

**BEFORE THE HEARING PANEL**

**IN THE MATTER**            the Resource Management Act 1991

**AND**

**IN THE MATTER**            of Proposed Plan Change 37 - Nukuhau (private) by AN Rajasingham LPT Trustees No 124 Limited anors to the Taupo District Council to rezone c.78ha of land in the Nukuhau area from Rural Environment to a mix of General Residential and Mixed Density Residential with a Neighbourhood Shopping Centre overlay.

---

**REPLY STATEMENT OF EVIDENCE OF KIRSTY NICOLE SYKES (ARCHAEOLOGY)**

**Dated 5 NOVEMBER 2021**

---

---

**LACHLAN MULDOWNY**

BARRISTER

**P** +64 7 834 4336 **M** +64 21 471 490

**Office** Panama Square, 14 Garden Place, Hamilton

**Postal** PO Box 9169, Waikato Mail Centre, Hamilton 3240

**[www.lachlanmuldowney.co.nz](http://www.lachlanmuldowney.co.nz)**

**Instructing solicitor:**

Graeme Halse

[Graeme@foyhalse.co.nz](mailto:Graeme@foyhalse.co.nz)

## **INTRODUCTION**

1. My full name is Kirsty Nicole Sykes (nee Potts).
2. I have been engaged by the applicant to provide archaeological evidence in respect of Private Plan Change 37: Nukuhau Private Plan Change (**PC37**).
3. My qualifications and experience and commitment to comply with the Environment Court Expert Witness Code of Conduct are as set out in my primary statement of evidence dated 20 October 2021. I maintain that commitment.
4. I have read, and respond to, issues raised in the statement of evidence (**SOE**) of Ms Carolyn McAlley on behalf of Heritage New Zealand Pouhere Taonga (**HNZPT**).

## **RESPONSE TO ARCHAEOLOGICAL ISSUES RAISED**

### **Literature review**

5. The SOE of Ms McAlley and the Technical Specialist Report (**TSR**) prepared by Ms Lynda Walters refer to the need for additional archaeological research in order to properly resolve the archaeological matters. Each information point in the TSR is specifically addressed in the following paragraphs.
6. The TSR refers to the need for a comprehensive review of available archaeological literature from the Taupō region, particularly Williams & Walton 2003<sup>1</sup>, and inclusions of the results of relevant archaeological investigations in the vicinity of the area subject to PC37.

---

<sup>1</sup> A Williams & T Walton 2003 Early Landuse Patterns in the Lake Taupō Area. Science for Conservation 222.

7. I consider that the literature review and summary of relevant archaeological investigations in my Archaeological Assessment dated 7 September 2021 (**Archaeological Assessment**) was sufficient to characterise the nature of the archaeology in this location. I considered the following information sources in the Archaeological Assessment:
  - a) HNZPT Archaeological Reports Digital Library (Taupō region only);
  - b) New Zealand Archaeological Association (**NZAA**) Archaeological Site Recording Scheme (sites recorded within 7.5 km of the project area);  
and
  - c) Specific literature related to the area as identified in **Attachment 1** to my evidence.
8. I specifically reviewed the literature sources listed in **Attachment 1**, with a focus on looking at evidence for storage pits and gardening features.
9. Williams and Walton 2003 was not reviewed in the Archaeological Assessment. I have now considered this report and any implications in regard to PC37. Williams and Walton considered that archaeological research in the area at the time was limited to information recorded within the NZAA Site Recording Scheme in an ad hoc fashion (2003:6). It was noted that many of the recorded archaeological sites were pit and house sites, likely associated with mid to late 19th century occupation.
10. They outlined archaeological excavations to date within the Taupō area. These were mostly small scale or salvage investigations including a cave site (T18/53) and a 19th century settlement (U15/15). More fullsome investigations included:
  - a) Investigations at Rua Hoata rockshelter (U17/6), situated below the Aratiatia Rapids on the Waikato River, found 54 incised canoe shapes (Phillipps 1947; Trotter & McCulloch 1971: 44; Trotter 1978).

- b) A small rockshelter (T18/22, N93/5), located in Waihora Bay, was excavated in 1956, although the investigation lacked strict excavation control (Hosking & Leahy 1982).
  - c) Whakamoenga Cave (U18/4, N94/7), at Whakamoenga Point, was excavated between 1961 and 1963 (Hosking 1962; Leahy 1976).
  - d) Salvage excavations were undertaken at thirteen sites during the Tongariro Development Project (Newman 1988), with most of the sites investigated dating to the mid to late 19th century.
  - e) A pa in Halletts Bay (U18/34, N103/10) was the subject of an archaeological investigation in the mid 1980s (Furey 1984).
  - f) Upgrading of a road on the west side of Tapuaeharuru Bay in 1990 resulted in a salvage excavation of Hapu a Wai (U18/24, N94/37), a European contact period site (N. Ritchie, Department of Conservation, unpubl. data.).
11. Williams and Walton 2003 considered that the Taupō area contained a fairly low population of Māori living in scattered villages primarily around the lake and rivers as well as occasionally on the bush line (Williams and Walton 2003:12). All current evidence suggested that sites from earlier periods have a limited geographical distribution along the lake and river margins. Settlement along the bush-edge became more important in the mid to late 19th century as the bush line was pushed back further inland.
12. In addition, there is unresolved discussion in the literature as to whether climatic conditions for kumara growth was viable in the Taupo region. If it was viable, it was considered that sheltered microclimates would have been needed for gardening areas.

13. In regard to pits, Williams and Walton noted that these could have been used to store potato tubers, tobacco and watermelons in the 19th century (e.g. Newman 1988, Crawford 1880:143).
14. The Archaeological Assessment considered 15 archaeological sites in the NZAA Archaeological Site Recording Scheme within 7.5 km of the project area which were noted as “depressions” representing pits. I refer to Figure 1 below and **Attachment 2**. While not as numerous as other regions, such as the Bay of Plenty, these sites do indicate that archaeological depressions are found throughout this landscape, albeit they have not been extensively investigated as the archaeological landscape appears under investigated in general.
15. I would consider the literature review above supports the findings in my Archaeological Assessment in regards to the literature review and assessment of values.

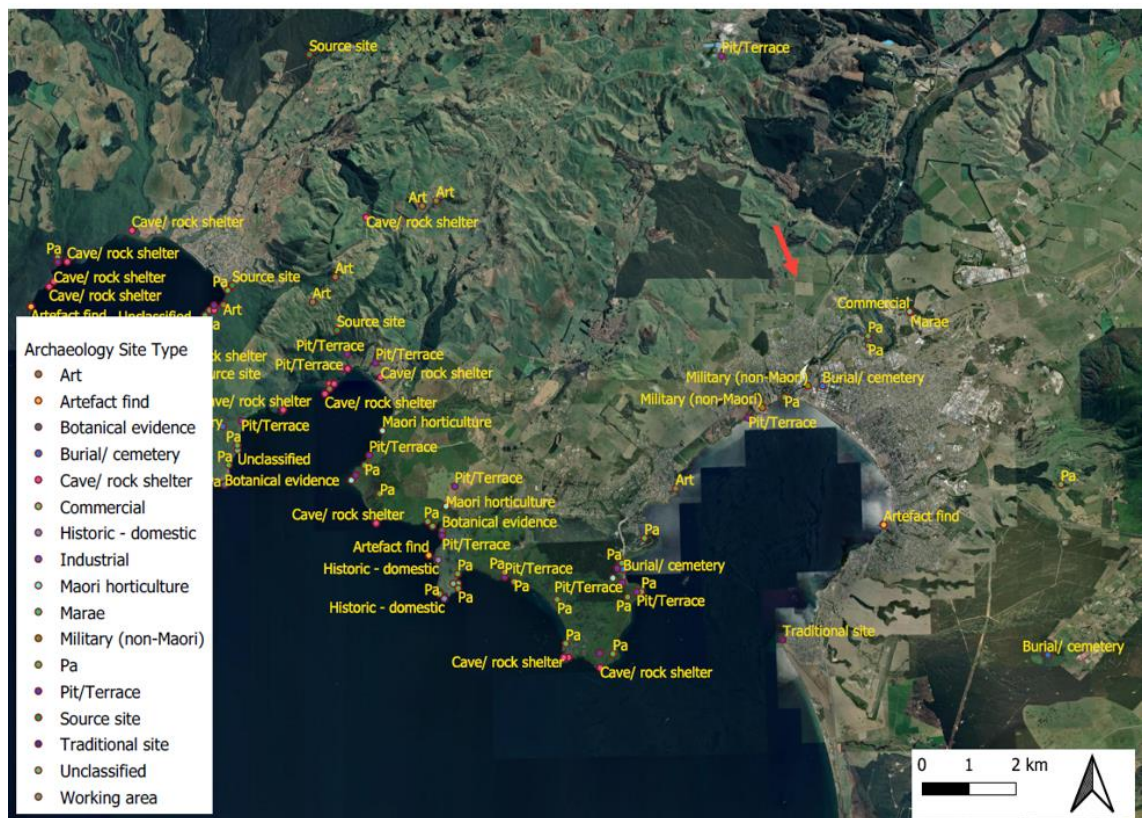


Figure 1. Archaeological site records (stars) within the wider vicinity of the proposed Site (red arrow). Image data from ArchSite 13/10/21.

## **CONSULTATION**

16. The TSR refers to the need to consult with mana whenua to determine if there are any areas of cultural significance within the PC37 area as this will also inform the probability of the presence or absence of archaeological sites.
  
17. Iwi consultation was outside of the scope of my involvement in the project. I note that consultation with mana whenua is outlined in Mr Crawford's Statement of Evidence and that the Section 42A report states at page 49:

Lastly, as already identified there remains a contested matter as to whether māna whenua have been consulted with – I have identified correspondence from the Proponent that states that such has been undertaken, and that there are no 'sites of historical or archaeological significance. There were none then and there are none now.

## **HISTORIC AERIAL PHOTOGRAPHY**

18. The TSR refers to comprehensive examination of geo-referenced high resolution aerial photographs taken in 1972 in order to search areas that were not able to be inspected during the field visit and also search for any depressions similar to those in Area C.
  
19. I consider that this examination was carried as part of the Archaeological Assessment. Aerial photographs were accessed and reviewed from the Retrolens website. The 1971 aerial photograph (there was no 1972 aerial for the project area identified in Retrolens) did not indicate any other potential archaeological features (see Figure 2).





Figure 2: 1971 Aerial photograph overlaid with the project area (red polygon). Source: LINZ via Retrolens.

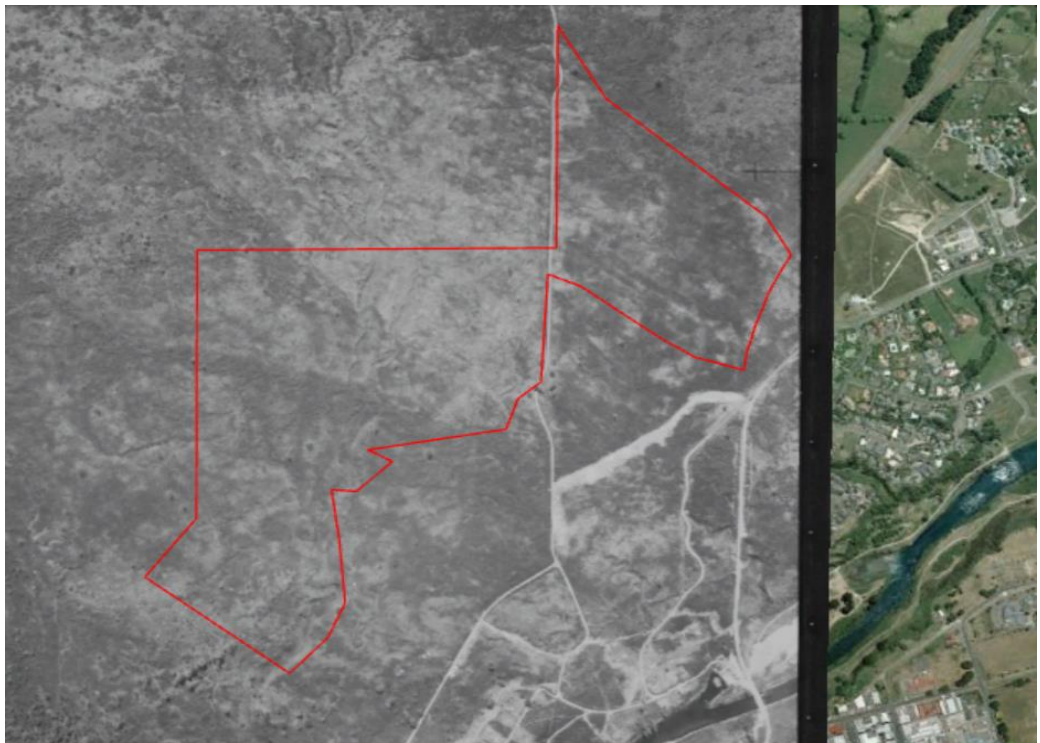


Figure 3: 1946 Aerial photograph overlaid with the project area (red polygon). Source: LINZ via Retrolens.

## POST 1900 LANDUSE

20. The TSR recommends documenting the history of post-1900 land use, particularly focussing on the areas that could not be inspected during the field visit, as this will assist to determine if intact archaeological features are likely to be present.
21. I consider that the Archaeological Assessment suitably addresses this through the review of aerial photographs. The earliest aerial photograph dated 1946, shows the entirety of the project area has been cleared of any original bush and appears to be in open land with occasional trees (Figure 3). The 1963 aerial of the project area shows little change from the 1940s bar the occasional track and building within the project area (Figure 4). By 1977, there is some ground disturbance in the central portion of the project area (Area B) but the majority of the properties continues to be in pasture or scrub (Figure 5). Some of this scrub has been removed by 1985 and by 2008, Area C is in forestry (Figures 6 and 7). The general land use appears to have had little overall disturbance to the project area since 1900 except for Area C now in forestry.



**Figure 4: 1963 Aerial photograph overlaid with the project area (red polygon). Source: LINZ via Retrolens.**





**Figure 5: 1977 Aerial photograph overlaid with the project area (red polygon). Source: LINZ via Retrolens.**



**Figure 6: 1985 Aerial photograph overlaid with the project area (red polygon). Source: LINZ via Retrolens.**



**Figure 7: 2008 Aerial photograph overlaid with the project area (red polygon). Source: Google Earth.**

## **SOIL STRATIGRAPHY**

22. The TSR requests a comparative analysis of the soil stratigraphy examined during the field visit with relevant documented examples of culturally modified soils – for example Simmons 2009<sup>2</sup>. This will assist in determining if buried archaeological features are likely to be present.
  
23. I consider this is addressed in the Archaeological Assessment and in Ms Walters report. Visual inspection and test pits as outlined in the Archaeological Assessment Report (Sykes 2021) and Ms Walters report did

---

<sup>2</sup> Simmons A 2009 Archaeological Work Undertaken to Investigate and Record U17/66, A Cultivation Area Discovered During Construction. Unpublished report prepared for Taupō District Council.

not identify any modified cultural soils; neither as described by Simmons, nor seen previously by me at other horticultural sites throughout the North Island.

24. Other indications for archaeological gardening can include stone alignments, borrow pits and/or markings from tools used to garden. I have noted none of these during the site visit. Storage pits, of which the depressions identified in Area C of the project area may represent, while possibly indicating the storage of tubers are not a guarantee of nearby gardening, as the tubers may be transported. However, storage pits encourage additional examination of nearby soil profiles in search of potentially modified soils. As stated above, none were identified by me during my site visit.

#### **AREA C**

25. The TSR requested that the archaeologist consult current and/or former occupiers of Area C to determine if the depressions identified during the field visit on 6th July 2021 are of recent origin and related to livestock farming activity or some other post-1900 use of the property.
26. My understanding is that the current owners of the subject property are not locally based. I spoke to the current tenant of the property during the site visit for the Archaeological Assessment Report and he reported having only been on the property for a few years.

#### **ADDITIONAL RECOMMENDATIONS**

27. The TSR's recommendations include the following to resolve archaeological matters:
  - a) That the archaeologist discuss with HNZPT whether the information supplied on 1st October which showed that the depressions in Area

C do not appear to have been present in 1972, based on aerial photography examination, introduces sufficient doubt that the features are archaeological to allow for subsurface testing without the need for a prior s 56 authority.

- b) If they agree, carry out sufficient subsurface testing to decide the origin and extent of the features, and include the result in the revised Archaeological Assessment.
  - c) Only if the 1972 aerial photography evidence and the result of discussions with the current and/or former occupants of the land does not establish, to the satisfaction of HNZPT; that the depressions in Area C are of recent origin, an exploratory archaeological investigation as provided for under section 56 of the Heritage New Zealand Pouhere Taonga Act 2014 should be carried out, focused on the area where the depressions are located and the immediate surrounding land. There is insufficient time available to complete a s 56 investigation before the scheduled plan change hearing date.
28. The following years of aerial photography were examined and the depressions were not clearly identified:
- a) LINZ via Retrolens: 1938, 1945, 1946, 1947, 1961, 1963, 1964, 1969, 1973, 1975, 1976, 1977, 1982, 1983, 1985;
  - b) Via Google Earth: 2014, 2016, 2017, 2018, 2019; and
  - c) Taupo District Council maps: 2020.
29. The following plans were examined, and the depressions were clearly visible:
- a) Via Retrolens: 1989;



- b) Via Waikato Lass: 2004;
- c) Via Google Earth: 2008, 2011, 2012, 2013, 2014, 2019, 2021; and
- d) Taupo District Council: 2016.



**Figure 8: 1989 aerial photograph georeferenced showing the location of the two depressions (white arrows); which are visible. Source: Google Earth.**





**Figure 9: 2020 aerial photograph georeferenced showing the location of the two depressions (red box), which are not visible. Source: Taupo District Council.**

30. Extensive review of available aerial photography of the location of the two depressions proved inconclusive regarding their origins. The depressions were first identified as being visible in a 1989 aerial photograph. However, they are not visible in numerous photographs since then, including one from 2020. This would suggest the depressions may have been in existence prior to 1989 and but are not visible on aerial photography prior to that.
31. As outlined in that report, the test pit undertaken during the Archaeological Assessment site visit would indicate that there is some depth to the depressions as fill was identified for at least 40cm below the bottom of the depression. The author considers this to be deeper than a typical farm trough or any that were noted on the property currently. No evidence of troughs or other explanations were noted on the aerial photographs examined.
32. This memorandum is intended to provide additional information for further discussion with the relevant stakeholders, including HNZPT, regarding the archaeological component of the project.

33. In summary, the above responds to the recommendations outlined by Ms Walters and as requested by HNZPT. I consider it supports the recommendations outlined in the Archaeological Assessment Report. As per that report, it is recommended that additional archaeological investigation is undertaken under an Archaeological Authority at the time of subdivision and earthworks consenting.

**Kirsty Nicole Sykes**

**5 November 2021**

### Attachment 1

Title of Report	Author	Summary of Archaeological Results
Taupō County	Fletcher 1978	Fletcher described several archaeological sites and provided information regarding gardening and pit sites. Fletcher noted that there are a wide variety of pit types and impressive stone rows at agricultural sites in Taupo. None of these site occur near the subject area (see Figures 1A and 1B below).
Interim Report Summer Field Recording [Taupo]	Perry 1979	Brief report of survey undertaken identifying sites but little additional information. Not considered relevant to the current study area.
Archaeological Site Survey: Rotoaira State Forest 141	Nevin 1979	Minimal information regarding forest survey. No sites found in vicinity of subject area. Not considered relevant to the current study area.
Archaeological Site Survey: Lake Taupo State Forest 115	Nevin 1979	Describes a survey for future forestry. Multiple sites with extensive features identified including pits; bell, open and raised in type.
Te Henga Historic Site Inspection and Protection	Fletcher 1982	Results of survey south of Turangi including pre-European and historic sites including open pits.
Interim Report on Items Recovered from Opepe Fossick Hole	Mitchell 1983	List of historic artefacts from fossicking. Not considered relevant to the current study area.
Preliminary Report to the New Zealand Historic Places Trust on	Mitchell 1984	Not relevant - Results of excavation of historic stockade. Not considered relevant to the current study area.

the Excavation of Runanga Stockade, N104/8, May 1984		
Archaeological Investigations in the Vicinity of Lake Rotoaira and the Lower Tongariro River 1966-1971	Newman and Walton 1988	Archaeological investigations of multiple sites at Tongariro. Notes that rua pits are more common than open pits in this area. Also notes that house sites are identifiable from pits as they are shallower and have raised rims on three sides.
Archaeological Survey of Eastern Whakaipo Bay, Lake Taupo	Williams & McFadgen 1994	Pa avoided so not visited during assessment for potential logging routes. Interpretation of stone rows previously recorded as archaeological proved inconclusive regarding if they were natural or cultural in origin.
Archaeological Survey of Mt Pohaturua	Perry 1996	Not relevant - survey of a specific pa site on Mt Pohaturua including earthworks interpreted as various types of pits and house sites.
Archaeological and Cultural Impact Assessment of Proposed Tailrace Lowering at Atiamuri Hydro Power Station	Frederickson 1996	Assessment regarding works on the banks of the Waikato River north of Taupo. No archaeology noted within the project area. Not considered relevant to the current study area.
Archaeological Survey of Te Kohatu Block Area, Western Taupo	Fletcher 1996	Recording of over 80 sites to the west of Taupo, primarily cave/rock shelters (28) but also pits: 3 open; 2 rifle and 11 rua.
Archaeological Field Inspection: Proposed Geothermal Development, Middle 15 Trust, Tauhara Geothermal Field	Bowers & Phillips 1997	Survey of land east of Taupo – no archaeology identified. Not considered relevant to the current study area.

Threats to Archaeological Features within the Redoubt and Village Area, Opepe Bush Scenic and Historic Reserve, Taupo	Williams 1999	Not relevant - threats and management of historic village and redoubt.
Archaeological Assessment: Harvesting of Pa Site T16/71, Strang Road, Tokoroa	Barr 1999	Monitoring of harvest in regards to a pa site, which was not affected by the works. Not considered relevant to the current study area.
Mapping Some Archaeological Features of the Opepe Bush Scenic and Historic Reserve	McFadgen & Williams 2000	Not relevant - Survey of historic occupation and stockade site.
Archaeological Assessment: NZHPT Proposed Maintenance Work at Opotaka (T19/69), Turangi, SH 47, North Shore of Lake Rotoaira	Darmody 2004	Assesses proposed works at the contact period site at Turangi. Not considered relevant to the current study area.
Makatote Tramway: An Archaeological Assessment	Watson 2005	Not relevant – post-1900 tramway.
Proposed Lodge Development, Hingarae Road, Lake Taupo	Prince 2005	Survey 1.2km west of Lake Taupo – no archaeology found. Not considered relevant to the current study area.
Taupō Police Station Excavation: First Report	Habberfield-Short 2005	Results of historic police station, mainly 1930s remains. Not considered relevant to the current study area.
Proposed Whareroa Village North Subdivision (Part Hauhungaroa 6A Block), Whareroa, Lake Taupo: Archaeological Survey and Assessment of Effects	Prince 2005	Assessment of subdivision at Whareroa. No archaeological sites within or in close proximity to the project area. Not considered relevant to the current study area.



Lakeview Ventures Subdivision, 540 Mapara Road, Lake Taupo: Archaeological Survey and Assessment of Effects	Prince 2005	Archaeological assessment with no archaeological sites identified within project area. Not considered relevant to the current study area.
Proposed Subdivision of Pukawa D2 and D3, Kuratau, Lake Taupo: Archaeological Survey and Assessment of Effects	Prince 2005	Archaeological assessment with no archaeological sites identified within project area. Not considered relevant to the current study area.
Taupō Police Station: Final Archaeological Excavation Report	Pishief 2006	Not relevant - no archaeological material identified.
Tongariro Domain, Taupo: Riverside Park Development - Archaeological Monitoring	Mallows 2007	Works at Taupo Domain recorded little potential archaeology due the depth of works mainly being in recent flood deposits. Not considered relevant to the current study area.
Taupō District Court: Archaeological Monitoring	Mallows 2008	Not relevant - No pre-European Māori archaeology identified. Minimal historic archaeological evidence identified.
Archaeological Work Undertaken to Investigate and Record U17/66, a Cultivation Area Discovered During Construction	Simmons 2009	Investigation of potential garden soils within a bridge construction area for the East Taupo Arterial. No evidence of 'made soils' identified. i.e. no additions of ash, sand, organics were found within the area of archaeological investigation. However, made soils were identified in DoC land on the bank of the Waikato River near-by. Simmons described these as: a cultural modified soil composed of organic/ top soil mixed with very fine charcoal. This garden soil is 19-25 centimetres thick. Below the garden soil

		is fifteen centimetres of brown pumice sand and other natural strata.
Tongariro Archaeology: A Contribution to the Ecology, Prehistory and History of the Tongariro Power Development	Batley n.d.	Extensive history of the environment and archaeological investigations undertaken for the Tongariro Power Development – some distance from the current project area. However, notes the full extent of the features found in pre-European New Zealand Archaeology
The Spa Hotel, Taupo: Archaeological Assessment of Standing Buildings and Management Plan	Campbell et al 2013	Not relevant - Historic spa building recording
Archaeological Monitoring at the Old Taupo Courthouse, Site of the Tapaeaharuru Redoubt (U18/2), Authority (2012/930)	Druskovich 2013	Reporting on historic site with few potential archaeological finds. Not considered relevant to the current study area.
File Note: Post Harvest Inspections - Tahorakuri Forest (Teal 3), Wairakei Pastoral Estate, Taupo. Heritage New Zealand Authority 2013/164	Hoffman 2014	Outlines eight sites within a large forestry block north of Taupo including two recorded pit/terrace sites, although neither were considered to be pit sites when further inspected.
Wairakei to Whakamaru C Line Transpower New Zealand Ltd: Final Archaeological Report	Simmons 2015	Final reporting for 40km powerline. No archaeological sites identified; one surface flake found for the project.
Report on Archaeological Authority No. 2014/847: Site U18/2, Taupo (Former) Courthouse and Tapuaeaharuru Redoubt, 23 Story Place, Taupo Domain, Taupo	Hauman 2016	No archaeological features encountered during works at the Taupo Domain.

<p>Taupo Water Network Renewal Final Report: Archaeology</p>	<p>Carter 2018</p>	<p>Reporting on Taupo CBD service works. One possible archaeological find of a post hole.</p>
--	--------------------	---

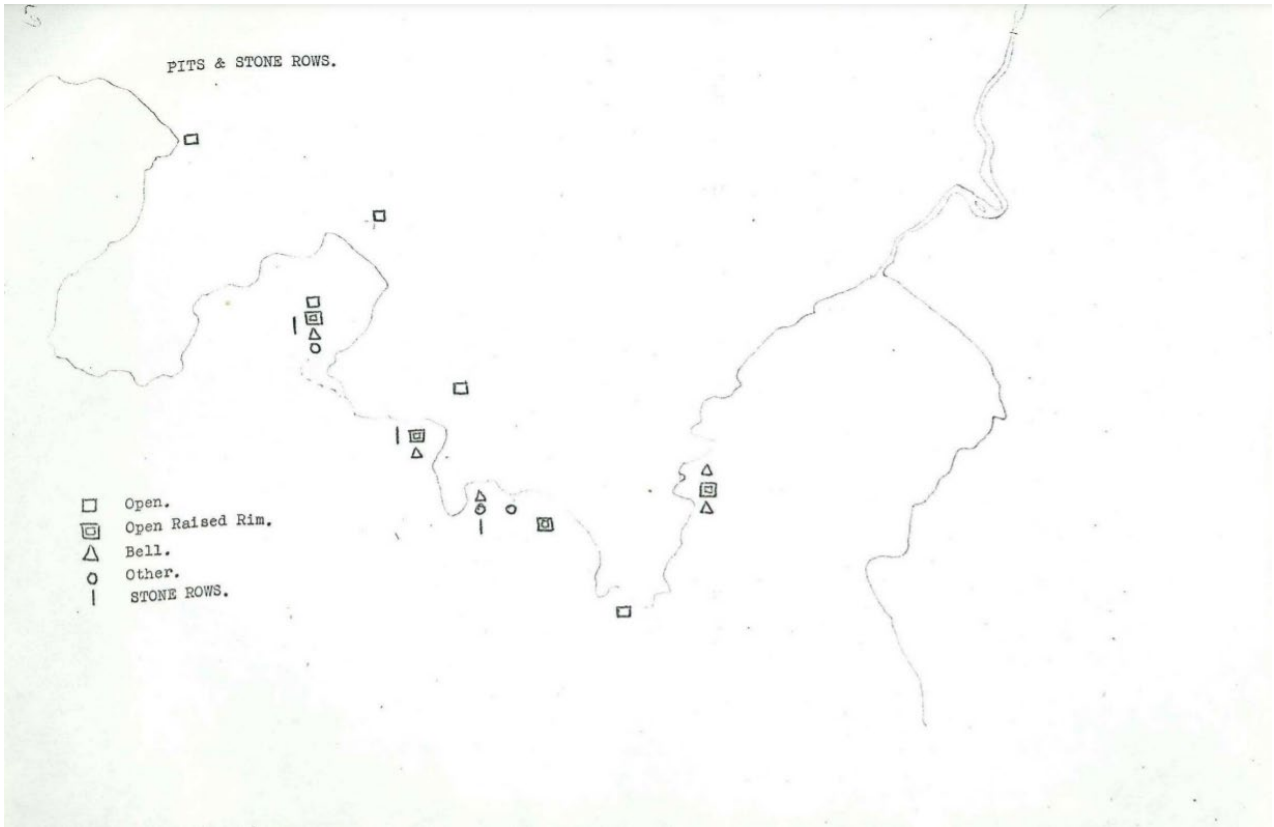


Figure 1A: Pits and stone rows identified by Fletcher (1978:68) in proximity to the project area (red arrow).

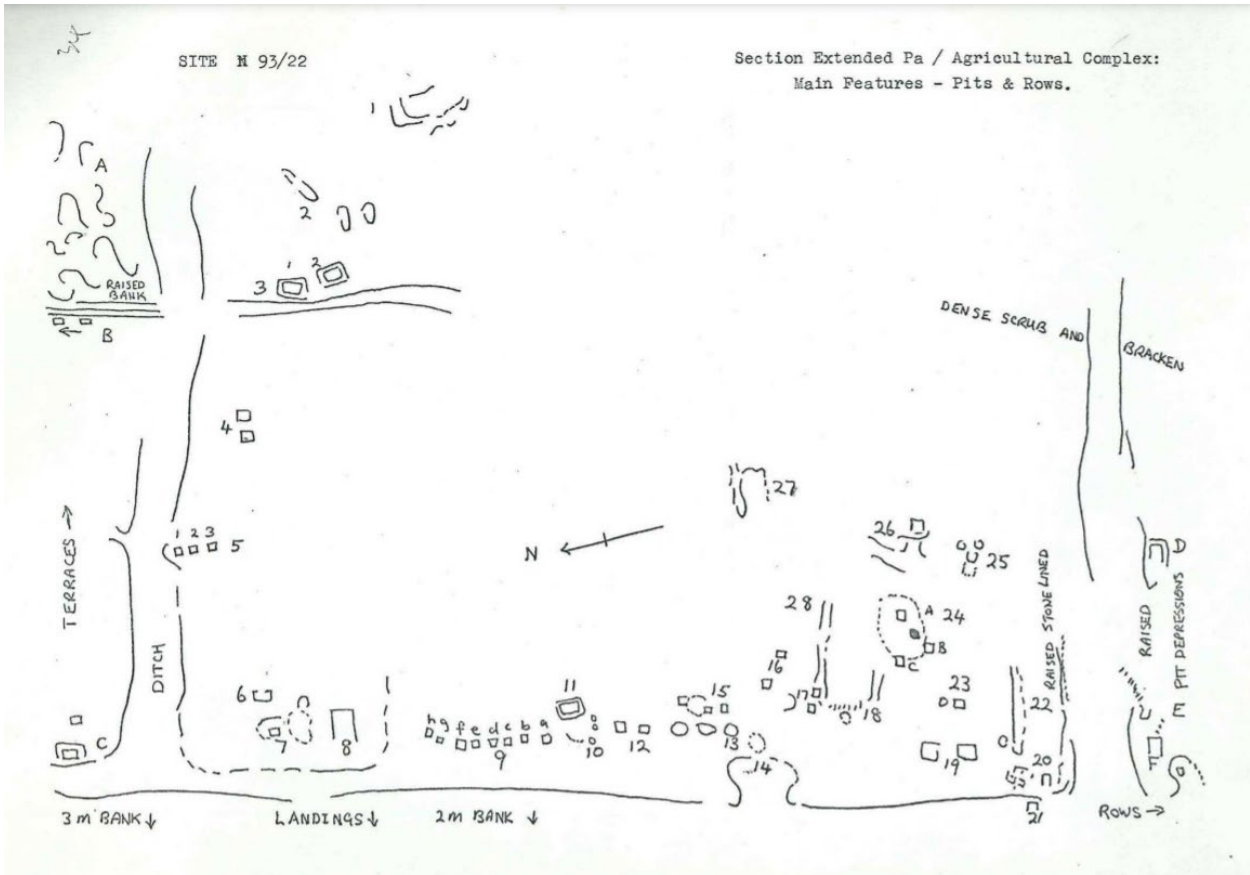


Figure 1B: Plan of Site N93/22 (Imperial). Note extensive pits (Fletcher 1978:34).

## Attachment 2

### Pit sites within 7.5km of the project area

Site Number	Site Type	Site Information regarding pits	Location	Distance from project area
U18/85	Pa	Recorded in 1984 as Poihipi pa. The site was occupied in the 1860s although reported to also have been occupied earlier. Aside from defensive earthworks, the site record indicates “open pit depressions, Subterranean (Bell?) Pit, Raised earth rim (House site)”.	Easting: 1866300 Northing: 5713405	1.5km
U18/87	Gun fighter trench and pits	Recorded in 1984 as two rifle pits, 3 metres long and a subterranean pit approximately 40-60 metres from the lake.	Easting: 1865816 Northing: 5713207	1.4km
U18/93	Pits	Recorded in 1977 as two bell shape pits cut into an old water course.	Easting: 1865516 Northing: 5713007	1.7km
U18/14	Pa	Recorded in 1978. Site record indicates banks, levelled area with surface stones and postholes, ovens and three square pits measuring 0.7m across and 1-2 m apart.	Easting: 1862717 Northing: 5710102	5.2km
U18/10	Pit/terrace	Recorded in 1977. The site record is vague but it	Easting: 1862617 Northing: 5710002	5.2km



		appears to record six pits, ovens and potentially a ditch.		
U18/26	Maori horticulture	Recorded in 1979 as a c.50m stone row. A depression 2 x 1.5 x 0.2 m was noted with worked scattered stone.	Easting: 1862517 Northing: 5709802	5.6km
U18/24	Whare/pits	Recorded as Hapu a Wai in an incomplete excavation report by DoC archaeologist Neville Richie in 1999. The site is recorded within the landscape of former pa (U18/14; U18/3) and nearby cultivations. This site was described as a “canoe landing, gardens and settlement associated with the main defensive positions”. Excavations were located on a terrace with rectangular depressions, stone alignments and shallow parallel depressions. Stratigraphy indicated two periods of occupation with obsidian and gourd in the lower and European artifacts in the upper of the larger pit. This ‘pit’ (4 x 2.5m) was interpreted as a potential whare although	Easting 1862717 Northing 5709702	5.5km

		no postholes were identified and the narrow stone hearth was void of fire residues. Excavations with a shallower pit found obsidian flakes through the pit fill. Richie suggested that the ground had been cultivated due to intermixing of the topsoil and the natural with fragmentary charcoal.		
U18/28	Pit/habitation	Recorded in 1980 as a landing and camp site with one bell shaped pit.	Easting 1863017 Northing 5709502	5.5.km
U18/9	Traditional site	Last site record update was in 2016. Rectangular depression (5m x 3m) within an earthen bank rectangular enclosure (6 x 7m).	Easting: 1866092 Northing: 5708414	6.2 km
U18/96	Pa	Recorded in 1999. The site record indicates this was the location of Paetiki Pa (historic occupation) with cultivations, terraces and a rua pit. Subsurface evidence at that time was being disturbed and was described as “thick black sub-surface soil exposure”.	Easting: 1872122 Northing: 5711412	6.6km
U18/22	Pa/pits	Recorded in 1978. Earthworks site including stone pile and ditch/bank	Easting: 1861316 Northing: 5709400	7 km

		with eight recorded pits including raised pits; extended pits and pits cut into earthworks; open pits; and a double raised pit.		
T18/86	Pit/Terrace	Recorded in 1978 this site records a row of open pits of “medium type” along a rise. The site was recorded as being the only source of water in the area and having been likely damaged by stock.	Easting: 1859213 Northing: 5711800	7km
U18/8	Pits/terrace	Re-recorded in 2007. In 2007 raised earthworks were recorded and it was thought part of the original 1977 recorded site had been lost to development. The original record indicated a shallow open pit 2 x 2 m.	Easting: 1862188 Northing: 5708261	7.1km
U18/7	Pa	Re-recorded in 2007 as Te Karaka Pa. Records two bell shaped pits.	Easting: 1862466 Northing: 5708241	7.2km
U18/15	Pit	Cave type pit		7.4km