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**ADMINISTRATION OF GEOTHERMAL TITLES IN
WESTERN AUSTRALIA**

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ADMINISTRATION OF GEOTHERMAL TITLES IN WESTERN AUSTRALIA

1.0 INTRODUCTION

This report outlines the legislative provisions relating to geothermal exploration and development in Western Australia and the relevant administrative processes involved

1.1 Background

Management of geothermal exploration and development in Western Australia is primarily the responsibility of Minister for Resources through the Department of Industry and Resources (“DoIR”). The Minister is also responsible for promoting and facilitating the development of major projects and the administration of projects falling under State Agreement Acts.

Ownership of geothermal energy resources in Western Australia is vested in the Crown (*Petroleum and Geothermal Energy Resources Act 1967* s9 and s10). However, exploration and development is carried out by the private sector. A system of allocating the rights of access to these resources is in place, which both assists the explorers/developers and provides long-term benefits to the community. The title system provides the framework for this allocation. The title issued defines the rights and the obligations of the government and the explorer/developer and provides the security of access to resources essential for the large capital investments required for exploration/development to occur. The rules for access to land and security of tenure are embodied in the State’s geothermal legislation.

1.2 The Nature of Geothermal Titles

Vacant geothermal exploration areas are allocated initially by publicly advertising areas, in terms of a number of graticular blocks (each 5 minutes of latitude by 5 minutes of longitude), as being available for application for the grant of Exploration Permits. Grant of such permits is made on merit, consideration being given to the extent and appropriateness of the work proposals, together with the applicant’s technical and financial ability.

In all cases, the holders of exploration and development titles are required to meet work commitments and comply with the conditions of approval to retain the rights to explore.

The holder of a geothermal exploration title has a statutory right to the grant of a production licence for a commercial resource or a retention lease if the resource is not presently viable but likely to become so in 15 years.

Titles issued for the actual extraction of geothermal energy are issued subject to appropriate conditions relative to safety, resource management, protection of the environment, etc.

An applicant for a Geothermal Production Licence is required to submit a notice outlining the nature of the proposed development, the method of operation and its environmental impact.

Further approvals must be obtained before any production can commence.

1.3 Land Tenure Considerations

The conditions upon which geothermal exploration may occur vary depending upon the nature of land tenure.

Geothermal exploration and development titles may be granted over Crown land, pastoral land, reserved land, private land (s15) and over Native Title land where the provisions of the *Commonwealth Native Title Act 1993* (NTA) have been satisfied. Entry into reserved land requires the concurrence of the Minister for Resources who must first confer with the Minister responsible for the reserve land. Similarly entry into private land for exploration and production can only be undertaken once compensation (if any) has been agreed to with the landowner. If compensation cannot be agreed either party may refer the matter to the Local Court.

Legislative provisions and administrative procedures have been developed to particularly control access to Aboriginal reserve land. An entry permit must first be obtained under the *Aboriginal Affairs Planning Authority Act* from the Minister for Aboriginal Affairs.

Places of cultural and spiritual importance are protected under the *Aboriginal Heritage Act*.

2. ADMINISTRATION OF GEOTHERMAL TITLES

In fulfilling its responsibilities under State administrative arrangements the DoIR: administers competitive acreage releases based upon work program bidding; assesses the appropriateness of exploration, development, and production methods, regulates and oversees geothermal energy activities of title holders to ensure that they are conducted safely and in an acceptable environmental manner; and ensures that administrative processes and title holders respect the legitimate rights of landowners and other land users.

Geothermal titles are granted subject to conditions, which require separate submissions for each phase of exploration activity so that the requirements of other land owners and users who may be affected can be addressed. For example a survey affecting an Aboriginal reserve would require consultation with the Aboriginal Affairs Planning Authority, which in turn would consult with the communities so affected.

Unlike mineral titles, the government from time to time invites interested parties to bid for geothermal exploration acreage. It is a competitive bidding process (although not all areas attract multiple bids) and the applicant, who proposes the most comprehensive work program and is both financially and technically able, is awarded a title.

3 LEGISLATION

Geothermal exploration and development in Western Australia is regulated and administered under the *Petroleum and Geothermal Energy Resources Act 1967*.

4. GEOTHERMAL TITLES

The Geothermal titles can be divided into exploration and development categories with development title evolving from the exploration titles. Exploration Permits are awarded by way of a competitive bid system. Applicants propose a program of exploration work for an area and if that applicant is successful (on the basis of the work proposed and the ability to undertake the work) a permit is awarded which converts that offer of work into a firm commitment.

Once a geothermal energy resource is identified, the permit holder has the right to convert that resource to a production title (eg: s53 *Petroleum and Geothermal Energy Resources Act 1967*) or if that discovery is presently uneconomic it may be retained for future use as a Retention Lease (eg: s48 (B) *Petroleum and Geothermal Energy Resources Act 1967*).

The various titles are as follows:

- ***Petroleum and Geothermal Energy Resources Act 1967***

Geothermal Exploration Permit (GEP) - authorises the holder to explore for geothermal energy and to carry on such operations and execute such works as are necessary (s38). Provided the conditions of the permit are fulfilled the permittee has the right to renew the permit on a reduced area basis (s42).

By conditions to the permit the permittee is obliged to fulfil the promised work program in a timely manner (s43 (2)), in accordance with good oil field practice and securing the health and safety of workers (s91).

Geothermal Drilling Reservation (GDR) - authorises the holder to drill for geothermal energy resources and to carry on such operations and execute such works as are necessary for that purpose (s43 (D)).

The holder of a drilling reservation may extend the term to accommodate further drilling (s43 (F)) and, as with permits, is obliged to drill the commitment well(s) in accordance with good oil field practice.

Geothermal Retention Lease (GRL) – is a holding title although it authorises the holder to continue to explore for geothermal energy and to carry on such operations and execute such works as are necessary for that purpose (s48(C)).

Retention Leases are granted over the blocks comprising a geothermal energy resource (S48A), which is currently not economic. Depending on circumstances further exploration work may be undertaken. However the lessee is obliged to undertake re-evaluation studies on the commercial viability of the geothermal energy resource as required from time to time by the Minister (ss48 (H)(3)).

Geothermal Production Licence (GPL) - authorises the holder to recover geothermal energy from the licence area, explore for geothermal energy and to carry on such operations as are necessary for that purpose (s62).

Geothermal Production Licences are granted over the blocks comprising a commercial geothermal energy resource and usually emanate from a Geothermal Exploration Permit, Drilling Reservation or Retention Lease (s50 and s50 (A)). The Geothermal Production Licence is subject to the conditions imposed on the grant of title (s66).

Geothermal Special Prospecting Authorities (GSPA) - allow limited prospecting for geothermal energy but do not authorise the drilling of a well (s105). Geothermal Special Prospecting Authorities are granted subject to conditions, which control the extent of work (ss105 (4)) and are for a maximum of six months (s105(6)).

Geothermal Access Authorities (GAA) - allow the holder of a permit, drilling reservation, lease or licence to conduct exploration activities outside their areas. This includes the drilling of deviated wells (s106). As with Geothermal Special Prospecting Authorities, a Geothermal Access Authority is controlled by conditions (ss106 (5)) and is limited in time to the operation necessitating the access (ss106 (7)).

All titles are issued with an endorsement, which outlines the necessity to observe the requirements of other land holders and users and of the *Aboriginal Heritage Act*.

The terms of the various petroleum titles are summarised in Appendix 1.

5. APPLICATION AND GRANT PROCESSES

5.1 *Petroleum and Geothermal Energy Resources Act 1967*

Geothermal Exploration Permits and Geothermal Drilling Reservations

Geothermal Exploration Permits are granted by the Minister following a competitive bid system and clearance through the NTA right to negotiate process. Notice is published in the Government Gazette inviting applications for either, specified areas or any vacant area within the State (s30).

Applicants pledge a program of work and the grant is made (or not) on the efficacy of that work program. Consideration is also given to the technical and financial ability of the applicant (s31).

Once a suitable applicant is identified the necessary NTA notifications are made pursuant to the Right to Negotiate provisions of that Act. Applicants are encouraged to commence negotiations with the Native Title parties involved in a good faith manner and as early as possible. DoIR is a party to such negotiations under the terms of NTA and while it is also required to negotiate in good faith, in essence its role is that of a coordinator.

For more information on the NTA right to negotiate process consult the National Native Title Tribunal web site www.nntt.gov.au

- Geothermal Production Licences and Geothermal Retention Leases

Production Licences and Retention Leases are granted over the blocks containing geothermal energy resources within Geothermal Exploration Permits and Geothermal Drilling Reservations to the holder of those titles as a matter of right upon application but subject to conditions (s54 and s48B respectively). Geothermal Retention Leases are granted in circumstances where the geothermal energy resource is not presently economic but is likely to be within 15 years.

Geothermal Production Licences and Geothermal Retention Leases are also subject to the Right to Negotiate provisions of the NTA.

- Geothermal Special Prospecting Authorities

Geothermal Special Prospecting Authorities (GSPA) may be granted for exploration work (other than drilling a well) preliminary to an applicant making a bid for a permit or drilling reservation. These authorities are limited in time to a specific exploration activity (eg: a seismic survey) and cannot be dealt with i.e: cannot be

transferred or encumbered. More than one authority can be granted over the same area (s105).

GSPA's which involve ground disturbing work (including seismic surveys) other than low impact activities are subject to the Right to Negotiate provisions of the NTA. GSPA's may also be granted with an acreage option. Such option provides the holder the exclusive right to apply for a geothermal exploration permit or geothermal drilling reservation. That request is limited in time usually 6 months following the expiry of the GSPA.

- **Geothermal Access Authorities**

Geothermal Access Authorities (GAA) may be granted to holders of Geothermal Exploration Permits, Drilling Reservations, Leases, Retention Leases and Special Prospecting Authorities when limited access into adjacent areas is required. Geothermal Access Authorities can also accommodate wellheads from directional drilling into another area. Geothermal Access Authorities are capable of being transferred and otherwise dealt with (s106).

GAA's, which involve ground-disturbing work, are subject to the right to negotiate provisions of the NTA.

6. GEOTHERMAL OPERATIONS

6.1 Permits Licences and Leases

Operations under geothermal exploration permits and leases may consist of geophysical surveys, (such as seismic, and gravity), and the drilling of wells. All geothermal titles are subject to conditions, which require the title holder to obtain Departmental approval before commencing any field operations. At the time an application for a particular operation (e.g. drilling of a well) is made a detailed examination of the area the subject of the operation is undertaken. Any referrals to other parties, which are likely to have an interest in the land, are made at this time either directly by the titleholder or by the DoIR. Conditions protecting other interests are likely to be applied at that time.

6.2 Exploration

Geothermal exploration operations for onshore areas are relatively non-intrusive. In fact field operations only occupy a small percentage of the six year permit term, with most of that time being occupied by office studies computer modelling and laboratory studies. A seismic survey of some 50 km would possibly occupy two to three weeks, and the drilling of a well up to four weeks.

Drilling and seismic surveys are subjected to stringent conditions that are imposed by way of a Ministerial direction, which has the full authority of the Act (s95).

6.3 Production

Licence operations relate to the installation of production equipment and the recovery of geothermal energy. Separate approval is also required to install plant and equipment and to commence recovery operations.

The production facility in a geothermal field would consist of pumps, flow lines and perhaps storage tanks. In all that facility would only occupy a few hectares of a typical production licence.

GEOTHERMAL TITLES

SUMMARY OF GEOTHERMAL TITLES

APPENDIX 1

TITLE	TERM	AREA	RIGHTS	OBLIGATIONS	CONDITIONS
Geothermal Exploration Permit	6 year initial term 5 year renewal terms (on a reduced area basis).	160 blocks maximum	To explore for geothermal energy. To convert any geothermal exploration permit to a geothermal production title or retention lease (if presently uneconomic).	To fulfill the work commitment on which the grant of title was made and in the time frame prescribed. To conduct operations in accordance with good oil field practice. To provide a safe working environment for employees. To pay annual fee.	Work commitments. Field operations, installation of equipment not to be undertaken without approval of Minister. Payment of royalty on geothermal energy produced. Environmental protection. Compliance with <i>Aboriginal Heritage Act 1972 (WA)</i> Compliance with enabling Act, regulations and directions.
Geothermal Drilling Reservation	3 years (plus 12 month extension period if appropriate).	Corresponds to potential size of prospect (usually 3-4 blocks)	As for Geothermal Exploration Permits.	As for Geothermal Exploration Permits.	As for Geothermal Exploration Permits.
Geothermal Retention Lease	5-year term. Right of renewal for subsequent 5 year periods.	Corresponds to size of geothermal energy resource (usually 3 – 4 blocks).	To explore for geothermal energy to convert to a production title once economic viability confirmed.	As for Geothermal Exploration Permits but also obliged to conduct economic viability studies as requested.	As for Geothermal Exploration Permits.

TITLE	TERM	AREA	RIGHTS	OBLIGATIONS	CONDITIONS
Geothermal Production Licence	21 year initial term. Subsequent renewal terms of not more than 21 years each.	Corresponds to size of geothermal energy resource (usually 3-4 blocks).	To recover geothermal energy.	<p>To recover geothermal energy in accordance with directions of Minister.</p> <p>To conduct operations in accordance with good oil field practice.</p> <p>To provide a safe working environment for employees.</p> <p>To pay annual fee.</p>	<p>Pay royalty at prescribed rate.</p> <p>Field operations, installation of equipment not to be undertaken without approval of Minister.</p> <p>Environmental protection.</p> <p>Compliance with <i>Aboriginal Heritage Act 1972</i>.</p> <p>Compliance with enabling Act, regulations and directions.</p>