

Appendix 4: Archaeological Assessment

CAMBRIDGE, WHITEHALL, PROPOSED QUARRY EXPANSION AND OVERBURDEN DEPOSITION AREA: ARCHAEOLOGICAL ASSESSMENT

Addendum to Cambridge, Whitehall Quarry Expansion: Archaeological Assessment
(July 2019)

Prepared for Winstone Aggregates
A Division of Fletcher Concrete and Infrastructure Ltd

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Contents

Introduction	1
Project Background	1
Methodology	1
Historical Background	4
Māori Settlement	4
Early European Settlement	4
Historical Survey	5
Information from Early Maps and Plans	5
Archaeological Background	11
Recorded Sites	11
Archaeological Landscape	11
Physical Environment	14
Topography, Vegetation and Historical Modification	14
Field Assessment	17
Field Survey Results	17
Discussion and Conclusions	24
Summary of Results	24
Māori Cultural Values	24
Survey Limitations	24
Archaeological Value and Significance	24
Effects of the Proposal	26
Resource Management Act 1991 Requirements	27
Heritage New Zealand Pouhere Taonga Act 2014 Requirements	28
Conclusions	29
Recommendations	30
Bibliography	31
Appendix A: Site Record Forms	32

INTRODUCTION

Project Background

Winstone Aggregates proposes to further develop the existing quarry at Whitehall, Cambridge (Figure 1). The proposed works will include the medium term expansion of the quarry and creation of the Stage 2 overburden deposition area (OBDA). The legal description of the properties containing the proposed expansion areas, which are leased by Winstone Aggregates, are: Lot 1 DPS 22660, Lot 2 DPS 22660, part Hinuera 2 Block and Part Lot 1 Section 13 Block X Cambridge SD and R/W over Lots 3 & 4 DPS 66220. The current development will be done in stages with the works to be included in this assessment covering the areas as shown in Figure 2.

An Archaeological Assessment Report for a previous quarry expansion in 2019 containing the general historical and archaeological background of the area was prepared to establish whether future development is likely to impact on archaeological values (Cameron and Clough July 2019). As well, parts of the currently proposed expansion were also included in a later report (Cameron July 2022). Both reports were submitted as part of the required assessment of effects accompanying a change of conditions application under the Resource Management Act 1991 (RMA) and to identify any requirements under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA).

This addendum report, which should be read in conjunction with the July 2019 and 2022 reports, has been commissioned by Winstone Aggregates to establish whether the areas proposed for medium term expansion of the quarry and Stage 2 OBDA included in this assessment are likely to impact on archaeological values. This report has been prepared as part of the required assessment of effects accompanying a resource consent 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), Waipa District Plan Schedules and the Heritage New Zealand Pouhere Taonga (Heritage NZ) New Zealand Heritage List/Rāangi Kōrero were searched to determine whether any archaeological sites or other historic heritage sites had been recorded on or in the immediate vicinity of the proposed works areas. Literature and archaeological reports relevant to the area were consulted (see Bibliography). Early survey plans and historical aerial photographs were checked for information relating to past use of the properties containing the quarry.

Previous field surveys have included the area of the proposed medium term quarry expansion and the proposed Stage 2 OBDA included in this assessment and additional survey was not undertaken. During the surveys, the ground surface was examined for evidence of former occupation (in the form of shell midden, depressions, terracing or other unusual formations within the landscape relating to Māori settlement, or indications of 19th century European settlement remains). Exposed and disturbed soils were examined where encountered for evidence of earlier modification, and an understanding of the local stratigraphy. Subsurface testing with a probe and spade was carried out to determine whether buried archaeological deposits could be identified or establish the nature of possible archaeological features. Particular attention was paid to the spur and ridge lines

and areas bordering streams (topographical features where archaeological sites are often found to be located). Sites were photographed and GPS readings taken. Field sketches were made as required and site record forms written or updated and photographs were taken to record the topography and features of interest.

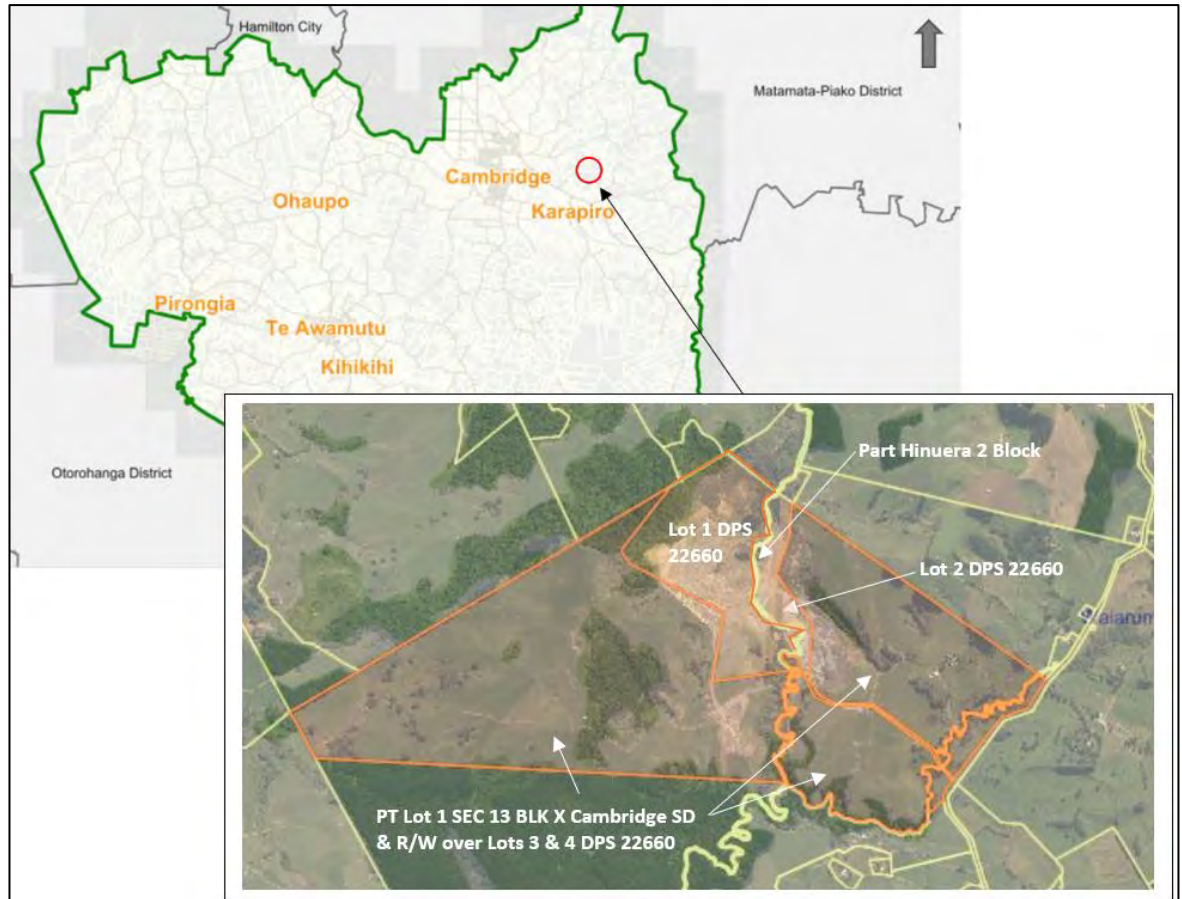


Figure 1. Upper map showing the location of Whitehall Quarry in a regional setting and lower aerial plan showing the property boundaries (outlined in orange) containing the proposed medium term quarry expansion and Stage 2 OBDA included in this assessment (source: Waipa District Council Intramaps)

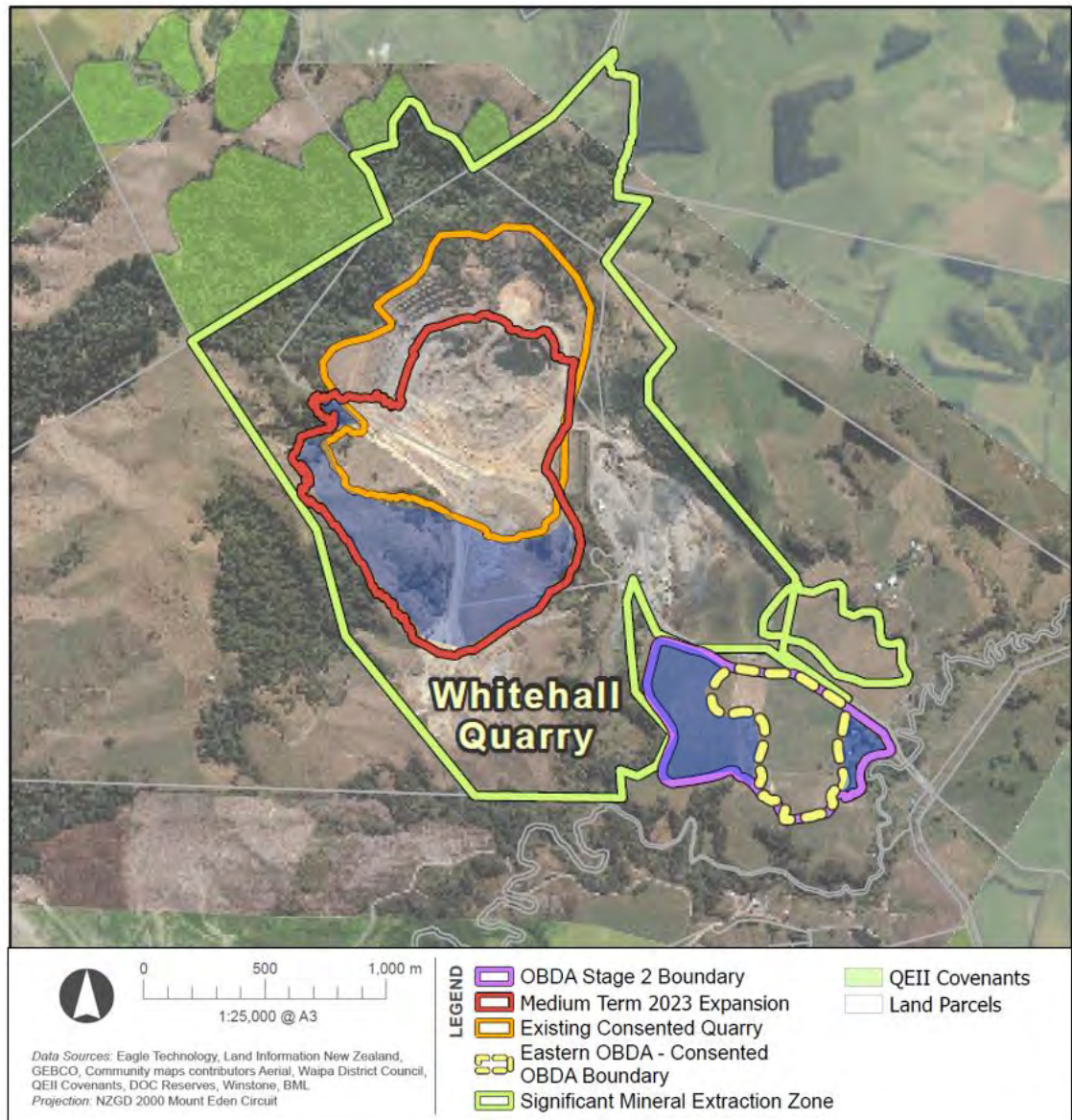


Figure 2. Aerial plan showing the proposed medium term quarry expansion and Stage 2 OBDA with areas covered in this assessment shaded blue (source: Boffa Miskell)

HISTORICAL BACKGROUND

Māori Settlement

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 (Te Ara Website). Hoturoa is said to have made his base at Kawhia and over the years the Tainui people expanded inland from there. This included movement into the Waikato and Māori 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 pā 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 Ōhaupō referred to as the battle of Hingakākā, which saw the defeat of Ngāti 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 Māori 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 Māori 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 Māori 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).

Early European Settlement

The military settlement at Cambridge was established in July 1864 and the site soon became the headquarters of the 3rd Waikato Regiment. Just after the outbreak of hostilities in the Waikato, the government had devised a scheme to form militia regiments that would provide a population base for military settlements in the Waikato once the government had taken control of the area (Allen 1969:33). The land for the settlements was to be confiscated from the Māori by the government and by mid-1864, military settlements were being planned at Cambridge, Alexandra (later renamed Pirongia), Kihikihi and Hamilton. The settlements were intended to prevent further unrest within the Māori population by establishing a larger European presence in the area and to guard from further attacks from the Kingites living to the south of the Pūniu River (Cowan 1955: 412). The soldiers were given one acre land grants within the town of Cambridge and also larger farm allotments in the surrounding area.

HISTORICAL SURVEY

Information from Early Maps and Plans

The land at Whitehall was not included in the military land grants at Cambridge. It instead had been leased from Wiremu Tāmeahana by William Thorne Buckland. Buckland, who was born in Devon, England around 1819 or 1820, had arrived in New Zealand from South Australia in 1841 and ran a butchery business in Auckland for several years before he turned to farming in the Waikato. He also served in public office as member of the New Zealand Parliament for Raglan (1865-1866) and for Franklin (1871-1875). Buckland died suddenly at the age of 56 in 1876. Along with the land containing the Whitehall Quarry, he had also held land leases at Karapiro, Fencourt and Tirau and the area was known collectively as ‘Buckland’s Run’, which is shown in the 1867 plan in Figure 3 (Cambridge Museum Website). After the government confiscation of Māori land, Buckland purchased land through the land courts. The early 1870s map in Figure 4 entitled ‘Plan of Farms at Taotaoroa’ includes the land containing the Whitehall Quarry and also has the following annotation, ‘Property of W.T. Buckland.’

Buckland was not the only Aucklanders who purchased land in the Cambridge area. As noted earlier, Whitehall was not granted to the soldier settlers, however, much of the surrounding land was. Unfortunately, for a number of reasons, including poor land quality and inexperience, many of the soldiers sold or abandoned their farms in the early days of the military settlement. To a number of Auckland businessmen, the large swathes of land now becoming available were seen as an opportunity to make a profit and they took advantage of the situation by buying up military farm allotments and the surrounding land to create large farming estates (Stone 2013). The Auckland Agricultural Company was formed in 1881 and held a large farming estate (Fencourt) to the Northeast of Cambridge which was soon expanded to include the land at Whitehall (Stone 2010; Cambridge Museum Website). The success of the companies who owned the large farming estates was short-lived and the Auckland Agricultural Company collapsed in 1887 with the landholdings purchased by the government in 1898 (Stone 2010). The government soon after took applications from settlers to be granted sections as Crown tenants with lease in perpetuity, with the land allotment chosen by ballot and the Whitehall settlement opened in 1900. There were only a handful settlers already living at Whitehall who had arrived there in the 1870s and their number was greatly increased with the opening of the settlement in 1900 with the currently proposed works being located in Section 13 which is shown on the plan in Figure 5. A slightly later plan dating from 1913 shows the subdivision of Section 13 into Lots 1 and 2 (Figure 6). The plan notes that it was prepared for ‘J. H. Cowling’, namely John Cowling, who was mentioned as an early landowner at the Whitehall Settlement in a 28 March 1935 Newspaper article titled ‘Half-Century of Taotaoroa History’ and printed in the *Waikato Independent*.

The plan from 1940 in Figure 7 shows land to be taken for a quarry site and the Whitehall Quarry began operations soon after, initially to provide aggregate for farming operations, but later expanded to provide aggregate for wider purposes, including the construction of the Karapiro Dam (Winstone Aggregates Website). The plan has descriptions of the terrain with the southern part, where the proposed Stage 2 OBDA is located, described as ‘undulating country in grass’ and the proposed medium term quarry expansion area as ‘Native Bush - Very steep slopes’.

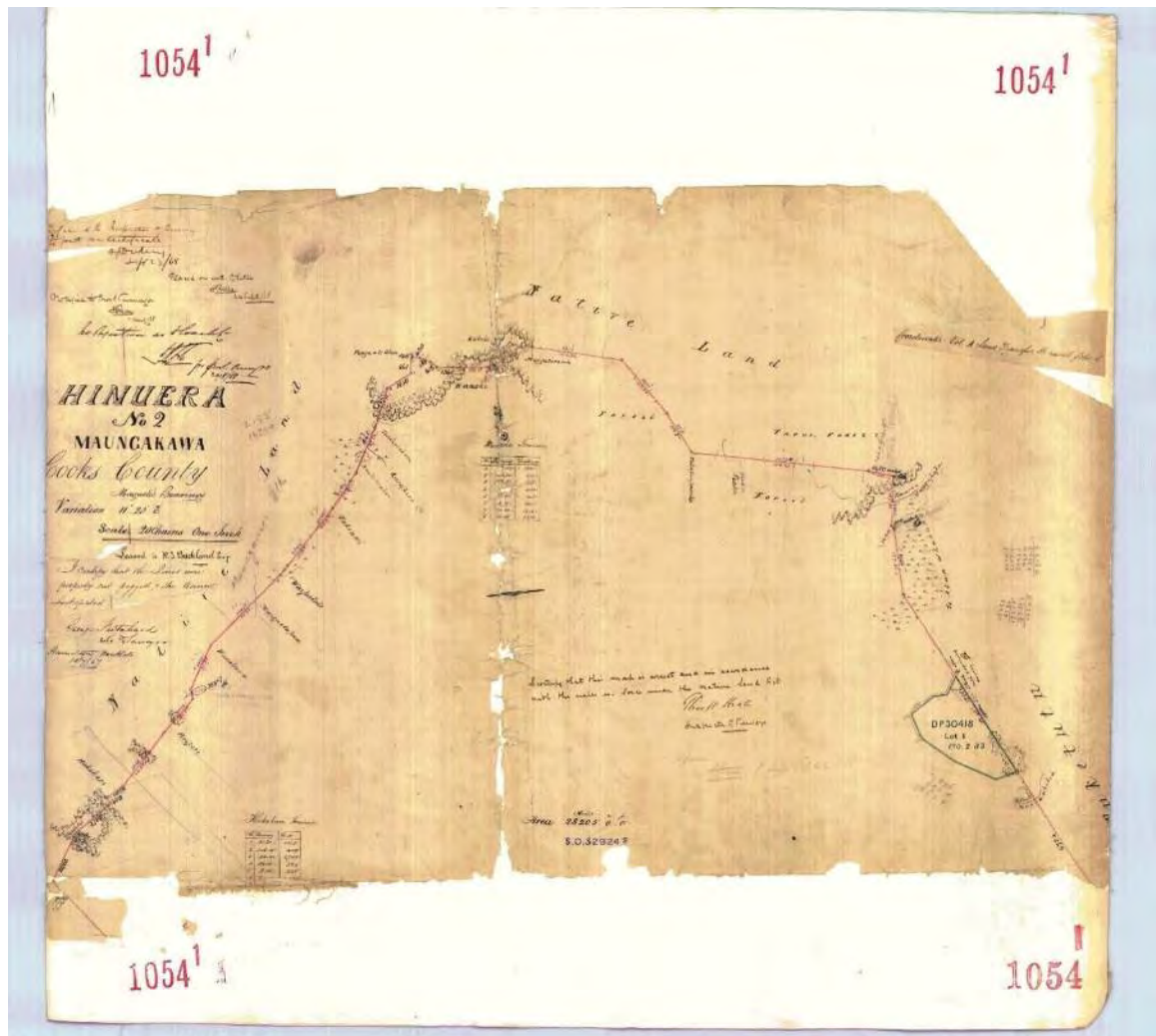


Figure 3. HNC ML 1054 I dated 1867, showing land leased to William Thorne Buckland (source: Quickmap)

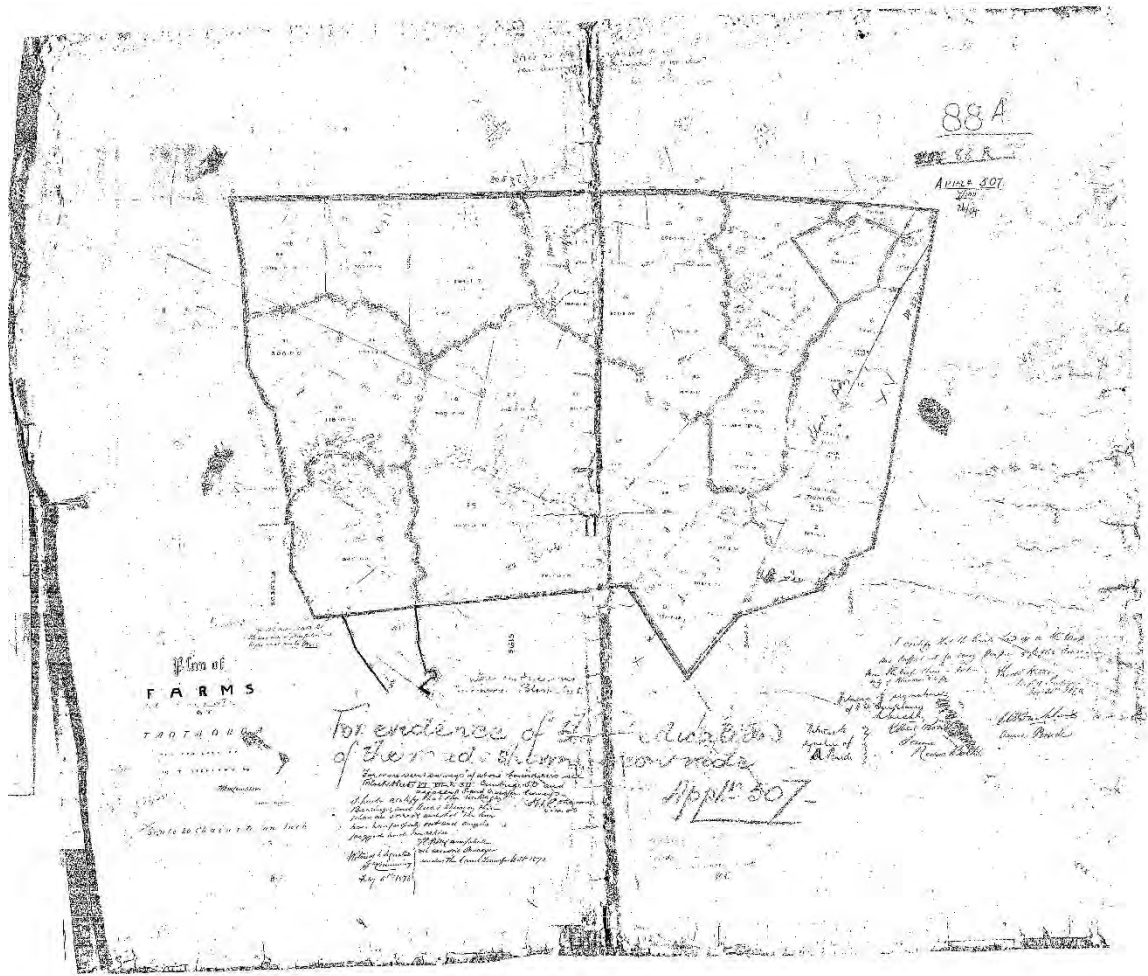


Figure 4. HN Deed 88 A I dated 1873, entitled 'Plan of Farms at Taotaoroa – The Property of W.T. Buckland Esq.' (source: Quickmap)



Figure 5. HNSO 11749 dated 1900, part of the plan of the Whitehall Settlement including Section 13, with area for the proposed medium term quarry expansion and Stage 2 OBDA circled in red (source: Auckland Libraries Heritage Collections NZ Map 4427)



Figure 6. HNC SO 17456 I dated 1913, showing the subdivision of Section 13 Block X Cambridge Survey District into Lots 1 and 2 with area for the proposed medium term quarry expansion and Stage 2 OBDA circled in red (source: Quickmap)



Figure 7. HN DP 31230 dated 1940, showing land to be taken for the proposed medium term quarry expansion described as ‘Native Bush’ and ‘Very steep slopes’ (circled in red) and the proposed Stage 2 OBDA described as ‘Undulating country in grass’ (circled in blue) (source: Quickmap)

ARCHAEOLOGICAL BACKGROUND

Recorded Sites

There are five recorded archaeological sites on the properties containing the Whitehall Quarry: T15/45, T15/341, T15/342, T15/344 and T15/374 (see Figure 8 for locations and Table 1 for a summary description of the sites). One of the sites will be affected by the proposed medium term quarry expansion covered in this assessment, T15/45. This site is a pit complex that was identified in 1977 through inspection of old aerial photographs. The site was first visited during the assessment for an earlier proposed expansion of the Whitehall Quarry in May 2019 (Cameron and Clough July 2019). It was located on a south-facing spur on a steep hillside and was found to contain four roughly rectangular-shaped pits, two near the back of the spur and two near the front. The NZAA Site record is appended to this report for reference.

T15/341, T15/342 and T15/344 were recorded in 2002 during an earlier assessment for expansion at the Whitehall Quarry. T15/341 is situated on a west-east running spur and was described as containing six well-defined pits along a flattened spur top, terraces, a possible house site and a number of indistinct depressions that may indicate the presence of subsurface features, possibly rua (NZAA Site Record). T15/342 was described as a pit terrace site with a number of terraces cut into the flanks of two east-west running spurs that overlook a small tributary of the Karapiro Stream (NZAA Site Record). T15/344 was described as consisting of four to five pits with four to five terraces cut into the southern face of a narrow ridge. (NZAA Site Record). T15/374 was recorded during the survey for an expansion of the Whitehall Quarry in July 2019. It consists of a series of nine roughly rectangular pits located on a high ridge. It should be noted that T15/46, which was tentatively identified as a pā from inspection of aerial photograph, was visited in 2013 and as a result of the inspection it is considered a natural landform and not archaeological in nature (NZAA Site Record).

Archaeological Landscape

Studies relating to the archaeological landscape of inland Waikato have been ongoing for many years, with attempts to understand the settlement location and chronology being one of the main research points. One of the earlier hypotheses, which used an environmental reconstructive model, predicted that the earliest sites would most likely have been located near lakes, such as Lake Mangakaware and Lake Ngaroto and the swampy surrounding land, rather than along rivers (Cassells 1972). Cassells also noted that pā away from the lakes were found in association with modified garden soils and in his opinion, these would have been the second most preferable settlement location (Cassells 1972). Although the connection Cassells made between pā and associated modified garden soils has been supported by data collected in more recent years, recent evidence would suggest that the earliest inland settlements were not in fact situated around these lakes, but instead focussed on the Waikato River. Much of the data that has been collected in favour of the Waikato River, as opposed to lakes, as early settlement sites has been gathered from radiocarbon dates obtained from material collected from Māori horticultural sites. Some of the earliest dates so far have come from sites near Leamington¹ and date to the mid-14th century (Gumbley and Laumea 2018:16). The preference for the Waikato River as an initial

¹ Sites S15/639, S15/641 and S15/757 (source: Gumbley and Laumea 2018).

settlement focus is supported by the abundance of resources it would have contained, the nearby associated soils that would have been suitable for horticultural uses and its role in transportation and communication links with the coastal communities. It should be noted that, although our knowledge has increased greatly over the years, there are still many unanswered questions surrounding the movements of people both geographically and over time through inland Waikato.

With respect to the archaeological sites recorded around the Whitehall Quarry, as can be seen in the map in Figure 8 these sites lie to the north and northeast of a large number of archaeological sites have been recorded to the along the Waikato River. The sites along the river represent a mixture of settlement sites (pā) and also sites associated with Māori horticulture. Many of the latter are borrow pits and many of these sites were recorded during a desk-based project aimed at identifying features associated with Māori horticultural activity (Gumbley and Hutchinson 2013). The land containing the Whitehall Quarry is situated c.3km to the north of the Waikato River in hilly country. However, there are several streams, including the Karapiro Stream and the Waiarumu Stream, running though the property and flat ridges and terraces are present, all of which would have provided a suitable environment for Māori settlement and horticulture. The proximity of these sites to the larger cluster described above makes them part of the overall archaeological landscape of the area.

As none of the archaeological sites at Whitehall Quarry have been previously investigated, the information they currently provide is limited to the fact that they show that the area was utilised by the Māori in the past, as pits, terraces and possible house platforms have been recorded. No dates have been established for the archaeological sites at Whitehall Quarry and their chronological relationship with the much more extensive gardening and occupation area along the Waikato River is yet to be established.

Table 1. Brief description of the recorded archaeological sites on the property containing the Whitehall Quarry*

NZAA #	Site Type	Description	NZTM Easting	NZTM Northing
T15/45	Pit/ Terrace	Pit complex identified from aerial photographs and not previously visited	1825082	5803304
T15/341	Pit/ Terrace	Six pits, six terraces and possible house floor and collapsed rua. Near a level stream terrace that may have been suitable for gardening.	1825298	5803068
T15/342	Pit/ Terrace	A number of terraces cut into the flanks of two parallel spurs above a stream terrace. Damage from stock.	1825374	5802907
T15/344	Pit/ Terrace	Series of terraces and pits damaged from insertion of a water pipeline.	1824942	5803102
T15/374	Pit/ Terrace	Nine roughly rectangular pits located on a high ridge.	1824908	5803604

*T15/46 formerly recorded as an archaeological site has been determined to be a natural feature.

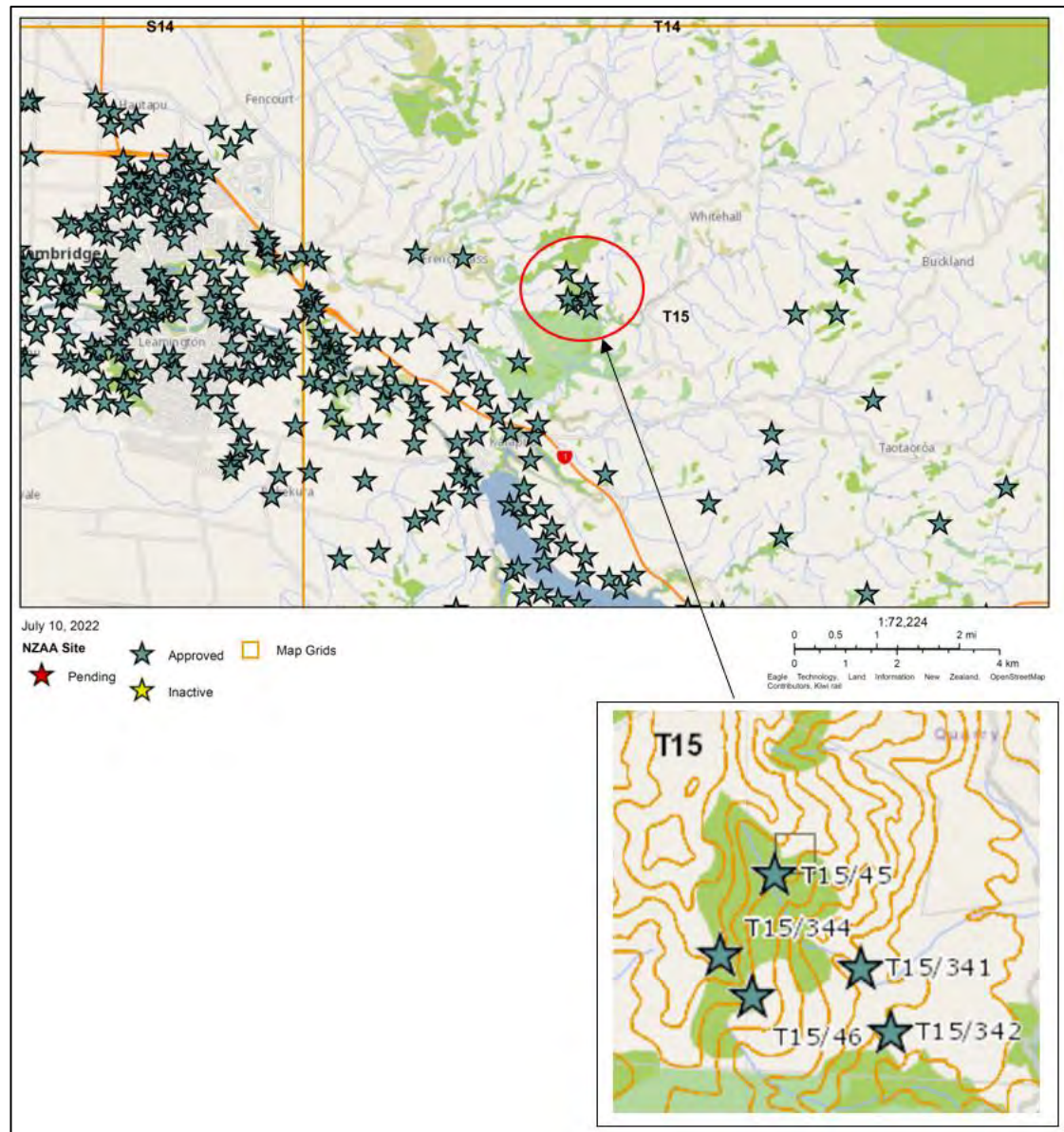


Figure 8. Upper map showing the distribution of archaeological sites in the general area around the Whitehall Quarry with sites on properties containing the proposed development works (circled in red); and lower inset showing the location of the sites in detail (source: NZAA ArchSite)

PHYSICAL ENVIRONMENT

Topography, Vegetation and Historical Modification

The area proposed for the medium term quarry expansion covered in this assessment is situated in steep hilly country ranging from c.250 to 110m asl as can be seen on the aerial plan with contours in Figure 9. The majority of the area has already been modified with the existing quarry making up the northern part of the proposed expansion area. It is also noted that the area to the east of the existing quarry road has also been modified through previous quarry associated activities, as can be seen in the aerial photographs also shown in Figure 9. The area to the west of the quarry road has not previously affected and is for the most part grass covered with some tree cover along the northern boundary and also some trees scattered along the eastern boundary along an existing quarry road. This area contains one recorded archaeological site, T15/45, which is situated on a knoll on a steep hillside.

The proposed Stage 2 OBDA covered in this assessment is located on the southern side of a road running in a north-westerly direction from Whitehall Road to the quarry. As can be seen in the aerial photograph with contours in Figure 10, most of the area is situated on relatively flat ground at c.80-85m asl and consists of planted out/grassed fields. There is also a hillock in the south, which rises up to 110m asl. The land extending from the hillock to the northeast is also more elevated than the rest of the proposed Stage 2 OBDA, lying at c.90m ASL. This area can be seen to contain some buildings and trees. The aerial photograph dated 1966 in Figure 11 shows that this area contained a house, several outbuilding and a small orchard at that time.

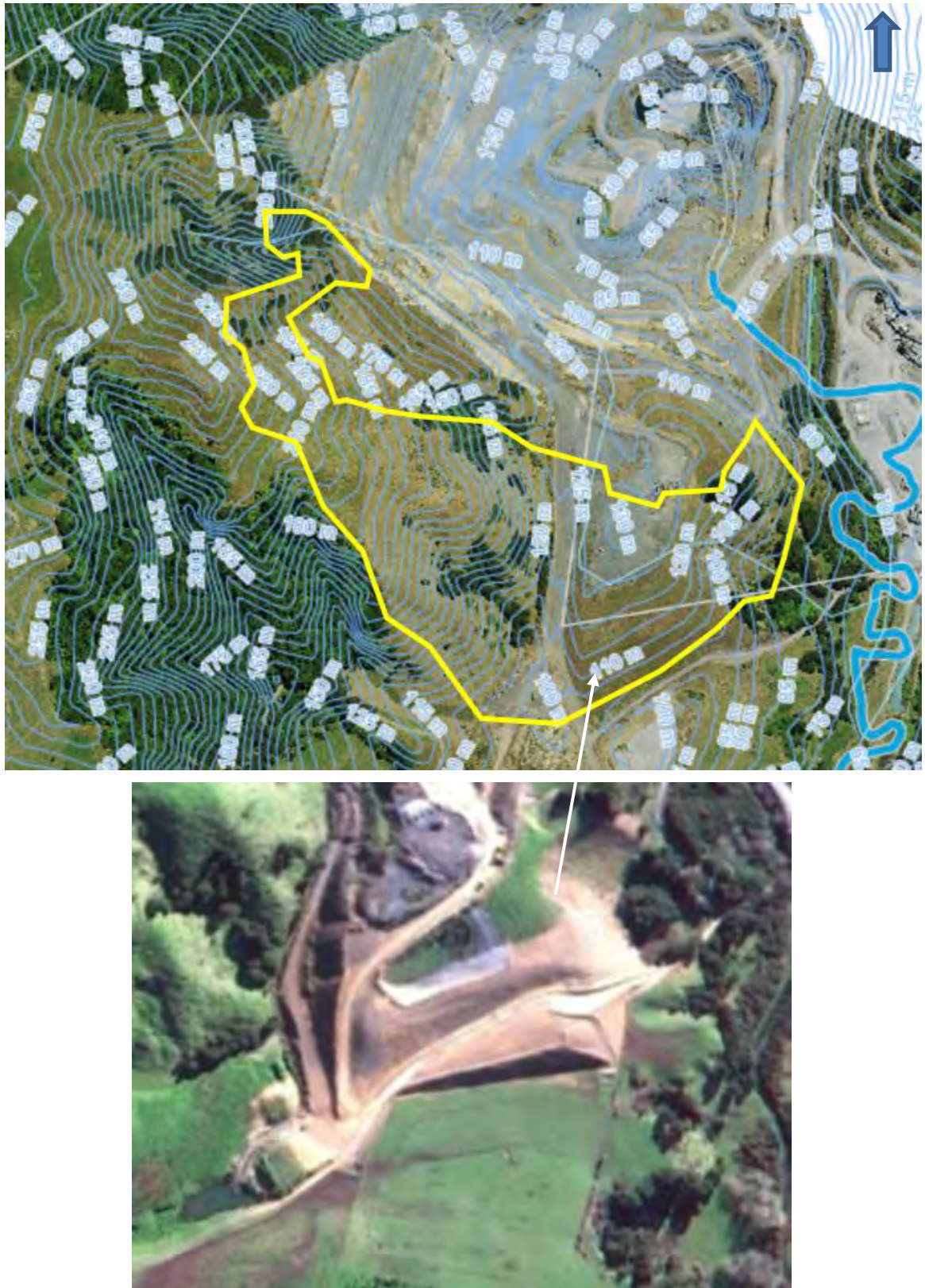


Figure 9. Upper aerial photograph from 2021 with contours showing the approximate area of the proposed medium term quarry expansion covered in this assessment outlined in yellow and lower aerial photograph (dated 2010) showing the modifications to the east of the quarry road (source: upper - Waipa District Intramaps, and lower – Google Earth)



Figure 10. Aerial photograph showing the area of the proposed Stage 2 OBDA covered in this assessment outlined in yellow (sourced from: <http://retrolens.nz> and licensed by LINZ CC-BY 3.0)



Figure 11. Aerial photograph dated 1966 (Crown 1558 3595 4) showing the proposed Stage 2 OBDA covered in this assessment outlined in yellow (sourced from: <http://retrolens.nz> and licensed by LINZ CC-BY 3.0)

FIELD ASSESSMENT

Field Survey Results

The currently proposed development is one in a series that have taken place at Whitehall Quarry and previous surveys have covered the areas included in the current assessment. These consist of a survey of the proposed quarry expansion area in May 2019 and survey of the proposed Stage 2 OBDA undertaken in June 2022.

May 2019 Survey

A site visit for a previous quarry expansion was undertaken on 27 May 2019 with the area included in the current assessment shown in Figure 12. During the survey the coordinates provided in the NZAA site record for archaeological site T15/45 were found to be in a steep-sided and wooded gully and were clearly incorrect. So instead, the area to the east, a location that fitted the written description in the site record, was walked over and visually scanned. Much of this area was located on steep-sided hill slopes, although some small, flat-topped spurs were also noted. One such spur was found to contain four roughly rectangular-shaped pits c.4m x 3m with two near the back end of the spur aligned north-south and two near the front edge of the spur oriented east-west. Probing in the pits identified a soft, easily penetrated soil down to c.80-85cm, where a hard layer was encountered. Again the ground surrounding the pits provided a uniform moderately compacted soil when probed. Based on the description of site T15/45 in the NZAA site record as being at the c.500ft (155m) contour and several hundred metres to the southwest of the quarry as it existed in 1966, this is considered to be site T15/45, with the adjusted coordinates being E1825306 N5803342 +/-6m (taken by handheld GPS). Photographs are provided in Figure 13 and Figure 14, and the site record form is appended to this report. No other archaeological features or deposits were identified during the survey.



Figure 12. Aerial plan showing the area surveyed for the proposed medium term quarry expansion outlined in yellow and location of site T15/45 indicated by blue star (source: Google Earth)



Figure 13. View of the two pits (indicated by arrows) near the end of the spur at archaeological site T15/45 (looking southeast)



Figure 14. View of the back part of the spur containing archaeological site T15/45 with the two pits in this area indicated by arrows (looking northwest)

June 2022 Survey

A survey of the part of the proposed Stage OBDA included in this assessment was undertaken on 20 June 2022. These areas included paddocks in the western side and also the area containing the house and orchard on the 1966 aerial photograph in Figure 11. The survey areas are shown in Figure 15 and results of the survey from both of these areas are presented below.



Figure 15. Aerial plan showing the proposed Stage 2 OBDA covered in this assessment indicated as Areas 1 and 2 (source: Google Earth)

Paddocks to the South of the Quarry Road (Area 1)

The land was observed to be divided into grassed paddocks with varying degrees of water saturation present and in general the ground was moist with sporadic areas of standing water. The entire area was walked over and intermittent probing was undertaken. The visual inspection did not identify any unusual features in the ground surface and probing indicated a generally uniform soil consistency with the probe being able to be extended fully into the soil. Photographs are shown in Figure 16 and Figure 17. Five test pits were also excavated in this area (Figure 18), four of which were distributed from north to south along the western side bordering the Karapiro Stream. The fifth test pit was located near the quarry road at coordinates E1826042 N5803078 ± 2 m. This test pit (TP1) showed a grass turf from 0-4cm below surface (bs) with yellowish brown silt, overlying a light yellowish brown to grey brown loosely packed silt from 4-31cm (bs). At 31cm (bs) a yellow/orange silty clay was encountered and the test pit was stopped. It was noted that the lower few centimetres of the test pit showed a mixing of the silt and clay layers.

The next test pit (TP2) was located at the northern part of this area at coordinates E1825878 N5803104 $\pm$ 2m. This test pit showed a thin grass turf layer from 0-2cm (bs) over a light yellowish brown silt from 2-18cm (bs) becoming mixed with a yellow/ orange silty clay from 18-20cm (bs) where a yellowish/ orange silty clay layer was encountered and the test pit was stopped. The third test pit in this area (TP3) was located in an area bordering the gully that was fenced off and the location was chosen as it was considered to be located in an area that would have been less disturbed than the main paddocks. The test pit was located at coordinates E1825843 N5803020 $\pm$ 2m. It showed a thin grass turf from 0-2cm (bs) over a yellowish brown slightly clayey silt from 2-18cm (bs) where a yellow/ orange silty clay layer was encountered and the test pit was stopped. The fourth test pit (TP4) was located further to the south. This test pit showed a grass turf from 0-4cm (bs) over a yellowish brown to pale greyish brown silt from 4-24cm (bs) becoming mixed with yellow/ orange silty clay with depth. At 24cm (bs) a yellow/ orange silty clay layer was encountered and the test pit was stopped. TP5 was the most southerly test pit undertaken in this area, it showed a grass turf from 0-2cm (bs) over a yellowish brown slightly clayey silt from 4-18cm (bs) where a yellow/ orange silty clay layer was encountered and the test pit was stopped. The survey in this area did not identify any archaeological features or deposits.



Figure 16. Photograph showing a general view of the February 2022 survey area for the proposed Stage 2 OBDA , looking west



Figure 17. Photograph showing an area of water saturation in the survey area, looking north

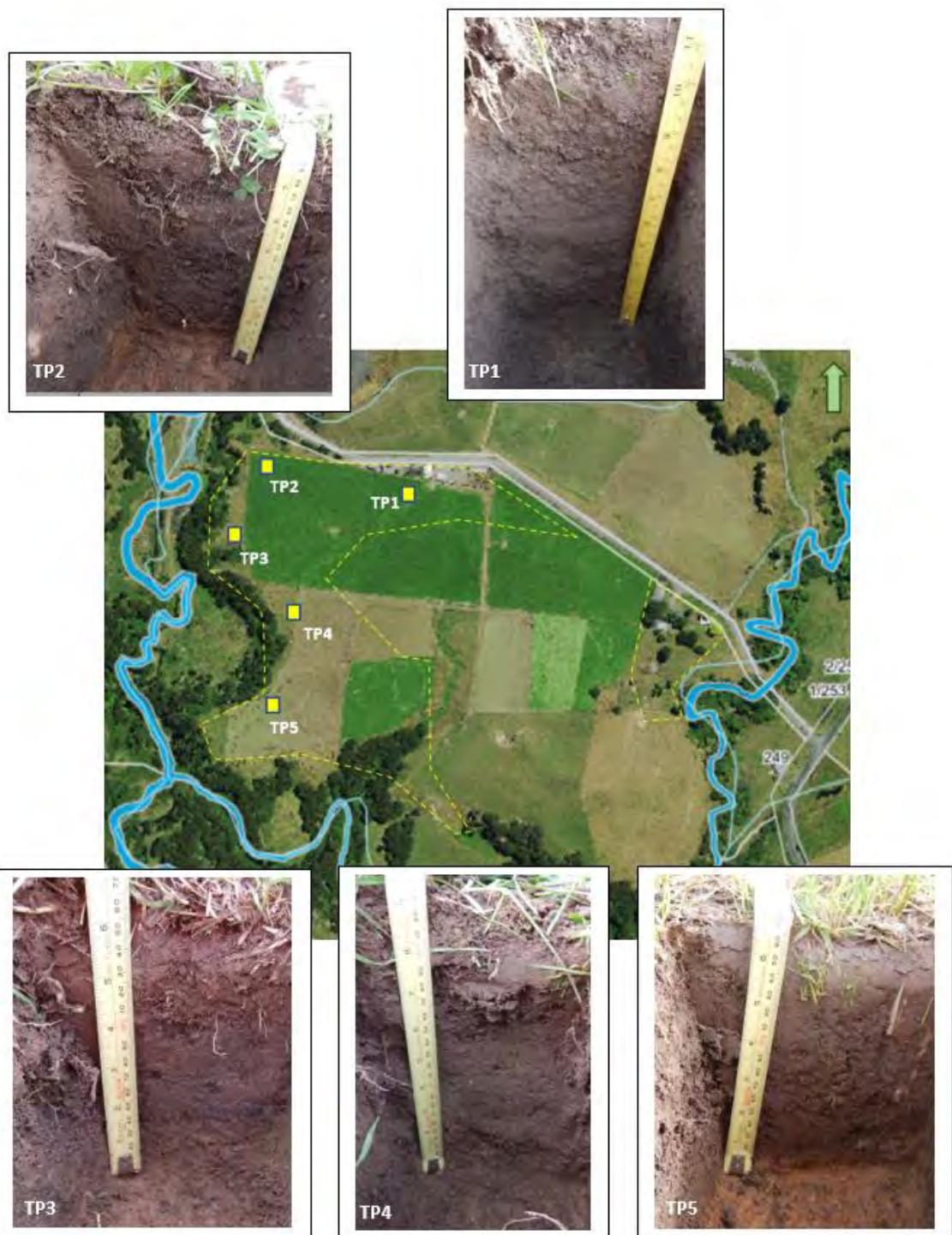


Figure 18. Aerial plan in centre with locations of test pits TP1 to TP5 with details of test pits in the insets (source: Waipa District Intramaps)

Location of House on 1966 Aerial Photograph (Area 2)

The site of the house and outbuildings that were visible on the 1966 aerial photograph (Figure 11) was visited next. The location of the former house was found to be on a northward-facing hillside that had been benched out part way down the slope for the house (Figure 19). Three corrugated iron structures were observed during the survey, two along the western side and one in the southern part, all of which were of modern construction (Figure 20).

The area to the south of the former house site contained the top of the hill and sloped down to the southwest to a relatively flat area. As noted earlier this area had formerly been planted out with trees, most of which had been removed although two orange trees were still noted to be present, indicating the former use as an orchard. The ground surface was noted to be uneven with numerous irregularly shaped depressions, which are considered most likely the result of the removal of the trees (Figure 21). The south-eastern part of this area bordering the Waiarumu Stream (Figure 22) was probed, but no evidence of any archaeological features or deposits were identified during the survey.



Figure 19. Photograph showing location of the former house, looking southeast



Figure 20. Photograph showing the corrugated iron shed, looking west



Figure 21. Photograph of the hillside to the south of the former house with irregular ground surface visible



Figure 22. Photograph showing the area to the south of the former house bordering the Waiarumu Stream, looking southwest

DISCUSSION AND CONCLUSIONS

Summary of Results

Five archaeological sites have been recorded on the properties containing the Whitehall Quarry and all of the sites reflect the use of the area by Māori in the past. One of the archaeological sites will be affected by the proposed quarry development. This is site T15/45 (pits) which is located within the proposed medium term quarry expansion area covered in this assessment. The other four sites – T15/341 (pits and terraces), T15/342 (pits and terraces), T15/344 (pits and terraces) and T15/374 (pits) – are not within the proposed works areas and will not be impacted by the proposed works. No evidence of archaeological features or deposits was identified during the background research and survey for this assessment in the proposed Stage 2 OBDA.

Māori Cultural Values

This is an assessment of effects on archaeological values and does not include an assessment of effects on Māori cultural values. Such assessments should only be made by the tangata whenua. Māori cultural concerns may encompass a wider range of values than those associated with archaeological sites. The historical association of the general area with the tangata whenua is evident from the recorded sites, traditional histories and known Māori place names.

Survey Limitations

It should be noted that archaeological survey techniques (based on visual inspection and minor sub-surface testing) cannot necessarily identify all sub-surface archaeological features or detect wahi tapu and other sites of traditional significance to Māori, especially where these have no physical remains.

Archaeological Value and Significance

The Waikato Regional Policy Statement (RPS) identifies several criteria for evaluating the significance of historic heritage places. In addition, Heritage NZ has provided guidelines setting out criteria that are specific to archaeological sites (condition, rarity, contextual value, information potential, amenity value and cultural associations) (Heritage NZ 2019: 9-10). Both sets of criteria have been used to evaluate the value and significance of archaeological site T15/45 in Table 2 and Table 3. Overall, the site is considered to have moderate archaeological/historic heritage value based on the criteria discussed. The site is not rare in the region but has moderate potential to add to existing information on Māori settlement and horticulture through radiocarbon dating of material recovered from within the pit features (if suitable material is present) and investigation of Māori horticultural activities through aspects such as structural form, drainage, capacity and also the type of plants that were stored in the pit. The site also has contextual value as part of a broader archaeological landscape.

If any additional unidentified subsurface archaeological sites are present they would also have archaeological value, although the level of significance would depend on the site type and its extent and condition.

Table 2. Assessment of the historic heritage values of site T15/45 based on the Waikato Regional Policy Statement criteria (Section 10A table 10.1)

Archaeological Qualities	
Information	The site includes at least four storage pits and investigation could add to our understanding of Māori settlement and horticultural activities in the area.
Research	Any intact features, including material suitable for radiocarbon dating could be used to provide information on patterns of past Māori settlement in inland Waikato.
Recognition or Protection	The site is recorded in the NZAA Site Recording Scheme and is a protected archaeological site as defined in the HNZPT Act 2014.
Architectural Qualities: Not applicable to this site.	
Cultural Qualities	
Sentiment	The site is not currently important as a focus of spiritual, political, national or other cultural sentiment. Cultural value to Māori should be determined by tangata whenua.
Identity	The site is not currently a context for community identity or sense of place and does not provide evidence of cultural or historical continuity.
Amenity or Education	Limited, as the site is located on private land.
Historic Qualities	
Associative Value	The site does not have any known direct association with, or relationship to, a person, group, institution, event or activity that is of historical significance to Waikato or the nation.
Historical Pattern	Intact archaeological features and datable material could be used to provide information on patterns of Māori settlement in the area.
Scientific Qualities	
Information	The site does not have any particular potential to contribute information about an historic figure, event, phase or activity.
Potential Scientific Research	The research potential of the site is of an archaeological nature and is addressed under the first heading.
Technological Qualities	
Technical Achievement	There is no evidence that the site shows a high degree of creative or technical achievement or is associated with scientific or technical innovations or achievements.

Table 3. Assessment of the archaeological values of site T15/45 based on Heritage NZ criteria (Heritage NZ 2019: 9-10)

Value	Assessment
Condition	The site is in fair condition and can be identified through surface evidence. The condition of subsurface features is not known.
Rarity	It is not a rare site type.
Contextual value	The site is part of an archaeological landscape of Māori settlement and horticultural activities along the Waikato River and further inland. Its contextual value lies in its contribution to the wider archaeological landscape of the area.
Information potential	This depends on both the ability of a site to provide information relating to the history of New Zealand through archaeological investigation, and on the research questions to which it could contribute. The site has some information potential as it could provide information on Māori settlement patterns in inland Waikato.
Amenity value	The site is located on private land and has limited amenity value.
Cultural associations	The site has Māori cultural associations. Their cultural significance is for tangata whenua to determine.
Other	No other values were identified.

Effects of the Proposal

Five archaeological sites have been recorded on the properties containing the Whitehall Quarry. Four of the sites are outside of the proposed area of works and will not be impacted by the proposed works. The proposed activity will affect one recorded archaeological site, T15/45, as it is located within the proposed medium term quarry expansion area. Impacts on archaeological sites should be avoided wherever possible, and consideration could be given to complete or partial avoidance of this area. However, based on the location of the site in the middle of the expansion area, it appears unlikely that the site can be avoided. If so, the quarrying works will require removal of all material overlying the rock to be quarried which would destroy any archaeological remains present. As such it is recommended that topsoil stripping on the knoll where the archaeological site is located takes place under archaeological supervision, as shown in Figure 23, and that any archaeological features identified are investigated, recorded and sampled according to professional archaeological standards to recover information relating to the history of the area. An Authority will be required under the HNZPTA before the site can be modified (see below).

The overall effects on archaeological values are considered to be minor as site T15/45 has been evaluated as having no more than moderate archaeological value and it is considered likely that any unrecorded subsurface remains encountered during the works would be of a similar nature. As well, the four other archaeological sites recorded in the area will not be affected by the proposed works. Site T15/45 makes only a small contribution to the broader archaeological landscape and the effects on this landscape would therefore also be minor.

It is noted that a house was identified on a 1966 aerial photograph, but based on the research for this assessment no evidence of a pre-1900 use of the property for a homestead was identified. As the property was included in the 1900 survey of the Whitehall Estate (Section 13) and subdivided in 1913, it is considered that the use of the homestead would be from the early decades of the 20th century.



Figure 23. Aerial plan with contours showing the proposed medium term quarry expansion covered in this assessment outlined in yellow and the area to be monitored by an archaeologist during topsoil stripping outlined in red (source: Waipa District Intramaps)

Resource Management Act 1991 Requirements

Section 6 of the RMA recognises as matters of national importance: ‘the relationship of Māori 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’. There is a duty to avoid, remedy, or mitigate any adverse effects on the environment arising from an activity (S17), including historic heritage.

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 Māori, 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 Waipa District Plan is relevant to the proposed activity.

This assessment has established that the proposed activity will affect archaeological site T15/45. This site is included in Appendix N3 in the Waipa District Plan which states that all archaeological sites both recorded and unrecorded are protected under the HNZPTA. Although it is considered unlikely, the possibility that additional unidentified subsurface archaeological remains may be exposed during the works cannot be completely discounted. Any unavoidable effects on archaeological deposits or features can be appropriately mitigated through archaeological investigation and recording to recover information relating to the history of Māori settlement in the inland Waikato.

If resource consent is granted, it is recommended that an advice note regarding the provisions of the HNZPTA is included, as an Authority under that Act will be required for any modification and investigation of archaeological remains relating to T15/45.

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)²

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 Māori 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 Māori 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.

If effects on site T15/45 cannot be avoided, an Authority must be obtained from Heritage NZ before any work can be carried out that may affect the site. The conditions of the authority are likely to include the archaeological recording/investigation of any remains

² 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.

affected. As the possibility of additional subsurface remains cannot be completely discounted, it is recommended that the authority cover all works areas for the project.

Conclusions

Five archaeological sites have been previously recorded on the properties containing the Whitehall Quarry. Although the likelihood of additional subsurface remains being present is considered low, the possibility cannot be completely discounted. The currently proposed development will impact on one recorded archaeological site, T15/45 and based on its location in the centre of the proposed medium term quarry expansion area it is considered unlikely that it can be avoided. Any works that are likely to result in modification of an archaeological site require an archaeological Authority under the HNZPTA, which must be granted prior to the start of works.

Overall, it is considered that any adverse effects on archaeology resulting from the proposed medium term quarry expansion and Stage 2 OBDA covered in this assessment are likely to be minor, due to the nature of the archaeological site that would be affected. It is considered that if additional subsurface archaeological remains are identified during development, they are unlikely to be extensive or of high archaeological significance. The adverse effects on archaeology could be appropriately mitigated through the recovery of archaeological information, potentially including material suitable for radiocarbon dating, relating to Māori settlement in the inland Waikato region.

RECOMMENDATIONS

- Consideration should be given to avoiding impacts on the recorded site T15/45 in the proposed quarry expansion area.
- If site T15/45 cannot be avoided, an Authority must be applied for under Section 44(a) of the HNZPTA and granted by Heritage NZ prior to the start of any works that will affect the site. (*Note that this is a legal requirement*).
- Because it is possible that additional unrecorded sites may be exposed during earthworks, the Authority application should include any additional sites that may be discovered when works are under way.
- The affected archaeological site(s) should be investigated and recorded in accordance with the conditions of an Authority issued by Heritage NZ to recover information relating to the history of the area.
- Earthworks in the vicinity of T15/45 (i.e. on the knoll containing the site, as shown in Figure 23) should be monitored by an archaeologist to establish whether any additional unrecorded subsurface remains are present.
- In the event of koiwi tangata (human remains) being uncovered, work should cease immediately in the vicinity of the remains and tangata whenua, Heritage NZ, the NZ Police and Council should be contacted so that appropriate arrangements can be made.
- As the affected site relates to Māori settlement, the tangata whenua should be consulted regarding the cultural effects of the proposal (this will be required as part of the authority application and is likely to be required for resource consent purposes).

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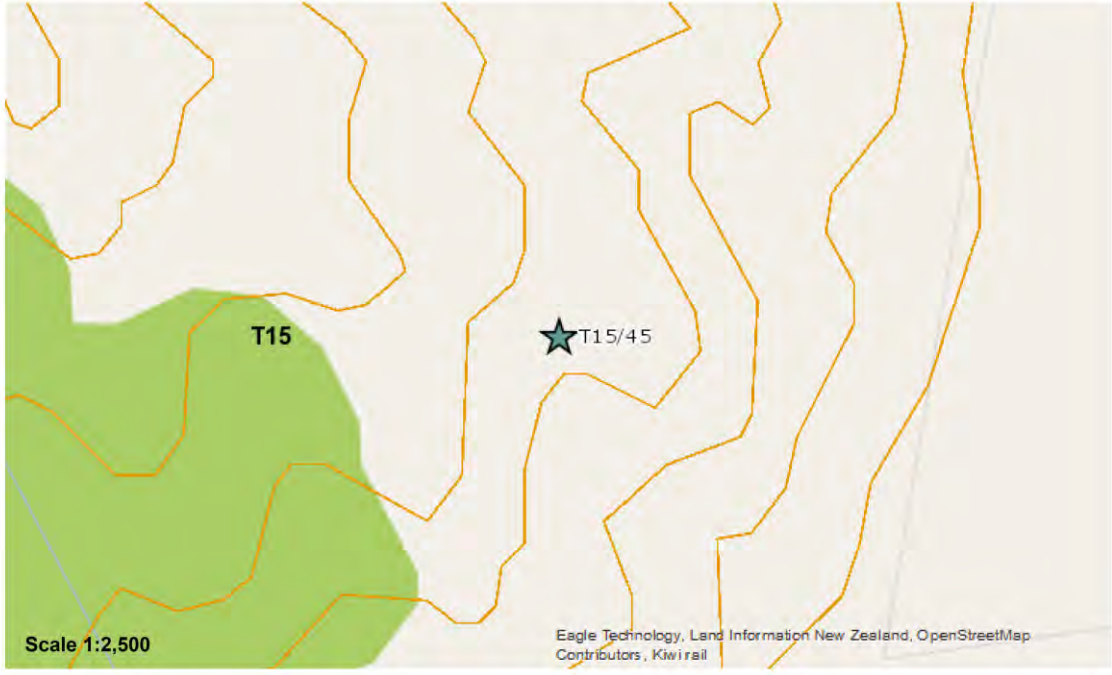
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Waikato Independent 28 March 1935

APPENDIX A: SITE RECORD FORMS

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 ARCH SITE archaeological site recording scheme		Site Record Form	
		NZAA SITE NUMBER: T15/45 SITE TYPE: Pit/Terrace SITE NAME(s): DATE RECORDED:	
SITE COORDINATES (NZTM) Easting: 1825306		Northing: 5803342	
		Source: Handheld GPS	
IMPERIAL SITE NUMBER: N66/66		METRIC SITE NUMBER: T15/45	
			
Finding aids to the location of the site the site is located on a spur that drops down steeply to the southeast approximately 120m to the east of a woodland area.			
Brief description Four roughly rectangular pits on spur (c. 3-4 m and 80-85cm depth), two near the back of the spur (oriented north-south) and two near the slope of the front (southeastern edge) oriented east west.			
Recorded features Pit			
Other sites associated with this site			

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1 of 5

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: T15/45
Site description Updated 19/07/2019 (Field visit), submitted by ellencameron , visited 27/06/2019 by Cameron Ellen; Harding Leah Grid reference (E1825306 / N5803342) The site is situated on a slightly southeasterly sloping grassed spur of land located on a hill side running down to a lower lying area that has been impacted by quarrying activities over many decades. Four roughly rectangular pits were identified on the spur (c. 3-4 m and 80-85cm depth), two near the back of the spur (oriented north-south) and two near the slope of the front (southeastern edge) oriented east west. Condition of the site Updated 19/07/2019 (Field visit), submitted by ellencameron , visited 27/06/2019 by Cameron Ellen; Harding Leah The site has some damage from stock movements. Updated 19/07/2019 (Field visit), submitted by ellencameron , visited 27/06/2019 by Cameron Ellen; Harding Leah The site has some damage from stock movements. Statement of condition Updated: 14/11/2019, Visited: 27/06/2019 - Fair - Some intact features, but others may be unclear or damaged Current land use: Updated: 14/11/2019, Visited: 27/06/2019 - Grazing Threats: Updated: 14/11/2019, Visited: 27/06/2019 - Quarrying	

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07/07/2022

2 of 5

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD INVENTORY	NZAA SITE NUMBER: T15/45
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Supporting documentation held in ArchSite

photograph of the two pits near the back of T15/45



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3 of 5

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

AM AW -- AD AA EA

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE RECORD FORM		SITE NUMBER N66/66
Map number N66	Map name Matamata	SITE NAME: MAORI OTHER
Map edition NZMSI 4th ed 1971	Grid Reference 058346	SITE TYPE pit complex
1. Aids to relocation of site E305800 N534600 Between French Pass Road and Karapiro/Whitehall Roads at approximately 500' contour several hundred metres south west of the quarry		
2. State of site; possibility of damage or destruction Good state of preservation		
3. Description of site (NOTE: This section is to be completed ONLY if no separate Site Description Form is to be prepared.) Pit complex located using aerial photographs - ground inspection to follow presently.		
4. Owner to be ascertained Address		Tenant/Manager Address
Attitude		Attitude
5. Methods and equipment used Photographs taken: Yes/No (Describe on Photograph Record Form) Date recorded 11/1/77		
6. Aerial photograph or mosaic No. 3595/3 & 4		Site shows: Clearly ~~not~~ not ~~not~~ not
7. Reported by Address S. C. EDSON WAIKATO ART MUSEUM BOX 937 HAMILTON Date 11/1/77		Filekeeper S. C. EDSON WAIKATO ART MUSEUM BOX 937 HAMILTON Date 11/1/77

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4 of 5

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

View of pits near front of spur at T15/45 taken by Ellen Cameron for the Whitehall Quarry Expansion Archaeological Assessment



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5 of 5