

**Geothermal Exploration License 98 Annual Report for 2002
Revised as requested by 30 September 2003**

Introduction

GEL 98 was granted to Geodynamics Limited on 2nd October 2001. Work for the year was aimed at fulfilling the guaranteed 1st years work program negotiated with Primary Industries and Resources South Australia (PIRSA). None of the activities for the year are Regulated Activities in the sense of the Petroleum Act 2000.

Location for Main Injection Well

Once Geodynamics had acquired South Australian Geothermal Energy Pty Ltd (SAGE), the owners of GEL97 on 8 May 2002, a matrix type analysis was carried out to determine the optimal site for the main injection well, now named Habanero 1. Two general locations were considered for the first well, in the vicinity of the Burley wells in GEL 97 and adjacent to McLeod 1 in GEL 98. The main considerations in order of importance were:

Condition	Burley area	McLeod area
Flooding	Very prone	No concerns
Scale up (faults and granite top topography)	Seismic indicates no concerns	Seismic indicates no concerns
Granite type	High radiogenic content possibly more variation	Lower radiogenic content less variation
Stress field	S_h close to S_v	S_h more likely to be higher than S_v
Existing monitoring wells	Two wells available but condition uncertain	One well available with access to 2,800m
Temperature	245°C at granite contact	232°C at granite contact
Gravity anomaly	Closer to centre	South of centre
Water storage	Difficult	Good site
Depth to granite	3,600m	3,750m

Consultants were employed to study the existing seismic data covering the two regions with reinterpretation of the depth to granite over the areas, and a study of the likelihood of faults lying close to the proposed new well. After full discussion and analyses of these conditions McLeod 1 was determined as the best location to carry out the "Proof of Concept" despite the fact that the Burley area is know to be hotter.

Following the decision to locate Habanero 1 next to McLeod 1, much of the year was dedicated to design and permitting of the injection well. Non-technical reports associated with these activities have been presented to PIRSA in the document:

Operator Classification and Activity Notification Report & Bridging Document, including the Environmental Impact Report, Statement of Environmental Objectives, Aboriginal Work Area Clearance Agreement, Drilling Program, and HS&E document.

Other Activities

The reports included in studies covering GEL98 for the year are listed in Table 1. Many of these reports were undertaken by CSIRO in relation to GEL 97 owned by SAGE, which is in turn owned by Geodynamics Limited, and are also listed in the GEL 97 Year 1 Annual Report. However the reports are also entirely relevant to GEL 98 as well, and so are included here.

Table 1 – Year 1 Work Program Reports completed relating to Geothermal Potential of GEL 98

Author	Title	Digital file
C.J.Otto	Aquifer Pumping Test Simulations for Water requirements at the Hot Dry Rock Pilot Site near Innamincka, South Australia	pumpingtests (Water Study).doc
R.V. Halyburton	A Review of Bottom-Hole Temperature Estimation in McLeod-1, Cooper Basin, South Australia	BHT Analysis.doc
P.W. Schmidt and D.A. Clark	Magnetic and Gravity Models for Geothermal Exploration Licenses 97 and 98, South Australia	Hot Dry Rocks Restricted Report(Gravity&Magnetic).doc
R.V. Halyburton	Wire-Line Log Response in Granodiorite – A Review of Three Wells in the Cooper Basin, South Australia	Altered Granite Note.doc
B. Jensen-Schmidt	Burley & Macleod Area Granites Seismic Study Report for Geodynamics Ltd	Brent report.doc (plus tif images
Greg Beresford	McLeod-1 Transmission Properties	Greg beresford Report.doc
CSIRO	Risk and Uncertainty Management Project	HDR RUG progress 11Sep02.ppt
R.V. Halyburton	Analysis of possible Temperature/ Pressure Changes in a HDR System in the Cooper Basin, South Australia	P-T Sensitivity.doc
Milovan Urosevic	Geothermal project – reprocessing of seismic data and analysis	COOPER_REPORT (Seismic).ppt

Digital copies of the above files are attached to this report.

Reporting Against Requirements of the Petroleum Act 2000

(a) Summary of the regulated activities conducted under the licence during the year

Geodynamics did not embark on any regulated activities under the Petroleum Act 2000 in GEL 98 during the period. Digital copies of the reports of activities undertaken (see above Table) are attached to this report. None of these activities are regulated activities.

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

As no regulated activities were undertaken much of the regulations have no bearing on this Annual report. However there were two instances of non-compliance. (i) the reports listed in the Table above were not conveyed to PIRSA within the two month period from receiving them as laid down by the Regulation 47. (ii) The Annual Report was not received within 2 months after the end of the licence year as laid down by Regulation 33.

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

Geodynamics is putting into effect significant changes to its management system for undertaking activities under the Petroleum Act. The company has employed a Manager of Logistics and Compliance whose role will be to specifically track our activities under the Act and ensure that we comply with all Regulations. Computer based tracking systems are being implemented.

(e) List all reports and data relevant to the operation of the Act during the relevant licence year.

All reports are listed in the Table above. We have double checked our files and there are no other reports.

(f) Report of incidents reportable to the Minister under the Act and regulations

None reported.

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

No threats identified.

(h) Operations proposed for the ensuing year

Once a site near McLeod 1 in GEL98 was chosen for Habanero 1, Geodynamics' program became fully focused on its "Proof of Concept" program at this site. The program consists of:

- drilling an injection well to approximately 4500m into the basement granite
- deployment of micro-seismic monitoring network around Habanero 1
- hydraulic stimulation of open hole section in the granite
- hydraulic stimulation of perforated casing section in the granite
- drilling of second well into established underground heat exchanger
- circulation test of heat extraction between the two well

Given trouble free operations we expect to complete the program up to the drilling of the second well during the year 2 program.

Expenditure for year 1

Commercial in confidence