

# Sunshine Bay to Mt Crichton Cycle Trail, Lake Wakatipu

Heritage and Archaeological Assessment  
September 2023



# Heritage and Archaeology Assessment for Sunshine Bay to Mt Crichton Cycle Trail

Archaeological Sites: E41/313, E41/314

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Commissioned by the Queenstown Trails Trust

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Prepared by Jaime Grant

Reviewed by Russell Cook

Origin Consultants Ltd

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12 September 2023

Cover Image: SO1106, survey plan of  
north shore of Lake Wakatipu, date  
unknown.

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## Introduction

This heritage and archaeology assessment has been prepared for the Queenstown Trails Trust as part of the proposed plan to construct a new section of trail along the Glenorchy-Queenstown Road. The newly proposed section will extend from Queenstown and join up with the existing 7 Mile trail.

Historically, the bank of the Wakatipu and its tributary creeks were the site of various goldmining operations. These ranged from individuals using gold pans and cradles in the 1860s, to ground sluicing operations in the later 19<sup>th</sup> century, to the large-scale dredging ventures in the late 19<sup>th</sup> and early 20<sup>th</sup> century. This history of goldmining has left a variety of archaeological sites along the banks of the lake and further into the interior. A site survey has determined that the proposed trail will affect and pass close to a number of these archaeological sites as well as several post 1900 finds, including the possible remains of electrical infrastructure predating the completion of the Glenorchy-Queenstown Road.

The legal descriptions of the affected and potentially affected land parcels are:

- Part Res B Block I Mid Wakatipu SD
- Section 4 SO 434205
- Lot 2 DP 27509
- Lot 1-2 DP 573743
- Section 12 SO 477625
- Part Section 39 Block IV Mid Wakatipu SD

The purpose of this assessment is:

- to identify the history and nature of any heritage or archaeological features that may be affected by the proposed excavations.
- to provide appropriate recommendations for the mitigation and management of any potential damage to these features.
- To provide information supporting a concession under the Conservation Act 1987.
- To provide information supporting an application for an Archaeological Authority under the Heritage New Zealand Pouhere Taonga Act 2014.

The author of this report is Jaime Grant, Archaeologist at Origin Consultants Ltd and a member of the New Zealand Archaeological Association.



Figure 1. Map Showing the location of the proposed trail in relation to Queenstown.

## Statutory Framework

There are two main pieces of legislation in New Zealand that control work affecting archaeological sites. These are the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014) and the Resource Management Act 1991 (RMA 1991). Heritage New Zealand Pouhere Taonga (HNZPT) administers the HNZPTA 2014.

### Historic Heritage/Resources

#### HNZPTA 2014

HNZPT also maintains the New Zealand Heritage List Rārangi Kōrero of Historic Places, Historic Areas, Wāhi Tapu, Wāhi Tapu Areas, and Wāhi Tūpuna. The List can include archaeological sites. The purpose of the List is to inform members of the public about such places and to assist with their protection under the RMA 1991.

#### RMA 1991

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

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

'Historic heritage' includes:

- historic sites, structures, places, and areas;
- archaeological sites;
- sites of significance to Māori, including Wāhi Tapu, Wāhi Tapu Areas, and Wāhi Tūpuna; and
- surroundings associated with the natural and physical resources.

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

Where resource consent is required for any activity, the assessment of effects is required to address cultural and historic heritage matters (Schedule 4, RMA 1991 and District Plan assessment criteria).

#### Conservation Act 1987

The Conservation Act 1987 established the Department of Conservation (DOC). The purpose of the act is to promote the conservation of New Zealand's natural and historic resources. Conservation of these resources includes the preservation and protection of their intrinsic values, the facilitation of their appreciation and enjoyment by the public, and their safeguarding for the future. Historic resources as defined by the Act include places that form part of the historical and cultural heritage of New Zealand and include:

- land and landscapes;
- archaeological sites; and
- buildings and structures.

DOC is responsible for managing these resources within conservation areas.

Activities within a conservation area normally require a concession from DOC (Part 3A). In considering a concession application, amongst other things, DOC will have regard to the effects of the proposed activity on historic resources and whether the activity is consistent with relevant management strategies or plans. Conditions can be imposed on concessions to ensure historic resources are appropriately conserved.

## Archaeological Sites

The HNZPTA 2014 contains a consent process for any work affecting archaeological sites (archaeological authority). An archaeological site is defined as:

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

Any person who intends to carry out work that may damage, modify or destroy an archaeological site, or to investigate a site using invasive archaeological techniques, must first obtain an archaeological authority from HNZPT. The process applies to sites on land of all tenure including public, private, and designated land. The HNZPTA 2014 contains penalties for unauthorised site damage or destruction.

The archaeological authority process applies to all sites that fit the HNZPTA 2014 definition, regardless of whether:

- the site is recorded in the NZ Archaeological Association Site Recording Scheme or registered by HNZPT;
- the site only becomes known about as a result of ground disturbance; and/ or
- the activity is permitted under a district or regional plan, or a resource or building consent has been granted.

Once an authority has been granted, modification of an archaeological site is only allowed following the expiration of the appeals period, or after the Environment Court determines any appeals. Any directly affected party has the right to appeal the Environment Court's decision within 15 working days of receiving notice of the decision.

HNZPT may impose conditions on the authority that must be adhered to by the authority holder. However, provision also exists for a review of the conditions. The authority remains current for a period of up to 35 years, as specified in the authority. If no period is specified in the authority, it remains current for a period of five years from the commencement date.

The authority is tied to the land for which it applies, regardless of changes in the ownership of the land. Prior to any changes of ownership, the landowner must give notice to HNZPT and advise the succeeding landowner of the authority, its conditions, and terms of consent.

## Methodology

An archaeological assessment is required to accompany an application for an archaeological authority, as stipulated in the HNZPTA 2014. The archaeological assessment for the Sunshine-Crichton Trail was carried out using desk-top research methods and included a site visit to assess any current site features.

The desk-top assessment consulted several historic sources to try to establish and clarify the historical development and chronology of the site. These included:

- Online and physical archives, including PapersPast and reports held by Heritage New Zealand.
- NZAA site records (via ArchSite), to identify the details of any previously recorded archaeological sites in the vicinity.
- Historic survey plans (via Premise) and historic aerial photographs (via Retrolens); and
- Modern aerial photographs (via Google Maps, Google Earth and LINZ Data Service).

A first site visit was undertaken to make a visual assessment of the proposed alignment and identify the presence and location of any heritage and archaeological sites within or close to the project area. This visual assessment was supported by digital photographs that recorded features of the site. The site visit was completed on 1 March 2023 by Jaime Grant of Origin Consultants.

A second site visit is to be undertaken with the Department of Conservation upon the completion of this draft to determine the alignment in relation to the identified features and to discuss methods of avoidance and mitigation.

### Constraints and Limitations

The key constraints and limitations on the archaeological assessment for the Sunshine-Crichton Trail are considered to be as follows:

- Reasonable time and budget constraints meant that the assessment only involved desk-based research and a visual inspection of the site. No targeted intrusive investigations like test pitting were able to be undertaken.
- The significant degree of dense vegetation in the area made it challenging to identify potential archaeological features and/or establish the extent of archaeological sites.
- The rough terrain made it difficult to access sections of the trail.
- No images have been able to be located that clearly show the site prior to the late twentieth century.
- The scope of the history was limited by reasonable time and budget constraints.

## Physical Environment or Setting

The proposed trail will be located along the northern shore of Lake Wakatipu, built in three sections. The first section begins just south of Sunshine Bay, approximately 3.4km southwest of central Queenstown and runs between the lakeshore and Glenorchy-Queenstown Road ending at the Seven Mile Recreation Reserve, just west of the intersection of Glenorchy-Queenstown Road and Moke Lake Road (right portion, Figure 2). The trail will then utilize an existing portion of the Seven Mile Point Track with the second proposed new section consisting of a bypass built near the shore of the headland (centre, Figure 2). The third portion will begin at the Seven Mile Scenic Reserve Mountain Bike Track and will again run south of and parallel to Glenorchy-Queenstown Road before ending at Mt Crichton Loop Track carpark (left, Figure 2). The land all three sections will be built on consists of heavily forested and uneven terrain which slopes downward from Glenorchy-Queenstown Road towards the lakeshore.

The trail passes through three property parcel types. Most of the alignment runs through Public Conservation Land managed by the Department of Conservation (DOC) (Figure 4, Figure 5, Figure 6). Some portions of the alignment also run through land managed by QLDC with a small portion running through private property (Figure 4).

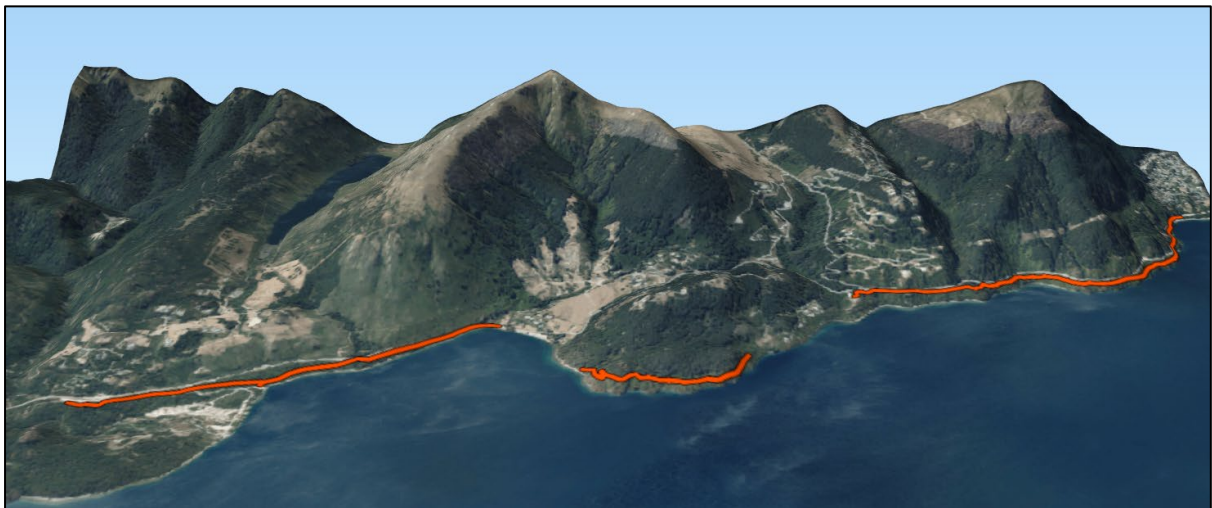


Figure 2. 3D topographic map showing the location of the trail in relation to the geographic features of the surrounding area.





Figure 3 Heavy vegetation along trail rout.

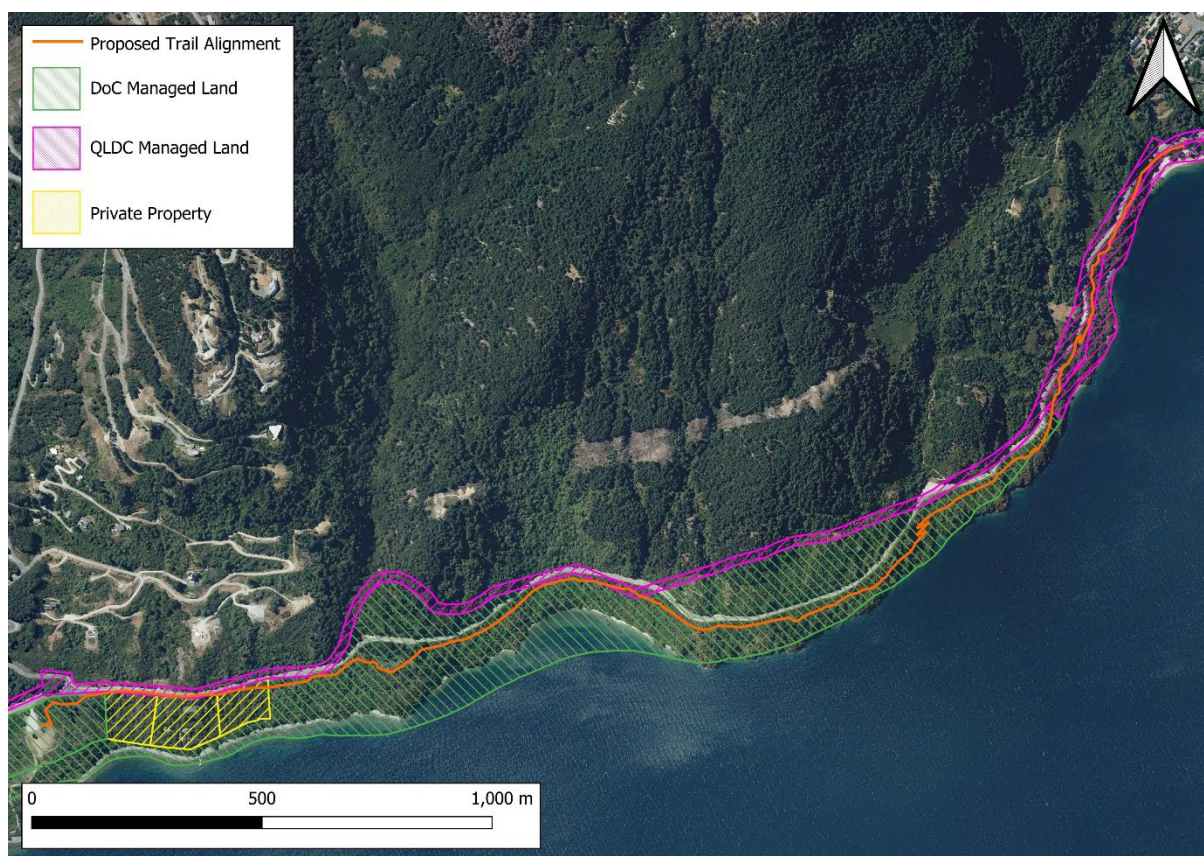


Figure 4 Map showing trail from Sunshine to Seven Mile Point Track.



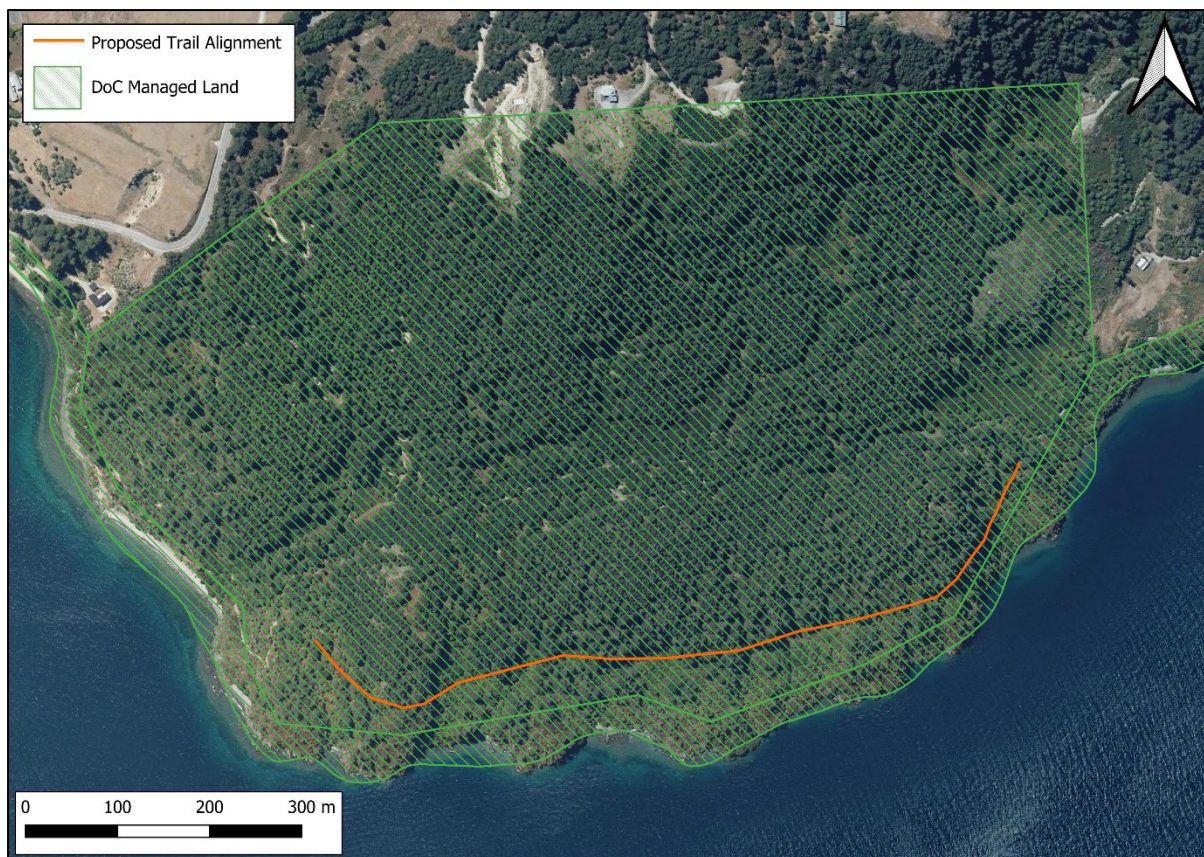


Figure 5 Trail alignment around headland to Wilson Bay.

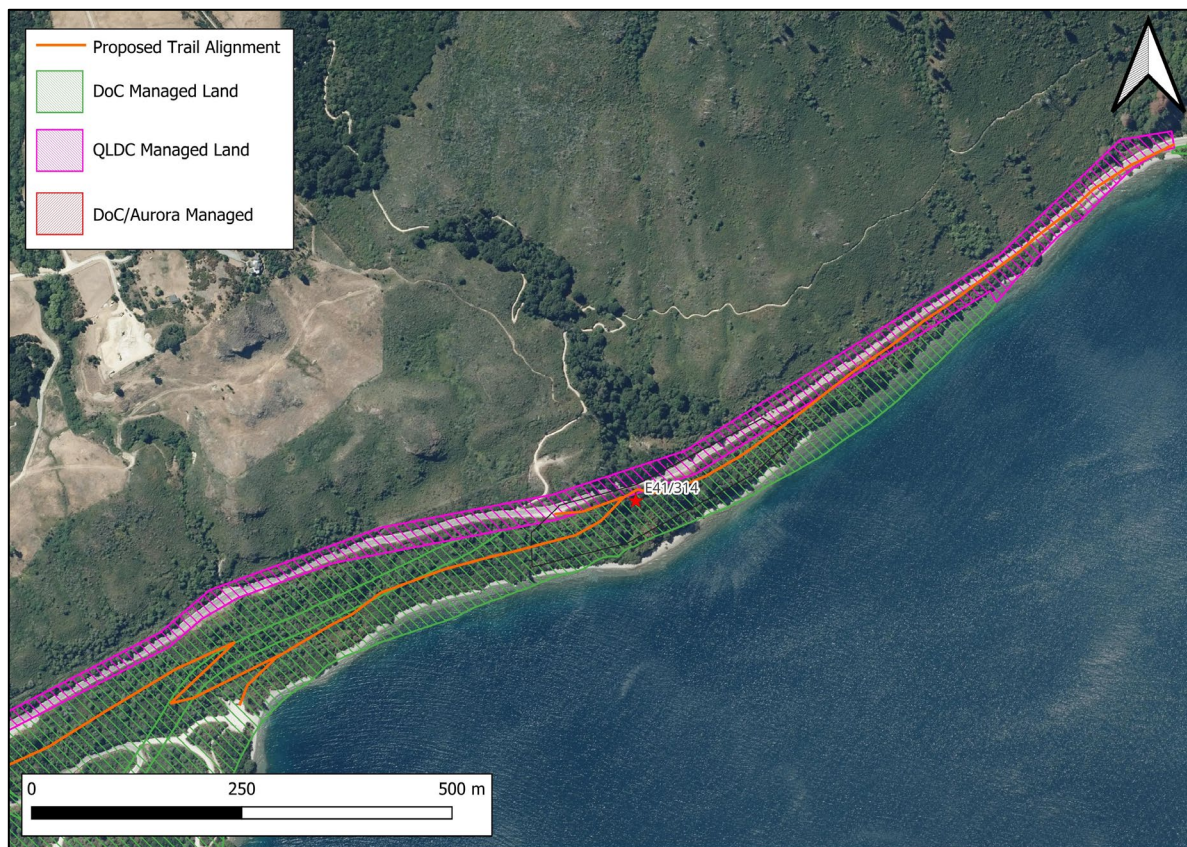




Figure 6 Trail alignment, east end of Wilson Bay.

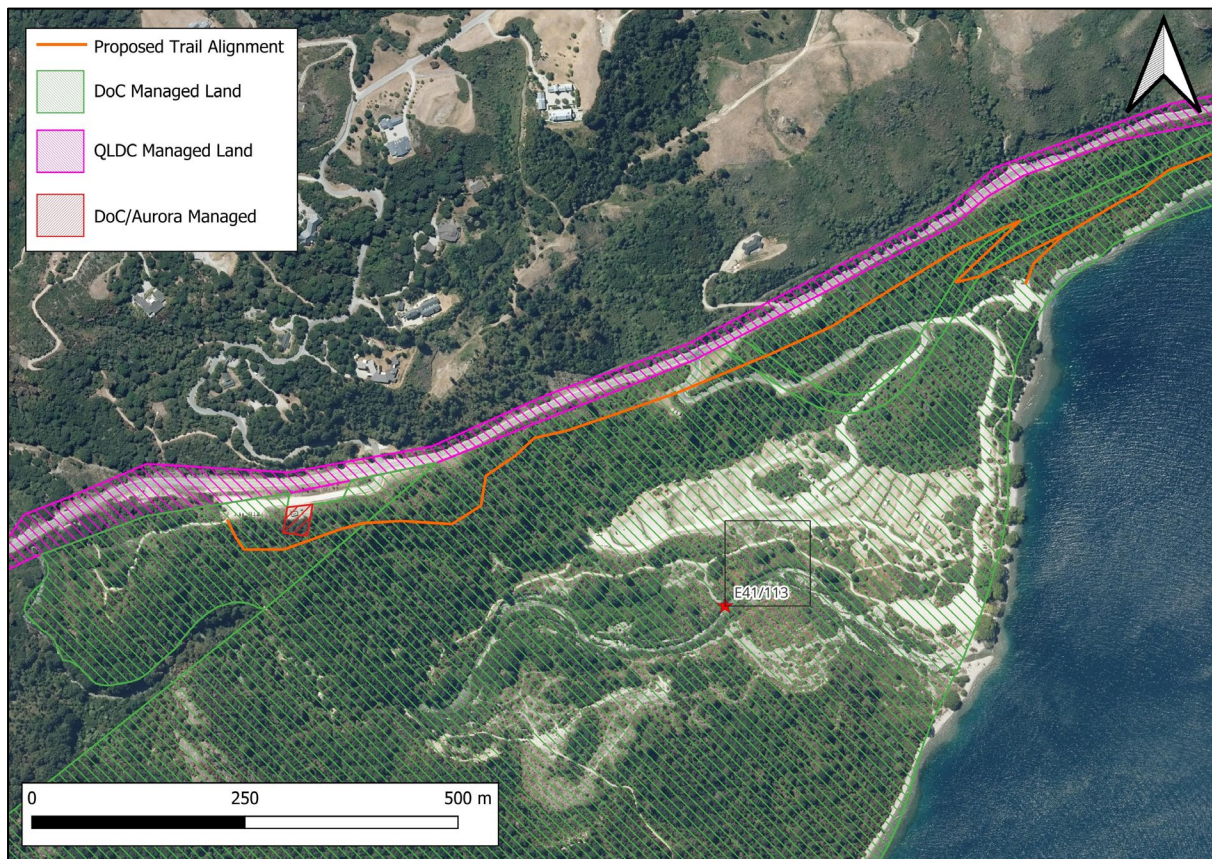


Figure 7 Trail alignment, east end of Wilson Bay.

## Historical Background

The earliest human occupation of the South Island and Otago region is considered to be by Polynesian settlers dating from around 1280AD who quickly spread across the region, developing different types of settlement sites dependent on the available local resources and environmental conditions (Wilmschurst et al 2008). These included settled village sites along the coast adjacent to rich and sustained food resources such as seals and moa; seasonal inland sites for collecting stone resources and hunting; and comparable seasonal coastal sites for 'fishing and moa processing (Hamel 2001). Over time much of the forest along the coastal region was reduced in extent; there were changes in patterns of hunting and fishing; and increasing use of smaller, more mobile occupation sites by the 16th and 17th centuries. This was followed by further changes in subsistence, based on organised food gathering and processing that created settled village communities along the Otago coastline from the mid-18th Century onwards (Hamel 2001).

The importance of Lake Wakatipu and the wider area as a place to gather food and other resources is identified in the oral histories of the area. The Statutory Acknowledgment for Whakatipu-wai-māori outlines some of the Māori history of the lake and Whakatipu basin:

The name 'Whakatipu-wai-maori' originates from the earliest expedition of discovery made many generations ago by the tupuna Rakaihautu and his party of the Uruao waka. Rakaihautu is traditionally credited with creating the great waterways of the interior of the island with his famous ko (a tool similar to a spade), known as Tu Whakaroria (renamed Tuhiraki at the conclusion of the expedition).

Whakatipu-wai-maori once supported nohoanga and villages which were the seasonal destinations of Otago and Murihiku (Southland) whanau and hapu for many generations, exercising ahi ka and accessing mahinga kai and providing a route to access the treasured pounamu located beyond the head of the lake.

Strategic marriages between hapu strengthened the kupenga (net) of whakapapa and thus rights to use the resources of the lake. It is because of these patterns of activity that the lake continues to be important to runanga located in Murihiku, Otago and beyond. These runanga carry the responsibilities of kaitiaki in relation to the Area, and are represented by the tribal structure, Te Runanga o Ngai Tahu.

The lake also supported permanent settlements, such as the kaika (village) Tahuna near present-day Queenstown, Te Kirikiri Pa, located where the Queenstown gardens are found today, a Ngati Mamoe kaika near the Kawarau Falls called O Te Roto, and another called Takerehaka near Kingston. The Ngati Mamoe chief Tu Wiri Roa had a daughter, Haki Te Kura, who is remembered for her feat of swimming across the lake from Tahuna, a distance of some three kilometres.

The tupuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of the lake, the relationship of people with the lake and their dependence on it and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngai Tahu today.

A key attraction of the lake was the access it provided to seasonal campsites and the pounamu located at the head of the lake at the Dart and Routeburn River catchments, from which countless generations gathered inaka and koko-takiwai pounamu and transported it back to coastal settlements for fashioning into tools, ornaments and weapons.

Waka and mokihi were the key modes of transport for the pounamu trade, travelling the length and breadth of Whakatipu-wai-maori. Thus, there were numerous tauranga waka (landing places) on the lake and the islands upon it (Matau and Wawahi-waka). The tupuna had an intimate knowledge of navigation, river routes, safe harbours and landing places, and the locations of food and other resources on the lake. The lake was an integral part of a network of trails which were used in order to ensure the safest journey and incorporated locations along the way that were identified for activities including camping overnight and gathering kai. Knowledge of these trails continue to be held by whanau and hapu and are regarded as taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the roto (lake).

Whakatipu-wai-maori is an important source of freshwater, the lake itself being fed by hukawai (melt waters). These are waters with the highest level of purity and were accorded traditional classifications by Ngai Tahu that recognised this value. Thus it is a puna (spring) which sustains many ecosystems important to Ngai Tahu. The mauri of Wakatipu-wai-maori represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngai Tahu Whanui with the lake (Schedule 75, 1998).

A variety of kai was hunted and cultivated around the lake. Weka were one of the main local hunting resources, with tuna, kererū, kea, and kākā also reputed to have been gathered. On Wāwahi Waka/Pigeon Island there is evidence of gardens as an additional food source. These were potentially used for the cultivation of kāuru and rīwai (Hale 2019).

Anderson describes the occupation by different iwi of the interior of Otago in more detail:

The traditions indicate that at the beginning of the 18th century, Waitaha and Ngatimamoe occupied settlements concentrated around the western lakes; Waitaha mainly at Ohau, Wanaka, Te Anau and Manapouri and Ngatimamoe in the Wakatipu district in particular. The conflicts between these groups, and within them, were turned into a three-way contest by the arrival of Ngaitahu. Waitaha, not as closely related to the other two groups as these were to each other, and seeming always to be victims rather than aggressors, were compelled to abandon the MacKenzie country and Wanaka by about 1720, and were driven from their last interior settlements in the south-west barely a generation later. Ngatimamoe, after the first Ngaitahu raids, retained a tenuous grip on Ohau and the Queenstown settlements, but by the mid-18th century seem to have retreated to areas south of Wakatipu. It is impossible to be more emphatic or precise about the course of events because of the uncertainties introduced by variations in the ascription of individuals to tribal groups, and of attributions of events to settlements. Moreover, given mobility in settlement patterns (below), the lack of a traditional encounter at any particular settlement need not mean

that it had already been abandoned, only that it was empty when it came to the attention of a raiding party. But, despite these problems, it seems quite clear that Waitaha and Ngatimamoe had abandoned the interior as far south as Wakatipu by about 1780 (Anderson 1982).

As mentioned in the Statutory Acknowledgement history above, the Queenstown foreshore is known to have been the site Tāhuna pā. This settlement is thought to have been located in close proximity to the outflow of Horne Creek. Though no physical remains of this particular settlement have been recorded traces of other, similar occupation sites have been recorded further up the lake (archaeological sites E41/14, E41/115) and at Frankton (F41/67). It is expected that Māori occupation at Tāhuna would have left only ephemeral traces in the archaeological record, and therefore could easily have been destroyed during the intensive occupation of the township over the last 150 years. Previous archaeological investigations in the immediate area have not identified any features specifically associated with Māori occupation. Horne Creek is not noted as an especially important mahika ka resource, but weka, tuna, kererū, kea and kākā were still potentially harvested in the vicinity (Hale 2019).

After the arrival of Europeans in New Zealand, an initial European traverse of the Wakatipu Basin was carried out by Nathaniel Chalmers who was led through the area by Ngāi Tahu guides in September 1853. By the end of the 1850s European pastoralists had begun to stake out claims to various runs in the area, taking up the depasturing licences on offer.

This initial era of settlement was quickly followed by the Otago goldrushes of the early 1860s, which brought large numbers of miners to the area. One of the miners, Johnston Kyle, worked several claims in the area around Seven Mile Creek from 1863 to 1890. Most of the claims worked by Kyle were located to the north of the proposed trail and are unlikely to be encountered. An 1890 cadastral map shows location of his claim in proximity to Five Mile and Seven Mile creeks with a note indicating that there were Chinese miners working to the south of him, though still north of the proposed trail alignment (Figure 8). Of note in this map is the annotation in the bottom right reading “Old Workings”, situated near the mouth of Five Mile Creek, where archaeological site E41/313 was encountered during a survey of the project area. It appears that these workings were an earlier, undocumented claim, likely dating to the earliest phase of the gold rush.



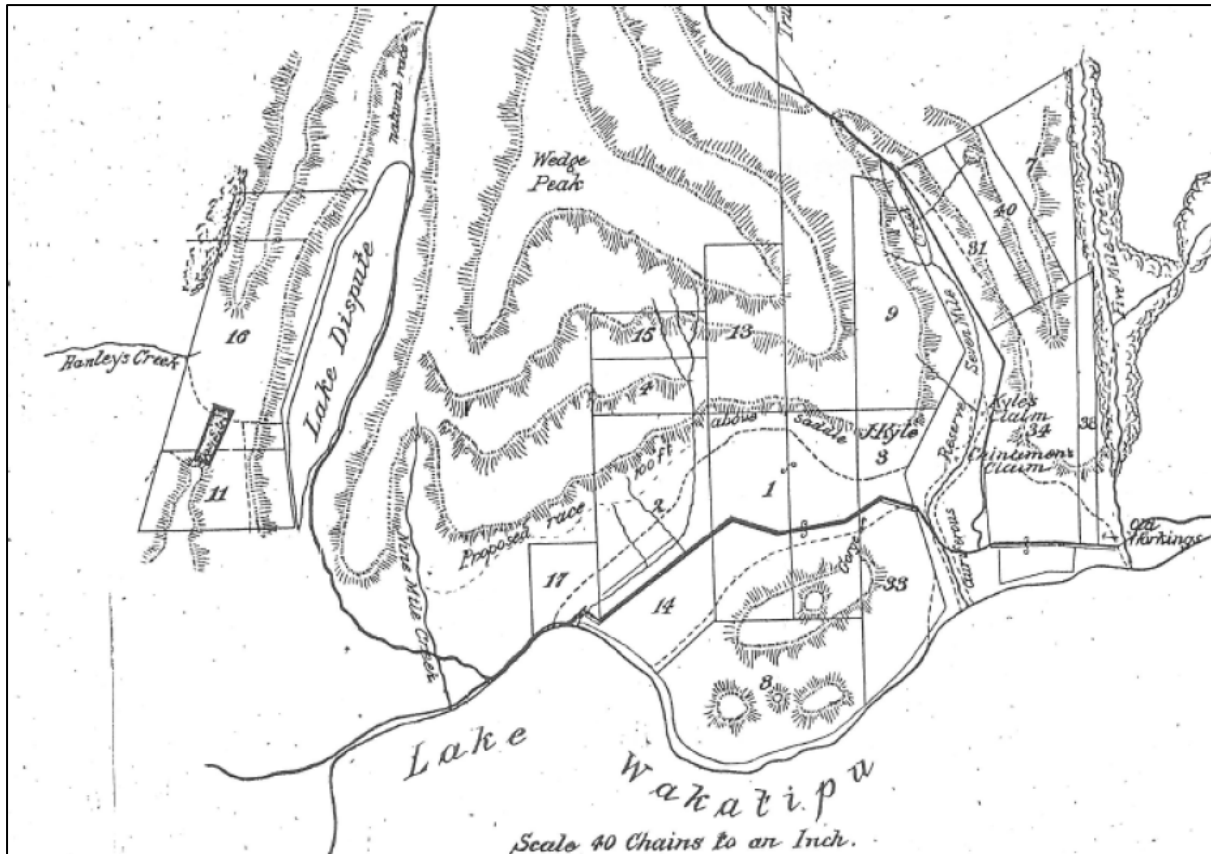


Figure 8. Cadastral map shows the area where the Chinese miners were working below Kyles claim (Lake Wakatipu Mail, 1890).

In 1899 James Dreaver received a special claim to dredge the beachfront of Lake Wakatipu between Five Mile and Seven Mile Creek (Figure 9), totalling 50 acres including part of the lake, beach, and creeks. Dreaver did not appear to spend a great deal of time dredging around the site location and was noted as an active dredger with other claims active or applied to at various locations in Lake Wakatipu and the Shotover in 1899 and 1900 (Lake Country press 1900; Lake Wakatipu Mail 1899; 1899a).

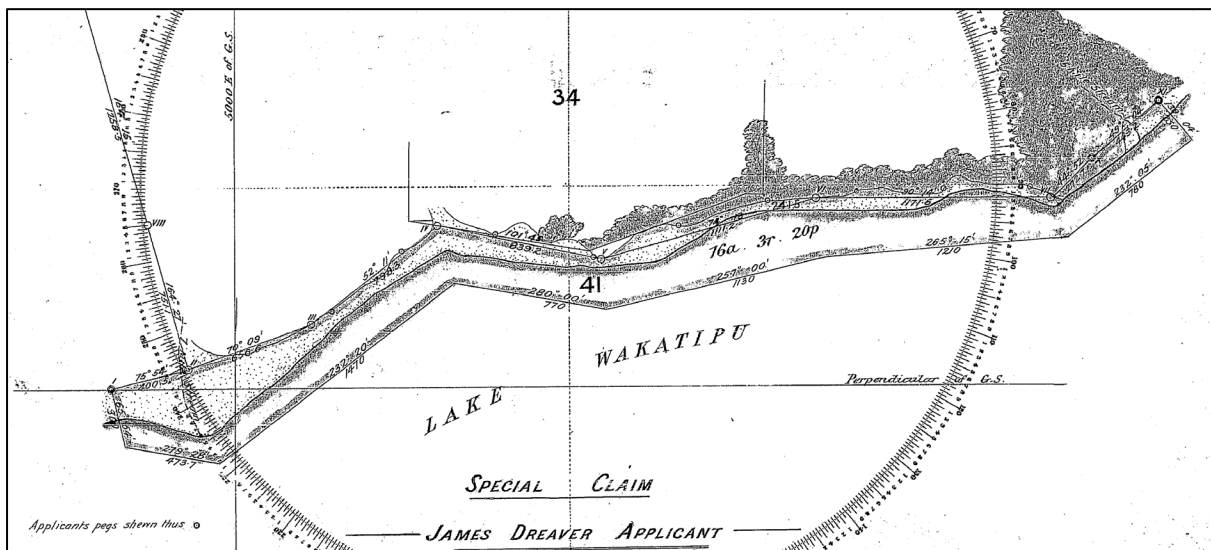


Figure 9 James Dreaver's Claim in Project Area (SO 5761).

Apart from mining the only other activity regularly carried out in this area was farming. SO5689, dated to 1879, shows Section 14 along Wilson's Bay as being part of James Kirkpatrick's agricultural area. It also labels the

area as 'Kirk's Terrace' and shows a house as being present near the lake shore (Figure 10). James Kirkpatrick appears to have been an active pastoralist and farmer, with an additional agricultural lease on Section 9, just northeast of the project area (Cromwell Argus, 1877a). Other articles note him as being based around Speargrass Flat (Lake County Press, 1881), though it would appear that house indicated on the survey plan was likely utilized by him based on its inclusion in his property, possibly as accommodation for workers. Further east, around Seven Mile Creek, SO5697 (Figure 11) shows Section 33 as being leased by Barbara Flint, with no improvements noted. While no mention has been found regarding Flint's use of the property, newspaper articles indicate that she had leased other properties in Central Otago for agricultural purposes (Cromwell Argus, 1877b; Lake Wakatipu Mail, 1875).

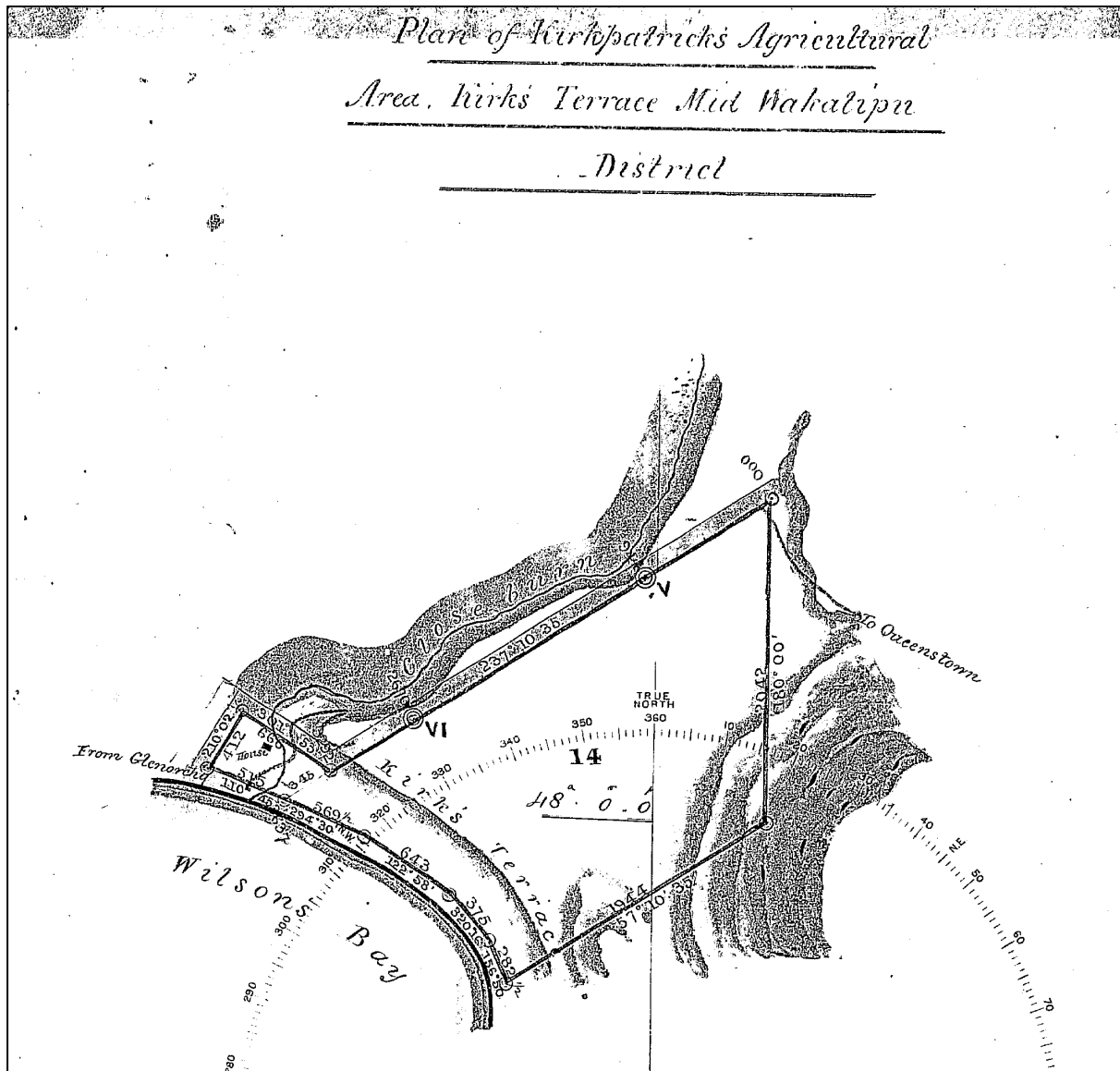


Figure 10 SO5689 Showing Kirkpatrick's tenure and location of a house, left of image, near the lake shore and stream.

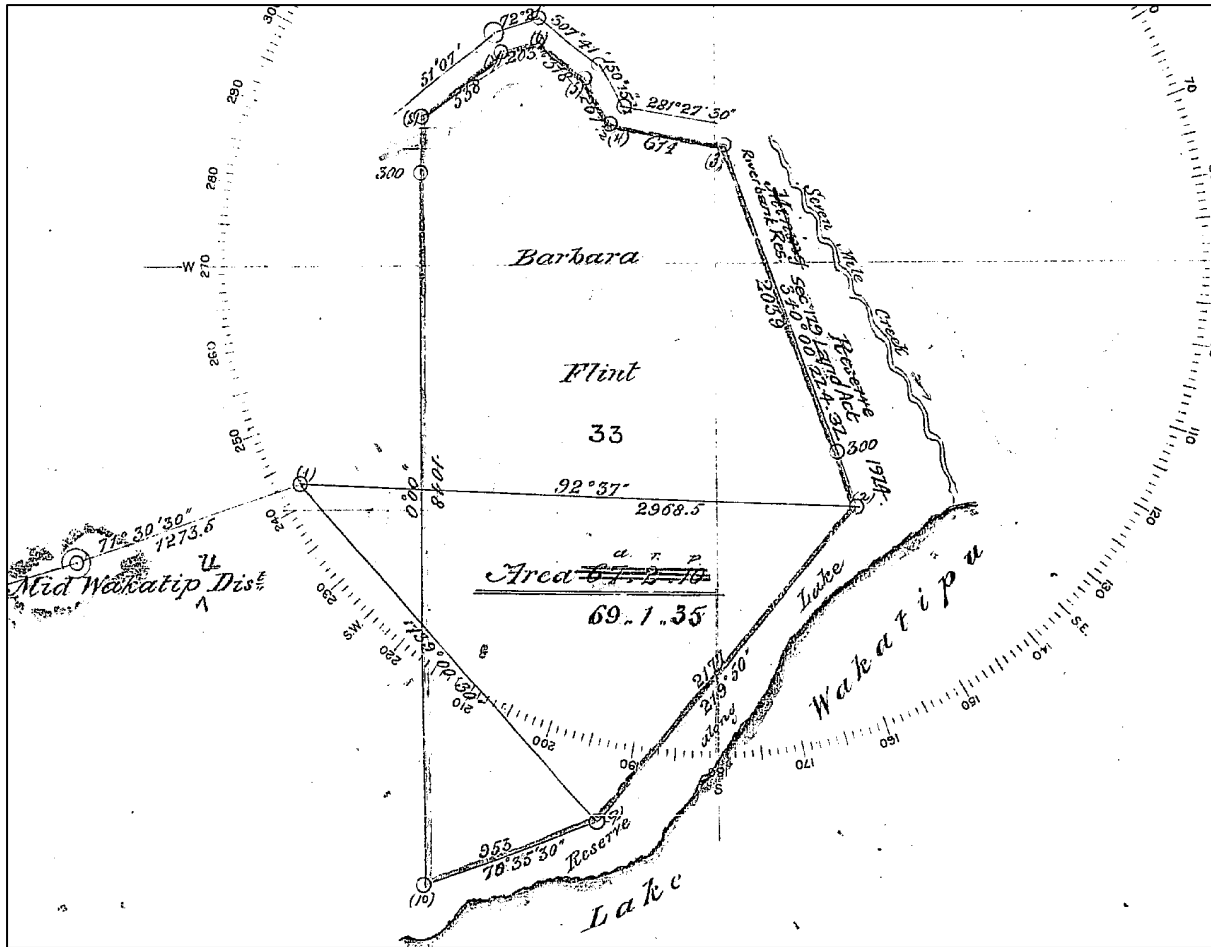


Figure 11 SO5697.

SO1106, date unknown but at least 1891, shows a recreational reserve present across the northern lakeshore of Lake Wakatipu, beginning at approximately the same location as the westernmost trail section (Figure 12). A newspaper article dated 22 May 1879 indicates that 516 acres of land at the head of Lake Wakatipu were designated as a reserve, though the purpose is not stated, and no actual use of this reserve has been documented (Lake Wakatipu Mail 1879). As indicated by SO1106, the land was officially gazetted as the reserve in 1891.



Figure 12. Recreational Reserve - North Shore Lake Wakatipu (SO1106).



SO12176, dated to November 1955, shows what appears to be a formed road reaching as far as Bob's Cove/Fortune Cove. This is supported by a newspaper article from 1933 which calls for work to begin on the Glenorchy-Queenstown Road, which at this point is described as reaching 7 miles from Queenstown, placing it approximately at the location indicated in SO12176 (Lake Wakatip Mail, 1933). This survey map shows what appears to be a trail, indicated by dashed lines, continuing to Glenorchy.

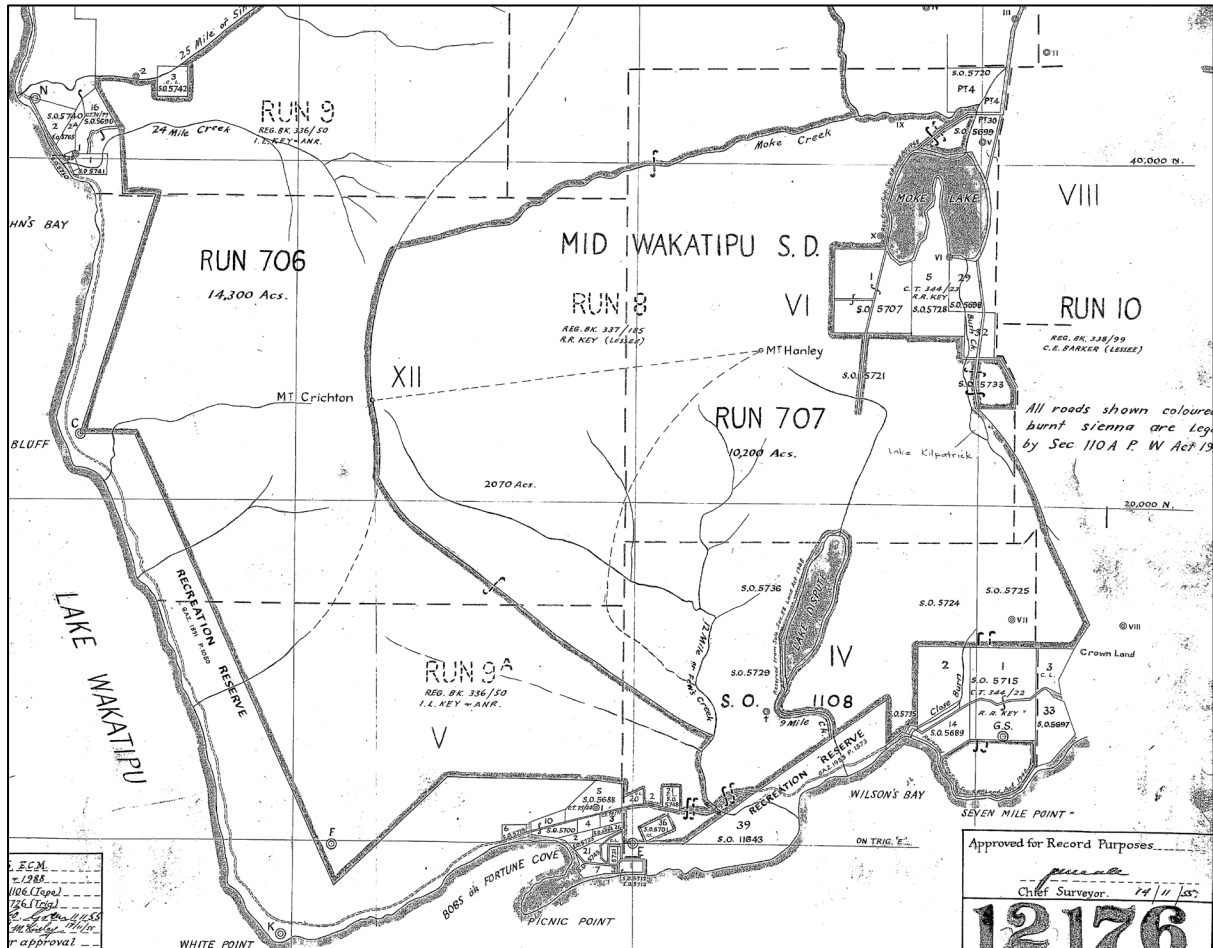


Figure 13 SO12176 Dated to 1955.

Electrification works in Glenorchy were undertaken in 1947, with it appearing to constitute the area's first electricity (Lake County Mail, 1947). Further electrical infrastructure development began in 1948 with plans to construct a hydroelectric power generator (Lake County Mail, 1948). Prior to the construction of an on-site generation system the introduction electricity would have required the running of lines from other established grids, with Queenstown being the closest.

## Archaeological Context

### Archaeological sites recorded on NZAA ArchSite

Reference to the New Zealand Archaeological Association's (NZAA) site recording scheme, ArchSite, indicates that no previously recorded archaeological sites exist within the proposed work area. However, it should be noted that an absence of previously recorded sites does not constitute a lack of archaeology as unidentified sites may still be present.

ArchSite indicates that three sites are noted within 1-2km of the project area. Site E41/283 is a Historic-Domestic cottage built in the 1860s by James Kirkpatrick, E41/253 is the remains of the Seven-Mile Creek Goldfield while E41/115 represents the location of an adze find. Of these sites E41/253 is the most relevant to the project, with the Seven-Mile Creek claim areas extending into the western end of the project's first section.

Two additional sites, E41/313 and E41/314 were identified during the site survey conducted as part of this assessment. The sites consist of a series of remains relating to the early gold rush, including tailings, prospecting pits, bridle paths and a stone hut. The sites are described in greater detail in the site visit section below.

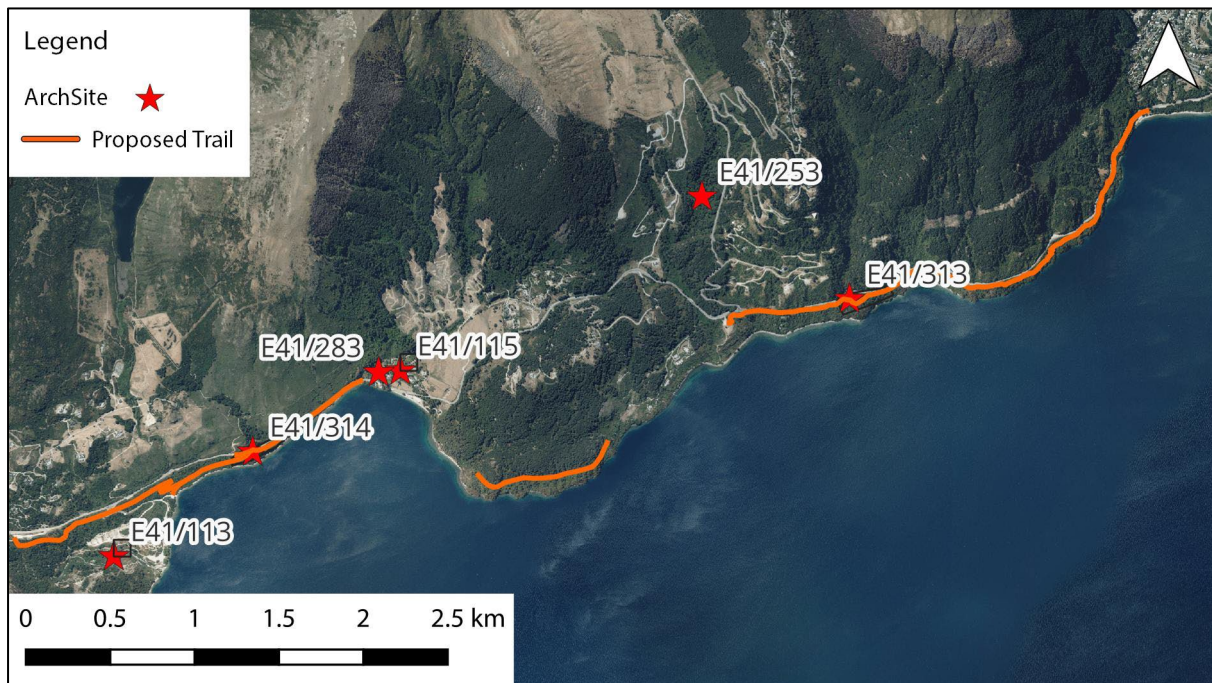


Figure 14. Map showing recorded archaeological sites (ArchSite).

Table 1. Table of recorded archaeological sites in the vicinity of the site.

Site Number	Site Name	Site Type	Details
E41/113	Sluicing Deposit	Mining – Gold	Sluicing deposits from the gold working in 12 Mile Creek
E41/314		Mining - Gold	Gold mining field includes one hut site, loose rock tailings, prospecting pits, bridle/pack track and associated artefacts.
E41/283	Closeburn Homestead	Historic - Domestic	The cottage built on the site in the 1860s by James Kirkpatrick.
E41/115	Adze	Artefact Find	Adze found beside the sheep yard at Closeburn Station.
E41/253	Seven Mile Goldfield	Mining - Gold	Gold mining field includes four hut sites, an enclosure, loose rock tailings, stacked sludge channels, prospecting pits, bridle/pack track and associated artefacts.
E41/313		Mining - Gold	Gold mining field includes, loose rock tailings, a large patch of tailings, prospecting pits, bridle/pack track and associated artefacts.

### Other archaeological work

Several archaeological assessments and reports have been carried out in the general area:

Ritchie, N.A, 1982, *12 Mile Creek*

Hamel, J, 1991 *Historic values of Closeburn Station. An unpublished report of the Department of Conservation, Otago Conservancy*

Briden, Shar, 2012, *Seven Mile archaeological assessment for the Queenstown Bike Club*

Briden, Shar, 2015, Gold Diggers Trail Seven Mile Report – E41/253 is a single ArchSite point but the site consists of 40+ archaeological features that stretch from the main road North up Seven Mile Creek.

All four assessments relate to the European Colonial period of the area's history. Of special interest are the assessment and report by Briden which deals with the archaeological remains associated with E41/253. The results of these indicate that archaeological remains related to E41/253 are present on the north side of the Glenorchy-Queenstown Road. While these reports indicate that the remains do not extend into the current project area it does show that the known archaeological remains are at least present in proximity, raising the likelihood of encountering unrecorded or unidentifiable subsurface remains.

### Site Visit

A site visit was conducted by Jaime Grant of Origin Consultants on 1 March 2023. This was undertaken to assess if there were potential archaeological features visible in the area. The site visit took place on a dry, cloudy day and was organised by the Queenstown Trails Trust. The area to be surveyed was covered by dense vegetation and access was limited by the group's ability to traverse the steep bank between the road and the lake. The site visit was divided between two main areas where heritage features had been identified (Figure 15). The first location of the site visit is indicated on (Figure 16), past 7 Mile Scenic Reserve, heading towards Glenorchy. Descending from the Queenstown-Glenorchy Road through the vegetation, revealed a number of archaeological and historic features (Figure 17). Small clusters of tailings were identified though no water races could be identified through the trees (Figure 18). A power pole with its cable intact was discovered (Figure 19), this feature is possibly related to the 20<sup>th</sup> century introduction of electricity to Glenorchy which



occurred during the mid twentieth century, prior to the construction of the road. The remains of an old trail were identified running perpendicular to the road on the side of the lake. Several 20<sup>th</sup> century bottles were found along its edge (Figure 20). Along the track, a flattened clearing was noted, a square metal bucket and several pieces of scrap metal were found nearby (Figure 21-Figure 23). The trail likely represents the informal bridal track visible in several survey plans that was used to connect Queenstown and Glenorchy prior to the formation of the road. A rectangular stone hut was found slightly further downhill from the old trail. It was approximately 3m x 5m but has been heavily impacted by the trees growing around it (Figure 24). Within 2m to the south of the hut was a small U-shaped stone wall, suspected to be an outhouse due to its interior having a small pit (Figure 25).

The second area was located off the Queenstown-Glenorchy Road by Bleakleys Bridge (Figure 26). There were some tailings just south of the road, though they have been heavily impacted by growing trees (Figure 27). Further to the south there is a large area of tailings that stretches from the west bridge landfall site to a prospecting pit roughly 200m to the east (Figure 28-Figure 31). To the east of the East bridge landing there was another small scattering of tailings mixed in with the vegetation (Figure 33). To the southeast of the tailings there was a large clearing next to a cliff. There was no sign of any historic material through the clearing, and it is suspected to be natural (Figure 32).

A water race was identified during a previous trail survey but was not able to be found during this site visit (Figure 26).

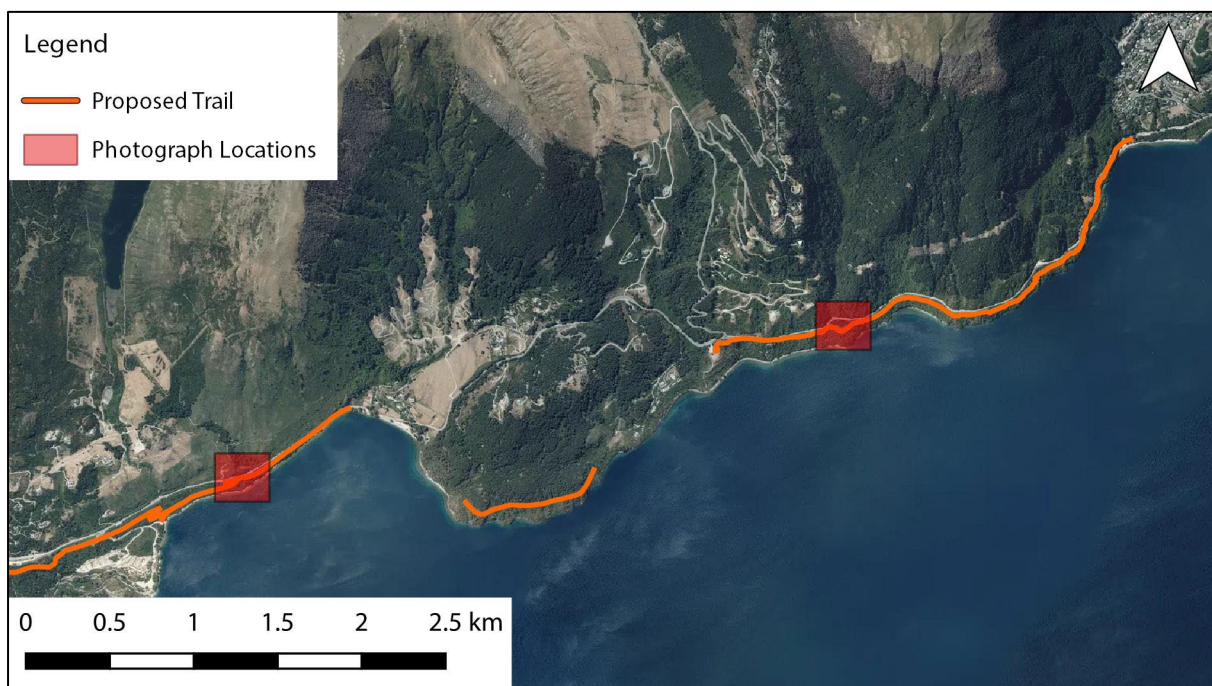


Figure 15. Map showing the two main locations of the site visit.



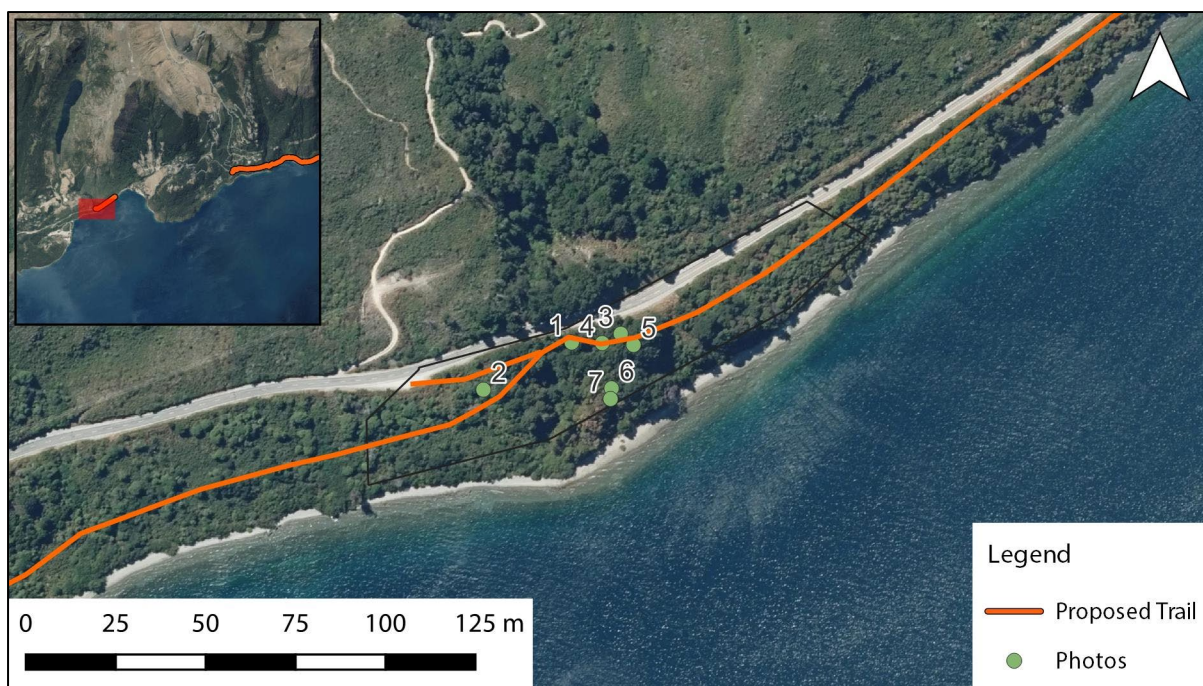


Figure 16. Locations of photos 1-7.

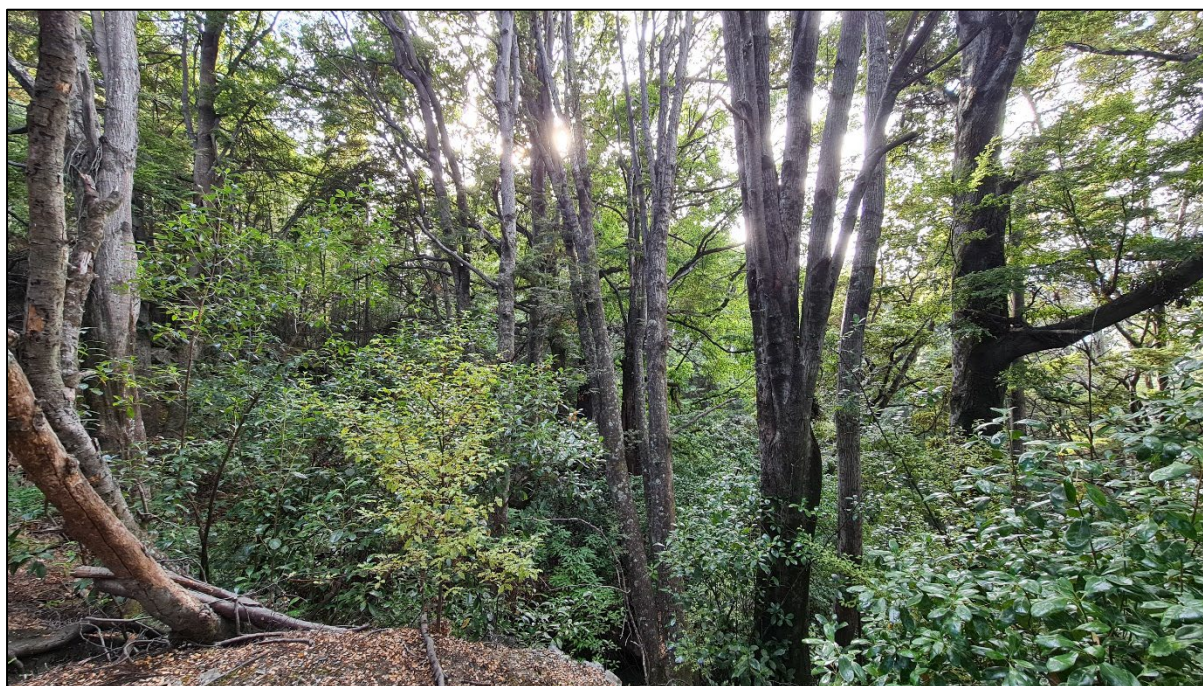


Figure 17. Photo 1 - Showing the dense vegetation.





Figure 18. Photo 2 - Scattered tailings.

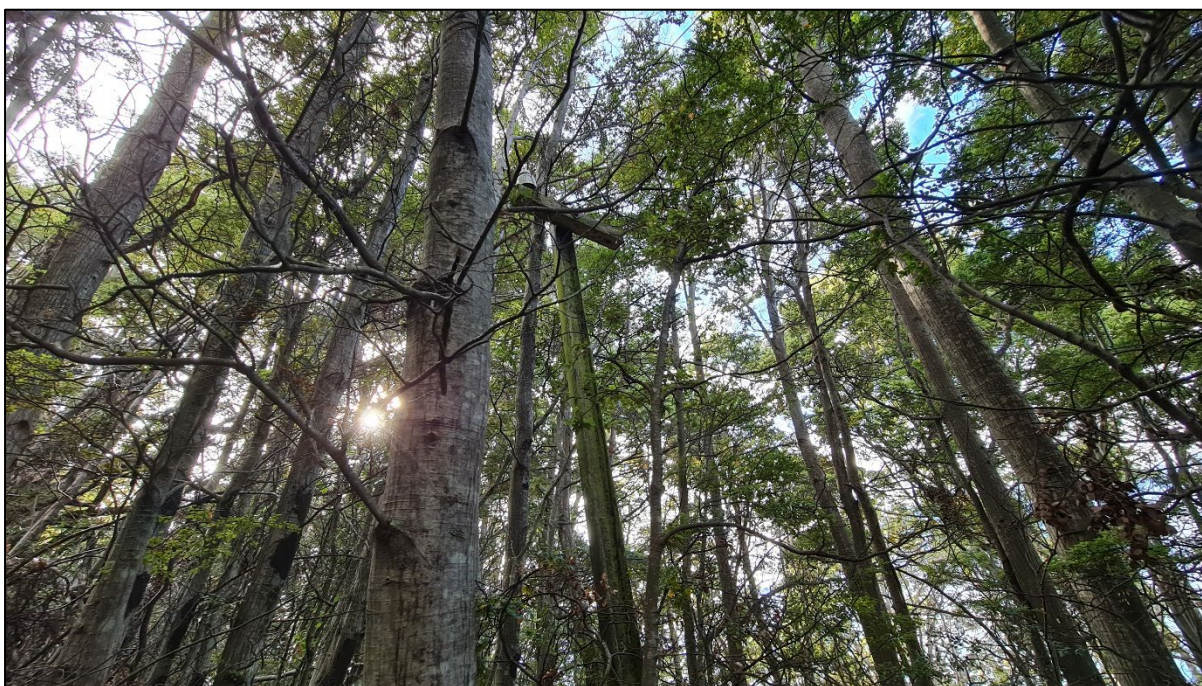


Figure 19. Photo 3 - Power pole.





Figure 20. Photo 4 - Remains of the old track.



Figure 21. Photo 5 - Clearing next to the trail.





Figure 22. Scrap metal next to the clearing.



Figure 23. Square metal bucket.





Figure 24. Photo 6 - Walls of the stone hut.



Figure 25. Photo 7 - U shaped stone walls.



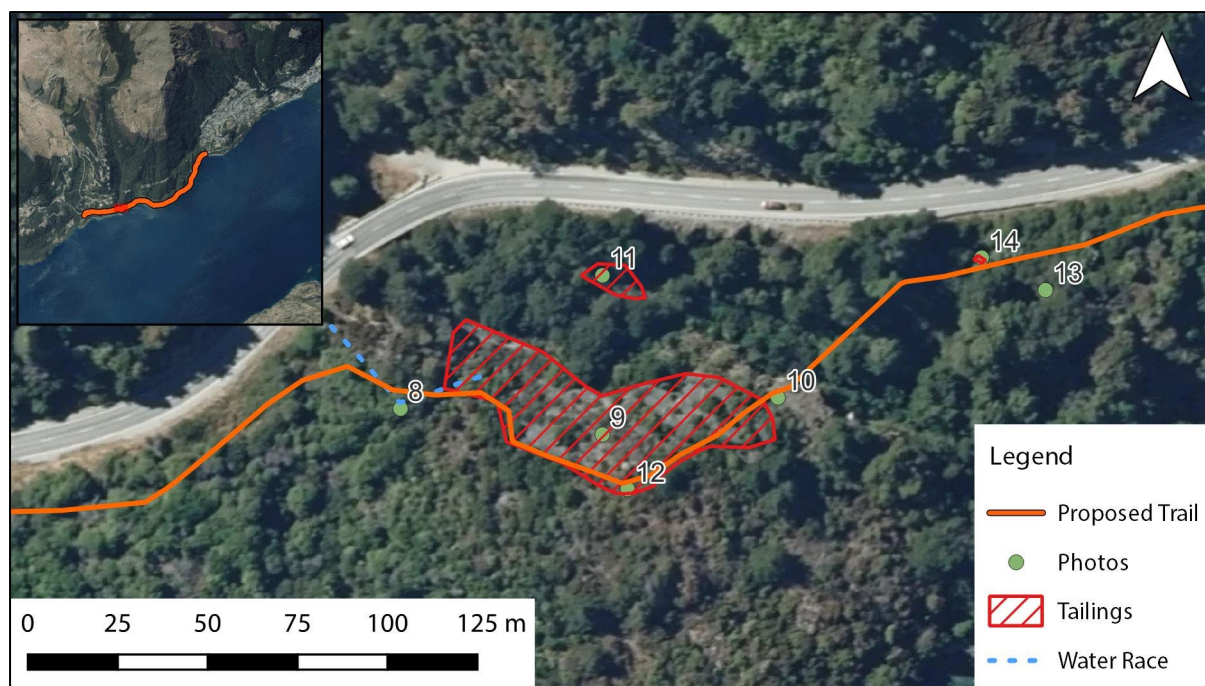


Figure 26. Locations of photos 8-14.



Figure 27. Photo 11 - Scattered tailings heading roughly SE from the road.





Figure 28. Photo 9 - Standing at the centre of the tailings.



Figure 29. Photo 10 - West bridge landing site, facing towards the western site.





Figure 30. Photo 12 - Tailings stretch to the south until the cliff edge.



Figure 31. Photo 8 - Prospecting pit.





Figure 32. Photo 13 - Clearing located to the east of the eastern bridge landing site.



Figure 33. Photo 14 - Scattered tailings to the south of the road.



## Archaeological and Heritage Values

Archaeological and heritage values were assessed for the sites identified within proximity of the proposed trail route. Some of the archaeological sites that have been identified above (E41/283, E41/115, E41/253) are not assessed here because they have been determined to be located a considerable distance away from the trail route and there is no possibility that they will be affected by trail construction.

### Archaeological Values

Six main criteria have been used for assessing the archaeological values of the Sunshine-Crichton Trail. These are:

- Condition – the physical condition of the site and any associated features.
- Rarity/Uniqueness – the degree of rarity of the site within its immediate and/or wider contexts.
- Contextual – the contribution of the site to its broader contextual situation (eg. cultural, local, and archaeological contexts).
- Information potential – the potential for additional information to be recovered by archaeological means and its nature.
- Amenity – the potential contribution of the site as a local amenity.
- Cultural associations – the cultural associations of the site.

This is the standard set of criteria provided in HNZPT templates for assessing sites as part of the Archaeological Authority application process.

Table 2. Assessment of archaeological values for E41/313

Site	Value	Assessment
<b>E41/313 - one hut site, loose rock tailings, prospecting pits, bridle/pack track and associated artefacts.</b>	Condition	All of the features identified within E41/313 have been impacted by the growth of the surrounding vegetation, some significantly so. The stone hut has been notably damaged as a number of the trees have grown through the walls. <b>Assessment – Poor to Fair</b>
	Rarity/Uniqueness	There are numerous sites relating to historic gold mining activities along the Glenorchy-Queenstown Road. Tailings are fairly common in the Queenstown area. Though there are numerous ruined stone huts in the Central Otago area, they are reasonably rare across the wider country. <b>Assessment – Moderate</b>
	Contextual value	The gold mining features identified here, while not unique, are a part of the defining colonial era archaeological landscape of the area. <b>Assessment – Moderate</b>
	Information potential	The archaeological investigation of these sites has some potential to provide information about domestic life on the goldfields and historic vernacular construction. <b>Assessment – Moderate</b>
	Amenity value	The sites have some amenity value as above ground features. However, this is diminished by the fact that most have been heavily impacted by vegetation growth. <b>Assessment – Low-moderate</b>
	Cultural associations	The site is possibly associated with Pākehā or Chinese. <b>Assessment – Pākehā and/or Chinese</b>

Table 3. Assessment of archaeological values for E41/314

Site	Value	Assessment
<b>E41/314 - Gold mining field includes loose rock tailings, a large patch of tailings, prospecting pits, bridle/pack track and associated artefacts.</b>	Condition	Most features of E41/314 are in good condition as they have been left relatively untouched. The large patch of tailings is in good condition and has been only minorly affected by the surrounding vegetation. The smaller scattered tailings have been damaged by the growing trees but remain easily visible. The bridle track is visible in certain areas but seems to have eroded away in others. <b>Assessment – Fair to Good</b>
	Rarity/Uniqueness	Gold mining sites are common within the Wakatipu Basin but are considerably less common on a national scale. This site is further elevated by a slightly greater than usual variety of features. <b>Assessment – Moderate</b>
	Contextual value	The gold mining features identified here, while not unique, are a part of the defining colonial era archaeological landscape of the area. <b>Assessment – Moderate</b>
	Information potential	The investigation of these sites has little potential to provide new insights into historic mining. <b>Assessment – Low</b>
	Amenity value	The sites are a visible reminder of the area's mining past, but are generally small-scale, overgrown, and hard for the untrained eye to identify. <b>Assessment – Low</b>
	Cultural associations	The sites are associated with Pākehā and Chinese mining. <b>Assessment – Pākehā and Chinese</b>

## Heritage Values

As well as the 'archaeological values' assessed above, the 'heritage values' of the sites along the route are also assessed here. An understanding of these heritage values will inform a concession application for the establishment of the proposed cycle trail on DOC land (whereas the above assessment is necessary for an Archaeological Authority application to HNZPT). Assessments of heritage value are presented in the tables below.

The framework outlined in the HNZPT *Significance Assessment Guidelines* (O'Brien and Barnes-Wylie, 2019) is adopted to assess heritage values. This document has been prepared as a guide for assessing historic places submitted for inclusion on the HNZPT List, but it also serves well as a robust framework for assessing the heritage value of sites more generally. Following this framework, ten criteria are used for assessing the heritage significance or value of various sites in the vicinity of the proposed trail route. These are:

- Aesthetic
- Archaeological
- Architectural
- Cultural
- Historical
- Scientific
- Social
- Spiritual

- Technological
- Traditional

It should be noted that the definition of 'archaeological' significance or value here is defined as a place that "provides, or is demonstrably likely to provide, physical evidence of human activity that could be investigated using archaeological methods. Evidence obtained as a result of an archaeological investigation could be expected to be of significance in answering research questions, or as a new or important source of information about an aspect of New Zealand history" (O'Brien and Barnes-Wylie, 2019). This differs from the wider of archaeological value discussed in the above section, though it is roughly analogous with 'Information Potential.'

All the sites mentioned in this report have no official recognition of their heritage values beyond their inclusion on ArchSite.

Table 4. Assessment of heritage values for sluicings and tailings.

Site	Significance or value	Assessment
<b>E41/313 - one hut site, loose rock tailings, prospecting pits, bridle/pack track and associated artefacts.</b>	Aesthetic	Though not significant some features will likely be visible from the trail, providing some visible reminder of the history of the area.
	Archaeological	N/A
	Architectural	N/A
	Cultural	N/A
	Historical	Though not significant, these sites have some historical values as they are representative of the widespread practice of gold sluicing in the late 19 <sup>th</sup> century and are part of a wider historic mining landscape.
	Scientific	N/A
	Social	N/A
	Spiritual	N/A
	Technological	Though not significant, these sites have some technological value as former gold mining infrastructure.
	Traditional	N/A



Table 5. Assessment of heritage values for E41/255.

Site	Significance or value	Assessment
<b>E41/314 - Gold mining field includes loose rock tailings, a large patch of tailings, prospecting pits.</b>	Aesthetic	The largest tailings pile is likely to be cut by a portion of the cycle trail. The act of riding through the midst of such a visible feature will provide a noticeable reminder of the early history of land use of this area.
	Archaeological	N/A
	Architectural	N/A
	Cultural	N/A
	Historical	Though not significant, these sites have some historical values as they are representative of the widespread practice of gold sluicing in the late 19 <sup>th</sup> century and are part of a wider historic mining landscape.
	Scientific	N/A
	Social	N/A
	Spiritual	N/A
	Technological	Though not significant, these sites have some technological value as former gold mining infrastructure.
	Traditional	N/A

Table 6. Assessment of heritage values for F41/853.

Site	Significance or value	Assessment
<b>Power-pole, bridal track and twentieth century artefacts</b>	Aesthetic	N/A
	Archaeological	N/A
	Architectural	N/A
	Cultural	N/A
	Historical	Though not significant, this site has some minor historical value as it reflects the mode of transportation undertaken prior to the establishment of the Glenorchy-Queenstown Road as well as the introduction of electricity to Glenorchy in the mid twentieth century.
	Scientific	N/A
	Social	N/A
	Spiritual	N/A
	Technological	Though not significant, this site has some technological value as representing the introduction of electricity to Glenorchy.
	Traditional	N/A

### **Manawhenua Values**

No archaeological or heritage sites relating to historic manawhenua occupation have been identified in the vicinity of the proposed trail or access track. However, the wider area and its landscape features are of cultural value to manawhenua and the trail runs across the Kimiākau Wāhi Tūpuna as outlined in the Queenstown Lakes District Plan.

These manawhenua values are being addressed as part of the resource consent process. Any assessment of manawhenua cultural values, and the potential effects of the project on these values, is beyond the scope of this report and will need to be carried out by an appropriately qualified individual or institution.

## Assessment of Effects

### Proposed Site Works

The trail will be formed along a corridor approximately 2m in width, with a 1.2m wide trail plus vegetation corridor that follows the proposed trail route. Note that the exact location of the trail has not yet been fixed and will be confirmed upon completion of the Heritage and Archaeological Assessment, and ecological report to best avoid as many sensitive areas as possible with an agreed upon alignment to be confirmed with DOC after a second site visit. Gradients will be between 0-4 degrees for 95% of the trail length with a 2-3 grade difficulty. Trail construction earthworks will at the very least involve the removal of vegetation and c. 200mm of topsoil from along the route, with deeper excavation required as necessary to create a bench depending on the local topography (Figure 35, Figure 36). The trail will be surfaced with local gravels to create a smooth and even riding surface.

The trail will be constructed using a 1.5t excavator due to the limited access. The construction will generally involve side casting of cut material with the trail bench being formed from a combination of cut and fill on slopes up to 20 degrees and being fully cut on slopes over 20 degrees.

Most of the excavation cut faces will be self-supporting and require no retaining. However, sections along river gravels may require timber retaining on one or both upper and lower batters. Such timber retaining is likely to be minor in impact, being supported by driven metal or timber supports.

In sensitive areas, for example, near historic sites, attention is given to the side-cast material and where required this is transported to another location, minimising the impact to either side of the immediate trail. Suitable locations for construction marshalling and stock piling of material (if required) are to be identified and agreed with construction contractors with the aim of avoiding archaeological features.

Once the trail formation has been cut and shaped to provide the flow of the trail, any additionally required surface gravels will be imported to the site and spread using small tip trucks and compacted. Imported gravels are expected to be needed on less than 10% of the total trail length.

One bridge will be constructed across the large gully at the location shown in Figure 37. Culverts will be used to bridge smaller gullies as necessary and other engineering features such as trail supports or boardwalks used as needed. However, it should be noted that these will not be used in proximity to any identified archaeology and so should have no effect on any known features. The construction methodology for the bridge is not yet confirmed apart from that it will be a suspension type bridge. From this it is assumed that piers, likely consisting of timber piles installed via auguring up to 600mm diameter holes, will be installed at either end to support the bridge span. Other minimal earthworks not exceeding those seen in other trail formation will also likely be involved. These works are to be designed to not affect any identified archaeological features.



Figure 34. Figure showing location of proposed works.

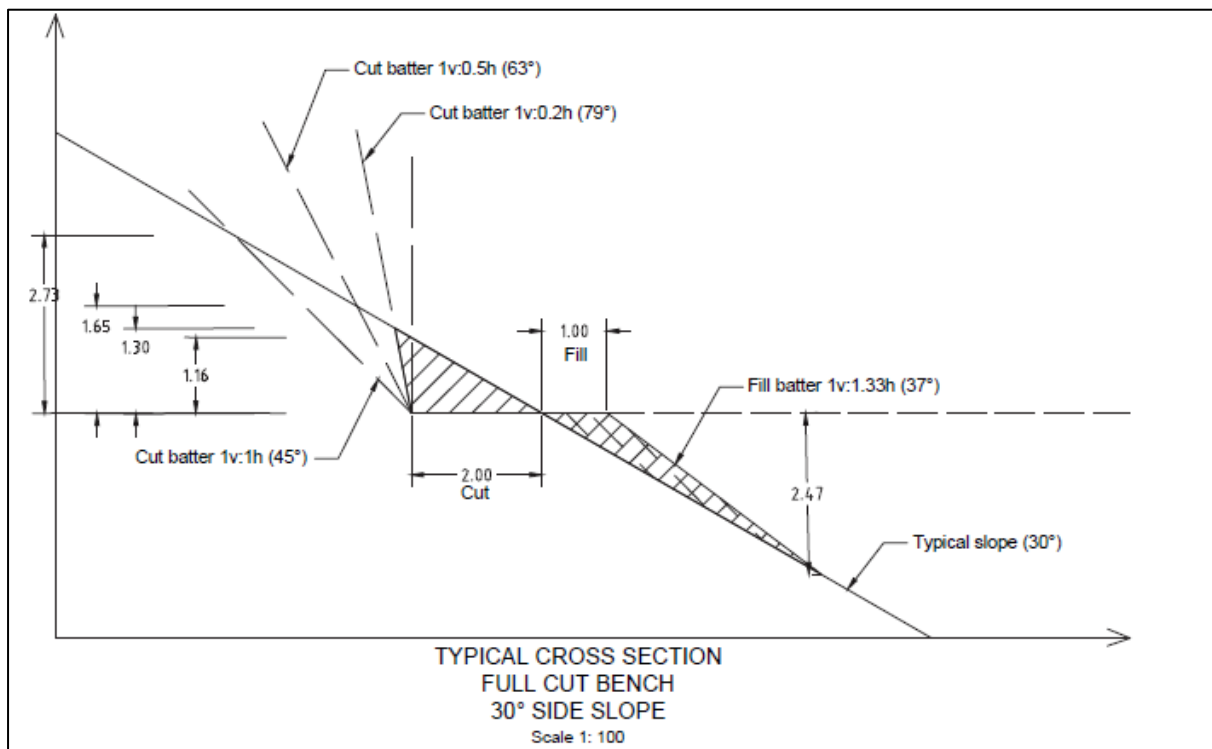


Figure 35. Cross section for 3m wide trail.

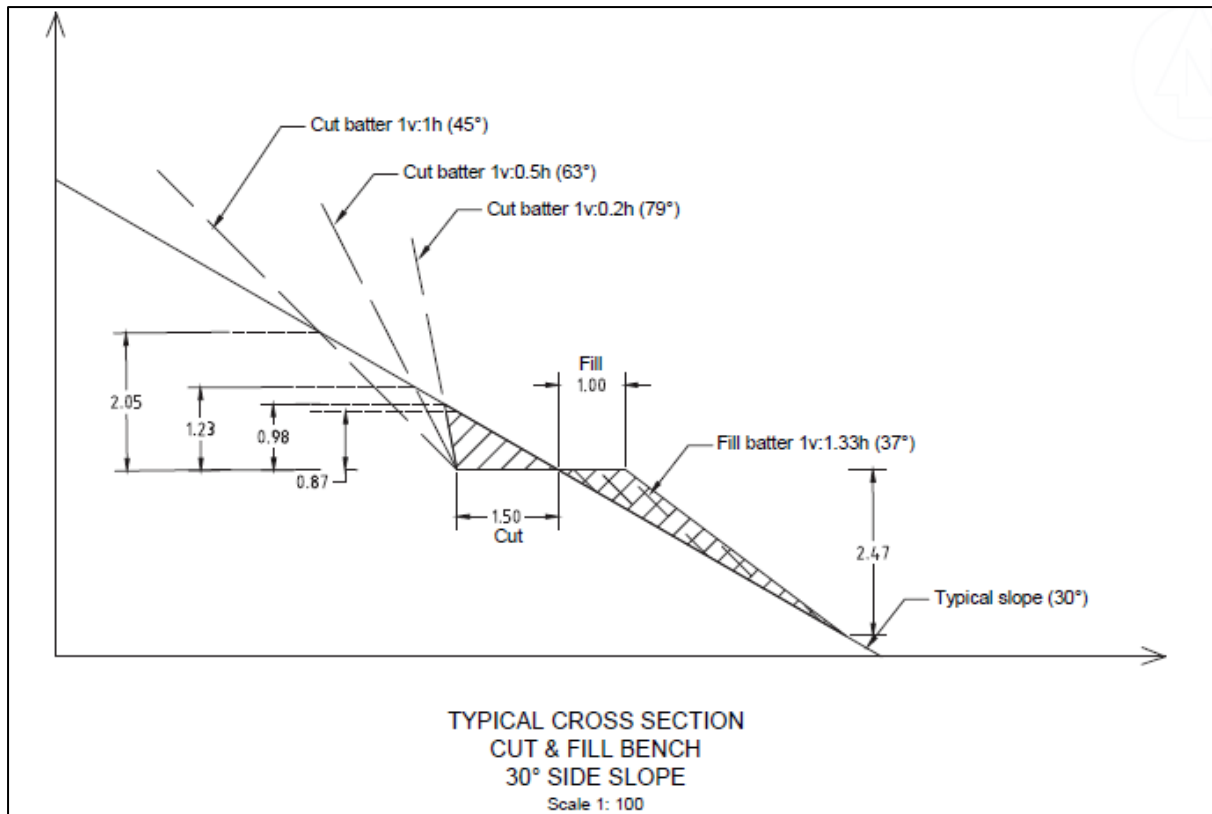


Figure 36. Cross section for 2.5m wide trail.<sup>1</sup>



Figure 37. Map showing the location of the proposed bridge.

<sup>1</sup> Southern Land.



### Effects of the Proposed Works

Depth of earthworks and trail width will vary depending on local topography, but as a rule it can be assumed that any above or below ground archaeological features within the trail corridor will be destroyed. As noted above, the trail corridor is approximately 2m wide area and will roughly follow the rout outlined here with the exact alignment to be fixed upon completion of the archaeological assessment and ecological report to avoid as many sensitive areas as possible.

Effects will vary between the two sites. E41/313 is less likely to be affected at all as the topography and limited size of the features here means that they should be completely avoidable. If E41/313 is affected the impact will be minimal. In contrast, E41/314 will see a minor scale of impact with a portion of the larger tailings pile requiring alteration. Due to the size of the tailings and topographical limitations it is likely not possible to completely avoid this feature. It is proposed that a 'causeway' style pathway could be installed overtop a portion of the tailings which would limit the impact required to form the trail (Figure 38). Additionally, a boardwalk will be considered to completely avoid the tailings if possible.



Figure 38 Causeway Technique example.

E41/313, while being part of the archaeological landscape of the region, is considered to have a low to moderate archaeological value. Given the minor overall impact likely to occur it is expected that there will be a minor scale of impact to the site. While any loss of archaeological information is regrettable, the impact can be mitigated in part through the recording of all features to a high standard.

While it is possible that the trail construction will encounter undiscovered archaeological material in the inaccessible areas, the chances are still low and if any unidentified features are discovered they will most likely be avoided through alterations to the trail alignment. Overall, it is considered that the proposed trail will have a minor effect on the archaeological sites and historic heritage of the Queenstown Lakes, between Queenstown and Glenorchy.

### **Alternative Options**

In general, the trail route has been designed to avoid as many archaeological sites along the route as is feasible. All alternative options will be explored during the second site visit conducted with DOC. In the few places where land access was limited, and it may be impossible to avoid an archaeological site, all care will be taken to minimise the disturbance. Many sprawling mining sites like large areas of tailings are almost impossible to avoid when topographic related safety concerns are taken into consideration, however this will be confirmed with DOC prior to the final determination of the trail alignment.

### **Site Management**

The proposed trail construction is a large project and will need to be carefully managed. A traffic light monitoring system of red, yellow, and green areas is proposed as the approach for managing the effects of trail construction on sites. This system needs to consider both the direct impact of excavation and filling in the trail, but also the potential impact of vehicle movements and aggregate stockpiling in the areas around construction. It also needs to include a requirement for regular site check-ins by an archaeologist to ensure compliance with any archaeological authority/concession/consent. The details of this management system are outlined in the Recommendations section below.

There also needs to be some consideration of the ongoing management of sites following trail construction. Some sites along the trail route have been preserved by their relative isolation. The cycle trail will bring with it numerous new visitors who have the potential to damage historic sites. As such, steps should be taken to both stabilise and/or protect at risk sites along the trail route. A site monitoring regime should also be instituted following trail construction to identify any potential site damage by trail users and recommend appropriate repair work.

## **Summary and Recommendations**

### **Summary**

This report provides an overview of the history and archaeology in the vicinity of the proposed Sunshine-Crichton Trail. It also offers an assessment of the site's archaeological values and the impact of the proposed development.

Lake Wakatipu has been an important centre of human activity since early Māori history due to the wide range of kai available throughout the surrounding landscape with this importance documented in the oral histories of the area. Following the arrival of Europeans, the region was settled initially by a small number of sheep farmers and then by a rapid influx of fortune seekers following the discovery of gold in the Shotover River. Mining along the north shore of Lake Wakatipu was initially focused inland, and both Europeans and Chinese miners worked in this area. Early mining was focused on the natural creeks flowing from the higher elevations above and later through dredging taking place along the beachfront and near the mouth of the above-

mentioned creeks. Later activity during the twentieth century appeared to primarily focus on the travel between Glenorchy and Queenstown as well as the eventual establishment of electricity for Glenorchy.

Various surveys have been carried out in the area near the lake front of the Wakatipu between Queenstown and Glenorchy. Most notably were the surveys carried out by Shar Briden in 2012 and 2015 where they identified many historic mining sites following 7 Mile Creek. The potential also exists for other heritage or archaeological features to be present in the surrounding landscape, both within and without the proposed trail alignment. Though they were not identifiable during this survey or those in the past, they may have been either buried or obscured by dense undergrowth. These other potential features include buried material associated with domestic sites and smaller mining features like sluicings, tailings, and water races.

Most features along the route were assessed as having at least some archaeological, historical, and technological heritage values. The effect of trail and track construction on the site varies depending on specific conditions; overall, it is considered that the proposed trail will have a minor effect on the archaeological sites and historic heritage located along the planned trail route, though this will be confirmed following a further survey with DOC.

The trail is designed to avoid damage to heritage and archaeological sites where possible, and alternative options will be explored with DOC during an upcoming follow up survey, however some alternatives may be limited due to the topography of the site. Some features like the tailings at E41/314 may be unable to be avoided due to their size. Design considerations will limit the impact to this feature as much as possible while any loss of information can be mitigated in part by a detailed recording of the feature prior to its modification.

## **Recommendations**

Based on the proposed works, Origin Consultants make the following recommendations:

- An archaeological authority under section 44 of the Heritage New Zealand Pouhere Taonga Act (2014) should be obtained from Heritage New Zealand for the project prior to any excavations proceeding that could damage both known and previously unidentified pre-1900 sites.
- Any concession application to DOC for the trail should recognise the presence of historic resources along the proposed route.
- As a first principle, every practical effort should be made to avoid damage to any archaeological site.
- The excavation contractor(s) must be informed of the requirements of any authority issued, any DOC concession conditions, and briefed by the archaeologist about the trail route's archaeological values and the possibility that buried archaeological material may be uncovered during excavation works.
- An archaeological management plan should be prepared to provide operational guidelines and procedures for day-to-day activities that may affect archaeological sites during works.
- Historic tailings piles should not be mined for construction materials.
- All earthworks that may affect any archaeological material should be monitored by an archaeologist.
- Heritage and archaeological sites along the route should be mapped in accordance with current archaeological practice, prior to and after construction. The ArchSite records for these sites should be updated after construction has completed.
- If any archaeological features are uncovered during excavations, these should be recorded using appropriate archaeological standards by an archaeologist.
- Regular monthly general project monitoring visits should be made by the archaeologist to ensure that any conditions required by an archaeological authority/concession/consent are being complied with.
- The project should follow a management regime based on the effect or potential effect of trail and track construction on sites. This management regime will be confirmed with DOC upon the completion of the second site survey but will likely employ a traffic-light system using red, yellow, or green colour coding to indicate the effect of the trail/track construction on certain sites and areas.



Specific recommendations for known sites will be provided after said survey. A general regime for monitoring earthworks is also illustrated in Figure 76-Figure 83 and recommended below:

- Red areas, high risk – Earthworks in these areas will, or are likely to, affect archaeological/heritage sites. The archaeologist must be present on site to coordinate the beginning of works in this area and on-site monitoring of excavations may be required.
- Yellow areas, moderate risk – Earthworks in these areas may affect archaeological/heritage sites. On-site monitoring is not required, but the archaeologist should be notified when contractors are moving into these areas and briefed on the type of works that will be carried out. A standard archaeological discovery protocol should be followed in these areas (Appendix C – Archaeological Discovery Protocol).
- Green areas, low risk – Earthworks in these areas are less likely to affect archaeological/heritage sites. A standard archaeological discovery protocol should be followed in these segments (Appendix C – Archaeological Discovery Protocol).
- **Red and yellow areas should be shown on trial construction plans.**
- If project plans change, DOC and the archaeologist should be consulted to ensure no changes to heritage or archaeological advice is required.
- Action must be taken to manage the impact of visitors on sites following trail construction. The details of a post-construction management regime are beyond the scope of this report. However, at the very least, a regular monitoring regime should be established for the large tailings at E41/314 to identify any potential damage occurring over time and any necessary conservation or protection work.
- If at any stage during site works Māori material is discovered, works must cease and manawhenua and HNZPT shall be consulted immediately about how to proceed.

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## Appendix A – Client Plans

No plans are current available for this development besides the trail alignment shown in the figures throughout this assessment and the dimensions of excavations described in the Assessment of Effects section. Plans will be provided as they are made available.

## Appendix B – Accidental Discovery Protocol





## Archaeological Discovery Protocol<sup>1</sup>

Under the Heritage New Zealand Pouhere Taonga Act (2014) an archaeological site is defined as any place in New Zealand that was associated with human activity that occurred before 1900 and provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand. For pre-contact Maori sites this evidence may be in the form of bones, shells, charcoal, stones etc. In later sites of European/Chinese origin, artefacts such as bottle glass, crockery etc. may be found, or evidence of old foundations, wells, drains or similar structures. Burials/koiwi tangata may be found from any historic period.

In the event that an unidentified archaeological site is located during works, the following applies:

1. Work shall cease immediately at that place and within 20m around the site.
2. The contractor must shut down all machinery, secure the area, and advise the Site Manager.
3. The Site Manager shall secure the site and notify Origin Consultants.
4. If the site is likely to be of interest to Māori, Origin Consultants shall notify the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (Heritage New Zealand Pouhere Taonga Act, Protected Objects Act).
5. If human remains (koiwi tangata) are uncovered, Origin Consultants shall advise the Heritage New Zealand Regional Archaeologist, NZ Police and the appropriate iwi groups or kaitiaki representative and the above process under 4 shall apply. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.
6. Works affecting the archaeological site and any human remains (koiwi tangata) shall not resume until Heritage New Zealand gives written approval for work to continue.
7. Where iwi so request, any information recorded as the result of the find such as a description of location and content, is to be provided for their records.

It is an offence under S87 of the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of whether the works are permitted, or a consent has been issued under the Resource Management Act.

Origin Consultants Contact Details	
Russell Cook – Principle Archaeologist	E: russell@originteam.co.nz, Ph: 021 989 620
Jeremy Moyle – Senior Archaeologist	E: jeremy@originteam.co.nz, Ph: 021 244 0300

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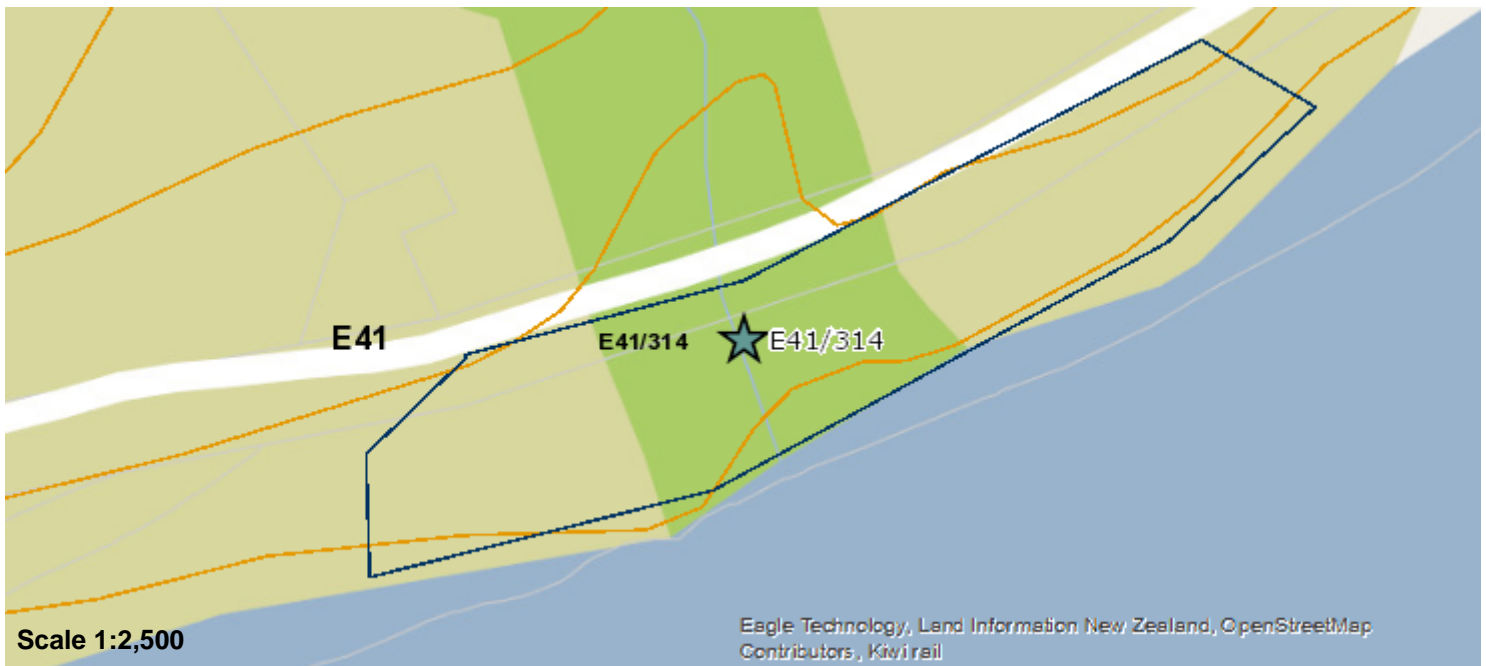
<sup>1</sup> This document is based on the Heritage New Zealand Pouhere Taonga Archaeological Discovery Protocol put together by Dr Matthew Schmidt.

## Appendix C – Site Record Forms





## Summary Site Record

**NZAA SITE NUMBER:** E41/314**SITE TYPE:** Mining - gold**SITE NAME(s):****Record last updated:** 29/03/2023**SITE COORDINATES (NZTM) Easting:** 1250034**Northing:** 5000423**Source:** Handheld GPS**IMPERIAL SITE NUMBER:****METRIC SITE NUMBER:** E41/314**Finding aids to the location of the site**

Several sites located between the road and lake.

**Brief description of the site**

Track, tailings, stone hut, stone wall, historic artefacts

**Condition of the site when last visited**

Fair

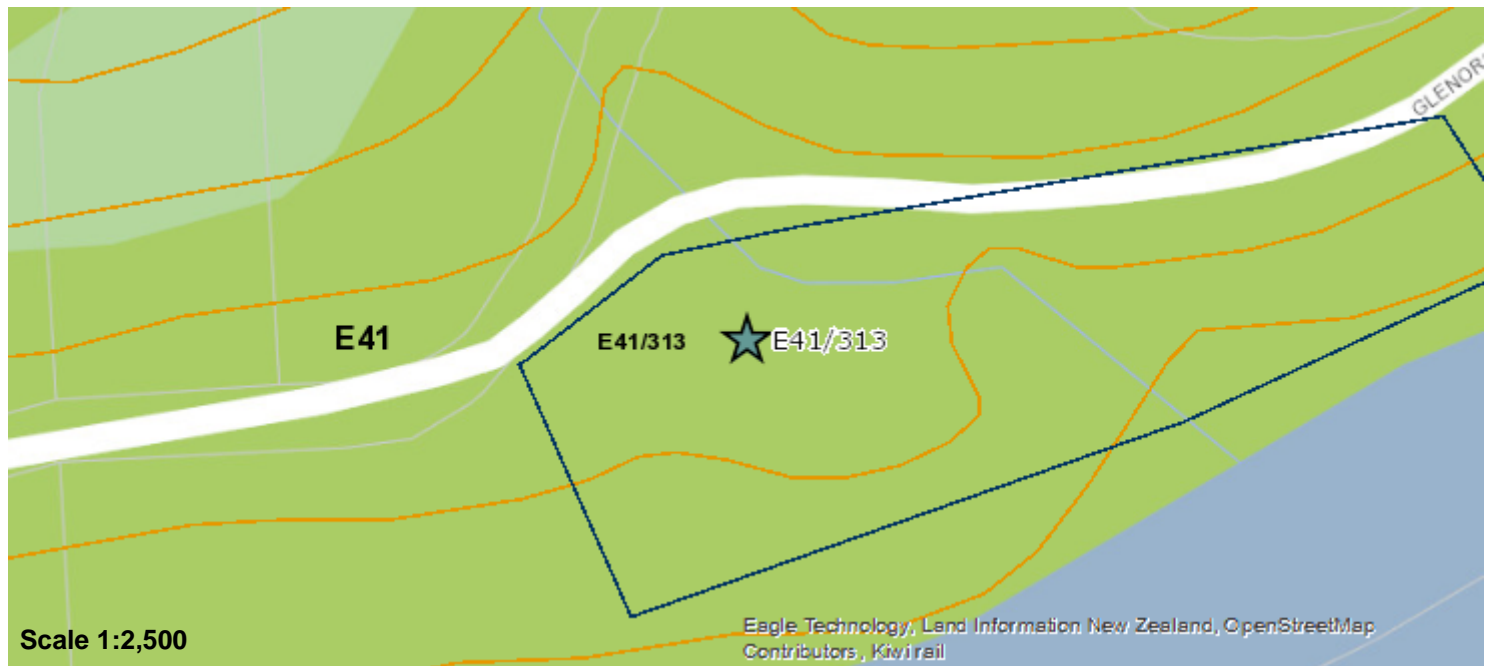
This report contains a summary of the information about this site held in ArchSite.

For a complete Site Record Form containing all the recorded information, please contact the ArchSite Coordinator.

**For further information please contact:****ArchSite Coordinator, PO Box 6337, DUNEDIN****admin@archsite.org.nz**



## Summary Site Record

**NZAA SITE NUMBER:** E41/313**SITE TYPE:** Mining - gold**SITE NAME(s):****Record last updated:** 29/03/2023**SITE COORDINATES (NZTM) Easting:** 1253576**Northing:** 5001331**Source:** Handheld GPS**IMPERIAL SITE NUMBER:****METRIC SITE NUMBER:** E41/313**Finding aids to the location of the site**

Accessed off Glenorchy-Queenstown road, after Bleakley's Bridge.

**Brief description of the site**

Tailings, adit, track, historic artefacts

**Condition of the site when last visited**

Fair

This report contains a summary of the information about this site held in ArchSite.

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