PARTIAL RELINQUISHMENT REPORT
ON POISION CREEK PROJECT

DAVENPORT MINERAL FIELD,
NORTHERN TERRITORY

Poison Creek Project

Exploration Licence: 26100

BY

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DISTRIBUTION

1. Northern Territory Department of Minerals & Energy
2. Spinifex Uranium Pty Ltd
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1.0 POISON CREEK PROJECT

2.0 INTRODUCTION

The north-west corner of EL 26100 is located approximately 184 kilometres south-east of Tennant Creek in the Northern Territory (Figure 1).

Work included literature searches and data base compilation. Open file company reports were obtained from the Northern Territory Geological Survey and a review of past exploration data and geological concepts undertaken. Airphoto interpretation has identified geological and structural features for ground reconnaissance. During the term Spinifex Uranium also negotiated the purchase of private company exploration reports.

EL 26100 is part of the Davenport Province Project, comprising seven Exploration Licence areas situated south-east of Tennant Creek. This relatively underexplored area was selected as it is considered to have potential to host unconformity-related uranium, and gold and base metal deposits.

A total of 50% of the tenement was to be relinquished based upon more favorable magnetic targets in the southern portion of the Exploration Licence area.

3.0 LOCATION AND ACCESS

The north-west corner of EL 26100 is located approximately 184 kilometres south-east of Tennant Creek. The EL is centered on the Frew River 1:250,000 Map sheet SF53-3 and more specifically spans the southern-central and northern-central portions of the Coolibah and Hanlon 1:100,000 sheets respectively. The nearest settlement, Canteen Creek, is located approximately 8km west of the south-western margin of EL 26100. Canteen Creek Settlement, located at the eastern end of the Davenport Ranges, is approximately 260km from Tennant Creek by road; this includes 180km of dirt road. Canteen Creek Settlement also has an airstrip suitable for light aircraft.

4.0 TENEMENTS

The project is comprised of one granted exploration licence (EL) with the tenement details summarised in Table 1 and their locations are shown in Figure 1.

<table>
<thead>
<tr>
<th>Project</th>
<th>Tenement Number</th>
<th>Status</th>
<th>Current Area Blocks</th>
<th>Current Area (sq km)</th>
<th>Current Holder</th>
<th>Granted Date</th>
<th>Expenditure Covenant ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poison Creek</td>
<td>EL26100</td>
<td>Granted</td>
<td>59</td>
<td>189.8 km²</td>
<td>Spinifex Uranium Pty. Ltd</td>
<td>13/02/2008</td>
<td>$128,000</td>
</tr>
</tbody>
</table>

4.1 Climate

The climate is arid, temperate, and continental. The highly irregular annual rainfall averages 353mm. Mean temperatures are 37°C in summer and 24°C in winter. Mean minimum temperatures are 24°C and 11°C for summer and winter respectively. In the Wet Season (October-May) roads can be cut off quickly by rising rivers.
4.2 Topography

The landscape is dominated by quaternary sediments consisting of aeolian sand frequently as stabilised sheets and north-west striking dunes. Topographic highs comprise predominantly north-east striking Early Proterozoic lithologies.

5.0 REGIONAL GEOLOGY & MINERALISATION

The Davenport Province represents an extension of the North Australian Platform Cover and includes sedimentary and bimodal volcanic rocks that were deposited between 1840 and ≥1790 Ma (Donnellan, 2005, Claué-Long et al, 2005). The oldest rocks belong to the Ooradidgee Group which is unconformably overlain by the Hatches Creek Group comprising two main stratigraphic units.
(Wauchope and Hanlon Subgroups). A simplified geological map of the Davenport Province Project (adapted from Ahmah and Scrimgeour, 2006) is shown in Figure 2.

The Hill of Leaders Granite (1848 ± 7 Ma) which is part of the Tennant Creek Supersuite outcrops in the northern part of the Davenport Province, where it intrudes folded turbiditic sedimentary rocks that have been correlated with the Warramunga Formation (1860-1850 Ma). The Warramunga Formation contains ironstones overprinted with Au-Cu-Bi mineralisation at Tennant Creek that formed during emplacement of the Tennant Creek Supersuite and is separated from the overlying Ooradidgee Group by a major angular unconformity. The Warramunga Formation underwent a deformational event before the deposition of the Ooradidgee Group resulting in moderate to tight folding.

The Ooradidgee Group is intruded by the Treasure Suite of igneous rocks that are tentatively dated between 1830 to 1815 Ma. The suite is bimodal and composed mainly of extrusive volcanics, although shallow-level intrusives are present as granophyres or porphyry sills within the lower Hatches Creek Group.

The Devils Suite of igneous rocks was emplaced late in the history of the Davenport Province between about 1720 to 1680 Ma. It is an extremely fractionated, oxidised, fluoride-bearing I-(granodiorite) type associated with minor vein-W deposits (Wyborn et al, 1998). The suite postdates known sedimentation and includes the Elkedra Granite (1720 Ma), Devils Marble Granite (1711 Ma) and several unnamed granites.

In comparison to other Proterozoic Basins to the north, the Davenport Province is more deformed and is metamorphosed to lower greenschist facies. It is unconformably overlain by the Palaeozoic Georgina and Wiso basins to the east and west respectively. Stratigraphic equivalents of Davenport Province are known to extend into the Aileron Province of the Arunta Region.

The Davenport Province is well mineralised and contains numerous small mineral occurrences including W, Au, Sn, Cu, Pb-Zn, Ni, Ta, Nb and U. According to Blake et al (1987), some of the small tungsten deposits were mined between 1913 and the early 1970s, yielding 4,500 t tungsten concentrate (65% WO2). At the Wauchope tungsten field and the Juggler mine near Elkedra, mineralisation is spatially associated with outcropping granites of the Devils Suite. Other deposits, such as in the Hatches Creek tungsten field, are interpreted to be related to unexposed granites (Blake et al, 1987). Budd et al (2001) classified the tungsten mineralisation into two types: 1) W-Cu-Bi-Mo-Au with minor U and Sn; and 2) W-Sn and related these to Treasure Suite volcanic rocks and the Devils Suite, respectively. The suite of metals at the Hatches Creek tungsten field is similar to the Au-Cu-Bi deposits at Tennant Creek which are associated with Cu, Bi, Mo, Se, Pb, Co and minor W and Sn.

Small lode gold deposits and prospects exist in the Davenport Province, primarily in the Kurinelli area (35 km north-northwest of Hatches Creek). Gold-bearing quartz veins often cross-cut sedimentary rocks of the lower part of the Ooradidgee Group and associated dolerite intrusives. Recent age dating suggests mineralisation is younger than the Au-Cu-Bi deposits at Tennant Creek and might have formed around 1811 Ma, coeval with mafic magmatism of the Stafford Event in the Arunta Region (Maidment et al, 2006).

The only known uranium occurrences in the region are at Mundagee and Curtis Pounds (Figure 2). The Mundagee Prospect was found in 1955, and there has been limited underground development. Recent sampling in a cross-cut at the base of one of the shafts returned assays of 0.82% U3O8 over 1.2 m (Atom Energy Limited, 2007). Uranium mineralisation is present in north-northwest striking quartz veins within felsic porphyry intruding Warramunga Group sediments. At the Curtis Pounds
Uranium Prospect, uranium is hosted in basalts and sediments of the Hatches Creek Group that crop out in the northern eastern flank of the Curtis Syncline.

Most of the isolated Proterozoic outcrops identified on the Frew River 1:250,000 Geological Map are listed as tentative (accompanied by? suffix) and identification was presumably based on lithology combined with relative stratigraphic and strike position. As stated above, the landscape is dominated by Quaternary sediments consisting aeolian sand frequently as stabilised sheets and north-west striking dunes.

In the southern portion of the EL these are associated with sand covered Quaternary relict fluvial systems. Minor outcrops of Cainozoic vein quartz rubble occurs in the northern central portion of the EL. Many of the topographic highs comprise predominantly north-east striking Early Proterozoic lithologies.

6.0 PREVIOUS EXPLORATION

The Dalmore-Epenarra Project was selected to develop a regional exploration effort on pre-Cambrian terrain beneath shallow cover for extensions of the Tennant Creek terrain, based on newly released airborne geophysical data. It was hoped to promote interest in testing geophysical targets, primarily for Tennant Creek type ore bodies, by developing the concept and then enlisting investment from other explorers. The holders had to divert resources to other projects and surrendered the titles when they were unable to find investment partners.

7.0 WORK COMPLETED AND DISCUSSION

During the third year of the Licence, the work was restricted to a study of open files available at the Northern Territories Department of Mines & Energy. The open file study demonstrated that there was some significant potential for uranium, base metals and phosphate in the area. In February 2011 Kastellco Geological Consultancy Ltd (KGC) was contracted to conduct a desktop study over the area and to make recommendations on a follow-up exploration programme for the following year.

During the month of April 2012, a review of re-processed and re-interpretation of magnetic and radiometric data from the Northern Territory Geological Survey Database was undertaken. The geophysical images were used in identifying exploration targets for uranium, base metals, tungsten and tantalum. Several first-order and second-order magnetics targets were identified which had not been previously examined by historical field programmes. Historical regional data was also reviewed to determine the effectiveness of previous exploration and evaluate remaining potential.

7.0 EXPLORATION POTENTIAL

The Northern Territory contains various small to large uranium deposits that have produced over 0.95 Mt of U3O8. Uranium production and current resource statistics for the Northern Territory are dominated by large unconformity-related deposits in the eastern Pine Creek Orogen. Smaller vein-type deposits in the Pine Creek Orogen (Adelaide River) have also been mined in the past. Geological analogues to Pine Creek Orogen unconformity-related deposits that could be considered prospective exist in the Davenport Province (Lally and Bajwah, 2006). Platform-cover successions represented by the Hatches Creek Group are correlatives of the Katherine River and Tolmer Groups, which are considered to be important in the formation of unconformity-related deposits in the Pine Creek Orogen (Lally and Bajwah, 2006). In the Davenport Province, the Hatches Creek Group rests unconformably on deformed and metamorphosed Palaeoproterozoic orogenic rocks and therefore represents a target for unconformity-related uranium.
The region is also potential for gold deposits associated with the Treasures Suite (Wyborn et al., 1998). In the Davenport Province, the suite is composed mainly of volcanics, and shallow intrusive granophyres and porphyries in the Ooradigge Group (Treasure and Mia Mia Volcanics) and Hanlon Subgroup (Arabulja and Newlands Volcanics) of the Hatches Creek Group. The Treasure Suite is a fractionated I-(granodiorite) type and members range in age from 1829 to 1816 Ma. These ages are roughly equivalent to the Ar-Ar ages of muscovite formed during Au-Cu-Bi mineralisation at Tennant Creek. The Treasure Suite is also of a similar age to the major Au-related magmatic events at Pine Creek (Mount Todd Au deposit) and Tanami Region, and is believed to be associated with the Au-Cu-Bi mineralisation at Tennant Creek and with W, Cu, Bi, Mo mineralisation in the Hatches Creek area (Wyborn et al., 1998).

9.0 REFERENCES

Ahmad M, and Scrimgeour, IR, 2006, Geological Map of the Northern Territory, 1:2,500,000 Scale, Northern Territory Geological Survey.

