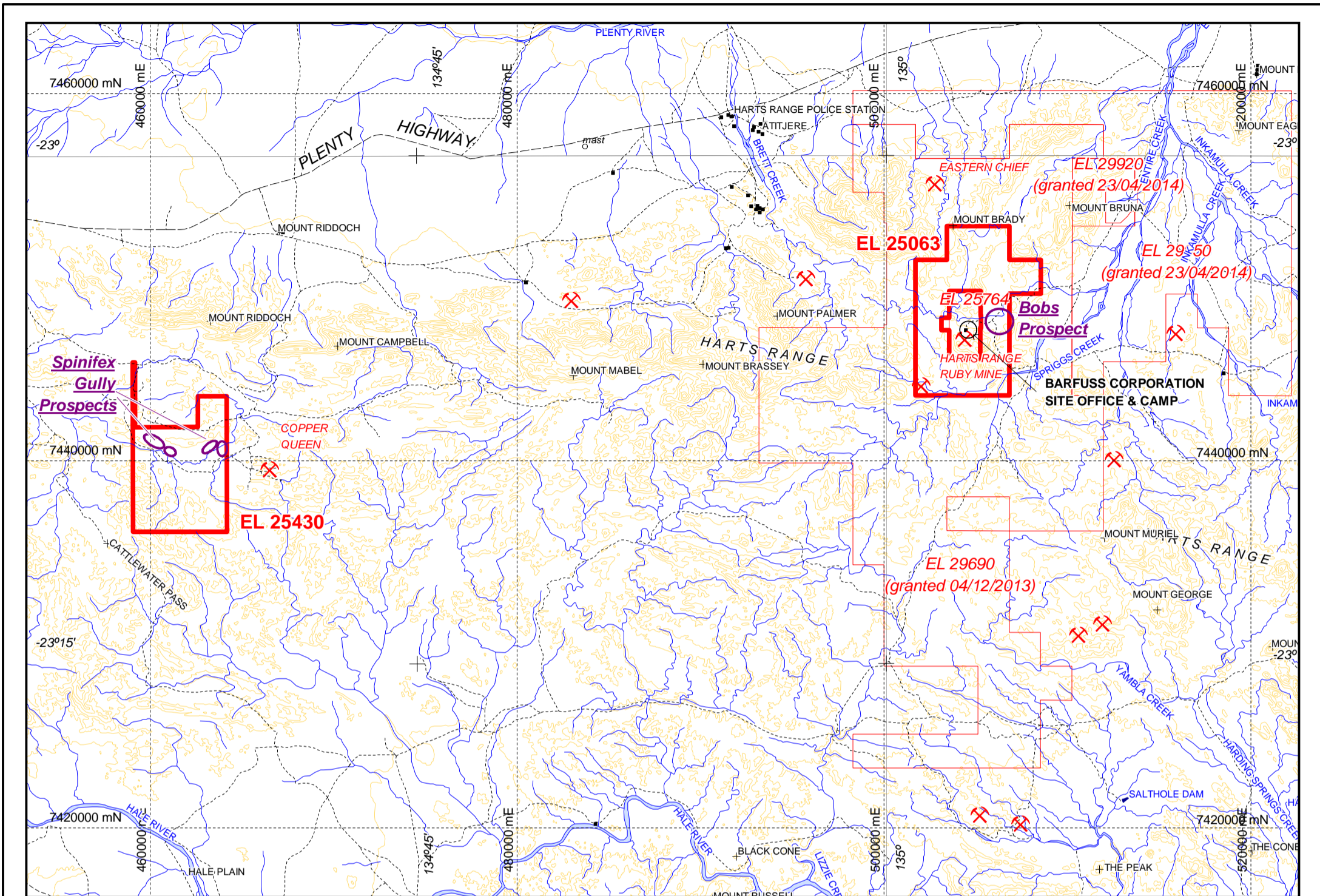
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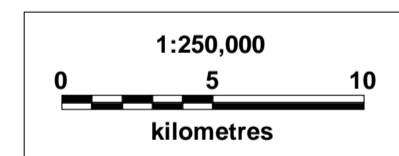
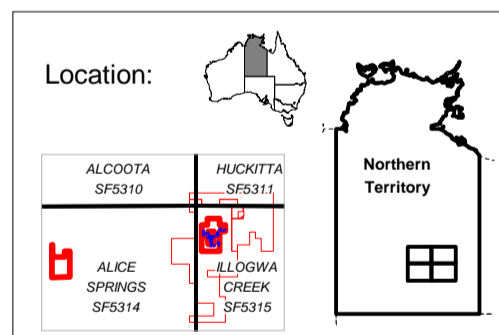
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*Open file company reports sourced from the Northern Territory former "Mineral Industry Reports Management System" ("IRMS") online system ( <http://apps.minerals.nt.gov.au/irmsmin/> ).*

*[ Now the Mineral Exploration Reports ("MEX") system ( <http://geoscience.nt.gov.au/mex.html> ). ]*



 Principal Areas of Field Activities (& prospects)



Barfuss Corporation's Harts Range Project comprises Exploration Licences 25063, 25430, 25764, 29690, 29920 and 29950, and a number of Mineral Claims within the area of ELs 25063 and 25764.

Barfuss Corporation also has Mineral Claim coverage of the Harts Range Ruby Mine, where the company's site office and camp are located.

Topographic Data from the 1:250,000 Geological Map Sheet digital datasets for Alice Springs, Alcoota, Huckitta, Illogwa Creek.  
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## BARFUSS CORPORATION PTY LTD

Harts Range Project - ELs 25063 & 25430 - Northern Territory

**Field Activities**  
**22 February 2014 to 21 February 2015**



Workspace: GR132-09_activities-1502	Date: May 2015
Plot file:	Scale: 1:250,000
Author: ARC	Projection: GDA94, MGA Zone 53
Drawn: ARC	Plotter: Adobe Acrobat Distiller 8.0

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Figure 2