Annual Report
EL 27026
Roper Region, Northern Territory

Fertoz Pty Ltd
40 Balgowlah St.
Wakerley
QLD 4154

Roper Project
1:100 000 Mapsheets: 5865 Tanumbirini, 5864 October, 5964 OT Downs
250 000 Mapsheets: SE5302 Tanumbirini, SE5303 Bauhinia Downs
Commodity: Phosphate

JM Draper B.Sc (Geol.)
Minesite Services Australia
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1. **EXECUTIVE SUMMARY**

In the latter part of October 2010 EL 27026 was purchased by Fertoz Pty Ltd from the previous titleholders FSL World Holdings Pty Ltd. The Exploration Licence consists of 497 graticular blocks, (1,640km²) located in the Roper River Region of the Northern Territory. The licence was applied for to search for phosphate deposits located in the eastern Carpentaria Basin.

Field exploration conducted during 2011 showed that the licence was in fact in the western portion of the MacArthur Basin and the Cretaceous claystones were underlain by Proterozoic sandstones, siltstones and limestones of the MacArthur Basin. The area was extensively covered by ground traverses due to the comprehensive road and fence network and all windows through the Cretaceous were visited and inspected. Although limestone was located it, was not the target lithology, (the Cambrian Top Springs Limestone).

2. **CONTACT DETAILS:**

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3. **INTRODUCTION**

EL 27026 was granted on the 3rd of September 2009 for a period of 6 years and this annual report covers work done in the second licence year (3/09/2010 – 2/09/2011). It has an area of 497 graticular blocks (1,640km²) and is located on the western extents of the MacArthur Basin.

EL 27026 is located 130km to the east of the Stuart Highway along the Carpentaria Highway and is on Tanumbirini, Broadmere and Beetaloo Stations. Exploration so far has determined there to be minimal chance of phosphate mineralisation on EL 27026 due to the erosion of the target lithologies. Field exploration has shown that the Cretaceous claystones sit directly on the Proterozoic lithologies of the western MacArthur basin with no Cambrian rocks being found in the licence area during 2011.

The licence area was extensively traversed during the year to the north of the Carpentaria Highway where the main pastoral activities are conducted on Tanumbirini Station. The area to the south of the highway is more difficult to access, with extensive heavily wooded forests of Bulwaddy and Lancewood which makes vehicle penetration impossible and penetration on foot difficult.

![EL 27026 Location Map](image)

*Figure 1. EL 27026 Location Map*
4. TENURE

a. Mining
Exploration Licence 27026 was granted to FSL World Holdings on 3rd of September 2009 for a period of 6 years, expiring on 2nd September 2015. Fertoz Pty Ltd purchased the licence in late October 2010. The exploration licence consists of 497 graticular blocks (1,640km²) and is located within the Tanumbirini and Bauhinia Downs 1:250 000 Mapsheets.

b. Real Property
The licence is located within PPL 1059 “Beetaloo Station” which is owned by Yarabala Pty Ltd (Beetaloo Station, Elliott NT 0862), PPL 1046 “Broadmere Station” which is owned by the Carwoola Pastoral Co Pty Ltd (Suite 4 38 Macquarie St, Sydney NSW 2000) and PPL 1060 “Tanumbirini Station” which is owned by Baldy Bay Pty Ltd (PMB 15 Halls Creek, WA 6670).

c. Other Stakeholders
Other stakeholders in the licence area consist of the Alawa peoples who own Cox River Station to the north, and the Wampaya peoples who own Anthony Lagoon Station to the south.
5. LOCATION AND ACCESS

EL 27026 is located 140km to the east of Daly Waters, some 580km to the south of Darwin. Access to the general area from Darwin is via the Stuart Highway southwards to the Hi-Way Inn, (some 10km to the east of Daly Waters), thence approx 130km to the east along the Carpentaria Highway which traverses the licence.

The Tanumbirini homestead is located near the central part of the licence and the OT homestead is located to the east of the licence. As with all cattle stations, roads, tracks and fencelines generally reach their highest density in these areas (near homesteads) and so make traversing the licence areas relatively easy. In the case of EL 27026 the Carpentaria Highway also traverses the licence and so gives an excellent starting point for field operations. The OT Downs homestead and station is run as an outstation of Beetaloo Station and is only occupied for part of the year, (during mustering operations).

Figure 3. EL 27026 Access
6. **REGIONAL GEOLOGY**

The youngest rocks in the licence area 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.

In the licence area the Cretaceous shales and mudstones form an opaque cover which effectively masks the underlying basinal contact between the Carpentaria, and probably the Georgina, and McArthur basins.

The outcropping Roper Group is underlain by the Tawallah Group which in turn is underlain by the Nathan Group to the west of the EL. These Mesoproterozoic groups mark the western extent of the McArthur Basin. For our search for phosphorite we need to be concentrating on the Cambrian Top Springs limestone which probably represents the equivalent of the Tindal limestone in the Daly Basin and Wonarah Formation in the Georgina Basin.

![Figure 4. Regional Geology](image-url)
Figure 5. Roper Group Stratigraphy
7. **Licence Geology**

The outcrop geology of EL 27026 consists of Cretaceous sediments of the Carpentaria Basin which are overlain by Tertiary laterite soils.

In the areas to the north of the escarpments as shown on the map below the Cretaceous claystones are eroded away to varying degrees exposing the underlying Proterozoic rocks. These consist of sandstones, siltstones and limestones, generally having varying dips indicating an angular unconformity at the base of the Cretaceous.

Crossing the northeast corner of the licence is a northwest plunging syncline that contains Roper Group sediments and this site adjacent to the western side of the Tanumbirini Dome a large scale antiform to the east of the licence area.

![Figure 6. Licence Geology](image-url)
8. **Previous Exploration**

In the early 1980s Western Mining explored the area of outcropping Proterozoic geology to the east of the licence area for stratiform copper and fault-associated stratiform lead-zinc deposits, (the Mallapunyah Fault play). They mainly concentrated on the Tanumbirini Dome, a southeast plunging antiform located in the eastern edge of EL 27026 and to the northeast of this licence. They used geological, geochemical and geophysical exploration techniques with negative results.

From this date the exploration has been aimed towards diamonds as part of each of the major diamond explorers have continued their search across the Australian landscape.

CRA Exploration were the first of the diamond explorers in the area in 1984, there efforts led to the discovery of 1 microdiamond in the licence area. Follow up of this result by loam sampling produced generally negative results. This sample has tantalised subsequent explorers and the source has not been located as yet.

Other diamond explorers in the area have been Aberfoyle Exploration as part of the ADE Joint Venture with Ashton Mining. Helix Resources on their own, and Ashton Mining for the ADE JV from 1993 to 1996.

Late stage explorers were Astro Diamonds (Legend International) and De Beers.

It seems that De Beers had 2 strategies, one was to lead the pack as Stockdale in the 1980s and 90s, and the second was to come along as de Beers in the 2000s and re-evaluate everyone else’s work.

### EL 27026

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Table 1. Historical Exploration Reports
Figure 7. Historical Exploration Licences

a. **Field Work**
   **Year 2**

Field work in the second year of tenure consisted of a comprehensive examination of all of the windows through the Cretaceous into what is undoubtedly the Proterozoic. The area to the north of the Tanumberini Homestead, (which is located on the Cretaceous cover overlooking the eroded cover to the north), consists of rolling plains and hills that contain the eroded remnants of the Cretaceous claystones to varying degrees through which the Proterozoic sandstones, siltstones and limestones are occasionally exposed. This area is one of the few windows through the Cretaceous in the area and we targeted the interval at its base to see the relationship between the Cretaceous and the underlying lithologies. Where we found this relationship there was no sign of the Cambrian Top Springs Limestone or the Antrim Plateau Volcanics.

b. **Desktop Surveys**
   **Year 2**

Research done included the review of scientific journal articles and current GIS maps of the area. This was mainly done with regards to exploration targeting and updating the database of literature with which teams used to navigate when out in the field.

c. **Exploration Targeting**

It has been demonstrated that phosphorite deposits are usually to be found in restricted basin margins and may 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.

d. **Prospect Generation**

Prospect generation in the licence area will depend on examining the areas of erosion through the Cretaceous sediments and these will be examined for nickel and base metals using standard geochemical exploration techniques. At the present time there have been no targets generated by the current study.
Figure 8. Georgina Basin phosphate prospectivity (Dunster JN, Kruse PD, et al.)

The proposed work program for the third year of tenure (2011-2012) will consist of the following:

Interpretation of open file aeromagnetic, radiometric and gravity geophysical data.

Field follow-up of data generated by the above methodology. With particular emphasis on Iron, phosphate and base metal targets.

Preparation of the Third Annual Report.
11. **EXPENDITURE COVENANTS**


The expenditure report for Year 2 (2010 – 2011) is included as Appendix 1 to this annual report.

b. **Proposed Expenditure for Year 3 (2011 – 2012)**

The proposed expenditure for Year 2 is as follows:

- **Geophysical Interpretation** $100,000
- **Field follow-up of the above data** $145,000
- **Annual report preparation** $5,000

**Total Proposed Expenditure** $250,000
12. **REFERENCES**

**Open File Company Reports**


Western Mining Corporation, (1982), Terminal Report for Adjoining ELs, EL 2715 - Lanson Creek, EL 3123 – Crooked Creek and EL 3243 – Tanumbirini Creek, Western McArthur Basin, western Mining Corporation unpublished company report, CR1982-0232.


Published Reports


Company Reports