EBONY IRON PTY LTD
FINAL REPORT
EXPLORATION LICENCE 26969

REPORTING PERIOD
3 September 2009 – 20 November 2013

1:100 000 Mapsheets
5667 Mais, 5666 Maryfield, 5767 Hodgson, 5766 Nutwood

1:250 000 Mapsheets
SD5314 Hodgson Downs

Commodity
Iron Ore
Contents

Abstract
Contact Details

1. Location
2. Title History
3. Physiography
   i. Geomorphology
   ii. Biogeography
   iii. Hydrology
4. Access
5. Geological Setting
   i. Regional Geology
   ii. Licence Geology
6. Exploration / Mining History
7. Exploration Rationale
8. Exploration Index Map
9. Geological Activities
10. Remote Sensing
11. Geophysical Activities
12. Surface GeoChemistry
13. Drilling
14. Geotechnical Studies
15. Resources and Reserve Estimation / Modelling
16. Conclusions and Recommendations
17. References

List of Figures

Figure 1. EL 26969 Location Map
Figure 2. Real Property Tenure
Figure 3. EL 26969 Access
Figure 4. Regional Geological Setting
Figure 5. Licence Geology
Figure 6. Historical Exploration Licences
Figure 7. Roper Iron Field
Figure 8. Georgina Basin Phosphate Prospectivity
Figure 9. Radiometrics
Figure 10. Gravity Image
Figure 11. Magnetics
Figure 12. Phosphate Sample Location and Values

List of Tables

Table 1. Historical Exploration Reports

List of Appendices

Appendix 1. Expenditure Report
Abstract

EL 26969 was applied for and granted to FSL World Holdings Pty Ltd, then transferred to Fertoz Pty Ltd in January 2011. The area was considered to be prospective for phosphate and iron ore mineralisation. Fertoz Pty Ltd engaged Terra Search Pty Ltd to undertake a review, to identify the areas likely to be prospective for Iron Ore. The review revealed that a large portion of the area was non-prospective and this area was relinquished voluntarily at the third year of the Licence. Fertoz then sold the tenement to Ebony Iron Pty Ltd with the transfer registered in August 2013. Ebony Iron did not commence any works on this Exploration Licence due to the change of focus of their parent UK based company, Strategic Minerals NL and the raising of funds. Exploration Licence 26969 ceased on 20 November 2013.

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1. LOCATION

EL 26969 is located 30km to the east of Larrimah township, some 500km to the south of Darwin. It is located within the 1:250K Mapsheets SD5314 Hodgson Downs and the 1:100K Mapsheets 5667 Mais, 5666 Maryfield, 5767 Hodgson and 5766 Nutwood. The tenement is located between 15° 20'S to 15° 36'S and 133° 30'E to 134° 03'E.

![Location Map](image-url)
2. TITLE HISTORY

Mineral Tenure

Exploration Licence 26969 was granted to FSL World Holdings on 3rd of September 2009 for a period of 6 years, expiring on 2nd September 2015 over an area of 473 graticular blocks (1,540km²) located on Vermelha and Hodgson River Stations.

Fertoz Pty Ltd purchased the licence in late October 2010. The transfer was registered with the Department of Mines and Energy on 11 January 2011. Fertoz sold the iron ore rights to Ebony Iron Pty Ltd in 2011 and reached agreement to transfer the tenement and the responsibility for ongoing exploration in January 2012 to Ebony Iron Pty Ltd. This transfer was registered with the Department of Mines and Energy on 26 August 2013. At the third anniversary of the Licence (September 2012) Fertoz voluntarily reduced the area to 113 graticular blocks on the recommendation from Terra Search that the relinquished area was non-prospective for iron ore. Since the transfer to Ebony Iron no work has been undertaken with the title ceasing on the 20 November 2013.

Real Property

The licence is located within PPL 1174 “Vermelha Station” which is owned by Best-Rural Pty Ltd (‘Anchorfield’ M/S 131, Brookstead QLD) and PPL 1010 “Hodgson River Station” which is owned by EF & ED Hart (Hodgson River Station, NT).

Other Stakeholders

Other stakeholders in the licence area consist of the Mangarrayi peoples who own Elsey Station to the north, and the Alawa peoples who own the adjacent Hodgson Downs Station.

Figure 2. Real Property Tenure
3. PHYSIOGRAPHY

i. Geomorphology

The outcrop geology of EL 26969 consists of Cretaceous sediments of the Carpentaria Basin which are overlain by Cainozoic clay rich soils. The Cretaceous sediments consist of mudstones and shales.

ii. Biogeography

The area consists mainly of Undulating low gravelly crests and slopes with isolated ridges; mainly shallow gravelly earths and sands on slopes and extremely variable soils in drainage depressions: Vegetation very variable, mixed Eucalypt woodlands, Lancewood and Melaleuca woodlands.

iii. Hydrology

The surface soils and Cretaceous sediments are incised by the northerly flowing drainage lines of Maryfield Creek and the Strangways River which join in the licence area. The eastern part of the licence is drained by Kempsey and Crocodile Creeks which flow into the Hodgson River to the northeast of the licence.

4. ACCESS

Access to EL 26969 was south from Darwin along the Stuart Highway to Larrimah. Vermelha Station homestead is located some 2km to the north of Larrimah and 1 km to the east of the Stuart Highway. From the homestead well used internal station roads lead east to the licence area.

The Hodgson River Station homestead lies 5km to the east of the licence so there is a higher than normal intensity of station roads in the area. Access throughout the licence area is via station tracks and fence lines which make traversing the area relatively easy. The Strangways River and Maryfield Creek systems flow northwards through the licence and provide windows through the Cretaceous mudstones and shales into the underlying Proterozoic rocks.
5. GEOLOGICAL SETTING

The licence covers an area where the Carpentaria, McArthur and Georgina Basins outcrop and so are prospective for manganese and bauxite in the Cretaceous cover of the Carpentaria and MacArthur Basins, phosphate in the Georgina Basin sediments, and nickel and copper in the Kalkarindji Province basalts and mafic volcanics.

i. Regional Geology

The youngest rocks are the sandstones, mudstones and limestones of the Carpentaria Basin. This basin has an age of between 205 and 65Ma. It unconformably overlies the sedimentary rocks of the McArthur and Georgina Basins.

The Georgina Basin consists of dolostone, limestone, shale, sandstone and siltstone and a thin outcrop of this occurs in the eastern end of the licence. The Georgina Basin unconformably overlies the McArthur and South Nicholson Basins, and the Lawn Hill Platform. This basin has a depositional history spanning 500Ma from 850Ma to 360Ma.

In the period 520-500Ma widespread continental flood basaltic flows covered much of the Northern Territory and conformable underlies the Cambrian secessions in the northern Georgina, northern Wiso, Daly and Ord Basins.

Figure 4. Regional Geological Setting
ii. Licence Geology

The outcrop geology of EL 26969 consists of Cretaceous sediments of the Carpentaria Basin which are overlain by Cainozoic clay rich soils.

The Cretaceous sediments consist of mudstones and shales that cover portions of the Carpentaria, McArthur and Georgina Basins. The underlying sedimentary basins have a complex relationship with each other and are masked by widespread Territory-wide events such as the deposition of the Cretaceous sediments and the widespread Phanerozoic volcanism of the Kalkarindji event. The flood basalts on the Kalkarindji event outcrop in the centre of the licence and along its eastern edge. These are being examined in other areas of the Northern Territory for Nortlisk-style nickel deposits.

The basalts are underlain by the Proterozoic Bukalara Sandstone which consist of conglomerate, sandstone and mudstone. The Bukalara sandstone is underlain by the sandstones and shales of the Roper group which extend to the east into the MacArthur Basin.

Figure 5. Licence Geology
6. EXPLORATION AND MINING HISTORY

Exploration

The area covered by EL 26969 has been predominantly explored for diamond in recent times. Ashton Mining explored EL 3361 in 1982/83 as part of a JV arrangement with Aberfoyle. Stockdale Exploration also explored for diamonds from 1984 through to 1992.

There are a lot of kimberlitic minerals that are scattered throughout the drainage systems of the area and this has led to the repeated examination of the area to try to locate the source of the indicators. There has been some debate as to the source of these indicators, whether they are in fact kimberlitic or not, but the proof must be the effort and expenditure of the various explorers on their programs in the area.

Normandy/Poseidon Exploration also examined the area for base metals as part of their regional Velkerri Project which targeted shale hosted PB-Zn mineralisation in the Roper Group along the northern margin of the Beetaloo Sub-basin. This project examined a large area extending from the Hodgson Downs region northwest to the Katherine region and was centred on the Beetaloo basin margins, especially where is contained the Mallapunyah Fault, a major northwest trending structural corridor.

Rio Tinto applied for and was granted a large area containing a number of ELs and actively explored between 2003 and 2007, via a JV agreement with Gravity Diamonds, the holder of the Australian licence for the FalconTM airbourne gradiometer gravity exploration system. All diamond exploration to this point had focused on the standard diamond exploration techniques, ie acquisition and examination of detailed aeromagnetics for the location of potential diatremes and the collection of gravel samples. The well developed drainages of the Strangways and Hodgson River catchments have exhibited microdiamonds and other indicator minerals (kimberlitic and non-kimberlitic chromites) which indicate a number of geographic sources in the Cretaceous plateau.

Gravity Diamonds flew the area with their equipment and advised of 32 anomalies detected of which 20 were selected for follow-up. These anomalies were examined and sampled where appropriate. Some were also drilled due to the overlying Cretaceous cover but no kimberlites were discovered. Gravity in effect did no further field work on the area after this initial program. Finching Pty Ltd held ground in the area between 2006 and 2008 and explored for diamonds, but effectively re-examined results generated by other workers. There has been no exploration in the area for iron ore.
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Table 1. Historical Exploration Reports
Figure 6. Historical Exploration Licences
7. EXPLORATION RATIONALE

Phosphate - It has been demonstrated that phosphorite deposits are usually to be found in restricted basin margins and exhibit a subtle radiometric signature associated with the replacement of Ca in the phosphate lattice by Uranium. Palaeogeographic basin margins, or basin shorelines in the Cambrian represent the primary targets. The Georgina Basin outcrops in the licence area are restricted to the eastern edge of the licence and this area is potentially prospective for phosphorite. Figure 8. shows that this exploration licence is still in the area seen as being prospective for phosphate exploration by the geologists of the Northern Territory Geological Survey.
Iron – Iron exploration would be carried out in those areas of Proterozoic outcrop seeking outcrops of the Sherwin Iron Formation. A subtle magnetic signature may be the geophysical signature if there is one and this may help to see through the outcropping cretaceous sediments. The licence may be considered to be prospective for the discovery of iron deposits as it is located approximately 13km along strike from the 75km long Roper Iron field.

The potential prospectivity for iron ore prompted Fertoz to sell the iron ore rights to Ebony Iron Pty Ltd in 2011. Fertoz then reached agreement to transfer the tenements and the responsibility for ongoing exploration to Ebony Iron in January 2012.
8. EXPLORATION INDEX MAP

No exploration index map has been constructed for EL26969.

9. GEOLOGICAL ACTIVITIES

Office Studies

Terra Search have reviewed the data sets available for EL26969 and the surrounding area on the basis of aeromagnetics, airborne radiometrics, Google Earth satellite imagery, geology, gravity and water bore drill results.

The aeromagnetic data over this tenement shows a large proportion of it is underlain by Cambrian basalt. Water bores show that there is no real potential for Roper type iron deposits to occur at economic depths under the basalt. Phosphate potential appears limited as almost all Cambrian lithologies are logged as massive limestone of the lower Tindal Limestone.

Terra Search identified an area of 113 subblocks which warrant further exploration. The remainder was recommended for relinquishment.

The area recommended for relinquishment (360 sub-blocks) is dominated by Tindall Limestone and thick basalt flows. The area for retention appears the most prospective as it contains some Roper Group, with the prospective upper units more likely to be present in the retained portion of EL26969. There also may be potential for base metal and nickel mineralisation within the Kalarindgi Volcanics adjacent to the major NNE trending structure. These 113 sub-blocks are proposed to be retained.

Field Studies

   a. Field Work

There was no field work done on the licence.

10. REMOTE SENSING

There were no remote sensing surveys conducted.
11. GEOPHYSICAL ACTIVITIES

There were no geophysical activities conducted on EL 26969.

Radiometrics

There have been no radiometric surveys conducted.

Included below is an image taken from the Department of Mines and Energy Strike dataset, Ternary Radiometrics.

The area hatched is recommended to be relinquished (360 subblocks) while the blank area is recommended to be retained. The radiometric image shows a total count high over the area of probably lateritized Mesozoic in the subblocks to be retained.

Figure 9. Radiometrics
Gravity

The gravity image is based on broad spaced data and shows a broad gravity high over the Sherwin Iron Project area, which probably reflects slightly higher density basement. A similar region characterised by broad high gravity is present in the area of the retained subblocks of EL26969. Some circular gravity lows are also present in EL26969, these probably reflect basement features, possibly regions of thick sediment.

Figure 10 Gravity Image
Magnetics

There were no Magnetic surveys conducted. Included below is an image taken from the Department of Mines and Energy Strike dataset, Magnetics TMI.

Figure11. Magnetics
12. SURFACE GEOCHEMISTRY

In 2011 a soil and rock chip sampling programme was undertaken. 23 Rock chip samples and 122 soils samples were taken. The location and values are shown in Figure 12. Sampling gave a high result of 0.26% P2O5 with 8 samples above 0.1%P2O5 being collected.

13. DRILLING

No drilling was undertaken on Exploration Licence 29696.
14. GEOTECHNICAL STUDIES

Geotechnical studies conducted during the year consisted of a literature survey and data collection study covering the whole of the Project area.

15. RESOURCE AND RESERVE ESTIMATION

There were no resource or reserve estimations done during the year.

16. CONCLUSIONS AND RECOMMENDATIONS

The exploration work done to date has not successfully explored EL 26969 for the presence of phosphate mineralisation. What limited work that has been done has proved that the transported soils effectively are geochemically blanketing the underlying rocks.

The tenement appears to be more prospective for iron ore than phosphate due to their proximity to the Sherwin Iron deposits. Fertoz sold the iron ore rights to Ebony Iron Pty Ltd in 2011 and reached agreement to transfer the Hodgson tenements and the responsibility for ongoing exploration in January 2012 to Ebony Iron Pty Ltd.

Terra Search recommended a significant reduction in the area as a result of a review of potential prospectivity of the tenements. Since this time Ebony Iron has not been able to raise the funds to further explore this area therefore the Licence ceased on 20 November 2013.

17. REFERENCES

Open File Company Reports


**Published Reports**

Dunn PR, (1963), Hodgson Downs, 1:250 000 Geological Series Explanatory Notes, Bureau of Mineral Resources, Geology and Geophysics


Khan M, Ferenczi PA, *et al*, (2007), Phosphate testing of waterbores and diamond drillcore in the Georgina, Wiso and Daly Basins, Northern Territory, Northern Territory Geological Survey


**Company Reports**

