

TE OHAAKI MARAE WORKING PARTY

WORKING PARTY REPORT

Report
September 2004

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TE OHAAKI MARAE WORKING PARTY

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Introduction

This report has been prepared as a requirement of the November 2003 Terms of Reference for the Tahorakuri A1 Section 1 (s.338) Reservation (“Te Ohaaki”) Working Party (See Attachment 1 for the Working Party Terms of Reference).

The aim of the report is to set out the results of an investigation and assessment of options by the Working Party for addressing land subsidence issues at Te Ohaaki Marae. The report will be used for presentation and discussion of findings with the full 338 and 215 Trusts. The Working Party will then, in accordance with the Terms of Reference, secure formal feedback from the Trusts and from Contact Management as to whether any one or other of the options investigated should be advanced to the Contact Board for funding approval.

If the parties are agreed that funding approval should be sought for a specific option then the option will first be presented to a hui-a-iwi for ratification of the recommendation. If, however, approval of an option is not received from all parties, or not ratified by the iwi, then the Working Party will reconvene to discuss the next step.

The report that follows is in three parts.

- **Part 1** provides historical background to the subsidence issue at Ohaaki.
- **Part 2** provides an outline of alternative future options.
- **Part 3** presents the findings of an assessment of the alternative options. This assessment was completed at a Working Party workshop at Te Ohaaki Marae on the 17th of June 2004

PART 1
BACKGROUND

1. The Land & the Administering Trusts

Te Ohaaki is the principal marae of the Ngati Tahu, the home of the people of the Reporoa-Broadlands area. The village that was once associated with the marae had been largely abandoned by the 1970's as people migrated to Reporoa, Rotorua, Taupo and elsewhere looking for employment opportunities. The marae is used by members of the Maori community for hui and gatherings, and therefore retains considerable importance for Ngati Tahu.

Two separate trusts have been responsible for looking after the land and its reservations. The Ngati Tahu Tribal Trust ("215 Trust"), administers the Ngati Tahu land that is leased to Contact Energy. Tahorakuri A1 Section 1 338 Reservation Trust ("338 Trust) is responsible for administering the various reserves including those which take in the Marae area, the Ngawha area, the Urupa area and the Sacred Rock (sometimes referred to as the Fertility Rock), Te Kohatu o Momonatanga (Te Toka a Tika). On 15 December 2003 the Ngati Tahu Tribal Trusts administration of part of the land area being Tahorakuri A1 Section 30 was terminated and three new trustees were confirmed.

1.1 The Marae

There are various alternative names for the Ohaaki marae and wharepuni. The marae is most widely known as Te Ohaaki o Ngatoroirangi (meaning the gift or legacy of Ngatoroirangi). Others know it as Te Ohaaki o Mataarae. The wharepuni is named after Tahu, the founding ancestor of the tribe. Tahumatua was located to the current site about 1916. It is an Arawa-styled carved house constructed in Totara.

As part of the establishment of the Ohaaki Geothermal Power Plant a marae redevelopment programme was undertaken. The wharenuui was restored and the old dining hall and ablution block replaced. The wharenuui restoration work was completed in 1986. The Marae was blessed and reopened at a dawn ceremony held on 31 October 1989.

1.2 The Ngawha Reserve

The Ohaaki Ngawha (hot spring) bordered with a fretted white sinter was a taonga of Ngati Tahu. The outflow from the Ngawha fed two bathing pools in which the temperatures could be controlled.

The pool was effectively destroyed (from both a practical and aesthetic point of view) as a result of drilling and testing work undertaken by the Crown prior to 1978. After this the water level in the pool receded and then rose again with intermittent overflow occurring after 1981. Steamfield development work by the crown in the mid 1980's saw the intermittent overflow cease and the pool level reduce. Work to reseal the base of the pool (and thereby maintain water in it) has been ongoing since 1988. Further sealing may be required when the flow of water out of the base of the pool exceeds the rate of supply in to it. That supply is currently provided by water from the reinjection system under a consent granted by the Waikato Regional Council. The hot water is fed in to the pool

via an underground pipe. A channel from the pool then feeds the overflow hot water to the downstream bath house.

1.3 Urupa Reserve

The Urupa Reserve marks the site that has been used for burials in recent generations. There is an older urupa behind the meeting house south of the Marae. There are also other burial sites in the area.

1.4 Sacred Rock Reserve

The Sacred Rock, Te Kohatu o Momonatanga, also known as Te Toka a Tika, and sometimes referred to as the Fertility Rock, was said to be a place with special curative powers – particularly in the treatment of ngerengere (a sort of leprosy). This is located further to the south of the marae.

2. Crown Involvement at Ohaaki

2.1 Crown Exploration of the Ohaaki Geothermal Field

In the years immediately following the commissioning of Wairakei Power Station in the early 1960's the Ministry of Works and Development (MWD) undertook an active exploration programme, drilling wells and conducting resistivity surveys at Broadlands/Ohaaki, Ngawha Springs, Tauhara, Rotokawa, Orakei Korako, Te Kopia and Reporoa.

The exploration work showed that there were reasonable prospects for geothermal electricity generation at both Ohaaki and Tauhara. But with limited exploration funds available a decision was made to concentrate on-going investigation drilling on just one field at a time – with Ohaaki being the chosen field. This phase of investigation commenced in 1965. By 1970 some 18 wells had been drilled and the field was assessed at 120MWe.

Well discharge testing occurred between 1967 and 1971. The wells that were drilled in this period were generally put on continuous discharge until all of the wells were closed in August 1971.

Exploration drilling stopped for a period between 1971 and 1973 (during the peak of the Maui gas development) but re-started after the 1973 oil shock. Investigation drilling was completed in 1976 with the resource then assessed as having sufficient capacity to support a 150MW power station.

2.2 Construction of the Ohaaki Power Plant

Government approval for the construction of the Ohaaki Geothermal Power Plant was given in 1982. Electricity generation started in the second half of 1988 and all generation sets were commissioned by May 1989. The station was officially opened in October 1989.

2.3 Subsidence at Ohaaki

Subsidence was anticipated and was observed at Ohaaki between 1967 and 1971, during the discharge testing phase undertaken by the Crown. A network of survey benchmarks had been set up in and around the geothermal field in advance of the testing. These were monitored over time and provided confirmation of subsidence.

By 1977 sufficient data had been collected to produce a map of the annual subsidence rates and the predicted ground levels 3 decades out based on these subsidence rates.

These predictions are discussed in the 1977 Broadlands Geothermal Investigation Report¹, the 1977 Environmental Impact Report (EIR)² which was prepared ahead of the initial water rights and designation of land for the Ohaaki scheme. They are also referred to in the 1978 Environmental Impact Audit³ and in technical evidence presented to the water rights hearing in 1978⁴ and the land designation hearing in March 1979.

It is acknowledged in the reports that the site of Te Ohaaki Marae would be affected by subsidence – with the likely outcome of eventual inundation of the site by the waters of the Waikato River. Unless some way could be found to stop the subsidence, or to control it, the relocation of the Marae was predicted to be required within between 10 and 60 years.

This information was presented to the Ohaaki water right and designation hearings in 1978 and 1979.

The resulting water right for the extraction of geothermal fluid at Ohaaki (granted in 1978) included conditions requiring the on-going monitoring of subsidence. It also included a condition that:

(p) Should subsidence resulting from the operation of the geothermal field adversely affect the drainage of any land other than that owned by the Crown the grantee shall effect remedial action as necessary.

The condition meant, in effect, that if the Marae or other private land was affected by inundation, then the owner of the water right (at that time the Crown) would be required to fix it.

In 1978 it would have nevertheless been a difficult issue for the water right hearing to comprehend and deal with. At the time the hearing committee would probably have been aware of uncertainties in the subsidence prediction model and are likely to have been unsure in their own minds whether (and to what extent) the marae would actually be affected, or whether some technique for

¹ Pages 61 – 71.

² Page 13.

³ Section 4.3.11

⁴ Evidence of R. Aspden & R. Allis. Full reference details at back of this report.

preventing or controlling the effects of subsidence might eventually be developed in the future. Reinjection and/or the building of stop-banks had been briefly discussed.

The issue was further complicated by uncertainties over the future tenure of the land. That is, whether the Crown would eventually own the land or just lease it. It will be remembered that a heads of agreement to lease Ngati Tahu land to the Crown was not signed until four years later, in 1982. In 1978 it was the usual policy of the government to own rather than lease the land beneath public works. The hearing committee therefore may have assumed that the Crown would eventually own all of the affected land and that the issue would be settled therefore by the purchase of the land and relocation of the marae to higher ground. Otherwise, if the land was to be leased, there remained the opportunity for these issues to be resolved through the lease negotiation process.

The same issues were discussed during the process for the requirement to designate land for the Ohaaki geothermal development that occurred in 1978/79. The Ministry of Works and Development were aware of the certainty of subsidence and the likelihood of inundation of the Marae site. The Explanatory Statement for the requirement (Para 7 page 3) discusses subsidence centred around the Waikato River⁵ and states *“The effects will occur gradually and will probably not become significant for some decades. At that stage it may be necessary to consider protecting some land by stop banking, and possibly relocating the nearby Maori Marae Reserve.”*

In making this decision the hearing committee and MWD would have had regard to the objection to the designation submitted by Dr Evelyn Stokes on behalf of Ngati Tahu (December 1978). This was a detailed submission covering a number of issues of relevance to Ngati Tahu, but in particular the issue of retention of the land. The main concern at that time was that the land should not be sold to the Crown, but that Ngati Tahu would be prepared to enter in to a lease. The iwi was not generally opposed to the development (it was recognised that there may also be benefits for the people of Ngati Tahu) but insistent that the iwi should not be deprived of their ancestral lands.

Subsidence is also mentioned, however, as one of the specific concerns of the iwi in the 1978 submission (paragraph 2.2(c)). In particular there was concern that the designation did not make any provision for the monitoring of ground subsidence, or for measures to be taken by the Crown to *“avoid or reduce the danger, damage or nuisance this may cause in the future”*. Also criticised is the lack of any provision or undertaking that the Crown would pay the costs of such measures.

The Ngati Tahu objection did not propose that subsidence should not be allowed to occur at Ohaaki. Such an outcome would have only been achieved by not proceeding with any further development of the geothermal field. The point of concern was rather that the Crown must take responsibility for any subsidence and inundation that eventually happens.

⁵ A copy of the 1978 notice of Requirement is attached to the back of this report.

The hearing committee ultimately granted the designation requirement.

The situation now 25 years later on is that subsidence is occurring generally as predicted in the late 1970's but with some variation in the areas affected and the subsidence rates. Re-injection of separated geothermal water to a level of about 95% has been undertaken at Ohaaki and subsidence has continued to progress.

Subsidence once it has occurred is essentially irreversible. It is not possible to restore the level of the land to its mid 1960 level. It is also expected that subsidence cannot be readily slowed or stopped now until it has run its natural course. There is some discussion of this under option 2 where injection into the Huka falls formation might be possible. This is considered by IGNS to be experimental rather than a proven technique. Within a little more than five years the existing marae site will be seriously vulnerable to flooding at high river flow rates when the river levels are at their maximum. That vulnerability will increase with time. Action will be required soon if the flooding is to be avoided.

3. Contact Energy (1996 onwards)

Contact Energy took over the Ohaaki station in 1996 through the purchase of part of ECNZ from the Crown. The lease of the land to Contact Energy from Ngati Tahu, rather than the Crown, was negotiated in 1999.

Since Contact took over the running of the station and steamfield there have been a number of discussions between the company, the Ngati Tahu Tribal Trust, and the Tahorakuri 338 Trust to try and work out what is best to do about the inundation issue.

Contact recognises that this is a difficult and sensitive issue and that final resolution will only come about through consideration of the options by the iwi as a whole.

3.1 Memorandum of Understanding (1997)

After initial discussions with Contact Energy a hui a iwi was called in November 1996 to consider how best to deal with on-going consultation and investigations. A Memorandum of Understanding was subsequently agreed in December 1997 between Contact Energy and the Tahorakuri 338 Trust.

The Memorandum acknowledged the need for the Trust to be satisfied as to the cause, existence and extent of the subsidence and resulting inundation and set up a schedule of investigations to be carried out.

3.2 Resource Consent Renewals (1997 / 1998)

Further consultation occurred between the Tahorakuri 338 Trust and Contact Energy in the lead-up to resource consent renewals for Ohaaki Power Station in 1997 / 1998. The 338 Trust was also a submitter to the consent hearing. Consents were subsequently granted for a 15 year term.

Among the conditions of resource consent was the following:

Should subsidence resulting from the operation of the Ohaaki Power Station inundate any land other than that owned by the consent holder, or to which the consent holder has legal rights of access for the purpose of storing water thereon, the consent holder shall either effect any remedial works necessary or undertake any mitigation works appropriate⁶.

This is more or less a repeat of the original 1978 designation condition (refer to page 3 of this report) requiring the operator of the Power Station (in this case, Contact Energy) to fix any damage caused by the inundation of private land.

3.3 The Original Options and Iwi Roadshow (1998)

During the Ohaaki re consenting process in 1998 discussions between Contact Energy and the 338 Trust were held in relation to future options for the Te Ohaaki Marae area.

On 5 August 1998 five options were presented as follows:

1. Reverse the subsidence
2. Stop the subsidence
3. Build a Water Barrier
4. Relocate to a new area
5. Raise the level of the existing area

The people of Ngati Tahu live throughout New Zealand and overseas. Although they refer back to and maintain interest in their home marae they are of necessity spread around the country wherever their employment takes them.

It was therefore determined in 1998 that in order to inform and enquire of the opinion of the wider iwi membership the issue ought to be taken to the road.

A series of hui and presentations were convened in Auckland, Napier, Taupo, Wellington and Christchurch at which local Ngati Tahu people were invited to attend. The presentations were concerned with the issue of subsidence at Ohaaki and how this might best be addressed – particularly in respect of the marae, the urupa, the ngawha and the sacred rock.

⁶ From water permit No. 100977, condition 7.

Five options were presented in relation to the marae. Among these was the relocation of the marae to higher ground; the raising of the ground underneath the marae; the building of a dyke and pumping system around the marae and the stopping or reversing of the subsidence.

A letter dated 7 December 1998 was subsequently sent to Contact Energy from the Tahorakuri. A.1. Section 1. 338 Reservation Trust confirming that Option 5 was officially approved in principle subject to a number of conditions.

Over the subsequent few years a number of meetings between Contact Energy and Contact Energy representatives were held to try to progress the implementation of Option 5 but an impasse developed because of a disagreement over the area of land that needed to be raised. During this period members of the 338 Trust advocated a larger area of land than originally shown in the Option 5 diagram should be raised and Contact Energy considered that agreement had been reached to raise just the area shown on the diagram presented in August 1998.

3.4 Maori Land Court Involvement (Oct 2001)

The Maori Land Court's (the Court) involvement in the issues relating to the inundation and subsidence on Part Tahorakuri AI Section 1 Block (the land) and damage to the Ngawha began on 31 October 2001. On that day, Mr Rodney Thompson made an application to the Court for an order requiring Contact Energy to pay compensatory damages (the damages application) to the Trustees for trespass on and injury to the the Ngawha.

The Court's role

Since the filing of the damages application, the Court has taken more of a supervisory role than an adjudicatory one. It has attempted to mediate between the conflicting views within the Trustees and between the Trustees and certain beneficiaries about how the problems caused by the inundation and subsidence on the land, and the damage to the Ngawha, should be dealt with.

The differences within the Trustees, and between a number of the Trustees and certain beneficiaries, have been significant. For example, on 30 November 2001 a number of the Trustees filed a memorandum with the Court stating that they did not support the damages application. Applications have also been made to remove Mr Thompson as a Trustee, and, conversely, to remove Trustees that did not support the application for compensatory damages.

Rather than focussing on those applications, or traversing the proceedings in detail, the following sets out a brief description of the Court's principal interventions following 31 October 2001 to the present day.

Principal interventions

On 29 November 2001, the Court heard two applications. The applications raised, amongst other matters, a number of issues related to the 10 December 1997 Memorandum of Understanding (MOU) that Contact Energy and the Trustees had entered into regarding the investigation of the inundation resulting from subsidence, and a Contract for Service (the Contract) the Trustees had entered into with Te Runanga o Ngati Tahu-Ngati Whaoa Inc. The Contract was entered into to facilitate the completion of a Social and Cultural Impact Assessment that the MOU had envisaged would be completed by consultants engaged by the Trustees. Subsequently, difficulties arose over the completion of the Contract.

The Court directed that the Trustees terminate the Contract, and file a report about a range of matters. These included the nature of the subsidence problem, the Trustees' relationship with Contact Energy and the outcome of any negotiations, and the details of any plan the Trustees had in place to protect the land from subsidence and inundation.

On 22 March 2002, Judge Wickliffe visited Te Ohaaki Marae, as well as the urupa, the Ngawha, Te Toka a Tika⁷, and the Ohaaki Power Station to gain a greater understanding of the problems affecting the land.

On 20 July 2002, the Court issued preliminary directions setting out the issues for a hearing that had been set down for 7-8 August 2002. Amongst other considerations, the Court requested the parties' views on whether it should adjourn the damages application to allow the parties to negotiate. After discussions between the parties, a judicial conference was held on 2 August 2002. At that conference, the parties agreed that the substantive issues that the damages application raised (relating to inundation, subsidence and the Ngawha) should be adjourned.

On 7 August 2002, the Court issued a direction adjourning the substantive issues sine die (indefinitely). The sine die direction on the damages and trespass application enabled discussions between the 338 Trust and Contact Energy to recommence. A working party as described in the section below was subsequently established.

Approximately one year later, on 25 August 2003, the Court directed that the 338 Trustees hold a hui of the beneficiaries to discuss the progress the Trustees had made with Contact Energy. The hui was held on 30 August 2003. However, a number of the beneficiaries were dissatisfied with the outcome of the hui, and another hearing took place. On 15 September 2003, the Court issued a direction to record the agreement that had been reached about how to deal with the issues that those beneficiaries had raised. This included an agreement that the 338 Trustees would convene a hui with the Ngati Tahu Tribal Trust to gauge the level of support for the options that the Working Party had identified to address the inundation and subsidence on the land.

⁷ Also known as Te Kohatu o Momonatanga (and as the Fertility Rock).

The hui took place on 1 November 2003. On 25 February 2004, the Court convened a judicial conference to hear back from the Trustees and the beneficiaries about the outcome of the hui. At the conference, the Trust Chairman expressed confidence in the relationship between the two Trusts and Contact Energy, stated the working party was focussing on Options 4 and 5, and that the Working Party had a mandate to continue. One of the beneficiaries expressed a contrary view, considering that there had been no real progress in negotiations, that the beneficial owners did not support Options 4 and 5, and that legal action needed to be reconsidered.

The Court considered that the best way forward was to appoint counsel to advise the beneficial owners about what legal remedies might be available to the Trust in respect of the subsidence and inundation of the land. Therefore, on 14 May 2004, the Court appointed Dr Rodney Harrison QC to represent and advise the beneficiaries. He expects to be able to be ready to work on the case as of the middle of July 2004.

The Court is currently adjourned.

3.5 The Contact 338 and 215 Trust Working Party

Establishment of the Working Party

On 13th June 2003, after some initial meetings, a formal Working Party was established including members of the 338 and 215 Trusts and representatives from Contact Energy. The objective of the Working Party has been:

To work together to identify a practical certain way to mitigate the effects of subsidence on Te Ohaaki that provides a durable solution for Iwi and secures cultural and social benefits for future generations, while recognising traditional values.

The initial (June 2003) Terms of Reference for the Working Party were to examine only two options: Option 5 and Extended Option 5. At the 338 Trust AGM in November 2003 it was, however, suggested that the Working Party Terms of Reference should be extended to consider and report on all five options (plus a “do nothing” option) from the 1998 Iwi Road Show. The Terms of Reference for the Working Party were therefore modified in November 2003 to cover all of these options.

The November 2003 amendment also made provision for up to three other trust beneficiaries who are not part of the main Working Party to attend as observers. The core Working Party otherwise comprises six nominated members from the 338 and 215 Trusts and three representatives from Contact.

The investigation and reporting process for the Working Party have been outlined in the Introduction to this report. But in summary, that process is:

1. To assess each of the seven options;
2. To prepare a report on the results of that assessment for presentation and discussion with the full 338 and 215 Trusts and Contact;
3. To obtain formal feedback from the Trusts and Contact management and, if all parties are agreed,
4. To seek ratification for the preferred option at a hui-a-iwi, or
5. If no option is approved, or if the recommended option is not ratified by the Iwi, then the Working Party is to reconvene and discuss the next steps

Completion of this (present) report will represent the fulfilment of step 2 in the process described above.

Decision on the Fertility Rock (2003)

One of the issues that the Working Party has sought to address is what should be done in respect of the Sacred Rock ('Fertility Rock') located to the south of the marae. At the 338 Trust AGM in November 2003 it was made quite clear that the consensus of the Iwi was that the rock should not be moved from its current position, irrespective of the fact that the rock will eventually go under water.

Exhumation of Graves

Another important issue has been the future of the graves located next to the marae. These graves are within the zone of subsidence. The general consensus of the June 17th Workshop meeting was that the graves would need to be exhumed and relocated to another site. This would be required for any of the options under consideration. This would need to be undertaken in accord with appropriate cultural protocols after discussion with relatives of the deceased.

Summary of Working Party Meetings & Actions

The following is a brief summary of meetings and actions of the Ohaaki Marae Working Party, beginning with the first initial meeting in February 2003:

Date	Actions
21 Feb 2003	First meeting of the Ohaaki Marae Working Party. Review of first draft of Terms of Reference.
12 March 2003	Review of second draft of Terms of Reference. Update on engineering matters relating to Option 5.
9 April 2003	On-site meeting at Te Ohaaki Marae to determine extent of area required for 'extended option 5'.
13 June 2003	Terms of Reference finalised and signed. Review of latest water level predictions. Assessment of feasibility of relocating the Fertility Rock..
8 August 2003	Update on investigation of Option 5 and Extended Option 5.
24 November 2003	Amendment of Terms of Reference to include all options plus the 'do nothing' option. TOR also amended to permit observers at Working Party meetings. Consideration of significance of existing 'national marae' status. Action agreed to set up ground level posts. Action agreed to investigate water levels at Mihi Bridge.
3 May 2004	Report on water levels at Mihi Bridge. Presentation and discussion of report on investigations for option of building a water barrier. IGNS instructed to look at scientific issues with Option 2.
17 June 2004	Presentation on results of investigation of Option 2. Assessment of all options.
21 July 2004	Hui to review the draft working party report. Opus instructed to prepare comparative costings.
18 Aug 2004	Hui to further consider the draft report, receive Opus costings report and decide on a recommended option. Option 4 selected, subject to the finalisation of some details. This option to be submitted to combined Trust and Working Party to be held in September.

PART 2
THE OPTIONS

The Options

Seven possible options have been identified for addressing the subsidence issue at Ohaaki Marae. These options appear in the Working Party Terms of Reference and include:

1. The “Do Nothing” Option
2. Option 1 (Reverse the Subsidence)
3. Option 2 (Stop the Subsidence)
4. Option 3 (Build a Water Barrier)
5. Option 4 (Relocate to a New Area)
6. Option 5 (Raise the Level of the Existing Area)
7. Extended Option 5 (Raise the Level of the Wider Area)

The following is a brief description and discussion of each option:

1. **“Do Nothing” Option**

The “Do Nothing” option is exactly that. Doing nothing would mean letting the marae go. The marae and adjacent urupa would become increasingly flood-prone, would then start to be flooded on a regular basis, and would eventually be permanently under water. The whole process will happen slowly, but within about five years the occupation of the marae will become untenable due to inundation at high Waikato River flow and level.

“Do Nothing” may be a temporary step on the way, but it is not an option that would preserve the marae.

2. **Option 1 : Reverse the Subsidence**

Reversing the subsidence would in effect require the ground beneath the marae to be ‘re-inflated’

The problem with this option is that it is not possible to reverse deep subsidence once it has occurred. Once the fluid-bearing strata has been compressed there is no way to restore it. It would be a desirable outcome but can not be physically achieved. There is no known technology that would allow this to be done.

3. **Option 2 : Stop the Subsidence**

The aim with option 2 would be to stop the subsidence and hold the ground level where it now is.

There is a possibility that this could be done by setting up a cluster of shallow injection wells around the marae. Investigations are being undertaken at the present time by the Institute of Geological and Nuclear Sciences (GNS) to see if such a method could be made to work. There is however a lot of uncertainty and IGNS have suggested that an experimental program would need to be undertaken. There are also likely to be issues with having so many injection wells surrounding the marae and the

fact of continued reliance on the injection wells and the pumping of water to keep the marae 'afloat'.

Deeper injection into the Ohaaki Rhyolite might be used to slow the subsidence process. This injection process would cause permanent damage to the Ohaaki geothermal field. Pumping reinjection water directly in to the heart of the field would quench it and reduce its productive potential.

Otherwise there are no further options available to stop the subsidence. Even if the power station was turned off today, the ground would continue to subside for many years to come. It will eventually stop, but long after the marae site has been inundated.

4. Option 3 : Build a Water Barrier

Option 3 is possible. A water barrier could be built. The advantage of this option is that it would leave the meeting house and urupa in their current location (although the dining hall would still need to be moved).

The marae would however gradually subside beneath the level of the Waikato River, meaning that constant pumping would be required to keep the water out. A network of drains would have to be dug around the marae to collect seepage water and stormwater so that this water could then be drained away to the pump stations then pumped into the river. The marae would be forever dependant upon the maintenance of the pumps and maintenance of the barrier. The view from the marae would look out upon the back of this 8 metre high dam.

There would also be an issue of safety for anyone staying at the marae. If an earthquake occurred at a time of high water levels there would be a risk of collapse. Good engineering design would minimise this risk, but it could not be completely overcome.

With this option the opportunities for future papakainga development are mostly unaffected – although it is questionable whether many people would want to build near to the marae and within the shadow of the dam. There may also be problems with trying to get building consent approval or house insurance for new papakainga housing in this same area.

5. Option 4 : Relocation of the Marae

Option 4 (relocation of the marae) is also possible. The marae would be refurbished and moved to a new site on higher ground. The location of the new site, somewhere near the existing site, would be selected by the Iwi. The urupa would also be moved. No specific site has been identified. It is only a conceptual option at this stage.

6. Option 5 : Raise the Level of the Existing Area

This option is also possible. It would involve temporarily removing the marae buildings and laying down a platform of fill on the site over a total area of 3.9

hectares and initially to a depth of 3 to 4 metres. The marae buildings would then be replaced. The urupa (unless relocated) would be buried beneath the imported fill.

Some years later the process would be repeated, bringing the depth or height of fill at that time to between 6 and 8 metres. The marae buildings would once again be temporarily removed then relocated back to the site on top of the new fill. The end result would be a peninsula built out in to the Waikato River with the marae buildings more or less in their original (but elevated) location.

The advantages of this option are that the marae effectively remains where it is. Although it would not be standing on specifically the same ground, it would at least be standing on the same site. The urupa (unless relocated) also remain, although these would now be covered over by 6 or 8 metres of imported fill.

The disadvantages of this option are that the retention of the site will be somewhat artificial. The marae will be standing on foreign imported fill, and the same fill will be overlying the urupa. The urupa (6 to 8 metres lower than the marae), unless relocated, will also eventually be beneath the level of the river and within an area of permanent groundwater. The grave stones and memorials would have to be removed each time during the filling process and put back in position above the original grave sites once the fill is in place.

The period of disruption for the marae will be much longer with this option. The marae buildings will need to be removed and relocated every time a build up of the ground level is undertaken. If the buildings are to be put back in their original position this will also mean a double-shifting each time, once to move each buildings aside, and a second time to move them back.

There will be a small amount of space around the marae for papakainga housing with this option – although any building in this area would have to be relocatable (to be able to be shifted off site when more fill is added) and would need to be on adjustable piles (to compensate for ground settlement). It may be difficult to get building permit approval under these circumstances.

7. Extended Option 5 : Raise the Level of a Wider Area

Also possible. This option is the same as option 5 but involves building up a larger area (about 6.6 hectares).

The advantages of this option are the same as with Option 5, except that there would be about 2.7 hectares more raised land immediately around the marae. Although the marae would not be standing on specifically the same ground, it would at least be standing on the same site. The urupa (unless relocated) would also remain, although these would now be covered over by 6 or 8 metres of fill.

The disadvantages are also the same as with Option 5. The site will be built up with imported foreign fill and therefore might feel somewhat unnatural. The urupa, unless relocated, will also be covered over with imported fill. If so, the grave stones and memorials would have to be moved aside and then put back again each time that fill is added.

Because of the larger area involved, the period of disruption from heavy earthmoving machinery will also be longer. As with Option 5, the marae buildings will have to be moved several times as subsidence progresses.

There would be space for some papakainga housing around the marae with this option (more space than with Option 5). But as with Option 5 it would be necessary for all of the buildings to be relocatable and to have adjustable piles. There may also be problems with getting District Council building permit approval for building on settling fill.

PART 3

ASSESSMENT OF OPTIONS

Assessment of Options

A decision on a course of action will soon be needed to address the inundation issue at Te Ohaaki Marae. This decision rests with the iwi, and will need to be ratified by Contact's Board in terms of expenditure. A number of options have been defined for assessment by the Working Party. These each need to be considered carefully.

At the Workshop on 17 June 2004 the options were discussed and given an initial ranking to help with thinking on what might be the best course of action to take. To assist in this process a scoring system was developed with each option considered against a number of different assessment criteria. These assessment criteria (from the Working Party Terms of Reference) were as follow:

1. **Cultural & Spiritual Acceptability**: How well or how badly does the option fit with cultural and spiritual observances and traditions?
2. **Durability of the Solution** : Will the solution last? Will it be a long term solution, or will future generations have to go through all this again?
3. **Level of Disruption to Marae Operations** : Will the marae be out of action for long? Once the works (if any) are complete, will the marae be able to be used as it always has been in the past?
4. **Engineering Practicality & Feasibility** : Will the option actually work? Will it succeed in protecting the marae?
5. **Opportunities for Papakainga** : Will it still be feasible to develop papakainga housing around the marae?

The task for the Working Party at the 17 June Workshop was to assess how well each of the seven options rated against the different assessment criteria. Each option was rated against each of the five assessment criteria using a 'descriptive' scale. At the top end of the scale is the description "better than now" (meaning the outcome for that option and that criteria would actually be better than what is there now). At the bottom of the scale is the description "impossible". In between are a range of different descriptive words.

The specific scoring criteria used were:

1. **Better than now** : The outcome would be better than what we have now.
2. **Good** : A good outcome, but no better than we have now.
3. **Neutral** : Neither good nor bad.
4. **Tolerable** : Not good, but we could live with it.
5. **Bad** : A bad outcome.
6. **Impossible** : This outcome is either physically impossible, or impossibly bad.

During the assessment a record was also kept of any other comments from workshop participants. These comments have been recorded underneath each of the respective assessment tables.

Set out below are the completed assessment tables from the 17 June Workshop.

1. “Do Nothing” Option

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability					•	
Durability of Solution						•
Level of Disruption to Marae					•	
Engineering Practicality			•			
Opportunities for Papakainga						•
<i>Other comment</i>						
<p>(CF) Timing is important – if it is left too long it will be difficult to relocate buildings.</p> <p>(RN) Will any change in government (BC) Contact independent & in consent.</p> <p>(CF) Options came about from Working Party, not from Contact’s point of view. The technical and scientific information prepared by Contact has been useful to base good decisions on for Tamariki and Mokopuna. Don’t want Tamariki and Mokopuna having to deal with this issue again some time in the future.</p> <p>(BH) Has the Working Party assessed all of the options. (BC) said today is about bringing all of the material together. All options are in front of us today.</p> <p>(BH) Will the Working Party make a recommendation? (BC) yes that is the plan but it needs to be ratified by the Hui.</p> <p>(BH) What impact will moving the marae have on the output of the Power Station? (BC) No.</p> <p>(BG) Be practical. If you do nothing you will get nothing.</p> <p>(LP) Thinks that a neutral stance is appropriate because in 1997 the scientists said that by 2005 the marae should be under water. Therefore there is a question about the scientific predictions.</p> <p>(RN) Never communication in the old days about effects on Orakei Korako and the damming of the Ohakuri Lake. She appreciates listening to the information and the technical issues and be able to make a decision with some knowledge and choice.</p> <p>(BG) The people have had to deal with 2 floods in the past - 1846 was the first. This affected pa in Aratiatia, Ohaaki and Orakei Korako and Ngawaparua areas. In 1961 people were moved out when Lake Ohakuri was flooded. The history of these events is recorded. The people have lived through these events. We just have to do our best for the old people and the future generations. Pre 1850 ancestors came up the Rangitaiki River to the area. At Orakei Korako a church was built in 1852. This is all documented. Tahu came there in the 1850s and built a meeting house called Tahu. There was another meeting house Taroa. 800 people at Orakei Korako in 1859 – Hoschetter.</p> <p>(CF) Wants to talk on behalf of his Mum. Tupuna are buried behind the marae. A very emotional issue.</p> <p>(BG) People buried behind the marae – can be moved to the main urupa with proper ceremony.</p>						

2. Option 1 : “Reverse the Subsidence”

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability						
Durability of Solution						
Level of Disruption to Marae						
Engineering Practicality						•
Opportunities for Papakainga						
<i>Other comment</i>						
(SD) It was agreed that because this is impossible to physically achieve due to engineering impracticalities rankings were not done for the other criteria.						

3. Option 2 : “Stop the Subsidence”

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability						•
Durability of Solution					•	
Level of Disruption to Marae					•	
Engineering Practicality			•			
Opportunities for Papakainga						•
<i>Other comment</i>						
(BC) The pumps would have to keep going until the power station stopped and then there would need to be time for the reservoir to fill back up – this would take decades.						
(RR)Struggling with second paragraph regarding the effectiveness of infield reinjection regarding this being best practice for Te Kopia and Rotokawa. (BC) 95% reinjection is going on at Ohaaki. But there is still subsidence going on. This doesn't work at Ohaaki. These are bold statements regarding “best practice”. Early infield injection resulted in cooling the resource and it was moved away from the productive parts of the resource. The injection we are talking about here is targeted and experimental.						
(BC) Engineering practicality not known – there will be lots of infrastructure all around the marae to keep the mudstones pumped up – wells, pumps, pipes. The solution results in an Island (a section of land held up) similar to Option 5 with water all around – similar to the Option 5 in this regard.						
(RN) Culturally sensitive for the marae to have water around it and be on an “island”.						
(RW) What are the guarantee of the options? There is a thin line. Explaining the cultural sensitivity of a marae sitting on an island where a kaumatua has to address the issues about the land itself. The real issue of tangata whenua and mana whenua cannot be expressed properly with the surrounding water. When the Queen was aware of the issues around Waahi Marae at Huntly she had it quickly lifted.						
(GR) Does not like the idea of pumps having to keep the marae up. This makes it not a durable option						
(BG) When is a marae not a marae? – when it is an island.						

4. Option 3 : “Build a Water Barrier”

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability					•	
Durability of Solution					•	
Level of Disruption to Marae					•	
Engineering Practicality				•		
Opportunities for Papakainga						•
<i>Other comment</i>						
<p>(CF) Had a good discussion on this at the last meeting at Wairakei – suggest move the comments from the minutes of 3 May 2004 into this comments section. Agreed.</p> <p>(PC) Opus Engineer. It is possible but there are risks. He would tend to the lower end of the scale – tolerable.</p> <p>(CF) This would just buy some time.</p> <p>(MR) Would water come in underneath. (BC) You would need to make special precautions to reduce the risk of this.</p> <p>(NW) The security of Papatuanuku would be lost.</p> <p>(GR) Will be handling more problems onto our kids – a temporary solution and not a good one.</p> <p>(BC) Major disruption would happen if something failed.</p> <p>(RR) Still a lot of disruption through the construction.</p> <p>(GR) How many pumps would be needed. (BC) – not sure, maybe about 4?</p> <p>(BG) A lot of risks associated with this – forget about it.</p>						

5. Option 4 : Relocate the Marae

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability		•				
Durability of Solution	•					
Level of Disruption to Marae				•		
Engineering Practicality			•			
Opportunities for Papakainga	•					
<i>Other comment</i>						
<p>(MR) Have Contact looked into any specific options. (BC) At an earlier meeting some possible sites were looked at but for today we should look at the broader concept and not specific sites.</p> <p>(BH) Glad I am here – I am now getting a bigger view of the concerns of the people. I see we have 2 realistic options either raise the marae or relocate it. Lets concentrate on these two. Do a feasibility study on raising the marae – this is not impossible. Would not oppose the relocating of the marae – Working Party would need to look at the details of a relocating if the raising of the marae was impossible.</p> <p>(PE) What would happen about the National Marae status if it was shifted? It is hard enough to get our Iwi to make a decision without all of NZ being involved. (BG) This status would only relate to the current site and not any new site.</p> <p>(RR) Understands that changing the status of the marae may be difficult legally. Relocation may assist with this problem?</p> <p>(BH) At the time the status of the marae was merely a symbolic exercise because the government was not prepared to spend money on the marae if it was privately owned. This was the understanding of the kaumatua at the time. The land is leased land, it is still owned by the people. We could invite the Historic Places Trust to explain this.</p>						

continues ...

Comment on Option 4 continues...

(RR) We are talking purely about the relocation of the marae. I want it to be noted that the loved ones who are buried beside the marae would be relocated also.

(CF) My personal “gut” feeling is that I would like to see the marae relocated outside the subsidence area. Somewhere solid for our mokopuna.

(RN) I support Cedric. Our mokopuna and grand mokopuna need somewhere stable. Cedric is here all of the time – ahi ka.

(MR) I support Cedric as well. I have always supported relocation. In history this marae has been relocated three times before. I want to see it moved to a more stable are. I have suggested up near the Power Station with access to steam and closer to SH1 where future generations could set up some business. Contact Energy should support the sustaining of the marae.

(RR) On behalf of Rawiri Te Whare I would like to say that if relocation is chosen by the people there would need to be dialogue about the loss of the land and the mana whenua and acknowledgment of the grievance that has occurred here. A comprehensive and total closure is needed which would help appease the grievance. It not necessarily only the relocation that needs to be addressed. If this is the option that the people choose this very special discussion would have to be had which would help form a closer relationship between Contact Energy and the people. Let’s build a strong relationship for the future.

(BG) I am agreeable with the relocation option.

(HN) Not sure if sinking will happen? It is coming up around us. Good to look at things now. It is sad. We were supposed to gain.

(NW) If relocation looked at lets put somewhere that is special to us and is stable. I like the area at Te Piripiri area we looked at – there is an urupa there.

(MF) I don’t like it. I just want to stay here.

(BH) We need to look at Option 5 – building up the marae also.

(MR) This option is compatible from a cultural perspective based on my understanding of science.

(SD) A mixture of views on cultural criteria – some think it is only tolerable from a cultural perspective while others think a better outcome than now because the science says that in 5 to 7 years the current site will be flooded. Therefore on this criteria a “Good Outcome” reflected the average of views.

6. Option 5 : “Raise the Level of the Existing Area”

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability				●		
Durability of Solution					●	
Level of Disruption to Marae					●	
Engineering Practicality			●			
Opportunities for Papakainga						●

Other comment

(BG) You still need to relocate the people in the burial areas.

(BH) I think this option is viable to think about. I don’t believe the River will get anywhere like shown on the graphics presented to the meeting.

(RN) Can you keep raising the area? (BC) Yes but you have to find the material. The works will take many months of work to reinstate the marae. There will be significant disruption.

(PC) You have to move the material in. The buildings have to be moved off. Each time you lift the area of land will reduce.

continues ...

Comment on Option 5 continues...

(RR) Will the urupa on the hillside get inundated?

(LP) Previously the people wanted the Option 5. We need to go back to them. I realise there will be some disruption.

(TM) How high is the first lift.

(CF) With the raising option we are back to the "Island Scenario" re option 2 and we didn't like that. We are going to make a man-made island ourselves.

(NM) The movement of our buildings a number of times is not as good as relocating once and blessing the new site.

(NW) Shifting the buildings back onto fill brought in from outside the whenua of the marae is not the same.

(PW) I like the presentation done today. For myself and our whanau we need to move it.

7. Extended Option 5 : Raise the Level of a Wider Area

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
Cultural/Spiritual Acceptability					•	
Durability of Solution					•	
Level of Disruption to Marae				•		
Engineering Practicality					•	
Opportunities for Papakainga						•

Other comment

(GR) With all the computerised photos we should distribute these to others because it is hard to imagine unless you live here what will happen. It also refreshes peoples minds about what will go on.

(RR) A lot of time has gone by – a lot of information has gone out. It would be good to send out material before a hui a iwi. Communication and dissemination of information is very important. Current and up to date information being able to be read and understood by people easily is important.

(CF) Really only 2 options for me – (do nothing or relocation).

(BG) Still need to shift the people buried around the marae irrespective of what option. This is a priority if the people want this.

Key to initials (Alphabetical order):

(BG) = Bill Galvin

(BH) = Bill Hall

(BC) = Brian Carey

(CF) = Cedric Forrest

(GR) = Garry Robinson

(HN) = Hape Ngamotu

(LP) = Lou Phillips

(MR) = Makere Rangitoheriri

(MF) = Miriama Forrest

(NW) = Nepia Williams

(PC) = Paul Clarkson (Opus Engineer)

(PE) = Paula Edwards

(PW) = Peehi Whou

(RW) = Raitana Whou

(RN) = Rangimarie Ngamotu

(RR) = Robert Reweti (representing Rawiri Te Whare)

(SD) = Stephen Daysh

(TM) = Tawhi Mita

Summary of Results

The table below shows a summary of ratings for all of the options assessed at the June Workshop at Te Ohaaki Marae. The names of each of the options are written down the right hand column of the table. Across the top of the table are the different scoring categories (from 'better than now' through to 'impossible'). The dots in the table show a summary of the total score for each option across all of the assessment criteria.

Total Scores (all Options)

	Better than now	Good outcome	Neutral	Tolerable	Bad	Impossible
"Do Nothing" Option			●		●●	●●
Option 1						●
Option 2			●		●●	●●
Option 3				●	●●●	●
Option 4	●●	●	●	●		
Option 5			●	●	●●	●
Extended Option 5				●	●●●	●

The results indicate that Option 4 was the most preferred option. This was the only option to score any points in the 'better than now' and 'good' categories. It was also the only option not to score an 'impossible'.

Summary of Costs

The following table provides a summary of the costs for the various options. Further details on the cost analysis are in the Opus Report attached to the back of this report.

The costs occur at various times and in order to make them comparable they have all been brought back to 2004 costs by discounting them with time at a 10 percent discount rate.

	Estimated 2004 Cost – DR 10%
"Do Nothing"	0
Option 1	Physically impossible. No cost estimates can be made.
Option 2	2,970,000
Option 3	1,137,000
Option 4	297,000
Option 5	1,434,000
Extended Option 5	2,242,000

The table shows that Option 4, as well as being the highest scoring on other attributes, is also (with the exception of the "Do Nothing" Option) the most reasonable option from a cost perspective.

Note however that the cost of Option 4 would also be expected to include some additional costs for improvements to the marae as part of the relocation process. The aim with this would be not just to relocate but to end up with a completed facility that is, as far as possible renovated and a little better than now. Such improvements would

be made as part of the overall relocation process. Some costs associated with preparation for papakainga have been included in the Opus cost estimates.

There have been some informal ideas discussed on other improvements that could be considered for incorporation in to Option 4. The improvements would need to be identified, drawn up into a concept plan and have the costing worked out. Any improvement costs that Contact would consider would be subject to the approval of the Contact Board. Improvements would need to be by way of physical works and be linked to the relocation.

Conclusion and Recommendations

The Working Party has fulfilled the Terms of Reference (November 2003 Update) insofar as the consideration of a range of options and the completion of the Working Party Report. Based on our work the clearly preferred option is Option 4 (Relocation).

It is appreciated that some Iwi members may still have doubts about the scientific predictions relating to inundation of the Ohaaki Reservation areas. However, based on the information in front of it the Working Party is satisfied that the subsidence predictions are realistic and that a decision on appropriate actions to deal with the situation needs to be made promptly.

Our recommendations to the 338 and 215 Trusts and to Contact Energy Management pursuant to Clause 8 of the Terms of Reference are as follow:

1. Option 4 (Relocation) is recommended as the preferred option to put before the Trusts (338 and 215), Contact Energy, and then a hui-a-iwi for ratification pursuant to Clause 10 of the Terms of Reference.
2. With regard to the matter of timing of relocation:
 - 2.1 Preparations should be made for identification of the new site, land purchase, legally setting aside the land as a Marae reserve and as an area for papakainga, securing any resource consents necessary for the site development, and the development of and preparation of the site for the buildings to be moved at the appropriate time.
 - 2.2 The relocation of the Marae to occur closer to, but before the time that inundation poses a serious risk of flooding to the buildings located on the current site. (i.e. when the bottom level of the front step of the Wharenuui is at RL 290.5 (about 500 mm free board to high water level – as at August 2004 freeboard is about 1500mm)).
 - 2.3 Undertaking this approach will help assist those who currently don't consider that the Marae will be threatened by inundation to have a more certain understanding of that reality and then better understand the preparations that the Working Party has made as part of this process.

3. That the graves immediately to the south of the marae be exhumed and be relocated, at the appropriate time prior to the flooding of the grave sites, in accordance with appropriate protocol.
4. That the Fertility Rock not be touched or moved and that appropriate ceremony and protocol be undertaken with regard to the submerging of the rock.
5. A budget provision be recommended to be set aside by Contact Energy for implementing the following:

§ Funding to relocate and re-establish the Marae on a new site of up to approximately 6 hectares, inclusive of preparation of some level building sites for papakainga housing, the establishment of vehicle access, power, phone/internet connection, and a septic tank sewerage system for the marae.

§ Energy supply to the relocated Marae, either:

- a) A supply of hot water to the new marae site through the supply of geothermal fluid similar to the current arrangements, including consideration of a bath house. The practicality of a geothermal supply will however depend on the location of the new marae site and the distance from the source of hot water / steam. If the new site is the same distance or less from an available source of geothermal fluid then a geothermal water supply will be made available for the Marae.
- b) If the geothermal fluid supply is too far away from the new site (see (a) above) then an annual supply of LPG for heating hot water and cooking of up to 630kg to be supplied for as long as the Ohaaki Power Station is operational.

An annual maintenance check to be organised by Contact Energy of the geothermal or LPG supply system installed in the Marae for as long as the Ohaaki Power Station is operational.

§ Upgrading of the kitchen facilities to a catering kitchen standard and a rest area for the cooks.

§ Funding for costs and expenses associated with exhumation of the graves from immediately behind the existing Marae area.

6. That the Working Party be authorised by the Trusts and Contact Energy Limited to:
 - § Assess in detail the possible locations of the relocated Marae
 - § Develop concept plans, including some facility improvements compared with the current site, for the preferred site.
 - § Discuss and seek Contact Energy Management approval to fund some of the improvements that are developed in the concept plans.
 - § Present the concept plans and receive feedback on the plans from the Iwi.

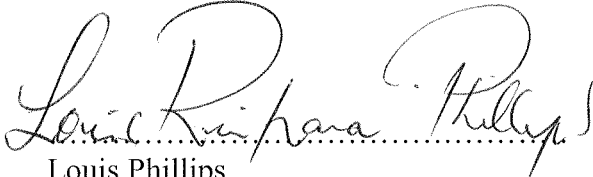
7. The following are some suggestions for inclusion in the concept plan:

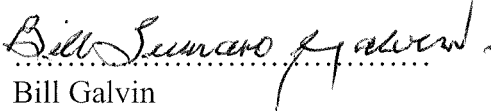
- § Papakainga Housing. Show provision for papakainga housing in the vicinity of the Marae. The 338 Trust to control the allocation of the sites. The 338 Trust to give consideration to relocation of the dwellings currently existing (as at August 2004) around the Marae and currently within the area of future inundation. The trust may consider it appropriate that these dwellings be relocated to the new Marae site or to some other agreed site on Ngati Tahu land in the near vicinity but outside the area of inundation or that some other course of action for these is appropriate.
 - § Toilet facilities and waiting room for manuhiri waiting to come onto the Marae.
 - § Construction of a caretakers cottage (floor area of approximately 50m²), including maintenance / workshop area to be built alongside the relocated Marae.
 - § Extension to the Wharenui for storage of bedding.
 - § Business Self Sufficiency initiatives
 - a) Contact to consider the provision of the old construction store area and floor slabs (just off the access road into power station) to assist Ngati Tahu to develop a business venture to utilise the 2000 KW of heat supply identified in the lease (clause 43.1). This could possibly be for a glass house business venture, or
 - b) Construction of a dormitory / lodging facility (approximately 100m²) next to the Marae.
8. If contrary to the scientific predictions the Marae doesn't require shifting then the land purchased and the preparations made under 2.1 above to establish a Marae reservation continues and the land procured is to be managed by a Ngati Tahu trust (338 / 215 Trusts).
9. Inundation of land around the Marae Reservation should be separately worked through with the owners / trustees of those portions of land with Contact Energy as has occurred with other land in the area of Ohaaki (The Working Party is only working with the Marae reserve areas).
10. That Contact Energy agree to apologise to the people of Ngati Tahu for the distress that inundation and the relocation of the Marae has caused. This apology to be given at the appropriate time and forum.

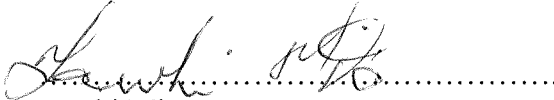
These are the Recommendation of the Ohaaki Working Party pursuant to Clauses 6 - 9 of the November 2003 Working Party Terms of Reference.

The Recommendation is hereby approved for submission to the 338 and 215 Trusts and Contact Energy management for their feedback and advancement.

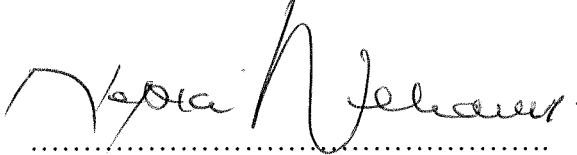
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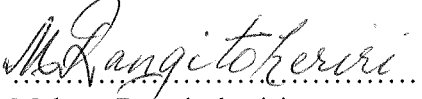

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Louis Phillips

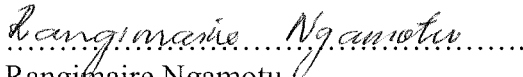

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Bill Galvin



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Tawhi Mita


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Rawiri Te Whare

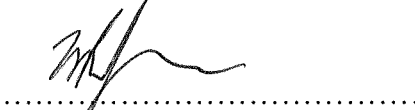

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Nepia Williams


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Makere Rangitoheriri


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Rangimaire Ngamotu


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Brian Carey


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Stephen Daysh


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Nick Gurr

Date: 2. September 2004.

KEY REFERENCES

KEY REFERENCES

Ministry of Works and Development (June 1977) *Broadlands Geothermal Field Investigation Report*. (pages 61 – 71)

New Zealand Electricity Department (November 1977) *Environmental Impact Report for the Broadlands Geothermal Power Development*. (page 13)

Commission for the Environment (May 1978) *Broadlands Geothermal Power Development : Environmental Impact Audit*. (Section 4.3.11)

Statement of Evidence of Robert John Aspden (1998) Evidence before the reconsenting hearing for Ohaaki Power Station.

Statement of Evidence of Robert John Aspden (March 1979) Evidence before the designation requirement hearing for Ohaaki Power Station.

Statement of Evidence of Richard Allis (1998) Evidence before the reconsenting hearing for Ohaaki Power Station.

Explanatory Statement – Ohaaki Power Station – Requirement of the Minister of Works and Development 6 November 1978.

ATTACHMENTS

- (1) WORKING PARTY TERMS OF REFERENCE**
- (2) ILLUSTRATIONS FOR OPTIONS**
- (3) 1978 EXPLANATORY STATEMENT**
- (4) COSTINGS REPORT**