PARTIAL RELINQUISHMENT REPORT

EL23506 (McKeddies)

For The Period
8th May 2003 – 7th May 2015

Pine Creek SD52-08 1:250,000 Geological Map Sheet
Pine Creek 5270 1:100,000 Geological Map Sheet
McKinley River 5271 1:100,000 Geological Map Sheet

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Element 92 Pty Ltd (Thundelarra Ltd)
# Table of Contents

SUMMARY ........................................................................................................................................ 1

1.0 INTRODUCTION, LOCATION AND ACCESS ................................................................. 1

2.0 TENURE ..................................................................................................................... 1

   2.1 MINERAL RIGHTS ........................................................................................................ 1

   2.2 LAND TENURE ......................................................................................................... 1

3.0 GEOLOGY .................................................................................................................. 3

   3.1: REGIONAL GEOLOGY ............................................................................................ 3

   3.2: LOCAL GEOLOGY AND MINERALISATION .......................................................... 4

4.0 PREVIOUS EXPLORATION ......................................................................................... 7

5.0: EXPLORATION ACTIVITIES OVER THE RELINQUISHED GROUND ................. 8

   3.1: SURFACE SAMPLING ............................................................................................ 8

   3.2: GEOPHYSICS ....................................................................................................... 9

   3.3: RC DRILLING ....................................................................................................... 9

7.0: CONCLUSIONS AND RECOMMENDATIONS ..................................................... 11

8.0: REFERENCES ......................................................................................................... 12

APPENDIX I ...................................................................................................................... 13

APPENDIX II ................................................................................................................... 13

APPENDIX III ................................................................................................................ 13

# Table of Figures

Figure 1: Location map of EL23506 (blue polygon), the red zone represents the relinquished ground. ................................................................................................................................. 2

Figure 2: Local geology for EL23506. The red polygon defines the boundary for the exploration licence. ..................................................................................................................... 6

Figure 3: Surface samples location. ................................................................................... 8

Figure 4: TMI image over the relinquished blocks. ............................................................ 9

Figure 5: Thundelarra drill holes location (in red relinquished blocks, in green: EL23506 before reduction). ...................................................................................................................... 10
SUMMARY

This report describes exploration activities conducted on the 27 blocks relinquished from tenement EL23506 in May 2015 by tenement holder Element 92 Pty Ltd (wholly owned subsidiary of Thundelarra Ltd).

The work done over the relinquished ground includes 6 RC holes for a total of 455 metres on Swamp Donkey prospect. The drilling over the Swamp Donkey area has confirmed the in situ base metal anomalism, but has not identified any immediate potential for economic mineralisation, nor any clear targets that warrant further follow-up drill testing. Moreover Swamp Donkey prospect is difficult to access due to a lack of access track and swampy ground making exploration effort more difficult. Therefore the prospect ground was relinquished for a total of 27 blocks out of 52.

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Any information included in the report that originates from historical reports or other sources is listed in the "References" section at the end of the document.

Element 92 authorises the department to copy and distribute the report and associated data.
1.0 INTRODUCTION, LOCATION AND ACCESS
EL 23506 is located about 150 km SSE of Darwin and approximately 30 km north-east of Pine Creek (Figure 1). The Licence area can be accessed from Darwin via Stuart Highway until Pine Creek which is located about 220 km south of Darwin. From Pine Creek, after a distance of about 20 km on Kakadu Highway, Mary River Station road takes off towards north which enters into the project area. Access within the Licence area is possible by station tracks which may be impassable during wet season.

2.0 TENURE
Tenement EL23506 was granted on 8th May 2003 for a 6 year term with an area of 173.3km² covering 52 square blocks. Reduction deferrals were granted on 22/05/2005, 04/04/2006, 02/04/2007, and 17/04/2008. A renewal application was made on 2nd February 2009, and granted on 9th March 2009. In May 2015 Thundelarra decided to voluntary relinquished 27 blocks out of the 52 blocks as shown on Figure 1.

2.1 MINERAL RIGHTS
Element 92 Pty Ltd (wholly owned subsidiary of Thundelarra Pty Ltd) is the tenement owner and Territory Resources Limited holds the exploration rights for iron ore and manganese under a Split Commodity Agreement. This Agreement was originally held with Teelow, Orridge and Clarke (TOC), dating from November 2006. TOC sold their rights to EL23506 to Element 92. Territory Resources Ltd retained the iron and manganese rights to the tenement.

2.2 LAND TENURE
Land tenure under the title includes parts of:

- Ban Ban Springs Pastoral Lease, PPL 1111 – NT Portion 695, owned by Ban Ban Springs Station Pty Ltd, PO Box 7207, St Kilda Road, Melbourne, Vic 8004.
- Mary River East Pastoral Lease, PPL 1134 - NT portion 1631, owned by Mary River Wildlife Ranch Pty Ltd, PO Box 137, Pine Creek, NT 0847.
Figure 1: Location map of EL23506 (blue polygon), the red zone represents the relinquished ground.
3.0 GEOLOGY

3.1: REGIONAL GEOLOGY

The Frances Creek mine site and adjacent exploration area are located within the Palaeoproterozoic Pine Creek Orogen which forms part of the North Australian Craton. The Pine Creek Orogen covers an area of ~50,000 km2 and represents a >4 km succession of carbonate, clastic and carbonaceous sedimentary and volcanic rocks, which unconformably overlie Neoarchaean (~2500 Ma) basement granite and gneiss. Based on the timing of sedimentation, magmatism and metamorphism, the Pine Creek Orogen has been divided into three distinct domains, from west to east; the amphibolite to granulite facies Litchfield Domain, the greenschist facies Central Domain and the amphibolite facies Nimbuwah Domain. The Frances Creek mine site and adjacent exploration area is located within the Central Domain.

The oldest rocks (the Palaeoproterozoic Woodcutters Supergroup) comprise the Namoona Group (Masson Formation) to the east of the Frances Creek project area. They are unconformably overlain by the Mount Partridge Group (Mundogie Sandstone and Wildman Siltstone) which cover the majority of the Frances Creek project. The Mundogie Sandstone (Mount Partridge Group) forms prominent continuous northwest-striking ridges of dominantly coarse, pebbly, feldspathic quartzite and arkosic sandstone (Stuart-Smith et al., 1987). Massive, graded beds of pebble conglomerate are common and units often display graded bedding and lenticular cross-bedding. Subsequent to sedimentation of the Mundogie Sandstone, the Wildman Siltstone (subdivided into two members; the Lower Wildman Siltstone and Upper Wildman Siltstone) were deposited with apparent conformity. The unit mainly comprises metapelitic assemblages with subordinate sandstone. The Lower Wildman Siltstone is host to the majority of the iron mineralisation at Frances Creek.

In the western portion of the Frances Creek project area, the Mt Partridge Group is unconformably overlain by the stratigraphic sequences of the Cosmo Supergroup, comprising the South Alligator Group (Koolpin Formation, Gerowie Tuff and Mt Bonnie Formation) stratigraphic sequence. Subsequent to deposition of these units, pre-orogenic Zamu Dolerite sills intruded these stratigraphic successions.

Syn- to post-orogenic activity is represented by intrusion of the 1835-1800 Ma Cullen Supersuite granitoids. Intrusion of the granite led to contact aureoles in the surrounding pre-orogenic Masson Formation, Mundogie Sandstone and Zamu Dolerite.
Two major episodes of folding are recognised, earlier tight to isoclinal F1 folds followed by younger open (widely spaced) folds (Stuart-Smith et al., 1987). The major structural controls in the tenement area are related to D3 1-3 km scale northwest-trending non-cylindrical folds, which plunge gently to the northwest to form a series of anticlines and synclines pre-dating the intrusion of the Cullen Supersuite, and 1-3 km long northwest and northeast-trending faults.

3.2: LOCAL GEOLOGY AND MINERALISATION

In EL23506 (Frances Creek East) the area mapped includes, (in stratigraphic order), the Palaeoproterozoic Masson Formation (Namoona Group), Mundogie Sandstone (Mount Partridge Group), intrusive, pre-orogenic Zamu Dolerite, all of which are flanked to the east by the intrusive, post-orogenic Frances Creek Leucogranite (Cullen Supersuite), Figure 2. The stratigraphy is structurally controlled by a large northwest-trending anticline, comprising the Mundogie Sandstone which forms prominent ridges to the west and east and the centrally positioned Masson Formation, which forms low-lying valley, floodplain deposits. Resistant ridges within the Masson Formation represent iron and quartz-hematite-goethite mineralised breccias. The iron mineralisation is hosted in the older Masson Formation, which forms the core of the anticline.

The oldest rocks in the Frances Creek East tenement area belong to the Palaeoproterozoic Woodcutters Supergroup. These include the Namoona Group (Masson Formation) and the Mount Partridge Group (Mundogie Sandstone). Although not present in the Frances Creek East region, the Mount Partridge Group also includes the stratigraphically younger Wildman Siltstone which is host to hematite mineralisation in the Frances Creek mine area.

The Masson Formation (Namoona Group) consists of poorly exposed metapelites, minor quartzose sandstone, sandstone, muscovite-tremolite marble (dolomitic schist) and ironstone ridges in the west (Stuart et al 1987). Quaternary alluvium and colluvium covers most of the unit. The Masson Formation is best exposed on slopes close to ridges of the overlying Mundogie Sandstone, where they form interbedded sequences of dominantly metapelite with minor quartzite. The Masson Formation is intruded by Zamu Dolerite sills and the Allamber Springs Granite, where it is extensively hornsfelsed at the contact.

The Mundogie Sandstone (Mount Partridge Group) forms prominent continuous northwest-striking ridges of dominantly coarse, pebbly, feldspathic quartzite and arkosic sandstone (Stuart-Smith et al 1987). Massive, graded beds of pebble conglomerate are common and
units often display graded bedding and lenticular cross-bedding. Within the contact aureole with Cullen Supersuite granitoids, the units are recrystallised to micaceous quartzite and metamorphic assemblages include cordierite-mica-hornfels.

Subsequent to sedimentation of the Mundogie Sandstone, the Wildman Siltstone was deposited with apparent conformity. The unit mainly comprises metapelitic assemblages with subordinate sandstone. Although associated with Fe-mineralisation to the east, the stratigraphically younger Wildman Siltstone does not occur in the Frances Creek East tenement area. After deposition of the Namoona Group, pre-orogenic Zamu Dolerite sills intruded the Masson Formation. In dissected valleys, the dolerite has limited outcrop exposure where it subcrops as rounded boulders and rubble. Further to the west in the Frances Creek mine area and surrounds, dolerite(s) intruded the Wildman Siltstone and the overlying South Alligator Group of the Cosmo Supergroup.

Post-orogenic activity is represented by intrusion of the 1835-1800 Ma Cullen Supersuite. The intrusion resulted in contact aureoles in the surrounding pre-orogenic Masson Formation, Mundogie Sandstone and Zamu Dolerite.

Known (outcropping) Fe-mineralisation in Frances Creek East is hosted by the Masson Formation in the southeast portion of the tenement and is documented in Stuart-Smith et al (1987). In this region, ironstone ridges are dominantly Fe-breccia with both hematite and goethite, however, goethite-dominated breccias in this region are not deemed to be prospective. The hematite ridges are located on the western boundary of the southern-most portion of EL23506. The local geology is shown in Figure 2.

Iron-bearing oxides include hematite (Fe₂O₃) and goethite (FeO(OH)) ± accessory manganese minerals which are associated with goethite. High grade Fe-ore (>65 %Fe) is characterized by hard, grey, massive hematite or friable purple, microplaty hematite. These ores can range from extremely fine grained to coarse grained and bladed with numerous irregularly shaped vugs and skeletal-textures reminiscent of boxworks, in which vugs are often filled with late-crystallising, coarse-grained hematite. Goethite occurs as both ochreous and vitreous forms.
Figure 2: Local geology for EL23506. The red polygon defines the boundary for the exploration licence.
4.0 Previous Exploration

EL 23506 has been subjected to considerable exploration and in 1980’s the Woodcutters Group (Nicron Resources) conducted desktop study and found similarities to the Rum Jungle along the granite margin on the eastern side of EL23506 (Butler, 1994). Drilling results identified Black Bream anomaly, with 7.4m @ 0.89% Cu from 74.6m in ASDDH1 in the primary zone, and ASRC1 intersected 42m @ 0.26%Cu from 8m in the oxide zone. Zn and Pb were sporadic, with maximum values of 3940 ppm Zn and 940 ppm Pb, with slightly elevated Co (to 240ppm) and Ni (to 250ppm).

Radiometric anomalies were noted by Total Mining Australia during exploration of EL 4414 (Earthrowl, et al., 1988). The anomalies are within the belt of carbonaceous shale and carbonates on the granite contact which correlate with the Rum Jungle sequence. Drilling only found narrow zones of U mineralisation. Orridge (2004) reported that gold exploration within EL23506 has been essentially of a reconnaissance nature and may not be conclusive given the extensive soil cover and poor exposure in the central Masson Formation belt. Iron ore mineralisation was found by mapping, costeanning and percussion drilling at Frances Creek East, and an estimate of a possible 1.5Mt of ‘low grade ore’ was made.

From 2003 to 2009, EL 23506 was explored under JV arrangement with GBS Gold Australia, Territory Iron Pty Ltd and tenement holder. It involved desktop study, soil/rock chip sampling and drilling. Assaying of drill intersections returned values of 4m @ 62.57%Fe in FERC004. For more detail review readers are referred to Bajwah (2012).

On 23 May 2011, Element 92 secured exploration rights to explore EL 23506 under optional agreement with tenement holder and, since then, has explored the project area aggressively. It involved previous data review, detail mapping, high resolution geophysical survey, soil/rock chip sampling and drilling. As a result of that a number of base metals + prospects such as Nipper, Archer Fish, North Brumby and Ox-Eyed Herring have been discovered. Details of these programs are given in Mill and Mees (2013).
5.0: EXPLORATION ACTIVITIES OVER THE RELINQUISHED GROUND

3.1: SURFACE SAMPLING

A total of 12 rock chip and 103 auger/soil samples were taken over the relinquished ground during the life of the tenement. Best values include 750ppm of Cu in a rock chip and 469ppm of Cu in a soil sample. These samples also revealed high Pb and Zn content with up to 757ppm of Pb in a soil sample and up to 1562ppm of Zn in a soil sample as well. All the data is available in Appendix I and sample location is displayed in Figure 3.

Figure 3: Surface samples location.
3.2: GEOPHYSICS

A large radiometric/magnetic survey was flown by Thompson Aviation in September 2012 for Element 92 as show on Figure 4. This survey allowed Element 92 to define exploration target. All the geophysics data acquired over the relinquished blocks is displayed in Appendix II.

Figure 4: TMI image over the relinquished blocks.

3.3: RC DRILLING

Over the relinquished ground, Element 92 drilled 6 holes (455 metres) on Swamp Donkey prospect (Figure 5, Table 1). Drill holes location is displayed in Table1 and drill holes data in Appendix III.

Table 1: Drill hole coordinates

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Six holes (TAL119-124RC) were drilled at Swamp Donkey to test anomalous copper, zinc and lead values recorded in regional soil sampling previously carried out by CRA. A recent new structural interpretation, tested by several auger lines, had confirmed weak copper anomalism. This drill program intersected extensive hornfels sequences with limited carbonatic layers. Although no granitic rocks were intersected, the strong contact metamorphosed metasediments confirmed the presence of intrusive rocks at shallow depth. Pyrite and pyrrhotite are the main sulphides, with traces of chalcocite also present. The highest copper grades from the samples assayed were 1,538ppm Cu between 32-34m in TAL121RC and 1,612ppm Cu between 14-16m in TAL122RC. Copper anomalism is associated with tungsten values up to 2,297ppm in TAL121RC between 50-51m.

Holes TAL123RC and TAL124RC tested the potential for tin/tungsten recorded in surface samples but recorded no anomalism.

The drilling over the Swamp Donkey area has confirmed the in situ base metal anomalism, but has not identified any immediate potential for economic mineralisation, nor any clear targets that warrant further follow-up drill testing at this stage.
7.0: CONCLUSIONS AND RECOMMENDATIONS

On the relinquished ground, Element 92 drilled 6 holes for a total of 455 metres on Swamp Donkey prospect. The drilling over the Swamp Donkey area has confirmed the in situ base metal anomalism, but has not identified any immediate potential for economic mineralisation, nor any clear targets that warrant further follow-up drill testing at this stage. Moreover Swamp Donkey prospect is difficult to access due to a lack of access track and swampy ground making exploration effort more difficult. Therefore the prospect ground was relinquished.
8.0: REFERENCES


Cotton, B., 2011, Photogeological Mapping at 1:40 000 Scale of the Pine Creek Regional Area 2, Northern Territory. Consultant Report for Element 92 Pty Ltd.


Appendix I

SURFACE SAMPLES DATA

Appendix II

GEOPHYSICS DATA

Appendix III

RC DRILLING DATA