

**TYSON RESOURCES PTY LTD**

**TECHNICAL REPORT**

**EL 23045 "RODINGA"**

***Northern Territory***

**Annual Report for the year ending  
2<sup>nd</sup> July 2003**

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**DATE** June 2003

## **KEY WORDS**

RODINGA  
BITTER SPRINGS FORMATION  
PROTEROZOIC  
CHANDLER FORMATION  
MAGELLAN PETROLEUM  
BLUEBUSH FORMATION  
AMADEUS FORMATION  
GILLEN MEMBER  
DIAPIR  
ISOPACH

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**TYSON RESOURCES PTY LTD****EL 23045 "RODINGA"  
NORTHERN TERRITORY  
Annual Report for the  
Year Ending 2nd July 2003****SUMMARY****AIM**

To explore and evaluate the potential for economic base and precious metal mineralisation.

**OBJECT of REPORT**

To document exploration activities and results achieved on Exploration Licence 23045 "Rodinga" and to report these to the Department of Mines and Energy, Northern Territory.

**LOCATION**

EL 23045 is located 120 kilometres south east of Alice Springs on the Rodinga 1: 250 000 map sheet (SG53-2).

**TENURE**

EL 23045 "Rodinga" was granted to Tyson Resources Pty Ltd on 2nd July 2002 for a period of six years. It is bounded by Longitudes 135<sup>0</sup>33' and 134<sup>0</sup>54' and Latitudes 24<sup>0</sup>18' and 24<sup>0</sup>32'.

**PRECIS**

During this reporting year, a review of all previous work and investigations was completed with a view to selecting targets for potash exploration, based largely on petroleum data.

**RECOMMENDATIONS**

Further seismic interpretation to locate position of test wells.

## M. RUANE

### EL 23045 "RODINGA" NORTHERN TERRITORY

#### Annual Report for the Year Ending 2nd July 2003

## 1. INTRODUCTION

Exploration Licence 23045 "Rodinga" (EL 23045), is located in the southeastern sector of the Amadeus Basin in the Northern Territory (Figure 1). The Amadeus Basin covers approximately 150,000km<sup>2</sup> and is located in the southwestern part of the Northern Territory extending into Western Australia. It is comprised of a Neoproterozoic to mid-Palaeozoic succession of shallow marine sediments and attains a thickness of up to 14,000m.

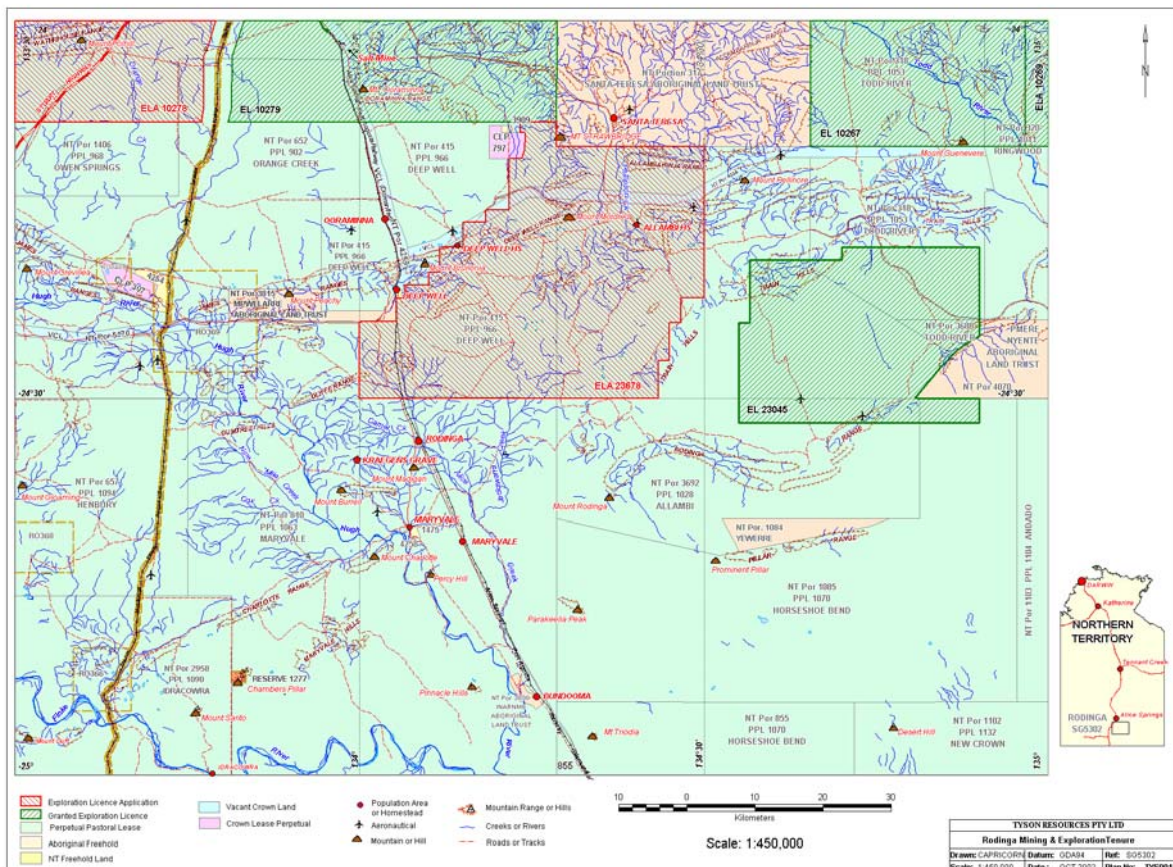
The purpose of this report is to detail exploration conducted on EL 23045 during the year ended 1<sup>st</sup> July 2003.

## 2. LOCATION and ACCESS

EL 23045 is located 120 kilometres south east of Alice Springs on the Rodinga 1:250 000 map sheet (SG53-2). (See Figure 1).

Access is via a graded gravel road to Allambri Station. Historical exploration and mine tracks, as well as limited station tracks provide local access throughout the tenement which is located over a portion of the Rodinga Pastoral Lease.

Fig 1  
Location Diagram



### 3. TENURE

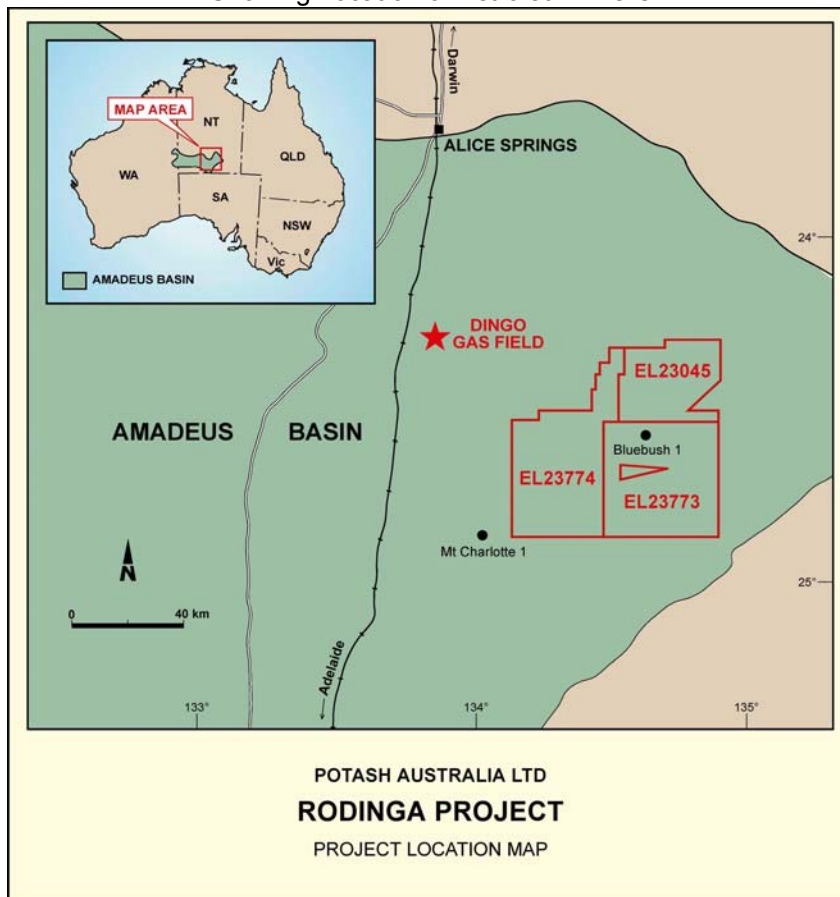
EL 23045 "Rodinga" was granted to Tyson Resources Pty Ltd on 2<sup>nd</sup> July 2002 for a period of six years. It comprises 271 blocks encompassing a total area of 826 sq km.

### 4. GEOLOGICAL SETTING

EL 23045 lies on the Rodinga 1: 250 000 map sheet (SG53-2), for which geological notes are available.

The Amadeus Basin contains two sequences prospective for potash mineralisation; the Neoproterozoic Bitter Springs Formation and the Early Cambrian Chandler Formation. Both of these formations occur within the basin at exploitable depths.

Figure 2  
Showing Location of Petroleum Wells



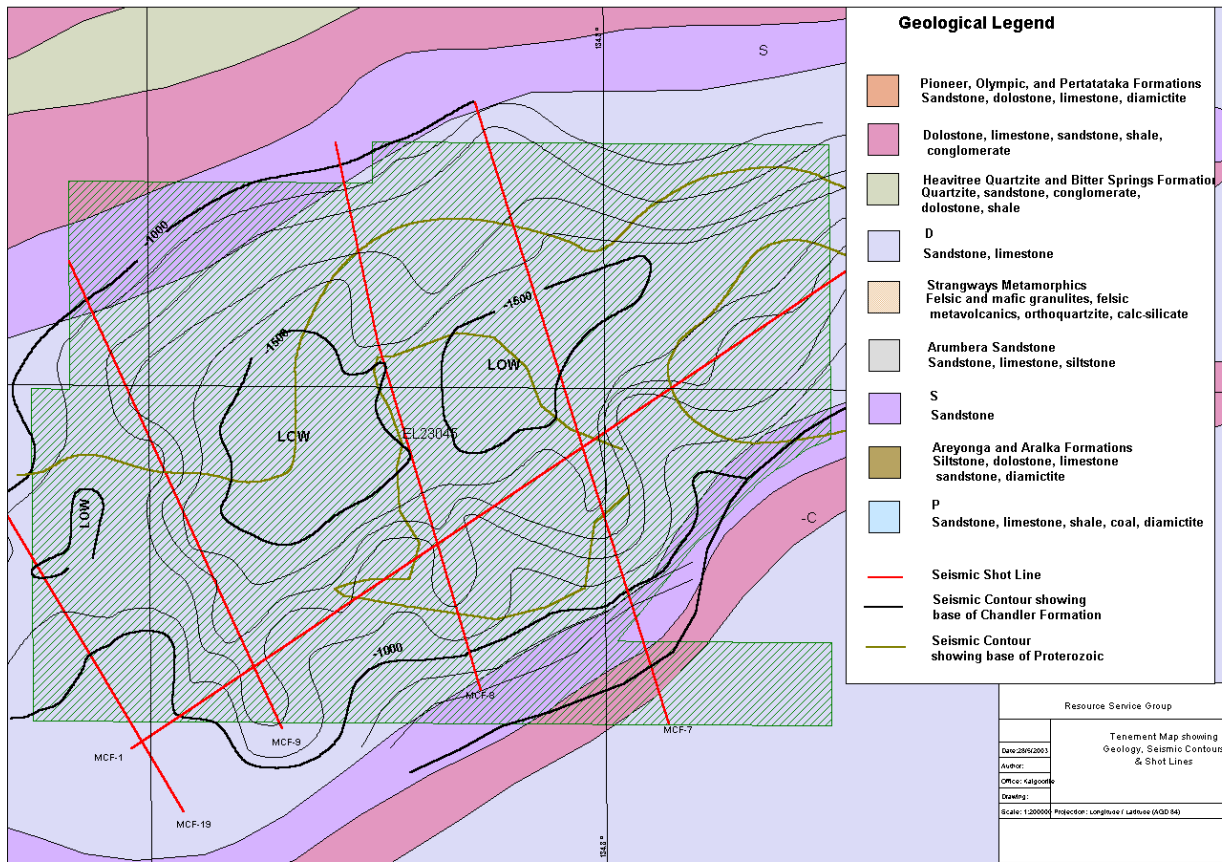
### 4. PREVIOUS EXPLORATION

In 1982, Magellan Petroleum carried out a seismic survey on an area called Camel Flat, part of which is covered by the tenement. A total of six seismic lines (MCF 1,7,8,9, and 10) were shot, the positions of which are shown in Figure 3. The area has been geologically mapped as the Camel Flat Nappe. From the seismic interpretation a series of isopach maps were produced displaying the following:

- Depth to bottom of the Chandler Formation
- Depth to the bottom of the Proterozoic
- Combined Chandler-Arumbera Isopach

These interpretations were combined to produce a map indicating areas where the Chandler Formation was at its lowest, providing a target zone for end stage bitens to collect, including potash. The tenement was sited to cover this target zone. (Fig 3)

Fig 3



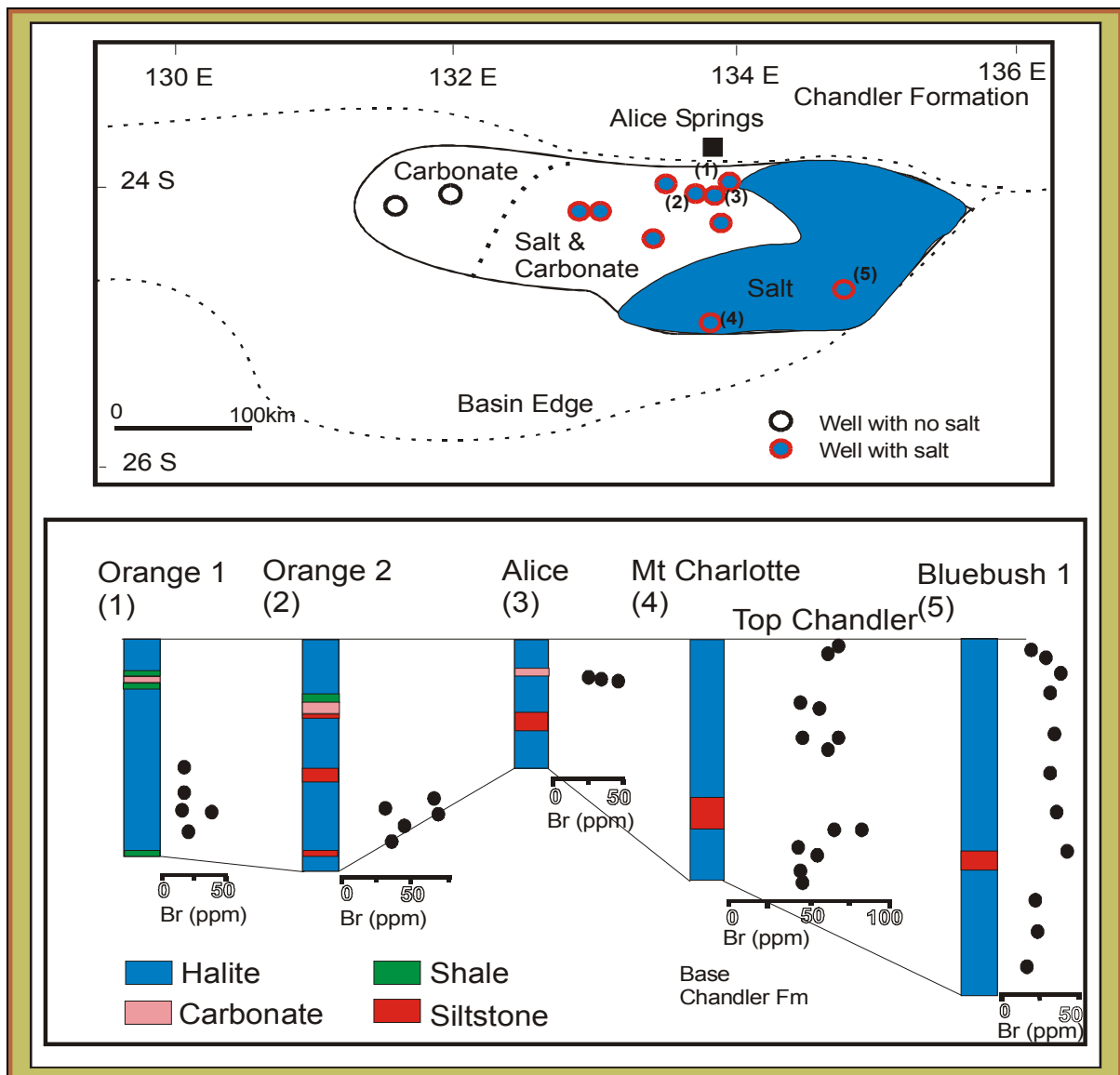
## 5. DISCUSSION AND RECOMMENDATIONS

The Chandler Formation is the primary target for potash mineralisation. In the eastern part of the Amadeus Basin, the Chandler Formation contains thick sequences of evaporitic rocks. Halite beds range in thickness from less than 50m to over 1,000m and average 470m thick in the Rodinga area. These thickness variations are accentuated in areas of structural thickening due to salt tectonics. Within the Rodinga project area the Mt Charlotte No1 well intersected a 225m thick section of Chandler Formation halite from 710 metres depth to the bottom of the hole and the Bluebush No1 well intersected 690m of halite from 786 metres depth (Fig 4). These intersections occurred between depths of 700 and 1,500m, within the depth range of economic exploitation. The Chandler salt has high bromine levels that suggest precipitation from late stage brines which is a positive indicator for the presence of potash salts.

The main Chandler Formation target interpreted from seismic surveys in the Rodinga Project is a basinal depression target at Camel Flats, just north of Bluebush No1 (see Fig 2). Other targets are areas of thickening of the Formation in localised basinal depressions adjacent to salt diapirs and salt walls derived from the underlying Bitter Springs Formation. Potential exists for large flat-lying Canadian-type potash deposits as well as diapir related European-style potash deposits.

Figure 4  
Showing Wells with Salt Intersections





Further analysis will be carried out using existing and new geophysical, geochemical and geological data to better define potash mineralisation targets within the Chandler Formation.

Within the Bitter Springs Formation, the evaporitic Gillen Member is the target horizon for potash mineralisation. It was deposited in the Neoproterozoic and comprises interbedded carbonates, sulphates and halite beds typical of a marine evaporitic sequence. It is widely distributed throughout the Amadeus Basin covering an area significantly greater than the Chandler Salt. The thickness of the Gillen member averages 800m but varies from 100m to more than 2,000m with the thickening of the beds mainly due to salt tectonism. Halite units are common within the Gillen Member but have been poorly tested by drilling, with a number of holes terminating in halite units at considerable depths.

In the Rodinga project area, two drill holes ended in the Gillen Member, Mt Charlotte No1 after intersecting 556m and Bluebush No1 after intersecting 85m of this formation. Halite beds up to 60m thick were intersected in the Gillen Member in the Mt Charlotte hole.

Bromine levels in the Gillen Member vary from 130-190ppm indicating precipitation of salts occurred from late stage brines. Potential exists for both large, flat-lying, Canadian style as well as diapir related potash mineralisation within the Bitter Springs Formation. Further work is required to establish the best target areas for potash mineralisation.

**REFERENCES**

Gibson G., 1982 Camel Flat Seismic Survey OP189. Magellan Petroleum Australia Ltd. October 1982

**M. Ruane****EL23045 .RODINGA****STATEMENT OF EXPENDITURE FOR 12 MONTHS ENDED JULY 2, 2003**

LABOUR MEX	0	
SUPPLIES & SERVICE –OFFICE FIXED	2200	
INFRASTRUCTURE	0	
PERSONNEL COSTS -FIXED	0	
PERSONNEL COSTS –VARIABLE	0	
MISC GOVERNMENT CHARGES	323	
SUPPLIES & SERVICE -OFFICE VARIABLE	0	
SUPPLIES & SERVICE -FIELD	0	
TRAVEL & ACCOMMODATION	0	
DRILLING	0	
CONTRACT & CONSULTANT SERVICES	55,000	
INTERNAL GEOPHYSICS .	770	
GEOPHYSICS	0	
GEOCHEMICAL	0	
RESEARCH	0	
LABOUR -EXTERNAL	0	
JOINT VENTURE CONTRIBUTIONS	0	
LAND TENURE & ENVIRONMENT	345	
<b>TOTAL DIRECT COST</b>		<b>58,638</b>
ADD: TECHNICAL SUPPORT & ADMINISTRATION		2,111
<b>TOTAL CURRENT TERM</b>		<b>60,749</b>

**M. Ruane****EL23045 .RODINGA****STATEMENT OF PROPOSED EXPENDITURE FOR 12 MONTHS ENDED JULY 2, 2004**

SUPPLIES & SERVICE –OFFICE FIXED	2500	
MISC GOVERNMENT CHARGES	300	
SUPPLIES & SERVICE -FIELD	0	
TRAVEL & ACCOMMODATION	3000	
DRILLING	0	
CONTRACT & CONSULTANT SERVICES	45,000	
INTERNAL GEOPHYSICS .	770	
GEOPHYSICS	0	
GEOCHEMICAL	0	
RESEARCH	6000	
LAND TENURE & ENVIRONMENT	300	
<b>TOTAL DIRECT COST</b>		<b>57,870</b>
ADD: TECHNICAL SUPPORT & ADMINISTRATION		2,000
<b>TOTAL CURRENT TERM</b>		<b>59,870</b>