

# **81 and 81B Kennedy Road: final report (HNZPT authorities 2018/353 and 2019/111)**

**report to  
Heritage New Zealand Pouhere Taonga  
Classic Developments Ltd  
and  
Blackstone NZ Ltd**

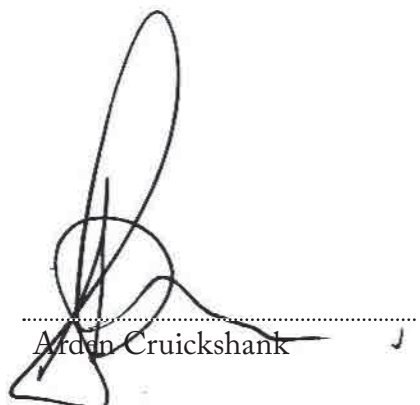
**Arden Cruickshank and Hayley Glover**



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# 81 and 81B Kennedy Road: final report (HNZPT authorities 2018/353 and 2019/111)

Arden Cruickshank and Hayley Glover

Blackstone NZ Ltd have undertaken earthworks to develop their properties at 81 and 81B Kennedy Road (Lot 2 DPS 30693 and Lot 2 DPS 53649) for residential subdivision. No archaeological sites had been recorded in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS) on the properties prior to works taking place, but numerous archaeological sites are recorded nearby, including midden site U14/1943 which is located just beyond the boundary. Classic Developments Ltd, on behalf of Blackstone NZ Ltd, applied for archaeological authorities to modify or destroy any unrecorded archaeology under section 44 of the Heritage New Zealand Pouhere Taonga Act 2014. Authorities 2018/353 and 2019/111 were granted by Heritage New Zealand Pouhere Taonga (HNZPT) on 12 December 2017 and 12 September 2018 respectively.

## Background

The properties are located in Te Ranga, Tauranga. The project area lies in the Tauranga Basin, infilled with volcanoclastic sediments, ignimbrites and tephras. There are 14 recorded archaeological sites within 1 km of the property. Of these, 13 are pre-European Māori sites:

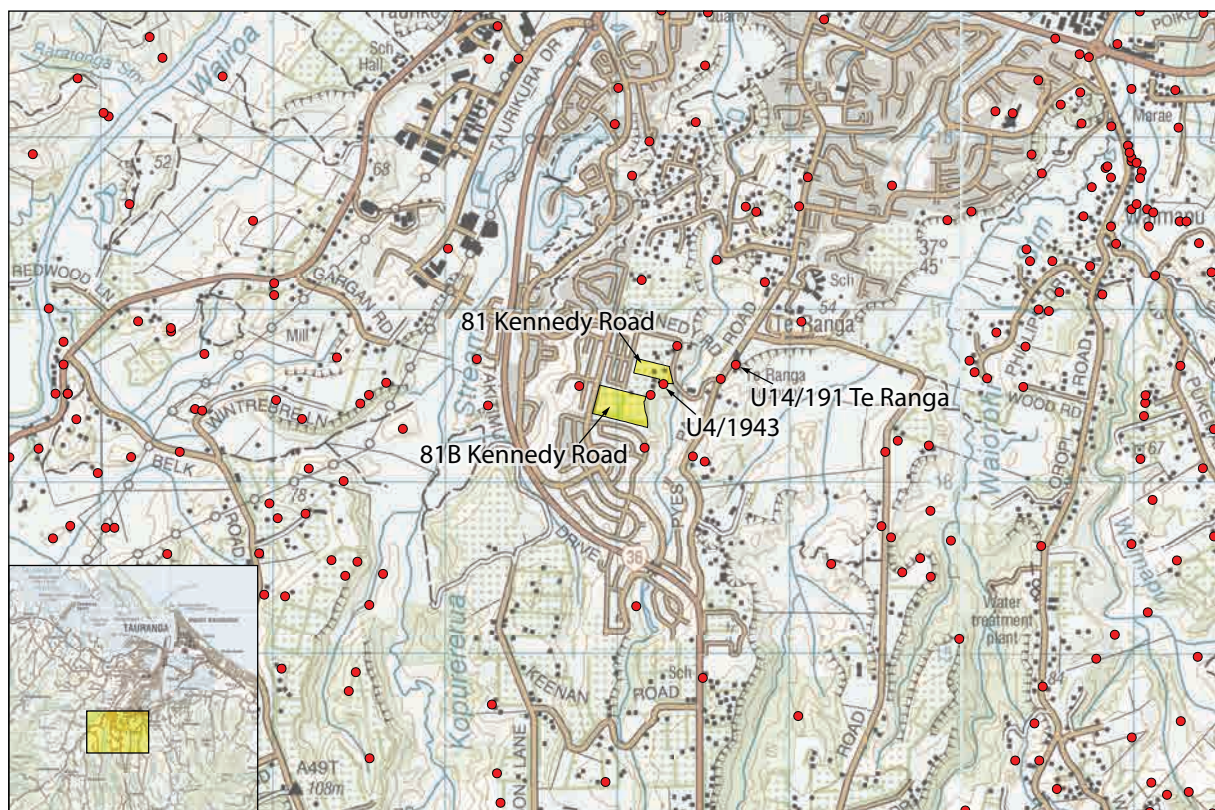


Figure 1. Location of 81 and 81B Kennedy Road showing nearby sites.

10 are recorded as pit/terrace sites and three as midden/oven sites. The remaining site is U14/191, the Te Ranga battlefield, 450 m northeast of the property on Pyes Pa Road.

The closest recorded site to the Kennedy Road properties is U14/1943, a shell midden initially recorded in 1984. The location data in the site record is vague and does not line up with aerial photography from the time. The site was recorded as a concentration of pipi, tuatua, tuangi and mudsnail over a 3 x 4 m area. The site record mentions that the ridge above has been used for orcharding, and the recorders thought that the shell has been redeposited from contouring the ridge. The grid reference in the site record, accurate to  $\pm 100$  m, is 20 m south of the boundary of 81 Kennedy Road.

### *Pre-European Māori history*

A brief history of the Māori occupation of Tauranga is provided here from widely available published sources. This is provided as a background only and is not written from a mana whenua perspective. It makes no judgement on the rights of any hapū in the area.

The Bay of Plenty was a prime location for early Māori settlement. The abundance of marine, freshwater and estuarine resources, open sandy beaches, forests and areas of high elevation and good soils for crop cultivation would have made the area attractive. Because of its rich resources, the area was much fought over and continuously occupied by Māori since initial settlement (Stokes 1990).

Māori settlement in the western Bay of Plenty was focused on the Kaituna River mouth and Maketu, and the Tauranga Harbour. The earliest known inhabitants of the Tauranga district were Ngā Marama who were conquered and absorbed by later groups. All present-day tangata whenua in Tauranga trace their descent back to these original people. The first waka to arrive in Tauranga was *Tainui*. Although Tainui people did not settle in Tauranga, they settled nearby: Marutūāhu in Hauraki and Ngāti Hauā and Ngāti Raukawa over the Kaimai Ranges. The next waka was *Te Arawa* whose people, apart from Waitaha, mostly settled south and east of Tauranga. The third waka to arrive was *Takitimu*, which landed at Mauao. Ngāti Ranginui trace their descent to the *Takitimu*. Waitaha and Ngāti Ranginui conquered Ngā Marama and divided the land between them: Ngāti Ranginui to the west of the Waimapu River, and Waitaha to the east (Stokes 1980: Chapter 1; Waitangi Tribunal 2004: 28).

After several generations, Ngāi Te Rangi and Ngāti Pūkenga, descended from the *Mataatua* waka that had landed at Whakatāne, displaced Ngāti Ranginui and Waitaha from much of Tauranga so that by about AD 1800 Ngāi Te Rangi had gained ascendancy on the coast and offshore islands of Tauranga while Ngāti Ranginui and Waitaha predominated inland east of the Waimapu (Waitangi Tribunal 2004: 29; Stokes 1980: Chapter 2; Stafford 1986: Chapter 22).

Tauranga supported a dense population prior to the arrival of Europeans. Coastal and inland hapū had reciprocal rights to resources and many migrated to the coast in winter and inland in summer. Early in the 19th century Ngāpuhi of Northland obtained muskets which provide them with a huge advantage in war. Tauranga was raided in 1818 and 1820. In 1828 Ngāti Maru of Hauraki attacked Tauranga, destroying Otamataha Pā and killing or enslaving the inhabitants. Tauranga Māori began to arm themselves with muskets and assisted Ngāti Hauā in expelling Ngāti Maru from Maungatautari in 1830. Further Ngāpuhi raids followed between 1830 and 1833 but these were successfully resisted. In 1836 Te Arawa took Te Tumu Pā at Maketu, successfully reoccupying lands they had lost to Ngāi Te Rangi 100 years earlier. Wars and skirmishes continued through parts of Waikato / Hauraki / Bay of Plenty into the 1840s but Māori society was becoming less inclined to settle disputes through destructive musket warfare (Waitangi Tribunal 2004: 23; Stokes 1980: Chapter 3; Ballara 2003: Chapter 16).



### 19th century history

The first recorded European Visitor to Tauranga was the missionary Samuel Marsden in 1820. He described the area as being “for the most part, fit for cultivation and ... easily be wrought by the plough” (quoted in Stokes 1992: 44). Visits by the Church Missionary Society schooner *Herald* followed in 1826 and 1828. In 1834 Alfred Nesbitt Brown established the mission station at Te Papa, and took over the running of it in 1838 until his death in 1884. In 1841 a Catholic mission was established at Otumoetai under Father Pezant (Stokes 1980: Chapter 3). Other early visitors to Tauranga were traders. As early as 1828 ships were calling at Tauranga Harbour trading powder and muskets for pigs and potatoes and James Farrow settled in the area in 1829. Philip Tapsell settled at Maketu in 1830 as a flax trader and from the early 1830s European goods became increasingly available to Bay of Plenty Māori (Stokes 1980: Chapter 4).

From the mid-1840s Tauranga Māori were growing wheat and pigs for the Auckland market and by 1857 they owned their own shipping and supplied Auckland with more produce than any other region (Stokes 1980: 65). Disease and war had reduced the population; many were leaving for Auckland to learn European ways and the old ways of life were changing as people took up Christianity, European education and European technology (Stokes 1980: Chapter 5). Slowly Europeans were arriving in Tauranga, if only in small numbers, but that was about to change. Many Tauranga Māori had close ties to Waikato people, particularly to Ngāti Hauā, whose rangatira, Wiremu Tamehana, was heavily involved in the Kīngitanga. When the government went to war with Waikato many Tauranga fighters went to the aid of the Kīngitanga. In 1864 government forces invaded Tauranga. They were repulsed at Gate Pā (Pukehinahina) on 29 April with heavy losses but during the night the Māori defenders slipped away. On 21 June government troops attacked Te Ranga Pā, which was not yet completed, and Māori suffered a heavy defeat which effectively ended their resistance in the Bay of Plenty.

The Kennedy Road properties are located in an area of confiscated land taken by the colonial government in 1865 following Te Ranga. The background and events surrounding this confiscation are complex and beyond the scope of this report (see Waitangi Tribunal 2004 for a full account). The military campaign in Tauranga had been promoted by various people for different reasons: one camp, led by Premier Whitaker, saw it as a pretext to confiscate Māori land; while the other camp led by General Cameron and Governor Grey saw it primarily as a military campaign and temporary occupation intended to prevent Tauranga Māori from continued participation in the Waikato Wars. Following the military victory, two models of settlement were proposed, a military settlement on confiscated land or private settlement on land purchased by the Crown. In May 1864 when the first lot of military settlers arrived in Tauranga the expectation was that they would be following the first settlement proposal as the Government was under pressure to provide land so that the soldiers did not have to be paid, fed or housed. When the second group of settlers arrived the following month it was reported that the assembled officers were “likely to become permanent settlers in this district, so soon as our brave enemy may have been somewhat subdued, which, at present, is very far from being the case” (*New Zealander*, 21 June 1864: 3). The Tauranga district was officially confiscated in May 1865 by an Order in Council.

### Archaeology

Numerous archaeological surveys and assessments have taken place in the lower catchments of the Kopurererua and Waimapu streams over the last four decades. This included two major site recording projects.

An initial field survey project was undertaken throughout Tauranga County by a team of students under the supervision of Bruce McFadgen of the New Zealand Historic Places Trust (NZHPT) between 1982 and 1985, recording 4500 archaeological sites. The data from this project was analysed by Mary O’Keeffe – she concluded that the main constraints on site location were topography (elevation and steepness) and resource availability. The Wairoa River was a major influence on site location: “The edges above the valley formed by the river were utilised for settlement and for strategic placing of defended sites” (O’Keeffe 1991: 147). In the general area of modern Tauranga, including Bethlehem, access to resources dictated settlement patterns, with occupation along the river, streams and harbour and horticultural sites located inland (O’Keeffe 1991: 148).

A review and summary of archaeological sites and report in the Bay of Plenty was undertaken in 2002 by Garry Law (2002). This was the first attempt at collating data in the area, which was already subject to heavy impacts from construction, horticulture and forestry. While this summary was produced, the New Zealand Archaeological Association undertook a site record upgrade project, checking the condition of already recorded sites to get a better understanding of their location, condition and the threats they face.

These projects have resulted in a relatively complete picture of the surviving field archaeology of the Kopurererua valley from the Waikareao estuary as far south as Belk Road. Pre-European sites have been recorded on the higher ground fringing the valley to the east and west and also on hills and ridges within the valley itself. No sites have been recorded on the previously swampy, though now largely drained, valley floor.

The earliest recorded pre-European site in Tauranga is Waikoriri / The Pilot Bay site, U14/363, on the harbour side of the tombolo at Mount Maunganui. The early period component of the site seems to be confined to the city block bounded by The Mall, Prince Ave, Victoria Road and Salisbury Ave, and consists of an artefact rich, charcoal stained midden dated to the early 14th–early 15th centuries AD (see Holmes et al. 2015 for a summary). Other early period sites are known at Bowentown and Maketu (Moore 2004, 2008; Moore et al. 2009; Campbell 2013) but none of these appear to be substantial sites, and they may have been ‘satellites’ of a larger, as yet unidentified base camp or camps.

The harbour remained a focus of settlement throughout the pre-European period but by around AD 1450 settlement had spread inland to the valleys that run into the harbour as well as east along the coast at Papamoa. Sites in the Waimapu Valley / Oropi, the Kaitemako Valley / Ohauti and the Koperuerua Valley / Tauriko / Te Papa were mainly occupied over 200 years, from about AD 1450–1650 (Campbell 2003, 2004a, 2004b, 2005; Furey 2004; Campbell and Harris 2007; Campbell and Hudson 2008). Presumably as soils became depleted settlement moved further inland, though no later sites from further inland have been reported apart from Ruahihi Pā, U14/38, further up the Wairoa Valley, which dates to AD 1650–1800 (McFadgen and Sheppard 1984). Settlement patterns at the time of European contact centred around major fortified pā on the harbour with “minor pā and other settlement components” on the harbour and inland bushline, about 30 km from the harbour edge (Kahotea 1983: 94).

Archaeological investigations were undertaken by CFG Heritage Ltd in 2015 at 89–97a Kennedy Road connected with the housing developments which are being undertaken in the area. Site U14/2165, originally recorded in 1984 as a badly eroded and fragmented shell midden in an area covering 45 x 25 m was recorded here, but archaeological investigation did not turn up any archaeological material, and it appears the site was completely destroyed by contouring (Campbell 2015).

Archaeological investigations were undertaken in 2022 by CFG Heritage Ltd at 81A Kennedy Road, which sits between the two properties in this project. Some redeposited obsidian flakes were found in a small modern depression along with some plastic, and it was



thought that this material was topsoil that had been imported and used as fill for planting (Cruickshank 2022). No other archaeological material or features were found on that property.

### *Te Ranga*

There have been several archaeological assessments undertaken in relation to the Battle of Te Ranga which took place approximately 450 m northeast of the property. There had been speculation about the location of the rifle pits and their design, which contain kōiwi of the 97 Māori who fell on the battlefield.

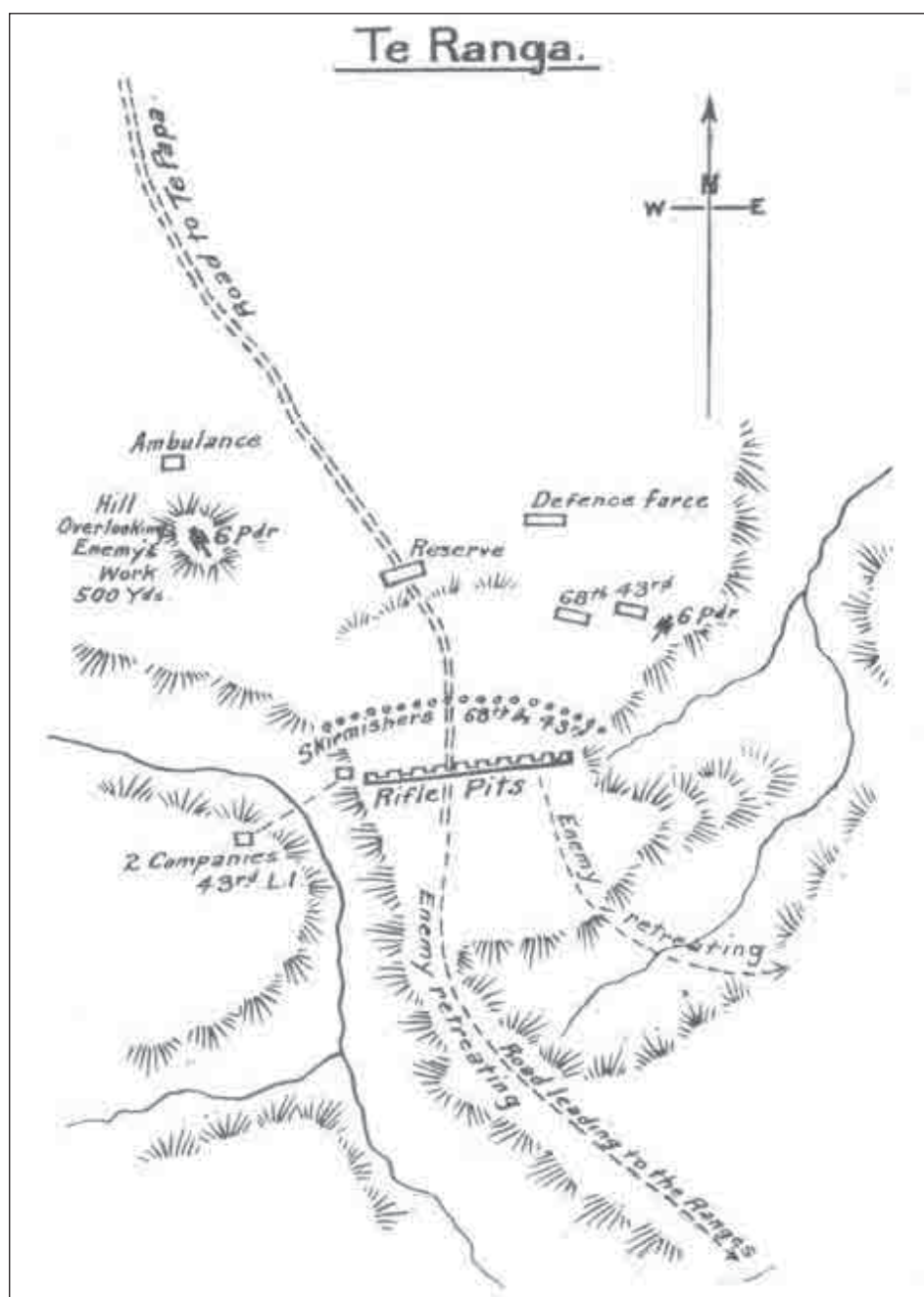


Figure 2. Cowan's sketch map of the battle of Te Ranga.

There have been several attempts by archaeologists to relocate the rifle pits (McFadgen 1977; Phillips and McCaffrey 2015), made more difficult due to discrepancies between survey maps, diary descriptions and hand drawn maps of the battle. Because of the sensitivity of the battleground and likelihood of uncovering human remains, typical exploratory methods were not feasible. Bruce McFadgen (1977) undertook a magnetometer survey where he suggests the rifle pits are located in a 5 m wide strip behind the concrete cairn. This result was far from conclusive, and advances in remote sensing equipment in the past 40 years made this study obsolete.

Another attempt to relocate the rifle pits was the monitoring of a water main trench by Archaeology B.O.P (Phillips and McCaffrey 2015) which ran down Pyes Pa Road. This trench should have intersected the trench and rifle pits, but nothing was noted in the profile. An attempt to geo-reference a hand drawn map from the battle proved somewhat limited but indicated that the rifle pits could lie further south than the current marker, near the intersection of Kennedy Road and Pyes Pa Road.

Recent investigations by CFG Heritage Ltd and Archaeology Solutions Ltd were successful in locating the rifle pits utilising magnetometry (Cruickshank 2019). This showed that the rifle pits are in a semi-circular pattern and were not joined up by a trench. This would account for the lack of evidence found by Phillips and McCaffrey (2015), indicating that their water main trench has passed between two pits. The rifle pits are located on the slightly raised ground in front of the stone cairn.

MishMish Heritage Ltd monitored topsoil stripping on the property at 219 Pyes Pa Road in March 2016, due to its proximity to Te Ranga. It was thought that the 6 Pound Armstrong Gun and the 43rd and 68th regiments drawn on Cowan's sketch map may have been stationed on the property and that some evidence might remain. No evidence of the



Figure 3. Results of 2019 magnetometer survey showing the Te Ranga rifle pits (Cruickshank 2019).

battle was uncovered, but pre-European features were identified and were recorded as site U14/3464 (Gallagher and Sturrock 2015).

CFG Heritage Ltd monitored topsoil stripping of 35 Joyce Road, which was also a possible location of the Armstrong gun. No evidence of the battle, or of pre-European occupation was identified during topsoil stripping (Cruickshank 2017).

### *81 and 81B Kennedy Road*

These properties were originally part of Pt Allots 1 (81 Kennedy Road) and 55 (81B Kennedy Road), Parish of Te Papa, which were allocated to soldiers and officers of the Waikato Regiment who were to settle in the area. There is no name entered on the plans for these two lots in 1865 (SO 435), but by 1885 they both appeared to be owned by C.R. Merrick (SO 2691). It is assumed that at this time they were converted to pasture, with wild gorse across the properties noted by 1907 (DP 4156).

The properties remained in pasture until at least 1974, with aerial photography showing that they had been converted to orchards by 1986. Presumably contouring took place between these two dates. Although 81B remained an orchard, the orchards at 81 Kennedy Road appear to have been removed by 1997 when the property was converted back to pasture. It had most recently been used for grazing horses.

Two archaeological assessments were undertaken by Arden Cruickshank of CFG Heritage Ltd with surveys carried out on 25 September 2017 (81B Kennedy) and 2 July 2018 (81 Kennedy Road). The survey was undertaken on foot, and the ground was probed intermittently with a 1 m gum spear to see if any subsurface archaeological deposits were present. No archaeological material was noted at the time, but due to the possibility of sub-surface archaeological features being present within the proposed works areas it was recommended that archaeological authorities be sought (Cruickshank 2017b; 2018).

## **Method**

Earthworks commenced on 25 January 2018, and archaeological monitoring was carried out intermittently by Arden Cruickshank of CFG Heritage between 25 January 2018 and 16 February 2021. There was a significant delay during earthworks for the construction of the Nanako Stream stormwater pond which was required to process stormwater from this project.

## **Results**

During topsoil stripping for the stormwater bund in the south east corner of 81 Kennedy Road, redeposited shell, fire-cracked rock and obsidian flakes were identified within the topsoil, near the recorded location of U14/1943.

The area was cleaned down on 12 February 2021 where 13 archaeological features, along with two obsidian findspots, were identified. These features were all restricted to an area measuring approximately 230 m<sup>2</sup>, with the area west of this having been extensively modified in the past. This modification was likely associated with orcharding from the 1980s–90s, and no archaeology was identified in the modified area. A windbreak / shelter belt which was present in the 1980s marked the extent of the modified area (Figure 4 and Figure 6). Based on observations during monitoring, when the shelter belt was removed it appears to have been done using an excavator with a toothed bucket, further impacting any remnants of archaeology.





Figure 4. View west of digger bucket tooth marks west of the identified features. Photo scale = 0.5 m.

Table 1. Features identified during investigation of U14/1943.

Feature	Type	l x w x d (mm)	Fill	Sample	Associated feature
1	Bin pit	700 x 490 x 100	Mottled, sparse charcoal		2
2	Posthole	100 x 150 x 140	Mottled, no charcoal		1
3	Posthole	130 x 130 x 360	Mottled, sparse charcoal, shell fragments		14
4	Posthole	130 x 110 x 230	Mottled		15
5	Posthole	160 x 160 x 370	Mottled, with pipi shell	Grab sample	
6	Posthole	100 x 100 x 50	Mottled	Grab sample	
7	Pit	1100 x 550 x 100	Mottled, with shell	Grab sample	8
8	Posthole	50 x 50 x 90	Mottled		7
9	Midden	1000 x 1500 x 250	Shell, dense	10l bulk	
10	Posthole	240 x 200 x 130	Mottled		
11	Posthole	100 x 100 x 220	Mottled		
12	Findspot			Obsidian flake	
13	Findspot			Obsidian flake	
14	Posthole mould	470 x 280 x 360	Mottled, charcoal, shell fragments		3
15	Posthole mould	480 x 400 x 230	Mottled, charcoal, shell fragments		4

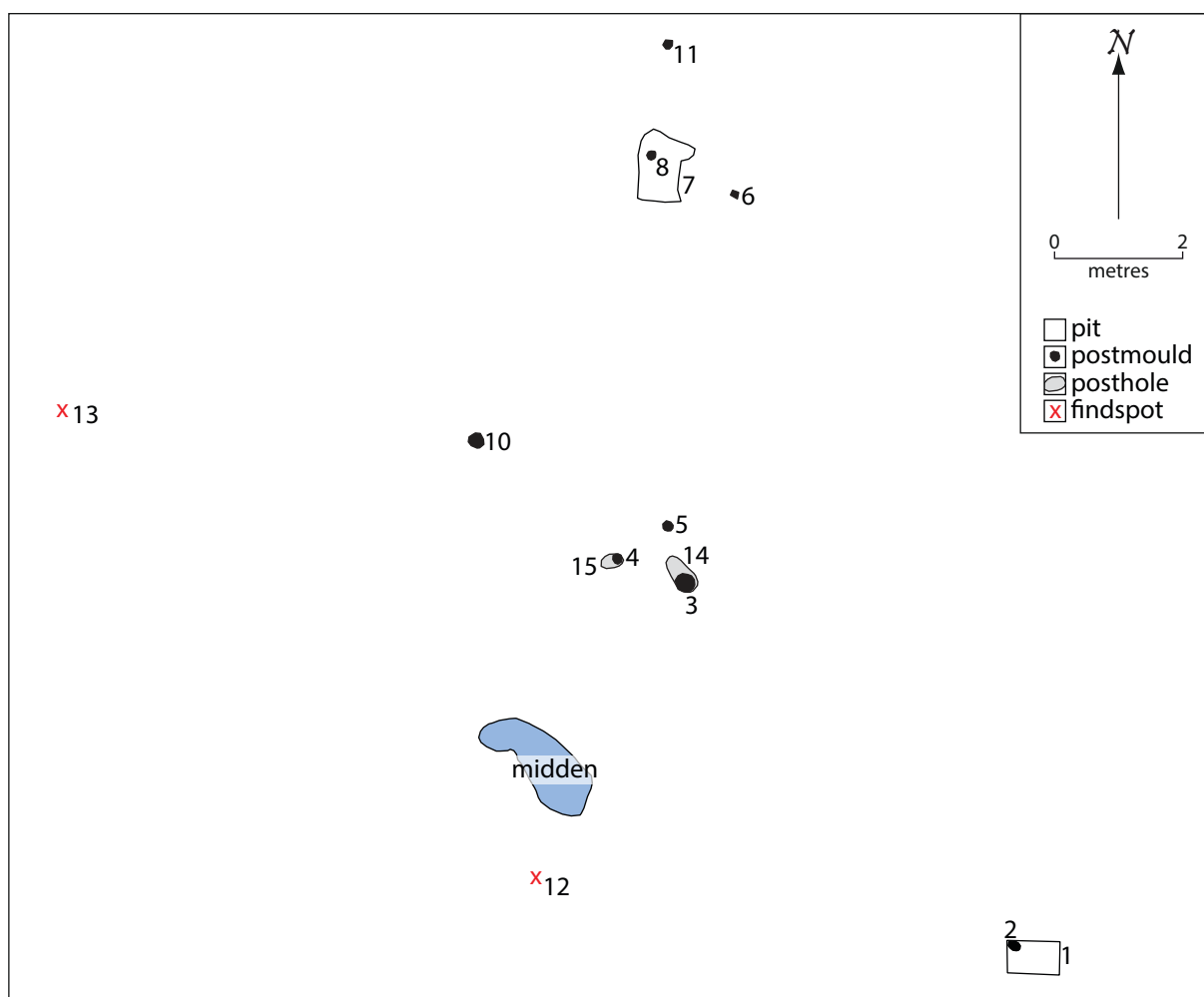


Figure 5. Site plan.

Recorded features included ten postholes, two small pits and a midden. It appears that the site has been heavily truncated by contouring, with only the remnants of post holes and pits remaining. Redeposited midden was identified in the topsoil, and it is likely this is associated with the redeposited midden which was originally recorded as U14/1943 down the bank to the east of the site.

### 81B Kennedy Road

Topsoil stripping at 81B Kennedy Road was also monitored, but no archaeological material or features were identified. The land has likely been heavily contoured for kiwifruit orcharding.





Figure 6. Aerial photo SN8626/J/10, taken in 1986, showing location of features in relation to shelterbelts.



Figure 7. Location of features relative to house and recorded location of U14/1943. Contour interval = 2 m.





Figure 8. View south of Feature 9. Photo scale = 0.5 m.



Figure 9. View north of Features 1 and 2. Photo scale = 0.5 m.





Figure 10. View south of 81B Kennedy Road post topsoil stripping.

## Analysis

### Lithics

Three obsidian artefacts were recovered from this site, all of which had a maximum dimension greater than 10 mm and were analysed by Arden Cruickshank based on methods outlined in Beyin (2010), Holdaway and Stern (2004), Turner (2005), Phillipps and Holdaway (2016) and Cruickshank (2011). Results are shown in Table 1.

The obsidian flakes were all green in transmitted light and were visually sourced to Tūhua / Mayor Island. Tūhua is the closest obsidian source to Tauranga and is the dominant obsidian type found in sites in the region. One piece had extensive retouching on all quadrants which was attributed to its use as a scraper.

Table 2. Summary of results of obsidian analysis.

Feature	Type	Size class (cm)	Snapping	Use wear	Scraping
12	Complete	3			
12	Complete	3		Retouch	Yes
13	Core Fragment	4	Yes		

## Fauna

Midden samples from Features 5, 6, 7 and 9 were analysed by Lucy Arrell of CFG Heritage. Three samples were small grab samples (dry weights of 650 g, 38 g, and 18 g respectively) while Feature 9 was a 10 litre bulk sample (dry weight of 1130 g). The samples were wet sieved through a 4.5 mm screen, dried, and then sorted to primary classes (shell, stone, charcoal and bone). Shell was analysed using conventional methods with species identification based on Morley (2004).

Shell with no diagnostic portions was classified as residue. A comparison of diagnostic shell to residue by weight shows that a large proportion of shell in Features 6 and 9 was crushed and fragmented due to post-depositional process such as trampling, although the Feature 6 sample is small.

Features 6 and 7 were small samples and had minimal species diversity, being primarily comprised of pipi (*Paphies australis*) as well as some tuangi (*Austrovenus stutchburyi*) in Feature 6. Feature 5 and Feature 9 have much greater diversity, as would be expected by their larger sample sizes. Feature 5 is dominated by pipi followed by tuangi, while conversely Feature 9 is dominated by tuangi followed by pipi and small numbers of tuatua (*Paphies subtriangulata*) (Table 2). Pipi and tuangi are both found in sheltered sand and mud substrates around the mid-tidal level, and would have been available nearby in the Tauranga Harbour and stream estuaries feeding into it. Tuatua are found on open sandy beaches and represent additional exploitation of the coast around Mauao and Papamoa. Features 5 and 9 also had a variety of other gastropods in very small amounts, likely representing by-catch.

Only a small amount of fishbone was recovered. This was analysed by Matthew Campbell of CFG Heritage. One bone from a mackerel (hātūre, *Trachurus sp.*) was identified in Feature 5. No other diagnostic fish bone was present.

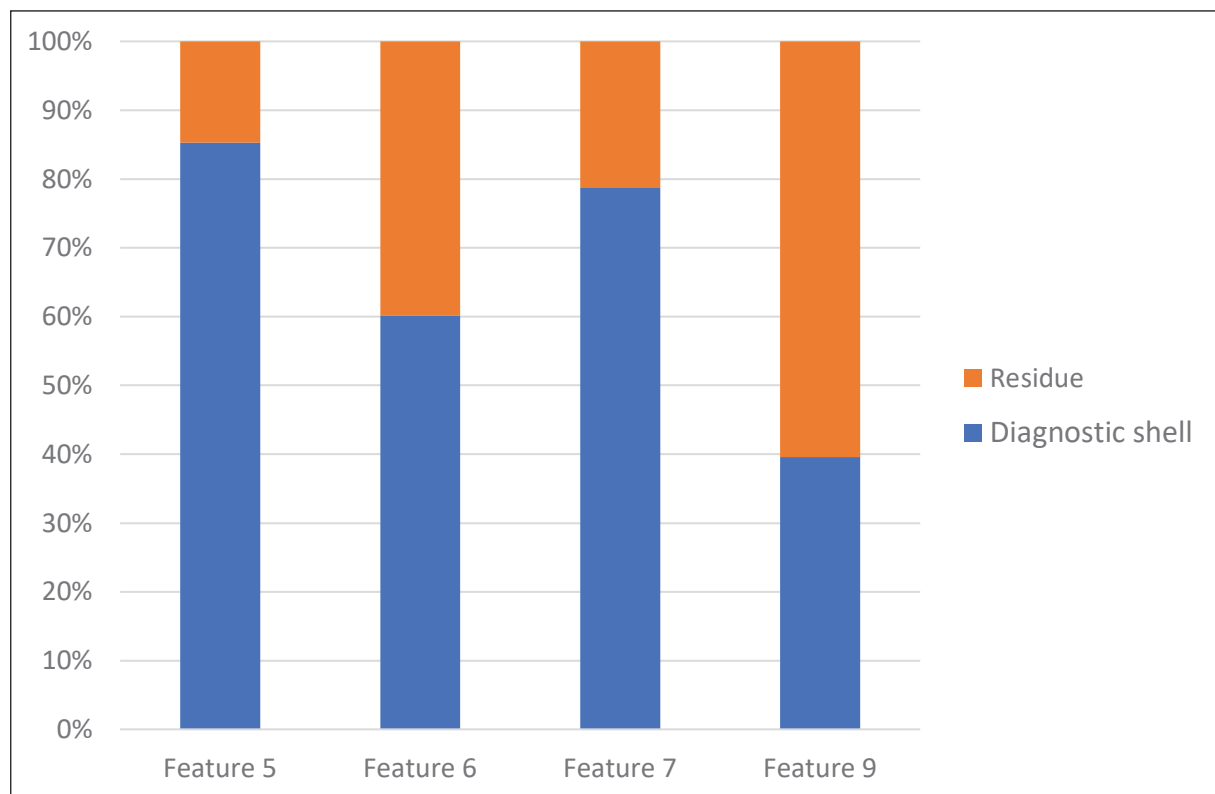


Figure 11. Fragmentation by percentage of weight per feature.

Table 3. Summary of shellfish by MNI.

Species	Feature 5	Feature 6	Feature 7	Feature 9
<b>Bivalves</b>				
Pipi ( <i>Paphies australis</i> )	129	23	5	133
Little black mussel (hānea, <i>Xenostrobus neozelanicus</i> )		1		
Mussel (kuku, Mytilidae)	1	1		
Tuatua ( <i>Paphies subtriangulata</i> )	1			21
Tuangi ( <i>Austrovenus stutchburyi</i> )	39	12		453
<b>Gastropods</b>				
Cat's eye (akanakana, <i>Lunella smaragda</i> )				1
Horn shell (koeti, <i>Zeucumantus lutulentus</i> )				5
Oyster borer (kaikai tio, <i>Haustrum scobina</i> )				3
Olive shell (pūpū pīataata, <i>Amalda australis</i> )				1
Purple-mouthed whelk ( <i>Cominella glandiformis</i> )	1			
Top shell ( <i>Diloma</i> sp.)	8			
Turret shell (Papatai, <i>Maoricolpus roseus</i> )	5			
Speckled whelk (kāwari, <i>Cominella adspersa</i> )				6
Wheel shell (kota, <i>Zethalia zelandica</i> )	1			
Unidentified gastropod	5		1	10
<b>Total</b>	<b>191</b>	<b>36</b>	<b>6</b>	<b>633</b>

### Charcoal

Charcoal was analysed by Ella Ussher of CFG Heritage following the methodology outlined in Chabal et al. (1999), Théry-Parisot et al. (2010) and Dotte-Sarout et al. (2015), although the sample sizes were lower (50 fragments or less) than recommended (200–400 fragments).

Charcoal from the wet-sieved material of each bulk sample was analysed. The samples from Features 6 and 7 had less fewer 10 fragments and very little can be said about these (Table 4).

The sample from Feature 5 was dominated by conifers, with smaller amounts from small trees and shrubs and only a very small amount from broad-leaved canopy and ground cover species. The presence of vegetative storage parenchyma from roots or tubers could derive the processing of foods such as kūmara or taro.

The sample from Feature 9 was highly carbonised, distorting the morphology of the charcoal fragments and making identification difficult. Of the fragments able to be identified, most were again from conifers with smaller amounts of small trees and shrubs.

Conifers dominate the samples, with few broad-leaf species and a notable lack of secondary growth species such as manuka, suggesting that stands of primary forest were still extant near the site. Bracken suggests that some of this forest had been cleared, probably for gardening.



Table 4. Species identification of charcoal from U14/1943

Species	Type	Feature 5	Feature 6	Feature 7	Feature 9	Total
Bracken (rarauhe, <i>Pteridium esculentum</i> )	Ground cover	1			2	3%
Kōwhai ( <i>Sophora microphylla</i> )	Small trees and shrubs		1		1	17%
Wharangi ( <i>Melicope ternate</i> )				1		
Tutu ( <i>Coriaria arborea</i> )		1				
Māhoe ( <i>Melicytus ramiflorus</i> )		4				
Hebe ( <i>Veronica</i> sp.)		6			3	
Lacebark (houhere, <i>Hoheria</i> sp.)					1	
Kaikōmako ( <i>Pennantia corymbosa</i> )					1	
Pōhutukawa ( <i>Metrosideros excelsa</i> )	Broad leafed canopy species		3			6%
Tawa ( <i>Beilschmiedia tawa</i> )					3	
Rewarewa ( <i>Knightia excelsa</i> )		1				
Conifer	Conifer	20	3		10	30%
Vegetative storage parenchyma	Roots / tubers	2				2%
Unidentified		11	2		29	38%
Unidentified bark		4				4%
Total		50	9	1	50	

### Radiocarbon dating

A pipi sample from Feature 5 was sent to the University of Waikato Radiocarbon Dating Laboratory. The sample returned a date in the mid-15th to early 18th centuries AD.

Table 5. Radiocarbon results from U14/1943

Feature	Lab no.	CRA BP	Cal AD 68%	Cal AD 95%
Feature 5	Wk 55075	757 ± 21	1510–1660	1440–1730

## Discussion and conclusion

The 13 features identified and investigated at 81 Kennedy Road and have been assigned to site U14/1943, as they are the most likely source of the shell originally recorded on the neighbouring property, since redeposited by contouring.

The features have been heavily modified, most likely in the 1980s when the property was converted from pasture to orchards. It is likely that there were further features associated with the site which have been lost through contouring.

The resources represented by this small assemblage are typical for a site in Tauranga, with the three obsidian flakes all visually sourced to Tūhua, and the faunal assemblage typical of the exploitation of Tauranga Moana, with lesser numbers of tuatua representing the exploitation of ocean beaches. Charcoal is typical of primary forest clearance indicating that the site represents initial movement inland from the coast.

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