

Muriwai Downs Golf Project: archaeological assessment

**report to
The Bears Home Project Management Ltd
and
Golf Strategy Group**

Matthew Campbell, Hayley Glover, Jacqueline Craig and John Brown

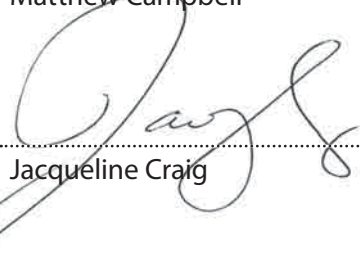


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1 Introduction

The Bears Home Project Management Limited propose developing a golf course on two properties owned by them at 610 and 670 Muriwai Road, Waimauku (Lot 2 DP 196478 and Lot 1 DP 187507) with a reservoir to the south at 451 and 697 Muriwai Road (Lot 4 DP 187060 and Lot 5 DP 187061). Additionally they also own two 'lifestyle' type properties at 614 and 680 Muriwai Road (Lot 2 DP 196478 and Lot 1 DP 163736) and Lot 3 DP 196479 at 451 Muriwai Road. Together these land holdings are referred to as the Muriwai Downs Property.

The project is located within the Muriwai Downs Property and comprises the following main physical components:

- A 19-hole golf course with warm-up fairway and short-game practice area;
- A clubhouse;
- A sports academy including; an academy building, academy driving range, practice green, 9-hole short course, and indoor and outdoor tennis facilities;
- A golf and property maintenance complex;
- A luxury lodge;
- Groundwater and surface water abstraction facilities;
- Off-stream water storage reservoir;
- Significant ecological restoration and enhancement works; and
- Various supporting infrastructure associated with the above items.

Five archaeological sites are recorded on the properties in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS) and three heritage sites are recorded in the Auckland Council Cultural Heritage Inventory (CHI). An archaeological assessment is required to inform the golf course design. David Moore of Golf Strategy Group, on behalf of The Bears Home, commissioned this assessment from CFG Heritage.

1.1 Statutory requirements

All archaeological sites, whether recorded or not, are protected by the provisions of the Heritage New Zealand Pouhere Taonga Act 2014 and may not be destroyed, damaged or modified without an authority issued by Heritage New Zealand Pouhere Taonga (HNZPT).

An archaeological site is defined in the Heritage New Zealand Pouhere Taonga Act as:

- (a) any place in New Zealand, including any building or structure (or part of a building or structure), that—
 - (i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and
 - (ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and
- (b) includes a site for which a declaration is made under section 43(1).

The Resource Management Act 1991 (RMA) requires City, District and Regional Councils to manage the use, development, and protection of natural and physical resources in a way that provides for the wellbeing of today's communities while safeguarding the options of future generations. The protection of historic heritage from inappropriate subdivision, use, and development is identified as a matter of national importance (Section 6f).

Historic heritage is defined as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from archaeological, architectural, cultural, historic, scientific, or technological qualities.

Historic heritage includes:

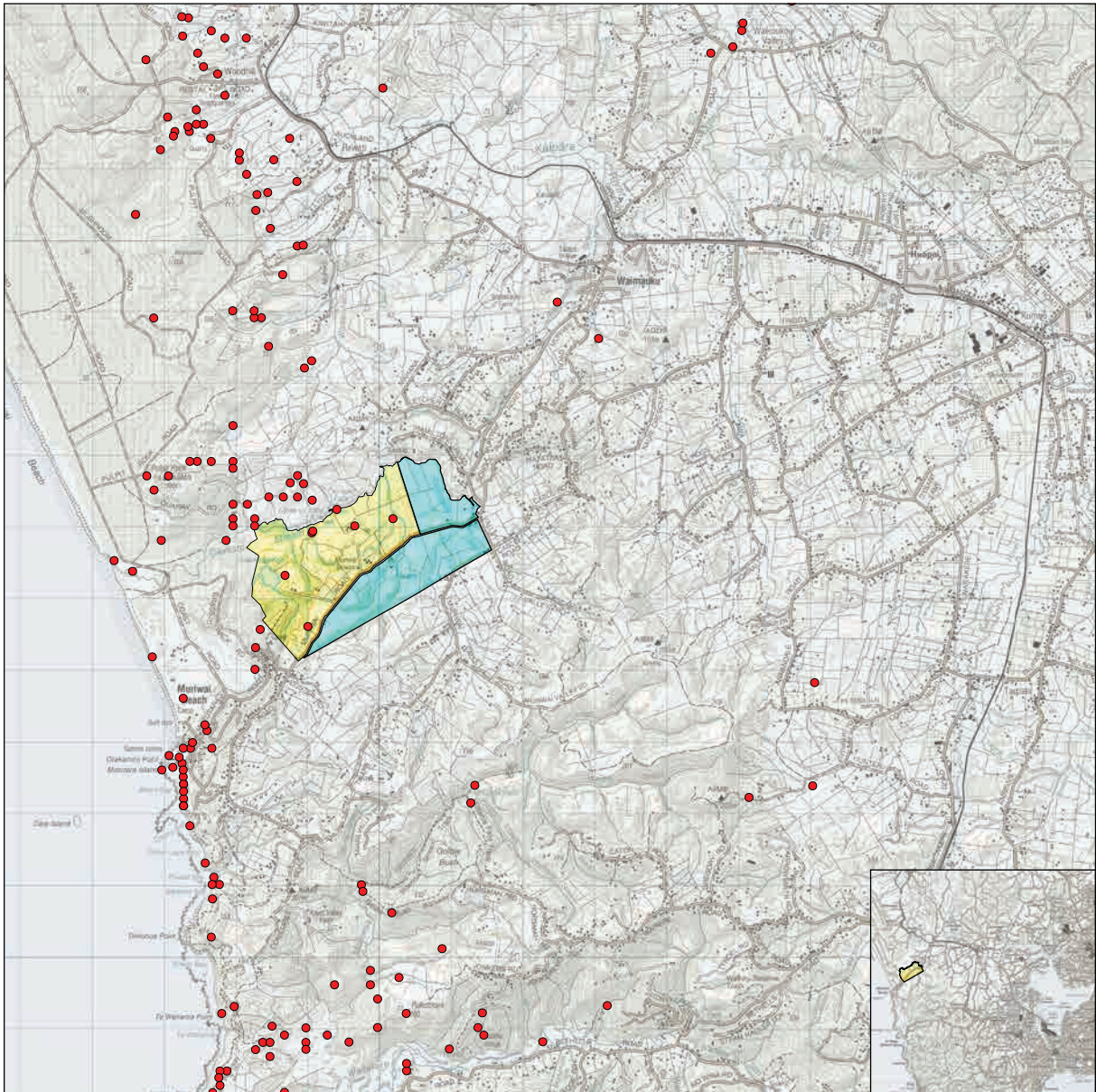


Figure 1. Location of Muriwai Downs, showing archaeological and CHI sites recorded in the vicinity.

- historic sites, structures, places, and areas
- archaeological sites;
- sites of significance to Maori, including wahi tapu;
- surroundings associated with the natural and physical resources (RMA Section 2).

These categories are not mutually exclusive and some archaeological sites may include above ground structures or may also be places that are of significance to Maori.

Where resource consent is required for any activity the assessment of effects is required to address cultural and historic heritage matters.

2 Methods

The following digital resources were consulted to provide the background for this assessment:

- The New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS) (nzarchaeology.org/archsite) was searched for records of archaeological sites.
- The Auckland Council Cultural Heritage Inventory (CHI) (chi.net.nz) was searched for records of other heritage sites.
- The digital library of archaeological reports held by Heritage New Zealand Pouhere Taonga (dl.heritage.org.nz/greenstone3/library/collection/pdf-reports/page/about) was searched for previous archaeological surveys and investigations in Muriwai.
- Old maps and plans held by Land Information New Zealand (LINZ) were reached using Quick Map software.
- Certificates of Title were searched on Landonline to establish the history of land ownership.
- Crown copyright aerial photographs dating back to 1940 were searched using retrolens (retrolens.co.nz).
- Manaaki Whenua Landcare Research Land Resource Information (LRI) spatial data was searched in the project GIS.

The two lots were initially surveyed on foot by Matthew Campbell and Hayley Glover of CFG Heritage on 22 and 23 March 2021 to outline potential heritage constraints on the golf course design. Hayley Glover assessed the southern reservoir on 11 August 2021. Matthew Campbell, accompanied by John Brown of PlanHeritage, assessed the old cottage, site Q11/614, on 28 September 2021. These were visual surveys only and no intrusive methods were used. The locations of previously recorded archaeological and heritage sites were visited and the records updated. Attention was paid to stream edges, hill tops and spurs and open areas.

3 Land ownership

A 1293 acre (523.3 ha) block “known by the name of ‘Muriwai’” was granted to Nopera Te Waitaheke, Paura Patu, Ngawaka Tautari, Utakura Te Haku[?], Pera Tane, Te Wirihana Huhu and Te Kepa Matu in November 1871 (NA3/25, the microfilm copy is very hard to read; Figure 2). By the end of the century many of these people were deceased and their “Estate and Interest” has been inherited by other family members. In 1896 Mihi Korama Wirihana transferred her interest to Te Aira Rangiarua who in 1899 sold to her husband Edmund Thomas Dufour of Auckland, Solicitor (NA3/25; Murdoch 1994: 9). This seems to have extinguished native title in the Muriwai Block. Dufour was the solicitor for the Kauri Timber Company, a large Australian logging company which operated throughout New Zealand from 1888 (<https://teara.govt.nz/en/interactive/12742/kauri-timber-company-catalogue>). Two days after he purchased the block he sold it to Percy Parker Espie Dufour, Law Clerk, Charles Edward MacCormick, Solicitor and William Beamish Austin Morrison, Agent, all of Auckland.

A sanatorium was built in 1899 near Lake Okaihau in the west of the section by three doctors on land they leased from Dufour (Murdoch 1994: 11). On 25 June 1900 the block was sold to Christopher Ingram. He took a mortgage out from Dufour, MacCormick and Beamish at the time of purchase. The sanatorium became the family home and later Ingram’s Boarding House (Murdoch 1994: 11). On 15 November 1912 Ingram sold it to Frederick and Teresa Mulcock. The Mulcocks had the block surveyed for subdivision in 1914 (the five lots shown in Figure 3 are the current lots with the exception of 614 and 680 Muriwai Road, which are ‘lifestyle’ type lots subdivided in 2000 and 1995 respectively). Lot 1 (the current Lot 1 DP 187507) was sold in 1918 to Horace Edward Salter (NA284/261), and in 1921 the other four blocks were sold to Edward Grimwade, who sold to John Houghton on 7 September 1925 (NA336/213), who bought Lot 1 on 20 July 1937 (NA284/261).

In 1955 Houghton sold Lots 1, 2 and 5 to Terence Hall and Henry Vialoux and Lots 3 and 4 to Selwyn Houghton (NA336/213; NA1150/35). By 1961 Lots 1, 2 and 5 were owned by Hall, Vialoux and Selwyn and Lotan Stuart Houghton. By 1970 the Houghton family owned all five blocks outright and the land remained in their hands until it was purchased by the Bears Home Company in 2019.

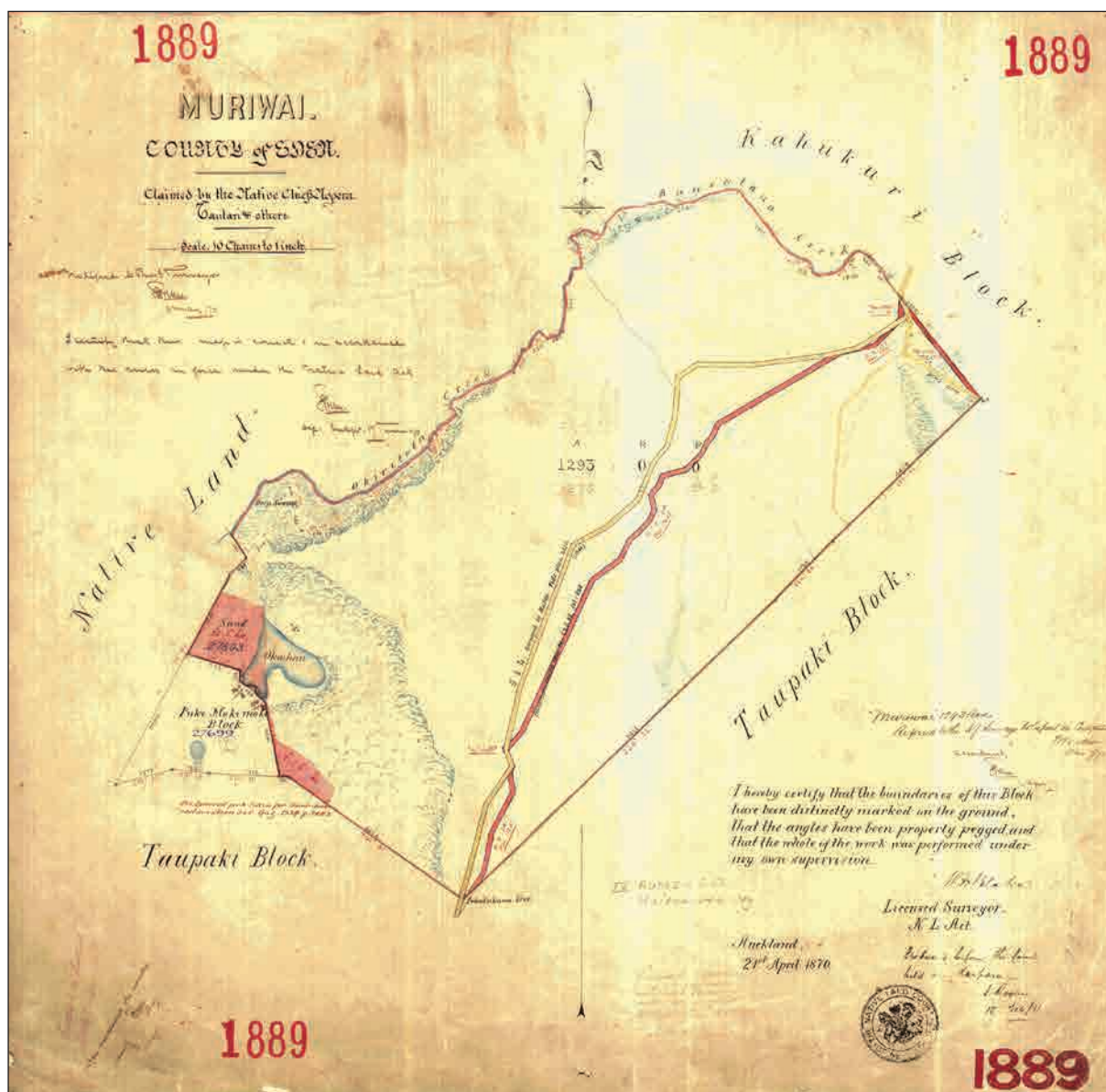


Figure 2. ML 1889, dated 1870, the Muriwai Block 'Claimed by the Native Chiefs Nopera, Tautari & others.'

4 Background

Waimauku and Muriwai are located to the west of Auckland city, with Muriwai located on the coast north of the Waitākere Ranges. The project area is located approximately 2 km from Muriwai Beach. Exposed rock cliffs on Muriwai Beach reveal lower Miocene rocks many of which contain trace fossils, overlain by unconforming Pleistocene sands (Hayward 1976). Muriwai has a high sediment supply with black iron sand from Taranaki, volcanic sediments from the Waikato River and Awhitu sands. The dune system which runs parallel to Muriwai Beach has been modified significantly with the Golf Course and Woodhill Forest on the eastern and northern margins. Further east are wetlands, specifically around Okiritoto Stream in the project area.

There are several soil types recorded across the project area, but the main soil type is Red Hills sandy clay loam, an orthic granular soil derived from weathered volcanic soils, which is well drained

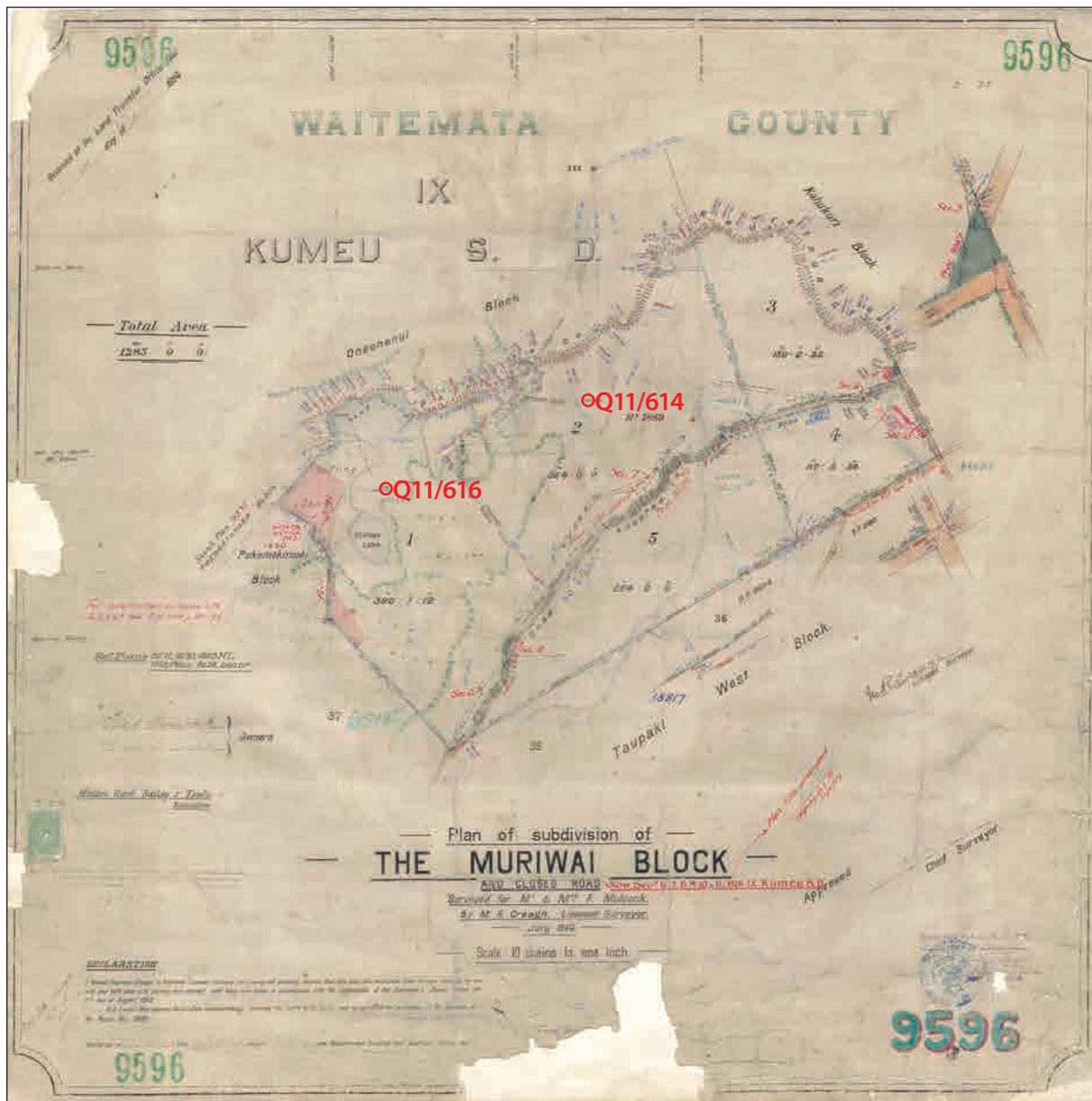


Figure 3. DP 9596, dated 1914, Subdivision of The Muriwai Block, for Frederick and Teresa Mulcock. Two buildings are highlighted, which are probably Ingram's boarding house Q11/616 and cottage Q11/614.

and of medium to low natural fertility. These soils could have been cultivated for kūmara by pre-European Māori but would not have been prime horticultural soils.

To the west is a small patch of Pinaki sands, while to the east is a small patch of Waitematā Complex soils, which are low fertility silty loams, not well drained and not suitable for kūmara cultivation. There is also a small patch of Waitakere Clay, which is poorly drained and not suitable for kūmara cultivation, but is good for brickmaking.

4.1 *Historic background*

Mana whenua have indicated their expectation that the archaeological assessment will not focus on their history or whakapapa. At this stage of the project CFG Heritage have had no consultation with mana whenua and no pre-European Māori history is provided in this section.

European settlement in the Muriwai area began in the 1870s. In 1870 John and Annie Foster established a flax mill (Q11/380) at Okiritoto Falls, later purchasing part of the Kahukuri Block and opening a general store and gum store at Waimauku. Flax from throughout the wider Muriwai area was harvested and processed at the mill, but it did not operate for long as a significant portion of flax in the Muriwai Block was destroyed by fire (Murdoch 1994).

In October 1875 the Helensville railway was opened and linked the area with Auckland by 1881. This made the area much more accessible and more attractive to European settlers. From 1878 onwards parts of several blocks in the surrounding area were leased and bought by European settlers, including the western portion of the Taupaki Block, the Oneonenui Block, the Motutara Block and the Muriwai Block. As of the 1890s most of the remaining Maori land in the Muriwai area had been sold (Murdoch 1994).

In 1908 with the popularity of camping on the Motutara Block, the Crown gazetted the Motutara Domain as a recreation reserve. It was renamed the Muriwai Beach Domain in 1960. Most of those visiting the domain were on holidays and would stay in one of two guesthouses in the area. The larger guesthouse was on the Muriwai Block near Lake Okaihau and was owned by the Ingram family (1220 in Auckland CHI). The guesthouse was established in 1912, although the facility was constructed in 1899 by doctors as a sanatorium for patients with tuberculosis. The hot black sands of the dunes and "ozone-rich" sea air was thought to benefit their health. The sanatorium was only opened briefly before the Ingrams used it as their family home and then guesthouse. The house included a formal dining area, ballroom, and croquet green, and guests would enjoy activities around Okaihau Lake and the Okiritoto Stream. When the land was sold to Mulcock in 1912, he focussed on farming, operating the guesthouse as a secondary priority with the aid of his neighbours, the Rutherfords. Mulcock later subdivided the property and Lot 1 (which included the guesthouse) was sold to Salter in 1918. Due to economic difficulties after WW I the guesthouse was closed in 1920, and later used as a family home (Murdoch 1994).

When the remainder of the Muriwai Block was transferred to Houghton, he cleared the scrub on the land to develop the farm which would be known as Muriwai Downs. He maintained a dairying unit and ran drystock. Houghton also served for a long period on the Motutara Domain board, from 1935 to 1960 (Murdoch 1994).

Another guesthouse called Muriwai House opened in 1925 near Motutara Domain, run by Blanchfield. Guests would explore the landscape and beach, with fishing a popular activity as well as walks, shooting, and driving along the beach. From the early 1920s Muriwai Beach was used for motor racing at low tide, with the New Zealand Motor Cup race first held in 1922, attracting large crowds annually. Foster built a small store near the beach access road in 1924 to take advantage of this, but in 1926 there was a flash flood and it was destroyed. The replacement store was located at the eastern end of the road. The domain continued to be hugely popular as a holiday location, with increasing infrastructure from the 1950s onward (Murdoch 1994).

4.2 *Archaeological background*

The area surrounding the project properties is part of a complex and extensive archaeological landscape with a long history of use. The land was rich in resources and well defended; within 5 km of the property boundaries, there are 15 recorded pā sites.

Two major field assessments have been carried out which encompass Muriwai and the project properties, and there have been several more targeted projects in the wider area. Simon Best carried out a large scale survey which aimed to cover the southern half of the South Kaipara Peninsula, but some areas were excluded including parts of Woodhill Forest and the flat land between the Kaipara river and foothills to the west. 164 sites were recorded; the vast majority of these were pits and terraces, as well as middens and pā (Best 1975). Hayward and Diamond carried out field surveys in

1977 in the Waitakere Ranges and West Auckland, recording a total of 550 pre-European Maori sites (Hayward and Diamond 1978a) and 683 historic sites (Hayward and Diamond 1978b). The majority of pre-European sites were midden sites, with high numbers of pā, rock shelters, pits, and terraces. Historic sites included in large part kauri timber dams, houses and baches, quarries, timber mills, shipwrecks, and tramlines, as well as a range of other site types.

Several projects have taken place around Muriwai resulting in smaller archaeological investigations. Spring-Rice (1984) undertook a survey for the route of a walkway between Muriwai and Bethell's Beach. The walkway was located near several archaeological sites but was routed to avoid all of them except for one, a midden (Q11/8). The site had already been damaged by erosion, excavation, and fossicking, and there was no alternative route for the track.

An archaeological assessment was also carried out by Visser (1987) with the proposal of the Takupu Refuge at Otakamiro Point, Muriwai, to minimise disturbance to the gannet colony. Multiple archaeological sites are concentrated around the pā, and it was clearly an important area in the settlement of Muriwai. Visser proposed that paths be relocated in order to reduce damage to archaeological sites, and that any works within their vicinity be monitored. In 2002, Law Associates Ltd put together a conservation plan for the Otakamiro Point Pā and nearby midden/urupā (Law Associates Ltd 2002).

The investigation and recovery of a waka from the Okiritoto Stream near Muriwai Beach in 2009 was documented by Brassey (2010). No other cultural material was encountered during its excavation. In 2001, Best carried out archaeological test excavations for a proposed cellphone mast at Muriwai, and no evidence of occupation was encountered. In 2009, Judge monitored works for the Southern carpark at Muriwai Regional Park and encountered firescoops and midden which were determined to be of 20th century origin. One piece of human bone was found within fill from 1950s and was of unknown origin. Overall, no pre-1900 archaeological evidence was encountered, likely as a result of extensive modification in the 20th century (Judge 2009).



Figure 4. View north showing typical landscape.



Figure 5. Okiritoto Falls.



Figure 6. Lake Okaihau.



Figure 7. View southwest of southern pit at Q11/67.



Figure 8. View northeast of northern pit at Q11/67.



Figure 9. View northwest of Q11/67 behind the manuka.

5 Field survey

The properties were undulating with relatively level ridge tops and steep banks down to stream gullies; small wetlands / swamps forming shallower waterways; the Okiroto Stream on the northern boundary with steep rock outcrops and waterfalls; and Okaihau Lake to the west (Figure 4, Figure 5, Figure 6). The relatively level paddocks have been ploughed and they are currently grazed, which has potentially obscured shallow features. The paddocks south of Muriwai Road, at the proposed reservoir, were similarly ploughed and grazed, sloping down towards the road with no notable features.

Five archaeological sites are recorded on the properties (Q11/67, Q11/68, Q11/70, Q11/71 and Q11/380) which were relocated except for Q11/70 as well as three CHI sites (1220, 1285 and 1519) of which 1519 was relocated. An old early 20th century house was also recorded as a new site.

5.1 Q11/67 Pits and terrace

Two storage pits were first recorded in 1975 by Best and relocated in 2009 by Druskovich. The pits were relocated during field assessment, located at the eastern edge of a bush filled gully, adjacent to the paddock fence.

The pits remain as recorded; the southern pit is amorphous and is approximately 4 x 3 m and is 2 m deep at the centre (Figure 7). The second pit is 4 m north of this, is more regular in form, and measures approximately 4 x 2 m x 1 m deep (Figure 8). The pits are both overgrown with long grass and manuka is growing in and around the pits.

5.2 Q11/68 Pits



Figure 10. View north of pits at Q11/68. Photo scale = 0.5 m.



Figure 11. View west showing the larger pit and the potential terrace (arrowed) at Q11/68.

This site also comprises two pits. It was also recorded first by Best in 1975 and relocated by Druskovich in 2009. The pits are on top of a small spur which runs 20 m west of the track towards the lake.

This site was relocated during field survey (Figure 10). The pits were originally recorded with measurements of 4 x 2 m x 0.15 m deep for the northern pit, and 6 x 3 m x 0.35 m deep for the southern pit. The southern pit was deeper than noted, being at least 0.5 m deep in the centre. 25 m north of the northern pit was a possible terrace measuring 8 x 8 m which is not noted in previous site assessments (Figure 11).

5.3 *Q11/70 Midden*

This site is recorded as the location of a midden and a potential pit, above exposed boulders on the steep eastern bank of a side creek south of Toroanui Falls. It was first recorded in 1975 by Best and was relocated in 2009 by Druskovich. The midden was reported to be exposed in several locations, consisting primarily of cockle with some pipi. The potential pit, measuring 3 x 1.5 m x 0.5 m deep, was located 10 m east, on top of a ridge. Both Best and Druskovich were unsure if it was a pit.

The eastern bank and surrounding area were thoroughly examined but neither midden nor pit were relocated. The area has been fenced off and is under long grass with very little ground visibility. It is likely that subsurface midden deposits are still present in this area, but no surface evidence was visible.

5.4 *Q11/71 Rock carving*

Q11/71 is a stone carving of a face recorded by Best in 1975 and relocated by Gillon in 2007. It is located on a steep rock face over which a small waterfall runs (Figure 12). The carving was relocated during the field assessment, approximately 8 m west of the waterfall. The head is about 1 m above the ground surface at that point, which slopes steeply up from the creek.

Previous site recordings note that it is unlikely the carving is pre-European Maori, due in part to its proximity to an old fence line, as well as the style. Previous recordings do not mention the date etched above the carving, which appears to read "12/9/39." This throws into question whether this date (and perhaps the face as well) was carved in 1939, and was obscured or for other reasons not recorded by Best or Gillon, or if the date was carved at some time after 2007 for an unknown reason – this latter seems unlikely.

The face carving is approximately 300 mm tall and 200 mm wide and has very deep relief, taking advantage of a natural protrusion from the surrounding rock. It has a heavy brow, large nose, and slanted mouth. There is a groove in the forehead as if it was used for grinding or sharpening (Figure 13).

5.5 *Q11/380 Foster's flax mill*

This site is the location of Foster's flax mill, on the southern bank of Okiritoto Stream at Okiritoto Falls. It was first recorded in 1981 by Renwick and revisited in 2008 and 2009 by Tanner and Druskovich, respectively. The mill was run by John Foster and dates to the 1870s. There are deep cuts in the rock approximately 7 m long, 3 m wide and 8 m deep for the wheel, with slots and buttresses, and evidence of races and slots in the bedrock above the falls. This site was relocated during the field assessment but was very overgrown (Druskovich noted that vegetation was a threat to the site), limiting access to the water wheel site (Figure 14 and Figure 15), but it remains as originally recorded.

5.6 *Q11/615 Houghton's quarry*



Figure 12. Rocky outcrop on which the carving Q11/71 is located (off camera to the right).



Figure 13. Stone carving of face with text above reading "12/9/39", Q11/71.



Figure 14. Water race at southern end of waterwheel slot, Q11/380.



Figure 15. Overgrown vegetation in waterwheel slot, Q11/380.



Figure 16. View south of Houghton's quarry Q11/615.



Figure 17. Goodwin rock crusher located at the Houghton's Q11/615.

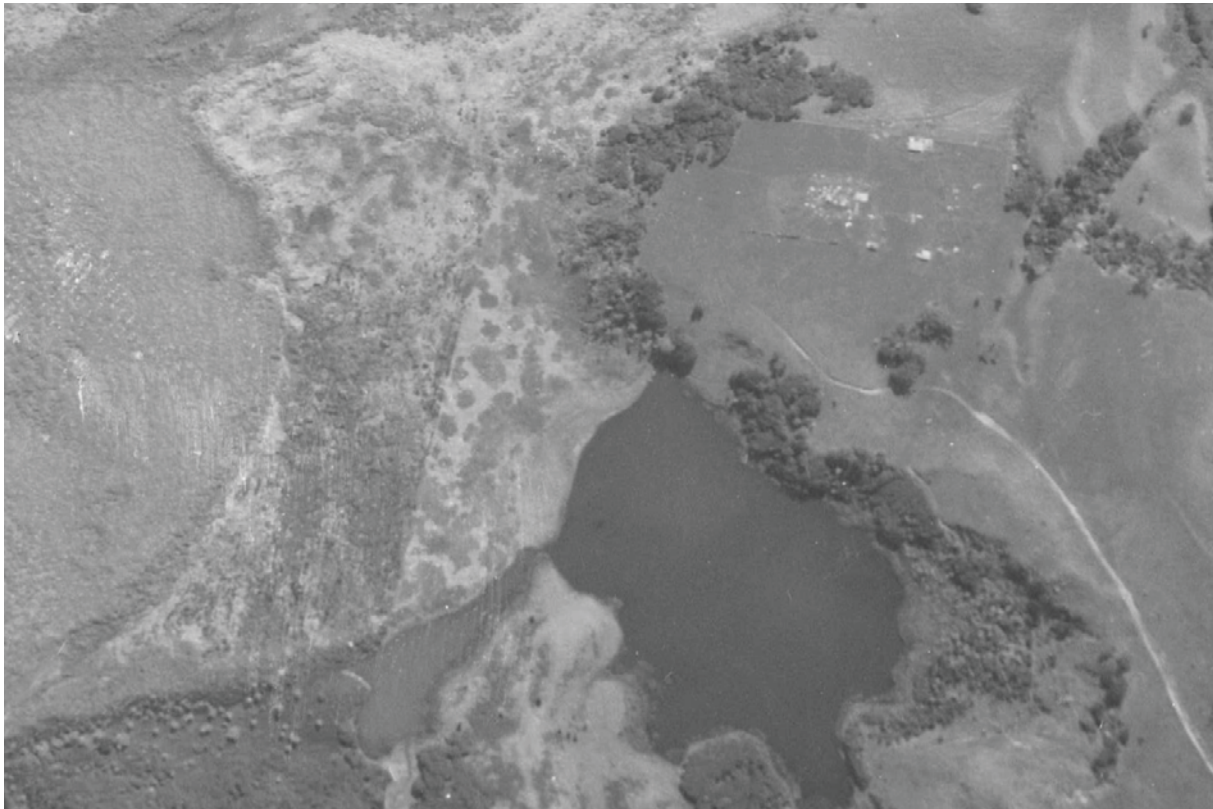


Figure 18. Detail of SN143/92/4 showing Ingram's boarding house north of Lake Okaihau.

Houghton's andesite quarry is recorded in the CHI as item 1519. The small farm quarry was recorded by Hayward and Diamond as site O5 (1978), and was successfully relocated during field assessment on the east bank of a small tributary leading to the Okiritoto Stream. The quarry takes advantage of the underlying volcanic rock being present on the surface, and measures roughly 30 x 20 m, and is up to 2.5 m deep, and the floor of the quarry has partly infilled and become swampy. A belt driven Goodwin 15 x 7 Acme Victor rock crusher (Lee Hodges, CMS Cepercor (parent company of Goodwin Barsby), email, 23 March 2021) sits above the eastern bank of the quarry. The rock crusher is in fair condition, quite corroded underneath. Just south of the quarry by the current gate are some brick and concrete that probably relate to the quarry office or shed.

The date of operation of the quarry is not known. The Houghton family owned the property between 1925 and 2019 and that model of rock crusher was built ca 1935–1957. The site is not visible in the earliest aerial photos (SN143, dated 1940) and is possibly visible in aerials from 1950 (SN583), but the resolution of these early images is poor. It is certainly visible in SN1392 from 1963, as is the building to the south. Houghton's Quarry has been recorded in the SRS as Q11/615.

5.7 Q11/616 Ingram's boarding house (new site)

Ingram's boarding house is recorded in the CHI as item 1220. It was built in 1899 as a sanitorium on land leased from Percy Dufour, who sold the block the following year to Christopher Ingram, who owned the land until 1912. Ingram operated it as a boarding house (the history of the boarding house is given above in Section 4.1). The site was identified by Hayward and Diamond in 1978 as site A168, who reported that while the building had been demolished, the site was identifiable. This site was not relocated during the field assessment. The house is shown in DP 9596 (Figure 3). It is visible as a complex of buildings covering around 110 x 80 m in aerial photos (Figure 18), the northern most of which is the largest and is assumed to have been the boarding house. Aerial photo SN143/92/4 was

georeferenced into the project GIS to an accuracy of around ± 10 m. The main building is located at E 1728600 N 5925620 NZTM. It has been recorded as site Q11/616 in the SRS.

5.8 CHI 1285 Houghton's farm shed

Also recorded by Hayward and Diamond (1978) Houghton's farm shed was recorded as being close to Muriwai Beach Road. It had been demolished but, at the time of recording, debris remained. This site was not relocated during field assessment and has not been recorded as an archaeological site.

5.9 Q11/614 Old house (new site)

A dilapidated cottage was recorded on 614 Muriwai Road. This is the same building shown on DP 9596, dated 1914 (Figure 3). It was in an unsafe condition and was only observed from the outside. Visible elements, including horizontal 12" sarking, board and batten ceilings, tiled fire surround and a surviving 4-pane double-hung sash window indicate an early 20th century date of construction. Aerial photos from 2017 show the roof intact, but since then the front of the house has been partly demolished with the roof and ceiling structure lying on the ground. It has been recorded as site Q11/614 in the SRS.

There is little in the historic record to provide a date of construction for the cottage. It could have been built either by the Māori owners pre-1900, by Dufour between 1899 and 1900, Ingram between 1900 and 1912 or the Mulcocks after 1912 but prior to 1914, the date of DP 9596. Ingram originally lived in the sanatorium that he then converted to a boarding house, so the most probable explanation is that he built the cottage at that time.



Figure 19. Horizontal sarking and board and batten ceiling in the dilapidated cottage Q11/614.



Figure 20. General view of the dilapidated cottage Q11/614, looking north.

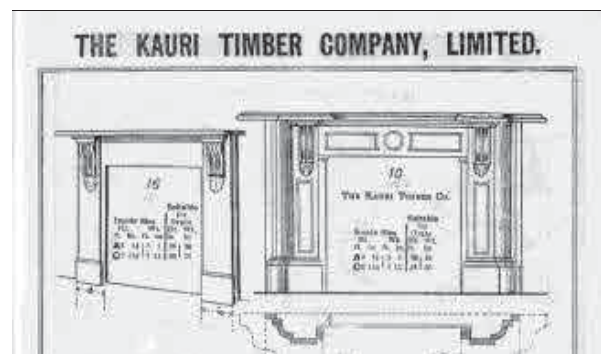


Figure 21. Comparison of the mantel with a 1906 catalogue example.

The cottage was again inspected by Matthew Campbell accompanied by built heritage specialist John Brown of PlanHeritage on 28 September 2021, who assessed the various elements of the building to ascertain a probable construction date.

The cottage contains a main structure originally a square cottage of two rooms, with rear lean-to kitchen or laundry extension. The structural form indicates that the building was likely built before 1914, and possibly before 1910, before bevelled weatherboards became the norm (Arden and Bowman 2004). The use of what are apparently squared totara piles also is in keeping with post-1900 traditions noted by Salmond (1986). The existing chimney is likely to be early 1900s in date, based on its simple, monochromatic brick construction and use of cement-enriched mortar.

Surviving interior features included the original plan layout of the main cottage, a back-to-back chimney breast; internal stud walls, sarking, and joinery, which includes ceiling trims, door skirt-



Figure 22. Location of recorded NZAA and CHI sites with respect to the proposed golf course layout.

ing and architraves. It is likely, based on the combination of visible features, that the core cottage was constructed between c. 1904 and c. 1910. A good example is the comparison of a Kauri Timber Company mantel, which is a close match to a design shown in the 1906 catalogue (Figure 21).

Modifications include a rear lean-to, which may be part of the original building form as a laundry or other ancillary space, and the extended bay to the front of the property which was probably a bedroom. The front living room chimney surround was also modified around this time, with tiling added around the grate. Some of the floor joists also appear to have been replaced.

Overall the most likely date based on visible construction elements and surviving architectural features would be somewhere between c. 1904 and c. 1910, which fits with the proposal that it was built by Ingram. The building therefore post-dates 1900 and is assessed as not being an archaeological site, based on existing evidence.

6 Discussion and conclusion

Although the properties are located within a rich pre-European Māori archaeological landscape, only three small scale Māori sites are recorded here, and one of these (midden Q11/70) could not be relocated during field assessment. On other hand, there are six European sites dating to as early as the 1870s, indicating a more substantial European occupation of the block. Farming activities, particularly bush clearance and ploughing may have obscured much pre-European Māori evidence but it seems that the Muriwai Block was not densely occupied by Māori. While settlement and gardening may have been sparse, Lake Okaihau, the Okiritoto Stream and associated swamps would have provided valuable resources such as harakeke (flax), rushes, birds, tuna (eels) and other freshwater fish (inanga, kōkopu, etc.) and kākahi (freshwater mussels). This is in contrast to the much denser record of archaeological sites north of the Okiritoto (Figure 1), which includes larger pit sites and pā. The reason for this is not immediately clear – soil types, for instance, are the same north and south of the stream while the land forms north of the stream are higher and less easily accessible, so on the face of it less archaeology might be expected.

7 Assessment

These sites, both pre-European Māori and European were initially identified as constraints on design, and should be protected from damage during golf course design and construction. They were also identified as providing opportunities to celebrate the history of the Muriwai Block though, for instance:

- Protection and signage at pit sites Q11/67 and Q11/68.
- Clearing the vegetation from Foster's Mill Q11/380.
- Conserving the rock crusher at Houghton's quarry Q11/615.
- Protecting the carved face Q11/71 – this site is in a difficult to reach location and visiting it should probably not be encouraged for health and safety reasons.
- Highlighting the wider archaeological landscape, particularly to the north of the Okiritoto Stream.

Subsequent design has avoided most of the sites discussed in this report, apart from the dilapidated early 20th century cottage Q11/614. A 10 m buffer has been placed around pit sites Q11/67 and Q11/68 and they will not be affected. Some subsurface evidence of 20th century outbuildings associated with Q11/616 Ingram's boarding house may also be affected.

There remains a distinct possibility that unrecorded pre-European Māori sites, most probably small scale middens along stream banks or pit sites on higher ground, may be affected by golf course development. It is not considered likely that pre-1900 European features will be affected, but sites and features as early as from the first decade of the 20th century are likely to be encountered, including the old cottage Q11/614.

Any effects of the proposed development will be minimal, and provided construction is undertaken following the conditions of an archaeological authority these effects can be appropriately mitigated.

The following assessments of values is for unrecorded pre-European Māori features that may be encountered. It relates only to archaeological values. Other interested parties, in particular mana whenua, may hold different values regarding the proposed development.

7.1 Assessment of values

The following assessment of archaeological values is based on the criteria set out in the HNZPT (2019).

Condition	Any unrecorded features will have no surface evidence but are likely to be well preserved below the plough line (~250 mm depth max), particularly pits.
Rarity	Any unrecorded features will be middens or pits, which are common site types.
Context	The wider context Okiritoto Stream is largely undeveloped and so can be considered intact. Earthwork sites are visible from the proposed golf course on the other side of the Stream, providing a visual and easily interpreted context.

Information	Any unrecorded features can potentially provide important archaeological information about the pre-European Māori settlement of Muriwai, which is not well understood.
Amenity	Any unrecorded features will not be visible and cannot be readily interpreted to the public. The development of signage and interpretation of surviving sites will be a positive public amenity.
Cultural	The cultural values of any unrecorded pre-European Māori features can only be determined by mana whenua.

8 Recommendations

These recommendations are only made based on the archaeological potential that has been outlined above. Any other values associated with special interest groups, including tangata whenua, can only be determined by them. It is recommended that:

- an authority to modify or destroy unrecorded archaeological features in Lot 2 DP 196478, Lot 1 DP 187507, Lot 2 DP 196478, Lot 1 DP 16373, Lot 4 DP 187060 and Lot 5 DP 187061 during golf course development be applied for from Heritage New Zealand Pouhere Taonga (HNZPT) under Section 44 of the Heritage New Zealand Pouhere Taonga Act 2014;
- the authority application should be accompanied by an Archaeological Management Plan that outlines where an archaeologist must be present for earthworks, contractor briefings, responsibilities of parties and contact details;
- note this is a legal requirement;
- no authority should be applied for without consultation with the appropriate tangata whenua authorities; evidence of consultation, and views expressed will be required by HNZPT, and will be taken into account when making a decision about the granting of the authority.
- note that the application process may take up to 20 working days from the date of lodgement, and following issue there is a period of 15 working days during which earthworks cannot commence to allow for appeals to the Environment Court;
- appropriate tikanga (protocols) should be followed during works – mana whenua may make recommendations about these;
- in the event of koiwi (human remains) being uncovered during any future construction, work should cease immediately and mana whenua should be contacted so that suitable arrangements can be made;
- since archaeological survey cannot always detect sites of traditional significance to Māori, or wāhi tapu, mana whenua should be consulted regarding the possible existence of such sites, and the recommendations in this report.

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