

***PROPOSED RESIDENTIAL DEVELOPMENT,  
64 & 95 SCOTT ROAD, TE KAUWHATA:  
ARCHAEOLOGICAL ASSESSMENT***

Report prepared for Lakeside Developments 2017 Limited

By

Ellen Cameron (MSc)

Sarah Phear (PhD)

March 2017

(updated from October 2016)

*Clough & Associates Ltd.*

[heritage@clough.co.nz](mailto:heritage@clough.co.nz)

321 Forest Hill Rd, Waiaatarua

WAITAKERE 0612

Telephone: (09) 8141946

Mobile 0274 850 059

[www.clough.co.nz](http://www.clough.co.nz)

# TABLE OF CONTENTS

---

Introduction.....	1
Project Background.....	1
Methodology .....	1
Historical Background .....	4
Maori Settlement and the Land Wars .....	4
Information from Early Plans and Photographs.....	8
Archaeological Background.....	18
Recorded Archaeological Sites .....	18
Other Identified Historic Heritage Places .....	22
Physical Environment .....	23
Geology and Topography .....	23
Field Assessment .....	26
Results of the Field Survey .....	26
Discussion and Conclusions .....	34
Summary of Results.....	34
Maori Cultural Values.....	34
Survey Limitations.....	34
Archaeological Value and Significance.....	34
Effects of the Proposal .....	35
Resource Management Act 1991 Requirements.....	36
Heritage New Zealand Pouhere Taonga Act 2014 Requirements .....	37
Conclusion .....	38
Recommendations.....	39
Bibliography .....	40

---

# INTRODUCTION

---

## **Project Background**

Lakeside Developments 2017 Ltd is preparing a private plan change application for a proposed residential subdivision at 64 and 95 Scotts Road, Te Kauwhata, Waikato (Figure 1). The proposed development site covers approximately 194 ha of land between Lake Waikare and the NIMT rail line. The legal description of the property is: Section 52 Block XV Maramarua Survey District (63.40 ha); Lot 1 DP 35516 (20.91 ha); Lot 1 DPS 85309 and Section 90 Block XV Maramarua Survey District (47.15 ha); Lot 1 DPS 85308 (62.38 ha); Lot 1 DP 489788 (7640 m<sup>2</sup>) and Lot 2 DP 489788 (14.12 ha).

The majority of the proposed development property is currently a working dairy farm, apart from Lot 1 DP 489788, which contains a house and landscaped grounds.

Lakeside Developments 2017 Ltd has commissioned an archaeological assessment to establish whether future development is likely to impact on archaeological values. This report has been prepared as part of the required assessment of effects accompanying a plan change application under the Resource Management Act 1991 (RMA) and to identify any requirements under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA). Recommendations are made in accordance with statutory requirements.

---

## **Methodology**

The New Zealand Archaeological Association's (NZAA) site record database (ArchSite), the Waikato District Plan (Operative Waikato Section April 2013), and the New Zealand Heritage List were searched to determine whether any archaeological sites had been recorded on or in the immediate vicinity of the proposed development property. Literature and archaeological reports relevant to the area were consulted (see Bibliography). Early plans held at Land Information New Zealand (LINZ) were checked for information relating to past use of the development area.

A visual inspection of the proposed development property (apart from Lot 1 and Lot 2 DP 489788<sup>1</sup>) was conducted by Ellen Cameron and Carly Mailhot on 30 September 2016. The ground surface across the development property was examined for evidence of occupation (in the form of shell midden, depressions, mounds, or other unusual formations within the landscape, or indications of 19th century European remains). Exposed and disturbed soils were examined where encountered to gain an understanding of the local stratigraphy.

---

*Continued on next page*

---

<sup>1</sup> Lots 1 and 2 DP 489788 were not included as part the proposed development property for the private plan change at the time of the survey in 2016. The assessment for these two lots is based on the results of desk based study (including historical plans, aerial photographs and written descriptions) and observations of the general area during the original survey.

# INTRODUCTION, CONTINUED



Figure 1. Upper aerial photograph showing the regional location of the proposed development property with locality shown in inset; lower aerial photograph indicating the proposed development property (lots outlined in yellow were not included in the field survey) (source: GoogleEarth and Waikato District Council Intramaps)

*Continued on next page*

## ***INTRODUCTION, CONTINUED***

---

### **Summary**

- There are no previously recorded archaeological sites on the proposed development property and no new sites were identified during the field survey for this assessment. However, sites associated with Maori gardening have been identified to the south and food storage pits to the east which attest to usage and occupation in the general area. Additionally, archaeological sites associated with the New Zealand Wars are located to the southwest at Rangiriri.
  - Past uses, including dairy farming, ploughing and tree plantations, would have repeatedly disturbed the ground surface and upper layers of the soil, which would have in turn damaged or destroyed evidence of any archaeological features and deposits that may have once been present. Therefore, the potential for any unidentified archaeological sites to be exposed as part of the development, is considered low and the effects to be less than minor.
  - This assessment has concluded that there should be no constraints on the proposed development on archaeological grounds, as no archaeological sites or other cultural heritage sites have been identified within its boundaries and it is considered unlikely that any will be exposed during development. If resource consent is granted, consent conditions relating to archaeological monitoring or protection would therefore not be required. A general condition relating to the accidental discovery of archaeological remains could be included, requiring that if any archaeological remains are exposed during development, work should cease in the immediate vicinity and the Council and Heritage NZ should be informed.
  - As well, an archaeological Authority is not required for development of the proposed development property as no known sites will be affected and it is unlikely that any undetected sites are present. However, should any sites be exposed during development, works must cease in the immediate vicinity and the provisions of the HNZPTA must be complied with.
-

# HISTORICAL BACKGROUND

---

## **Maori Settlement and the Land Wars**

In oral tradition the Tainui canoe, captained by chief Hoturoa made its final landfall at Kawhia some 800 years ago. The canoe had travelled around various parts of the central north island, including the Bay of Plenty, the Coromandel, the Manukau Heads and the Hauraki Gulf with some people leaving the voyage and settling in these areas (TeAra 1).

Hoturoa is said to have made his base at Kawhia and over the years the Tainui people expanded inland from here. This included movement into the Waikato and caused the displacement, either through warfare or assimilation, of the people who occupied the Waikato region prior to the 16th century (Parker 1986:33 4). Maori settlements spread throughout the region, with many concentrated along the coast to exploit the rich resources available there. Further inland, settlements were made along navigable waterways, such as the Waikato and Waipa Rivers and their tributaries, with numerous pa sites identified as well as gardening and food storage sites. Intertribal conflicts occurred periodically as a result of alliances, disputes and competition for resources. In the late 18th century there was a major encounter near Ohaupo referred to as the battle of Hingakaka, which saw the defeat of Ngati Toa by the Waikato tribes (Sole 2005: 137).

During the early years of the 19th century contact with European traders and missionaries increased, one result being the introduction of muskets into Maori intertribal conflicts. In the early years the northern tribes were the first to arm themselves in this way and gained some advantage in battles with tribes who had not obtained such weaponry. However, by the 1830s most tribes were more or less equally equipped and were unable to sustain the long-term and large scale warfare often referred to as 'The Musket Wars' that had occurred over the previous two decades. In the years that followed, European influence increased and conflicts between Maori and the colonial government over the European demand for land became an ongoing issue, resulting in open conflict by the early 1840s. Contentious land sales, and the demands of settlers for land that was not properly secured, continued to result in conflicts and in 1845-46 these were centred in the north. However, confrontations between Maori and government forces continued with skirmishes, raids and battles taking place to the south, in the Hutt Valley and Wanganui in the late 1840s (Cowan 1955: 100-103; 143-144).

Tensions between Maori and the government worsened over time and in 1858 resulted in the founding of the King Movement (Kingitanga) in the Waikato. This movement aimed to unite Maori under a single leader to strengthen their ability to oppose the loss of their land from the growing demands from the ever-increasing number of European settlers arriving in New Zealand (Te Ara 3; Belich 1986).

---

*Continued on next page*

### **Maori Settlement and the Land Wars, *continued***

The Waikato, with its proximity to Auckland and now as the seat of the King movement, was a concern to the government and on 11 July 1863, the governor of New Zealand, Sir George Grey, issued an ultimatum to the chiefs of the Waikato, ordering that they pledge allegiance to Queen Victoria or face the consequences. Without providing adequate time for the Maori leaders to respond, on 12 July, British forces marched into the territory of the Maori King crossing the boundary (aukati) between the Pakeha and Maori lands and marking the beginning of the Invasion of the Waikato (Belich 1986; New Zealand History Website).

#### **Battle at Rangiriri**

Military installations were constructed by both sides throughout the Waikato during 1863 and 1864 as British troops engaged with Maori in numerous skirmishes and battles. One such site, Rangiriri is located to the west of Lake Waikare and adjacent to the Waikato River. Sketch plans were made by the British Army of the battle area which show the earthworks extending from the Waikato River to Lake Waikare (see Figure 2 and Figure 3). However, as has been noted previously, the British military plans were incorrect, as the battle area actually only extended to the western edge of what is today known as Lake Kopuera, not to Lake Waikare (Gumbley 2011: 3-4). It has also been suggested that this confusion may have arisen from the two lakes being joined by swampy land during the 19th century and as such being jointly referred to as Lake Waikare (Prickett 2008: 40-41). There is no known evidence that any earthworks were located in the area between Lake Kopuera and Lake Waikare as they exist today.

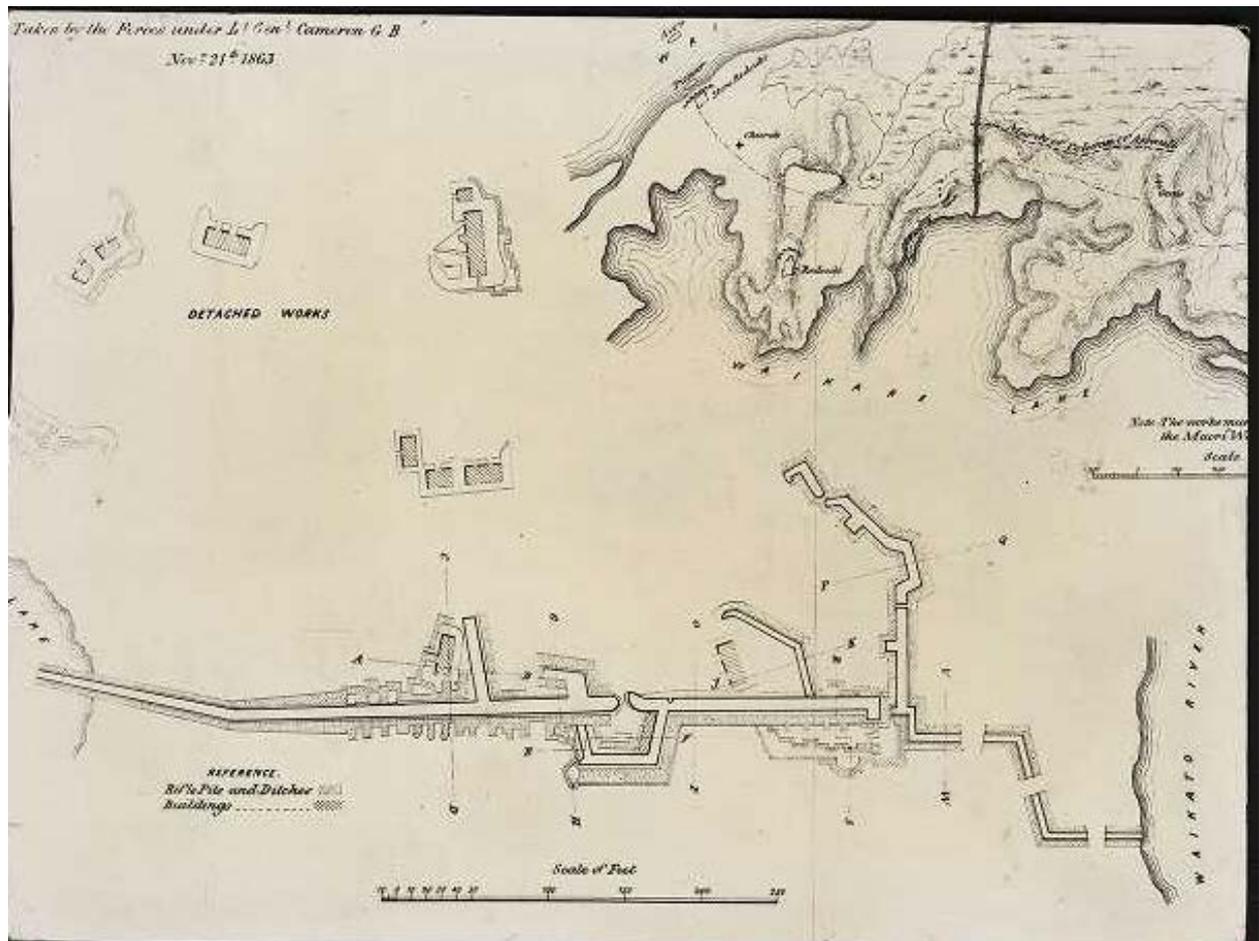
The battle at Rangiriri took place on 20 November 1863 and was one of the major engagements during the invasion of Waikato with heavy loss of life on both sides and the taking of 180 Maori prisoners by the British. After the battle, an advance camp was set up by the British and the campaign focused on advancing into the Waipa. It has been noted that some of the Maori defenders in the outlying defensive positions which fell to the British in the early stages of the battle successfully fled across the swamps taking canoes across Lake Waikare (Cowan 1955: 330).

---

*Continued on next page*

## *HISTORICAL BACKGROUND, CONTINUED*

---



**Figure 2. Plan by Capt. E. Brooke R.E. (from November 1863) of the Maori entrenchments at Rangiriri taken by Imperial forces (source: PAColl-3033-1-25. Alexander Turnbull Library, Wellington, New Zealand. <http://natlib.govt.nz/records/22704282>)**

*Continued on next page*

# HISTORICAL BACKGROUND, CONTINUED

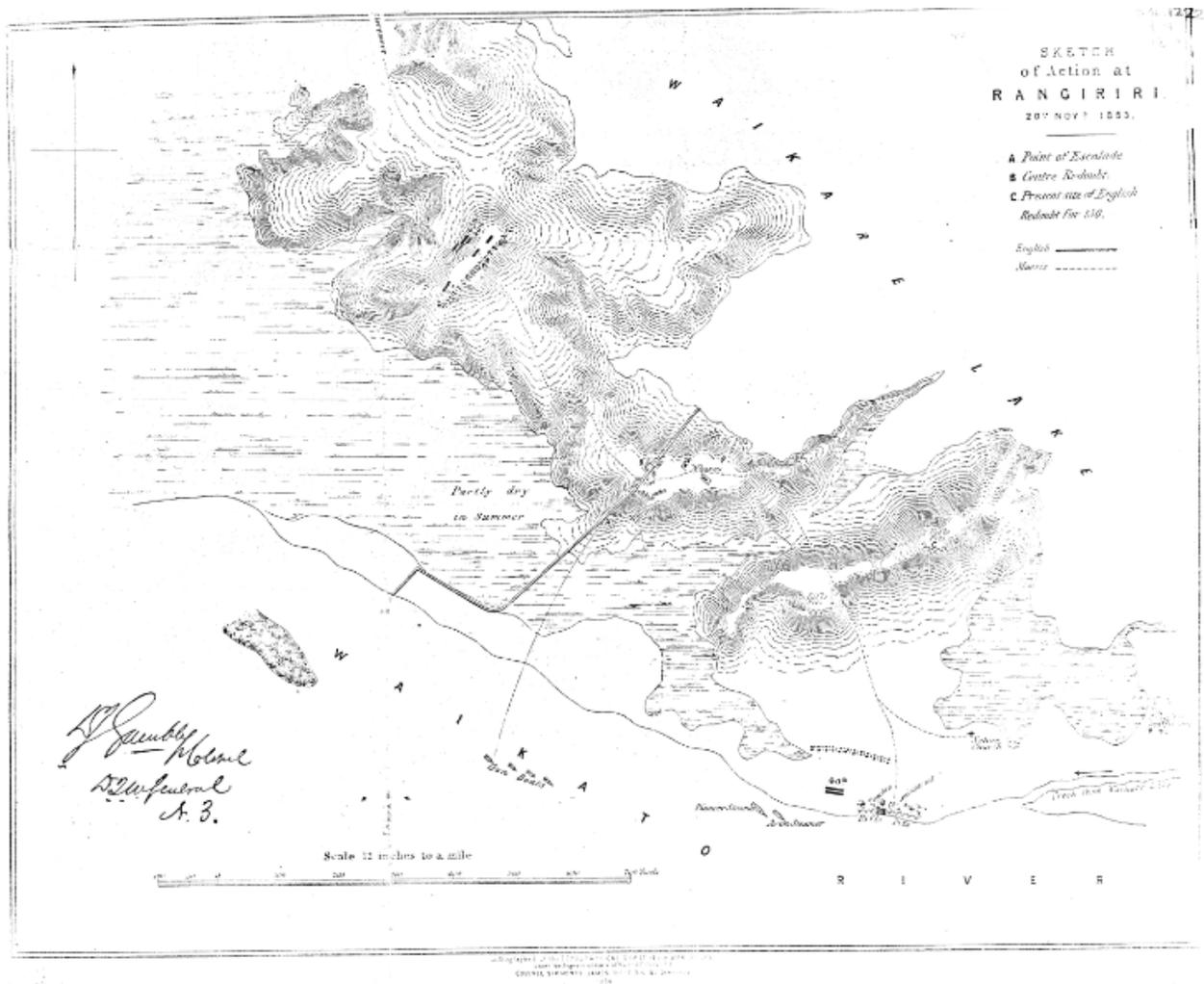


Figure 3. Sketch plan from 1864 showing the location of the battle at Rangiriri between the Waikato River and Lake Waikare (source: University of Waikato Digital Library)

*Continued on next page*

## ***HISTORICAL BACKGROUND, CONTINUED***

---

**Department of Agriculture Land Survey** In 1870 the Department of Agriculture surveyed the land around Whangamarino and Lake Waikare with findings that the land was of low fertility, and zoned much of the area as forestry plantations. This included the area to the south of modern Te Kauwhata, much of which, beginning in 1887, was planted with wattle for use in the tanning industry (Te Kauwhata and Districts Historical Society 2003: 5). An article written in 1913 by Gerald Peacocke provides more details on the contemporary view of the land condition (in the first excerpt) and logic of planting wattle (in the second excerpt) shown below:

‘It is a good many years since the writer first went over the block of land on which the present State experimental farm, known as “Waerenga”, is situated. At that time it was a tract of land of some two or three thousand acres near Rangariri, on the Waikato railway line, which, like a large area of the surrounding country, looked quite hopeless as a field for settlement. Ever since its confiscation from the Natives, as a result of the Waikato war, the country for many miles beyond the Whangamarino River had lain practically waste and unoccupied. As seen from the railway, it has an expanse of poor clay hills, interspersed with a succession of miserable-looking rush swamps.’ (Peacock 1913)

‘Just beyond Wairangi station, now re-named Te Kawhata there was a block of Crown land of 2000 or 3000 acres, stretching as far as Lake Waikare, a portion of which had been roughly turned over and planted with the Australian tanning-bark, black wattle (*Acacia decurrens*) and golden wattle (*Acacia pycnantha*) as an experiment, the idea being that if useless for any other purpose the land might possibly grow wattles, and trees give some return in bark for tanning purposes. This wattle plantation grew, slowly of course, the young trees gradually showing up over the scrub and fern between the rows’ (Peacock 1913).

---

**Information from Early Plans and Photographs** Early plans and photographs have also been used to provide some information on the topography and early uses of land in the area. European settlement at Te Kauwhata, which was originally known as Wairangi, began to grow during the 1870s with expansion increasing after the opening of the railway station in 1877 (Scoble 2010). The proposed development property lies just to the south of the station and town, between Lake Waikare and Lake Kopuera.

---

*Continued on next page*

## ***HISTORICAL BACKGROUND, CONTINUED***

---

### **Information from Early Plans and Photographs, *continued***

As mentioned above an area which includes part of the proposed development property was zoned as a plantation reserve in the late 1880s by the government and this can be seen on an 1891 plan of the area (Figure 4). In 1892, Te Kauwhata also became the site of an experimental farm run by the Department of Agriculture which remained in operation until 1992. The main area of the farm was located just to the west of the proposed development property on the western side of the railway line. A plan from 1914 (Figure 5) shows this area as containing orchards and vineyards (it was made the government viticultural research station in 1902), and a small part of the development property as 'ploughed land'. A more detailed plan also from 1914 notes the presence of the wattle plantations (as described earlier) on part of what is now the proposed development property (shown in Figure 6).

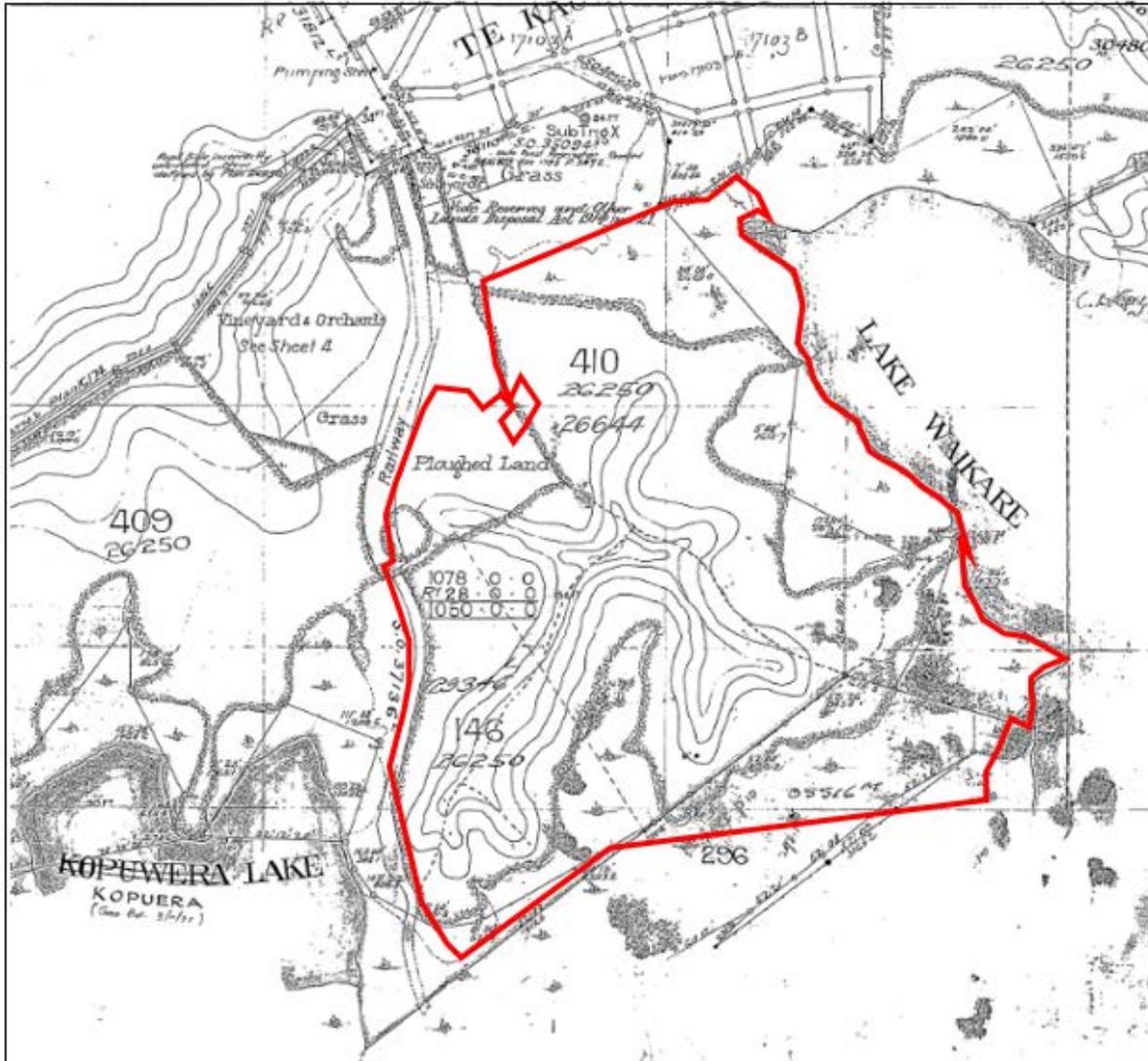
---

**Figure 4. 1891 map with the proposed development property highlighted in red with 'Plantation Reserve' description (source: Sir George Grey Special Collections, Auckland Libraries, NZ Map 4362)**



*Continued on next page*

## ***HISTORICAL BACKGROUND, CONTINUED***

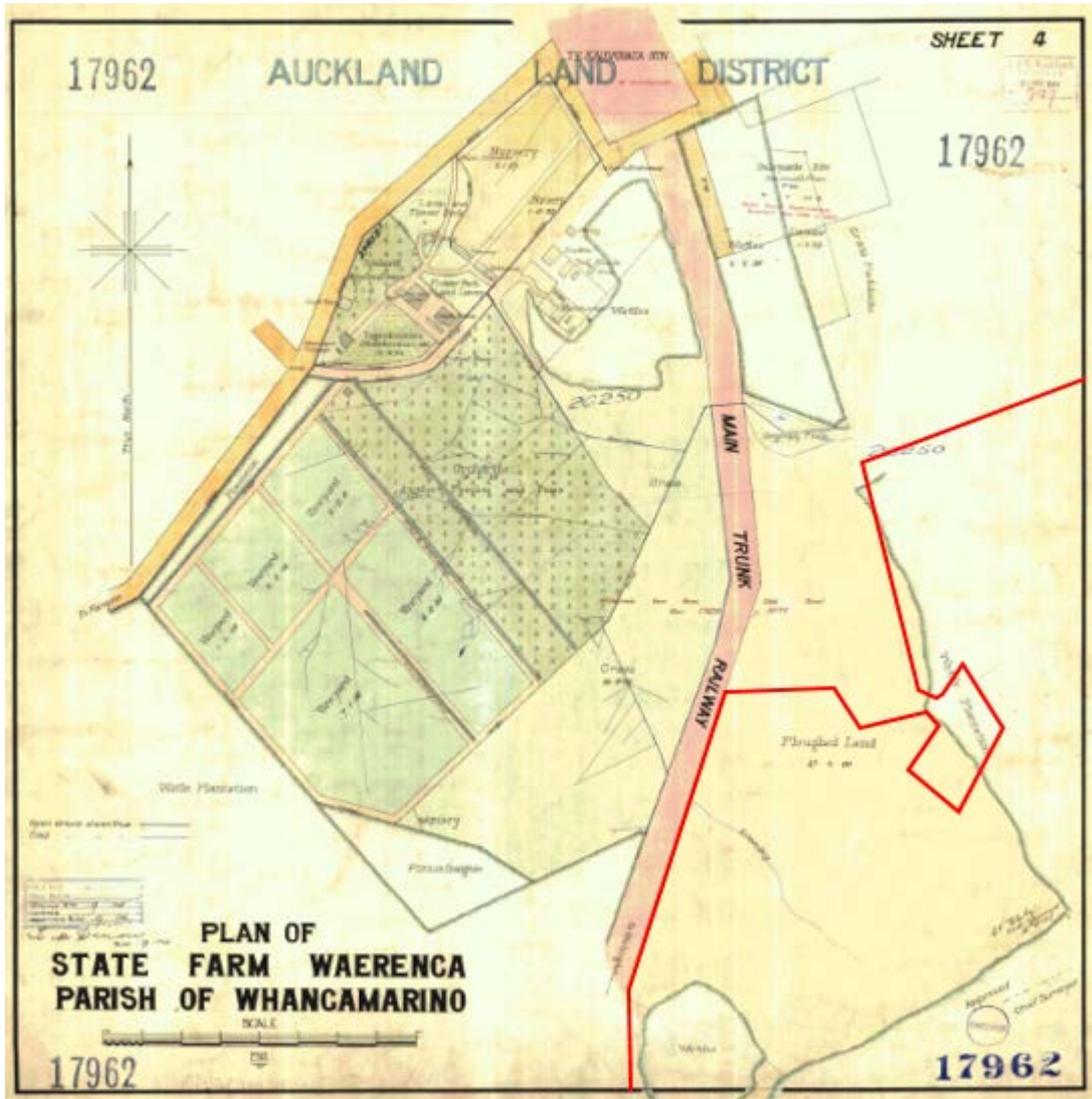


**Figure 5. Part of Plan HN SO 17961 from 1914 showing outline of the proposed development property overlain on the plan in red. The viticultural station land's 'vineyards and orchards' are marked just off the northwest corner of the property (source: LINZ)**

*Continued on next page*

# ***HISTORICAL BACKGROUND,*** CONTINUED

---



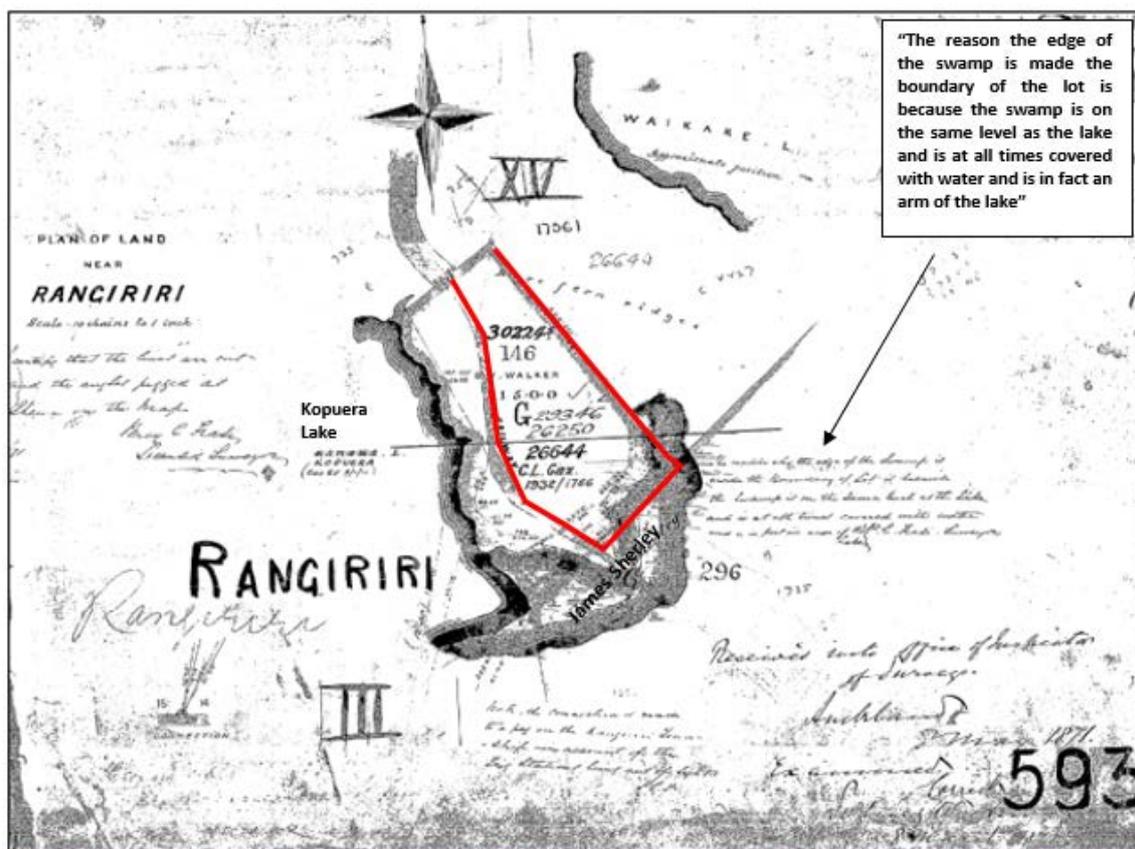
**Figure 6. Plan HNC SO 17962 I 4 from 1914 showing the State Farm at Waerenga (Te Kauwhata) including some parts of the proposed development property (outlined in red) as ploughed land and containing wattle plantation (source: LINZ)**

*Continued on next page*

## ***HISTORICAL BACKGROUND, CONTINUED***

### **Information from Early Plans and Photographs, *continued***

Details relating to settlement of Te Kauwhata can be found in plans such as one from 1871 (shown in Figure 7) where the southwestern corner of the proposed development property is indicated as a swamp covered in water at all times, with higher land containing 'bare fern ridges' to the east. This plan also has the name James Sherley written on the lot just to the south of the proposed development property. Mr Sherley ran the Royal Mail Hotel at Rangiriri in the 1860s and 1870s and had a farm on Manutahi Island. The name on the land within the proposed development area just to the north is D.V. Walker. This almost certainly refers to Hugh Middleton Devaumorel Walker (whose written name appeared in several variations over the years, including D.V. Walker). He had overseen the military canteen at Meremere and ran the Traveler's Rest Hotel in Rangiriri until it burnt down sometime in the late 1870s. He and his wife Eliza lived in Rangiriri up until his death in 1914 (Kelly 2015: 9). Another plan from the same year (Figure 8) shows in more detail the boundary between James Sherley's property and D.V. Walker's, covered by swamp apart from a small area of higher ground running in a north south direction and containing the railway line.



**Figure 7. Plan HN SO 593 I from 1871 with the southwestern corner of the proposed development property outlined in red (currently part of Lot 1 DPS A 85309 and Section 90 Block XV Maramarua Survey District) noting the southern section is swamp and presence of bare fern ridges in the central part (source: LINZ)**

*Continued on next page*

## HISTORICAL BACKGROUND, CONTINUED

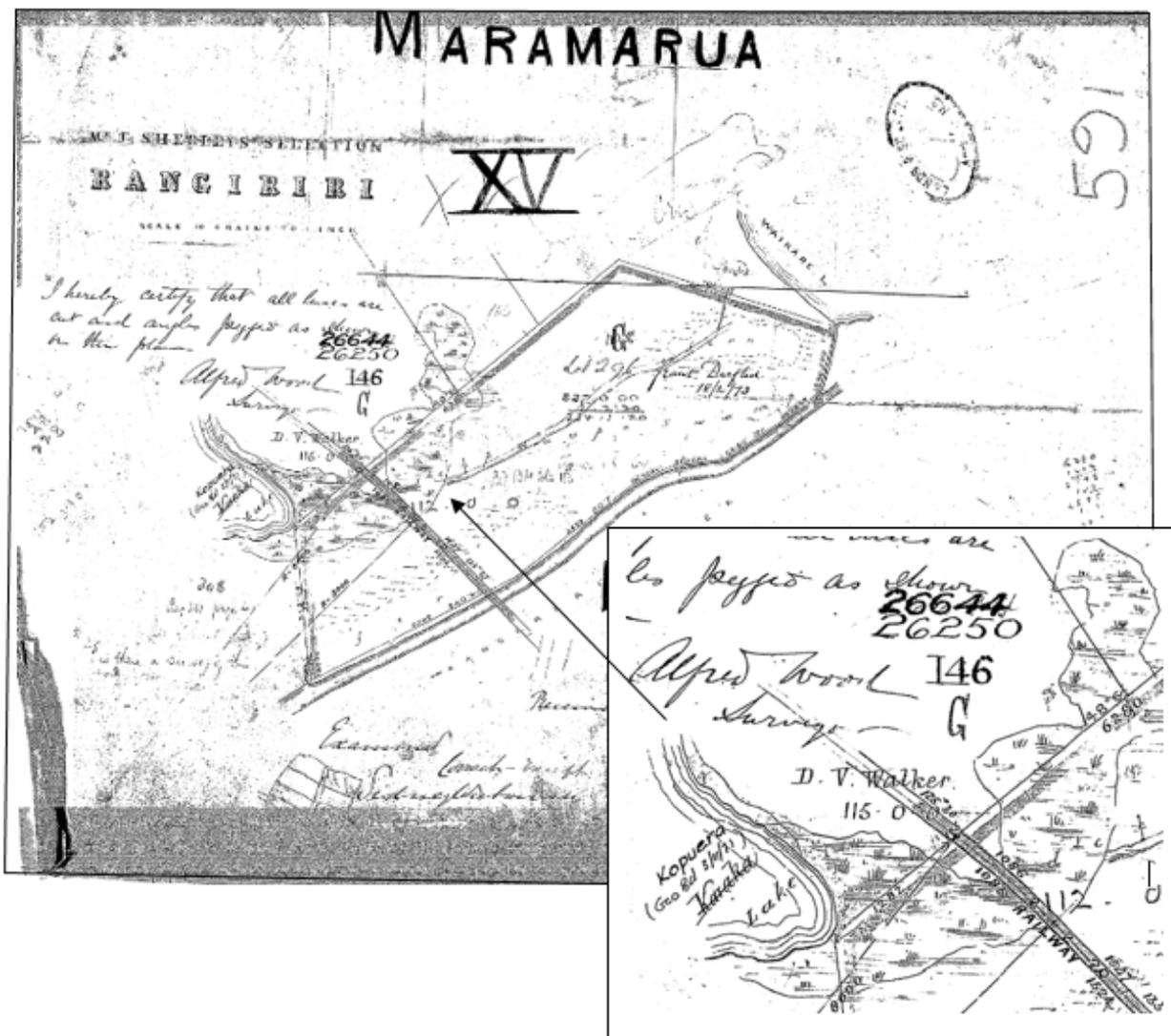


Figure 8. HN SO 591 I plan from 1871 showing the boundary of James Sherley's and D.V. Walker's lots with swampy land marking the boundary, shown in detail in the inset at bottom (source: LINZ)

### Information from Early Plans and Photographs, continued

Another use of the area around Lake Waikare in the early 20th century was for wild fowl shooting and numerous photographs attest to its popularity, as well as highlighting the swampy nature of the land around the lake, with an example shown in Figure 9. This is also evident in a 1931 map (Figure 10) which describes the lower parts of the proposed development property as swampy (with wiwi and manuka) and the higher areas as 'easy country'.

*Continued on next page*

## ***HISTORICAL BACKGROUND, CONTINUED***

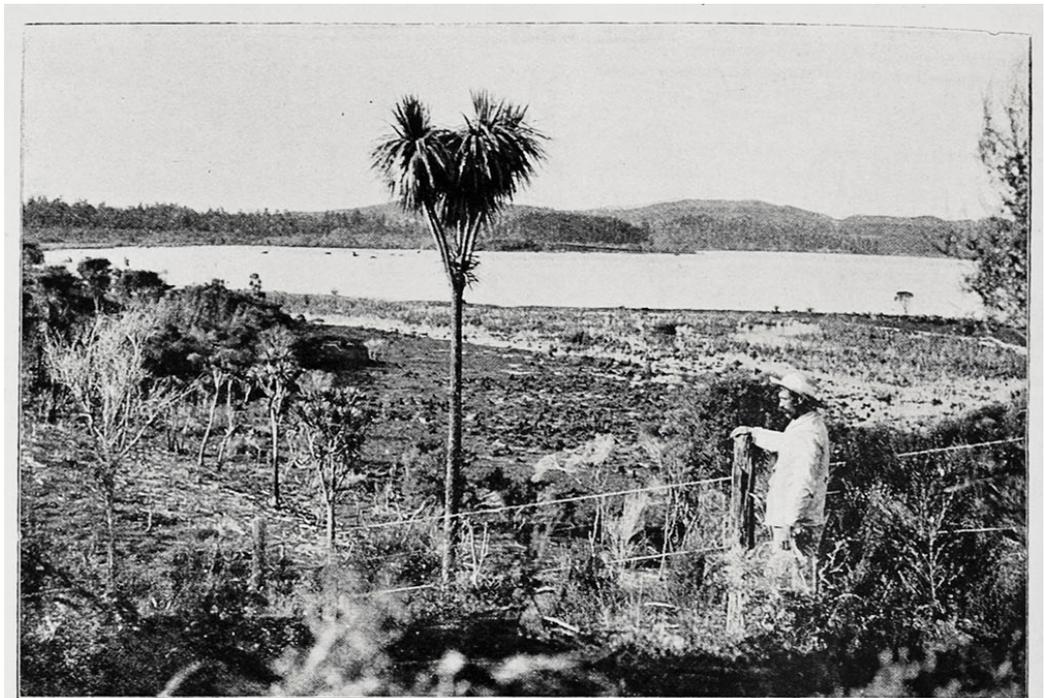
---

### **Information from Early Plans, Maps and Photographs, *continued***

A slightly later plan from 1939 (Figure 11) shows the formation of Scott Road and also notes lessees on parts of the development property (G.W. Fowlie along the railway line in the west and C.E. Scott in Section 52 Block XV). It is quite likely that the land had been converted to dairy farming by this point, as it has been noted that during the Depression in the late 1920s the local farmers convinced the government to have land formerly used as plantations converted to dairy farms (Te Kauwhata and Districts Historical Society 2003: 11). An exception to this was possibly the triangular southernmost lot bordering Lake Waikare, which is shown in a 1948 plan (Figure 12) as having high land covered in wattle bush with the lower part described as very wet swamp containing rushes and raupo.

---

**Figure 9.  
Photograph taken on the opening day of shooting season May 1901 (source: Sir George Grey Special Collections, Auckland Libraries, AWNS-19010510-6-4)**

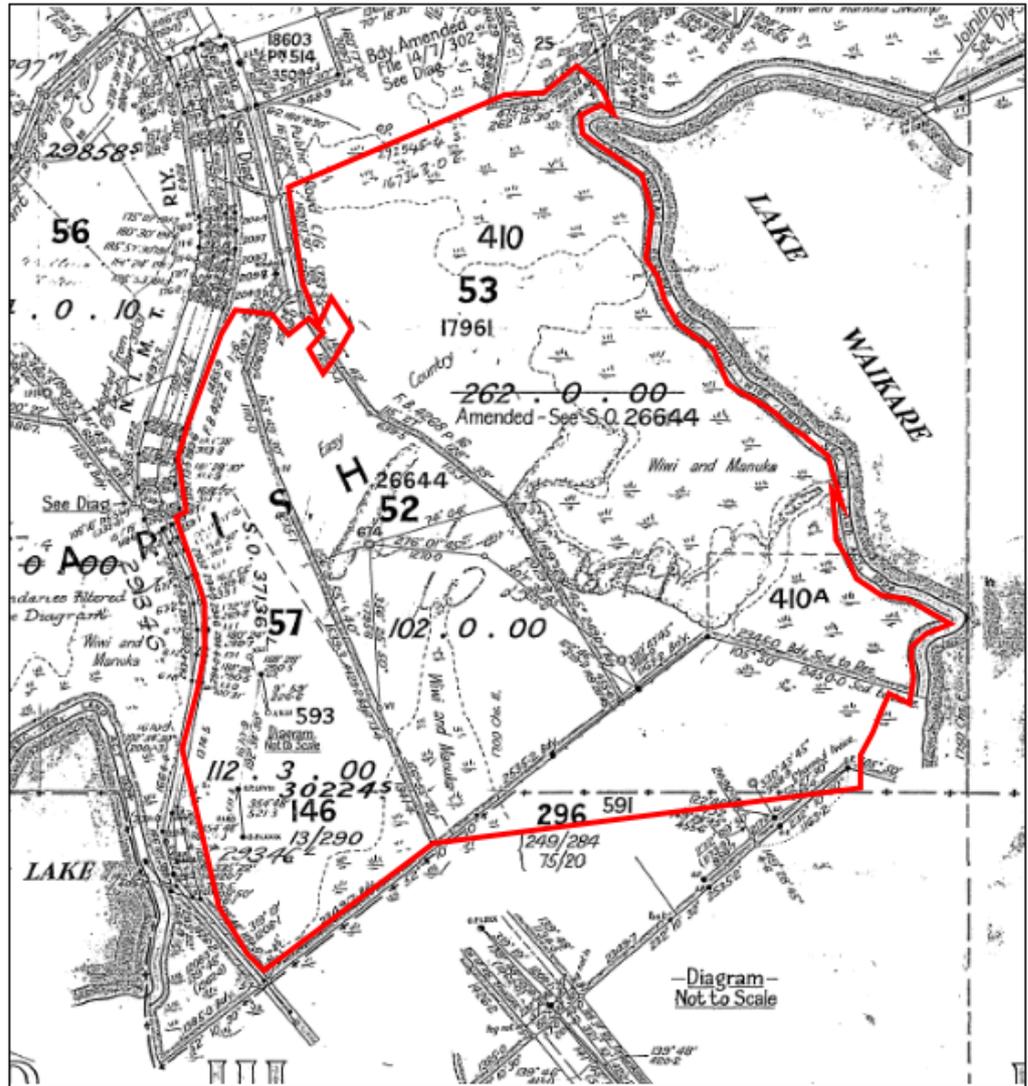


A BIT OF LAKE WAIKARE: THE DOTS ON THE WATER ARE REALLY WILD BLACK SWANS.

*Continued on next page*

## *HISTORICAL BACKGROUND, CONTINUED*

Figure 10. Part of plan HN SO 2625 from 1931 of the proposed development property with boundary overlain onto the plan in red showing large areas of swamp and some higher ground (referred to as 'easy country') (source: LINZ)



*Continued on next page*

# HISTORICAL BACKGROUND, CONTINUED

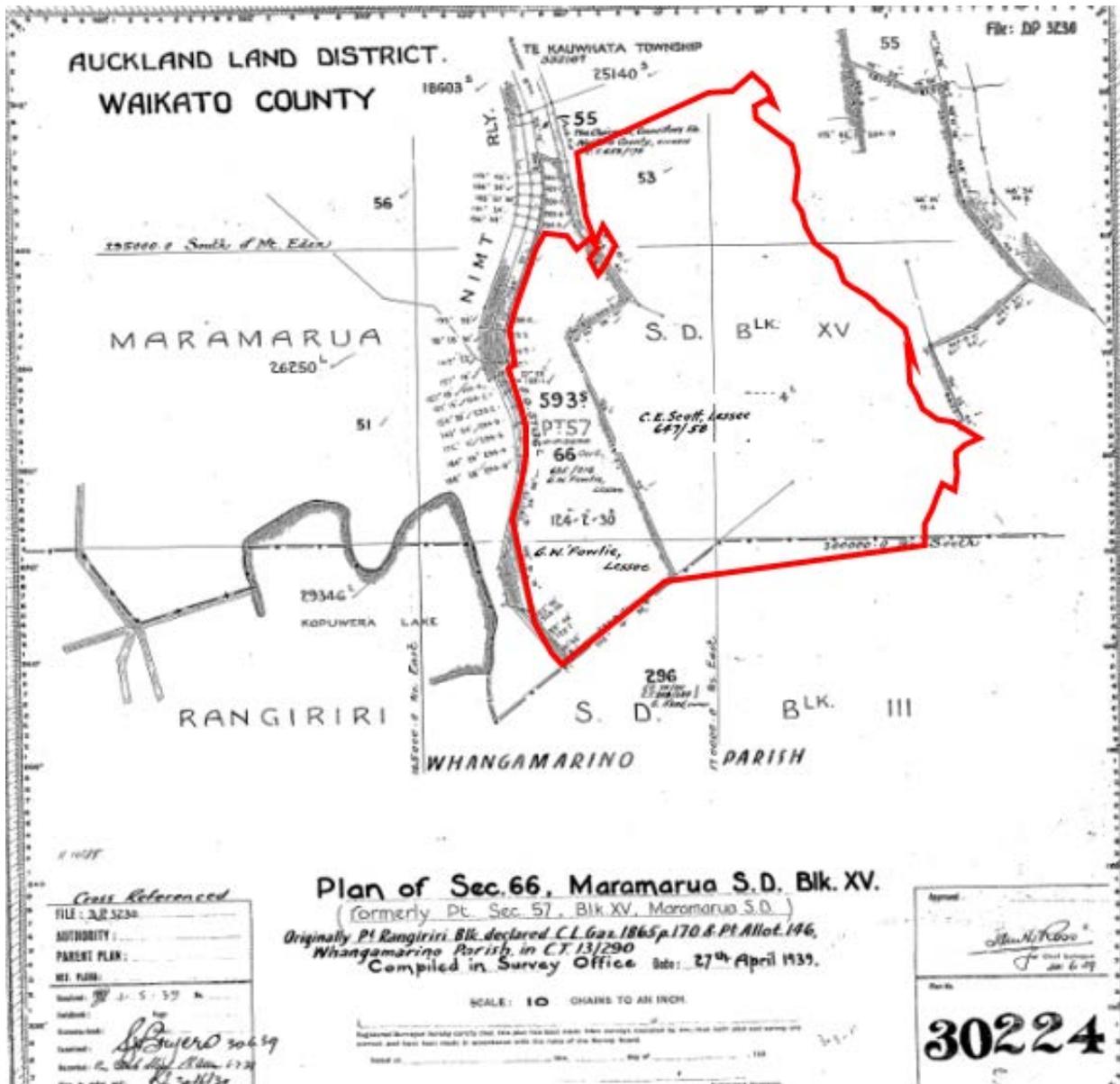


Figure 11. Plan HN SO 30224 I from 1939 showing the proposed development property overlain onto the plan in red with identification of Lessees as C.E. Scott and G.W. Fowlie (source: LINZ)

Continued on next page

# HISTORICAL BACKGROUND, CONTINUED

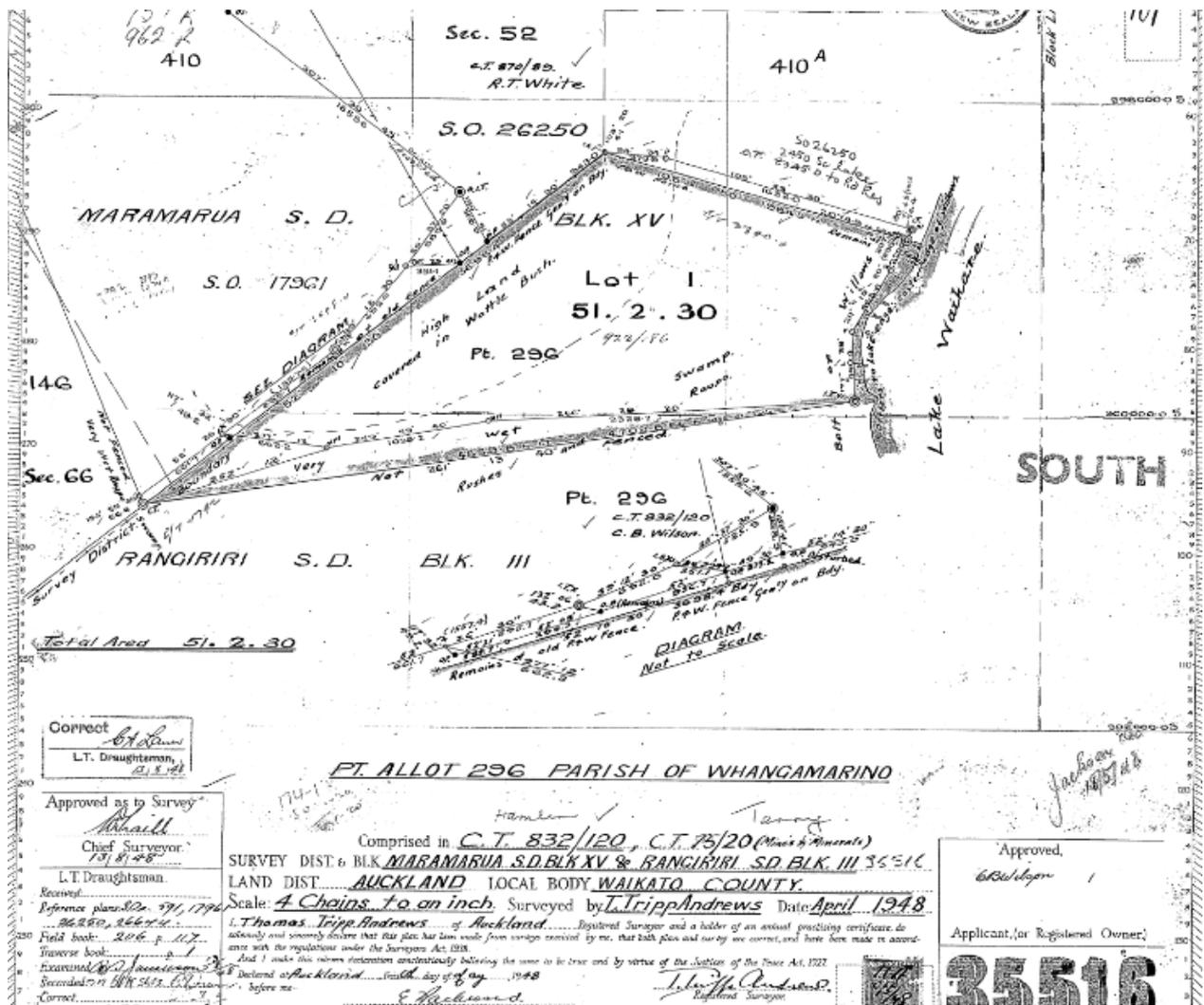


Figure 12. HN DP 35516 I plan form 1948 showing Lot 1 DP 35516 with a description of vegetation consisting of swamp and wattle bush (source: LINZ)

# ARCHAEOLOGICAL BACKGROUND

---

## **Recorded Archaeological Sites**

A search of the NZAA ArchSite database established that there are no recorded archaeological sites on the proposed development property although there are a number of sites in the surrounding area (shown on Figure 13 and listed in Table 1). Three of these sites, located to the south of the proposed development property, present evidence of Maori horticultural activities in the area. In general, the evidence for Maori gardening sites can include the use of surface stones to create rows, alignments, mounds or heaps, modification of natural soil through the addition of sand, gravel or shell, as well as the presence of ‘borrow pits’ from which the additional materials were extracted along with often extensive systems of cultivation ditches, channels and plots. It has also been noted that the main features found along the Waikato River are modified soils and borrow pits (Furey 2006: 23 and 61).

The northernmost of these recorded sites, S13/121, is located just to the south of the proposed development property and covers some 50ha; it is described as having clearly defined rectangular plots identified from aerial photograph. Site S13/122 is located further to the south and covers c.34ha; it consists of less well defined rectangular patterned ditches than S13/121 and it is noted in the ArchSite site record that the area is marked as ‘Puketutu cultivations’ on an 1863 map. S13/123 is the southernmost of the three sites and covers approximately 5ha. It consists of poorly defined possible ditches and drains.

Food storage sites are often found in association with or in the general area of gardening sites and two such sites have also been identified in the vicinity of the proposed development property (to the east across a narrow neck of water ending in the northwest corner of Lake Waikare). The first (S13/102) consists of two storage caves/rua that have been excavated into soft pumicious rock. The condition of both features is described as very poor with only the back sections remaining and ongoing damage from tree roots and stock trampling. The other site (S13/103) consists of five rua/pits in sandstone, approximately 2m in length and 1m in height. It is noted that the location of these features would have originally protruded out into the lake, but as the water level was lowered by 1m in 1965 (as part of flood control) the features became removed from the water’s edge. It is suggested that more such features were likely to have been present in the past but have been destroyed by erosion after the water levels were altered.

---

*Continued on next page*

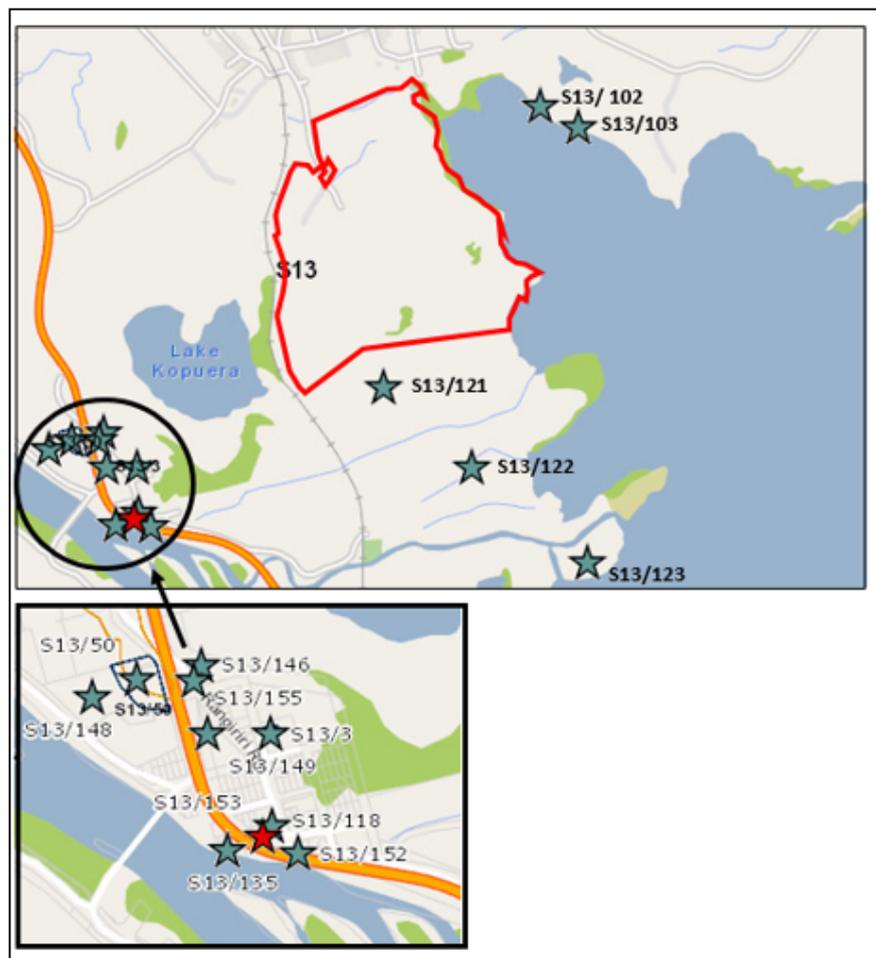
## ARCHAEOLOGICAL BACKGROUND, CONTINUED

### Recorded Archaeological Sites, *continued*

There are also 10 recorded archaeological sites to the southwest of the proposed development property. These sites, which are located at Rangiriri, are mainly associated with the New Zealand Wars and include earthworks such as defensive ditches, trenches, rifle pits associated with gunfighter pa (S13/50, S13/146, S13/148 and S13/155), a stockade redoubt (S13/3), commissariat store (S13/135) and a possibly associated midden site (S13/152). They also include a cemetery on the site of a former Maori church (S13/118), a row of military buildings from the mid 1860s (S13/149) and a commercial store (S13/153) identified from an 1883 plan.

Summary details of the archaeological sites are provided in Table 1 and locations on the map in Figure 13.

Figure 13. Map showing the archaeological sites in the vicinity of the proposed development property (source: NZAA ArchSite)



*Continued on next page*

## ARCHAEOLOGICAL BACKGROUND, CONTINUED

**Table 1. Summary description of the recorded archaeological sites in the general vicinity of the proposed development property**

NZAA Ref	Site Type	Description	NZTM Easting	NZTM Northing
S13/3	Military: Scarp, Bastion, Ditch, Redoubt	Te Wheoros Redoubt: Stockaded redoubt; internal measurements 20 x 15m, with four bastions, a 1.5m high scarp, an external ditch on N and E sides, 1m deep and 4m wide at top. Built immediately after battle of Rangiriri 1863. On site of old gunfighter pa.	1788803	5855384
S13/50	Pa - gunfighter	Condition of Pa is described as good with most features still visible.	1788388	5855559
S13/118	Burial/ cemetery	Site of Maori church up until Nov 1863 battle, when it was abandoned and a military graveyard established. All graves marked by concrete slabs, one with headstone; a rectangular mound marks former mass grave of 40+ Maori found dead by the British.	1788810	5855093
S13/135	Military (non-Maori) pending	Rangiriri Pa commissariat store/ redoubt	1788673	5855019
S13/146	Pa –gunfighter: Ditch - defensive, Rifle pit, Rifle trench. Associated with S13/50.	This area includes the main defensive trench east of SH1 and the set of rifle pits defending the rear of the main trench.	1788590	5855600
S13/148	Pa – gunfighter: Ditch defensive Associated with S12/50	A bank flanked by ditch descended the ridge and crossed low-lying ground to the river. Described as no surface evidence but sub-surface material likely to be present (not destroyed).	1788250	5855500
S13/149	Military (non-Maori)	Military buildings, depicted on SO 628 plan which shows a row of 6 buildings along the western edge of the ridge. The row is aligned north-south. Each building is shown on the plan to be approximately 10 x 5 m. SO 628 was drawn between 1864 and 1867, probably 1865.	1788611	5855386
S13/152	Midden/ oven	Site was located in a construction trench adjacent to SH1. It was apparent as layer 10-25 cm thick and approximately 0.7 m deep buried under two more recent layers (the uppermost a fill layer from the previous road construction phase). Age is difficult to determine but it is probably later pre-European up to mid-19th century. It appears very similar to the midden at S13/135 and may even be directly associated.	1788893	5855006

*Continued on next page*

## ARCHAEOLOGICAL BACKGROUND, CONTINUED

**Table 1. Continued...**

NZAA Ref	Site Type	Description	NZTM Easting	NZTM Northing
S13/153	Commercial: Post hole, Pit - rectangular, Drain	Rangiriri store. A store is marked on SO2781C, surveyed in 1883. This was the subject of an archaeological investigation conducted by W. Gumbley in late in April 2014.	1788780	5855060
S13/155	Pa - gunfighter	A depression cut into the natural orange sand containing brown sandy silt as fill. The depth of the feature was 60 cm. Coal fragments were found in the horizon above the feature, but not in the fill itself. This could be part of the outlying earthworks associated with the main pa constructed at Rangiriri for the battle in 1863. Surface evidence has been obliterated, however, there is likely to be subsurface material present.	1788564	5855553
S13/102	Pit/ Terrace	The site consists of the remnants (back portions only) of two rua/ caves (2m high and 1m wide) excavated into soft pumicious rock forming a bank at this location and facing onto Lake Waikare. Local informant notes there were also two more located 50m to the west.	1791332	5857669
S13/103	Pit / Terrace	The site consists of five rua/pits (2m high / 1m wide) excavated into a pumicious sand formation (originally formed a point extending into the lake before the water level was lowered). The rua are on the eastern side/ western side may have also contained similar features but at time of site visit in 1993 all evidence had eroded away.	1791578	5857529
S13/121	Maori Horticulture	Site covers c.50ha with rectangular plots visible on aerial photographs. Immediately north of eastern half of Rangiriri Stream. In drained and previously cultivated pasture with one swampy area.	1790350	5855889
S13/122	Maori Horticulture: Site name Puketutu	Site covers c.34ha of dendritic and less well defined rectangular patterned ditches than S13/121. Identified from aerial photographs. Between the eastern halves of Rangiriri and Te Onetea streams. Recorded on an 1863 map as "Puketutu cultivations". In part cultivated, part pasture, part swampy area.	1790909	5855383
S13/123	Maori Horticulture	C.5 ha of poorly defined possible ditches and drains located immediately south of the Te Onetea Stream in previously drained swampy pasture.	1791629	5854781

*Continued on next page*

## ARCHAEOLOGICAL BACKGROUND, CONTINUED

---

### Other Identified Historic Heritage Places

Part 3: Section C Historic Heritage - subheading C4 (Waikato River Sites of Significance) of the Waikato District Plan lists parcels of land that have been identified in Part 8 (Subpart A) of the Schedule to the Waikato-Tainui Deed of Settlement as being culturally significant to Waikato-Tainui Iwi. Lake Waikare lake bed (SS49) and Lake Waikare marginal strip (SS24) are both included as such items (shown in Figure 14). The significance to Waikato-Tainui is provided as follows:

‘Lake Waikare was a historical food basket for Waikato hapuu. The surrounding lands and margins are identified as sites of significance as they were papakainga, nohoanga kai, paa tuna and also urupa. During the Rangiriri battle in 1863, it is said that when Waikato-Tainui people fled from Rangiriri Pa, they ran towards and into Lake Waikare and Lake Kopuera while they were fleeing the battle and were shot by British soldiers. It is highly likely that some of the bones of persons associated with the battle are still in both lakes which are very significant to Waikato-Tainui.’

---



Figure 14. Planning map showing the sites of significance- Lake Waikare marginal strip (SS24) & Lake Waikare lakebed (SS49) in relation to the proposed development property (source: Waikato District Council)

---

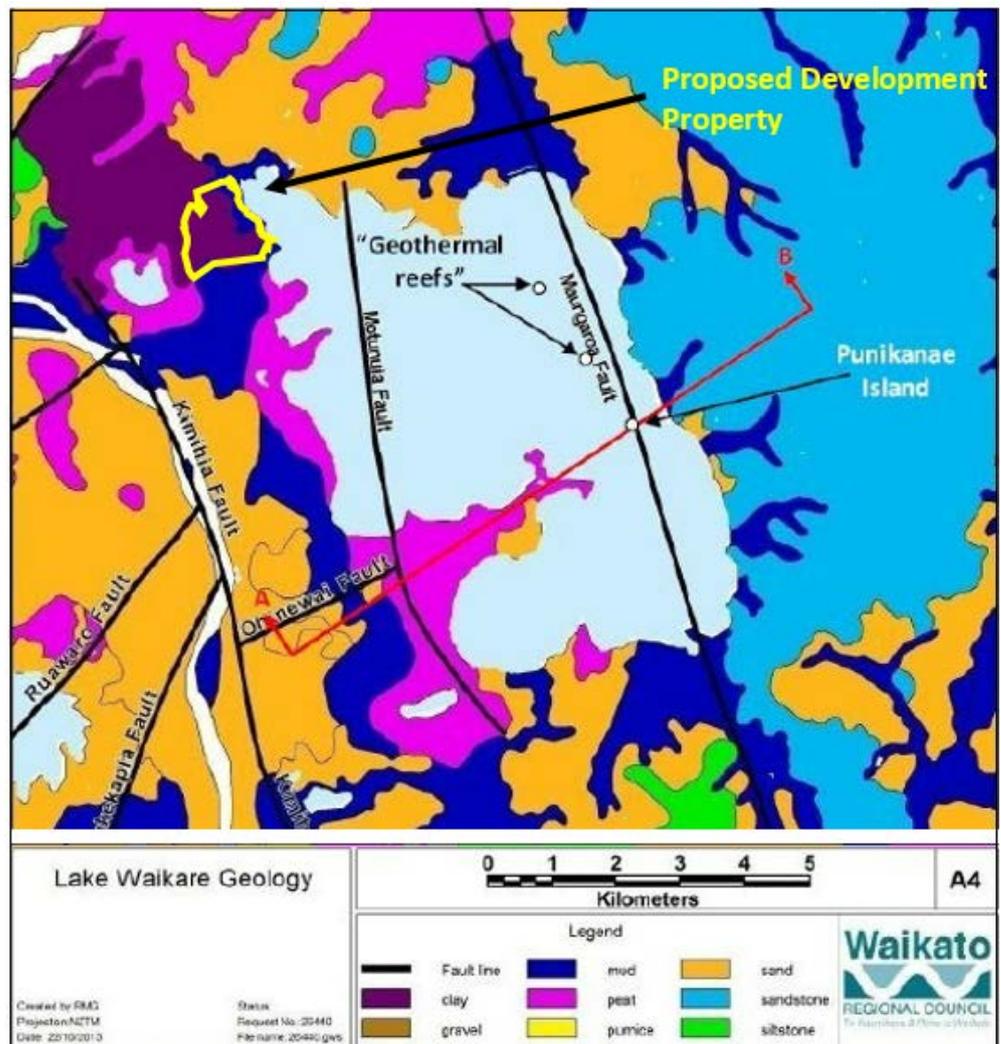
# PHYSICAL ENVIRONMENT

## Geology and Topography

### Soils

As can be seen in the map in Figure 15 the proposed development property is predominated by clay deposits with muddy alluvium around the lakeside. Soil testing has been undertaken for a separate subdivision in the northeastern part of Lot 1 DPS 85308 and the soil profile here was found to be moist, stiff to very stiff silty clays under a silt topsoil averaging around 25cm in thickness (Maunsell 2008). Soil testing was also undertaken for a proposed heavy vehicle bypass planned near the proposed development property. Topsoil depths ranged from 10cm to 50cm with two auger boreholes situated along the northern boundary of the proposed development property exhibiting a stiff pumicious sandy silty layer containing clay over an alluvial layer with very soft to stiff organic silt with some coarse pumicious sand (Earthtech Consulting 2010).

Figure 15. Geological map of the area around Lake Waikare with the proposed development property (outlined in yellow) showing clay as predominant with mud occurring around the lake edges (source: Balane 2015 courtesy of Waikato Regional Council)



Continued on next page

### **Geology and Topography, *continued***

#### **Environmental Setting**

The proposed development property lies on the northeastern shores of Lake Waikare, a shallow riverine lake covering 3442ha and the largest lake in the lower Waikato catchment. It was once part of a large natural hydraulically linked lake/wetland system that included lakes Kopuera, Ohinewai and Rotokawau, the Waikato River, and the Whangamarino wetland. This changed in 1965 when the level of the lake was reduced by 1m and the discharge levels were put into a control system as part of a flood management scheme, including a canal through which excess water was now artificially channeled into the Whangamarino wetland. Previously, water from the lake had flowed into the Waikato River via the Onetea stream under normal conditions, although during flood events water had flowed from the river back towards the lake via the Onetea and Rangiriri streams as well as overland. Prior to the scheme the fluctuations had averaged around 2.71m, while afterwards this was reduced to a maximum of 0.35 m. As a result, it has been estimated that the wetland area around Lake Waikare was reduced by 67% from its occurrence in 1963 (Dean-Speirs et al. 2014: 144).

The reduction in lake depth and artificial containment of levels also resulted in lowering of water quality in the lake, which could no longer rely on natural flushing action from periodic inflows from the Waikato River and in 2002 the lake was classified as hypertrophic (ibid.). The results of this, coupled with the introduction of pest species, mean that the lake today supports a different biomass than it would have prior to 1965. In the past the lake was known to support many species including eels, mullet, smelt, galaxiid species (including inanga and banded kokopu), bullies, shrimp, grey mullet, lamprey, and brown trout. Although some native fish can still be found in the lake they are threatened by the pest species, particularly koi carp, rudd and catfish (ibid.). Lake Waikare was historically regarded as the most important lake eel fishery in the Waikato and although eel species are still present they have declined in number. As well, the lake traditionally supported a large numbers of wildfowl species, which have also declined since the flood control scheme came into effect (Dean-Speirs et al. 2014: 147).

Flooding in the low-lying areas around the lake is, however, still an issue and much of the proposed development property is situated within a flood hazard zone (this area is shown in Figure 16).

---

# PHYSICAL ENVIRONMENT, CONTINUED

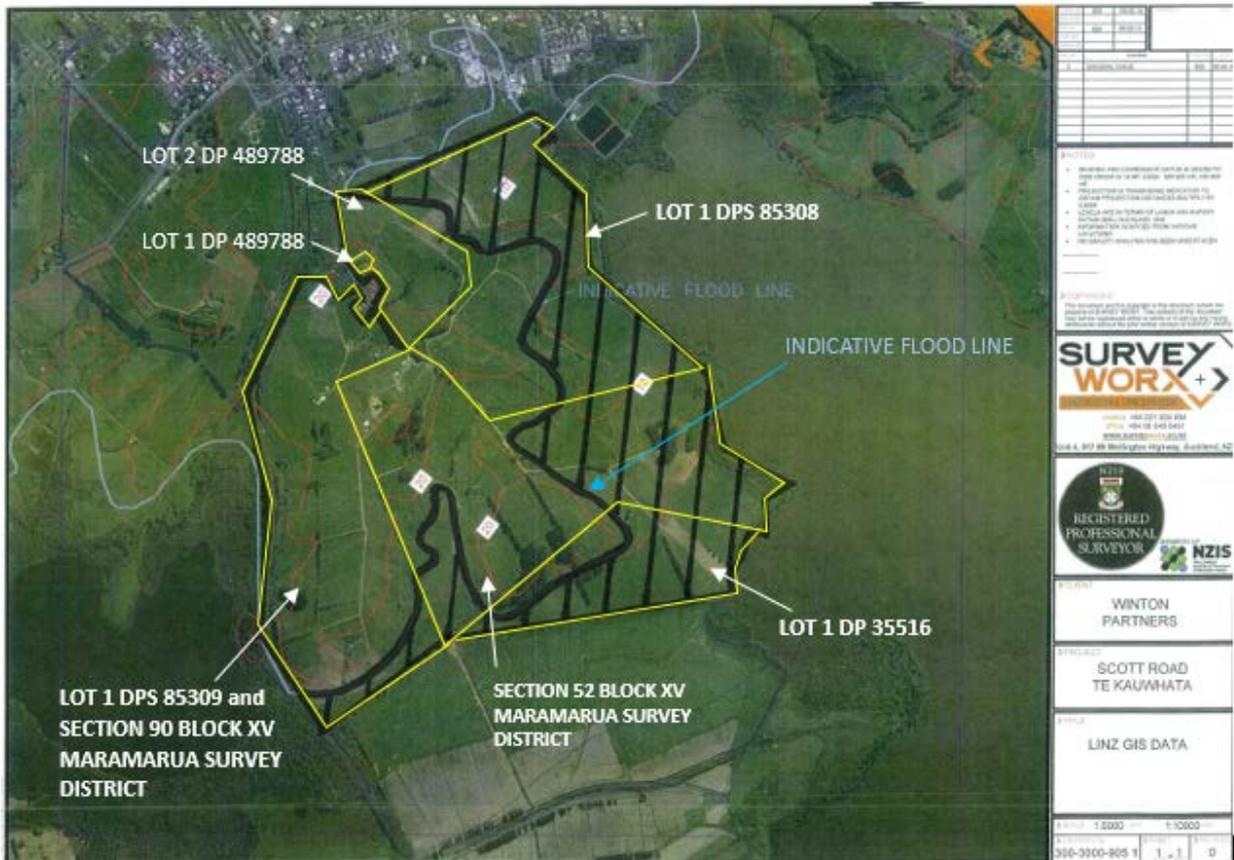


Figure 16. Plan showing the area of the proposed development property (outlined in yellow) with the areas situated in the flood zone are indicated by diagonal lines (source: SurveyWorx Ltd)

Continued on next page

# FIELD ASSESSMENT

---

## **Results of the Field Survey**

A field survey of four of the six lots currently included in the private plan change application was conducted on 30 September 2016. Two lots were not surveyed as they had not been included in the private plan change application at the time of the survey. Based on desk-based research and observations made during the survey, an additional site visit to these lots was not undertaken as; Lot 1 DP 489788 has been modified through construction of a house and landscaped grounds and Lot 2 DP 489788 has received the same impacts as the rest of the property from past horticultural activities and dairy farming and evidence of archaeological features and deposits would not be expected to be present.

In general the property could be described as low-lying swampy land around the lake (most of which is situated in the flood zone shown in Figure 16) with higher elevations containing low ridges and hillslopes mainly located on the western side. As the property is a working dairy farm the impacts from cattle movement in the form of slumping and churning of the upper layers of muddy topsoil were evident over much of the site. All parts of the property were accessible, although the low-lying parts were very waterlogged and difficult to traverse.

Although it is not believed that any earthworks associated with the New Zealand Wars period extended into the area containing the proposed development property, earthworks dating from the New Zealand Wars are known to be present to the southwest of the property at Rangiriri and features such as large ditches were known to have extended as far as Lake Kopuera. However, all of the drainage ditches and banks observed within the proposed development area were associated with the existing paddock layout and no evidence of historical earthworks was identified. A detailed description of the survey findings for the four lots included in the survey is presented below:

### **Lot 1 DPS 85308** (Figure 17 and Figure 18)

This was the first lot to be visited and it was noted that majority of it is situated in the flood zone as shown in Figure 16. The land for the most part was low-lying and swampy with pools of standing water present. It has been divided into a number of paddocks separated by post and wire fences with numerous drainage ditches. One paddock adjacent to the lake was occupied by a bull and was observed from outside the fence. The slightly more elevated areas are located in the southwestern part of the lot which also contains a tree lined gully just to the south of the border with the area that is not included in the currently proposed subdivision. It was observed during the survey that the ground in these higher areas was only slightly waterlogged although it still showed damage from cattle movements with pugging and disturbance of the upper levels of the soil. No archaeological features or deposits were identified in this area.

## ***FIELD ASSESSMENT, CONTINUED***

---



**Figure 17. Photograph showing a view of Lot 1 DPS 85308 taken looking east towards Lake Waikare which can be seen in the distance**

---



**Figure 18. Left: an example of a drainage ditch and bank (looking east); right: an example of an area disturbed by cattle movements (looking southeast). Lot 1 DPS 85308**

---

*Continued on next page*

## ***FIELD ASSESSMENT, CONTINUED***

---

### **Results of the Field Survey, *continued***

#### **Section 52 Block XV Maramarua Survey District (Figure 19 - Figure 21)**

This lot covers the central part of the proposed development property with the eastern side bordering Lake Waikare and situated in the flood zone (Figure 16). The land in this part of the lot was found to be low-lying and swampy with the only exception being a slightly elevated area containing a grove of trees and a small wooden cabin, probably used as a hunting camp. The cabin was inspected but no evidence of any historical building materials was identified. The land to the east of this area increases in elevation with the highest point being a southeast trending ridge with pine shelter belts along its eastern and western sides. The area to the north and west of the ridge consists of grassed hillsides interspersed with a few wooded gullies. The northwestern corner of this lot has been modified through farm use and contains a modern house and a number of farm buildings, including a milking shed, with dirt tracks linking the buildings. No evidence of archaeological features or deposits was identified on any parts of this lot.

---



**Figure 19. Two views of the low-lying and swampy land on the eastern side of Section 52 Block XV: left side looking eastward from the central part of the lot towards Lake Waikare and right side looking south along the eastern edge of the lot**

---

*Continued on next page*

## *FIELD ASSESSMENT, CONTINUED*

---



**Figure 20. Left photograph showing the slightly elevated area with possible hunting camp (looking south) and right closer view of the cabin. Section 52 Block XV**

---



**Figure 21. Left: showing the flat topped ridge in the distance marked by arrow (taken looking south); and right: showing the view of the ridge top looking north. Section 52 Block XV**

---

*Continued on next page*

## ***FIELD ASSESSMENT, CONTINUED***

---

### **Results of the Field Survey, *continued***

#### **Lot 1 DP 35516 (Figure 22)**

This small rectangular lot makes up most of the southern boundary of the proposed development property. The only high ground is the southernmost edge of the ridge described above which protrudes slightly into the northwestern part of the lot. From this high point, wooded gullies on either side of a grass covered hillside drop down to the flat swampy land which covers the remainder.

A large, deep ditch (canal) marks the southern boundary of the lot and the land in this area was extremely wet and boggy at the time of the survey. It was noted during the survey that the fields to the south of this lot had been identified as containing an archaeological site associated with Maori horticulture, in the form of ditches and rectangular plot outlines (S13/121 shown in Figure 13). The proposed development lot was visually scanned for the presence of these indicators as well as any other archaeological features or deposits, but none were identified.

---



**Figure 22. Lot 1 DP 35516: right photograph showing the view from high ground in the northwest part of the lot looking southward to the flat swampy land with drainage ditch to the south indicated by arrow; and left photograph showing the flat swampy land and drainage ditch running to the east towards Lake Waikare**

---

*Continued on next page*

**Results of the  
Field Survey,  
*continued***

**Lot 1 DPS 85309** (Figure 23 - Figure 25)

This is a long narrow lot that runs from Scott Road in the north along the eastern side of the NIMT railway line to the southern boundary of the proposed development property. The majority of the land in this lot is on relatively high ground and not located within the flood zone. The exception is the southernmost part which is low-lying and wet (this is the area described as permanently underwater in the 1871 survey plan shown in Figure 7 and it still contains some residual swamp). The large drainage ditch (canal) described above continues into the southern boundary of this lot. As mentioned previously, archaeological site S13/121 (containing Maori gardening features) is located to the south, although as this part of the proposed development property was noted as being extremely swampy as a result of its proximity to Lake Kopuera, it is quite likely that the gardening features did not extend this far north. The area, was, however, scanned in case any evidence did exist. The results observed were that previous impacts in the form of the large drainage ditch (canal), numerous smaller ditches and damage to the upper levels of the soil from the dairy herds would have destroyed or caused substantial damage to any such features that might have been located in this area.

The land to the north consists mostly of higher ground with slopes down the eastern and western sides of the lot, with the western edge being quite low-lying and swampy. The majority of the higher ground is covered by grassed paddocks with shelter belts planted and wooded gullies running to the west. This high ground provides a good vantage point overlooking the much flatter land to the south and southwest and it was noted that it would have been a useful place for observing movements in the surrounding countryside. Unfortunately, much of the ground surface was again found to be heavily disturbed by the dairying activities on the site as well as construction of a telecommunications tower on one of the highest points. No archaeological features or deposits were identified in this or any other parts of the lot.

---

*Continued on next page*

## ***FIELD ASSESSMENT, CONTINUED***

---



**Figure 23. Lot 1 DPS 85309: top photograph showing general view of southern paddock (looking southwest); bottom left showing damage to the ground surface from feeding station use (taken looking southwest); and bottom right photograph showing a swampy area and drainage pipe near the southwestern corner of the lot (taken looking northwest)**

---

*Continued on next page*

## ***FIELD ASSESSMENT, CONTINUED***

---



**Figure 24. Lot 1 DPS 85309: left photograph taken from higher ground looking west towards Lake Kopuera; d right photograph showing high point in the lot with telecommunications tower (base visible) and impacts from dairy farming (both looking southwest)**

---

**Figure 25. View from high ground in Lot 1 DPS 85309 looking towards the southwest with swampland south of Lake Kopuera visible in the central part of the photo and the Waikato River in the background**



*Continued on next page*

---

# DISCUSSION AND CONCLUSIONS

---

## **Summary of Results**

No archaeological sites had previously been recorded on the proposed development property and none were identified during the field survey. Sites associated with Maori gardening have been identified to the south and food storage pits to the east which attest to usage and occupation in the general area. Additionally, archaeological sites associated with the New Zealand Wars are located to the southwest at Rangiriri. As the proposed development property has been a dairy farm for a number of years and previously to that had been ploughed and utilised for tree plantations, the ground surface and upper layers of the soil have been heavily disturbed, which would in turn have damaged or destroyed evidence of any archaeological features and deposits that may have once been present.

---

## **Maori Cultural Values**

This is an assessment of effects on archaeological values and does not include an assessment of effects on Maori cultural values. Such assessments should only be made by the tangata whenua.

Consultation regarding the proposal is being undertaken with local iwi and the Waikato River Sites of Significance will be dealt with as part of the cultural assessment for the project.

---

## **Survey Limitations**

It should be noted that archaeological survey techniques (based on visual inspection) cannot necessarily identify all sub-surface archaeological features, or detect wahi tapu and other sites of traditional significance to Maori, especially where these have no physical remains. Subsurface testing was not undertaken as much of the property was swampy and no potential sites were identified that warranted subsurface testing.

---

## **Archaeological Value and Significance**

The archaeological value of sites relates mainly to their information potential, that is, the extent to which they can provide evidence relating to local, regional and national history through the use of archaeological investigation techniques, and the research questions to which the site could contribute. The surviving extent, complexity and condition of sites are the main factors in their ability to provide information through archaeological investigation. For example, generally pa are more complex sites and have higher information potential than small midden (unless of early date). Archaeological sites may also have other values, including landscape, amenity, educational and cultural values.

---

*Continued on next page*

## ***DISCUSSION AND CONCLUSIONS, CONTINUED***

---

### **Archaeological Value and Significance, *continued***

No archaeological sites were identified on the proposed development property, although nearby archaeological sites attest to Maori occupation and land use in the vicinity and the New Zealand Wars site of Rangiriri is located to the southwest. It is therefore considered likely that the proposed development property was visited in the past due to its proximity to Lake Waikare and surrounding wetlands and the rich resources located there and also during the military campaign at Rangiriri (historical sources note that canoes were kept at Lake Waikare and used by Maori during the battle at Rangiriri). Based on the nature of both usages, it is likely that little or no evidence would now remain as it would have been damaged or destroyed by the wattle plantation and dairy farming activities on the site over many decades.

Finally, although considered unlikely, due to the extremely swampy nature of this area, it is possible that the archaeological features recorded to the south as part of S13/121 may have extended into the southernmost part of the proposed development property. However, the construction of the large drainage ditch (canal) across the southern boundary, numerous smaller drainage ditches along with decades of use as cattle paddocks would have destroyed any evidence of archaeological features and deposits.

---

### **Effects of the Proposal**

The proposed residential development at 65 and 94 Scott Road Te Kauwhata will have no known effects on archaeological values as no archaeological sites have been identified within its boundaries.

In an area where archaeological sites have been recorded in the general vicinity it is possible that unrecorded subsurface remains may be exposed during development. While it is considered unlikely in this situation, based on the negative results from field survey and the destructive impacts of tree plantations and decades of dairy farming activities, the possibility can be provided for by putting procedures in place ensuring that the Council and Heritage NZ are contacted should this occur.

Archaeological features and remains can take the form of burnt and fire cracked stones, charcoal, rubbish heaps including shell, bone and/or 19th century glass and crockery, ditches, banks, pits, old building foundations, artefacts of Maori and early European origin or human burials.

---

*Continued on next page*

## ***DISCUSSION AND CONCLUSIONS, CONTINUED***

---

### **Resource Management Act 1991 Requirements**

Section 6 of the RMA recognises as matters of national importance: ‘the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga’ (S6(e)); and ‘*the protection of historic heritage from inappropriate subdivision, use, and development*’(S6(f)).

All persons exercising functions and powers under the RMA are required under Section 6 to recognise and provide for these matters of national importance when ‘*managing the use, development and protection of natural and physical resources*’. Archaeological and other historic heritage sites are resources that should be sustainably managed by ‘*Avoiding, remedying, or mitigating any adverse effects of activities on the environment*’ (Section 5(2)(c)).

Historic heritage is defined (S2) as ‘*those natural and physical resources that contribute to an understanding and appreciation of New Zealand’s history and cultures, deriving from any of the following qualities: (i) archaeological; (ii) architectural; (iii) cultural; (iv) historic; (v) scientific; (vi) technological*’. Historic heritage includes: ‘(i) historic sites, structures, places, and areas; (ii) archaeological sites; (iii) sites of significance to Maori, including wahi tapu; (iv) surroundings associated with the natural and physical resources’.

Regional, district and local plans contain sections that help to identify, protect and manage archaeological and other heritage sites. The plans are prepared under the rules of the RMA. The Waikato Regional Policy Statement and the Waikato District Plan are relevant to the proposed activity. As stated previously the Lake Waikare lake bed (SS49) and marginal strip (SS27) are included as Waikato River Sites of Significance in the Waikato District Plan. However, the notation of these sites on planning maps is for information purposes only to alert the public to their location. This site notation does not introduce any additional controls nor are the sites subject to any of the rules that relate to Appendix C: Historic Heritage Items.

This assessment has established that the proposed activity will have no effect on any known archaeological remains, and has little potential to affect unrecorded subsurface remains. If resource consent is granted, consent conditions relating to archaeological monitoring or protection would therefore not be required. A general condition relating to the accidental discovery of archaeological remains could be included, requiring that if any archaeological remains are exposed during development, work should cease in the immediate vicinity and the Council and Heritage NZ should be informed.

---

*Continued on next page*

## **DISCUSSION AND CONCLUSIONS, CONTINUED**

---

**Heritage New Zealand Pouhere Taonga Act 2014 Requirements**

In addition to any requirements under the RMA, the HNZPTA protects all archaeological sites whether recorded or not, and they may not be damaged or destroyed unless an Authority to modify an archaeological site has been issued by Heritage NZ (Section 42).

An archaeological site is defined by the HNZPTA Section 6 as follows:

*‘archaeological site means, subject to section 42(3), –*

*(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)’<sup>2</sup>*

Authorities to modify archaeological sites can be applied for either in respect to archaeological sites within a specified area of land (Section 44(a)), or to modify a specific archaeological site where the effects will be no more than minor (Section 44(b)), or for the purpose of conducting a scientific investigation (Section 44(c)). Applications that relate to sites of Maori interest require consultation with (and in the case of scientific investigations the consent of) the appropriate iwi or hapu and are subject to the recommendations of the Maori Heritage Council of Heritage NZ. In addition, an application may be made to carry out an exploratory investigation of any site or locality under Section 56, to confirm the presence, extent and nature of a site or suspected site.

An archaeological Authority is not required for development of the proposed development property as no known sites will be affected and it is unlikely that any undetected sites are present. However, should any sites be exposed during development, works must cease in the immediate vicinity and the provisions of the HNZPTA must be complied with.

---

*Continued on next page*

---

<sup>2</sup> Under Section 42(3) an Authority is not required to permit work on a pre-1900 building unless the building is to be demolished. Under Section 43(1) a place post-dating 1900 (including the site of a wreck that occurred after 1900) that could provide ‘significant evidence relating to the historical and cultural heritage of New Zealand’ can be declared by Heritage NZ to be an archaeological site.

## ***DISCUSSION AND CONCLUSIONS, CONTINUED***

---

**Conclusion** No archeological sites have been recorded previously on the proposed development property and no new sites have been identified during the survey for this assessment. Based on the likely historical uses of the property coupled with impacts from tree plantation and decades of dairy farming activities it is not considered likely that any archaeological sites are present. If any unrecorded sites are exposed during future development the effects are considered likely to be minor and can be appropriately mitigated by recording and information recovery under the archaeological provisions of the HNZPTA.

---

# RECOMMENDATIONS

---

**It is  
Recommended**

- That there should be no constraints on the proposed subdivision on archaeological grounds, since no archaeological sites are known to be present and it is considered unlikely that any will be exposed during development.
  - That if subsurface archaeological evidence should be unearthed during construction (e.g. intact shell midden, hangi, storage pits relating to Maori occupation, or cobbled floors, brick or stone foundation, and rubbish pits relating to 19th century European occupation), work should cease in the immediate vicinity of the remains and the Council and Heritage NZ should be notified.
  - That if modification of an archaeological site does become necessary, an Authority must be applied for under Section 44(a) of the HNZPTA and granted prior to any further work being carried out that will affect the site. (*Note that this is a legal requirement*).
  - That in the event of koiwi tangata (human remains) being uncovered, work should cease immediately in the vicinity of the remains and the tangata whenua, Heritage NZ, NZ Police and Council should be contacted so that appropriate arrangements can be made.
-

# BIBLIOGRAPHY

---

- Cowan, J. 1955. *The New Zealand Wars: A History of the Maori Campaigns and the Pioneering Period: Volume I (1845–64)*, sourced at <http://nzetc.victoria.ac.nz/tm/scholarly/tei-Cow01NewZ-c35.html>. Copyright: 2016 Victoria University of Wellington.
- Balane, M.O. 2013. Lake Waikare Low Enthalpy Geothermal Resource: An Initial Study of its Origins. Prepared for Waikato Regional Council.
- Belich, J. 1986. *The New Zealand Wars and the Victorian Interpretation of Racial Conflict*. Auckland University Press, Auckland.
- Dean–Speirs, T. et al. 2014. Waikato Region Shallow Lakes Management Plan: Volume 2: Shallow Lakes Resource Statement: Current Status and Future Management Recommendations. Report prepared for Waikato Regional Council.
- Earthtech Consulting and Waikato Regional Council. February 2010. Te Kauwhata Heavy Vehicle Bypass: Preliminary geotechnical Report prepared for Bloxham, Burnett and Oliver Ltd.
- Furey, L. 2006. *Maori Gardening: An Archaeological Perspective*. Science and Technical Publishing Department, Department of Conservation, Wellington New Zealand.
- Gumbley, W. 2009. Rangiriri Section of the Waikato Expressway Project: Rangiriri Investigation of Part of the 1863 Defensive Earthwork, S13/148.
- Gumbley, W. 2011. Rangiriri Bypass Project: Results of Archaeological Test Investigations.
- Kelly, J. 2015. *Rangiriri Lives and Times 1870-1970*. Print House Ltd Hamilton N.Z.
- Maunsell Ltd October 2008. Proposed Lakeside Farm Subdivision, Geotechnical Suitability Assessment. Report prepared for Lakeside Farms.
- Parker, E. 1986. *Cambridge – Alive with History*. Cambridge Museum, Cambridge.
- Peacocke, G.L. 1913. Notes on Waerenga and Ruakura State Farms, in *The Pamphlet Collection of Sir Robert Stout: Volume 79*: Victoria University of Wellington.
- Prickett, N. 2008. *Fortifications of the New Zealand Wars*. Department of Conservation, Wellington New Zealand.
- Scoble, J. 2010. Names and Opening and Closing Dates of Railway Stations in New Zealand – 1863-2010. Report written for the Rail Heritage Trust of New Zealand.
- Sole T. 2005. *Ngati Ruanui: A History*. Huia Publishers, Wellington New Zealand.
- Te Kauwhata and Districts Historical Society. 2003. Vintage Memories of Te Kauwhata- compiled by the Te Kauwhata and Districts Historical Society to the Year 2000.

## Websites:

- TeAra (1) Rāwiri Taonui. 'Canoe traditions - Te Arawa and Tainui', Te Ara - the Encyclopedia of New Zealand, updated 22-Sep-12 accessed at <http://www.TeAra.govt.nz/en/canoe-traditions/page-5>
- TeAra (2) The Encyclopedia of New Zealand. Updated 22-Apr-09 'Hongi's Expeditions'. from An Encyclopedia of New Zealand. edited by A.H. McLintock, originally published in 1966 accessed at [URL: http://www.TeAra.govt.nz/en/1966/maori-tribal-history/page-2](http://www.TeAra.govt.nz/en/1966/maori-tribal-history/page-2)
- TeAra (3) The Encyclopedia of New Zealand, updated 12-Dec-12, Rahui Papa and Paul Meredith. 'Kingitanga – the Māori King movement' accessed at [URL:http://www.TeAra.govt.nz/en/kingitanga-the-maori-king-movement](http://www.TeAra.govt.nz/en/kingitanga-the-maori-king-movement)
- New Zealand History Website accessed at <http://www.nzhistory.net.nz/war/war-in-waikato>
- New Zealand Archaeological Association ArchSite Database accessed at <http://www.archsite.org.nz/>
- New Zealand Heritage List, accessed at <http://www.historic.org.nz>
-