COMPLIANCE MONITORING OF A COASTAL PERMIT FOR SAND EXTRACTION, OTAMARAKAU BEACH, BAY OF PLENTY

Office of the
Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

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PREFACE

Many people like to live close to the sea. New Zealand with its enormous coastline provides plenty of opportunities. However, coastal living has its risks, particularly when coastal lands are in a dynamic state: rising, falling, receiving deposits or being eroded.

This investigation arose from community concerns regarding sand mining on a beach at Otamarakau, Bay of Plenty - one part of a large, dynamic terrestrial/marine sand sediment transportation system. Citizens at Pukehina Beach, 14km northwest of Otamarakau, were concerned about erosion on their beach and wanted a full investigation of the contribution that sand mining to the southwest might be making to the erosion. The answer to this question lies in comprehensively understanding a very complex coastal and marine sediment recruitment and movement system. Available data and my resources simply preclude providing this understanding. I found there was data available to show that the volumes of sand removed on the particular beach did not adversely affect its "health" over the few years monitored. However, there is no adequate data to indicate what the long term effects might be on the coastal dynamics within the greater Bay of Plenty. From a sustainable management perspective that is the greater need.

The inadequacy of our understanding of impacts on the Bay of Plenty marine sediment transportation system, as opposed to the actual piece of beach being mined, is one of the key findings of this investigation. Despite the coastal process of the Bay of Plenty being extensively researched, it appears neither research, nor Bay of Plenty Regional Council monitoring, can determine the long term sustainability of sand extraction at Otamarakau. That indicates a need to apply the precautionary principle i.e. further restrict sand mining or phase it out until there is a better understanding of the total stock of sands, and of recruitment rates. To not take this course of action could result in future communities having to deal with more severe coastal erosion and carrying all the associated cost. I don't believe current communities have the right to offload this risk on to future generations.

While I was not able to answer the Pukehina community's main question (the agent or agents responsible for causing erosion of the foredune) the investigation did highlight a number of other resource management issues - specifically the adequacy of systems for monitoring compliance of sand extraction with resource consents and the adequacy of processes for valuing minerals and collecting royalties. While my investigation established that the total quantities of sand mined approximated permitted amounts, there was considerable variation between the amounts recorded per audit reports

provided to the Bay of Plenty Regional Council, Ministry of Commerce mines inspection records and purchase records of the major end user.

Sand extraction royalty setting and collection systems are deficient. The Otamarakau beach sands are of high quality and the quantity for extraction is clearly limited by the resource consent. The royalties set by regulation, however, do not reflect the sands' true value. Review of the regulations, to ensure resource rentals reflect resource value, appear to be required. An investigation by the Ministry for the Environment, to ascertain reasons for royalties not being paid or collected as required by the law, could also be warranted.

As is so often the case with the administration of resource management policy, the focus of monitoring has been on processes and site specific matters. I have concluded that the Bay of Plenty Regional Council did adequately monitor sand extraction operations for compliance with the consent that was granted. However, while focussing on compliance it may have overlooked the impact of commercial sand extraction on the wider coastal system. For the long term environmental health and economic future of the region, that omission must be remedied.

Dr J. Morgan Williams
Parliamentary Commissioner for the Environment

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The highest quality sand deposits in the Bay of Plenty are beach sand and are in considerable demand for construction purposes. Sand has been extracted, since about 1919 from the beach at Otamarakau, some 30 kilometres northwest of Whakatane, by NZ Railways and others. The current consent holding company J W Paterson & Sons Ltd has been mining sand from this site since 1987 and has been permitted to take 330,000 cubic metres of sand from the beach over the last 10 years.

There has been ongoing concern within the community that the sandmining operation at Otamarakau may be directly or indirectly responsible for the coastal erosion occurring at Pukehina Beach 14 km along the coast to the northwest.

What becomes clear from the scientific analysis is that, while a lot is known about this particular stretch of beach - perhaps as much, if not more than, any other beach in New Zealand - not a lot is known about the dynamics of the total sediment transportation system at work along the Bay of Plenty coast. There is insufficient data to conclusively determine exactly what effect sustained sand removal on the Otamarakau beach has on the wider system.

At the time of approving the permit in 1995, it was anticipated that the regional coastal plan in which sand mining on the foreshore would be excluded, would be in place before the permit expired. Therefore, the amount of effort invested in analysing the total Bay of Plenty sand system was in keeping with the expected life of the permit.

This permit expired on 30 June 1998 and a new permit application is currently being processed by the Bay of Plenty Regional Council (Environment BOP). The expired permit restricts mining activity to three locations, each to be mined for no more than 22 working days annually. It contained a complex formula for determining whether sufficient sand is available for mining.

The consent conditions provided a yardstick for compliance monitoring and enforcement activity. In the Otamarakau case, sand volumes seem to exceed permitted levels but not significantly. Other conditions appear to have been met, although often not to deadline. The issue of frequency of reporting and rigour of monitoring has led to the consent holder believing he has to monitor too much too often. Nevertheless, there is no evidence to suggest that this consent holder is treated any differently by the council than any other operator working on a similar scale in the Bay of Plenty.

In the course of this investigation several issues emerged. These included the procedure/ accountability for royalty payments to the Crown, the robustness of the mean high water springs jurisdictional boundary and the community's understanding of what the consent allowed the consent holder to do.

A review of resource rentals for the occupation of coastal space became an amendment to the Resource Management Act in 1997. There would appear to be merit in having sand extraction royalties revised in a similar way.

The issues concerning mean high water springs are twofold. The first involves defining where this boundary occurs and the second is the jurisdiction issue, the ability of one council (Environment BOP) to enforce the consent where works occur beyond this boundary and hence into another council's jurisdiction (Whakatane District Council).

The community does not have a good understanding of what is allowed under this permit, thus the consent holder is under some suspicion within the community. Although all consent information is readily available on request from Environment BOP, the council should consider ways of further communicating its role and responsibilities and those of the consent holder.

Overall, it would appear that Environment BOP did adequately monitor the consent that was granted and its monitoring measures were carried out in keeping with the purpose of the Resource Management Act 199 1. However, in monitoring compliance with that consent it may have overlooked impacts on the wider coastal system.

1. INTRODUCTION

The investigation was to examine the effectiveness of monitoring by the Bay of Plenty Regional Council (Environment BOP) to ensure compliance with the conditions of a coastal permit to extract sand from the foreshore at Otamarakau Beach. It was conducted under section 16(l)(b) of the Environment Act 1986, which authorises the Commissioner for the Environment to examine the effectiveness of environmental planning and management carried out by public authorities, and to advise them of any remedial action the Commissioner considers desirable.

There has been ongoing concern within the community that the sandmining operation at Otamarakau may be directly or indirectly responsible for the coastal erosion currently occurring at Pukehina Beach further along the coast to the northwest.

Pukehina Ratepayers' Association wrote to the Minister for the Environment on 17 October 1997 after seeing an article in the Rotorua Daily Post of 15 October 1997 about the "non-compliance of conditions [under the relevant resource consent] by J W Paterson and Sons [which] resulted in operations being stopped three times this year". The Association asked the Minister to stop all sand mining operations by the company pending a full investigation "by the Minister's Department".

The local Member of Parliament, Mr Tony Ryall contacted the Parliamentary Commissioner for the Environment following representations by the Association asking for "an independent audit of Environment Bay of Plenty's technical procedures and advice regarding sand dune erosion at Pukehina Beach in the Bay of Plenty". In particular Mr Ryall was "keen to be assured that the advice offered by Environment BOP is credible".

After some initial enquires and a visit to the site to meet the parties concerned, the Office of the Parliamentary Commissioner agreed to investigate the effectiveness of Environment BOP's compliance monitoring. The Commissioner decided against providing an opinion on the soundness of Environment BOP's analysis of the cause of erosion at Pukehina Beach. This was based on insufficient resources within the Commissioner's Office to undertake a further scientific study of coastal geomorphology. However, there appears a general consensus among scientists involved in studying this stretch of coast that land erosion at Pukehina is a natural phenomenon, affected by storm events, occurring within a much wider coastal system. This is

not to say that ongoing sand extraction at one point in the system may not be having an effect on the balance of that system.

Throughout this report the term 'compliance monitoring' is used to describe a regulatory activity of the regional council, involving surveillance or checking of the resource consent, to determine whether the consent holder is meeting the specified conditions and is operating within limits intended to control any adverse effects of an activity on the environment. A broad definition of compliance monitoring would also include checking for compliance with rules in plans and the requirements of the Resource Management Act 1991 (RMA). However, that falls outside the parameters of this investigation.

Section 35 of the RMA recognises the importance of the monitoring of resource consents (compliance monitoring). It is a statutory duty on local authorities. Section 35 (1) and (2)(a) directs regional councils to "gather such information, and or undertake or commission such research, and monitor the state of the whole or any part of the environment of its region or district to the extent that is appropriate, as is necessary to carry out effectively its functions under the Act" - including "the exercise of the resource consents that have effect in its region . ..". Failure to carry out that duty is not only a breach of the RMA, it also puts at risk the credibility of the council if consents are not monitored for compliance and, where necessary, action taken to enforce conditions.

The overriding goal of any monitoring carried out under the RMA is to contribute to the promotion of sustainable management of natural and physical resources. Monitoring provides feedback on the effectiveness of policies, plans and resource consents to achieve the purpose of the Act, to control adverse effects on the environment, and to enable councils to refine their guiding policies and procedures and review consent conditions.

2. BACKGROUND

2.1 The region

Environment BOP is the regional authority for 12,231 square kilometres of land and 9,509 square kilometres of coastal marine area on the east coast of the North Island of New Zealand. The region extends inland generally to the ridge of the catchments which drain into the Bay of Plenty. The furthest point from the coast, the top of the Rangitaiki River catchment, is 139 kilometres from the sea. The eight major rivers emptying into the Bay are the Wairoa, Kaituna, Tarawera, Rangitaiki, Whakatane, Waioeka, Motu and Raukokore Rivers.

Economic growth in the Bay of Plenty is the second highest of any region in the country. Economic activity is based heavily on the region's primary production activities - forestry, dairying and horticulture - and tourism. Housing is the largest component of the growth in construction in the region. Associated with this growth in construction has been a high demand for masonry products - concrete blocks and paving, all made from Otamarakau sand.

2.2 Geological history

The Opotiki, Maketu and Tauranga Basins and the harbours that they contain are the main landforms along the coastline of the Bay of Plenty. These were formed by down warping during the middle to late Pleistocene period. (Shaw and Healy 1962) Sea-level fluctuations occurred throughout the Pleistocene. During this time events were further complicated between Maketu and Whakatane by faulting and further warping.

The coast to the west and inland of Matata is made up of the Kaharoa plateau, a landform of loosely consolidated sand and gravel volcanic material. In the headwaters of the Hauone and Waitahanui streams there are outcrops of Urewera Greywacke which underlie the volcanics in this region (Healy et al. 1994). To the east of Matata is the Rangitaiki Plains, a sand and ash feature intilling the Whakatane Graben and extending seawards onto the coast in a convex arc.

The Otamarakau coastal system is composed of sand and gravel. The beach and dune sand are composed of predominantly quartz and feldspars, although volcanic glass is a significant contributor. (Phizacklea 1993) The mineralogy of the sands indicates the dominance of an acid volcanic provenance derived primarily from the Central Volcanic Region and the Kaharoa Plateau. (Gibb 1994)

Illustration 1 - Location Map

However, the question of where the sediment sources of the Otamarakau coastal system are located today and whether they are still active and provide long term replenishment or are of a finite amount is difficult to determine. These are questions that cannot be answered with any confidence through this investigation. They require ongoing scientific determination.

2 3 The Otamarakau coastal system

The Otamarakau coastal system is found between the Pikowai and Waitahanui streams. It is generally agreed that sand is supplied to the system from local streams, of which the Waitahanui is the major source, and from both offshore and longshore sources. Seaward of the beach is a longshore bar-trough system. During low swell conditions, sediment is thought to be transported onshore from this longshore bar-trough. During onshore wave storms, sand is transported offshore to be stored in the longshore-trough system. The "longshore component of [coastal sediment] movement caused by the interaction of coastal processes is commonly termed . . . littoral drift". "Littoral drift is the main mechanism by which sediment is supplied to the beach . ..". "The actual littoral drift direction for the Pukehina-Matata section of the Bay of Plenty is not known with any degree of certainty. One of the main reasons for this is the orientation of the Maketu and Pukehina Spits in opposing directions." (Phizacklea 1993)

Between Otamarakau and Matata, the mouths of the Waitahanui, Hauone, Pikowai, Herepuru and Mimiha Streams have a tendency to migrate in a southeasterly direction. Such a tendency is consistent with a net southeasterly longshore drift. In contrast, at the Town Point end of the system, Pukehina Spit has grown from east to west suggesting a net northwesterly longshore drift in the lee of the Point. (Gibbs 1994)

The overall tendency however, appears to be for sediment to be blown along the Bay of Plenty coast in a westerly direction. Smith makes the observation that the sand on the beach between the sea and cliffs is wedge shaped tapering towards the west. This same pattern is reflected in the longshore bar that exists off shore. The tapering of these deposits to the west indicates that this is the net transport direction. It is the bar and the sand sitting on the sea floor, according to Smith, that provides the bulk of the sediment movement onto and along the beach at Otamarakau. (Smith 1997)

Despite the close proximity of the Waitahanui Stream as the major sediment source to the Otamarakau coastal system, the localised trend of retreat against the general trend of accretion suggests that sand mining since the mid 1980s has had a definite impact on the amount of sediment available to nourish the coastal system northwest and southeast of Otamarakau. (Gibbs 1994)

In the short term, according to Phizacklea (1993) "sand extraction will probably have little noticeable effect on the beach-dune nearshore system of the area, other than the current aesthetic one, provided the guidelines set down in the coastal permit regarding sand extraction are adhered to . . . Also of vital importance is stringent monitoring of the actual volumes of sand removed is required, to better assess the extent of likely impacts." However, Pizacklea is sceptical of "the assertion that the beach between Otamarakau and Pikowai can sustain removal of 36,000 cubic metres (since reduced to 27,000)." (p308)

Yet Smith's scientific opinion based on 15 years of coastal change records along this part of the coast is that although the supply of sediment is a finite resource, it must be considered in the context of a 1,000 year process. Within that time frame, and providing the beach is retained in a healthy condition, there is enough sand moving onto and along the beach at Otamarakau to make mining sustainable. In Smith's opinion, the real limiting factor is the rate of net long shore transport which will vary from year to year. (Smith 1997)

What becomes clear from reading the scientific analysis is that, while a lot is known about this particular stretch of beach - perhaps as much, if not more than, any other beach in New Zealand - not a lot is known about the dynamics of the total system at work along the Bay of Plenty coast.

There is insufficient data to conclusively determine exactly what effect sand removal from on this particular beach has on the wider system.

There is data available to show what volumes can be removed without adversely affecting the health of this particular beach over the period of a few years, but nothing pointing to any effects this might have on the coastal dynamics within the wider Bay of Plenty over a longer time span.

2.4 Otamarakau sand

The highest quality sand deposits in the Bay of Plenty are beach sand deposits. These deposits have been subjected to intensive abrasion by wave action, and only the hardest material remains. Consequently, these sands are in considerable demand for construction and industrial purposes. The high pumice concentrations of most of the Bay's land sources of sand make them unsuitable for use in building aggregate. (Smith 1997)

With the exception of the dune mining operation near Papamoa, Otamarakau, Snells Beach and Matakana Bank are supplying all the sand-sized building aggregate for the Bay of Plenty and parts of the central North Island.

Environment BOP has recently completed a monitoring report on two coastal sand mining operations in the Bay of Plenty region - one at Otamarakau and the other, on a smaller scale, at Hikuwai (or Snells) Beach, Opotiki.

The consent holder currently extracts sand from two sites along this coast, a site on private land at Papamoa, and at Otamarakau Beach. The Papamoa site provides fine sand particularly suitable for concrete which requires pumping and for plastering.

Otamarakau sand is valued for the high strength of the particles that make up the sand. This in turn gives a very high abrasion resistant product able to met very high municipal specifications. Without using this sand it would be harder and more costly to achieve the required specifications in some masonry contracts.

2 5 The two Otamarakau sites

The mining area is located within the coastal foredune area on the Otamarakau coast off State Highway 2. The main east trunk railway line runs to the south of the site, following the coastline. The nearest houses to the site are farm houses some 200 - 400 metres away to the south/southwest.

It is difficult to accurately establish the history of sand extraction from Otamarakau, as there are no records of volumes extracted. Small amounts of sand have been extracted from the beach at Otamarakau since about 1919 by NZ Railways and others.

The current extraction area extends from the Pikowai Stream in the east to the Waitahanui River in the west. The beach is split for extraction purposes into three 1800 metre lengths with each area mined once at different times of the year: Area One (closest to the processing plant at Otamarakau Station) is mined in the autumn/winter, Area Two in summer and Area Three (closest to Pikowai Stream) in spring.

Sand extraction on the foreshore at Otamarakau Beach is, according to the New Zealand Coastal Policy Statement, a restricted coastal activity because the removal of sand extends 1,000 metres or more over the foreshore. S 1.6 (b)(iii)

The sand is stock piled and processed for transportation off the site at an adjacent site behind what is known as the Otamarakau railway station. Processing involves the screening and washing of sand. The original processing and stock pile site was owned by NZ Rail and leased by J W Paterson & Sons Ltd. However, the company moved its processing site across the railway line to adjoining land leased from a private farm owned by E M & W A Mortensen.

The processing site is shown as zone Rural G in the Whakatane District Plan. In this zone, mining is a discretionary activity.

Illustration 2 - Sand extraction areas showing beach monitoring sites

2.6 Maori issue

Maori interests as they relate to this site are claimed by three different groups. The company owner, Mr Paterson is a member of one of those groups (Ngati Rangitihi, a sub-tribe of Te Arawa). Each of the groups considers that its rights to determine what occurs along this stretch of the coast are paramount.

The Otamarakau Marae (Ngati Makino) is within 1 kilometre of the site. The Otamarakau Marae Trustees have lodged a Waitangi Tribunal Claim (Wai 334), known as the Matata Land Claim. The occupation by Ngati Makino can be traced back to the time when they moved from Rotoehu to harvest flax on this part of the coast. Occupation by Ngati Makino was subsequently confirmed by the Crown in recognition of their "loyalist" support during the land wars of the 1870s.

Tuwharetoa ki Kawerau have a Waitangi Tribunal Claim (Wai 62) covering the area in question. The Claim, registered in 1988, seeks redress against an historical breach against the Treaty of Waitangi and manawhenua and manamoana over that portion of land from the Eastern side of the Waitahanui Stream to a point at Wahieroa.

Waitangi Tribunal claim (Wai 46) by Ngati Awa also involves this area. There is also a claim (Wai 524) by Ngati Rangitihi, but this is understood to be over land in the Tarawera basin.

Mr Paterson, in exercising this resource consent, has had advice and guidance from his local (Ngati Rangitihi) kaumatua, Mr Jack Te Aramoana Brady. There is evidence on file that he has sought clearance from kaumatua of all three local iwi to verify whether or not the proposed mining area contains waahi tapu, urupa or other sites/values of special importance.

The beach site is part of a significant Kaokaoroa Battle stretching from Otamarakau to Tarawera. In early 1990, remains of three human burials were discovered in the frontal dune system between Otamarakau and Matata.

Kaumatua have reservations about indicating specific waahi tapu or urupa publicly because of possible desecration or vandalism. This means that there are no publicly identified sites in the immediate vicinity. The dunes are the more likely sites of ancient burial places. The resource consent is for the foredune and outside the dune area. Nevertheless, the beach is also culturally and spiritually significant because of its historical use for kaimoana/native plant harvesting and the fact that it used to be the main access route along the coast.

The Otamarakau Marae Trustees (Ngati Makino) appealed the resource consent to the Planning Tribunal ***Tawa v Bay of Plenty Regional*** Council, *(AO/8/95)*. Although the Tribunal dismissed the appeal and awarded costs to Environment BOP, it did make two recommended amendments to the consent conditions. One allowed for the kaumatua, after being invited to inspect the site, to inform the regional council in writing of their concerns, and allowed the council the right to withdraw that specific area from mining. The second amendment was for inspection at the completion of each mining period. Before issuing a written clearance, the council would invite the kaumatua to express any concerns over the work undertaken.

It is generally recognised that this consent holder is more aware of Maori issues than most and has sought the advice of his kaumatua. However, there are conflicting points of view regarding authority to grant approval to extract sand from this beach and questions of ownership and interest in the sand as a resouce. Clarification of such questions may develop as the claims are heard by the Waitangi Tribunal.

2.7 History of the resource consent

The consent holding company, J W Paterson & Sons Ltd has been involved in extracting sand and assorted aggregate since the early 1950s. In April 1985 their sand mining operation at Matata was closed down because the extraction was greater than the natural rate of replenishment at that site. After commissioning a study into the possible sand mining sites in 1986, the consent holder began extracting sand from the Otamarakau site in 1987. Prior to this date, the site had been used by New Zealand Rail for the same purpose. Since 1987 licensing of the consent holder for sand extraction has been the responsibility of the Department of Conservation, under section 146A of the Harbours Act, 1950. The consent holder was licensed on an annual basis to take 20,000 cubic metres of sand from Otamarakau for each licensing period. A three month licence was issued as a temporary permit in June 1991 to remove 5,000 cubic metres. This licence expired at the end of September 1991.

In October 1991 the RMA was enacted, repealing section 146A of the Harbours Act 1950. Control of the Otamarakau mining operation below mean high water springs (MHWS) passed to the Bay of Plenty Regional Council (Environment BOP).

The consent holder's operation involves mining sand from below mean highwater (the Tribunal changed the reference from MHWS to mean highwater) and processing the sand above the MHWS mark on adjacent land across the railway line. Authority to mine the sand (below MHWS) is provided by Environment BOP and the sand processing site (above MHWS) is within the authority of the Whakatane District Council.

After the study by Phizacklea in 1993, the amount of allowable annual sand extraction was reduced from 36,000 cubic metres to 27,000 cubic metres. This amendment was accepted and recommended by the Planning Tribunal in its appeal decision in August 1995.

Volumes permitted to be taken off this part of the coast since 1987 are as follows:

period	**site**	**volume in cubic metres**
1987 - 1991	Otamarakau	20,000 x 5 yrs = 100,000
1991 (three months)	Otamarakau	5,000
1991 - 1995	Otamarakau	36,000 x 4 yrs = 144,000
1995 - 1998	Otamarakau	27,000 x 3 yrs = 81,000
total volume permitted to be taken		330,000

For an assessment of actual volumes taken see pages 25-26 below.

The consent holder's main customer is Firth Industries Ltd in Mount Maunganui. Other Firth plants at Kawerau and Rotorua, as well as a number of smaller customers have also been supplied in the past.

All sand used in the Firth masonry plant at Mount Maunganui comes from Otamarakau. This plant is Firth Industries' largest masonry manufacturing one in New Zealand. It produces all Firth's masonry products from Taupo to the Bombay Hills, and all paving products in the Auckland area.

The Otamarakau sand supplied to Firth's is used mostly in paving and veneer products. Fashion is changing the demand for these products with the increase in popularity of clay products imported from Australia providing strong competition.

2.8 Current coastal permit

The current coastal permit was issued for a restricted coastal activity (s. 119 RMA) "to extract sand from the foreshore at three selected areas at Otamarakau Beach" on 10 July 1995 by the Minister of Conservation. This permit expired on 30 June 1998. A consent application from J W Paterson and Sons Ltd for a renewal of the coastal permit for a 10 year period with a review in 5 years was lodged with Environment BOP on 23 December 1997. The new consent application is currently being processed.

The mining strip is subdivided into three areas which are mined in turn throughout the year as described above.

- Mining is only allowed for a period of 22 days in each area, and can only take place on normal working days.

- There is no mining on public holidays or weekends. This ensures the public have access to the beach for recreational purposes.
- Area One is located near a New Zealand Dotterel nesting area and mining takes place in this area in the winter to prevent disturbance of breeding pairs in the spring.
- A buffer of 110 cubic metres per metre of beach is required to be retained at all times. Mining of material is approved to take place on sites with beach profiles above this level within each mining area.

2.9 Joint hearing

Whakatane District Council and Bay of Plenty Regional Council joint hearings took place in April 1993 on the application "to establish a sand processing plant on the Otamarakau Railway Station site involving the stockpiling, screening and washing of sand.

Submissions were received from 16 parties, including the Minister of Conservation, Whakatane District Council, Transit New Zealand, Te Runga 0 Tuwharetoa Ki Kawerau, Rotorua Fishing and Casting Club Inc., Otamarakau Marae Trustees, Te Puke Branch, Tauranga Branch & Eastern Bay of Plenty Branch of the Royal Forest and Bird Protection Society of New Zealand, Bruce Shearer, McDougal & Sons Ltd, Mrs Garwood and 89 other local residents, E M & W A Mortensen, D J & C C Blennerhassett and the National Council of Women of New Zealand (Inc).

2.10 Concerns of objectors

These can be summarised as follows:

The adverse effects of the proposal on the natural character of this part of the coastal environment. The operation is incompatible with the scenic values and character of the beach.

Loss of recreational values and public access. The impact of heavy machinery operation and associated noise levels will minimise the desirability of the area for public use and recreation.

Increased coastal erosion. Danger of outstripping the natural replenishment of sand through littoral drift or catchment systems. Concern at the possible damage to properties and assets along the coastal margins.

Effects on Maori cultural/spiritual values and land ownership claims. The two iwi making submissions have Waitangi Tribunal claims on the area - Otamarakau Marae Trustees (Ngati Makino) and Re Runga 0 Tuwharetoa Ki Kawerau. Ngati Makino submit that if their land claim is granted they would have absolute authority over any sand removal

activities. Tuwharetoa Ki Kawerau submit that the application is commercially driven and does not reflect concerns of a spiritual and cultural nature for the sites in question.

Adverse effects on ecological values. The three Royal Forest and Bird Protection Society branches are principally concerned at any threat to the New Zealand Dotterel whose breeding habitat is near the Waitahanui Stream mouth.

Lack of monitoring. How is the proposed operation going to be policed to determine how much is actually removed.

Alternative sources of supply. Alternative locations for sand extraction exist away from the foreshore. These alternative sources should be investigated.

Restoration/rehabilitation of the proposed mining area.

Inappropriate use of the proposed area ie. coastal environment. Considered to be contrary to the policies of the Bay of Plenty's Transitional Regional Coastal Plan. These policies include the restriction of sand mining from areas where environmental damage and/or coastal erosion could result.

Sustainability of sand resource. Removal of sand from the proposed area is an unsustainable activity. The amount of sand being extracted is greater than the rate of replenishment.

Illegality of current operation. A licence should not be issued to make an illegal operation legal after the fact.

The final wording of the coastal permit and its conditions were taken to appeal by the Otamarakau Marae Trustees. The appeal was based on Maori cultural grounds arising from competing claims by different tribes to the status of tangata whenua in respect of the stretch of beach concerned ***(Tawa v Bay of Plenty Regional Council*** A 18/95 24/3/1995 Judge Sheppard). The Tribunal's report to the Minister upheld the recommendations of the regional council's hearings committee that the permit be granted, but amended to give effect to the agreed reduction in the volume of sand to be extracted and to certain amendments to the conditions recommended by the committee.

The outcome of the hearings is reflected in the conditions imposed on the permit. See Appendix I for a copy of the signed coastal permit and conditions.

3. MONITORING OPERATIONS OF ENVIRONMENT BOP

Section 35(2) of the RMA requires local authorities to monitor four different things:

- the state of the environment
- the suitability and effectiveness of policy statements and plans
- the exercise of any functions, powers or duties delegated or transferred by the local authority; and
- the exercise of resource consents.

The Act also requires local authorities to take 'appropriate action where this is shown to be necessary'. This recognises the purpose of monitoring is to check compliance with policies, plans and consents. Monitoring provides an important source of information for evaluating the effectiveness of policies, plans and consents. It can also signal whether changes are required to manage natural and physical resources in a sustainable way to achieve councils' environmental objectives.

3.1 Resources allocated fo monitoring

A previous report of the Parliamentary Commissioner for the Environment (1996) identified the issue of resource allocation as a constraint on councils. Without exception resources are found to limit the extent to which compliance monitoring is carried out (PCE 1996). Resource constraints highlight the importance of identifying priorities and setting achievable targets within the resources available.

Environment BOP's RMA functions come under the direction of the Director Regulation & Monitoring and the Director Resource Planning. The Director Regulation and Monitoring is responsible for the Consents and Compliance Section. This section is separated into three areas: Consents Administration, Consents Processing and Compliance. The Consents Processing area has eight staff, while the Compliance area has six staff. However, staff are contracted from throughout the entire organisation and even externally to undertake consent and compliance work as appropriate.

Consent management (including consent processing, consent compliance, response to complaints and enforcement) at Environment BOP is funded 55% from user charges and 45% from general rates/investment income. Response to complaints is funded wholly from general rates/investment income.

3.2 Use of the resource consent information

Monitoring of resource consents is an essential part of evaluating resource management policies, plans,

strategies, programmes, objectives and targets. Information from compliance monitoring can help:

- assess any effects on the environment of activities authorised by resource consents
- assess the effectiveness of, and review, consent conditions
- assess and review monitoring programmes
- determine whether the local authority's policies and strategies relating to consent monitoring, and their relevant information requirements, need to be revised, and
- contribute to 'state of the environment' monitoring.

A number of methods are used for recording and retrieving information on consents, and for recording and following up complaints. For Environment BOP, information on the coastal sand extraction permit at Otamarakau Beach is held on a paper filing system with a category heading called Consents and Permits. The one active and six closed files for this permit were inspected on Environment BOP premises as part of this investigation.

3.3 Environment BOP complaints monitoring

Complaints about an activity subject to a resource consent can be a valuable source of information. In keeping with the trend in many councils, complaints received by Environment BOP are entered into a computer database as a complaint report with a summary of the concern and the action taken. Every six weeks a list of all complaints is generated and reported to the Environment Monitoring Committee.

Complaints to Environment BOP noted on the Otamarakau sand extraction operation over the last twelve months include:

> excavator operating within 200 metres of the Hauone Stream
> operating outside approved mining sites
> excess sand removal has caused sea to wash up near railway line

The Principal Compliance Officer responds to all complaints and the entire compliance area feeds back into consent conditions, either through review periods or when consents are renewed. For example, there is a formal process whereby a compliance report is usually prepared as part of consent renewal. However, generally Environment BOP observes the need for separation of compliance and consent duties - consent officers who have sole responsibility for compliance are probably less willing to recognise the inadequacy of conditions if they have prepared them in the first place.

4. MONITORING OF THE OTAMARAKAU PERMIT

Monitoring is a significant component of this resource consent and is necessary to ensure that the operation does not adversely effect the coastal environment.

The main monitoring requirements of the Otamarakau permit are:

Before and after surveys of the established beach monitoring sites within each area to be mined. Survey data to be verified by Environment BOP who approve/decline areas to be mined, before the start of each operation.

Site inspections by Environment BOP of the mining areas throughout each period of operation.

The operator is required to establish further beach monitoring sites. All monitoring sites are surveyed at four monthly intervals.

The operator is required to survey coastal cross sections along the beach at sites either side of the proposed mining zone to determine whether mining is affecting the coast beyond the actual operational area. These sites are surveyed at four monthly intervals, with annual reports required to be submitted to Environment BOP.

An annual monitor of the effects of the mining on ecological values, including the back dune/wetlands areas, shellfish populations and nesting habitats at the three stream mouths, is also specified and must be reported to Environment BOP.

Returns of volumes extracted are to be supplied to Environment BOP four times a year. An annual independent audit of volumes extracted must also be suppled.

All of this monitoring complements the existing Environment BOP monitoring programme, including two profiles in the sand extraction area that make up the 49 coastal sites of the Natural Environment Regional Monitoring (NERM) programme.

As part of the Compliance and Impact Monitoring Policy approved in 1995, Environment BOP also carries out a compliance audit of all operations involving sand, shingle and shell mining in the coastal

marine area in the Bay of Plenty. The first of these annual compliance reports based on six monthly visits was finished in October 1997.

The October 1997 Compliance Report described compliance by two operators, including the one at Otamarakau, that carry out sand mining in the coastal marine area in the region. The report found that during 1997 the operators at Otamarakau were not complying with consent conditions on several occasions and they were instructed to cease operation on those occasions. There was also an issue with the royalty not being paid.

5. ISSUES RAISED DURING PERMIT MONITORING

5.1 Royalty payments to the Crown

Although sand, shell and shingle within the coastal marine area are by definition Crown owned minerals, the Crown Minerals Act 1991 (CMA) does not apply to them unless the Minister of Commerce so specifies in a minerals programme. In the absence of a minerals programme, or a particular mineral being specified within a minerals programme, no authorisation is required from the Crown to extract material from the coastal marine area (the landward boundary being mean highwater springs - MHWS). What this could mean in the Otamarakau context however, is that any sand mining above MHWS would require a Crown Minerals Permit (s.8(2)(b) CMA 1991).

However, irrespective of the existence of a minerals programme the extraction of sand from within the coastal marine area requires royalty payments to be made to the regional council on behalf of the Crown. Royalty is payable on all material extracted including pea gravel and other beach material, particularly where this material is on-sold.

Payment of royalties is set out in clause 9 of the Resource Management (Transitional, Fees, Rents and Royalties) Regulations 1991 (SR 1991/206) which provide that:

- for each cubic metre of sand, shingle or other natural material extracted, a royalty of $1.70 is payable
- payment is to be at intervals, specified in the consent or at quarterly intervals
- payments are collected by the regional council and paid to the Crown

The consent holder in this instance is required to provide annual payments. However, Environment BOP and the Ministry for the Environment have no record of any royalty payments received from February 1994.

There has been confusion over just what constituted the Crown's royalty. The consent holder, and indeed its legal counsel made a case for the royalties to equate to the mines inspection fee for health and safety issues required under the Ministry of Energy Abolition Act 1987. This fee of 10 cents per tonne has in fact been paid regularly by the consent holder to the Ministry of Commerce office in Hamilton.

The Minister for the Environment is responsible for royalties. However, the Ministry does not appear to have a system in place for ensuring regular royalties payments follow the granting of coastal permits.

There are two separate types of royalties:

- Resource rentals represent a return on an asset paid by the people using the asset, to the owner of that asset or the body vested with ownership duties.
- Environmental user charges are a form of economic instrument, a way of achieving environmental outcomes by providing a primary economic, rather than a legal incentive to get users to change their behaviour towards the environment.

The sand extraction royalty for Otamarakau is the resource rental kind. In principle a resource rent royalty system is to capture an economic rent on behalf of the community. While this issue goes beyond the terms of reference of this investigation, it is difficult to see how an arbitrarily determined figure ($1.70 set in 1991 for the whole of New Zealand) could be anything more than a token rental. If the royalty were never intended to be a way of achieving an environmental outcome (eg. managing the effects of an activity or for intergenerational equity), it begs the question as to why it is in the RMA in the first place.

The rationale for rentals derives from scarcity, and the level of rental should reflect this. The best way to estimate a rental is to use a tendering system. The RMA provides for the use of such a system. The next best method could be a rental based on the value of the coastal site and the resource it contains eg. the value of Otamarakau Beach as a sand extraction site. For example, if Firths were to buy the total annual quota (27,000 cubic metres) at current prices, this would equate to some $697,000. This valuation would then be used as the basis of a royalty used to collect the rental.

These ideas, and how the revenue could be better targeted for coastal management, have been canvassed in a Ministry for the Environment discussion document on Resource Rentals for the Occupation of Coastal Space (1994). The RMA has since been amended to address these concerns (Amendment Act 1997 s.64(a)). **There would appear to be merit in having sand extraction royalties revised in a similar way.**

The collection of royalties has significant direct costs, not including the costs of enforcement. Environment BOP sets its own flat fee of $45 for collecting the royalties on behalf of the Crown (clause 7C 1991/206). Chasing up unpaid amounts can quickly consume this sum

and more. Similarly, there are additional indirect costs associated with the confusion over the demand for multiple fee payments (for resource management charges, survey fees, inspection fees, and royalties), particularly for the consent holder. For the Otamarakau permit this represents $7.96 per cubic metre in total, of which $0.22 goes to Environment BOP.

Environment BOP wrote to the operator in July 1997 assessing the royalties owing (based on returns supplied) as $96,587.10. This figure did not include royalties for the period October 1991 to December 1993 which is still being assessed, or for the period of mining that has occurred since the assessment was made.

The operator made representation to the Minister for the Environment to have the arrears waived. However, this request was declined. The consent holder has since come to an arrangement with Environment BOP to repay the outstanding royalties.

5.2 Mean high water springs

The jurisdiction of Environment BOP extends as far inland as mean high water springs (MHWS). The area above MHWS is within the jurisdiction of the Whakatane District Council.

The issues arising from this investigation concerning MHWS are twofold. The first involves defining where MHWS occurs and the second is the jurisdiction issue concerning the enforcement of the resource consent.

Establishing MHWS on a daily basis creates frustration for officials and the consent holder. Over any given year the high water mark can move as much as 30 metres on this part of the coast. This has led to occasions where the boundary lines for mining have been disputed. Truck movements along the beach have also been confined to below MHWS (the consent holder has recently made an application to change this condition).

The distance from MHWS to the toe of the dunes will vary from site to site and will alter as sand is extracted. This means that the "inland" boundary is difficult to determine at any one point on the beach. It is also not easily measurable.

The meaning of the term "the line of mean high water springs" was addressed in ***Gisborne District Council and the Minister of Conservation v Falkner and Others*** (A082/94). It was submitted that the only precise way to actually determine the line of MHWS at any given time was a two stage process of determining the vertical height of the MHWS level and then projecting it onto the shore profile to determine the horizontal location of the MHWS contour. The result of

that calculation when transferred to the shoreline profile would mean that the line is not fixed but shifts over time.

Illustration 3 - Areas of management responsibility

A pragmatic solution to identifying MHWS provided in the above case was for a survey twice a year to demonstrate on a plan of the foreshore area where on at least two separate occasions, the line actually ran. However, the next storm could dramatically alter the beach profile and thereby negate the usefulness of any earlier survey.

A boundary that is fixed and readily found is more convenient for people. For this stretch of Otamarakau beach a practical way of providing such a boundary could be to determine a fixed point, or points from the land side and use this to measure a required minimum buffer distance between it and any mining site.

Alternatively, the area in question could be managed collectively through an agreed informal management plan. Such a plan would propose a long term development strategy dealing with issues arising out of conflicts with recreational activity, sand extraction, protection of dunes, the breeding sites of the New Zealand dotterel and provision of public facilities (parking, beach access, rubbish collection, etc.).

From an operational point of view, the simplest solution could be merely to agree to keep vehicles below the wet sand line of the last high tide.

On the jurisdiction issue, Environment BOP are mindful that if the consent holder is found operating above MHWS, the council's powers to enforce the conditions of the consent do not apply. Technically, any activity above MHWS is the jurisdiction of Whakatane District Council and it is for them to determine whether a stop can be enforced. This transcending of boundaries may not be a problem in all instances involving MHWS. Cross boundary issues should be dealt with in regional policy statements and plans - RMA s.67(1)(h). However, as the preparation of statements and plans is already well advanced, the opportunity to use this process may have passed. In the Otamarakau case efficiencies could be gained by reaching an agreement that the activity be dealt with by a single authority.

The RMA recognises the need to create such efficiencies - transfer of powers, delegated responsibilities and joint hearings. In this instance, the principal administration body is Environment BOP. Perhaps Whakatane District Council could delegate its responsibilities as they relate to this particular consent to the regional council. This would mean the district council would still be responsible for those powers it agrees to delegate, but on a day to day basis, the regional council could monitor and ensure compliance within the mining zone and the processing site.

Uniformity in monitoring and enforcement should occur, and it seems appropriate for there to be a joint meeting of authorities to establish a common framework and assess whether monitoring could be assigned to one agency. At the very least it would be useful for one agency to act as the first point of contact for the public.

Ultimately, a legal challenge or prosecution may well highlight a significant problem of jurisdiction using MHWS as a boundary between territorial authorities and regional councils and may warrant further consideration. It is important to readily identify where the boundary is on any particular day.

5.3 Community understanding of consent holder's approval

It would appear the community does not have a comprehensive understanding of the resource consent conditions. Some of the objectors at the hearing found the proceedings a strange experience and did not have an accurate picture of the outcome after appeal. One of the objectors spoken to believed the Planning Tribunal (now the Environment Court) made significant changes to matters parties had previously agreed on. In reality the Planning Tribunal endorsed the decision of the joint hearing, making amendments to two of the conditions as they related to consultation with iwi.

The consent holder is under some suspicion within the community in extracting sand from the foreshore. This suspicion has at times perhaps led to ill-will towards the operator and placed Environment BOP in the position of having to make sure it carries out its monitoring without bias.

Although all consent information is readily available on request from Environment BOP, the council should consider ways of further communicating its role and responsibilities and those of the consent holder. One method could be the erection of a sign displaying the main conditions of the consent at the entrance to the processing site. Vandalism may mean such a sign would have a limited life.

An information booklet about the beach and the mining activity, jointly funded by the consent holder and Environment BOP, might be another way of addressing misinformation within the community.

There is significant community interest, not only in the beach but also in coastal management. During the joint hearing process, staff recommended that a community group be established to help monitor the mining operation and safeguard the environmental values associated with the coastal environment in which mining occurs. The community group would include representatives from the regional council, three iwi, local residents, recreationalists, conservation groups and the applicant. The community group would be responsible for administering an environmental fund of 10 cents per cubic metre of

excavated sand donated by the applicant. This suggestion was not adopted because no provision had been made in the District Plan for financial contributions of this nature.

At the end of the day, no matter what is done, there will be people who are not happy with the activity or the monitoring process. However, this is not a valid reason to do nothing. The question will ultimately depend on how much effort and cost the consent holder and the council are prepared to invest in community understanding and good will.

5.4 Bond

The resource consent required a bond of $50,000 to be paid to Environment BOP, before the start of mining. This bond would be returned on expiry or surrender of the consent. The consent was signed in July 1995 and as late as 1997 no bond had been lodged. The bond is now in place.

The fact that the bond took so long to secure, points towards ineffectual procedural action on the part of Environment BOP. This has not been helped by an at times seemingly uncooperative consent holder or an apparent misunderstanding between the consent holder and his agents instructing that the money be deposited with Environment BOP.

A bond is appropriate for remediation of adverse effects if the consent holder is either unable or unwilling to undertake the action. However, the risk of forfeiting this bond, or parts of it, is also a compelling reason for a consent holder to fully comply with the conditions of the permit. **In future, every effort should he made to secure any bond payment well before commencement of the approved activity.**

5.5 Volume of sand extracted from Otamarakau Beach

Following a review of Environment BOP files, it is apparent that there is not a full record of sand volumes removed. This is in part due to volume discrepancies, but also due to non-compliance with volume return conditions. There is evidence on file of increased efforts over the last twelve months by Environment BOP to have the consent holder supply this information.

Constraints associated with the operation and its location make it difficult to identify a reliable monitoring device for confirming volume returns. It is left to the consent holder to supply such information, but no other checks are made to ensure volumes recorded equate to volumes actually extracted. Before and after mining surveys are made of the beach profile but there are occasions where the after mining profile shows more sand on that part of the beach than before mining commenced.

In projects of this nature, where large volumes of material over long periods of time are involved, more stringent procedures for

verifying the amounts taken from the beach should be identified as a condition of the permit.

One of the ongoing points of dispute over volume discrepancies is the conversion rate figure used to convert tonnes to cubic metres. A conversion factor for sand of 1.3 has been supplied by Firth Industries and this figure has been adopted below.

The following has been put together using a combination of sources to provide an indicative picture of the volume of sand removed during the period of the current coastal permit, issued in July 1995.

Date	**Comparative Volumes**		
Year ended	**Audit by Accountant**	**Ministry of Commerce Mines Inspection**	**Firth Industries**
March 1995	26 299 m^3		
March 1996	27 425 m^3		
March 1997	26 189 m^3		
December 1995		15 769 m^3	*18 672 m^3
December 1996		15 385 m^3	36 359 m^3
December 1997		49 923 m^3	35 301 m^3

* 6 months only

There is considerable variation in these figures. The consent holder has explained that sand is also brought in from his Papamoa site to the processing plant at Otamarakau and that lower grade material is sold to other users. This may account for some discrepancy. However, the consent holder has said that 99% of all Otamarakau sand is sold to Firth (a condition of the supply contract to eliminate sales to opposition). The volume sold to Firth Industries alone exceeds the allowable amount. Rumours within the community that the total volume extracted could be more than double the allowable amount, have not been able to be substantiated and would appear unlikely.

6 EVALUATION OF MONITORING EFFECTIVENESS

In general, councils throughout New Zealand have been focusing efforts on meeting statutory deadlines for producing regional policy statements and plans, and processing resource consent applications. As a result, many councils have given low priority to monitoring compliance with consent conditions as their energies were largely directed elsewhere.

The lack of monitoring policy in some councils has also been a constraint on monitoring resource consents. However, Environment BOP, like many other councils, has recognised effective compliance monitoring begins with a clear policy and developed monitoring strategies, programmes and reporting systems.

Chronological filing of actions and information on the Environment BOP file for coastal sand extraction at Otamarakau Beach, indicate a more active monitoring regime in 1997-98 than in earlier periods.

Overall, however, there is little evidence on Environment BOP files of any evaluation of NIWA or the consent holder monitoring. Similarly, few reports evaluating this information appear to have been submitted to the council. The only interpretative account is the first compliance report completed in October 1997 (a second is due in another six months). In this Environment BOP report reference is made to where "staff have randomly reviewed the survey information and recreated the volumes and are satisfied with the quality of information supplied". (p 16)

6.1 Monitoring policy

Compliance and impact monitoring of consents was carried out on an ad hoc and as required basis by the Bay of Plenty Regional Council and its predecessors until 1990 when a structured programme was adopted as policy, This policy was reviewed in 1995 and resulted in a new Compliance and Impact Monitoring Policy coming into effect in July 1995.

A compliance and impact monitoring policy developed by Environment BOP provides for "the preparation of scientifically defensible annual reports on consent compliance and on the results of the regional monitoring programme and the "health" of the region's environment ..." The policy is intended to match the council's proposed monitoring programme with the resources available. In its

policy, Environment BOP has outlined matters that will be covered by compliance monitoring. These include checking that:

- required work has been carried out
- required maintenance has been carried out
- information or records have been forwarded
- the quantity and quality requirements of the consent are being met, and
- the activity being carried out is consistent with that authorised by the consent.

In the review of monitoring policy in 1995, an attempt was made to match the proposed programme with available resources. In some instances this has meant significant reductions in the frequency of monitoring or the frequency of reporting to council.

Environment BOP established a coastal monitoring programme in 1990. A total of 49 coastal sites are profiled on an annual basis within the programme. Some selected sites are monitored quarterly (including Otamarakau), while others are monitored as and when required eg. after storm events.

Council's annual plans provide an important mechanism for outlining its commitment to compliance monitoring (eg funding and targets), and annual reports enable councils and the public to assess compliance monitoring performance and effectiveness.

A performance target in the Draft Annual Plan 1998/99 is "to monitor all coastal erosion sites at least once in the 1998/99 annual plan period, and to monitor selected beaches (approximately 10 sites) quarterly, within a budget of $15,800".

Another performance target in the Draft Annual Plan 1998/99 is "to carry out and report on compliance and impact monitoring of resource consents in accordance with council policy, with a particular emphasis on compliance monitoring of air discharges, sediment generating activities, geothermal consents, contaminant discharges to water and water users in catchments with abstraction pressures within a budget of $8 17,800".

6.2 Consent conditions

Consent conditions remain the starting point for compliance monitoring. Previous reports of the Parliamentary Commissioner for the Environment (1992, 1995 and 1996) have highlighted the importance of providing good information at the stage where environmental effects are assessed, to enable consent authorities to set appropriate conditions, and to follow this with monitoring of consent conditions to ensure compliance.

The conditions on a consent strongly influence the ability of council staff to monitor consent compliance. If consent conditions are not

clear, unambiguous, measurable and enforceable, it is very difficult to determine whether they are being complied with or to enforce them. Conditions which are vague may be unenforceable and therefore invalid.

In part, conditions also depend on the way the consent application is processed before the decision is made. If the application is notified, there will be an opportunity for public concerns to be aired, and conditions are more likely to address those concerns. This certainly appears to have occurred with the Otamarakau permit and the subsequent Planning Tribunal recommended amendments.

With consent conditions providing a yardstick for compliance monitoring and enforcement activity, it is clear that both the consent holder and the council must be able to measure and determine whether compliance has occurred. **In the Otamarakau case, most conditions apart from sand volume appear to have been met, although often not to deadline. The issue of frequency of reporting and rigour of monitoring has led the consent holder to believe he was being asked to monitor too much too often. Nevertheless, there is no evidence to suggest that this consent holder has been treated any differently by the council than any other operator working on a similar scale in the Bay of Plenty.**

6.3 Monitoring consent conditions

A question often raised about compliance monitoring is whether its sole purpose is to ensure compliance with the conditions of the consent or whether it also includes monitoring the effects on the environment of the activity to which the consent relates. This latter point is important if the effectiveness of the consent conditions is to be assessed. Monitoring only consent conditions assumes that the information available on the actual or potential effects of the activity, at the time of granting the consent, was accurate, and no other effects are likely to occur if the consent conditions are met.

Environment BOP in its Compliance & Impact Monitoring Policy document identifies the difference between compliance monitoring and impact monitoring. In the case of compliance monitoring, these are conditions that the consent holder must meet. Impact monitoring is about collecting information and data on which further assessment of the proposal can be measured. Impact information is normally used as part of the consent review or renewal.

Environment BOP appears to be doing both sorts of monitoring in a well intended and professional manner. Some concern was expressed by the consent holder that there was a degree of duplication in monitoring effort by the consent holder's agent, NIWA and the council's own programme. There may be a valid point. However, the 'double checking' is in keeping with the precautionary approach towards activities on dynamic coastal processes recommended under the New Zealand Coastal Policy Statement 1994.

The consent held by J W Paterson and Sons Ltd contains a complex formula for determining whether sufficient sand is available for mining to be sustainable. The survey work and determination of this formula has been carried out through an independent agency (National Institute of Water & Atmospheric Research Ltd - NIWA) by the same scientist over the life of the permit. In practice, approval has been given to extract sand if the quantity at each beach site to be mined exceeded 110 cubic metres per metre (derived from the formula set out in the conditions of the coastal permit). Environment BOP has confidence in the rigour and neutrality of this work. Indeed, the involvement of NIWA in this operation lends credibility (in the minds of Environment BOP) to the consent holder's monitoring returns.

Reporting on beach volume has been undertaken according to consent conditions, except for the post mining surveys and late submission of several of the reports.

6.4 Enforcement

Enforcement is a last resort used in compliance monitoring by a consent authority to ensure consent holders comply with conditions. Enforcement serves not only a punitive function, but also helps to ensure the effects of activities on the environment are within the bounds set by the consent conditions or the plan.

Enforcement of consent conditions is one of the aspects of council performance frequently criticised by community groups and members of the public. Failure to take enforcement action against those who do not comply with conditions is seen as a major failing of many councils. It undermines community confidence in the ability of councils to manage resources in a sustainable way and to control adverse effects on the environment.

In the past twelve months it would appear that greater efforts have been made to ensure enforcement than before. It is true that compliance monitoring is both a duty and a cost on local authorities (although some costs can be recovered from consent holders).

Environment BOP needs to explore alternative ways to encourage compliance, including those which offer incentives to consent holders to comply, For example, consent holders who have adopted environmental management systems or some other form of accreditation into their operations, as Environment BOP has done with major forestry companies, could receive concessions such as reduced monitoring requirements and monitoring charges. For smaller operations, the cost of compliance monitoring should be an incentive to comply. As each inspection is charged for, those operators who comply receive fewer visits and therefore pay less. J W Paterson and Sons Ltd has in fact had a significantly high level of compliance checking, due to complaints and Environment BOP concerns, and hence are paying for those associated costs.

7 CONCLUSIONS

This has not been a simple coastal permit to monitor.

The council appears to have developed effective performance measures for most of its regulation & monitoring. It has also established targets for response times to deal with complaints and has enforced stoppages on the operation where it has detected non-compliance with some of the conditions. **Overall, the advice offered by Environment BOP is credible and its monitoring measures carried out in keeping with the purpose of the Resource Management Act.**

However, the adequacy of the coastal permit conditions has to be questioned on two levels. Firstly, in relation to the larger coastal system and secondly, with regard to the monitoring of the permit itself.

At the time of processing the consent, it was anticipated that the coastal plan would be in place which would have stopped sand mining on the open coast within the five year period. Therefore, the amount of effort invested in analysing the total system was in keeping with the expected life of the consent.

This permit expired on 30 June 1998 and the coastal plan is not in place. The permit conditions do not reflect an adequate understanding of the scale or manner of the natural movement of sediment off-shore and along-shore in the wider coastal system. It is the responsibility of the consent authority to investigate these issues and is not something that can be delegated to the consent holder.

Before Environment BOP can adequately judge the sustainability of mining a very small part of this system, it needs to gain a better understanding of the dynamics of the whole coast. The Natural Environment Regional Monitoring Programme will certainly help. As each year passes, accumulated data represents invaluable information for determining trends. Meanwhile, research into the extent of sediment deposits and its movement is vital in gaining a greater understanding of the bigger picture.

In monitoring the actual permit Environment BOP has been unable to meet all compliance monitoring responsibilities for the following reasons:

No council has the financial or staff resources to monitor all activities of a consent holder, especially over a period of several years on an isolated stretch of the coast.

Under the conditions of the resource consent, measures were not stipulated for verifying the actual amounts of sand extracted, making it difficult for Environment BOP to check that reported volumes were accurate.

There is often a time lapse between receiving and attempting to verify information on consent holder activity. By the time a consent authority is in a position to move towards enforcement, discrepancies between consent conditions and reality may have developed.

Inadequate systems in place (regionally and nationally) to ensure financial conditions have, or are being met.

The conditions of the permit were not reviewed. The review clause in the permit is linked to significant adverse environmental effects occurring. Environment BOP staff do not at this stage, believe there is evidence of large impacts which can be attributed to this consent.

In summary, it would appear that Environment BOP did adequately monitor the consent that was granted, but in focussing on compliance with that consent it may have overlooked impacts on the wider coastal system.

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APPENDIX 1

COASTAL PERMIT

Pursuant to the provisions of section 119 of the Resource Management Act 1991, I hereby grant J W Paterson and Sons Limited a coastal permit to extract sand from the foreshore at three selected areas at Otamarakau Beach in accordance with the plans and information provided by the applicant but subject to the conditions attached to this permit to expire on 30 June 1998.

1. PURPOSE

To mine beach sand for use in manufacturing concrete products, on Crown Land along the foreshore between the Waitahanui Stream, Otamarakau and the Pikowai Stream, Pikowai.

2. LOCATION

On Crown Land as shown on Plan Number BOPRC NUMBER RC 04 0052/1.

3. MAP REFERENCE

NZMS 2660 V15 277 681 to V15 323 655

4. LEGAL DESCRIPTION,

Crown Land Blocks IV and VIII Waihi South SD (Whakatane District Council).

5. WORKS

5.1 All works associated with this operation shall be carried out as detailed in the NIWAR Consultancy Report No PAT 001 (R K Smith and Others) and the proposed environmental mitigation methods included in the application for this consent.

5.2 Mining shall be carried out at Areas 1, 2 and 3 within the foreshore as shown on Plan Number BOPRC Number RC 04 005212.

5.3 Mining activities shall only proceed within each mining area if the General Manager of the Regional Council or his delegate is satisfied that there is sufficient sand as shown by the beach monitoring (BM) survey results obtain& under condition 8.8. The sand available for mining at each BM site shall be calculated by the General Manager or his delegate using the following formulae.

A - (62 + B + 15) m3/m = balance of sand available (m3/m)

where A = volume. of sand present at time of survey as calculated from survey measurements required under condition 8.10.

62 = the constant, 100 yea-r buffer zone along the toe of the foredune.

B = the beach variability factor as calculated under condition number 8.11.

15 = the constant, 5 year erosion factor.

5.4 The Grantee shall ensure that a buffer zone of 62 m3 per metre of material is maintained and protected along the toe of the foredunes adjacent to the mining zones, at all times during mining activities.

5.5 Up to a maximum total volume of 9,000 m3 of sand shall be annually excavated from each individual mining area.

5.6 Mining shall occur at quarterly intervals throughout the year and each individual mining area shall not be excavated more than once in any one year.

5.7 The location of and start of excavations within each individual mining area shall be approved by the General Manager of the Regional Council or his delegate before the start of the mining operations within each quarter year period.

5.8 Each area to be mined will be designated by visible boundary poles at 200 metre (maximum) intervals along the beach, before the start of the mining and to the satisfaction of the General Manager of the Regional Council or his delegate.

5.9 The Grantee shall ensure that the boundary poles, as specified in Condition 8.11, are established and maintained at all times while mining is occurring.

5.10 Any directions issued verbally on site by the General Manager of the Regional Council or his delegate, in relation to the operation, shall be complied with. Significant instructions will be followed up in writing.

5.11 At least 10 working days before the commencement of mining in each quarter, the Grantee shall advise the Regional Council of the capacity of all vehicles being used in the mining and unprocessed sand transport operations.

5.12 Each quarter year mining period shall not be more than 22 working days.

5.13 Mining shall occur during week days only, excluding public holidays, between the hours of 7 am and 5 pm.

5.14 The Grantee shall employ only one excavator on the beach during each mining period.

5.15 The Grantee shall not employ more than two trucks for mining area one; three trucks for mining area two and four trucks for mining area three. four.

5.16 Trucks shall only travel along the foreshore between mean high water mark and the water's edge between mining periods.

5.17 No excavations shall take place within 200 metres of the Hauone or Pikowai Streams.

5.18 No vehicles shall cross through the Hauone Stream during any period when the stream is flowing directly to the sea.

5.19 No refuse material from the Grantee's sand processing operation shall be deposited onto the beach.

5.20 No fuel storage or machinery refuelling/lubrication/oil-changing shall occur on the beach.

6. ACCESS

6.1 The Grantee shall ensure that the public access along the beach is maintained at all times through the mining zone.

7. MAORI CULTURAL/SPIRITUAL VALUES

7.1 Before the start of a mining period the Grantee shall arrange for the proposed mining area to be inspected by kaumatua from the three local Iwi i.e. Ngati-Makino, Ngati-Rangitihi and Tuwharetoa Ki Kawerau, to verify whether or not the proposed area contains waahi tapu, urupa or other sites/values of special importance.

7.2 If within 21 days after the Grantee's invitation for the kaumatua to inspect the proposed mining area, the kaumatua (or any one of them) believe that the proposed area may contain waahi tapu, urupa or other sites or values of special importance, then the kaumatua (or any one of them) shall inform the

Regional Council, in writing, of their concerns and the Regional Council may in its discretion, and if necessary after seeking independent advice, withdraw that specific area from mining.

7.3 In the event that an urupa or artifacts are uncovered during the course of mining activities, then the Grantee shall immediately cease work and notify the Kaumatua of the three Iwi specified in condition 7.1 and the General Manager of the Regional Council or his delegate.

7.4 The Grantee shall establish a buffer zone around any sites uncovered or disturbed during the course of mining activities and shall restore any of those sites under the direction of and to the satisfaction of the Kaumatua of the Iwi concerned.

7.5 Mining activities stopped under condition 7.3 shall resume only after approval is given by the Kaumatua of the Iwi concerned and/or Historic Places Trust if appropriate.

8. MONITORING

8.1 The Grantee shall establish further (BM) sites between Hauone and Pikowai and between BM 24 and BM 00, at 200 metre intervals, to the satisfaction of the General Manager of the Regional Council or his delegate.

8.2 BM sites as specified in condition number 8.1 shall be established with an appropriate back marker, as detailed on a plan to be supplied to the Grantee by the General Manager of the Regional Council or his delegate.

8.3 BM sites as specified in condition number 8.1 shall be established before the Start of any mining activities.

8.4 The Grantee shall survey all BM sites adjacent to the mining zone, as shown on the BOPRC Plan Numbers RC 04 0052/1,2 at least four times per year.

8.5 The Grantee shall also survey five coastal cross sections (CCS) at sites outside of the mining zone, specified by the General Manager of the Regional Council or his delegate, at least four times per year.

8.6 All surveys shall be measured from reference points to be designated by the General Manager of the Regional Council or his delegate.

'8.7 The Grantee shall forward an annual report of the survey results, as required under conditions 8.3 and, 8.4, to the General Manager of the Regional Council or his delegate, within eight weeks of the completion of the last field survey of the year.

8.8 Before the proposed start of each mining period the Grantee shall survey the proposed BM sited adjacent to the proposed area to be mined and shall provide the General Manager of the Regional or his delegate with the results of that survey at least seven working days before the proposed start of the mining.

8.9 The Grantee shall also survey the proposed BM sited adjacent to each area mined, within seven working days of the completion of the mining period and shall provide the General Manager of the Regional or his delegate with the results of the survey within fourteen working days of the completion of the mining period.

8.10 BM sites shall be surveyed as follows:

The line of survey shall be the line taken through benchmark and the back marker down to mean sea level, the beach profile from the bench mark to mean sea level, or lower, shall be measured at intervals of3.0 metres or such lesser intervals as are necessary to accurately determine the beach profile.

Survey measurements shall be to within -/+ 10 millimetres of actual ground level.

8.11 The beach variability factor shall be calculated as being the standard deviation of the beach volume measurements for each BM site. Beach variability within existing BM sites shall be based on the record of survey data for that site. At sites where no such records exist the beach variability shall be 33m3/m which is the maximum for beach variabilities measured for the other BM sites (00-2000). This shall continue in use for a minimum of two years until sufficient data is available to determine a specific beach variability factor for those BM sites which had no survey records at the start of mining.

8.12 The survey results as required under conditions 8.7 and 8.8 shall be in a form prescribed by the General Manager of the Regional Council or his delegate.

8.13 The Grantee shall provide the General Manager of the Regional Council or his delegate with quarterly returns of volumes extracted from the beach, at quarters ending 30 June, 30 September, 31 December and 31 March, for the duration of mining covered by this consent.

8.14 The Regional Council reserves the right to inspect and measure the Grantees operational stock-pile at any reasonable time to ascertain compliance with the consent.

8.15 The Grantee shall obtain an annual independent audit of volumes extracted from the beach and shall provide a report of this audit to the General Manager of the Regional Council or his delegate by 30 September each year.

8.16 The Grantee shall have a suitably qualified ecologist annually survey the ecological values of the mining zones and adjacent habitats, including shellfish populations, species and nesting habitats within the Waitahanui, Hauone and Pikowai Stream mouths and the back dune/wetland areas between the beach and State Highway 2.

8.17 If in the opinion of the General Manager of the Regional Council or his delegate any ecological impacts have taken place or are occurring in or adjacent to the extraction site, the Regional Council may withdraw any area from mining.

8.18 The Grantee shall provide a report of each ecological survey required under condition 8.16 to the General Manager of the Regional Council or his delegate by 30 June each year.

8.19 Surveys of the required BM, CCS sites and ecological values will continue for at least one year after the cessation of all niining activities, at the same level of monitoring required in conditions 8.3, 8.4, 8.5, 8.16.

8.20 The Grantee shall provide a report of the year's surveys required under condition 8.18 to the General Manager of the Regional Council or his delegate within three months following the completion of those surveys.

8.21 The Grantee shall obtain a final site inspection and written clearance from the General Manager of the Regional Council or his delegate at the completion of each mining period. Prior to issuing a written clearance, the General Manager of the Regional Council or his delegate shall invite the kaumatua from the' three local iwi, being Ngati Makino, Ngati Rangitihi and Tuwharetoa Ki Kawerau, to express any concerns over the work undertaken in the mined area.

8.22 All monitoring required of the Grantee under the terms of the consent shall be at the expense of the Grantee.

9. BOND

9.1 The Grantee shall provide a bond of $50,000 to the Bay of Plenty Regional Council, before the start of mining, which shall be returned to the Grantee only upon expiry or surrender of the consent.

9.2 In the event that the Grantee is unable to carry out any remedial works to the satisfaction of the General Manager of the Regional Council or his delegate, the Regional Council may use all or part of the bond as necessary to mitigate any adverse environmental effects caused by the Grantee's operation.

10. RESTORATION/REHABILITATION

10.1 The Grantee shall ensure that at the completion of each day's mining there are no holes or depressions resulting from the operation. The method of reinstatement shall be as agreed by the Grantee and the Regional Council and advised by the Regional Council in writing.

Note: The method of reinstatement shall not involve the taking of sand of sand from the beach above mean high water mark springs.

10.2 The Grantee shall reinstate the beach to its original contour at the end of each day's mining activity.

10.3 The Grantee shall restore any sections of the beach or adjacent inland areas, to the satisfaction of the General Manager of the Regional Council or his delegate, which are damaged or destroyed as a result of the Grantee's operation.

10.4 The Grantee shall provide written evidence, before the start of mining activities, to the General Manager of the Regional Council or his delegate that the Grantee has sufficient insurance to carry out any restoration works required under condition 10.3.

11. REVIEW OF CONSENT CONDITIONS

11.1 The Regional Council under section 128 of the Resource Management Act reserves the right to review the conditions of this consent every 12 months or in the event that any significant adverse environmental effects should occur as a result of this mining operation.

12. TERM OF THE PERMIT

12.1 This permit shall terminate on 30 June 1998.

13: RESOURCE MANAGEMENT CHARGES

The Grantee shall pay the appropriate resource management charges under section 36 of the Resource Management Act 1991, associated with this permit.

14. GOVERNMENT ROYALTY

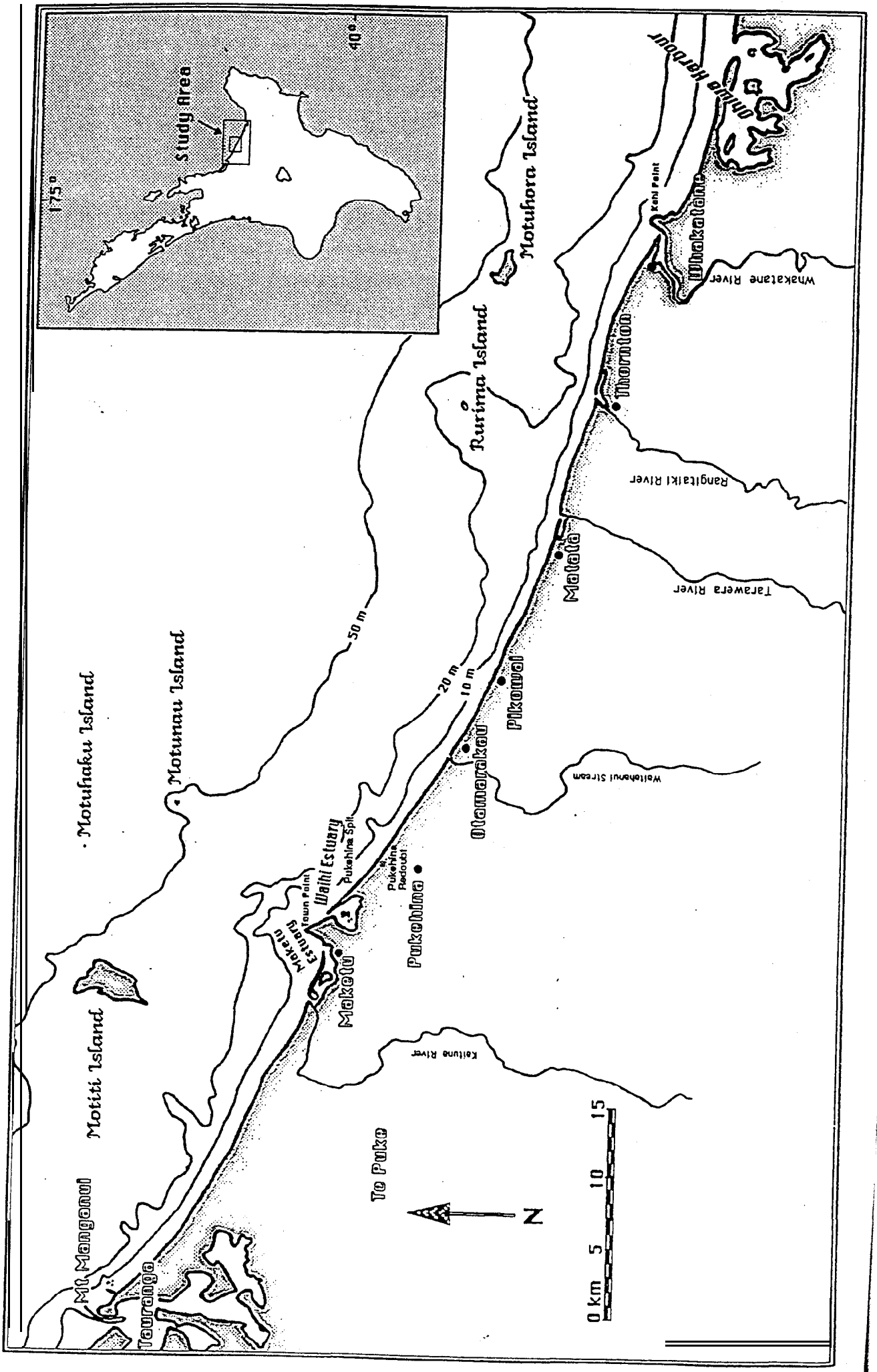
Where applicable, the Grantee shall pay the annual Government Royalty as prescribed by the Resource Management (Transitional, Fees, Rents and Royalties) Regulations 1991.

15. THE PERMIT hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Dated at Wellington this 10th day of July 1995.

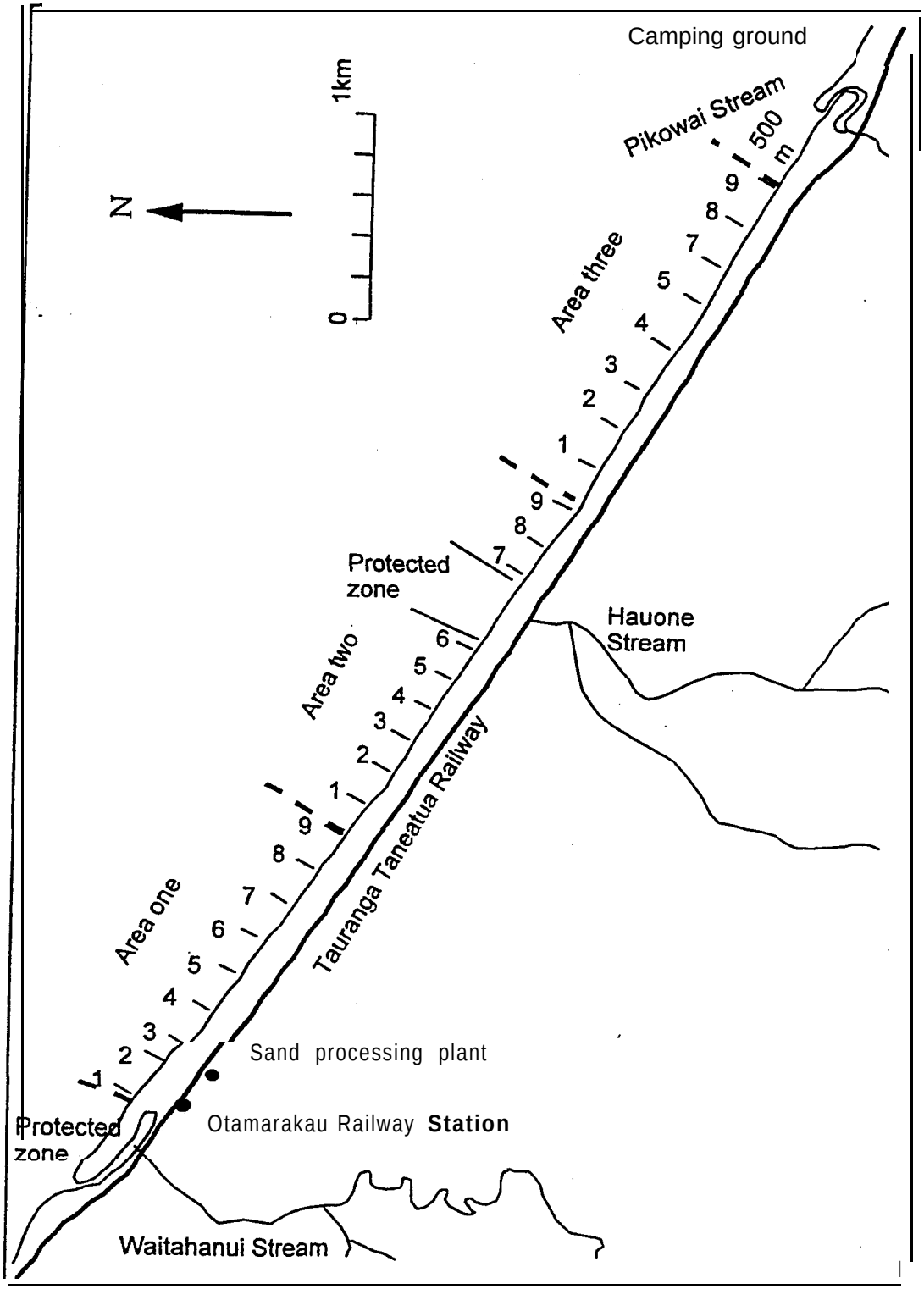
Denis Marshall
Minister of Conservation

Illustration 1 - Location Map



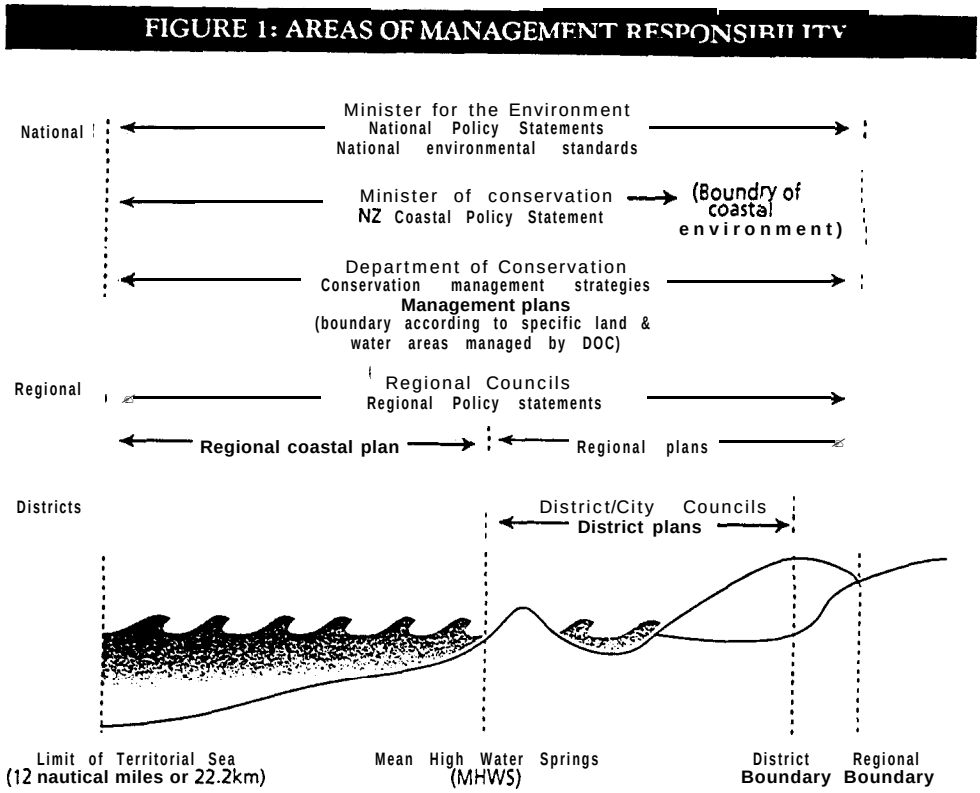
Source: Phizacklea, 1993

Illustration 2 - Sand extraction areas showing beach monitoring sites



Source: NIWA December 1997

Illustration 3 - Areas of management responsibility



Source: *NZTB,* ***1996***