NT Minerals Pty Ltd

EL 29123, 29124, 29126, 29128, 29129, 29130 & 29131

Annual and Final Report
For the period
04 Apr 2012 to 28 Feb 2014

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Relevant 100K Map sheets: Winnall Ridge, Inindia, Gill, Wallera, Curtin, Angas, Seymour, Ebenezer, Henbury
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1.0 ABSTRACT

The Exploration Licenses (EL) 29123, 29124, 29126, 29128, 29129, 29130 & 29131 are the remaining seven Titles of the original nine that made up the amalgamated Amadeus West Project. EL 29122 and 29125 were surrendered effective 2nd January 2014. The remaining seven Titles were surrendered effective 28 February 2014.

The Project is located 150 km southwest of Alice Springs and covers an area of 5,513 km² of the central Amadeus Basin. The region is underexplored though to the west of Lake Amadeus though previous exploration targets have included phosphate and evaporites, uranium, sulphur, copper and diamonds. All exploration in the area has been short lived with few available reports and data.

From the grant date to surrender no field activities were conducted over the Amadeus West Project. Whilst all commodities were considered, the focus of the extensive technical review of the region was placed on potash, phosphate, uranium, gold and base metals.

The review determined that there none of the tenements in the Amadeus West Project offer NT Minerals any specific commodity target or focus that can be evaluated in the short to medium term.

The conclusion reached for the remaining seven Titles of the Amadeus West Project was that there was insubstantial evidence for the high risk field exploration that would be required. The Titles have been nominated for surrender effective 28 February 2014.
2.0 LOCATION

Amadeus West Project is located in southern Northern Territory approximately 180 km southwest of Alice Springs in the MacDonnell Shire.

Figure 1 – Amadeus West location map

2.1 TENEMENT DETAILS

Amadeus West Project is comprised of a total of 9 titles and covers an area of 7,065 km². The details of the two surrendered Titles are shown in Table 1 below.

Table 1 – Tenement details summary

<table>
<thead>
<tr>
<th>EL NUMBER</th>
<th>29123</th>
<th>29124</th>
<th>29126</th>
<th>29128</th>
<th>29129</th>
<th>29130</th>
<th>29131</th>
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<td>6/6/12</td>
<td>6/8/12</td>
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<td>6 years</td>
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<td>778</td>
<td>775</td>
<td>775</td>
<td>768</td>
<td>899</td>
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</table>
2.2 ACCESS

Amadeus West Project is largely bounded by the Lasseter Highway to the south and the Luritja and Ernest Giles Roads to the north. These roads connect with the Stuart Highway on the eastern extent of the project which then connects with Alice Springs 150 km to the north.

Access to the majority of the project area can be gained via unsealed tracks from the Lasseter Highway and the Luritja, Lasseter, and Ernest Giles Roads. EL 29129 is easily accessible from the Lurirja road that transects it (Figure 1).

Rail access is via the only rail line in the Northern Territory which is located approximately 200 km to the east of the title.

2.3 PHYSIOGRAPHY

Amadeus West Project is located north-east of the non-perennial 1,800 km² salt lake Lake Amadeus. Within the title area there are a number of non-perennial lakes in shallow depressions which are filled during times of heavy rain.

The title area is relatively flat with a gentle slope to the south-west. North of the project area lies the George Gill Ranges and the West MacDonnell Ranges. The majority of the project area is covered by sand dunes which obscure outcrop of formations. This can be seen in Figure 2.

![Physiography Map](image-url)
3.0 GEOLOGICAL SETTING

3.1 REGIONAL GEOLOGY

Amadeus West Project is located in the intracratonic Amadeus Basin located in the South West of the Northern Territory.

The Amadeus Basin is a Neoproterozoic to early Phanerozoic intracratonic sedimentary basin approximately 170,000 square kilometres in area and includes several sub-basins and troughs which are major depositional centres. Sediment thickness reaches a maximum of 14,000 metres.

The Amadeus Basin overlies the Warumpi and Aileron provinces to the north and the Musgrave Province to the south. The Amadeus Basin is overlain by the Eromanga and Pedirka Basins to the south-east.

The basin has at least nine recognisable megasequences separated by regional unconformities. These megasequences were instigated by major tectonic events including the Peterman and Alice Springs Orogenies.

Periods of subsidence and uplifts coupled with sea level changes caused a series of fluviatile, glacial, marine and evaporite deposits. Though the formation of the Amadeus Basin was instigated by an extensional event, the majority of deformation that took place was compressional and transtensional (Shaw, R.D. 1991). More recently, halotectonics has been considered to be very important to the development of the basin’s structure with evaporite deposits allowing an alternate dispersion of tectonic forces and acting as reservoirs (Marshall and Dyson, 2007).
Figure 3 - Map of the Structures of the Amadeus Basin Red box depicts location of Amadeus West Project (Shaw, R.D. The tectonic development of the Amadeus Basin, Central Australia, BMR Bulletin 236, 1991)

Figure 4 - Schematic cross section of the Amadeus Basin (Shaw, R.D. The tectonic development of the Amadeus Basin, Central Australia, BMR Bulletin 236, 1991)
Figure 5 - Cross sections across Amadeus Basin. Red box and dot depicts location of Amadeus West Project (numbers correspond to the stratigraphy of the simplified cross section) Adapted after Wells and others, 1970 and Kennard and others, 1986 (Shaw, R.D. The tectonic development of the Amadeus Basin, Central Australia, BMR Bulletin 236, 1991)
Figure 6 - Simplified Stratigraphic Column of the Amadeus Basin. Adapted after Wells and others, 1970 and Kennard and others, 1986 (Shaw, R.D. The tectonic development of the Amadeus Basin, Central Australia, BMR Bulletin 236, 1991)
3.2 LOCAL GEOLOGY

The oldest subsurface geology of Amadeus West Project are the Pioneer, Olympic and Pertatataka Formations; Heavitree Quartzite, Bitter Springs Formation; and Areyonga and Aralka Formations. These formations range in age from 1000 to 545 Ma and are composed of shales, sandstones, dolostones, limestones, diamictites, dolostones and quartzites. The younger formations are 490 to 410 Ma in age and are sandstones, shales and dolostones.

Most formations are covered by sand dunes with only small areas of outcrops visible within the title area. A map of the solid geology in the area is shown below in Figure 7.

![Figure 7 - Local Geology of Amadeus West Project](image)

3.3 HISTORIC EXPLORATION

There are a number of historic titles that overlapped or were in close proximity to the area of the Amadeus West Project. These were held from the 1960's to present though very little actual exploration has been carried out over the area. The exploration data available over these tenements has been reviewed and reported on in the Year 1 Annual Report for the Amadeus West Project.
4.0 OPERATIONS REPORT
No field work has been completed on the Amadeus West Project. Work associated with this
tenement has been focused on a review of previous exploration in order to plan a forward
exploration programme.

5.0 CONCLUSION AND RECOMMENDATIONS
A technical evaluation of the Amadeus West projects in the NT led to the recommendation to
initially drop EL 29122 and 29125 and subsequently the remaining seven Titles detailed in this
report. This decision was made based on reviews of selected historical exploration reports and an
assessment of the economic prospectivity of the Amadeus Basin based on various geological reports
and evaluations in the public domain.

Potash
The commodity of principal focus has been potash, initially in hard rock and more recently in brines
associated with the Karinga Creek salt lakes and salinas. Historical exploration and deep wells have,
to date, failed to demonstrate the existence of hard rock potash within the Amadeus Basin
sequence. A number of wells within the Neoproterozoic Bitter Springs Formation and Cambrian
Chandler Formation were reviewed for potash associated with evaporitic minerals though no reports
of potentially economic sequences of potash were found.

Uranium
Small sandstone-hosted uranium deposits are present at the Angela and Pamela prospects south of
Alice Springs near the northern margin of the Amadeus Basin. However, low-level historical
exploration has failed to provide any targets for uranium exploration in the region of the Amadeus
West Project. The central part of the Amadeus Basin is considered too far removed from potential
uraniferous source granites in the Arunta and Musgrave Blocks.

Gold and Base Metals
There is low potential for gold and base metals deposits in the Amadeus Basin. Exploration for base
metals has been undertaken along the northwest margin of the basin though there are no specific
targets for gold and base metals present within the Amadeus West Project. The review found that
no appropriate models of gold and base metal mineralisation can be applied and tested within the
project.

Phosphate
There have been reports of phosphorite being intersected in the Amadeus Basin in a number of
government drill holes from the early 1960s, though none were deemed economic. Historic
exploration for phosphate in the Amadeus Basin is not as been as extensive as in the Georgina Basin
where most of Australia’s commercial or potentially commercial deposits are situated. The risk is
considered too high for NT Minerals to launch an adequate exploration program over the project.
Currently there are no known phosphate occurrences within the projects.
The review determined that there none of the tenements in the Amadeus West Project offer NT Minerals any specific commodity target or focus that can be evaluated in the short to medium term. The conclusion reached for the remaining seven Titles of the Amadeus West Project was that there was insubstantial evidence to conduct a high risk field exploration program. The Titles have been nominated for surrender effective 1st March 2014.

6.0 REFERENCES


Barrie, J. 1964, Phosphate Drilling, Amadeus Basin, BMR 1964/0195


Huston, D. 2011, An assessment of the uranium and geothermal prospectivity of east central South Australia, Geoscience Australia, 2012/51


Lindsay, J.F., 1999, Heavitree Quartzite, a Neoproterozoic (ca 800-760Ma), high-energy, tidally influenced, ramp association, Amadeus Basin, central Australia, Australian Journal of Earth Sciences 46 127-139


