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GEL 158 – Ferguson Hill

Annual Report Year 5

21 January 2008 – 03 November 2009

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21 January 2008 – 03 November 2008

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1. Introduction

Ferguson Hill GEL158 was granted to MNGI Pty Ltd, a wholly owned subsidiary of Petratherm Ltd, on 20th January 2004. Petratherm Ltd listed on the Australian Stock Exchange on the 27th July 2004, following the successful completion of a \$4,000,000 public offering.

Ferguson Hill represents the informally known Radiogenic Iron Oxide (RIO) model for hot rock energy. The measured heat production rates in RIO bodies may be as much as 50 times greater than those from average granite. Under favourable conditions, temperatures as high as 200°C may be generated at depths of around 3km.

2. Work Requirements

The work program negotiated for Year 5 by MNGI Pty Ltd with Primary Industries and Resources South Australia (PIRSA) for the Ferguson Hill GEL 158 was as follows.

Year of License	Work Program
5	<ul style="list-style-type: none">• Drill 1 test well or re-enter existing well• Down hole thermal analysis• Drill injection well / convert test well• Down hole stress analysis• Reservoir development & modelling• Drill trial production well• Fracture, circulation and recovery tests.

3. Work Conducted

3.1 Thermal Modelling

Final processed data results obtained in the year 5 work period, from geophysical survey work carried near the end of licence Year 4 tested the Ferguson Hill play, with negative results. These findings meant that there was no requirement to drill a test well and undertake the subsequent work as laid out in the original work program. For this reason Petratherm surrendered the licence.

Initial work comprised modelling a magneto-telluric survey which clearly defined a shallow basement surface at 2 kilometres depth. The company has well constrained thermal conductivity control from the core of two historical deep wells drilled over the Ferguson Hill body, SR 17/2 drilled to 1450m and FHD 1 drilled to 743.8m.

The company then built a revised 2D thermal model utilising the thermal conductivity data, the new depth to basement data, and assuming an exceptionally high heat flow of 130 mWm⁻² (based on data obtained from the Olympic Dam and Prominent Hill

Radiogenic Iron Oxide (RIO) ore bodies). The model yielded a poor thermal gradient, averaging 34 °C per kilometre and a bottom hole temperature of approximately 158 °C at 4km.

These findings highlighted that even with an exceptionally high heat flow; there is no high temperature resource at depth because of the thin cover sequence, which has on average a relatively high thermal conductivity. Finally a revised financial model for the geothermal system was constructed confirming the project was not commercially viable.

3.2 Environmental Audit of 2007 Magneto-telluric Survey

During March 2008 Petratherm completed and submitted an Environmental Audit of the 2007 Magneto-telluric Survey which was undertaken on GELs 156 and 178). The Audit results were submitted to PIRSA pursuant to the Statement of Environmental Objectives for ground based Geophysical Operations in South Australia (August 2007).

4. Year 5 Expenditure

See Appendix 1.

5. 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 defined under the Petroleum Act in GEL158 during this license year.

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

The Company did not conduct any regulated activities, as the tenement was surrendered for reasons outlined in section 3. The Company did not undertake the year 5 work plan and therefore is non-compliant.

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

The registered non-compliance with respect to the year 5 work program specifically relates to the Company not managing the exploration campaign in the timeframe of the formal work program. The Company renewed the year 5 licence before final results of the year 4 work program had been completed. In hindsight the Company should have sought a temporary suspension of GEL158 prior to the end of the year 4 program to allow the proper interpretation of the data. With this information at hand

the Company would have been in a position to surrender the licence before the year 5 period had begun. Since this breach, staff have undergone a formal education process on exploration requirements as administered by the Petroleum 2000 Act. In addition the Company has incorporated within its tenement management system a work activity approval checklist prior to entering a new tenement licence year.

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

Author	Title	Date	Activity	GEL	Submitted
Petratherm	Year 4 Annual Report for Ferguson Hill	Mar 2008	Annual Report	GEL 158	17/3/08
Petratherm	Environmental Audit Report on Magneto-telluric Survey	April 2008	Env Audit	GEL158	15/04/08
Petratherm	Quarterly incident and cased hole activity report 1st quarter 2008	Jan-Mar 2008		GEL158	Apr 2008
Petratherm	Quarterly cased hole activity report and incident reports 2nd quarter 2008	Apr-June 2008		GEL158	July 2008
Petratherm	Quarterly incident and cased hole activity reports 3rd quarter 2008	Jul-Sept 2008		GEL158	Oct 2008
Petratherm	Surrender letter		Licence Surrender	GEL 158	31/10/08
Petratherm	Magneto-telluric Operations Report			GEL 158	07/11/08
Petratherm	Magneto-telluric Interpretation Report			GEL 158	07/11/08

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

Final year of licence

Appendix 1

Year 5 Combined Expenditure

Commercial in Confidence