SUMMARY

Title Holder: AREVA Resources Australia Pty Ltd
Operator: AREVA Resources Australia Pty Ltd
Titles/Tenements: EL28211, EL28213, EL28214
Project Name: Davenport Project
Report Title: Davenport Project Joint Annual Technical Report for the period 17th March 2013 to 16th March 2014
Group Reporting ID: GR 249/12
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Internal Reporting Title: ARA_NT_SAR_2014/45
Personal Author: Rachael WILSON and Guillaume KERN
Date of Report: 13th May 2014
Datum/Zone: GDA94 Zone 53
Sheet Name (250k): Barrow Creek (SF53-6); Bonney Well (SF53-2)
Sheet Name (100k): Taylor (5755), Murray Downs (5855), Wauchope (5756)
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ABSTRACT

AREVA Resources Australia’s (Areva) Davenport Project consists of EL28211 (Nelson Bore), EL28213 (Lake Surprise) and EL28214 (Ghost Gum Rise). All three titles were granted to Areva on 17th March 2011 for a period of six years. Amalgamated Reporting was granted to Areva in April 2012 (GR 249/12).

Areva’s Davenport Project targets palaeochannel hosted uranium mineralisation within Tertiary sediments and sandstone hosted mineralisation in the Devonian sandstones within the Wiso and Georgina Basins. The exploration concept for the Davenport Project models uranium leaching from uraniferous rich basement of the Davenport and Aileron Provinces (source) into a palaeodrainage system (transport) with reduced Devonian and Tertiary units potentially trapping uranium. Historically, the Wiso and Georgina Basins have primarily been targeted for petroleum, phosphates and base metals, with very minimal uranium focused exploration.

For the year ending 2014, work has included a Versatile Time Domain Electromagnetic (VTEM) geophysical survey and technical reviews for the Project area which focused on mapping the Tertiary units of the Southern Wiso and Georgina Basins..

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## CONTENTS

- **SUMMARY** ........................................................................................................................................... 2
- **ABSTRACT** ........................................................................................................................................... 3
- **COPYRIGHT STATEMENT** .......................................................................................................................... 3
- **CONTENTS** ........................................................................................................................................... 4
- **LIST OF FIGURES** .................................................................................................................................... 5
- **LIST OF TABLES** ..................................................................................................................................... 5
- **1. INTRODUCTION** ................................................................................................................................. 6  
  1.1. Location and Access ........................................................................................................................... 6  
  1.2. Tenement Details ................................................................................................................................... 7  
- **2. GEOLOGY** ......................................................................................................................................... 7  
  2.1. Regional Geology ............................................................................................................................... 7  
  2.2. Local Geology ....................................................................................................................................... 8  
- **3. HISTORICAL WORKS** ........................................................................................................................... 9  
- **4. EXPLORATION RATIONALE** .................................................................................................................. 13  
- **5. WORK COMPLETED DURING YEAR ENDING 2014** ................................................................................... 16  
  5.1. Land Access Negotiations .................................................................................................................... 16  
  5.2. VTEM Survey ....................................................................................................................................... 16  
    5.2.1. **VTEM Technical Parameters** .................................................................................................... 16  
    5.2.2. **Data Interpretation** .................................................................................................................... 17  
- **6. CONCLUSION AND RECOMMENDATIONS** ......................................................................................... 20  
- **REFERENCES** ....................................................................................................................................... 21
LIST OF FIGURES

Figure 1: Location of the Davenport Project tenements, Northern Territory. .............................................. 6
Figure 2: Surficial geology of the Davenport Project 1:1M scale. ................................................................. 8
Figure 3: Schematic cross section over EL28211 (Nelson Bore). Current exploration concept is focused towards mapping the Tertiary sequence that unconformably overly the Paleozoic and Proterozoic Basement. .......................................................................................................................... 14
Figure 4: Conceptual cross section showing source-transport-trap proposed for the Tertiary sediments. ........................................................................................................................................ 15
Figure 5: Davenport Project - VTEM Survey results - Conductivity at 100m deep for EL28211 and 80m deep for ELs 28213 and 28214. .............................................................................................................. 19

LIST OF TABLES

Table 1: Davenport Project – Tenement Summary ......................................................................................... 7
Table 2: Davenport Project – Historical Exploration surrounding AREVA’s tenements ......................... 10
Table 3: Davenport Project - VTEM Technical Parameters for Surveyed Blocks ..................................... 16
1. INTRODUCTION

1.1. LOCATION AND ACCESS

The Davenport Project comprises of Exploration Licences (EL) 28211 (Nelson Bore), 28213 (Lake Surprise) and 28214 (Ghost Gum Rise) and is 100% owned and operated by AREVA Resources Australia Pty Ltd. The Project area is located approximately 350km north of Alice Springs, between the Davenport Ranges in the north and the Osborne/Crawford Ranges to the south (Figure 1).

![Figure 1: Location of the Davenport Project tenements, Northern Territory.](image)

The Project area is located on Pastoral Leases. Access to the tenement is via the Stuart Highway which passes through the middle of the project area. Within the licence areas, access is limited with few unsealed tracks and poorly maintained pastoralist tracks.
1.2. Tenement Details

EL28211, 28213 and 28214 were granted to Areva in March, 2011. Amalgamated reporting was granted on the 26th April 2012 (GR 249/12). EL28212 was surrendered the 25th June 2013.

Table 1: Davenport Project – Tenement Summary

<table>
<thead>
<tr>
<th>TENEMENT</th>
<th>DATE GRANTED</th>
<th>AREA (KM²)</th>
<th>EXPENDITURE COMMITMENT (YEAR ENDING 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL28211</td>
<td>17/03/2011</td>
<td>687</td>
<td>$124,500</td>
</tr>
<tr>
<td>EL28213</td>
<td>17/03/2011</td>
<td>249</td>
<td>$54,000</td>
</tr>
<tr>
<td>EL28214</td>
<td>17/03/2011</td>
<td>98</td>
<td>$25,500</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1,034</td>
<td>$204,000</td>
</tr>
</tbody>
</table>

2. Geology

2.1. Regional Geology

The Davenport Project lies on the south-eastern edge of the Wiso Basin where it meets the northern edge of the Arunta Region (specifically the Aileron Province), the south-western edge of the Davenport Inlier, and the north-western margin of the Proterozoic Georgina Basin (the Dulcie Syncline; Figure 2).

The Wiso Basin is a Neoproterozoic to Palaeozoic intracratonic sag basin which comprises an east south-east trending, structurally-controlled trough (Lander Trough) containing up to 3km of sediments. Elsewhere, sediment thickness does not generally exceed 300m. The Davenport Province is a mildly deformed and metamorphosed, Palaeo- to Mesoproterozoic succession of siliciclastic metasedimentary and volcanic rocks. These, in turn, unconformably overlie the Tennant Creek Inlier, a volcaniclastic and flysch sedimentary rock sequence which was intruded by granites and deformed by the Tennant Event at ~1850 Ma.

Sedimentation commenced in the early Middle Cambrian with deposition of marine carbonates and overlying shallow marine to intertidal siliciclastic. During the Late Cambrian uplift, erosion occurred, possibly as part of the Delamerian Orogeny. This was followed by deposition of shallow marine to fluvial siliciclastics during the Late Cambrian to Early Ordovician with shallow marine carbonates and siliciclastics following later in the Ordovician after which deposition ceased. In the Devonian, the Arunta Block to the south was uplifted during a phase of the Alice Springs Orogeny leading to deposition of Devonian to Early Carboniferous fluvial siliciclastics along the southern margin of the basin. The most significant faulting is along the southern margin of the Lander Trough. A series of parallel, east-south-east trending faults with an overall displacement of over 2,000m places sediments of the Wiso Basin against the crystalline rocks of the Arunta Block.
Quaternary and Tertiary sediments cover the tenement area and consists of quartz rich sediments, dunes, clay pans and channel sediments. The Tertiary unit unconformably overlies the varying basement, and comprises sediments of quartz rich sands with minor clays, calcrites, laterites, and possible palaeochannel units.

2.2.\ LOCAL GEOLOGY

EL28211 (Nelson Bore) is situated over the boundary of both the Wiso-Georgina Basins (north to south) and the Aileron-Davenport Province (west to east) which provides a basement high in the regional basin architecture. The south-western boundary of the tenement runs parallel with the regional Taylors Fault which marks the beginning of the downwards thrusted Wiso Basin. Quaternary and Tertiary sediments cover the tenement and consists of quartz rich sediments,
dunes, clay pans and channel sediments. The Tertiary unit unconformably overlies the varying basement, and comprises sediments of quartz rich sands with minor clays, calcretes, laterites, and possible palaeochannel units. The basement geology consists of Wiso Basin Palaeozoic metasediments, Proterozoic Granites and the Hatches Creek Group of sandstone and volcanics.

EL28213 (Lake Surprise), EL28214 (Ghost Gum Rise) and the northern part of tenement EL28211, lie within the Wiso Basin with the north-east tenement border close to the south-west edge of the Davenport Province. The tenements are covered with Quaternary and Tertiary sediments (historical drill logs indicate +50m thickness) with a small section of outcropping Lake Surprise Sandstone in the southern portion of EL28213. Minimal shallow drilling in this area has limited the understanding of the thickness or architecture of Palaeozoic sediments or Proterozoic basement.

3. HISTORICAL WORKS

Previous exploration within the Southern Wiso Basin primarily focused on petroleum exploration with very limited uranium exploration. However, uranium mineralisation is known in the region and is restricted (thus far) to the Proterozoic Aileron Province and the Devonian to Carboniferous parts of the Ngalia and Amadeus Basins (Figure 3). Uranium at Nolan’s Bore (Arafura Resources), to the south, occurs in phosphatic and REE-enriched metasomatic pods and veins within the high-metamorphic-grade Lander Rock beds. Sporadic precious and base metal exploration was undertaken by several major mineral resource companies between the early 1970s - current. As part of these on-ground investigations, limited drilling was carried out, with most drilling targeting the Proterozoic basement underlying the Wiso and Georgina Basin successions to the southwest of Areva’s current tenements. With the exception of Toro Energy’s neighbouring tenements (uranium), current exploration is focused on Phosphates, gold and base metals.
<table>
<thead>
<tr>
<th>COMPANY</th>
<th>YEAR</th>
<th>COMMODITY</th>
<th>ACTIVITY</th>
<th>COMMENT</th>
</tr>
</thead>
</table>
| Kewanee Australia Pty Ltd       | 1970-1974   | Base Metals     | • RAB, RC and Diamond drilling on geophysical defined targets. | • SW of Davenport Project in the Crawford-Osborne Ranges  
• Defined a sub-economical Cu-Ni resource (Prospect D)  
• Relinquished ground |
| Australian Development Ltd      | 1972-1976   | Iron            | • Drilled geophysical targets                 | • Desktop study targeted iron formations  
• Tenement area (EL40, 41) west of AREVA project  
• Shallow drilling resulted in no viable results  
• Tenements were relinquished |
| Peko Mines Ltd                  | 1974-1976   | Base Metals     | • Geophysical survey  
• Diamond drilling on possible target | • Detailed Magnetic survey over EL1041, NW of AREVA project project area  
• Identified several anomalies  
• Target Ex182 followed up with diamond drilling (390m) with no success |
| Shell Company of Australia      | 1981-1983   | Base Metals     | • Geophysical surveys  
• RAB drilling | • Tenements NW of AREVA project area  
• Completed airborne and ground magnetic surveys over EL2720  
• Followed up with 5 shallow RAB drillholes targeting Au and base metal anomalies  
• No mineralisation intercepted and no further work was recommended |
| CRA Exploration                 | 1988-1990   | Diamond         | • Grab sampling                               | • Tenement EL6324, SW of AREVA project  
• Grid sampling over the Tomahawk Beds and Dulcie sandstone for Kimberlite indicator minerals  
• Samples results recovered chromites, though considered not to be derived from a Kimberlite source  
• The tenement were relinquished |
<table>
<thead>
<tr>
<th>Exploration Company</th>
<th>Time Period</th>
<th>Exploration Stage</th>
<th>Exploration Methods</th>
<th>Tenements/Notes</th>
</tr>
</thead>
</table>
| Newmont Exploration        | 1989-1990   | Gold              | • RAB drilling                                                                      | Tenement EL6324, north of AREVA project  
• Sampled drill chips from concurrent water bore drilling to depth of 120m  
• Samples failed to yield significant Au mineralisation  
• Tenements were relinquished |
• Aircore drilling                                                            | Tenement EL6306, south of AREVA project  
• Work included reconnaissance, soil sampling, and geological mapping  
• Aircore drilling of 40 holes for 150m to test altered dolerite sill. Results ranged from 1ppb to 33ppb Au.  
• Tenement was relinquished |
| Northern Uranium           | 2007-2008   | Uranium           | • Mapping and rock chip sampling  
• RC drilling  
• Diamond drilling  
• Geophysical survey                                                       | Tenements EL24995 and EL23937 to the north of AREVA project  
• Focused on exploration around historic Munadgee uranium prospect and prospective structural corridor  
• RC drilling program defined small mineralised shoots of uranium in the basement rocks  
• Follow up diamond drilling targeted Munadgee working at depth with weak results  
• Further detailed geological mapping and rock chip sampling followed by a ground based magnetic survey. |
| Rum Jungle Resources       | 2008-current| Phosphate         | • RC drilling                                                                       | Tenements EL25183-186 and EL28116-17, east of AREVA project  
• Targeting Cambrian Phosphate beds in the Wiso and Georgina Basins  
• RC drill program delineated the Barrow Creek 1 resource (97.3mt @ 18.1% P2O5) and the Ammaroo 1 prospect |
<table>
<thead>
<tr>
<th>Company</th>
<th>Years</th>
<th>Industry</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABM Resources</td>
<td>2011-</td>
<td>Base Metals</td>
<td>Geophysics, Drilling</td>
</tr>
<tr>
<td></td>
<td>current</td>
<td></td>
<td>Tenement EL28748, west of AREVA Davenport Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flew airborne EM survey over Kroda and Tulsa prospects, part of the Arunta Block</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gold mineralisation intercepted on Kroda 3 Au Prospect defined over 400m strike with 40m width, open below 150m</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kroda 1 prospect also returned low-grade Au mineralisation</td>
</tr>
<tr>
<td>Toro Energy Ltd</td>
<td>2009-</td>
<td>Uranium</td>
<td>Geophysical Survey, Co-funded with NT Dept. of Mines</td>
</tr>
<tr>
<td></td>
<td>current</td>
<td></td>
<td>Tenement EL27138, west of AREVA Davenport Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SkyTEM geophysical survey over tenement to define possible palaeochannels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Conductive featured (channels and deltaic fans) mapped in the tertiary and follow up with possible future drilling program</td>
</tr>
<tr>
<td>NT Department of Natural Resources</td>
<td>1970-</td>
<td>Stratigraphy</td>
<td>Stratigraphic drill holes, Detailed logging</td>
</tr>
<tr>
<td></td>
<td>current</td>
<td></td>
<td>Multiple drill holes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Detailed stratigraphic logs with associated water table data</td>
</tr>
<tr>
<td>NT Department of Natural Resources</td>
<td>1970-</td>
<td>Water</td>
<td>Water bore drill holes</td>
</tr>
<tr>
<td></td>
<td>current</td>
<td></td>
<td>Multiple water bore drill holes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drill holes vary from 30 to 105m depth</td>
</tr>
</tbody>
</table>

Previous work conducted by Areva on the Davenport Project has included an Airborne Electro-Magnetic survey, co-funded by The Northern Territory Government performed during 2013. This EM survey identified electromagnetic anomalies interpreted as saline aquifers within inferred Tertiary Palaeochannels.

Results from these studies have aided in the planning and design of the proposed 2014 Drilling Program.
4. EXPLORATION RATIONALE

The Davenport Project was developed having in mind its potential to host a variety of differing styles of uranium deposits. Initially the focus was towards sandstone-hosted mineralisation near the margins of overlying sedimentary basins (Wiso and Georgina) and a mineralised style analogous to the Bigrlyi (southwest of Areva tenements) or Pamela-Angela (south of Areva’s tenements) uranium deposits. After geological review and field inspections the possibility for uranium mineralisation within Tertiary sediments was also recognised.

The Upper Devonian Lake Surprise Sandstone is considered to be particularly prospective with a mineralisation style analogous to the Bigrlyi and Pamela-Angela deposits. The margin of the southern Georgina Basin, which underlies the Wiso Basin to the south east, is considered equally prospective for sandstone-hosted uranium mineralisation (Dulcie Sandstone). Radiogenic basement rocks of the Aileron Province and the Tennant Creek Inlier may have provided a source of coarse detritus and leachable uranium for recycling into the younger basins. Organic-rich horizons within permeable sandstone capable of trapping mobile uranium are likely to be present within the upper, Devonian to Carboniferous portion of the basin succession. Where these horizons occur at shallow depths and within close proximity of the basin margin, the potential for roll front-style and/or structurally-controlled, sedimentary-hosted Bigrlyi-style mineralisation in Mt Eclipse Sandstone equivalents is considered significant. It is expected to find preserved reductant Devonian sandstone within both Wiso and Georgina basin within Areva’s tenements.

Areva is also targeting Tertiary sediments that overlie the Palaeozoic and Proterozoic basement and the possible existence of drainage channels with potential reducing traps that might concentrate uranium mineralisation (Figure 3). Tertiary sediments can occur up to ~100m thick over the Palaeozoic to Proterozoic basement and has been described (multiple stratigraphic and bore drillholes) as sand dominated with interbedded clays, silts and gravels. Redox conditions are mixed, with predominately oxidised sediments and interlayered reduced grey-greenish sands, which shows a potential for redox fronts/fluid movement within the Tertiary unit. The source of the sediment and possible uranium mineralisation is derived from the Davenport and Aileron Provinces which provide both coarse detritus material but also leachable uranium from their radiogenic units (granites of the Tennant Creek Inlier and volcanic units of the Hatches Creek Group).
Figure 3: Schematic cross section over EL28211 (Nelson Bore). Current exploration concept is focused towards mapping the Tertiary sequence that unconformably overly the Paleozoic and Proterozoic Basement.
Following the uranium roll-front model of source-transport-trap, the Davenport Project contains the following attributes:

**Source:** Uplifted blocks of the Davenport and Aileron Province provide coarse detritus and associated uranium minerals to the Basins Palaeozoic and Tertiary sediments.

**Transport:** Proximity of the basement rocks to the basin; alluvial/fluvial transport mechanisms off the ranges.

**Trap:** Existence of palaeochannels or deltaic fans and the possibility of reductants (lignite, organic matter, pyrite) within the Tertiary. Petroleum exploration of the basins indicates the presence of reductants (Figure 4). Presence of Devonian sandstone potentially reduced downward the Basin with good reservoir properties.

![Diagram](07-2553-4)

**Figure 4:** Conceptual cross section showing source-transport-trap proposed for the Tertiary sediments.

To understand the potential of the Davenport Project more information is required on the Tertiary sediments, basement architecture, and potential trap sites. The available data on the Tertiary sediments is derived from sparse drilling focused towards stratigraphy of basement, base metal exploration and construction of water bores. An Airborne Electromagnetic (AEM) survey across the tenement package enables the mapping of Tertiary sequences and highlights potential palaeochannels. Interpretation of the AEM survey enables target generation drilling programs.
5. WORK COMPLETED DURING YEAR ENDING 2014

Work conducted on the Davenport Project during the year ending 2014 consisted of land access negotiations with Central Land Councils (CLC), an Electromagnetic geophysical survey (VTEM) and preparation and planning for a drilling program to be conducted during 2014. As part of the round 6 Northern Territory collaborative funding for geophysical program, Areva was granted $100,000 for the Airborne Electro-magnetic survey. The survey took place in September 2013. A Final Technical report compiling all results was provided to the Northern Territory Government on the 10/12/2013.

5.1. LAND ACCESS NEGOTIATIONS

Initial discussions and negotiations with the Central Land Council (CLC) began in 2013. An on-country meeting occurred in March 2014 and an Agreement was signed in April 2014 between Areva, the CLC, The Native Title Party, Kaytetye Tywertate Arenge Aboriginal Corporation and the Mpwerempwer Aboriginal Corporation.

Prior to any on ground disturbance, a sacred site survey will occur.

5.2. VTEM SURVEY

During the reporting period, a Versatile Time Domain Electromagnetic (VTEM) survey was conducted in September 2013 covering EL28211, EL28213, and EL28214. An AEM survey was used as it is a time and cost effective method to resolve Tertiary sedimentary architecture and structural features over a large area.

The main objective was to map shallow conductive features that could be interpreted as palaeochannels.

5.2.1. VTEM Technical Parameters

Flight lines were orientated at N60° (perpendicular to expected palaeochannel direction at N150°), line spacing was fixed at 500m and tie lines every 5,000m for a total survey distance of 2,512 line km (Table 3).

<table>
<thead>
<tr>
<th>Project</th>
<th>EL28211 Covered Area</th>
<th>EL28213 Covered Area</th>
<th>EL28214 Covered Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line orientation</td>
<td>N 60° E / N 240° E</td>
<td>N 60°E / N 240° E</td>
<td>N 60°E / N 240° E</td>
</tr>
<tr>
<td>Line spacing</td>
<td>500 m</td>
<td>500 m</td>
<td>500 m</td>
</tr>
<tr>
<td>Tie-Line spacing</td>
<td>5,000 m</td>
<td>5,000 m</td>
<td>5,000 m</td>
</tr>
</tbody>
</table>
VTEM data was inverted using InvTEMv2.0 software. This software is an in-house AREVA MINES software. Given the geological context (sedimentary basins), 1D inversion is suitable and inversion artefacts are limited. A lateral constrain was applied to regularize inversion along each profile. Each dataset was inverted using a 25-layer model and the maximum depth was fixed to 300 m. The thickness of each layer is automatically determined by the software based on the sensitivity.

For EL28211, additional inversions with a deeper maximum depth was made in order to better characterise deep conductive bodies observed on the first depth sections.

5.2.2. Data Interpretation

For each tenement, a series of conductivity depth sections were gridded using Geosoft Oasis Montaj.

Each section grid was geo-orientated in order to be used with 3D modelling or representation software. Conductivity sections were exported in jpeg 2000 format files.

Results of inversion have also been interpolated to create conductivity depth sections, from z=5 m to z=285 m, every 5 m.

5.2.3. VTEM Results

Conductive bodies which could be interpreted as sand palaeochannels were highlighted in all tenements (Figure 5).

An approximate 100m deep, 3km wide conductive body oriented north-north-west / south south-east is the most dominant feature found from the entire survey located on EL28211.

EL28213 shows a conductive body along the north-east border, orientated north-west / south-east increasing in width toward the north-west.

EL28214 shows a particularity with a south-west north-east conductive body within the northern part of the tenement. A second body is highlighted in the southern corner of the tenement and appears to be oriented north-west / south-east.
These conductive bodies will be drill-tested in 2014 to delineate the geometry, sedimentology, redox potential and reservoir quality of the Tertiary and Devonian Formations within the Georgina and Wiso Basins.
Figure 5: Davenport Project - VTEM Survey results - Conductivity at 100m deep for EL28211 and 80m deep for ELs 28213 and 28214.
6. CONCLUSION AND RECOMMENDATIONS

The VTEM geophysical survey performed during the reporting year highlighted interesting conductive bodies interpreted as Tertiary palaeochannels. The Devonian sandstones are still considered an exploration target and both the Tertiary and Devonian Formations will be drill-tested during the next reporting period.
REFERENCES


