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# **GEL 241 and 242 – Renmark**

## **Annual Report Year 1**

**26 February 2007 – 25 February 2008**

**GEL 241 and 242 – Renmark**  
**Combined Annual Report Year 1**  
**26 February 2007 – 25 February 2008**

**Contents**

**1. Introduction**

**2. Work Requirements**

**3. Work Conducted**

3.1 Geological and Geophysical Review

3.2 Modelling and Interpretation of Geophysical Data

3.3 Historical bore hole thermal data collection, analysis and petrographic study

3.4 Theoretical modelling of thermal and stress regimes

3.5 Economic modelling Study

**4. Year 4 Expenditure**

**5. Operations Proposed for Year 1**

**6. Compliance with the Petroleum Act 2000 (Reg. 33)**

## 1. Introduction

Renmark GELs 241/242 were granted to MNGI Pty Ltd, a wholly owned subsidiary of Petratherm Ltd, on 26<sup>th</sup> February 2007. Petratherm Ltd listed on the Australian Stock Exchange on the 27<sup>th</sup> July 2004, following the successful completion of a \$4,000,000 public offering.

The Murray Basin represents a widespread shallow Tertiary feature of marine sediments. To the north and west the basin is bound by Archaean, Proterozoic and Cambrian sediments. Underlying the Murray Basin is the Early Cretaceous Berri Basin and Early Permian Nadda Basin. Furthermore a major structural feature of the Murray Basin is the Palaeozoic, northeast trending Renmark Trough.

## 2. Work Requirements

The work program negotiated for Year 1 by MNGI Pty Ltd with Primary Industries and Resources South Australia (PIRSA) for the Renmark GELs 241/242 was as follows.

Year of License	Work Program
1	<ul style="list-style-type: none"><li>• Geological and geophysical review</li><li>• Modelling and interpretation of geophysical data</li><li>• Historical borehole thermal data collection and analysis and petrographic study</li><li>• Theoretical modelling of thermal and stress regimes</li><li>• Economic modelling study</li></ul>

## 3. Work Conducted

### 3.1 Geological and geophysical review

During the first year of the licence, Petratherm's technical studies have focused on the collection and review of available open file data including well logs and well completion reports relating to the Renmark tenement and surrounding areas. This data was then synthesised interpreted in terms of geophysics. This included magnetic and gravity modelling. The aim of this interpretation was to delineate the depth to basement and hence the thickness of the sedimentary units in the Renmark Trough.

### 3.2 Modelling and Interpretation of Geophysical Data

Compilation of regional aeromagnetic and gravity datasets has been completed and modelling and inversion of this data is in progress. A final report on this work is expected to be received by Petratherm in the near future, and will be subsequently forwarded.

### **3.3 Historical bore hole thermal data collection, analysis and petrographic study**

Available thermal data from existing exploration holes has been collected and reviewed. Review of the published literature has been undertaken to establish a database of thermal conductivity values from a range of rock types, for use in theoretical thermal modelling. Core was inspected at the PIRSA Core Library which resulted in the sampling and analysis of seven samples (Inspection No. 2715). A thermal conductivity analyses on the core samples was completed by a contractor, a report on these results has previously been sent to PIRSA.

### **3.4 Theoretical modelling of thermal and stress regimes**

Preliminary modelling of the in situ thermal and stress regimes was initiated using a range of input variables, however in the absence of historical temperature or stress data from open file sources, Petratherm sought advice from PIRSA on the possibility and appropriate protocol of re-entering some of the historical drill holes in the Renmark tenements and re-logging the holes. The ability to conduct wireline temperature logging within these holes would allow the sensitivity of our thermal modelling to be increased. Discussions with PIRSA personnel however were discouraging due largely to the liability implications should the integrity holes be found to be compromised as a result of normal depreciation with time or through Petratherm's activities.

A field trip was conducted to the Renmark tenements in an effort to locate the existing wells. Due to the inaccuracy of the recorded coordinates the wells were not located. We are currently using other resources and talking with locals in an effort to locate the wells.

### **3.5 Economic modelling Study**

There has been some preliminary economic modelling completed on transmission solutions for the Renmark Tenements. This preliminary modelling work has shown that the commercial aspects of the area appear to be favourable.

## **4. Year 1 Expenditure**

Commercial in Confidence

## 5. Operations Proposed for Year 2

The work program for Year 2 of the Renmark tenements will be aimed at increasing understanding of the local geology and in situ thermal regime, and assessing potential targets. Petratherm will attempt to locate existing wells using local knowledge of previous drilling activity in order to conduct wireline logging within these holes. Firm thermal conductivity and temperature data from these holes would allow the sensitivity of our thermal modeling to be increased.

Year of License	Work Program
2	<ul style="list-style-type: none"><li>• Commercial negotiations for funding</li><li>• Final target selection</li><li>• Surface Geophysical Surveys</li><li>• Well Engineering</li></ul>

## 6. Compliance with the Petroleum Act 2000 (Reg. 33)

### a) Summary of the regulated activities conducted during the license year

Petratherm did not undertake any regulated activities as defined under the Petroleum Act in GELs 241 and 242 during the licence year.

### b) Report for the year on compliance with the Act, these regulations, the license and any relevant statement of environmental objectives.

Given that no regulated activities were undertaken in the licence year, many of the regulations are inapplicable at this stage, and no compliance breaches have been noted.

### c) Actions taken to rectify non-compliance with obligations imposed by the Act, these regulations or the license, and to minimise the likelihood of recurrence of any such non-compliance; and d) summarise any management system audits undertaken during the relevant license year including and information on any failure or deficiency identified by the audit and any corrective actions that has, or will be, taken

Petratherm Ltd recognises the importance of achieving regulatory compliance and is committed to achieving best practice in its management strategies, work practices and procedures, in an environmentally and socially responsible manner. Petratherm has a policy of continuing review and improvement in the developing of management systems to ensure it meets this commitment.

At present documented management systems include an Environmental and Operational Health and Safety Manual, Field Operations Manual, and Standard Operating Procedures Manuals for individual tenements/projects. A computer based tracking system has been implemented to ensure compliance with all regulations and obligations under the Act.

### e) List all reports and data relevant to the operation of the Act generated by the licensee during the license year

Much of the work conducted during the first licence year has been focused on the collection of various open file datasets and collation of this data into GIS format databases. No new geophysical surveys relating to the tenement have been acquired, however new thermal conductivity data for representative sedimentary units in the cover sequence have been analysed. Reports relating to this work have been forwarded to PIRSA.

<b>Author</b>	<b>Title</b>	<b>Date</b>	<b>Activity</b>	<b>GEL</b>	<b>Submitted</b>
Petratherm	Results of Thermal Conductivity Analysis of Selected Core Samples from the Renmark Trough	Feb 2007	Analysis	GEL 241 and 242	19/02/07
Petratherm	PIRSA Inspection No. 2715	Sept 2006	Analysis	GEL 241 and 242	Sept 2006
Petratherm	Thermal Conductivity results from Hot Dry Rocks Pty Ltd	Nov 2006	Analysis	GEL 241 and 242	March 2007

**f) Report on any incidents reportable to the Minister under the Act and regulations during the relevant licence year**

No reportable incidents occurred during this licence year.

**g) Report on any reasonably foreseeable threats that reasonably present, or may present, a hazard to facilities or activities under the license, and report on any corrective action that has, or will be, taken**

No threats have been identified.

**h) Operations imposed for the ensuing year**

A discussion of the proposed work program for Year 2 of Renmark is presented in Section 5 above.