

**INDEX OF DOCUMENTS HELD ON THE PUBLIC REGISTER FOR  
GEOTHERMAL RETENTION LICENCE GRL 21**

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1. 19 January 2009 Grant of Geothermal Retention Licence GRL 21 (ex GEL 99)  
  
Interests: Geodynamics Limited 100%  
  
Expiry Date: 18 January 2014
2. 19 January 2009 Memorandum entering GRL 21 on the public register.
3. 22 January 2009 Gazettal of grant of licence.
4. 1 February 2010 Memorandum entering notation of the following documents on the public register.  
  
Letter Confirming Assignment of a 30% Interest in Geothermal Tenements dated 18 May 2009 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd.  
  
Ref: SA 2009-64  
  
Interests in the licence are:  
Geodynamics Limited 70%  
Origin Energy Geothermal Pty Ltd 30%  
  
Farmin Agreement dated 20 July 2009 between Geodynamics Limited, Origin Energy Geothermal Pty Ltd and Origin Energy Limited.  
  
Ref: SA 2009-65  
  
Joint Operating Agreement (Innamincka Joint Venture) dated 20 July 2009 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd.  
  
Ref: SA 2009-66
5. 13 July 2010 Memorandum entering notation of the following document on the public register.  
  
Memorandum of Understanding dated 24 February 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd.  
  
Ref: SA 2010-40
6. 20 August 2010 Memorandum entering notation of the following document on the public register.  
  
Deed of Cross Charge dated 2 August 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd.  
  
Ref: SA 2010-45
7. 26 November 2010 Variation of licence conditions

8. 26 November 2010 Memorandum entering variation of licence conditions on the public register.
9. 20 January 2011 Memorandum entering notation of the following document on the public register:  
  
Deed of Cross Charge (Shallows) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd  
  
Ref: SA 2010-66
10. 20 January 2011 Memorandum entering notation of the following document on the public register.  
  
Deed of Cross Charge (Deeps) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd  
  
Ref: SA 2010-67
11. 23 February 2011 Memorandum entering notation of the following documents on the public register.  
  
The Coordination Deed dated 12 November 2010 between Geodynamics Limited, Origin Energy Geothermal Pty Ltd and Origin Energy Electricity Limited.  
  
Ref: SA 2010-64  
  
The Joint Operating Agreement (Innamincka Shallows Joint Venture) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd  
  
Ref: SA 2010-65  
  
Deed of Amendment of Existing Deed of Cross Charge dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd  
  
Ref: SA 2010-68
12. 24 February 2011 Memorandum entering notation of receipt of security on the public register.
13. 14 June 2011 Memorandum entering notation of revision to security arrangements on the public register.

**Petroleum and Geothermal Energy Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES**  
**GELs 211, 268**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 20, 21, 22, 23, 24**

1. Notation of revision of security arrangements is hereby entered on the public register.



**BARRY A. GOLDSTEIN**  
**Executive Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources**  
**Development**

Date: 14 June 2011

File: 27/2/344, F2011/074,  
27/2/423, 27/2/424, 27/2/425,  
27/2/426, 27/2/427, 27/2/428,  
27/2/429, 27/2/430, 27/2/431,  
27/2/432, 27/2/550

**Petroleum and Geothermal Energy Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCE**  
**GEL 268**

**AND**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 20, 21, 22, 23 and 24**

1. Notation of receipt of security is hereby entered on the public register.



**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources**  
**Development**

Date: 24 February 2011

File: F2011/000074  
27/2/550

**Petroleum and Geothermal Energy Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 20, 21, 22, 23 and 24**

**and**

**GEOHERMAL EXPLORATION LICENCE**  
**GEL 211**

- SA 2010-64 Notation of the Coordination Deed dated 12 November 2010 between Geodynamics Limited, Origin Energy Geothermal Pty Ltd and Origin Energy Electricity Limited is hereby entered on the public register.
- SA 2010-65 Notation of the Joint Operating Agreement (Innamincka Shallows Joint Venture) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.
- SA 2010-68 Notation of the Deed of Amendment of Existing Deed of Cross Charge dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.



**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

Date: 23 February 2011

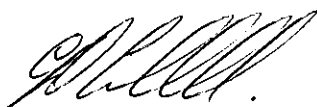
Ref: 27/2/344            27/2/428  
27/2/423            27/2/429  
27/2/424            27/2/430  
27/2/425            27/4/431  
27/2/426            27/2/432  
27/2/427            27/2/550

**Petroleum and Geothermal Energy Act 2000  
S.115**

**MEMORANDUM**

**GEOHERMAL RETENTION LICENCES  
GRLs 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 20, 21, 22, 23 and 24  
GEOHERMAL EXPLORATION LICENCE  
GEL 211**

- SA 2010-66 Notation of the Deed of Cross Charge (Shallows) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.
- SA 2010-67 Notation of the Deed of Cross Charge (Deeps) dated 12 November 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.



**C. D. COCKSHELL  
A/Director Petroleum and Geothermal  
Minerals and Energy Resources  
Primary Industries and Resources SA  
Delegate of the Minister for Mineral Resources Development**

Date: 20 January 2011

Ref: 27/2/344            27/2/428  
27/2/423            27/2/429  
27/2/424            27/2/430  
27/2/425            27/4/431  
27/2/426            27/2/432  
27/2/427            27/2/550

***Petroleum and Geothermal Energy Act 2000***  
**S.115**

**MEMORANDUM**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 20, 21, 22, 23 and 24**

1. Variation of licence conditions is hereby entered on the public register.



**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

Date: 26 November 2010

Ref: 27/2/550

# Petroleum and Geothermal Energy Act 2000

## VARIATION OF GEOTHERMAL RETENTION LICENCES GRLs 20, 21, 22, 23 and 24

I, BARRY ALAN GOLDSTEIN, Director Petroleum and Geothermal, Minerals and Energy Resources, Department of Primary Industries and Resources, in the State of South Australia, pursuant to section 76(3)(b) of the *Petroleum and Geothermal Energy Act 2000* and all other enabling powers, for and on behalf of Paul Holloway, Minister for Mineral Resources Development (Minister), pursuant to delegated powers dated 1 October 2009 hereby vary the conditions of Geothermal Retention Licences GRLs 20, 21, 22, 23 and 24 held by -

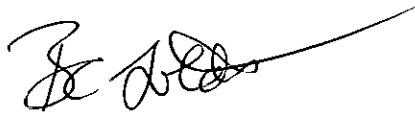
**Geodynamics Limited** ACN 095 006 090

**Origin Energy Geothermal Pty Ltd** ACN 128 159 277

The geothermal retention licences are varied by amending the licences granted 19 January 2009 as follows:

Clause 8 of the licence is hereby revoked.

Dated: 26 November 2010



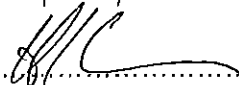
**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

The following signature evidences the consent of the Licensees to the Variation of Conditions of Geothermal Retention Licences GRLs 20, 21, 22, 23 and 24 as set out in this document and made pursuant to Section 76(3)(b) of the *Petroleum and Geothermal Energy Act 2000*.

Executed for and on behalf of:

**Geodynamics Limited** ACN 095 006 090

Date..... 23/11/10 .....

Signature.....  .....

Name..... HOWARD COMBES .....

Position..... ENVIRONMENT & APPROVALS MANAGER .....

Executed for and on behalf of:

**Origin Energy Geothermal Pty Ltd** ACN 128 159 277

Date..... 22-11-10 .....

Signature.....  .....

Name.....

Position..... Owen Hobbs  
Eastern Australia Onshore Asset Manager  
Upstream Oil & Gas Australia .....

**Petroleum and Geothermal Energy Act 2000  
S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCE  
GEL 211**

**GEOHERMAL RETENTION LICENCES  
GRLs 3, 4, 5, 6, 7, 8, 9, 10, 11,  
12, 20, 21, 22, 23 and 24**

SA 2010-45 Notation of registrable dealing as evidenced by Deed of Cross Charge dated 2 August 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.



**BARRY A. GOLDSTEIN  
Director Petroleum and Geothermal  
Minerals and Energy Resources  
Primary Industries and Resources SA  
Delegate of the Minister for Mineral Resources  
Development**

Date: 20 August 2010

Ref:	27/2/344	27/2/428
	27/2/423	27/2/429
	27/2/424	27/2/430
	27/2/425	27/2/431
	27/2/426	27/2/432
	27/2/427	27/2/550

**Petroleum and Geothermal Energy Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCE**  
**GEL 211**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 3, 4, 5, 6, 7, 8, 9, 10, 11,**  
**12, 20, 21, 22, 23 and 24**

SA 2010-40 Notation of registrable dealing as evidenced by Memorandum of Understanding dated 24 February 2010 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.



**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources**  
**Development**

Date: 13 July 2010

Ref: 27/2/344	27/2/428
27/2/423	27/2/429
27/2/424	27/2/430
27/2/425	27/2/431
27/2/426	27/2/432
27/2/427	27/2/550

**Petroleum and Geothermal Energy Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 3, 4, 5, 6, 7, 8, 9, 10,**  
**11, 12, 20, 21, 22, 23 AND 24**

**GEOHERMAL EXPLORATION LICENCE**  
**GELs 211**

SA 2009-64 Notation of registrable dealing as evidenced by Letter Confirming Assignment of a 30% Interest in Geothermal Tenements dated 18 May 2009 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register.

Interests in the licences are:

Geodynamics Limited	70%
Origin Energy Geothermal Pty Ltd	30%

SA 2009-65 Notation of registrable dealing as evidenced by Farmin Agreement dated 20 July 2009 between Geodynamics Limited, Origin Energy Geothermal Pty Ltd and Origin Energy Limited is hereby entered on the public register.

SA 2009-66 Notation of registrable dealing as evidenced by Joint Operating Agreement (Innamincka Joint Venture) dated 20 July 2009 between Geodynamics Limited and Origin Energy Geothermal Pty Ltd is hereby entered on the public register



**MICHAEL MALAVAZOS**  
**A/Director - Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

Date: 1 February 2010

Ref:	27/2/344	27/2/428
	27/2/423	27/2/429
	27/2/424	27/2/430
	27/2/425	27/2/431
	27/2/426	27/2/432
	27/2/427	27/2/550

## PETROLEUM ACT 2000

*Grant of Geothermal Retention Licences—GRLs 20, 21, 22, 23 and 24*

PURSUANT to section 92 (1) of the Petroleum Act 2000, notice is hereby given that the undermentioned Geothermal Retention Licences have been granted under the provisions of the Petroleum Act 2000, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

No. of Licence	Licensee	Locality	Date of Expiry
GRL 20	Geodynamics Limited	Cooper Basin of South Australia	18 January 2014
GRL 21			
GRL 22			
GRL 23			
GRL 24			

*Description of Area—GRL 20*

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 28°02'00"S GDA94 and longitude 140°09'00"E GDA94, thence east to longitude 140°14'35"E GDA94, south to latitude 28°07'05"S GDA94, west to longitude 140°08'00"E GDA94, north to latitude 28°03'00"S GDA94, east to longitude 140°09'00"E GDA94 and north to the point of commencement.

Area: 98.2 km<sup>2</sup> approximately.

*Description of Area—GRL 21*

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 28°07'05"S GDA94 and longitude 140°08'00"E GDA94, thence east to longitude 140°14'35"E GDA94, south to latitude 28°13'00"S GDA94, west to longitude 140°11'00"E GDA94, north to latitude 28°12'00"S GDA94, west to longitude 140°10'00"E GDA94, north to latitude 28°11'00"S GDA94, west to longitude 140°09'00"E GDA94, north to latitude 28°10'00"S GDA94, west to longitude 140°08'00"E GDA94 and north to the point of commencement.

Area: 99.6 km<sup>2</sup> approximately.

*Description of Area—GRL 22*

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 28°02'00"S GDA94 and longitude 140°14'35"E GDA94, thence east to longitude 140°17'35"E GDA94, south to latitude 28°13'00"S GDA94, west to longitude 140°14'35"E GDA94 and north to the point of commencement.

Area: 99.7 km<sup>2</sup> approximately.

*Description of Area—GRL 23*

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 28°02'00"S GDA94 and longitude 140°17'35"E GDA94, thence east to longitude 140°20'00"E GDA94, south to latitude 28°03'00"S GDA94, east to longitude 140°23'00"E GDA94, south to latitude 28°04'00"S GDA94, east to longitude 140°24'00"E GDA94, south to latitude 28°07'55"S GDA94, west to longitude 140°17'35"E GDA94 and north to the point of commencement.

Area: 99.7 km<sup>2</sup> approximately.

*Description of Area—GRL 24*

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 28°07'55"S GDA94 and longitude 140°17'35"E GDA94, thence east to longitude 140°24'00"E GDA94, south to latitude 28°13'00"S GDA94, west to longitude 140°17'35"E GDA94 and north to the point of commencement.

Area: 98.5 km<sup>2</sup> approximately.

Dated 19 January 2009.

M. MALAVAZOS, Acting Director Petroleum and Geothermal  
Minerals and Energy Resources  
Primary Industries and Resources SA  
Delegate of the Minister for Mineral Resources Development

***Petroleum Act 2000***  
**S.115**

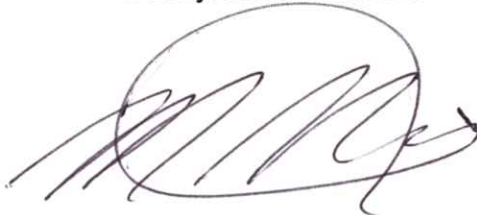
**MEMORANDUM**

**GEOHERMAL RETENTION LICENCES**  
**GRLs 20, 21, 22, 23 AND 24**

1. These Licences granted on 19 January 2009 are hereby entered on the public register.
2. Interests in the licence are:-

Geodynamics Limited

100%



**MICHAEL MALAVAZOS**  
**A/Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

Date: 19 January 2009

File: 27/2/550

## **Petroleum Act 2000**

### **GEOHERMAL RETENTION LICENCE GRL 21**

I, BARRY ALAN GOLDSTEIN, Director Petroleum and Geothermal, Minerals and Energy Resources, Primary Industries and Resources, in the State of South Australia pursuant to the provisions of the *Petroleum Act 2000* and all other enabling powers, for and on behalf of Paul Holloway, Minister for Mineral Resources Development (Minister), pursuant to delegation dated 28 March 2002, (refer Government Gazette dated 11 April 2002 page 1573), HEREBY GRANT to:

**Geodynamics Limited**  
ACN 095 006 090

(hereinafter referred to as the Licensee) a Retention Licence in relation to a source of geothermal energy in respect of the area set out below, to have effect for a term of five years and to expire on 18 January 2014 and carrying the right to renewal subject to the provisions of the *Petroleum Act 2000*.

#### **DESCRIPTION OF AREA**

The land comprised in this licence is that part of the State of South Australia described in the Schedule hereto.

#### **CONDITIONS**

1. During the term of the licence, the Licensee is authorised to carry out in the licence area -
  - (a) operations –
    - (i) to establish the nature and extent of a discovery of geothermal energy; and
    - (ii) to establish the commercial feasibility of production and appropriate production techniques; and
    - (iii) other regulated activities specified in the licence.
2. During the term of the licence, the licensee shall carry out or cause to be carried out the drilling of one well on the area comprised within GRLs 20, 21, 22, 23 and 24.
3. The Licensee shall during periods determined by the Minister, lodge and maintain with the Minister, in the form acceptable to the Minister, for the satisfaction of obligations arising under the Act or this licence, a security of \$50,000 (fifty thousand dollars) or such greater sum as specified by the Minister from time to time ("the Security").
  - 3.1 The Security shall be lodged in the form of either;
    - (a) cash; or
    - (b) an unconditional, irrevocable bank guarantee or letter of credit in a form, and from a financial institution, approved by the Minister,
  - 3.2 Interest will not be payable by the Minister to the Licensee on any cash Security.

- 3.3 All charges incurred by the Licensee in obtaining and maintaining the Security shall be met by the Licensee.
- 3.4 If upon expiry, this Licence is not renewed and the Minister is satisfied that there are no further obligations under this Licence or the Act, the Minister will return the Security to the Licensee.
4. The Licensee must:
- (a) maintain in force during the term of this licence public liability insurance to cover regulated activities under this licence (including sudden and accidental pollution) in the name of the Licensee for a sum not less than twenty million dollars (\$20,000,000.00) or such greater sum as specified by the Minister, and make such amendments to the terms and conditions of the insurance as the Minister may from time to time require;
  - (b) maintain in force during the drilling of any well or operation in any well, control of well insurance in the name of the Licensee for a sum not less than ten million dollars (\$10,000,000.00) or such greater sum as specified by the Minister, and make such amendments to the terms and conditions of the insurance as the Minister may from time to time require; and
  - (c) upon request by the Minister, provide the Minister with a cover note or certificate of currency of each insurance policy referred to in paragraphs (a) and (b).
5. The Minister in specifying the levels of insurance accepts no liability for the completeness of their listing, the adequacy of the sum insured, the limit of liability, the scoped coverage, the conditions or exclusions of these insurances in respect to how they may or may not respond to any loss, damage or liability.
6. The Licensee will ensure, when preparing an Environmental Impact Report under Part 12 of the *Petroleum Act 2000*, that the report also includes an assessment of the potential economic consequences for other licensees under the *Petroleum Act 2000* or *Mining Act 1971* and owners of land, arising out of proposed regulated activities to be carried out in the licence area.
7. A contract or agreement entered into by the licensee to transfer or accept liability for any well or facility constructed for the purpose of undertaking a regulated activity under the *Petroleum Act 1940* or *2000* cannot transfer, limit or exclude liability under the *Petroleum Act 2000* unless written consent of the Minister is obtained.
8. The licensee shall, each year, no later than two months prior to the anniversary date of the licence, provide a written statement specifying the work program proposed for the forthcoming licence year, for approval by the Minister.

Date: 19 January 2009



~~BARRY A. GOLDSTEIN~~ MICHAEL MALAVAZOS  
A/ Director Petroleum and Geothermal  
Minerals and Energy Resources  
Primary Industries and Resources SA  
Delegate of the Minister for Mineral Resources  
Development

Signed by the said LICENSEE

Date: 11/12/08

D Wyborn  
Authorised Representative

D WYBORN  
Name

Chief Scientific Officer  
Position

Hydrodynamics Limited  
Company

# PETROLEUM RETENTION LICENCE

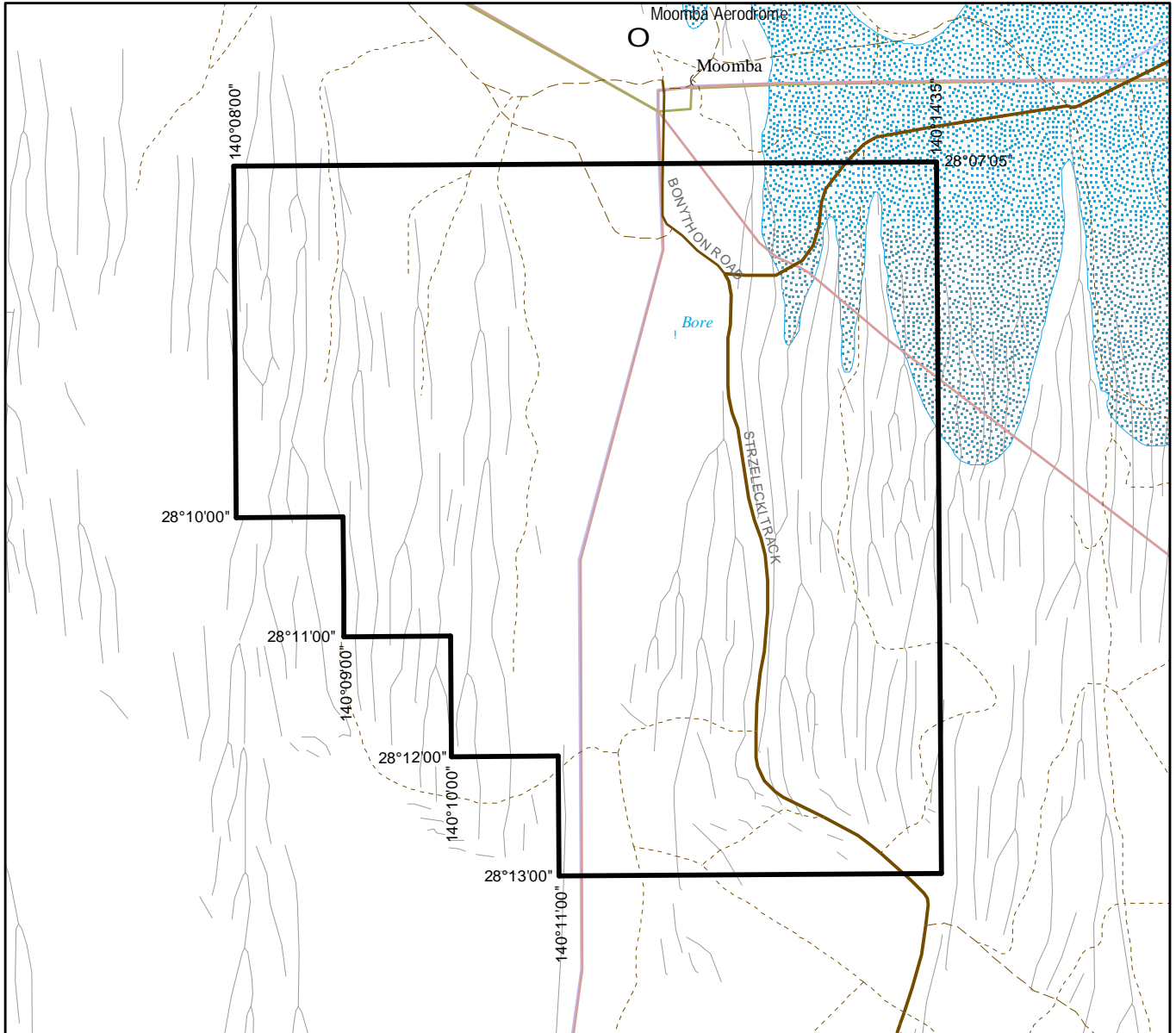
## GRL 21

### DESCRIPTION OF AREA

All that part of the State of South Australia, bounded as follows:-

Commencing at a point being the intersection of latitude 28°07'05"S GDA94 and longitude 140°08'00"E GDA94, thence east to longitude 140°14'35"E GDA94, south to latitude 28°13'00"S GDA94, west to longitude 140°11'00"E GDA94, north to latitude 28°12'00"S GDA94, west to longitude 140°10'00"E GDA94, north to latitude 28°11'00"S GDA94, west to longitude 140°09'00"E GDA94, north to latitude 28°10'00"S GDA94, west to longitude 140°08'00"E GDA94, and north to the point of commencement.

AREA: **99.6** square kilometres approximately.



SCALE 1:100 000



Note: There is no warranty that the boundary of this licence is correct in relation to other features of the map. The boundary is to be ascertained by reference to the Geocentric Datum of Australia (GDA94) and the schedule.

THE PLAN HEREINBEFORE REFERRED TO  
**GEOHERMAL RETENTION LICENCE NO: 21**



Government of South Australia  
 Primary Industries and Resources SA

SR 27/2/550b

AREA: 99.6 sq km (approx)