The Minister's decision and the regulations were challenged in the High Court by the Rotorua Geothermal Users Association in 1987. The challenge failed. Heron J. rejected the Association's claim that the Minister had exercised his powers unlawfully. He also rejected an argument that the formula used in the regulations for calculating resource rentals was repugnant to the overall scheme of the Geothermal Energy Act[156]. The closure of the bores was proceeded with, despite a further challenge to the regulations before the Regulations Review Committee at parliament[157].

12.0 THE WATER AND SOIL CONSERVATION ACT 1967

A. Introduction

12.1 A further change came with the Water and Soil Conservation Act 1967 which nationalised all private rights in water and which replaced - for all practical purposes - the Common Law regime of riparian rights. All persons wishing to take or divert or discharge into natural water were required to obtain water rights from the Regional Water Board. The Act was deficient in that it failed to specify criteria governing the grant or refusal of water rights, and it was left to the Planning Tribunal and the courts to devise the criteria themselves. For present purposes probably the most important of the many decisions on the 1967 Act is the decision of the High Court in Huakina Development Trust v Waikato Valley Authority [1987] 2 NZLR 188.

B. Maori Values

12.2 At issue in Huakina was whether the concerns of Maori objectors relating to purely metaphysical or spiritual concerns were relevant to the determination of water rights applications. Earlier cases had held that they were not. An example of such an earlier case is the decision of the Planning Tribunal in McKenzie v Taupo County Council (1987) 12 NZTPA 83. This case was concerned with a proposal to build a marina at Taupo. The

evidence of Maori objectors relating to "spiritual" concerns, while heard sympathetically by the Tribunal, was regarded as irrelevant to the final determination. The evidence related to concerns that the marina would obstruct the spiritual flow of water from Lake Taupo down the Waikato and so out to sea, the path followed by the spirits of the dead.

12.3 In Huakina Chilwell J. overturned Water Board and Planning Tribunal practice completely. The case was concerned with discharges into the Waikato River. The Waikato Valley Authority had granted water rights to a Mr and Mrs Bowater, a couple who owned a dairy farm, allowing the Bowaters to discharge dairy-shed waste into a stream which in turn flowed into the Waikato. The Huakina Development Trust, represented by Mrs Nganeko Minhinnick, objected, and appealed to the Planning Tribunal against the grant of the water right. Both the Regional Water Board and the Planning Tribunal approached the case on the basis that evidence led by the Huakina Development Trust relating to spiritual and metaphysical matters touching pollution of the waters of the Waikato River was irrelevant. Chilwell J. disagreed. In a judgment which refers extensively to the Crown's obligations under the Treaty of the Waitangi he concluded that such issues undoubtedly were relevant. Chilwell J. decided that the Water and Soil Conservation Act 1967 was linked to the Town and Country Planning Act 1977 as a statutory "scheme", and thus that the references to ancestral land in the Planning Act imported similar concepts into the Water Act. Another reason for his finding was that the Treaty of Waitangi could be used in its own right to interpret ambiguous statutes which affected the Treaty obligations of the Crown.

12.4 The decision in Huakina has had importance consequences, seen most clearly with the Wanganui River. In 1988 the Rangitikei-Wanganui Catchment Board heard a major case relating to the establishment of minimum flow levels for Wanganui. A lengthy section of the report of the Board's Tribunal is concerned with Maori spiritual values. The Board recommended:-

> "In recognition of the spiritual, cultural and traditional fishing value of the Wanganui River to the Wanganui Maori and Tribunal considers that the full natural flow of the Wanganui River at the Western Diversion intake should be restored. This would allow the main artery of the river to flow without impediment, along the flight path of Taranaki, from its source to the sea."[158]

The Board's decision, which in effect reduced the draw-off from the Wanganui and its upper tributaries by 50% was bitterly denounced in the media by Electricorp. The Corporation, then at the commencement of a 15 year programme of securing water rights for its HEP stations, saw itself as suffering a serious reverse and appealed to the Planning Tribunal. Electricorp claimed in national media that would have to spend an extra $17 million per annum burning fossil fuels to replace the energy lost by the partial restoration of the Wanganui flow levels.

12.5 The hearing before the Planning Tribunal was lengthy and it was not until 1990 that the Planning Tribunal released its decision. This decision is a document of major importance, to say nothing of considerable length (208 pages). The Tribunal accepted, naturally, that Maori values had to be taken into account:-

> "In deciding whether a minimum acceptable flow should be fixed in respect of the Wanganui River, and if so, what that minimum flow should be, spiritual, cultural and traditional relationships of the tangata whenua with the Whanganui River must be considered; and also the effect on Maori spiritual and cultural values. There was no issue about that among the parties to these proceedings, and we accept it."[159]

The Tribunal rejected, however, a submission from counsel for the Whanganui River Maori Trust Board that such values ought to have priority[160].

C. The Water Act and Geothermal Issues

12.6 The principal case on geothermal issues arising under the Water and Soil Conservation Act is Keam v Minister of Works and Development [1982] 1 NZLR 319, a decision of the Court of Appeal. In this case it was settled that applicants wishing to develop geothermal resources needed not only a licence under the Geothermal Energy Act 1953 but also a water right from the Regional Water Board under the Water and Soil Conservation Act 1967. In fact the Regional Water/Catchment Boards (now Regional Councils) are the principal regulatory authorities relating to geothermal resources, and it is at water rights hearings that the major battles relating to geothermal resources are fought out in practice. The usual practice of the Ministry of Energy was to make the grant of a licence pursuant to the Geothermal Energy Act conditional on obtaining water rights. The two relevant authorities are now the Waikato and Bay of Plenty Regional Councils.

12.7 The process of obtaining water rights for a geothermal project can be very complex. This is seen in the Geotherm case, a case which directly affects Ngati Tahu. The applicants, Geotherm Energy Ltd of Taupo, wish to construct a privately owned geothermal power station near Taupo. In July 1988 the company lodged applications to take 44,000 tonnes of geothermal fluid and to re-inject 40,000 tonnes of separated geothermal water per day. The stages through which this case has passed are as follows:-

(a)	6 July 1988	Application lodged with the Waikato Catchment Board (WCB)
(b)	July/Nov 1988	Objections received from Electricorp, the Ngati Tahu Tribal Trust and the New Zealand Tourist and Publicity Department
(c)	Dec 1988	First hearing by WCB

(d)	Jan 1989	WCB lodges a case stated appeal with the High Court concerning the legality of Electricorp's existing bores at Wairakei
(e)	Mar 1989	The matter is transferred to the Court of Appeal
(f)	Apr 19, 1989	Court of Appeal judgment (Re. Geotherm energy [1989] 2 NZLR 22
(g)	July 1989	WCB resumes hearing the matter
(h)	Aug 24, 1989	Standing Tribunal of the WCB issues its report and recommendations
(i)	Sep 15, 1989	Geotherm lodges an appeal to the Planning Tribunal against the WCB decision
(j)	Sep 15, 1989	Electricorp lodges its cross-appeal
(k)	Mar 13, 1990	The Planning Tribunal holds its first judicial conference relating to the appeal. At this hearing Judge Sheppard rules that "it is not intended that the appeal be listed for hearing until the Ngati Tahu claim in respect of the hydrothermal field has been resolved"
(l)	Apr 12, 1990	Planning Tribunal gives judgment on procedural matters relating to production of a confidential DSIR report

(m) Aug 14, 1990 Planning Tribunal's second judicial conference. The Tribunal decides this time that the appeals should proceed on the basis that the Ngati Tahu Waitangi Tribunal claim relates to the Tauhara field but not the Wairakei field

(n) July 16, 1991 Planning Tribunal decision released

12.8 In its decision on 24 August 1989, the WCB made it clear that Electricorp is not in any privileged position regarding the use of the Wairakei field. Its position is open to challenge by those who can convince the regulatory authority that they can use the resource more effectively and efficiently. Thus in this case the WCB, in applying the "benefit/detriment" test (by which the benefits of granting the rights are weighed against the competing detriments) took into account the more efficient technology which Geotherm intended to use. The WCB stated that the Wairakei resource "is a single entity, declining due to exploitation by, at present, a single user" (that is, Electricorp)[161]. Although Electricorp up till now "has been virtually the sole user of the geothermal field", the situation now confronting the Catchment Board involved "competing use of a limited and diminishing resource"[162]. The Catchment Board granted water rights to Geotherm, although not on the scale that Geotherm wanted (it sought a daily limit of 44,000 tonnes of fluid but this was recued to 10,000 tonnes of fluid combined with a restriction of not more than 3,000 tonnes of steam). The Board gave some weight to Geotherm's statement that it intended to use more up-to-date technology, and to the fact that Geothermal planned to re-inject spent fluid rather than discharge it into the Waikato river (as Electricorp does).

12.9 The decision of the Planning Tribunal of 16 July 1991 is a lengthy document (50 pages)[163]. The Planning Tribunal was faced with a complex situation in which both Geotherm and Electricorp had appealed against the Catchment Board (i.e. Regional Council)

decision, and in which the Ngati Tahu Tribal Trust, as an original objector, was also present. The Planning Tribunal upheld in most essential respects the Catchment Board's decision. An argument advanced on behalf of the Ngati Tahu Tribal Trust that the Geotherm appeals should be dismissed and the status quo maintained until the Waitangi Tribunal process had been completed was rejected[164]. The Tribunal also found that there was "no safe basis" for finding that the Geothermal proposal would be any more efficient than Electricorp's Wairakei station; and as to reinjection it pointed out that Geotherm had to re-inject: the spent fluid contained heavy metals which might have toxic effects, and the site was some distance from the Waikato River in any event. The Tribunal, after weighing up the conflicting technical evidence concluded[165]:-

> "We are confronted with balancing the benefits and disbenefits. On the one hand are the business advantages to Geotherm of being permitted to take 40,000 tonnes per day rather than 10,000 tonnes per day, with the potential to generate 40 MWe rather than 15 MWe, and in the favourable features of successful re-injection. On the other hand are the disbenefits to the geothermal field from the additional taking of faster run-down of the field, and from re-injection of risks of further reduction in temperature and pressure, with consequential substantial losses to the existing user which has invested substantially in reliance on its authority to take (which does not extend to the current level) and reduced opportunities for other uses and diminished intrinsic value of the resource. The faster run-down resulting from the extra taking is certain. The risk of harm from the re-injection is not certain, and we cannot quantify it beyond finding that it is a real risk of serious harm."

In the end the Tribunal confirmed the limit of 10,000 tonnes per day although the term of the right was extended from 15 to 18 years.

D. The Water and Soil Conservation Act: Summary

12.10 This Act became the central statute governing the administration of geothermal resources, especially after the relationship between it and the Geothermal Energy Act was clarified by the Court of Appeal in the Keam decision. The process towards regional control has now been taken one step further with the Resource Management Act 1991 which repeals nearly all of the old Geothermal Energy Act and vests complete control over the resource with regional councils. The 1991 Act also removes some of the deficiencies of the old Water Act insofar as geothermal resources are concerned, by, for instance, now making it possible to obtain a water conservation order for a geothermal system. To summarise:-

(a) It was not until 1987, with the Huakina decision, that it became possible for Maori objectors to raise "metaphysical" issues at water rights hearing, including hearings relating to geothermal systems;

(b) Even so, the Act did not give such concerns, or any other kind of Maori issue a priority;

(c) The first decision regarding competing use of a geothermal system was not until 1991, with the Planning Tribunal's judgment in the Geotherm water rights case;

(d) That case illustrates the likelihood of increased pressure on the resource from competing users and the difficulties regulatory authorities have in dealing with such situations; and

(e) The case illustrates the relative powerlessness of local Maori communities: although Ngati Tahu objected to the Geotherm application and participated in the hearings they were not able to significantly affect the outcome.

13.0 MANAGEMENT PLANNING

13.1 In 1980 the Nature Conservation Council prepared a report for the New Zealand Geological Survey titled The preservation of hydrothermal system features of scientific and other interest. The authors of the report were B.F. Houghton, E.F. Lloyd and R.F. Keam. The report expressed concern about the damage to surface features at Wairakei and elsewhere, and advocated that geothermal areas should be classified according to suitability for development, with some being excluded on conservation grounds. In 1982 the Nature Conservation Council and the Environmental Defence Society hosted a conference at Rotorua dealing with the effects of energy developments and tourism on geothermal systems at which a range of concerns were debated fairly extensively, including the effects of the new geothermal power station at Ohaaki on the Ngati Tahu people[166]. And in 1983 the Commission for the Environment released its own study of the matter - Management of Geothermal Resources: Issues and Options[167]. This report concluded that there was a need for a strategy which would[168]:-

(i) manage selected geothermal systems to retain the system's natural features;

(ii) allocate geothermal systems for development for energy and mineral exploitation from those geothermal systems where other values and uses are relatively unimportant; and

(iii) develop fields selected for energy exploitation in a co-ordinated and efficient fashion.

It also agreed with the suggestion in the 1908 Houghton, Lloyd and Keam report that fields be ranked into three categories with those in Category C lowest priority for preservation.

13.2 Meanwhile in 1982 an Officials Co-Ordinating Committee was established. Its task was to develop policy recommendations for

management of the geothermal resource. The same year the Officials Committee released a preliminary issues paper, A Review of the Role of Geothermal Resources in New Zealand. Public submissions were called for and separately published in 1983. In 1984 a Draft Geothermal Policy was released, and submissions again called for. The final policy statement was released by the Ministry of Energy in 1986 as Geothermal Resources: A Policy and Management Framework. This is an important document, and is the first attempt to set a co-ordinated national planning strategy for geothermal resources into operation. The Policy Framework lists a number of "goals" followed by a list of "objectives", one of which is:-

> "3. To take into account people's cultural beliefs including the relationships, as determined by customary usages and practices, between the culture and traditions of Maori people, and any geothermal fields."

The Policy Framework adopts the tri-partite classification of fields first proposed in 1980. Policy 11, for instance, is:-

> "...That the Waimangu, Ketetahi and Orakeikorako geothermal fields be included in the Schedule of Protected Waters."

And Policy 12 is to this effect:-

> "That priority be given to preparing geothermal water management plans for the following:-
>
> - Rotorua, Tikitere (Ruahine Springs) and Waiotapu; these have surface features worthy of protection but are also used, or have potential, as energy sources;
>
> - Te Kopia, Waikite, Tokaanu-Waihi-Hipaua and Reporoa; - these are covered by the present policy of no drilling (except for monitoring purposes);

- Mokai, Rotokawa, Ngatamariki and Ngawha; these are priorities for energy developments."

Without wishing to belabour the point, it should be said there is little evidence that there was much, or even any, Maori input into this all-important classification process. (At both Mokai and Ngawha, both "priorities for energy developments", the fields to a large extent lie underneath Maori freehold land, and Lake Rotokawa, although now Crown land, is a long-standing issue of real importance for Ngati Tahu.

13.3 The classification of the fields at a national level is in turn reflected in their classification at the regional level by the former catchment boards, now regional councils. The WCB has four categories, giving special protected status to Waiotapu, Orakeikorako and Ketetahi (Ketetahi, on the northerly slopes of Mt Tongariro, is Maori freehold land, and is not a part of the Tongariro National Park); the other categories are targeted for development in varying ways[169].

14.0 RECENT DEVELOPMENTS

A. Resource Rentals

14.1 In 1987 householders at the Ngati Whakaue community at Ohinemutu received an account from the Ministry of Energy charging a resource rental for geothermal energy taken from bores on Maori freehold land at Ohinemutu. It must be stated that the bill was certainly legal. It accorded with the Geothermal Energy Act itself. It accorded also with the Geothermal Resources Policy and Management Framework, "Policy 9" of which states:-

"That geothermal energy users be charged a rental to cover the costs of licensing under the Geothermal Energy Act 1953."

The demand for payment, however, greatly upset Ngati Whakaue leaders, and revealed a complete mis-match in terms of competing perceptions. Ngati Whakaue, like most of the Arawa tribes, placed much reliance on what they perceived as a special relationship with the Crown. Emphasis was put on the Fenton Agreement and the generous grants of land to facilitate the establishment of the new town of Rotorua. To government officials, the demand was presumably seen quite differently. The long historical perspective of Ngati Whakaue did not sit easily with the perspectives of government officials, few of whom, one would guess, would even have heard of the Fenton Agreement and who, if asked, would have seen the demand for payment as a lawful and unexceptionable use of the powers set out by parliament in the Geothermal Energy Act.

14.2 Ngati Whakaue resistance led to a lengthy process of negotiations with the Crown. On 23 March 1990 Mr Butcher, the Minister of Energy, announced that Ngati Whakaue did not have to pay resource rentals after all. The exemption and reaction of the Rotorua Geothermal Users' Association, was reported in the local newspaper, the Rotorua Post, on March 21, 1990:-

"Geothermal Exemption for Tribe in Ohinemutu

Ngati Whakaue living in Ohinemutu have been granted an exemption from paying rentals for geothermal energy.

About 11 bores and households in the village will be affected by the exemption, announced yesterday by the Minister of Energy, Mr Butcher.

The exemption has disappointed the Rotorua Geothermal Users Association. The Chairman, Mr Robert Brewster, said it would be seen as discriminatory against bore users who had been denied continued use of the resource without compensation.

Only Ngati Whakaue living in Ohinemutu have been granted exemption from payment of rentals for geothermal energy used for traditional purposes.

'Full rentals will not be payable for any users in Ohinemutu who are not Ngati Whakaue or in respect of any commercial usage', Mr Butcher said.

'Members of Ngati Whakaue outside Ohinemutu are also excluded from this arrangement.'.....

It is understood that most geothermal use in Ohinemutu is by Ngati Whakaue.

In a statement, Mr Butcher said the exemption was the result of two years of negotiation between Ngati Whakaue and the Crown.

It recognised that Ngati Whakaue had been using the geothermal resource at Ohinemutu for several hundred years and it was an 'integral and important' part of their way of life.

It was unlikely the circumstances prevailing at Ohinemutu would be repeated elsewhere, he said.

'Besides the long history of use, Ohinemutu was specifically excluded from the leasing, and later purchasing, of what is now the city of Rotorua under the Fenton Agreement of 1880', Mr Butcher said."

14.3 Resource rentals have been discussed at some length in two recent reports. The first of these is a Ministry of Energy Report, Pricing Geothermal and Hydro Energy (1989). This report is a technical discussion of the various methods available for pricing resource rentals, and evaluates them from the standpoint of efficient resource use. (The report does not, quite naturally, question the Crown's right to levy geothermal resource

rentals). The report advocates different energy royalty regimes for small-scale and large-scale users of the resource. Resource rentals are also discussed in a Manatu Maori report, The Ownership, Management and Development of the Geothermal Resource: A Discussion Document (February 1991). At p.7 of this report it is observed:-

> "An important right in relation to resources is the right to economic gain. The holder of that right (at present the Crown) has a number of ways of obtaining a share of the so-called 'economic rent' from the development of geothermal resources. The owner can charge for the resource directly, i.e. charge a royalty and there are a number of different ways of doing this. The other common method is for the group entitled to economic gain from the resource to participate in a development as an owner or part owner and obtain their economic benefit that way."

On the assumption that a share in royalty income might be a device for channelling some of the economic benefits of development of the resource into Maori hands the report usefully identifies a number of issues which impact on this. These include the question of to whom should the resource rental be paid (iwi, landowners, a Geothermal commission); who should set the royalties; who should collect them; what kinds of royalties are most appropriate?

B. Structural Changes

14.4 The Manatu Maori Discussion Paper refers to the options for Maori management of the resource identified by myself in my 1989 paper on Geothermal Energy: Maori and Related Issues. These options are: (i) tribal regulation of the entire resource; (ii) dual regulation; and (iii) a mixed system in which the regional councils would continue to have a role in association with Maori organisations and central government. In my earlier report I expressed a preference for option (iii). This appears to be generally endorsed by Manatu Maori. A great deal of

thought, however, needs to go into how such a 'mixed' system might work, and to what degree there can feasibly be tribal self-regulation of the resource. This is a policy issue in any case, which these present proceedings may assist in resolving. It also needs to be considered to what degree the Resource Management Act 1991 facilitates such tribal self-regulation.

14.5 There has been some support for a co-ordinating geothermal commission. This was supported by myself in my 1989 report, and is supported also by DSIR, Dr Evelyn Stokes and - apparently - by Manatu Maori. If there is to be a devolution of control then such a co-ordinating commission (meaning a small group of experts who could commission research and co-ordinate tribal and catchment board management, serviced perhaps by Ministry for the Environment and Manatu Maori) seems essential. I record this to inform the tribunal of the discussions that have already taken place (and, admittedly, to reiterate my own opinion).

C. Sale of Geothermal Assets

14.6 The only discussion of this issue I am aware of is in a paper jointly authored by myself and D.A. Edmunds and presented to the geothermal institute conference in Auckland in November 1991[170]:-

> "On May 17 of this year [1990] The Dominion [Wellington] reported that the government was considering a sale of all Crown interests in the geothermal resource[171]. The purpose of such a sale would be to raise revenue, but more importantly to save costs and stimulate private sector development. The suggestion that the Crown was considering this raised Maori fears that the Crown was about to facilitate the transfer of a significant share of the resource to the private sector.
>
> It should be emphasised that no official announcement regarding the Crown's intentions in this respect has been made. If in fact the Crown intends to sell anything it

would most likely be contemplating the sale of the residuary assets of Gas and Geothermal Trading (GGT), the successor to the energy trading division of the Ministry of Energy. The principal former assets of this division were sold in July 1990, these being the Crown's interests in the Synfuels plant at Motunui and the Crown's rights under the Maui Gas Contracts. The geothermal assets of GGT are a diverse collection of several fields. They include the Kawerau steam field, for which there exists contracts for the sale of steam to Tasman Pulp and Paper; a joint venture in respect of the same field with the Bay of Plenty EPB to supply the Board with waste hot water; ownership of Geothermal Developments and Investments Limited, which in turns owns a 50% share of Tauhara Development Limited; and exploration wells at Mokai, Ngawha, Rotokawa, Ngatamariki, Mangakino and Kawerau. Some of these wells are on Maori land."

D. Other Recent Developments

14.7 Two others merit mention. These are the Resource Management Act 1991 and current proposals to deregulate the electricity industry. Both are of great significance to geothermal resources. The chief change brought about by the new Act in regard to Maori interests in geothermal resources is that Maori customary use of the resource may now simply be continued without the need for a water permit. Deregulation of the electricity industry will enhance the opportunities for privately-owned geothermal generation. Both electricity industry deregulation and the Resource Management Act are of such importance that they should form the subject of separate documents. The principal changes brought about by the Resource Management Act 1991 are listed in the annexures.

15.0 SUMMARY

15.1 This report has attempted to present a legal history of

the resource in New Zealand. This history falls naturally into a number of phases:-

(a) The Tourist Era

Originally the tourist industry in Rotorua was under Maori control. Following the Fenton Agreement, itself endorsed by government in order to bring the Rotorua region under government control, the government passed legislation which was partly political in its objectives, and partly aimed at preventing private purchasers from acquiring thermal areas. This is exemplified with the Thermal Springs and Districts Acts and the Scenery Preservation Acts. It is also associated with diminishing Maori control over the tourist industry. The principal purpose of the Thermal Springs Districts Acts were to restrict purchase of Maori land to the Crown; the Scenery Preservation Acts to provide machinery for compulsory acquisition of, amongst other places, thermal areas.

(b) The Era of Exploitation

This is exemplified by the Geothermal Energy Act 1953, and its precursor, the Geothermal Steam Act 1952. Once an awareness had emerged of the geothermal resource as an energy resource the response of the Crown was to in effect nationalise it. The awareness and the response were in fact virtually synonymous. Maori involvement in the decision-making seems to have been nil.

(c) The era of Conservation

Beginning with the enactment of the Water and Soil Conservation Act in 1967, the law changed slowly in response to an evolving recognition that the geothermal resource was not, after all, infinite. Concern grew about damage to surface features, loss of geyser fields, and declining yields at Wairakei. The 1980s saw new

management regimes emerging at central government level and catchment board level in response. Once again, there was little Maori involvement in the decision-making.

(d) **The contemporary era: Sale of Crown Assets, electricity industry de-regulation, resource rentals**

New issues now seem to arise due to the changing economic and ideological climate. There is less discussion of conservation of the resource and of surface features, more discussion of "efficient" use of the resource. Consultation with Maori has improved considerably. Management of the resource was split until 1991 between the Ministry of Energy (now Commerce) and the catchment boards (now regional councils). With the Resource Management Act 1991 complete control now vests in the regional bodies.

DAEGEO01

1.Cowan, The New Zealand Wars (1922) 150-51. Note that Claudia Orange, however, is firmly of the view that Arawa did not at any time sign. See Orange, The Treaty of Waitangi (1987) 76.

2.In a letter to Fenton from Makari Hikairo dated 12 August 1881 (MA 13/79) complaining about aspects of the Land Court's decision concerning the Pukeroa-Oruawhata block, the complainant stresses that the blocks she was concerned about had already been adjudicated upon by the Komiti. "They were investigated before the four judges of that Tribunal, and some pieces were awarded to us by reason of our claims under Maori custom (a whakataua ana etahi o auapiihi kia matou irunga ano i o matou take maori)".

3.Fenton, "Report", December 18, 1880 (MA 13/79) (Annexure 1)

4.See Cowan, The New Zealand Wars (1922) Vol 1, 414-420; D.M. Stafford, The Founding Years in Rotorua (1986) 35-52.

5.See Ngahuia Te Awekotuku, The City of Rotorua and its Meaning to Ngati Whakaue, Centre for Maori Studies and Research, University of Waikato, Hamilton, 1976, p.2; Stafford, op. cit., 67-73.

6.Stafford, op. cit., 127-30.

7.Stafford, op. cit., 105-131.

8.See Peter Waaka, "Tarawera - 100 Years before the Eruption", in Ian Rockel (ed), Tarawera Eruption Centennial Exhibition (1986), 11-13. Waaka writes that "almost overnight, they inherited a business so lucrative that, less than a decade later, Tuhourangi were being hailed as the most affluent tribe in the country" (ibid., 12). Waaka adds: "From guiding and boat fees alone, it is estimated that the tribe had an annual income of 6,000 pounds. Te Wairoa (now known as the Buried Village) was developing as the main Tarawera settlement to service the tourist industry. So affluent were our ancestors of this period that the eyes of the carved figures on the meeting house, Hinemihi, were made of gold sovereigns." (ibid., 12-13).

9.Stafford, op. cit., 126.

10.Fenton to Rolleston, 16 July 1881 (M.A. 13/79): "The squatters are beginning to see their danger."

11.See 1 Rotorua MB.

12.Stafford, at p.145 writes: "...The Arawa tribes had consistently refused to deal with the Land Court or to sell or lease any of their lands. As a result, their territory remained almost untouched in their own hands . Ultimately, however, government surveyors began to appear in the area, necessary of course, because of roading and other public facilities, and they were accepted by the Arawa at the time. The government also wished to proceed with normal surveys of all lands and to conduct an investigation into titles. With the assurance of government that these activities would not facilitate the lease or sale of property the Arawa allowed one or two pieces to be surveyed and put through the Court. Almost at once there was trouble.....So much strife was caused by subsequent disputes between the alleged owners that the Court refused to allow any lands to pass through. The leaders of the Arawa then asked that their lands should be entirely tied up, so that no leases or sales could take place. The government complied with their wishes and so the position was virtually back, in Rotorua, to the pre-1865 days where the government maintained the pre-emptive rights. There is no doubt that the local Maori people intended that no land at all should be disposed of - not to European nor to government."

13.Stafford, op. cit., 147.

14.On Fenton, see the entry in the Dictionary of New Zealand Biography, Vol 1, 121-3 by W.L. Renwick. The best account of Fenton's role in the establishment of the Native Land Court remains Alan Ward, A Show of Justice (1973).

15.Bryce to Fenton, (date illegible: 10 November 1880?) M.A. 13/79. On the Crown's earlier attempts to acquire land in the region see Stafford op. cit., 147-8.

16.Fenton, "Report", December 18, 1880, (M.A. 13/79) (Annexure 1).

17.Ibid.: "I was at Ohinemutu and the adjacent villages for about a fortnight, and during this time I visited the neighbouring tribes as well as the resident owners."

18.The Tuhourangi agreement is dated November 26, 1880. (See Annexure 3).

19.See Annexure 2.

20.Fenton, "Report", December 18, 1880 (M.A. 13/79) (Annexure 1).

21.Ibid..

22.Agreement, (Annexure 2), Cl.1.

23.Ibid., Cl.3(1)-(6).

24.Ibid., Cl.6.

25.Ibid, Cl.7.

26.Ibid., Cl.16.

27.Agreement (Annexure 2), clause 8

28.Fenton, "Report", December 18, 1880 (MA 13/79) (Annexure 1).

29.e.g. on July 9, 1881 Fenton telegraphed Paora te Amohau of Ngati Whakaue: "Tell the people that they need not bother their heads about rates. Parliament can put rates on to Native land just as on to other land if it likes. Better leave everything as it is until spring. Then I will come up to arrange about advertising the town in the Australian papers. I expect to have rents coming in before the summer. Let me know two or three chiefs who will be directors for the Railway. I will be one if you will." (MA 13/79)

30.E.g. on 24 June Symonds telegraphed Fenton: "Ready for Judgment await your instructions".

31.Mair to Fenton, 1 June 1881 (MA 13/79). Mair is advising Fenton of Judge Symond's decision in favour of Ngati Whakaue: the judgment is at (1881) 1 Rotorua MB 344 (Annexure 4).

32.Fenton to Rolleston, 16 July 1881 (MA 13-79).

33.e.g. Fenton to Rolleston, 16 July 1881 (MA 13/79): "There is a little bother about Ohinemumu nothing important. I wish you could induce Government to take a bold step and get the Court to say that the certificate is subject to the agreement with the Crown. The squatters are beginning to see their danger..."

34.See (1881) 1 Rotorua MB 344 (Annexure 4).

35.Puckey to Fenton, 10 April 1881 (MA 13/79).

36.Makari Hikairo and others to Fenton, 12 August 1881. The original of the letter is in Maori, and the translation I have used is the official translation on file (MA 13/79).

37.This process will be fully documented in a later report.

38.As, for instance, in the King Country. See M.P.K. Sorrenson, "Land Purchase Methods and their Effect on Maori Population", 1865-1901", Journal of the Polynesian Society, Vol 65, 183-99, 93-94.

39.Bay of Plenty Times, 9 March 1882, quoted in Stafford, op. cit., 157.

40.When it was vested in the Crown by the Thermal Springs Act 1910, s.10.

41.Rolleston to Fenton, 14 February 1882 (MA 13/79).

42.Fenton to Rolleston, 14 February 1882 (MA 13/79).

43.On 27 February 1882 Paora te Amohau wrote to Fenton as follows: "Friend Fenton. Salutations to you:- Sir, I have received your letter of 22nd instant telling me of the documents sent in by Petera and others, respecting Pukeroa; and I have shown your letter to the whole assembly of Ngatiwhakaue, from Ohinemutu as far as Maketu; and I did not hear a word, except praise of your plans.....Friend, I spoke to Ngatiwhakaue about their withholding Te Pukeroa, let it be leased from the town as far as Te Pukeroa.

As it is, be strong to conduct the sale of by auction of our riches.

Enough. From your friend, Paora te Amohau." (MA 13/79, Official English translation on file).

44.Thermal Springs Act 1881, s.2.

45.Ibid., s.3.

46.This is, of course, to simplify an enormously complex process. Some legislation did in fact contain various kinds of restriction on alienation.

47.1873 AJHR G-7.

48.For a study of the comparable process in Te Urewera, see Evelyn Stokes, J. Wharehuia Milroy and Hirini Melbourne, Te Urewera: Nga Iwi, Te Whenua, Te Ngahere: People, Land and Forests of Te Urewera (1986), pp. 46-105. The equivalent of the Thermal Springs Acts in Te Urewera was the Urewera District Native Reserve Act 1896.

49.The circumstances of the Wairakei investigation and sale were first remarked upon by Alan Ward, A Show of Justice (1973), 256. See now Evelyn Stokes...

50.

51.Proclamation defining Te Pukeroa-o-Ruawhata Block a District under "The Thermal Springs Districts Act 1881", 1881 NZG 1267 (Annexure 5).

52.1881 NZG 1375 (Annexure 6).

53.Tauhara North: Rehearing under Native Equitable Owners Act (1897) 10 Taupo MB 190, 312.

54.(1883) 46 NZPD 339.

55.(1883) 46 NZPD 340.

56.Report on Native Lands Affected by "The Thermal-Springs Districts Act 1881", 1883 AJHR 6-9, 7-8.

57.Thermal Springs District Act 1881 Amendment Act 1883, s.6.

58.See (1910) 153 NZPD 1134-35 (Dr Findlay); 1057-59 (Ngata).

59.Ibid, 1058: "Clause 9A, relating to Mokoia, is to give effect to the representations of the Native claimants to that historic island and, indeed, endorses the sentiment of the whole of the Arawa people with regard to it. It makes an inalienable reserve of the island, free from interference from the operations of the Public Works Act in some respects, and from the Scenery Preservation Act and the Rating Act. No one can cavil at this, seeing that the island is quite detached and does not call for the expenditure of any public or local moneys. The Arawas have been loyal to the Crown, have given of their best to the service of the Crown in the days of the wars, have given liberally of their lands to settlement at the request of successive Governments; and the least they deserve is that this, the place round which is centred the traditional and historic sentiment of the people, shall be preserved to them so far as lies in the power of the Parliament." (Apirana Ngata).

60.Copy on TO 1, 1904/191/12.

61.13 October 1904 TO 1, 1904/191/12.

62.The 1906 Act defined "private land" to mean "land owned by any person other than a Maori". The Scenery Preservation Board, by s.5, "shall, when so directed by the Minister inspect any lands possessing scenic or historic interest, or on which there are thermal springs, and make inquiries respecting the same, and report to the Governor; and shall from time to time recommend what lands, whether Crown or private, in the opinion of the Board should be permanently reserved as scenic, thermal, or historic reserves".

63.Which would have been the case only <u>after</u> 1906.

64.(1906) 138 NZPD 596.

65.This section is based on TO 1, 1901/36 (Waiotapu Reserve: Taking of Maori Lands at Waiotapu).

66.Rukingi Rotohiko Haupapa to Minister of Native Affairs, 23 October 1907.

67.1907 NZG 2753.

68.Rockel, Taking the Waters (1986), pp.68-9.

69.For a discussion of developments at Te Aroha see Rockel, op. cit., ch.9.

70.Inspector of Works, Rotorua, to Superintendent, Department of Tourist and Health Resorts, 26 March 1906 (on file TO 1, 1/107/1, Whakarewarewa Reserve).

71.See TO 1, 1/107/1. Government was also interested at one stage in acquiring geothermal water from the pools on Maori land at Whakarewarewa - see T.E. Donne to Engineer in Charge, Rotorua (1907):-

> "If the Maoris agree to release any of the thermal waters in their reserve I should like to be advised of the details so that I could make a representation to the government for the acquisition of the same. If the Government erects baths at Whakarewarewa, which it is proposed to do, it would not be good business to have private competition. The Geyser Hotel is now taking a supply of water through our land and this, I think, should be looked into, as unless we make a change, rights will be established which we shall not be in a position to upset. As long as the Geyser Hotel is allowed to take thermal water for private baths there will be very little use in the Government going to any expense in providing Baths. To get a fair return for expenditure, the Government should have a complete monopoly."

72.Rockel, op. cit. (above, n.68), p.38.

73.Ibid., 47.

74.Halsbury, 4th ed., Vol. 49, para. 368.

75.Ibid., para. 372.

76.Ibid., para. 414.

77.Ibid.

78.Acton v Blundell (1843) 152 ER 1223, 1223.

79.(1843) 152 ER 1233-34.

80.Ibid.

81.See Crommelin "The US Rule of Capture: Its Place in Australia" [1986] AMPLA Yearbook 265.

82.See Crommelin, op. cit., 267.

83.See D.A. Edmunds, "Unitisation and the Law of Capture in New Zealand", a paper presented to the 1991 Oil Exploration Conference, Christchurch, September 1991.

84.(1937) 249 NZPD 1044.

85.Ngata was supported by, amongst others, W.A. Bodkin, the Member for Central Otago: see (1937) 249 NZPD 1048.

86.See (1937) 249 NZPD 1236.

87.For commentary on Maori claims to petroleum, see M.H. Heron, "The Maori Right to Share in Oil and Gas", Research Paper for Indigenous Peoples and the Law LLM (Laws 546), Law Faculty, Victoria University of Wellington, 1989. A more recent discussion is R.P. Boast, "Indigenous Claims to Petroleum Resources", a paper presented to the 1991 Oil Exploration Conference held at Christchurch, September 1991. A copy of this paper is reprinted as Annexure [ ].

88.[1899] AC 594, 602.

89.Crommelin, above n.81, p.

90.[1906] 2 KB 822, 827.

91.Ibid., 829.

92.Ibid., 832.

93.See e.g. P.G. McHugh, "Aboriginal Title in New Zealand Courts", (1984) 2 Canterbury Law Review 235; "Aboriginal Rights and Sovereignty: Commonwealth Developments", [1986] New Zealand Law Journal 57; The Aboriginal Rights of the New Zealand Maoris at Common Law, Ph.D. Thesis, Cambridge University, 1987. See also K. McNeil, Common Law Aboriginal Title, Oxford, 1989.

94.Calder v Attorney-General of British Columbia, (1969) 8 DLR (3d) 59 (British Columbia Supreme Court); (1970) 13 DLR 3d 64 (British Columbia Court of Appeal); [1973] SCR 313 (Supreme Court of Canada); Hamlet of Baker Lake v Minister of Indian Affairs [1980] 1 FC 518; County of Oneida v Oneida Indian Nation 105 S.Ct. 1245 (1985); Te Weehi v Regional Fisheries Officer [1986] 1 NZLR 680.

95.David Elliott, "Aboriginal Title" in B.W. Morse (ed), Aboriginal Peoples and the Law: Indian, Metis and Inuit Rights in Canada (1985), ch.3, p.51.

96.Law Commission, report on The Treaty of Waitangi and Maori Fisheries: Mataitai: Nga Tikanga Maori me te Tiriti o Waitangi (1989), 57-58.

97.For a discussion of this case law see R.P. Boast, "Treaty rights or aboriginal rights?" [1990] NZLJ 32.

98.Bartlett, Aboriginal Water Rights in Canada, (1988), p.

99.Winters v US 207 US 564, 576 (1908).

100.Statement by the Hon. R. Semple, Minister in Charge of the State Hydro-Electric Department, 1947 AJHR D-4.

101.See ibid., 1-2.

102.Mr Goosman, Minister of Works, introducing the Geothermal Steam Bill, 22 July 1952: (1952) 297 NZPD 446.

103.Ibid.

104.The main source I have relied on for this episode, which is remarkably little-known in New Zealand at the present time, is a New Zealand Electricity Department file, 1,2/0/83: Geothermal Steam Unitisation (Heavy Water). It is briefly referred to in Robin Fry, Power from the Earth (1985), p.9 ("A Plan that was later abandoned"). Fry says that the idea of extracting heavy water from geothermal steam first surfaced at a conference of DSIR scientists in Rotorua in 1946.

105.For a detailed study of the tests conducted in Australia see the Report of the Royal Commission into British Nuclear Tests in Australia (McLelland Report), 1985, Aust. Parliamentary Paper 482/1985. The most detailed study of British atomic energy and nuclear weapons policy in the post-war period is M. Gowing, Independence and Deterrence, Macmillan, London, 1974 (2 vols).

106.Memo from Minister for Scientific and Industrial Research to see for Internal Affairs on NZED 1, 2/0/83.

107.Original on NZED, 1, 2/0/83.

108.Robin Fry, Power from the Earth, 1985, 9.

109.Electricity Department file 1, 2/0/22/3 Pt. II. Doc A54. See T. Bennion, New Zealand Law and the Geothermal Resource, Waitangi Tribunal, July 1991, 21-22.

110.See below, para.

111.The materials relating to this block were usefully collected together by P.W. Patrick and are reprinted as Appendix E to Paora Maxwell, The Maori Use of Geothermal Energy, a report to the Waitangi Tribunal, April 1990. The taking of this block led to litigation over the amount of compensation payable: see (1918) 17 Whakatane MB 272-277 and (1919) 18 Whakatane MB 158. A notice of intention to take part of this block was first gazetted in 1912, but as a result of some of the owners petitioning parliament the Minister of Lands decided not to continue with the acquisition. A further notice was lodged in 1918 and the land was taken by proclamation on 18 July 1918 (Gazette No. 100, 18 July 1918). Compensation for the block was ultimately fixed at £1.350 to be paid to the Waiariki District Maori Land Board until

such time as the interests of the respective owners were determined. In May 1932 the remaining Maori-owned part of the block was partitioned into Rangitaiki 12A and 12B. A further area of 25 acres was taken for a recreation ground by proclamation dated 23 August 1939 (NZG 1939 2245) for which compensation was fixed by the court at £129: see (1040) 26 Whakatane MB 274-6, 338. This area is the thermal area usually referred to as Awakeri. For further details see Paora Maxwell, op. cit., 23-25; Ian Rockel, Taking the Waters: Early Spas in New Zealand (1986) ch.17. Rockel points out that the pressure on the government to acquire this area came from the Whakatane County Council.

112.(1952) 297 NZPD 446, 22 July 1952.

113.Water-power Act 1903, s.2:-

"The Governor may from time to time, by Order in Council gazetted, delegate to any local authority, on such conditions as he thinks fit, the right to use water from any lake, falls, river, or stream for the purpose of generating electricity for lighting or motive power.

114.As can be seen from s.4 of the Water-power Act:-

"Notwithstanding anything in this Act, the Minister for Public Works, outside a mining district, may, subject to such conditions as he thinks fit, grant to any person or company the right to use water from any fall, river, or stream for the purpose of -

(a) Generating electricity for lighting, to be used only for the purpose of and in connection with the business of such person or company, and not for the purpose of sale to or use by any other person, company or corporation; and

(b) Driving any machinery used for any agricultural, industrial or manufacturing purpose other than the generation or storage of electricity."

115.(1952) 297 NZPD 449.

116.McLagan, ibid., 450.

117.Ibid., 452.

118.The Atomic Energy Act was enacted by the Labour Government in 1945. Section 8 of the Act, which obviously has affinities with the equivalent provisions in the Water-power Act, the Petroleum Act, the Geothermal Steam Act and the Geothermal Energy Act, vested ownership of all uranium in the Crown:-

"8. (1) Notwithstanding anything to the contrary in any Act or in any Crown grant, certificate of title, lease, or other instrument of title, all uranium existing in its natural condition on or below the surface of any land within the territorial limits of New Zealand, whether the land has been alienated from the Crown or not, is hereby declared to be the property of the Crown."

No compensation was available for this expropriation: s.9. The provisions are virtually identical to those in the Petroleum Act: the equivalent sections are s.3 and s.39(5). The situation

is now governed by s.10 of the Crown Minerals Act 1991:-

"10. Petroleum, gold, silver, and uranium - Notwithstanding anything to the contrary in any Act or in any Crown grant, certificate of title, lease, or other instrument of title, all petroleum, gold, silver, and uranium existing in its natural condition in land (whether or not the land has been alienated from the Crown) shall be the property of the Crown."

119. In 1937 Bodkin said:-

"The Treaty of Waitangi guaranteed those rights to the Maori people at common law, and the Parliament of New Zealand is now seeking to take away those rights and vest them in the State. The fact that petroleum is of a migratory character does not alter the law at all, because one of our common law princ8ples is that a commodity, such as gas or oil, which is of a migratory character, becomes the property of any landowner who takes control of it on his land and gets possession of it. If the State permits the sinking of a well on Maori lands and secures then the right to petroleum, it does so at the expense of the Maori who has full ownership as recognized by common law. That right of ownership was definitely guaranteed him by the Treaty of Waitangi. So, if any member of the House desires to carry out the spirit of the Treaty of Waitangi.....there is a duty to see that at least some compensation is paid to these people in respect of this privilege or right which is now being taken away: (1937) 249 NZPD 1048."

120. (1952) 297 NZPD 455.

121. Ibid.

122. Ibid.

123. Ibid., 456.

124. Ibid., 457.

125. This was a reference to the former Labour Government's controversial Coal Act 1948, a measure which had done more than anything else to raise the political temperature of the issue of nationalisation of resources. Section 3(1) of the Coal Act 1948 vested all coal in the Crown. One of the first measures of the incoming National Government was the Coal Mines Amendment Act 1950. This re-vested all privately-owned coal in its former owners. Section 2 of the Coal Mines Amendment Act 1950 states:-

"All coal, servitudes, and rights that were declared by Part I of the Coal Mines Act, 1948, to be vested in the Crown shall be deemed not to have been so vested in the Crown, but to have remained vested, as from the commencement of that Act, in the same persons, in the same manner, and subject to the same encumbrances, liens, and interests, as if Part I of the Coal Act, 1948, had never been passed."

126. The Geothermal Steam Act was repealed by s.17(1) of the Geothermal Energy Act 1953.

127.(1953) 301 NZPD 2647.

128.Ibid., 2468.

129.Ibid., 2469.

130.(1953) 301 NZPD 2470.

131.The Geothermal Steam Act 1952 defined "geothermal steam" as to include:-

"...steam, water, water vapour, and every kind of gas, and every mixture of all or any of them, that has been heated by natural heat of the earth."

132.s.5(1).

133.See Rotorua Geothermal Users Association Ltd v Minister of Energy and He Majesty's Attorney-General, unrep., 13 May 1987, HC, Wellington, CP 543/86 (Heron J.) pp.13-15 for an analysis of the provisions allowing the closure of bores. Heron J. upheld the legality of the Minister's decision.

134.Section 8(1) permits the Governor-General to apply the section in circumstances where Ministers have certified that "an industrial undertaking which will use geothermal energy is of national importance" - an interesting energy forerunner of the National development Act 1979. Section 8(2) goes on to provide:-

"For the purpose of facilitating the establishment of any such undertaking to which a declaration under sub-section one of this section relates, the Governor-General may, on the application of the persons responsible for the undertaking.....take.....any land within the area specified in the declaration or any particular estate or interest in any such land (whether for the time being subsisting separately or not), or any easement or profit a prendre over any such land (whether for the time subsisting or not)." [emphasis added].

S.8(3) provides that the interest so taken vests in the persons for whom it is taken rather than the Crown itself. I have not been able to discovery whether this provision was actually applied at Kawerau or not; since the Kawerau plant certainly does run on geothermal steam I presume it was.

135.See s.9(1), proviso (a); s.5.

136.(1953) 301 NZPD 2469. Goosman did also state that a reason for government control of the resource was that "it is necessary to ensure that the use of these forces of Nature is properly controlled, and also that nearby tourist attractions are not damaged".

137.(1953) 301 NZPD 2473 (25 November 1953).

138.Section 2 of the Geothermal Energy Amendment Act 1966 inserted s.3A and 9A into the parent Act.

139.Geothermal Energy Amendment Act 1969 s.2(b).

140.See Geothermal Energy Amendment Act 1966, s.4(1). This set out a standard resource rental figure.

141.See Ministry of Energy Act 1977 s.3(1).

142.See Ministry of Energy Act 1977 s.22.

143.Rotorua City Geothermal Energy Empowering Act 1967, s.8.

144.Ibid., s.15. See also Geothermal Energy Act 1953, s.3A and 9A.

145.Quoted by Heron J. in Rotorua Geothermal Users Association v. Minister of Energy, unrep., 13 May 1987, High Court, Wellington, CP 543/86, p.2.

146.Ibid., 5-6.

147.See the Minister of Works at (1953) 301 NZPD 2469.

148.See generally R.F. Keam, Tarawera: The Volcanic Eruption of 10 June 1886 (1988). The Rotomahana region became uninhabitable after the eruption. Many Tuhourangi went to live with the Ngati Wahiao people at Whakarewarewa and Ngapuna. Land was also gifted by the Ngati Maru - this block was returned to Ngati Maru by Tuhourangi in 1984. See Keam op. cit. 296-97.

149.See B.F. Houghton, E.F. Lloyd and R.F. Keam, The preservation of hydrothermal system features of scientific and other interest: a report of the Nature Conservation Council to the New Zealand Geological Society, 1980.

150.D.R. Gregg and A.C. Laing, "Hot springs of sheet n 94/4, with notes on other springs of N 94", unpublished report NZGS, DSIR, 1951.

151.M. Davenport, Beat Huser, C. Hannah, P. Dell, T. Tutua-Nathan, T. Marshall, R. Curtis, Geothermal Management Planning: An Overview, WVA Technical Publication No. 48, Waikato Valley Authority, Hamilton, 1987, 49.

152.Ibid., 49.

153.See Evelyn Stokes, Maori Issues at Orakeikorako: A Report to the Ngati Tahu Trustees.

154.E.F. Lloyd, Geology and Hot Springs at Orakeikorako, NZGS Bulletin No. 85, Wellington, 1972.

155.SR 1987/73.

156.Rotorua Geothermal Users Association Inc. v Minister of Energy, unreported, 13 May 1987, High Court, Wellington (CP 543/86).

157.See Regulations Review Committee 1987 (Chairman: Mr D.L. Kidd), Report on the Committee's Inquiry into the Geothermal Energy Regulations 1961, Wellington, 1987. The Committee's

report was strongly critical of the state of geothermal licensing procedures: see ibid., p.9. See generally R.P. Boast and D.A. Edmunds, "Geothermal Resources and the Law", a paper presented to the 1990 Geothermal Institute Conference, Faculty of Engineering, Auckland University, November 1990.

158.Rangitikei-Wanganui Catchment Board and Regional Water Board, Wanganui River Minimum Flow Review: Report and Recommendations of the Tribunal (20 September 1988), 22.

159.Planning Tribunal Decision on Wanganui River Minimum Flow Appeals, 1990, 57.

160.See ibid., 70, 71-72, 178-79. Compare this with Manganui Sewerage Report (Wai-17), August 1988, p.7.

161.In the matter of an application by Geothermal Energy Ltd: Report and Recommendations of the Special Tribunal, Waikato Catchment Board, 24 August 1989, p.10.

162.Ibid., 7.

163.Geotherm Energy Ltd v Electricity Corporation of NZ Ltd and The Waikato Regional Council, unreported, 16 July 1991, Planning Tribunal A 58/91 (Judge Sheppard).

164.See ibid., 37.

165.Ibid., 47.

166.See R.F. Keam (ed) Geothermal Systems: Energy, Tourism and Conservation: The proceedings of a seminar organised jointly by the Nature Conservation Council and the Environmental Defence Society, Nature Conservation Council, 1982. The present author has a copy only of a part of this document. The paper on Ohaaki was presented by Evelyn Stokes (see ibid., 45-51).

167.P. Gresham, O. Cox, C. Chung, and Alison Voice (ed), Management of Geothermal Resources: Issues and Options, Issues and Options Paper No. 1983/1, Commission for the Environment, Wellington.

168.ibid., 21.

169.R. Curtis, P. Dell, B. Huser, Strategy, Policy and Guidelines for Geothermal Management, Waikato Catchment Board, Hamilton, 1988.

170.D.A. Edmunds and R.P. Boast, Geothermal Resources and the Law, a paper presented to the 1990 Geothermal Institute Conference, Auckland University, November 1990, pp.13-14.

171."State geothermal assets may be sold off", The Dominion, 17 May 1990, p.1.