



New Zealand
Heritage Properties Ltd
Investing In Our Heritage

Mananui Mineral Sands

An Archaeological Assessment
for Sites J33/214 and J33/215

Report Prepared for Westland Mineral Sands Co. Ltd
Author: India Gillespie
Reviewed by: Dr Naomi Woods and Dr Dawn Cropper

Mananui Mineral Sands

An Archaeological Assessment for Sites J33/214 and J33/215

Prepared by **New Zealand Heritage Properties Ltd**

Dunedin | Invercargill | Christchurch (trading as Underground Overground Archaeology Ltd)

+643 477 3933 | www.heritageproperties.co.nz

Project Details

Archaeological Site No.	J33/214 and J33/215
Site Address	713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854)
Client	Westland Mineral Sands Co. Ltd c/- Tai Poutini Resources Ltd
Client Contact	Luke McNeish
Client Address	Westland Mineral Sands Co. Ltd 120 Medway Road, Hanmer Springs, 7334
Report Authors	India Gillespie
Reviewed By	Dr Naomi Woods and Dr Dawn Cropper
Approved Archaeologist	India Gillespie
Report Submitted To	Westland Mineral Sands Co. Ltd c/- Tai Poutini Resources Ltd; and Heritage New Zealand Pouhere Taonga
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Executive Summary

Westland Mineral Sands Co. Ltd are proposing to extract heavy mineral sands from within an area near Mananui at 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854). New Zealand Heritage Properties Ltd (NZHP) has been commissioned by Luke McNeish of Tai Poutini Resources Ltd on behalf of Westland Mineral Sands Co. Ltd to undertake an archaeological assessment of the project area. This archaeological assessment has been prepared to assess the archaeological potential of the project area and to consider the impact that the proposed works will have on any archaeological sites. Archaeological sites are areas that witnessed human occupation prior to the year 1900 and can provide information on the history of New Zealand through archaeological investigation; archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

Historical research has revealed that the project area has a long history of nineteenth century activities that were strongly associated with resource extraction. From the 1860s, various forestry activities were undertaken across the project area, which contained valuable timber resources. Following this, mining was sporadically undertaken across the project area from the 1870s through into the twentieth century, with at least five prospecting licenses granted in 1900 alone. In addition, there were at least four dwellings located along the northern boundary, within the project area, by 1912. These were likely associated with the home for aged and infirm miners that was established by the Provincial Government and the Westland Hospital and Charitable Aid Board from 1887 onwards. The site survey identified numerous points of interest (POI) across the project area, and combined with the historical research, has resulted in two new archaeological sites, J33/214 and J33/215, being recorded on ArchSite.

This archaeological assessment has identified that at least two archaeological sites are located within the project area, with the potential to uncover further unrecorded archaeological sites during the project works. **NZHP considers that the proposed work will have a major magnitude of impact on J33/214 and any unrecorded archaeological sites, while there will be no effect to J33/215 as the project works will avoid this site.**

Archaeological sites located within the project area. Shading indicates the site will be affected by the proposed works.

NZAA Site ID	Site Name	Site Type	Brief Description
J33/214	-	Historic – domestic	Demolition debris associated with four former dwellings.
J33/215	-	Mining – gold	Three water races.

On the basis of this assessment, NZHP makes the following recommendations:

- **Authority Application:** As the proposed works described in Section 1.2 will affect site J33/214, an archaeological authority under Section 44 of the HNZPTA 2014 must be obtained from HNZPT prior to any modification of the site.
 - If development plans are altered from those reviewed for this assessment (Appendix A), then HNZPT and NZHP must be alerted, as any changes may alter the assessment of effects or invalidate the authority.
- **Protection of sites/features:** As a first principle, every practical effort must be made to avoid damage to any archaeological site, whether known, or discovered during any redevelopment of the site.
 - Three water races, recorded as site J33/215, were identified within the wider project area during the site survey, but are located outside of the area to be mined. NZHP recommends that a protective cordon, using fluorescent reflective tape, be established around these three water races with an approximate buffer of 5m, vegetation coverage permitting. The establishment of a cordon around these water races will protect the site from inadvertent damage. The location of this site should also be noted on all project documents for further protection.
- **Site Instruction:** All works must be carried out in accordance with the Site Instruction. Any amendments to the Site Instruction will require prior written approval from HNZPT.

- **Contractor Briefing:** All contractors working on the project must be briefed by the s45 approved person (or person nominated on their behalf) on the possibility of encountering archaeological evidence, how to identify possible archaeological sites/features during works, the archaeological work required by the conditions of the authority, and contractors' responsibilities with regard to notification of the discovery of archaeological evidence to ensure that the authority conditions are complied with. NZHP recommends that the briefing be undertaken in an office space to best enable the briefing to be presented digitally, thus maximising engagement.
- **Archaeological Monitoring:** NZHP recommends that any earthworks within non-virgin soil around POI # 1-6, as identified in Chapter 7, must be monitored by the s45 approved person (or person nominated on their behalf) as shown on Figure 10-1 and in accordance with the Site Instruction. Works outside this area, or those which occur within virgin soil, must operate under the OCP.
 - Any archaeological features and material encountered shall be recorded, analysed, and interpreted in accordance with current archaeological practice and as outlined in the Site Instruction.
- **Archaeology of Māori origin:** If archaeological material of Māori origin is discovered at any stage, all work must stop within 20m of the find. NZHP will assist the authority holder in contacting all relevant parties including Te Rūnanga o Makaawhio and Ngāti Waewae, and HNZPT in accordance with the Site Instruction.
 - Any taonga tūturu are *prima facie* the property of the Crown who will be notified of the find. Taonga tūturu will be registered with the Ministry for Culture and Heritage. NZHP, in collaboration with manawhenua, shall notify the Ministry for Culture Heritage and establish the most appropriate temporary storage, management and care for taonga tūturu, until such time as traditional or actual ownership is determined, with an appropriate institution or kaitiaki.
- **Kōiwi (human remains):** Should kōiwi be encountered, all work must stop within 20m of the find. NZHP will assist the authority holder in contacting all affected parties as soon as practicable, including Te Rūnanga o Makaawhio and Ngāti Waewae, HNZPT, and the police. The Ngāi Tahu policy for kōiwi takata shall also be followed (Te Rūnanga o Ngāi Tahu, 2019).
- **Reporting:**
 - Within 20 working days of the completion of on-site archaeological work, the site record forms must be updated or submitted to ArchSite.
 - Within 12 months of the completion of on-site archaeological work, a final report on any archaeological material that is found must be prepared in accordance with *ASG12 Archaeological Report Guideline* (HNZPT, 2023) and submitted to HNZPT for inclusion in the digital library and to Westland Mineral Sands Co. Ltd, the Westland District Council, the Hokitika Museum, and ArchSite. This will provide information about the earthworks undertaken and any resulting archaeology and will be useful to guide any similar future projects in Te Tai o Poutini.

Abbreviations

Abbreviation	Definition
HNZPT	Heritage New Zealand Pouhere Taonga
HNZPTA 2014	Heritage New Zealand Pouhere Taonga Act 2014
NZAA	New Zealand Archaeological Association
NZHP	New Zealand Heritage Properties Limited
POI	Point of Interest
RMA 1991	Resource Management Act 1991

Glossary

The following terms were sourced from the Kāi Tahu Ki Otago Natural Resources Management Plan (Kāi Tahu Ki Otago, 2005) and Heritage New Zealand Pouhere Taonga (HNZPT, 2014).

Te Reo Māori	English
Hapū	Sub-tribe, extended whānau
Iwi	Tribe
Kāi Tahu ki Otago	The four Papatipu Rūnaka and associated whānau and rōpū of the Otago Region
Kāika/Kaik/Kāinga	Settlement, place of residence
Karakia	Prayer, incantation
Kaumatua	Respected elder
Kōiwi / kōiwi	Human remains
Mahika kai/Mahinga kai	Places where food is produced or procured
Manawhenua	Those who exercise customary authority or rakātirataka
Papatipu	Original/traditional Māori land
Rakātira/Rangatira	Chief
Rakātirataka/Rangatiratanga	Chieftainship, decision-making rights
Rohe	Boundary
Rōpū	Group
Rūnaka/Rūnanga	Local representative group or community system of representation
Takata whenua/Tangata whenua	The iwi or hapū that holds mana whenua in a particular place
Takiwā	Area, region, district
Taoka/Taonga	Treasured object
Tapu	Sacred
Tikaka/Tikanga	Lore, customary values and practices
Tūpuna/Tipuna	Ancestor
Umu	Earth oven
Umu-tī	Earth oven used for cooking cabbage tree (tī)
Urupā	Burial place
Wāhi Tapu	Places sacred to takata whenua
Whakapapa	Genealogy
Whānau	Family

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- Damien Barr, Westland Mineral Sands Company Limited.

Table of Contents

Project Details	i
Document Control	i
Ownership and Disclaimer	i
Executive Summary	ii
Abbreviations	iv
Glossary	iv
Acknowledgements	iv
Table of Contents	v
List of Figures	vi
List of Tables	vii
1 Introduction	8
1.1 Project Area	8
1.2 Proposed Activities.....	8
2 Statutory Requirements	10
2.1 Heritage New Zealand Pouhere Taonga Act 2014.....	10
2.2 Resource Management Act 1991.....	11
2.3 Protected Objects Act 1975	12
3 Methodology	13
3.1 Research to Identify Archaeology and Inform Archaeological Values	13
3.2 Assessment of Archaeological Values	13
3.3 Assessment of Effects.....	14
4 Physical Environment and Setting	15
5 Historical Background	17
5.1 Māori Occupation of Te Tai o Poutini.....	17
5.1.1 Pā and Kāinga.....	17
5.1.2 Mahinga Toi.....	17
5.1.3 Mahinga Kai.....	18
5.1.4 Ara Tawhito and Nohoanga.....	19
5.2 Contact and Post-Contact Period Occupation of Te Tai o Poutini	19
5.3 History of the Project Area	21
6 Previous Archaeological Investigations and Archaeological Context	26
6.1 Previous Investigations of the Project Area	26
6.2 The Archaeological Context of the Project Area.....	26
6.3 Site Types in the Archaeological Record.....	28
6.3.1 Mining – Gold Site Types in the Archaeological Record.....	28
6.3.2 Historic – Domestic Site Types in the Archaeological Record.....	28
6.3.3 Timber Milling Site Types in the Archaeological Record.....	28
6.4 Recognised Heritage Sites.....	28
7 Results of the Site Survey	29
7.1 Setting	29
7.2 Points of Interest (POI).....	31
7.2.1 POI # 1-5.....	31
7.2.2 POI # 6.....	33
7.2.3 POI # 7-9.....	34

8	Research Results	36
8.1	Constraints and Limitations	37
9	Archaeological and Other Values.....	38
9.1	Assessment of Archaeological Value for J33/214.....	38
9.2	Assessment of Effects for Unrecorded Sites.....	39
9.2.1	Gold – Mining Sites.....	39
9.2.2	Timber Milling Sites	39
9.3	Other Values.....	40
10	Assessment of Effects and Other Considerations	41
10.1	Assessment of Effects on Archaeological and Other Values	41
10.1.1	J33/214.....	41
10.1.2	Assessment of Effects on Unrecorded Sites	41
10.2	Recommendations to Avoid, Minimise and/or Mitigate Adverse Effects.....	41
10.2.1	Sites and Features to be Avoided or Protected.....	41
10.2.2	Mitigation for Information Loss	42
10.3	Summary of Effects on Archaeological Values.....	44
11	Conclusions and Recommendations.....	45
12	References	47
Appendix A	Development Plans	A-1
Appendix B	Site Record Forms of Previously Recorded Archaeological Sites.....	B-1

List of Figures

Figure 1-1.	Map detailing the project area.....	9
Figure 4-1.	The broader geographical setting surrounding the project area.....	16
Figure 5-1.	Map showing kāinga, mahinga toi and kai areas, and ara tawhito in Te Tai o Poutini at the time of Pākehā contact (1840s). Note: the project area is indicated by the red arrows (McCaskill, 1954).	18
Figure 5-2.	Plan of the Arahura Deed of Purchase (J. Mackay, 1860).....	20
Figure 5-3.	Detail of a map showing the timber resources of Westland (Amor, 1873). The project area is indicated by the white arrow.....	22
Figure 5-4.	Detail of a map of the Kaniere and Mahinapua survey district, with the project area highlighted red and fluming underlined red (Deverell, 1900).	23
Figure 5-5.	Georeferenced survey plan from 1897 (SO 266) with the project area overlain.....	24
Figure 5-6.	Georeferenced plan from 1912 (DP 313) with the project area overlain.	24
Figure 5-7.	Georeferenced aerial photograph with the project area overlain (LINZ, 1970). Note the buildings present along the northern boundary.....	25
Figure 6-1.	Previously recorded archaeological sites within 5km of the project area.	27
Figure 7-1.	Drone photograph of the project area, looking south-west.	29
Figure 7-2.	Map showing the project area and POI identified during the site survey.	30
Figure 7-3.	Photographs showing POI # 1, looking north (left) and west (right).	31
Figure 7-4.	Photograph of POI # 2, looking north-northeast.	32
Figure 7-5.	Left: photograph of POI # 3, looking north-east. Right: photograph of POI # 4, looking north-northeast.	33
Figure 7-6.	Left: photograph of POI # 5 showing brick debris, looking south-east. Right: detail of glass vessel fragments, looking south.	33
Figure 7-7.	Left: detail of glass vessel fragments at POI # 6, looking east. Right: photograph overlooking the area around POI #6, looking south-east.	34

Figure 7-8. Photographs showing the start (7-1, left; looking east) and finish (7-2, right; looking west) of POI # 7.....	34
Figure 7-9. Photographs showing the start of POI # 8 (8-1; left, looking south) and finish (8-2; right, looking north).	35
Figure 7-10. Photographs showing POI #9, looking north-west (left) and south-east (right).....	35
Figure 10-1. Map detailing where archaeological monitoring is recommended for earthworks into non- virgin soil.....	43

List of Tables

Table 1-1. Summary of project area.	8
Table 3-1. Levels of overall archaeological value (adapted from DoT, 2008).....	14
Table 5-1. Summary of key events relating to the project area.	21
Table 6-1. Details of previously recorded archaeological and heritage sites near the project area.	26
Table 9-1. Summary of archaeological value for J33/214.	38
Table 9-2. Summary of archaeological value for general mining - gold sites.....	39
Table 9-3. Summary of archaeological value for general timber milling sites.	40
Table 11-1. Archaeological sites located within the project area. Shading indicates the site will be affected by the proposed works.	45

1 Introduction

Westland Mineral Sands Co. Ltd are proposing to extract heavy mineral sands from within the project area at 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854). New Zealand Heritage Properties Ltd (NZHP) has been commissioned by Luke McNeish of Tai Poutini Resources Ltd on behalf of Westland Mineral Sands Co. Ltd to undertake an archaeological assessment of the project area. This report documents the history of the sites and their archaeological values before assessing the potential effects of the proposed redevelopment on these values and making recommendations for the management of archaeology under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

1.1 Project Area

The project area is defined as 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854), encompassing one land parcel, and a summary of the project area is provided in Table 1-1 and shown in Figure 1-1.

There are no previously recorded archaeological sites, heritage items as included on the New Zealand Heritage List/Rārangi Kōrero, items scheduled on the current Westland District Plan or the proposed Te Tai o Poutini Plan that have been identified as relating to the project area. The project area is also not within a Statutory Acknowledgement Area, nor has this assessment identified that there is a covenant or heritage order affecting the project area.

Table 1-1. Summary of project area.

Site Address	713 Ruatapu Road, Ruatapu, Westland
Legal Description	Lot 1 DP 3854
Territorial Authority	Westland District Council
Archaeological Site No.	J33/214 and J33/215
Previous Archaeological Authorities	-
New Zealand Heritage List/Rārangi Kōrero	-
Covenant or Heritage Order	-
Scheduled on District Plan	-
Reserve Status	-
Statutory Acknowledgement Area	-
Customary Marine Title	-

1.2 Proposed Activities

Westland Mineral Sands Co. Ltd are proposing to undertake a 16-year project, featuring ~10-years of extracting heavy mineral sands from within the project area near Mananui, Westland. The project, which will seek to remove valuable minerals, including garnet, ilmenite, and gold, will also see the creation of an ecological reserve to mitigate vegetation clearance. The proposed plans for the project are provided in (Appendix A) with the location of the project area is shown in Figure 1-1. The following proposed activities will, or have the potential to, affect archaeology:

- Removal of vegetation and topsoil. Earthworks to remove the vegetation and topsoil across the project area will be required to a depth of approximately 0.6m below surface.
- Initiation of mining across a 112.9Ha area. Earthworks will be required to a depth of up to 14m below surface to extract mineral-rich sands. A floating, self-propelled, electric suction-dredge will be situated within a pit, that will be dug by a hydraulic excavator. The dredge will pump material to the plant site for further processing.
 - The removed materials will be either returned to the mined areas, used to build bunding (using topsoil), used to create settlement ponds (using tailings), or resowing pasture (using topsoil), *etc.*
- Earthworks for associated activities, including the construction of bunds to buffer noise, and the construction of a plant site of 4.4Ha, located approximately 450m north of the south-east corner of the project area.

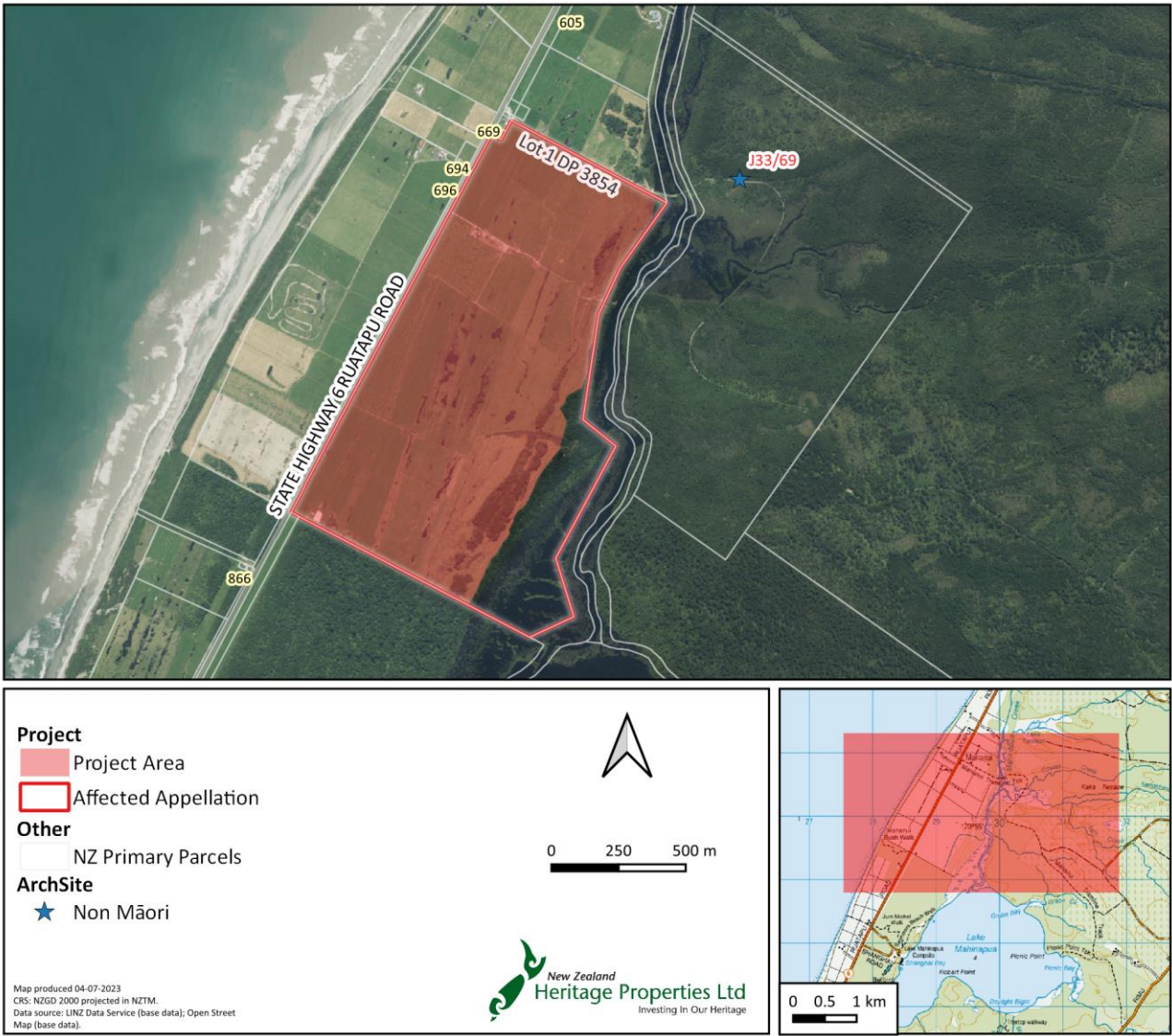


Figure 1-1. Map detailing the project area.

2 Statutory Requirements

The legislative requirements relating to archaeological sites and artefacts are detailed in the following sections. There are two main pieces of legislation that provide protection for archaeological sites: the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014) and the Resource Management Act 1991 (RMA 1991). Artefacts are further protected by the Protected Objects Act 1975.

2.1 Heritage New Zealand Pouhere Taonga Act 2014

The HNZPTA 2014 came into effect in May 2014, repealing the Historic Places Act 1993. The purpose of this act is to promote identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage. Heritage New Zealand Pouhere Taonga (HNZPT) administers the act and was formerly known as the New Zealand Historic Places Trust (Pouhere Taonga).

Archaeological sites are defined by this act 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)

Additionally, HNZPT has the authority (under section 43(1)) to declare any place to be an archaeological site if the place

- (a) was associated with human activity in or after 1900 or is the site of the wreck of any vessel where that wreck occurred in or after 1900; and
- (b) provides, or may be able to provide, through investigation by archaeological methods, significant evidence relating to the historical and cultural heritage of New Zealand.

Archaeological sites are protected under Section 42 of the act, and it is an offense to carry out work that may “modify or destroy, or cause to be modified or destroyed, the whole or any part of that site if that person knows, or ought reasonably to have suspected, that the site is an archaeological site”, whether or not the site has been previously recorded. Each individual who knowingly damages or destroys an archaeological site without having the appropriate authority is liable, on conviction, to substantial fines (Section 87).

Any person wishing to carry out work on an archaeological site that may modify or destroy any part of the site, including scientific investigations, must first obtain an authority from HNZPT (Sections 44(a,c)). The act stipulates that an application must be sought even if the effects on the archaeological site will be no more than minor as per Section 44(b). A significant change from the Historic Places Act (1993) is that “an authority is not required to permit work on a building that is an archaeological site unless the work will result in the demolition of the whole of the building” (Section 42(3)).

HNZPT will process the authority application within five working days of its receipt to assess if the application is adequate or if further information is required (Section 47(1)(b)). If the application meets the requirements under Section 47(1)(b), it will be accepted and notice of the determination will be provided within 20 to 40 working days. Most applications will be determined within 20 working days, but additional time may be required in certain circumstances. If HNZPT requires its own assessment of the Māori values for the site, the determination will be made within 30 working days. If the application relates to a particularly complex site, the act permits up to 40 days for the determination to be made. HNZPT will notify the applicant and other affected parties (*e.g.*, the land owner, local authorities, iwi, museums, *etc.*) of the outcome of the application.

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 decision within 15 working days of receiving notice of the determination. HNZPT may impose conditions on the authority that must be adhered to by the authority holder (Section 52). Provision exists for a review of the conditions (see Section 53). 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 land owner must give notice to HNZPT and advise the succeeding land owner of the authority, its conditions, and terms of consent.

An additional role of HNZPT is maintaining the New Zealand Heritage list, which is a continuation of the Register of Historic Places, Historic Areas, Wāhi Tapu, and Wāhi Tapu Areas. 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 Resource Management Act 1991.

2.2 Resource Management Act 1991

The RMA 1991 defines historic heritage as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, and it may include historic sites, structures, places, and areas; archaeological sites; and sites of significance to Māori. It should be noted that this definition does not include the 1900 cut-off date for protected archaeological sites as defined by the HNZPT Pouhere Taonga Act 2014. Any historic feature that can be shown to have significant values must be considered in any resource consent application.

The heritage provisions of the RMA 1991 were strengthened with the Resource Management Amendment Act 2003. The Resource Management Amendment Act 2003 contains a more detailed definition of heritage sites and now considers historic heritage to be a matter of national importance under Section 6. The act 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 well-being of today's communities while safeguarding the options of future generations.

Under the RMA 1991, local authorities are required to develop and operate under a district plan, ensuring that historic heritage is protected. This includes the identification of heritage places on a heritage schedule (or list) and designation of heritage areas or precincts and documents the appropriate regulatory controls. All heritage schedules include, but are not limited to, all items on the New Zealand Heritage List/Rārangi Kōrero. Additional sites of significance to the local authority may also appear on the schedule.

The regulatory controls for historic heritage are specific to each local authority. However, most local authorities will require resource consent under the RMA 1991 for any alterations, additions, demolition, or new construction (near a listed place) with HNZPT being recognised as an affected party. Repair and maintenance are generally considered permitted activities.

The RMA 1991 requires local authorities to develop and operate under a district plan. In September 2018, the Local Government Commission announced its decision to require the Westland, Grey, and Buller District Councils to combine their District Plans into one document. The combined plan has been named Te Tai o Poutini Plan and was notified in 2022 giving some rules immediate legal effect. Rules which have immediate legal effect relate to:

- Historic Heritage;
- Sites and Areas of Significance to Māori;
- Ecosystems and Indigenous Biodiversity;
- Natural Character and the Margins of Water; and

- Activities on the Surface of Water.

Te Tai o Poutini Plan is a proposed combined district plan for the West Coast. The proposed plan identifies important heritage buildings and sites, and important trees and sites of significance to Poutini Ngāi Tahu. Part 2 of the Proposed Te Tai o Poutini Plan encompasses Historical and Cultural Values, Ngā Uara ā-Ahurea, ā-Hitori Hoki.

Iwi/hapu management plans are planning documents that are recognised by an iwi authority, relevant to the resource management issues, including heritage, of a place and lodged with the relevant local authority. They have statutory recognition under the RMA 1991. Iwi Management Plans set baseline standards for the management of Māori heritage and are beneficial for providing frameworks for streamlining management processes and codifying Māori values. Iwi Management Plans can be prepared for a rohe, heritage inventories, a specific resource or issue or general management or conservation plans (NZHPT, 2012).

The hapū who hold mana whenua in Te Tai o Poutini are Ngāti Mahaki o Makaawhio and Ngāti Waewae. Under section 74(2A) of the RMA, territorial authorities, in preparing or changing a district plan, must take into account planning documents recognised by iwi. Both Ngāti Mahaki o Makaawhio and Ngāti Waewae have prepared Pounamu Management Plans which have been recognised by Te Rūnanga o Ngāi Tahu as planning documents. These iwi management plans have been taken into account in the Te Tai o Poutini Plan through participation of Poutini Ngāi Tahu representatives during development of the plan. One of these plans, the Lake Māhinapua Management Plan (Te Rūnanga o Ngāi Tahu, Te Rūnanga o Ngāti Waewae, & Te Rūnanga o Makaawhio, 2018), was prepared by Te Rūnanga o Ngāi Tahu, in conjunction with Te Rūnanga o Ngāti Waewae and Te Rūnanga o Makaawhio to manage the bed of Māhinapua, as well as the wider catchment area, in line with Ngāi Tahu values.

2.3 Protected Objects Act 1975

The Protected Objects Act 1975 was established to provide protection of certain objects, including protected New Zealand objects that form part of the movable cultural heritage of New Zealand. Protected New Zealand objects are defined by Schedule 4 of the act and includes archaeological objects and taonga tuturu. Under Section 11 of the Protected Objects Act 1975, any newly found Māori cultural objects (taonga tuturi) are automatically the property of the Crown if they are older than fifty years and can only be transferred from the Crown to an individual or group of individuals through the Māori Land Court. Anyone who finds a complete or partial taonga tuturu, accidentally or intentionally is required to notify the Ministry of Culture and Heritage within:

- (a) 28 days of finding the taonga tuturu; or
- (b) 28 days of completing field work undertaken in connection with an archaeological investigation authorised by HNZPT.

3 Methodology

This archaeological assessment has been prepared in accordance with HNZPT's (2019) guideline on preparing an archaeological assessment. Presented below are the methods used to gather information to identify the archaeological potential of the project area, determine the archaeological significance, and assess the effects of the proposed work on archaeological values.

3.1 Research to Identify Archaeology and Inform Archaeological Values

The first half of this report provides the information gathered to inform on the archaeological values of the project area, including the setting, historical background, archaeological context, and the site visit. Documentary research was undertaken to inform the background research sections of this assessment. The physical environment section documents the setting of the project area, its land use, and considers environmental factors that may influence how the site was occupied through time. The historical background first provides an overview of human history for the wider area before narrowing down on evidence that is specific to the project area itself to determine the nature and significance of the archaeology. Previous archaeological research and investigation for the project area provide an understanding of research results, areas of modification, and informs on the potential for the proposed works to affect archaeology. This section also considers the wider archaeological context, including the consideration of sites recorded within and near the project area and how these are represented in the archaeological record at the local, regional, and national level. Sources utilised for this research include:

- Archives New Zealand
- ArchSite
- Digital NZ
- Kā Huru Manu
- LINZ
- PapersPast

Section 7 documents the results of the pedestrian survey, which was conducted to identify the presence or absence of archaeological sites within the project area. A pedestrian survey of the project area was undertaken by India Gillespie, accompanied by Luke McNeish, on 18 July 2023.

3.2 Assessment of Archaeological Values

The assessment of archaeological and other values is based on criteria established by HNZPT (2019):

- The **condition** of the site(s).
- Is the site(s) unusual, **rare or unique**, or notable in any other way in comparison to other sites of its kind?
- Does the site(s) possess **contextual value**? Context or group value arises when the site is part of a group of sites which taken together as a whole, contribute to the wider values of the group or archaeological, historic or cultural landscape. There are potentially two aspects to the assessment of contextual values; the relationship between features within a site, and the wider context of the surroundings.
- **Information potential**. What current research questions or areas of interest could be addressed with information from the site(s)? Archaeological evaluations should take into account current national and international research interests, not just those of the author.
- **Amenity value** (e.g. educational, visual, landscape). Does the site(s) have potential for public interpretation and education?
- Does the site(s) have any special **cultural associations** for any particular communities or groups (e.g., Māori, European, Chinese.)

The criteria outlined above help to build an overall assessment of significance of a site, and NZHP have adopted the following levels of overall archaeological value (Table 3-1). These levels of significance follow the recommendations proposed by Department for Transport (2008); although, this steers away from the use of local, regional, and local importance, which Kerr (2013) argues is irrelevant to the assessment process. It is important to note that it is not possible to fully understand the archaeological significance of subsurface sites, and that the significance of a site may change on the basis of what is found during the work programme.

Table 3-1. Levels of overall archaeological value (adapted from DoT, 2008).

Level of Significance	Criteria
Very High	<ul style="list-style-type: none"> • World Heritage Sites (and proposed sites) • An archaeological site of acknowledged international importance
High	<ul style="list-style-type: none"> • Listed archaeological sites, including those of listing quality and importance <ul style="list-style-type: none"> ○ Category 1: places of special or outstanding historical or cultural heritage significance or value; ○ Category 2: places of historical or cultural heritage significance or value; and • Scheduled archaeological sites, including those of scheduling quality and importance • Archaeological sites with exceptional values
Medium	<ul style="list-style-type: none"> • Archaeological sites that can be shown to have moderate values
Low	<ul style="list-style-type: none"> • Archaeological sites with limited value, including those that are highly represented, have low information potential, have poor preservation, and/or poor survival of contextual association
Negligible	<ul style="list-style-type: none"> • Sites with very little surviving archaeological interest
Unknown	<ul style="list-style-type: none"> • The importance of the site is not yet known

3.3 Assessment of Effects

After determining that there is evidence that archaeology is present within the project area and evaluating its archaeological value, an assessment of the effects of the proposed work on those values was completed. Specifically, consideration was given to the following matters as outlined by HNZPT (2019):

- How much of the site(s) will be affected, and to what degree, and what effects this will have on the values of the site(s).
- Whether the proposed work may increase the risk of damage to the site(s) in future. For example, change from farming to residential use may make sites vulnerable to increased pedestrian and vehicular activity.
- Whether a re-design may avoid adverse effects on the site(s). It is recognised that detailed evaluation of alternatives may be beyond the scope of the archaeological assessment, however, some consideration of alternatives should be considered where possible.
- Possible methods to protect sites, and avoid, minimise or mitigate adverse effects should be discussed. These will form the basis of any recommendations in the final section.

The magnitude of impact on archaeology is defined below with a scale ranging from no impact to major impact. In most instances these impacts are adverse; however, there may also be positive impacts on the site.

- **Major** - impact to the archaeological site, such that the asset is totally altered (*e.g.*, a site is totally destroyed).
- **Moderate** - impact to the archaeological site, such as the asset is significantly modified (*e.g.*, at least half of a site is affected)
- **Minor** - impact to the archaeological site, such that the asset is slightly different (*e.g.*, a small portion of the site is affected).
- **Negligible** - slight changes to archaeological site that hardly affect it.
- **No impact** - the works will not affect the site.

4 Physical Environment and Setting

The project area is situated approximately 10km south of Hokitika at Mananui, Westland. Positioned eastwards adjacent to State Highway 6, the project area is bordered on the north by the Mananui Tramline (Māhinapua Walkway) and along the east by Tūwharewhare (Māhinapua Creek). The project area is relatively flat, with much of the former native vegetation having been long-since cleared and converted to pasture. Lower-lying areas across the landscape are swampy, and prone to waterlogging. The following sections outline the physical environment and setting of the project area, including its geomorphological and ecological context.

Te Tai o Poutini, the West Coast of Te Waipounamu, lies along the boundary between the Pacific and Australian tectonic plates, with the plate boundary being clearly marked by the Alpine Fault, forming the western edge of the Southern Alps. The rocks on each side of the fault are gradually sliding apart, with those on the western side of the Alpine Fault having moved approximately 480 kilometres northwards in comparison to those on the eastern side. This has resulted in a sudden change in types of rocks present across the fault line (Nathan, 2012). To the east of the Alpine Fault, the most commonly found type of rock is greywacke, a hard, grey muddy sandstone that contains bands of shale. Closer to the Alpine Fault, the deeply buried greywacke has metamorphosed into schist, while pounamu can be sourced from small area of schist north-east of Hokitika. To the west of the Alpine fault, the rocks are more varied, with the oldest rock type being greywacke, containing intrusions of several types of granite. These are overlaid by layers of softer sedimentary rocks, including mudstone, sandstone, conglomerate, and limestone. Coal-bearing rocks are widespread, with coal having been mined at a number of locations (Nathan, 2012).

Mesothermal gold is contained within the greywacke, which is predominant on Te Tai o Poutini, and is incorporated into the faulted areas of the hard rock source, known as shear zones. When the hard rock sources, such as the West Coast greywacke, are eroded away, it becomes auriferous gravels (Karoro Formation). Alluvial gold is the result of rivers or glaciers having flowed over auriferous gravels, washing, and sorting the gold, which then allows for the formation of concentrations of heavy gold deposits in certain layers. This often meant that alluvial gold deposits were much richer than their hard-rock sources (Walrond, 2012). The majority of gold deposits within the Westland region are alluvial, consequently, the area hosts a dynamic timeline of mining activities throughout recent history.

The landscape surrounding the project area is comprised of a coastal dune system, which would have formerly been part of a lagoon and wetland ecosystem. The wetlands around Lake Māhinapua and along the eastern fringes of the affected appellation are a significant feature of the wider ecosystem. The wetland areas, which will not be impacted by the project works, are comprised of freshwater wetland, with smaller areas of salt marsh and salt meadow. Some of the native vegetation present in these wetlands is representative of the original vegetation (Te Rūnanga o Ngāi Tahu et al., 2018).

The project area is situated in the Westland District, which extends approximately 400km from the Taramakau River in the north to Barn Bay in the south and is bordered by the Tasman Sea to the west, and the Southern Alps to the east. Nearby Hokitika is the main urban centre in Westland, however there are other sizeable settlements north and south along State Highway 6.

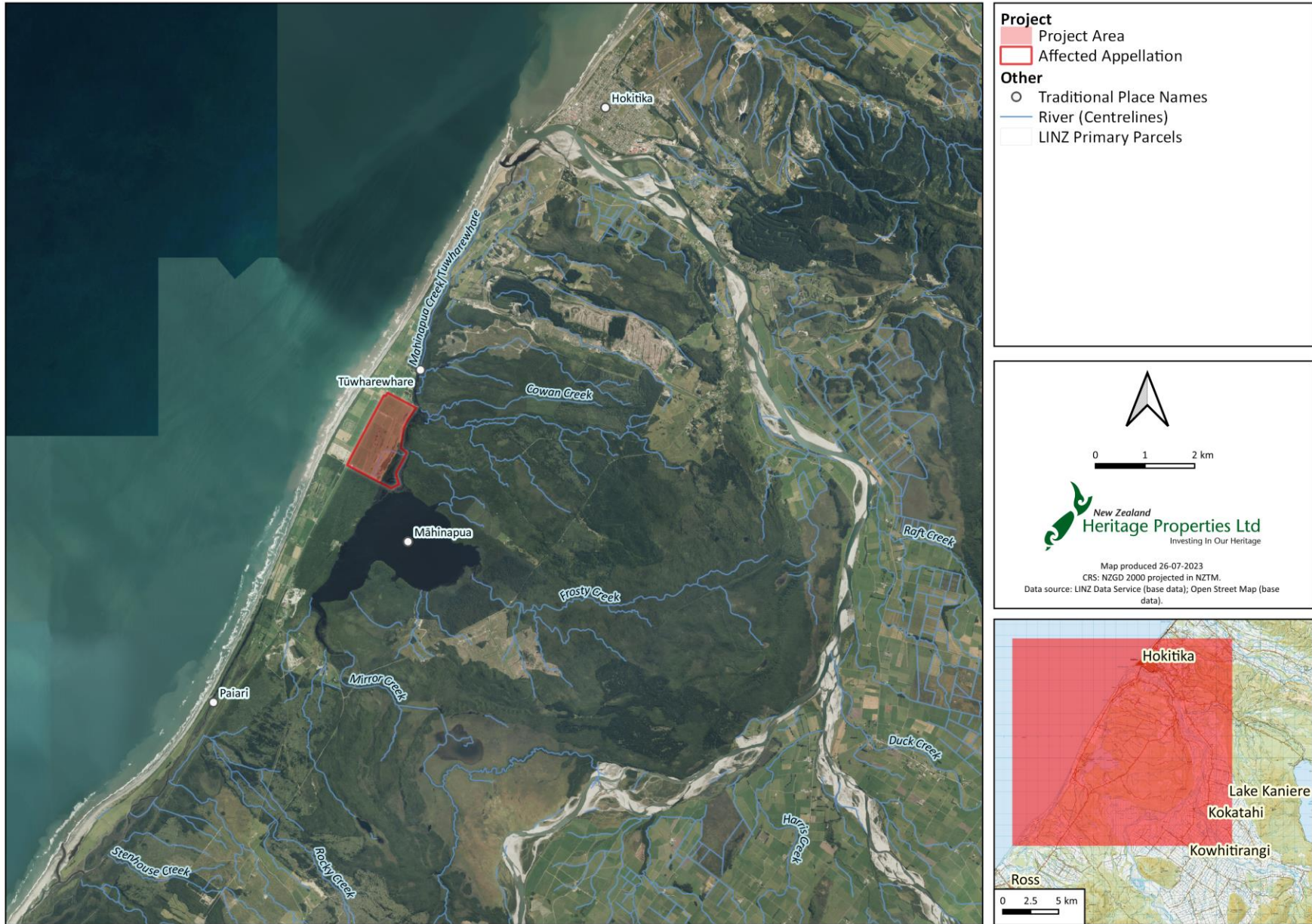


Figure 4-1. The broader geographical setting surrounding the project area.

5 Historical Background

The following sections give an overview of Māori and Pākehā settlement in Te Tai o Poutini (the West Coast) and Westland to provide context to understand the history of the area. Through this research it is possible to begin to identify what type of physical, cultural, and social processes have shaped the form and distribution of archaeological material. This chapter then moves on to outline the history of the project area, situated at Mananui.

5.1 Māori Occupation of Te Tai o Poutini

Te Tai o Poutini lies within the traditional boundaries of Ngāi Tahu. Ngāi Tahu is the largest iwi in Te Waipounamu (the South Island), comprised of people descended from the tribe's five primary hapū (Ngāti Kurī, Ngāti Irakehu, Ngāti Huirapa, Ngāi Tūāhuriri and Ngāi Te Ruahikihiki) along with earlier Rapuwai, Hawea, Waitaha, and Kāti Mamoe ancestors. The hapū who hold mana whenua in Tai o Poutini are Ngāti Mahaki o Makaawhio and Ngāti Waewae; together they are known as Poutini Ngāi Tahu. The rohe of Poutini Ngāi Tahu extends over the entire West Coast Region from Kahurangi Point to Piopiotahu (Milford Sound) and inland to Ngā Tiritiri o te Moana (the Southern Alps).

In the seventeenth century, Raureka, a Ngāti Wairangi rangatira was the first person to find a way across Ngā Tiritiri-o-Te-Moana, the Southern Alps. Raureka, who was born at Lake Kaniere to the east of the project area, arrived in the Arowhenua region and was taken in by a party of Ngāi Tūhaitara, who were amazed by her pounamu toki. Word of Raureka's journey, and the pounamu that could be gathered en route, soon spread (Te Rūnanga o Ngāi Tahu, 2022; Te Rūnanga o Ngāi Tahu et al., 2018).

In the late seventeenth century, following Raureka's journey and the introduction of pounamu to Ngāi Tahu, successive parties were sent from the East Coast over to Te Tai o Poutini to gather more of the precious resource. What followed was a series of battles, including one near the project area at Lake Māhinapua; Ngāi Tahu were defeated in a battle here by the resident Ngāti Wairangi. The senior Ngāi Tahu rangatira Tānetiki, Tūtaemaro, and Tūtepihiraki were killed in the battle. Hikātūtae, who was an uncle of Tānetiki, removed their heads for safekeeping and swam across the lake to safety while clenching the hair of Tānetiki's head with his teeth, and holding the other two heads. He travelled over Nōti Raureka (Browning Pass), and back to Kaiapoi Pā, where he returned the heads (Te Rūnanga o Ngāi Tahu et al., 2018). Lake Māhinapua is recognised as a wāhi tapu (sacred place).

5.1.1 Pā and Kāinga

A lot of what is known of the settlement of Te Tai o Poutini comes from traditional oral histories and later nineteenth century ethnographic accounts recorded by Pākehā. By the nineteenth century, kāinga (villages) were largely permanently occupied and were situated near the mouths of the major rivers. However, during summer, kāinga could often be sparsely populated as groups dispersed to undertake a range of seasonal activities. When Pākehā arrived in Te Tai o Poutini, Māori settlements were concentrated along the central coastline, although, archaeological evidence also suggests that kāinga and nohoanga (seasonal camps) stretched along the western seaboard (Anderson, 1982). The central area of Te Tai o Poutini, where the project area is situated, was closest to the four large rivers and the Arahura and Taramakau Valleys where pounamu was sourced. Later Pākehā noted the presence of small, isolated settlements in these areas, where Māori communities stayed while procuring pounamu (Anderson & Prickett, 1982; Ngai Tahu, 2021).

5.1.2 Mahinga Toi

Mahinga toi refer to places where non-food resources were gathered. Pounamu (greenstone) was of particular importance to Māori, with the stone manufactured into tools such as adzes, chisels, and knives, as well as items of ornamentation such as hei tiki (pendant) (Te Rūnanga o Ngāi Tahu, 2022). The major sources for pounamu along Te Tai o Poutini were along the Arahura and Taramakau Rivers (Figure 5-1). Raw pounamu was also traded for other resources, and spread throughout both Te Waipounamu and Te Ika-a-Māui (the North Island) (Jacomb *et al* 2010). There were a number of ara tawhito (traditional routes) used to traverse Kā Tiritiri-o-te-moana (the Southern

Alps) with the major routes crossing the Haast and Harper's Pass (Figure 5-1). Lake Māhinapua, adjacent to the south-west of the project area was, prior to the seventeenth century, valued as puna raranga (weaving resource area). Kuta (also known as paopao or ngāwhā; *Eleocharis sphacelate*) is a giant spike sedge that was harvested and transformed into a variety of items (Te Rūnanga o Ngāi Tahu et al., 2018).

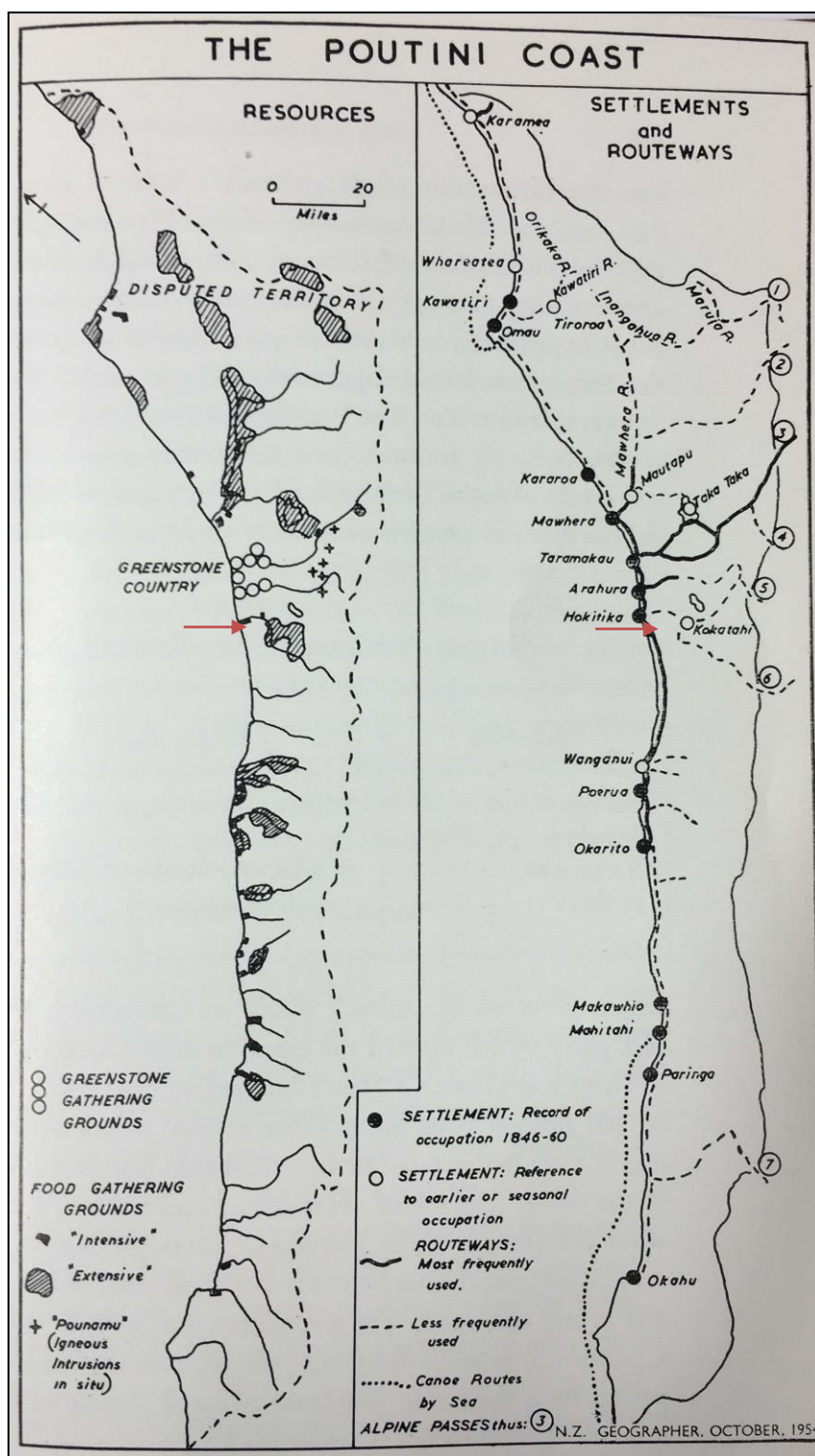


Figure 5-1. Map showing kāinga, mahinga toi and kai areas, and ara tawhito in Te Tai o Poutini at the time of Pākehā contact (1840s). Note: the project area is indicated by the red arrows (McCaskill, 1954).

5.1.3 Mahinga Kai

Te Tai o Poutini was also associated with mahinga kai (food gathering places) utilised by people living in the region, as well as travelling parties. Freshwater sources were fished for tuna (eel), grayling, and īnanga (whitebait), while

forested areas were fowled for weka, kākāpō, pigeon, kākā, and tūi (Anderson, 1982). Berries and vegetables, such as tree fern pith, mamaku, podocarp berries, and rarely, bracken fern root and nikau palm, were also gathered. It is unlikely that Polynesian cultigens, such as kūmara, were grown on Te Tai o Poutini south of Hokitika, as no evidence, ethnographic or archaeological, has been uncovered to support this. Although Anderson notes that climatic fluctuations, such as the period of global warming during the sixteenth century, may have made supported horticulture (1982).

The project area is adjacent to Lake Māhinapua and the Māhinapua Creek, which is traditionally known as Tūwharewhare. Lake Māhinapua and Tūwharewhare were, prior to the seventeenth century, valued as mahinga kai. Tuna, īnanga, and various species of waterfowl, which continue to thrive in the area, were important resources prior to Māhinapua becoming regarded as a wāhi tapu (Te Rūnanga o Ngāi Tahu et al., 2018).

5.1.4 *Ara Tawhito and Nohoanga*

The coastline of Te Tai o Poutini was an ara tawhito (traditional travel routes) frequently utilised by Māori (see Figure 5-1). Te Tai o Poutini was an important area to travel to and around as it was one of only a few places where pounamu could be found.

Nohoanga, literally meaning ‘a place to sit’, traditionally refers to seasonally occupied sites. Nohoanga were an integral part of the mobile lifestyle of tīpuna (ancestors) as they moved around Te Waipounamu undertaking various seasonal expeditions for resource procurement, trade and maintaining social relationships. No inland settlement sites or nohoanga have been investigated in Te Tai o Poutini, although secondary information inferred from artefact findspots suggests that nohoanga would have been close to inland rivers or streams (Department of Conservation, 2010). There have been no artefact findspots close to the project area.

5.2 Contact and Post-Contact Period Occupation of Te Tai o Poutini

The first Pākehā explorer to sight Te Tai o Poutini was Abel Tasman in 1642, (McNab, 1914). His sighting was followed by that of Captain James Cook in the following century; however, strong winds prevented both explorers from landing. On the trail of explorers came gangs of sealers and whalers. The first ship to enter the Buller (Kawatiri) River was reportedly the sealing schooner the *Three Brothers*, which sailed up the river in 1844 likely for ship-based sealing. The master of the vessel went ashore, noting the ‘only trace of a human being he saw on shore, was the footprints of a Māori and a piece of wood, on which had been written, with charcoal, instructions to another Māori to follow the writer to Wanganui’ (New Zealand Spectator and Cook’s Strait Guardian, 1845). There are suggestions that sealing parties operated from the 1820s; a gang from the Te Awaiti Whaling Station, near Wellington, also seemed to have set up camp at the Steeples for several months (Smith, 2002). However, sealing and whaling were coastal pursuits and these early Pākehā arrivals did not venture far into the interior of Te Tai o Poutini.

Surveyors and geologists were the first Pākehā to explore the interior of Te Tai o Poutini, led by Kehu, a local guide. The forested, mountainous landscape of Te Tai o Poutini, which regularly experienced high rainfall, was unattractive for potential Pākehā settlement. Noted explorers, who included Charles Heaphy, William Fox, and Thomas Brunner, recorded their explorations in search of suitable agrarian land and resources. Between 1846 and 1848, Brunner and Heaphy, guided by Kehu, spent 560 days exploring from Nelson to Arahura. The party traced the Buller (Kawatiri) River from its source to the ocean, traversed the Grey and Īnangahua Valleys, and mapped the coastline as far south as the Paringa River (Nathan, 2016).

From 1844 to 1863, Ngāi Tahu sold their lands to the Crown in a series of nine purchases, believing the treaty would bring material benefits. The largest of these purchases was Kemp's Deed, signed at Akaroa on the 12th June 1848 (Tau, 2017). Twenty million acres of Canterbury land was acquired by the Crown. The northern boundary of the land was a line drawn from Kaiapoi on the east to Cape Foulwind near Westport on the west (A. Mackay, 1875). By the late 1850s, a shortage of agricultural land in Canterbury led to interest in the Te Tai o Poutini. In

1859 the government sent James Mackay to negotiate with Poutini Ngāi Tahu to purchase the land. After negotiations, the Arahura Deed was signed by leading chiefs on 21 May 1860 (see Figure 5-2). Almost all of Te Tai o Poutini was purchased for £3000. Small reserves, including Māwhera in the present town of Greymouth, were set aside for manawhenua. In 1879, a Ngāi Tahu leader who had been at the signing of the Kemp Deed in 1848, had this to say: 'Kemp promised us reserves, we were to have our fisheries, our burial places, mahinaa kai [food-gathering places], eel weirs, anywhere, everywhere. The promises were made 30 years ago! Where is the fulfilment of them?' (Evison, 1993).

Despite the land purchases and shortages of agrarian land elsewhere, Pākehā were slow to take up residence in Te Tai o Poutini. In 1859 a surveyor, John Rochfort, found gold in several places, including in the Taramakau Valley and lower Buller Gorge; however, there were no major finds and the Otago goldfields were more attractive to prospectors (Nathan, 2016). That was until 1864 when Ihaia Tainui and Haimona Taukau found gold while searching for pounamu in the Taramakau River, leading to a surge in prospectors to the region and marking the beginning of the West Coast gold rush (Department of Conservation, 2010).

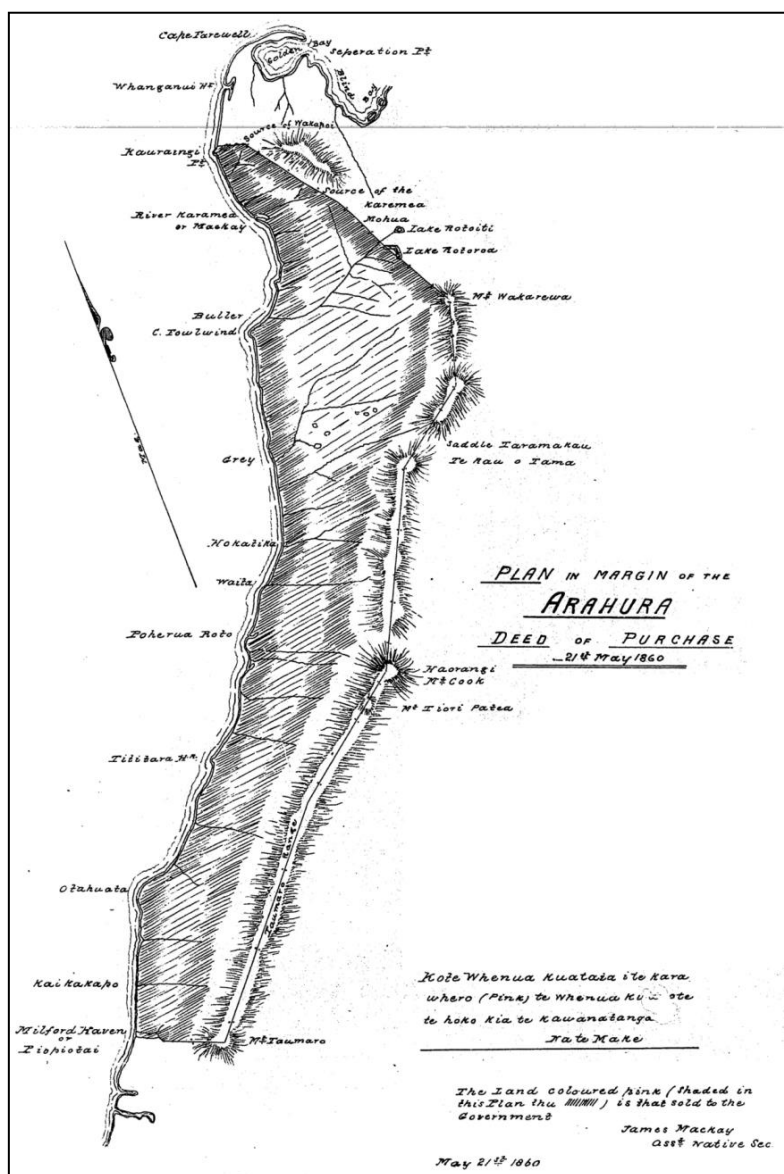


Figure 5-2. Plan of the Arahura Deed of Purchase (J. Mackay, 1860).

Following on from the discovery of gold in the Taramakau River, new discoveries prompted further rushes shortly after, when discoveries were made at Waimea and Kaniere in 1864 and Ōkārito, Bruce Bay, Ross, and along the

Māwheranui (Grey) River in 1865 (Larnach, 1887; Nathan, 2012). Westland, from the Māwheranui (Grey) River to the southern boundary of the Canterbury province, was declared a goldfield in March 1865.

Alluvial diggings were undertaken throughout the district as miner’s prospected streams and tracks everywhere (Andrews, 2009; New Zealand Mines Department, 1887; Salmon, 1963). Accounts of gold sparkling in the black sands spread and the West Coast gold rush saw the influx of many foreign miners from abroad and the surrounding provinces setting up small claims as independents (Andrews, 2009; Nathan, 2012; Salmon, 1963). Reports flooded in of parties making £50 a week with every river and stream along the coast being gold-bearing (New Zealand Mines Department, 1887). In 1865, almost 300,000 ounces of gold was shipped out from Hokitika, Greymouth and Westport, eclipsing the Otago gold fields by more than 30,000 ounces (Salmon, 1963). 1866 to 1867 saw a peak production with more than 15 tonnes of gold and from 1857 to 1886 exports of gold from the West Coast are estimated at £43,231,476 (New Zealand Mines Department, 1887). The rushes on the West Coast after 1867 were small affairs with only a few thousand men mining in the area after this point. Despite this, the West Coast region as a whole continued to be the largest gold producing area in New Zealand until 1895 (May, 1962). The West Coast was still producing 49% of the national gold production in comparison to Otago (35%) and Auckland (16%) in 1884 (Salmon, 1963).

5.3 History of the Project Area

The project area is situated at 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854), 10km south of Hokitika. The project area has a long history of nineteenth century activities, beginning with various forestry activities from the 1860s, followed by mining from the 1870s through into the twentieth century. Historical research has revealed that there were at least four dwellings present within the project area by 1912, and these were likely associated with the home for aged and infirm miners that was established in the project area from 1887 onwards. Gold mining activities were also identified as taking place within the project area, with at least five prospecting licenses granted in 1900 alone, and fluming associated with some of these is detailed on a historic map from the same year. A summary of key events relating to the project area are detailed in Table 5-1. As a result of this assessment, sites J33/214 and J33/215, classified as historic – domestic and mining – gold archaeological site types, respectively, have been recorded on ArchSite.

Table 5-1. Summary of key events relating to the project area.

Year	Event	Source
Pre-1844	Past Māori lifeways activities taking place in the wider landscape.	(Te Rūnanga o Ngāi Tahu, 2022)
1865	Lake Māhinapua and Māhinapua Creek adjacent to the project area utilised for transporting forestry goods.	(Te Rūnanga o Ngāi Tahu et al., 2018)
1879	Gold rush declared at Lake Māhinapua, including the project area.	(New Zealand Tablet, 1879)
1887	Home for aged and infirm miners (Reserve No. 271) to be established within the project area.	(West Coast Times, 1887)
1900	Five prospecting licenses applied for within the project area.	(West Coast Times, 1900)
1900	Fluming detailed within the project area	(Deverell, 1900)
1912	Reserve No. 271 vested from the Government to the Westland Hospital and Charitable Aid Board. At least four dwellings present within the project area.	DP 313
1970	Four dwellings, and associated outbuildings, still present.	(LINZ, 1970)

Prior to the arrival of Pākehā, the landscape surrounding the project area was part of a system of various lifeways activities. Situated in a prime location, the wider Mananui area provided access to mahinga toi and mahinga kai resources. Following the arrival of Pākehā to Te Tai o Poutini, the valuable resources surrounding the project area became a focus for various activities, for both labour and profit, and leisure.

Lake Māhinapua, to the south-east of the project area, was effectively turned into an inland water highway in 1865, when the Māhinapua Creek, also called Tūwharewhare (Te Rūnanga o Ngāi Tahu, 2022), which flows eastwards adjacent to the project area, was utilised to connect Hokitika and Ross. The landscape surrounding the lake and the project area were valuable to commercial forestry activities, with a number of timber mills and associated tramlines constructed in the area in the late-nineteenth century (Te Rūnanga o Ngāi Tahu et al., 2018). However,

the timber resources of Westland had long been valued by Pākehā. An 1873 map detailing the timber resources of Westland notes (entry 55) that red, white, and silver pine are predominant, with some yellow pine and hinau present as well (Figure 5-3). While another entry (56) notes that white pine was present along the Māhinapua Creek. The completion of a rail link from Hokitika to Greymouth in 1893 acted as a catalyst for the rapid development of the Westland timber industry in the last decade of the nineteenth century. Coal mining, railway construction, and gold dredging provided ready markets for the industry. In 1895, the West Coast Sawmillers' Association was formed to better regulate the industry and promote Westland timber (West Coast Times, 1895). However, it was not until the turn of the twentieth century that timber boomed in the area south of Hokitika, and several companies were established around Mananui and Lake Māhinapua. The main products formed from timber in this area were silver pine sleepers and telegraph poles.

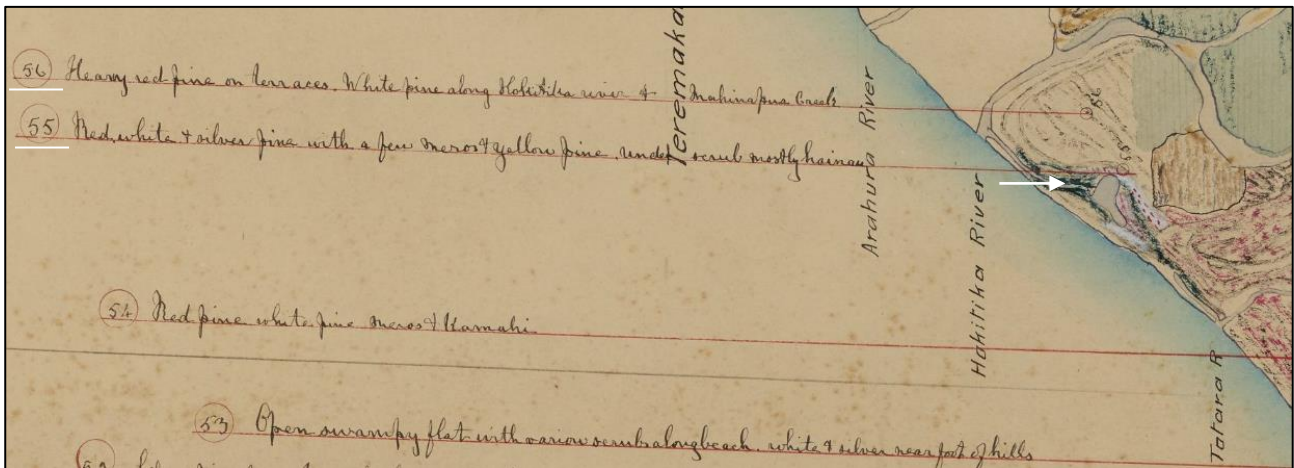


Figure 5-3. Detail of a map showing the timber resources of Westland (Amor, 1873). The project area is indicated by the white arrow.

As with most areas of Westland from the mid-1860s onwards, gold mining had a significant role in the history of the region. In 1879, a rush to Lake Māhinapua for gold mining was declared (New Zealand Tablet, 1879). Mining was, however, a dangerous activity and by the 1880s, there were calls for the establishment of a home to care for aged and infirm miners (Grey River Argus, 1886). The following year, it was decided that a home would be established at Lake Māhinapua, within the project area (West Coast Times, 1887). A newly endowed reserve, which was formally referred to as Reserve No. 271, was owned by the Crown and gazetted by the Provincial Government, who planned to construct a home for miners who, through old age, accident, or infirmity, could not support themselves (West Coast Times, 1887).

By the end of the nineteenth century, the project area was site of various mining developments, with at least two extended claims applied for by 1899, where lead was being extracted (West Coast Times, 1899). A survey plan (SO 266) from 1897 shows the extent of a mining reserve adjacent to the project area (Figure 5-5). However, it is likely that mining was undertaken within the project area itself, along with the adjacent reserve, as in 1900, there were five prospecting license applications submitted for the project area (West Coast Times, 1900). A district survey map from the turn of the century details fluming, referred to as 'Macfarlane's Fluming', noted as being present within the project area, towards the centre-east (Figure 5-4). The Macfarlane referred to is James Chicago Macfarlane, who was a surveyor connected with various mining ventures, especially those associated with large tunnels and syphons (Cyclopedia Company Limited, 1906).

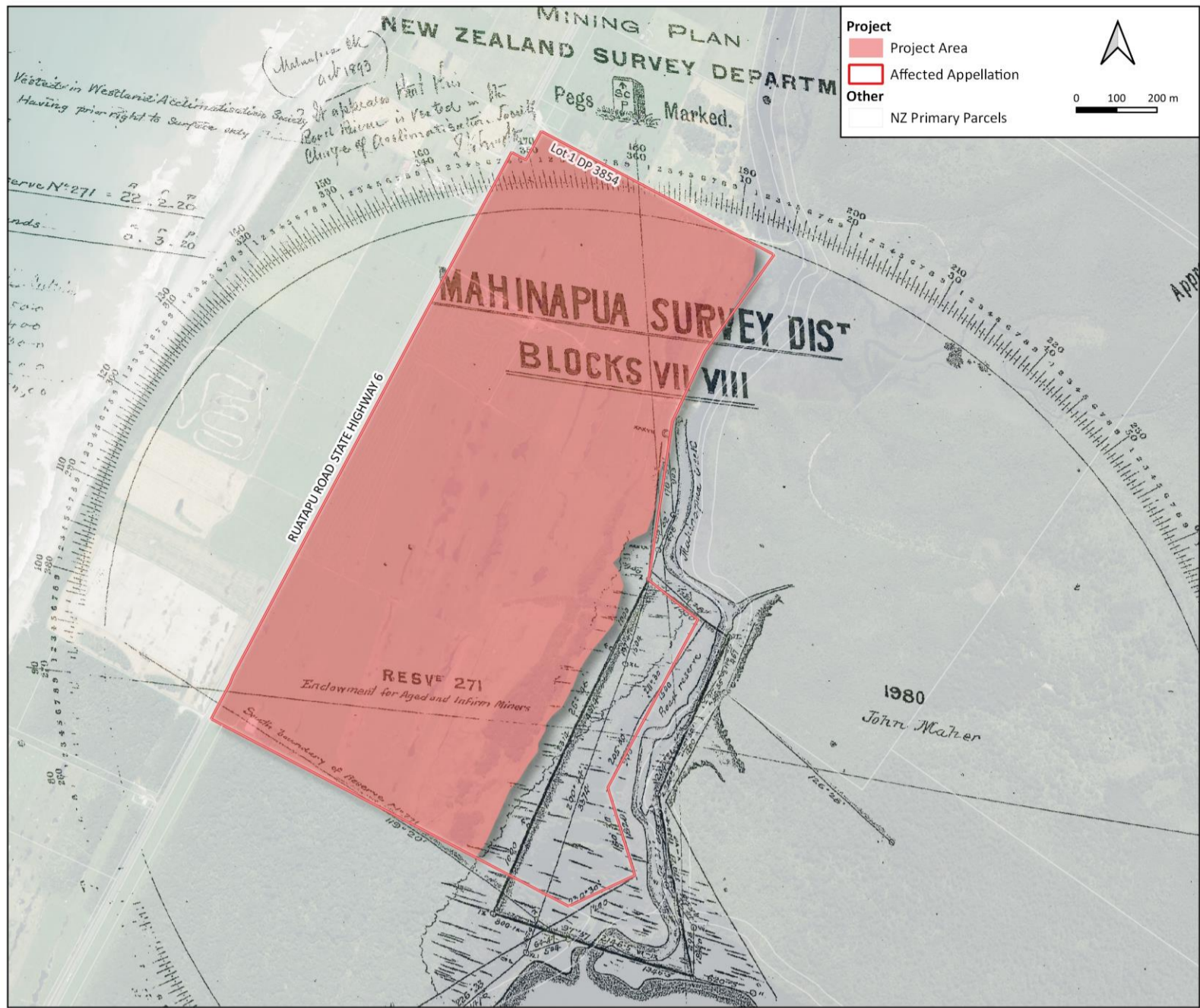


Figure 5-5. Georeferenced survey plan from 1897 (SO 266) with the project area overlain.

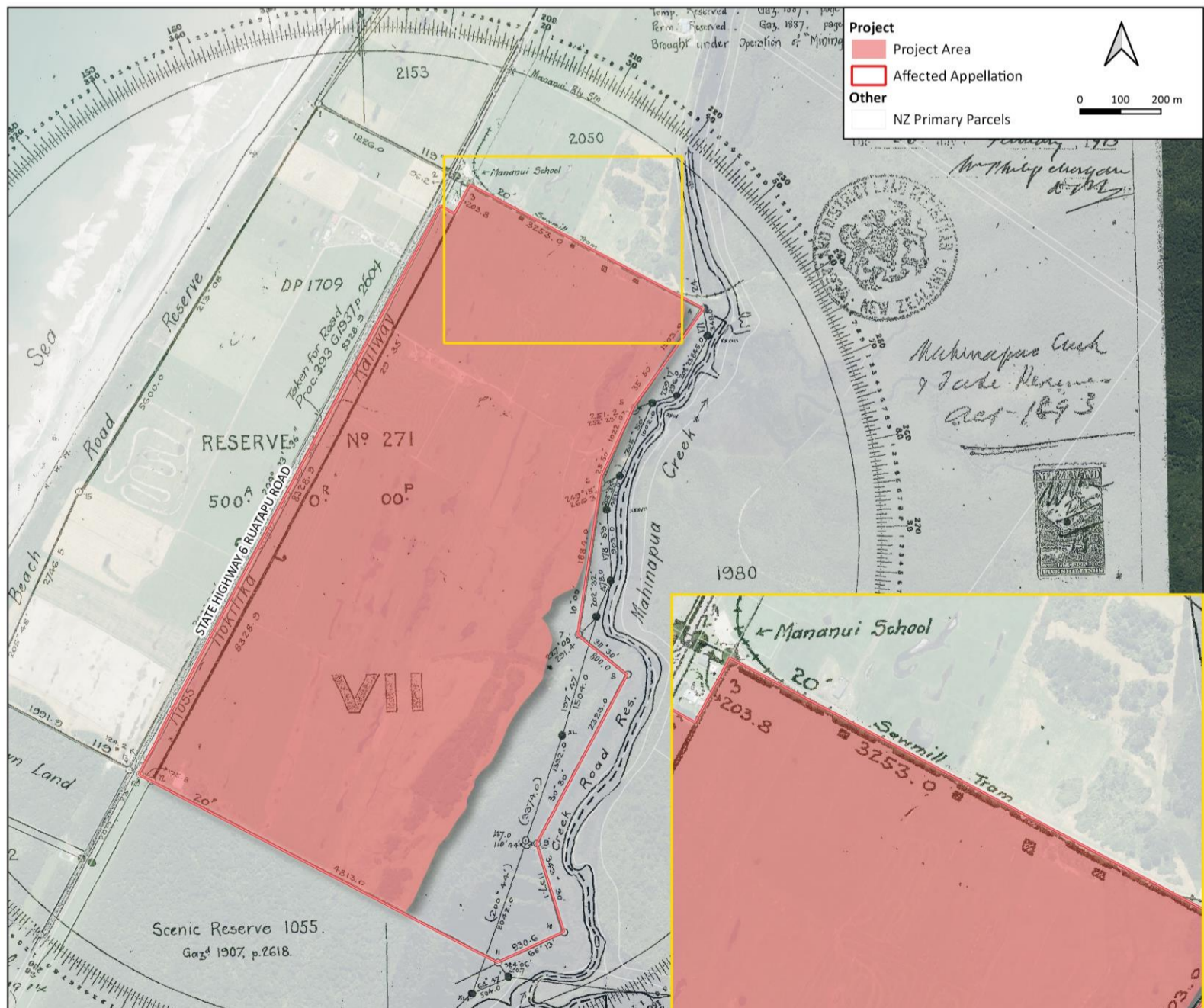


Figure 5-6. Georeferenced plan from 1912 (DP 313) with the project area overlain.

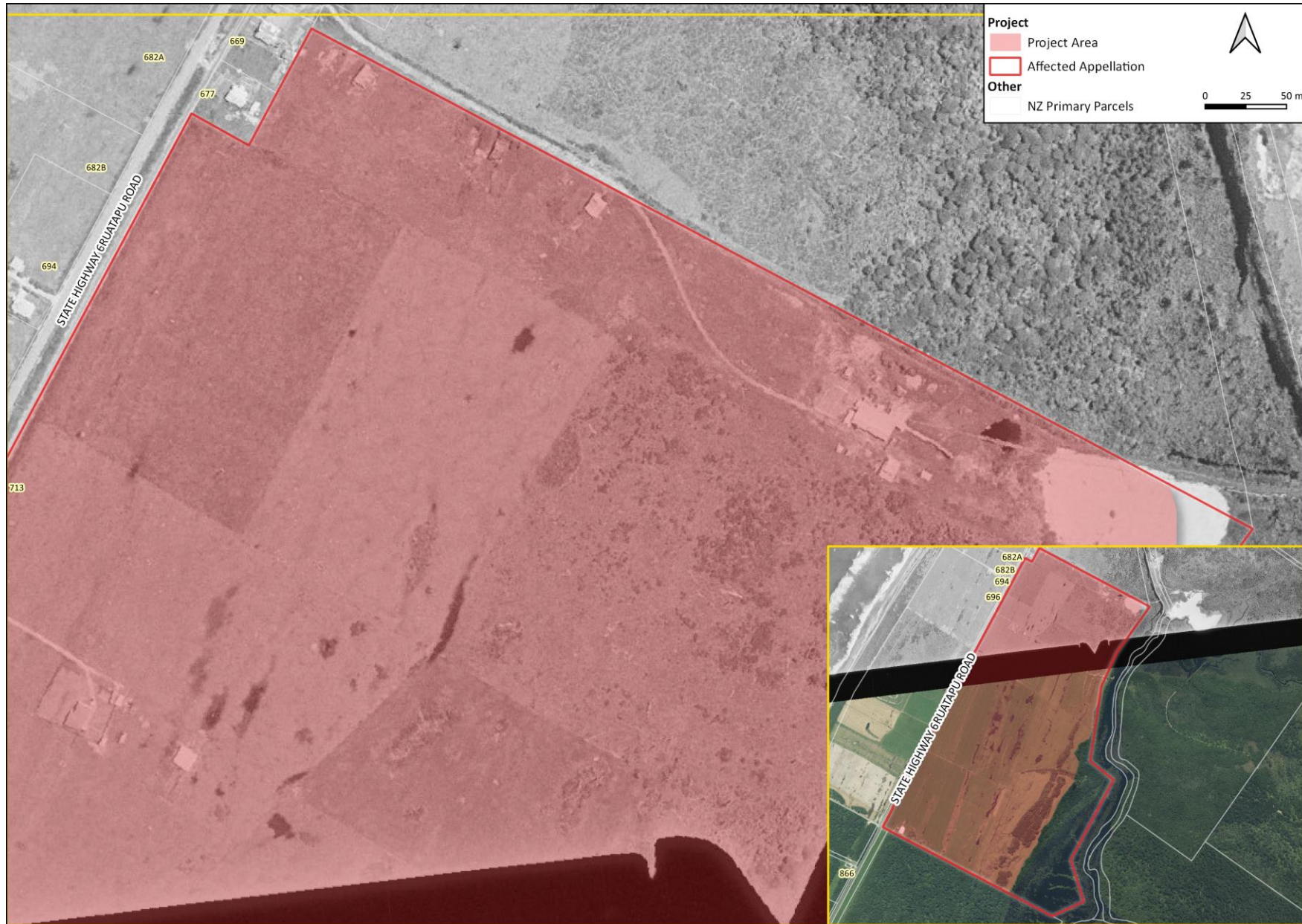


Figure 5-7. Georeferenced aerial photograph with the project area overlain (LINZ, 1970). Note the buildings present along the northern boundary.

6 Previous Archaeological Investigations and Archaeological Context

The previously recorded archaeological and heritage sites within the landscape surrounding the project area are explored here, broadly considering the patterns through ethnicity, chronology, and distribution. Not only does this provide a comprehensive overview of the existing archaeological and heritage resources in the area, but it helps to identify what types of sites may be encountered during the project works.

6.1 Previous Investigations of the Project Area

There is no evidence to indicate that previous archaeological investigations have been undertaken within the project area.

6.2 The Archaeological Context of the Project Area

The following sections discuss the previously recorded archaeological sites within the broader area surrounding Mananui, to provide a more comprehensive idea of the distribution and nature of archaeological remains than would otherwise be able to be presented.

There are eight previously recorded archaeological sites, as recorded on ArchSite, the New Zealand Archaeological Association's (NZAA) site recording scheme, located within 5km of the project area (see Table 6-1 and Figure 6-1). One of these sites, J33/68, is also included on the New Zealand Heritage List/Rārangi Kōrero. However, please note that the sites recorded on ArchSite represent only those that have been identified to date and are not a true reflection of the distribution of all archaeology. This assessment has identified that mining – gold, timber milling, and transport/communication site types are most likely to be encountered by the works that are located within the project area. There is also the possibility that Māori archaeological sites may be encountered. The following section briefly discusses the previously recorded archaeological sites within 5km of the project area, while the broader spatial patterning of archaeological site types is discussed further in Section 6.3.

Table 6-1. Details of previously recorded archaeological and heritage sites near the project area.

Archaeological Sites			
NZAA ID	Name	Short Description	Site Type
J33/12	-	Early Māori site along creek bank near old homestead. Recorded from local knowledge and finds made by locals. Findspot for artefacts.	Traditional site
J33/14	Lagoon Town	Site of mining settlement.	Mining - gold
J33/18	Lagoon Town	Site of mining town.	Mining - gold
J33/145	-	Water race.	Mining - gold
J33/24	-	Shell midden.	Midden/Oven
J33/68	Māhinapua Creek Rail Bridge	A single-span, timber truss railway bridge, 37.4m long x 7m wide, with trestle approaches. An unusual feature is its angled piers, built in line with the creek banks.	Transport/communication
J33/69	Mananui Sawmill and Tramway	The site of four sawmills, the first built in 1885, and an historic tramline. Features include a large sawdust heap with some concrete foundations, rusting metalwork and rotting timbers. Some mill buildings survive as farm sheds.	Timber milling
J33/212	-	Horse-drawn tramway comprising laid sleepers, cuttings and embankments.	Transport/communication
New Zealand Heritage List/Rārangi Kōrero Items			
Name	List Entry Type	List Number	NZAA ID
Māhinapua Creek Railway Bridge (Former)	Historic Place Category 1	5010	J33/68

6.3 Site Types in the Archaeological Record

The following sections discuss the previously recorded archaeological sites within the landscape surrounding the project area, looking beyond the sites that are only within the project area to provide a more comprehensive idea of the distribution and nature of archaeological remains than would otherwise be able to be presented. This is not intended to provide a detailed account of each site within the project area, but instead to discuss broader patterns in the archaeological record of the county in order to provide some context for new sites recorded as part of the proposed works.

6.3.1 Mining – Gold Site Types in the Archaeological Record

Across Te Waipounamu, there are more than 2000 mining – gold sites and a further 167 sites associated with other forms of mining recorded in the ArchSite database. Sites are concentrated in Te Tai o Poutini, Central Otago, and in smaller pockets in the Marlborough, Tasman, and Southland Districts. The nature of gold mining sites is varied as features relate to different working aspects of the gold fields and trace chronological differences in mining technology and equipment. For example, many features relate to the storage and movement of water required for sluicing and hydraulic elevating (*e.g.*, water races, reservoirs, ponds, aqueducts, dams), others relate to the physical remains of mining activities (*e.g.*, sluice faces, tailings, prospecting pits) or the specific equipment and machinery that was utilised (dredge, stamper battery, machinery). In addition, there are also features and materials associated with the domestic lives of miners living in close proximity to gold workings (*e.g.*, stone and sod huts, hut floors, artefacts). There are 346 mining archaeological sites recorded in the Westland District, contributing to 51.41% of all sites in the Westland District.

6.3.2 Historic – Domestic Site Types in the Archaeological Record

Historic – domestic archaeological site types often contain structural features associated with buildings (*e.g.*, farmsteads, cottages, huts), although other domestic features such as rubbish pits, artefact deposits, garden features, boundary walls and fencing have also been classified as historic – domestic site types. The presence of such a site in the area of proposed works, however, is indicative of heightened potential to encounter further archaeological remains associated with human activity. Throughout Te Tai o Poutini, there are 101 previously recorded historic – domestic archaeological site types, as of July 2023. The majority of these sites appear to have been related to the gold mining industry, as the sites are recorded as containing huts, as opposed to larger, more permanent domestic residences.

6.3.3 Timber Milling Site Types in the Archaeological Record

Timber milling sites are rare, but not uncommon in the region or the vicinity of the proposed works. These sites were a necessary part of the mining industry, supplying timber for a range of uses (*i.e.*, platforms, piles, tunnel roof/shaft entrance support, risings, dams, flumes, water wheels) (Ritchie & Hooker, 1997). According to Ritchie and Hooker (1997), during the excavation of adits (or mining tunnels) “some timbers, *e.g.* red beech (on the West Coast) were favoured because of their tendency to talk, *i.e.*, make distinctive squeaking noises when nearing the point of collapse”. Unsurprisingly, timber mill sites are often recorded in areas proximate to gold and coal mining and can be found dispersed throughout Te Tai o Poutini. However, there are only ten previously recorded timber milling archaeological site types in the Westland District recorded on ArchSite.

6.4 Recognised Heritage Sites

There are no sites listed on the New Zealand Heritage List/Rārangī Kōrero within the project area. The closest site is the former Māhinapua Creek Railway Bridge (List Entry No. 5010; ArchSite J33/68) which is located approximately 2.5km north of the project area. This single-span, timber truss bridge, which is adjacent to State Highway 6, opened in 1906 and closed to rail traffic in 1980 when the Hokitika to Ross Railway Line ceased operating (Heritage New Zealand Pouhere Taonga, 1990).

7 Results of the Site Survey

A pedestrian survey was carried out on 18 July 2023 by India Gillespie, accompanied by Luke McNeish, to record the current condition of the project area and identify any exposed areas of archaeology. Although heavily modified, the project area still retained visible archaeology. There was evidence of recent gorse control along the northern and north-eastern extents of the project area, related to the former agricultural activities undertaken across the project area. The area where gorse was cleared measured approximately 25m x 170m and was located between POI # 5 and POI # 6 (see Figure 7-2). The following section will describe the results of the site survey, documenting the site setting and condition of visible pre-1900 features.

7.1 Setting

The project area is situated at Mananui, 8km south of Hokitika, westwards adjacent to Ruatapu Road-State Highway 6 (see Figure 7-1 and Figure 7-2). The landscape, grass-covered sand dunes, is currently utilised as pasture to support dairy cattle production. To the north of the project area, the historic Mananui Tramline, also referred to as the Māhinapua Walkway, extends along the remains of a former sawmill tramline. While the Māhinapua Creek and Māhinapua Scenic Reserve are located to the east and south, respectively. The following sections will detail the results of the site survey.



Figure 7-1. Drone photograph of the project area, looking south-west.

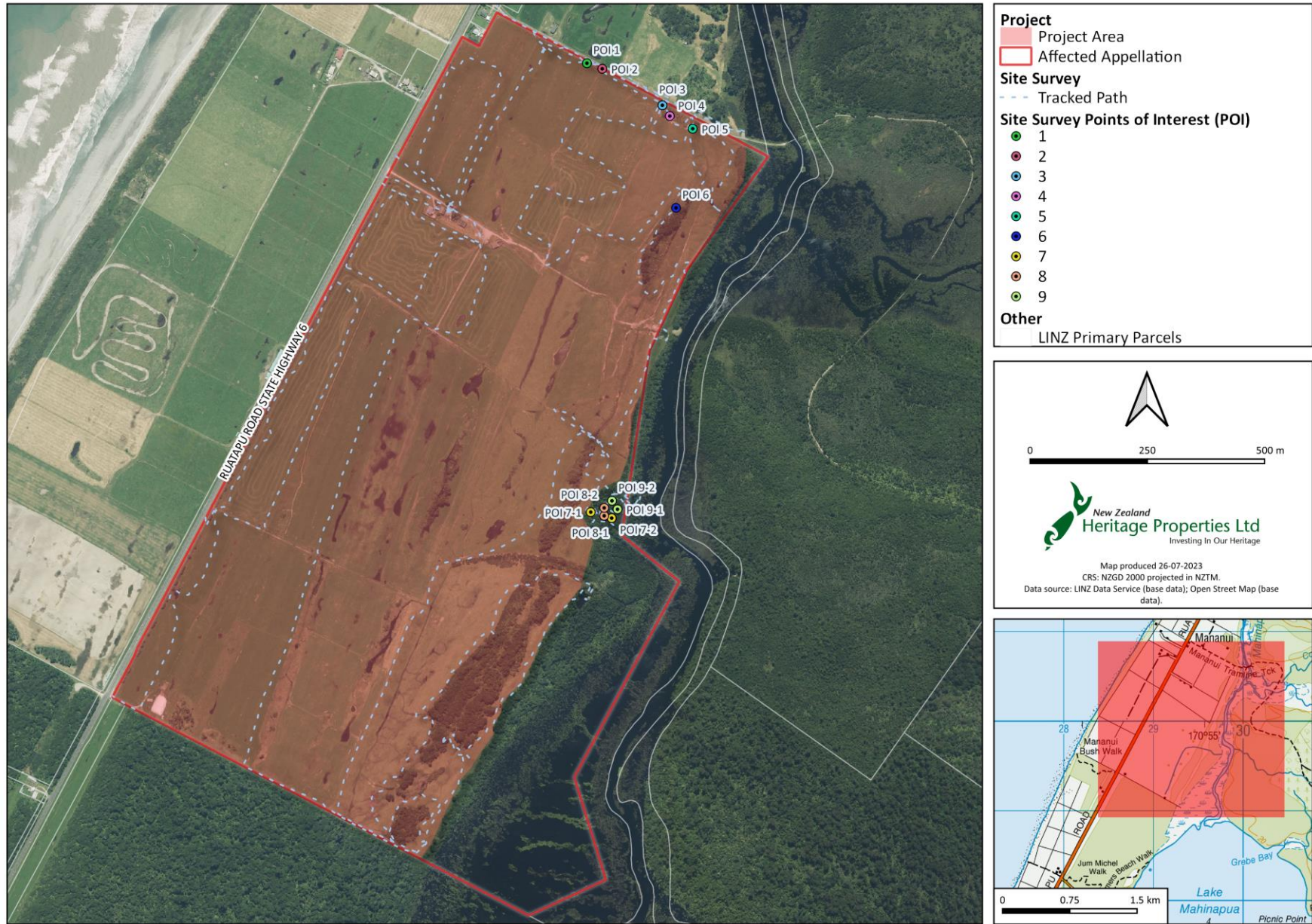


Figure 7-2. Map showing the project area and POI identified during the site survey.

7.2 Points of Interest (POI)

Nine points of interest (POI) were identified and recorded during the pedestrian survey of the project area. The following sections will discuss these POI, which are grouped together based on their association to one another. POI # 1-5 are theorised to relate to the former dwellings present along the northern extent of the project area, which has been recorded on ArchSite as J33/214. POI # 7-9 are assumed to relate to the historic mining activities undertaken across the project area and have been recorded on ArchSite as J33/215. POI # 6 is likely related to J33/214; however, this cannot be confirmed.

7.2.1 POI # 1-5

The first five POI were all identified towards the northern boundary of the project area, and likely relate to the former dwellings located here.

POI # 1 was located at the centre-north of the project area, approximately 6m south of the border, and featured a range of scattered demolition debris (Figure 7-3). Stone, concrete, and brick fragments were visible on the surface in an area measuring roughly 5m². It is theorised that this debris was part of the foundations and/or walls of a building.



Figure 7-3. Photographs showing POI # 1, looking north (left) and west (right).

POI # 2 was a small exposure of three bricks set into concrete that was located ~34m to the east of POI # 1 (Figure 7-4). The three bricks were variable in size, but measured 210mm x 105mm x 70mm, although unfortunately the mortar had long since degraded. There were striations, ill-defined and irregular, present on the surface of the bricks, implying they were handmade. In the 1860s and 1870s, machines for producing wire-cut bricks began to appear, although these were not common until the late nineteenth century (Sand, 1954; Trendafilov et al., 2018), suggesting that these three bricks were from a pre-1900 building or structure.



Figure 7-4. Photograph of POI # 2, looking north-northeast.

Moving further east, two exposures of concrete, recorded as POI# 3 and 4, were identified. POI # 3 was a large, displaced portion of concrete (Figure 7-5; left). The concrete, which measured 700mm high x 900mm wide x 400mm thick, was resting out of the way against a fence line. The matrix of the concrete was comprised of rounded pebble and gravel aggregate in a sandy, granular cement mixture. Such large aggregate inclusions often indicate an early construction date; however, it may merely indicate a concrete manufactured using readily available aggregates, such as local sand and water-rolled stones. POI # 4 was an interesting combination of conglomerates set into concrete (Figure 7-5; right). The matrix of this feature was very coarse, comprised of both angular gravel and rounded pebbles set into a grainy cement along with the conglomerates. It is assumed, given the form and material, that both POI # 3 and 4 were formerly part of a building or structure. The coarse-grained matrix of both features may imply a nineteenth century construction date; however, this cannot be confirmed at this stage.



Figure 7-5. Left: photograph of POI # 3, looking north-east. Right: photograph of POI # 4, looking north-northeast.

POI # 5 was the final area of exposed material uncovered along the northern extent of the project area. This POI featured brick debris and fragmented glass present across the ground surface (Figure 7-6). The bricks were highly fragmented and scattered, yet despite this, appeared similar to those identified at POI # 2. Undiagnostic body fragments of a coffee and chicory essence bottle were also identified; however, these were unable to provide any useful chronological information as this style of vessel was common in both the late-nineteenth and early-twentieth centuries. Prior undertakings of gorse control were evident in this area, which had resulted in some topsoil disturbance; however, as noted above, no discrete archaeology was identified here.



Figure 7-6. Left: photograph of POI # 5 showing brick debris, looking south-east. Right: detail of glass vessel fragments, looking south.

7.2.2 POI # 6

POI # 6 was located ~270m south-east of POI # 5 near the north-easternmost stand of vegetation in the project area, and was recorded due to scattered glass fragments exposed in the topsoil (Figure 7-7). Unfortunately, none of the glass vessel fragments, which were predominately aqua, could provide any useful chronological inferences. The fragments may have been from a nineteenth century vessel and may indicate the presence of further subsurface features in this area; however, this cannot be confirmed. Prior undertakings of gorse control were evident in this area, which had resulted in some topsoil disturbance; however, as noted above, no discrete archaeology was identified here.



Figure 7-7: Left: detail of glass vessel fragments at POI # 6, looking east. Right: photograph overlooking the area around POI #6, looking south-east.

7.2.3 POI # 7-9

Along the centre-east boundary of the affected appellation, just east of the project area, three water races were identified. These races, recorded as POI # 7-9, were followed, and recorded; however, please note that the GPS data for these POI may contain accuracy errors, owing to the dense vegetation coverage in this area.

The first water race identified, POI 7 (Figure 7-8), extended ~50m downwards towards Māhinapua Creek. This water race, which meandered in a general east to west orientation, was approximately 600mm wide and, depending on the topography, featured cuttings of up to 2m in depth for the sidewalls. There is evidence of race infilling and vegetation growth, however, the race remained in fair condition.



Figure 7-8. Photographs showing the start (7-1, left; looking east) and finish (7-2, right; looking west) of POI # 7.

The next POI located was POI # 8 (Figure 7-9), which has been interpreted as being a branch-race, given that it connects to POI # 7. This branch-race was smaller, approximately ~20m in length, and was orientated north to south, connecting into POI # 7. Vegetation growth hampered the recording of this race; however, it was approximately 500mm wide, and up to 1m deep in areas.



Figure 7-9. Photographs showing the start of POI # 8 (8-1; left, looking south) and finish (8-2; right, looking north).

The final water race identified was POI # 9 (Figure 7-10), located to the north of the previous two POI. This race, orientated north-east to south-west, was approximately 25m in length by up to 1m in width. This race was in fair condition, with less vegetation infilling present. However, the edges of the race were difficult to define in areas, and there has been prior stock trampling. The termination of this race (POI 9-2 on Figure 7-2) opens into a large area just to the west of Māhinapua Creek.



Figure 7-10. Photographs showing POI #9, looking north-west (left) and south-east (right).

8 Research Results

This assessment has identified that the project area has a long history of nineteenth century activities. Historical research has revealed that the project area would likely have been part of traditional lifeways activities undertaken seasonally by local Māori. However, no Māori archaeological sites have been identified within the project area. From the 1860s, various forestry activities were undertaken across the project area, which contained valuable timber resources. Following the gold rushes across Te Tai o Poutini in the 1860s, mining was sporadically undertaken across the project area from the 1870s through into the twentieth century.

Research has revealed that there were at least four dwellings located along the northern boundary, within the project area, by 1912. These were likely associated with the home for aged and infirm miners that was established by the Provincial Government and the Westland Hospital and Charitable Aid Board from 1887 onwards. Gold mining activities were also identified as taking place within the project area, with at least five prospecting licenses granted in 1900 alone. Fluming associated with some of these, referred to as Macfarlane's Fluming, was detailed on a historic map from the same year. It is unknown when this fluming was constructed; however, it was likely installed pre-1900 given that the historic map was surveyed, illustrated, and produced in 1900. No fluming was identified during the site survey; however, three water races were recorded in the same location as the historically documented fluming.

The site survey identified nine POI across the project area, relating to both the four dwellings along the north of the project area, and the water-races to the east. POI # 1-5 were discrete areas of debris that are theorised to relate to the four former dwellings situated across the northern extent of the project area. POI # 7-9 were three water races located to the east of the project area that would have been utilised for historic mining activities. The final POI, # 6, was in the north-east of the project area, and was likely related to the four dwellings, however, not enough surface material was exposed for this association to be confirmed. There was surface disturbance, relating to previous gorse control measures, identified surrounding this POI.

This assessment has resulted in two new archaeological sites, J33/214 and J33/215, being recorded on ArchSite, the New Zealand Archaeological Association's site recording scheme, on the basis of physical remains and documentary research. Site J33/214, recorded as a historic – domestic site, relates to the four nineteenth century dwellings formerly present across the northern extent of the project area. The site boundary for J33/214 is based upon Figure 5-7, wherein the fence line demarcating the division between the domestic and mining activities is visible, measuring approximately 80m wide by 515m long. Site J33/214 will be affected by the proposed project work, either through creation of a bund or through the mining activities themselves. Site J33/215, recorded as a gold – mining site, relates to the nineteenth century mining activities undertaken across the project area. The site boundary for J33/215 is based upon the visible extent of the archaeology, as identified during the site survey.

The research results confirm that works will affect Site J33/214 and have the potential to uncover and affect unrecorded mining – gold, historic – domestic, and timber milling archaeological site types. Research has indicated that unrecorded archaeology that may be encountered could include landscaping features associated with the miners' dwellings (gardens, fencing, paths, and walls around the dwellings, *etc.*), and services (*e.g.*, water tanks, field drains, stormwater, and foul sewer pipes, *etc.*). Along with other subsurface archaeological remains associated with timber milling and mining (pits, tracks, tailings, machinery remains, *etc.*) are likely to be encountered as well. The following chapters will assess the archaeological values of these sites and the effects of the work on those values. Site J33/215 will not be affected by the proposed work as it is located outside of the project extent. As the site is near the project area, recommendations to protect this site during works are provided in Section 10.2.1.

8.1 Constraints and Limitations

Constraints and limitations that were encountered during the completion of this assessment include:

- Limited historical photographs and maps of the project area.
- Limited nineteenth century documentary evidence regarding the project area, which was Crown Land for an extended period; resulting in a lack of details recorded during this time.

9 Archaeological and Other Values

Section 46 of the HNZPTA 2014 requires an assessment of the archaeological, Māori and other relevant values of the archaeological sites in the detail that is appropriate to the scale and significance of the proposed activity and the proposed modification of site J33/214. No assessment of values for archaeological site J33/215 has been included, as this site will not be affected by the proposed works. Archaeological value is determined by, but not limited to, its condition, rarity or uniqueness, contextual value, information potential, amenity value, and cultural association.

9.1 Assessment of Archaeological Value for J33/214

Historical research has revealed that there were at least four dwellings present within the project area by 1912, and these were likely associated with the home for aged and infirm miners that was established in the project area from 1887 onwards. During the site survey, demolition debris, presumably relating to these dwellings, was identified across the northern extent of the project area. As a result of this assessment, this site has been recorded on ArchSite as J33/214.

An evaluation of the archaeological values is provided in Table 9-1 based on the criteria defined by HNZPT (2019). Overall, NZHP consider site J33/214 to have **low-medium** archaeological values. This evaluation is for the entire site and is based upon the commonality of this archaeological site type, its features, and the poor condition of the site. Owing to the isolated location of the site, which is generally hazardous and not publicly accessible, the site offers low amenity value.

Table 9-1. Summary of archaeological value for J33/214.

Value	Criteria	Assessment
Condition		Poor. The visible above surface features across the site are in poor condition, having suffered damage from vegetation, weathering, and likely from successive modifications to the landscape.
Rarity or Uniqueness	Is the site(s) unusual, rare or unique, or notable in any other way in comparison to other sites of its kind?	Low-Medium. This historic – domestic site is representative of a site type that is relatively common throughout Te Tai o Poutini, although more so throughout other parts of New Zealand. However, the rarity of this site is increased by its function; nineteenth century social housing, especially on Te Tai o Poutini, is rarely recorded and investigated.
Contextual Value	Does the site(s) possess contextual value?	Medium. The site has contextual value when considered as a residential complex; however, the level of preservation of the subsurface remains is unclear. The site also derives contextual value from its association with the wider mining landscape. This value, which is not just archaeological, encompasses the wider socio-economic factors related to the historic mining industry.
Information Potential	What current research questions or areas of interest could be addressed with information from the site(s)?	Medium. This site contains potential to provide information regarding usage of the site by aged or infirm miners residing on the reserve. Investigations of domesticity, in direct contrast to the oft dangerous employment of the mining sector, could reveal valuable information regarding those who resided on the reserve. Human agency is difficult to explore; however, this site presents an opportunity to research the domestic life of miners, albeit from an emic perspective. Archaeological investigations of the site will also provide chronological data, which will enable a robust historical record of the site to be documented for perpetuity.
Amenity Value	Does the site(s) have potential for public interpretation and education?	Low. The site offers little amenity value. Although the project area is highly visible from State Highway 6, there is little above-ground archaeology which is visible and/or accessible. The site does, however, contain amenity value when considered in conjunction with the wider historic landscape surrounding Lake Māhinapua.
Cultural Associations	Does the site(s) have any special cultural associations for any particular communities or groups?	Unknown.

9.2 Assessment of Effects for Unrecorded Sites

This assessment has identified that there is potential for unrecorded mining – gold and timber milling archaeological site types to be located within the project area. Historical research has indicated that the project area was rich in timber and mineral resources, with extraction of these beginning in the 1860s, and continuing through, albeit sporadically, until today. The following section will provide a general assessment of values for these potential unrecorded sites. For ease of reference, the assessment of values is organised by site types.

9.2.1 Gold – Mining Sites

Archaeological sites associated with gold mining are the most common site type throughout Te Tai o Poutini. Features often recorded for gold mining sites in the region include modifications to the terrain as a result mining activity (*i.e.*, adits/shafts, mines/quarries, workings, holding dams, prospecting trenches/pits, sluicings/sluicing faces, water races, tail races, mullock heaps, tracks and tramways), the foundation of platforms, hut floors, and to support other machinery used for facilitating, processing or transporting mining material (*i.e.*, plants, aerial cableways, boilers (or pumphouses), stamper batteries, and water wheels. Refuse dumps and pits have also been recorded in association with this site type. Despite their low rarity, gold mining sites possess contextual and amenity values, and have information potential. These sites have generally been assessed to have **low-moderate** archaeological values (Table 9-2).

Table 9-2. Summary of archaeological value for general mining - gold sites.

Value	Assessment
Condition	Unknown: While the present state of any unrecorded sites is unknown , it is likely that any mining sites in the proposed project area have been damaged by nineteenth and twentieth century mining and other commercial activities. Despite this, these site types may retain identifiable heritage features.
Rarity or Uniqueness	Low: This site type is the most common overall within Te Tai o Poutini. Therefore, most sites within this category will have a low rarity.
Contextual Value	Moderate-High: These sites constitute part of a wider landscape associated with gold mining. While sites trace different chronological periods and activities, these sites have contextual value as a complex working landscape of use and reuse.
Information Potential	Low: Sites of this type may provide information about the development of public and private infrastructure in the Hokitika region during the nineteenth century, but many sites within this category (<i>e.g.</i> , prospecting pits) will offer little in the way of meaningful information.
Amenity Value	Low to moderate: These sites have low-moderate potential for public interpretation and education as they form part of the larger gold mining landscape. However, features associated with this unrecorded site type are subsurface within the project area and contain low amenity values.
Cultural Associations	Unknown.

9.2.2 Timber Milling Sites

Timber milling sites are a relatively rare site type classification, with only 534 previously recorded, accounting for only 0.05% of all archaeological sites throughout New Zealand. There is a vast difference between the number of sites recorded in the North and South Islands, with only 122 previously recorded timber milling sites located in Te Waipounamu, with 27 of these on the Te Tai o Poutini. Interestingly, these sites are often associated with the mining industry, whether directly or indirectly. Features often recorded for this site type include sawmills, tracks, tramways and aerial cableways, saw pits, and associated machinery. Due to their condition, rarity, and information potential, these sites have generally been assessed to have **low** archaeological values (Table 9-3).

Table 9-3. Summary of archaeological value for general timber milling sites.

Value	Assessment
Condition	Unknown: While the present state of unrecorded sites is unknown, it is likely that any timber milling sites in the proposed project area have been damaged by nineteenth and twentieth century mining and other commercial activities. Despite this, these site types may retain identifiable heritage features and/or fabric.
Rarity or Uniqueness	Moderate: This site type is not rare throughout New Zealand; however, few have been recorded in Te Tai o Poutini. Therefore, most sites within this category will have a moderate rarity.
Contextual Value	Moderate: Sites of this type have contextual value when considered in conjunction with the wider resource-extraction landscape. However, they can also be site complexes in themselves, and can contain intra-site values.
Information Potential	Low: Sites of this type may provide information about the development of timber milling and associated production and/or exports during the nineteenth century, but many sites within this category (<i>e.g.</i> , saw pits) will offer little in the way of meaningful information.
Amenity Value	Low: Some timber milling sites may be highly visible (<i>e.g.</i> , a historic sawmill), while some may be subsurface (<i>e.g.</i> , pits), meaning there is a range within their amenity values. There were no above surface timber millings sites identified across the project area, so it is reasonable to assume any unrecorded sites here will have a low amenity value.
Cultural Associations	Unknown.

9.3 Other Values

The proposed Te Tai o Poutini Plan classifies the project area as being situated within the Rural Zone. It is not anticipated that the proposed works will be a threat to the values of this zone. However, in a broader context, the project area is historically significant, and the anthropogenic landscape spans several key periods of human activity, first tracing the early Māori occupation of groups traversing the wider landscape. While Pākehā were beginning to venture into the interior of Te Tai o Poutini from the late 1850s, it was not until the mid-1860s onwards that the project area became associated with forestry and gold mining. The Te Tai o Poutini gold rushes of the 1860s and onwards are important historical events within the region, and even within the broader Aotearoa context. The history of miners undertaking pioneering exploration efforts in the range of the proposed project areas provides insight into domestic and commercial experiences in an isolated setting prone to climate extremes.

The south-eastern extent of the project area extends into the Lake Māhinapua Outstanding Natural Landscape, as scheduled on the Proposed Te Tai o Poutini Plan. Outstanding Natural Landscapes are those which have been assessed and identified as having high levels of scientific, biophysical, sensory, or associative landscape values, which makes them outstanding. The Lake Māhinapua Outstanding Natural Landscape contains, and is not limited to, areas of intact wetland, swamp, and native canopy forest species. In addition, there are values associated with the bird life in the landscape, and the tranquillity of the lake itself. However, it is outside the scope of this assessment to comment on any impacts to these values.

The wider catchment area surrounding the project area is also valued by Poutini Ngāi Tahu, as outlined in the Lake Māhinapua Management Plan (Te Rūnanga o Ngāi Tahu, Te Rūnanga o Ngāti Waewae, & Te Rūnanga o Makaawhio, 2018). Lake Māhinapua is a taonga to Poutini Ngāi Tahu, with cultural, ecological, and landscape values, and it is recognised as a wāhi tapu. Given the distance to the project area from Lake Māhinapua, it is not anticipated that the project work will have any effect on these values; however, it is not appropriate for NZHP to comment on these cultural values.

10 Assessment of Effects and Other Considerations

Section 46 (g)(ii) of the HNZPTA requires an assessment of the effects of the proposed works, as detailed in Section 1.2, on archaeological and other values, which were assessed in the previous section. The assessment of effects takes into account the criteria established by HNZPT (HNZPT, 2019) as outlined in Section 3. Also considered here are methods to avoid, minimise, and mitigate any adverse effects to archaeology.

10.1 Assessment of Effects on Archaeological and Other Values

This assessment has identified that two archaeological sites, J33/214 and J33/215, are located within the wider project area, with the potential to uncover further, unrecorded archaeological sites during the works. Of the two recorded sites, J33/214 will be affected by the proposed works. J33/215, which records three water races identified during the site survey, is outside of the area to be mined and will not be affected. The following sections detail the assessment of effects of the proposed works on the archaeological values of site J33/214 and any unrecorded sites, along with exploring methods to avoid, minimise, and/or mitigate adverse effects on the archaeological sites.

10.1.1 J33/214

This site records the four potentially pre-1900 dwellings previously located towards the northern boundary of the project area. Earthworks in this area will be extensive, involving excavations of up to 14m below surface. The assessment of archaeological values has identified the site to have **low-medium** archaeological value, owing to the commonality of this site type, its features, poor condition, and lack of amenity value. However, investigations of this site may reveal valuable information regarding the domesticity of miners, and those who resided on or utilised the site. Archaeological features that are expected to be encountered include structural remains associated with dwellings (building piles and/or foundations, outbuildings, *etc.*) and refuse disposal features may also be present. Considering the large extent of the earthworks across the project area, including the northern extent where this site is located, **NZHP considers the magnitude of impact on this site will be major**. The proposed works are anticipated to result in the complete destruction of this archaeological site.

10.1.2 Assessment of Effects on Unrecorded Sites

This assessment has identified that unrecorded gold – mining, historic – domestic, and timber milling archaeological site types may be encountered during the project works. However, the majority of archaeological remains across the project area are subsurface, and their location and condition are unknown. Unrecorded archaeology that may be encountered includes landscaping features associated with the miners' dwellings (gardens, fencing, paths, and walls around the dwellings, *etc.*), and services (*e.g.*, water tanks, field drains, stormwater, and foul sewer pipes, *etc.*). However, other subsurface archaeological remains associated with timber milling and mining (pits, tracks, tailings, *etc.*) are likely to be encountered as well. Earthworks for the project have the potential to encounter and affect archaeological remains relating to these earlier uses of the landscape. Considering the large extent of the earthworks across the majority of the project area, **NZHP considers the magnitude of impact on any unrecorded archaeological sites will be major**. The proposed works are anticipated to result in the complete destruction of any unrecorded archaeological site. NZHP recommends that any earthworks within 50m of any POI identified in Chapter 7 must be monitored by an archaeologist.

10.2 Recommendations to Avoid, Minimise and/or Mitigate Adverse Effects

Recording of archaeological features and deposits along with subsequent analysis and reporting will form a permanent record of the modification of each site. From this record we will increase our understanding of the site and mitigate, to some degree, the loss of contextual value between features and materials at the site level.

10.2.1 Sites and Features to be Avoided or Protected

As a first principle, every practical effort should be made to avoid damage to any archaeological site, whether known, or discovered during the project works. Three water races, recorded as site J33/215, were identified within

the wider project area during the site survey, but outside of the area to be mined. NZHP recommends that a protective cordon, using fluorescent reflective tape, be established around these three water races with an approximate buffer of 5m, vegetation coverage permitting. The establishment of a cordon around these water races will protect the site from inadvertent damage. The location of this site should also be noted on all project documents for further protection.

10.2.2 Mitigation for Information Loss

NZHP recommends that any earthworks into non-virgin soil around the POIs identified in Chapter 7 that are located within the area to be mined (POI # 1-6) should be monitored by an archaeologist. This is because these areas have physical archaeological remains observed during the survey and confirmed as archaeological through documentary research, and therefore must be recorded. A plan (Figure 10-1) detailing where monitoring is recommended has been created. We consider that the on-call protocol alone is not sufficient to mitigate the information loss on site due to the high likelihood of encountering features, many of which are unlikely to be recognised by contractors in the field, such as postholes, remains of buildings, saw pits, and others. Beyond this area of high risk, or for where earthworks are occurring within virgin soil, NZHP recommend that work proceed under an on-call protocol (OCP).

All archaeology that is encountered should be investigated and recorded to best practice. NZHP recommends that structures should be recorded to a Level III standard as defined in HNZPT's guide, *Investigation and Recording of Buildings and Standing Structures* (2018). NZHP anticipates a range of features associated with the gold – mining, historic – domestic, and timber milling sites, including pits, tracks, tramways, refuse disposal, landscaping (paths, walls, fencing, *etc.*), and structural remains (*e.g.*, retaining walls, foundations, *etc.*).

Beyond the recording during fieldwork, mitigation for information loss also includes analysis of all artefactual material recovered during the excavations and reporting on all archaeology in a final report. Where archaeology is encountered, further commensurate historic research will be required to provide context to the finds. Site record forms must be created or updated for all sites where archaeology has been encountered.

NZHP recommends that a site instruction be prepared to provide the practical steps for managing the archaeological requirements under the authority, defining the roles and responsibilities of the client, their contractors, and archaeologists. The site instruction will clearly define the areas when an archaeologist must be present, procedures for archaeological monitoring, protocols for the discovery of Māori archaeology and kōiwi, and OCP for the unexpected discovery of archaeology.

Briefings for contractors and project managers are recommended to ensure that all parties understand the conditions of the authority and their individual responsibilities. The briefing will outline when an archaeologist is required on site, the types of archaeology expected to be encountered, and the OCP. Such steps will ensure that archaeological values, such as information value and possible amenity purposes, are increased through appropriate archaeological investigation. NZHP recommends that the briefing be undertaken in an office space to best enable the briefing to be presented digitally, thus maximising engagement.

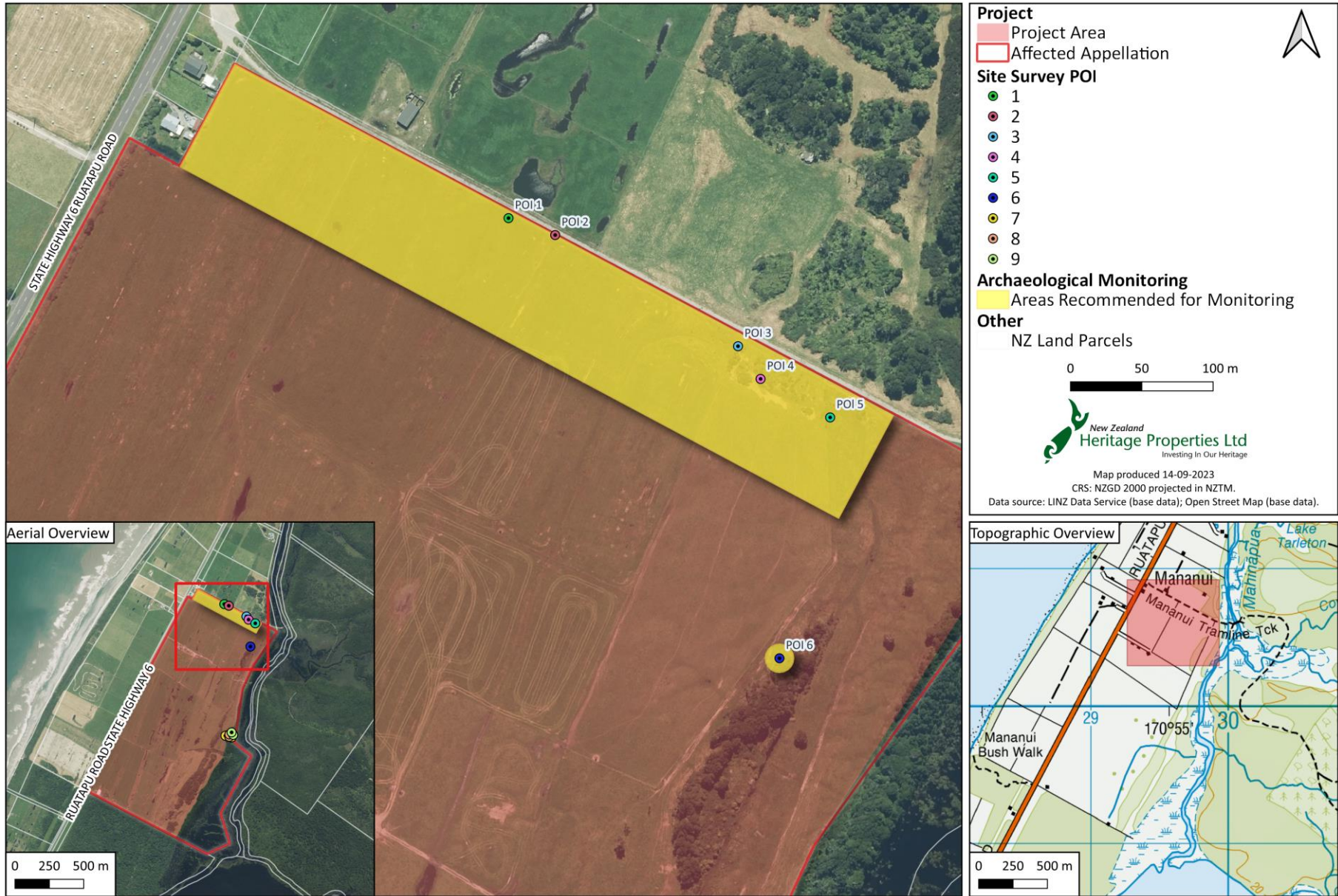


Figure 10-1. Map detailing where archaeological monitoring is recommended for earthworks into non-virgin soil.

10.3 Summary of Effects on Archaeological Values

This assessment has identified that there are two archaeological sites, J33/214 and J33/215, located within the wider project area, with the potential to uncover further sites during the project works. Work near site J33/214 will be extensive and is anticipated to result in the destruction of this site, although the project works will avoid J33/215. The project will involve intensive earthworks, extending up to 14m below surface, related to the extraction of heavy mineral sands. The above ground archaeology associated with site J33/214 is in poor condition, and it is likely that subsurface archaeology is also in poor condition across the project area. NZHP supports the proposed modification of J33/214 and any unrecorded archaeology sites uncovered during the proposed works. The information gathered from investigations of **J33/214**, and other sites yet to be uncovered, has the potential to provide information regarding usage of the site by aged or infirm miners residing on the reserve, and by those miners or foresters using the wider landscape.

11 Conclusions and Recommendations

This archaeological assessment has identified that one recorded site, J33/214, will be affected by the proposed work to extract heavy mineral sands from within the project area near Mananui. (Table 11-1). There is also reasonable cause to suspect that further unrecorded archaeological sites will be uncovered and modified by the proposed works. The work, which is extensive, will affect the entirety of any archaeological site located within the mining project area. **NZHP considers the magnitude of impact on J33/214 and any unrecorded archaeological sites will be major.**

Table 11-1. Archaeological sites located within the project area. Shading indicates the site will be affected by the proposed works.

NZAA Site ID	Site Name	Site Type	Brief Description
J33/214	-	Historic – domestic	Demolition debris associated with four former dwellings.
J33/215	-	Mining – gold	Three water races.

On the basis of this assessment, NZHP makes the following recommendations:

- **Authority Application:** As the proposed works described in Section 1.2 will affect site J33/214, an archaeological authority under Section 44 of the HNZPTA 2014 must be obtained from HNZPT prior to any modification of the site.
 - If development plans are altered from those reviewed for this assessment (Appendix A), then HNZPT and NZHP must be alerted, as any changes may alter the assessment of effects or invalidate the authority.
- **Protection of sites/features:** As a first principle, every practical effort must be made to avoid damage to any archaeological site, whether known, or discovered during any redevelopment of the site.
 - Three water races, recorded as site J33/215, were identified within the wider project area during the site survey, but are located outside of the area to be mined. NZHP recommends that a protective cordon, using fluorescent reflective tape, be established around these three water races with an approximate buffer of 5m, vegetation coverage permitting. The establishment of a cordon around these water races will protect the site from inadvertent damage. The location of this site should also be noted on all project documents for further protection.
- **Site Instruction:** All works must be carried out in accordance with the Site Instruction. Any amendments to the Site Instruction will require prior written approval from HNZPT.
- **Contractor Briefing:** All contractors working on the project must be briefed by the s45 approved person (or person nominated on their behalf) on the possibility of encountering archaeological evidence, how to identify possible archaeological sites/features during works, the archaeological work required by the conditions of the authority, and contractors' responsibilities with regard to notification of the discovery of archaeological evidence to ensure that the authority conditions are complied with. NZHP recommends that the briefing be undertaken in an office space to best enable the briefing to be presented digitally, thus maximising engagement.
- **Archaeological Monitoring:** NZHP recommends that any earthworks within non-virgin soil around POI # 1-6, as identified in Chapter 7, must be monitored by the s45 approved person (or person nominated on their behalf) as shown on Figure 10-1 and in accordance with the Site Instruction. Works outside this area, or those which occur within virgin soil, must operate under the OCP.
 - Any archaeological features and material encountered shall be recorded, analysed, and interpreted in accordance with current archaeological practice and as outlined in the Site Instruction.

- **Archaeology of Māori origin:** If archaeological material of Māori origin is discovered at any stage, all work must stop within 20m of the find. NZHP will assist the authority holder in contacting all relevant parties including Te Rūnanga o Makaawhio and Ngāti Waewae, and HNZPT in accordance with the Site Instruction.
 - Any taonga tūturu are *prima facie* the property of the Crown who will be notified of the find. Taonga tūturu will be registered with the Ministry for Culture and Heritage. NZHP, in collaboration with manawhenua, shall notify the Ministry for Culture Heritage and establish the most appropriate temporary storage, management and care for taonga tūturu, until such time as traditional or actual ownership is determined, with an appropriate institution or kaitiaki.

- **Kōiwi (human remains):** Should kōiwi be encountered, all work must stop within 20m of the find. NZHP will assist the authority holder in contacting all affected parties as soon as practicable, including Te Rūnanga o Makaawhio and Ngāti Waewae, HNZPT, and the police. The Ngāi Tahu policy for kōiwi takata shall also be followed (Te Rūnanga o Ngāi Tahu, 2019).

- **Reporting:**
 - Within 20 working days of the completion of on-site archaeological work, the site record forms must be updated or submitted to ArchSite.
 - Within 12 months of the completion of on-site archaeological work, a final report on any archaeological material that is found must be prepared in accordance with *ASG12 Archaeological Report Guideline* (HNZPT, 2023) and submitted to HNZPT for inclusion in the digital library and to Westland Mineral Sands Co. Ltd, the Westland District Council, the Hokitika Museum, and ArchSite. This will provide information about the earthworks undertaken and any resulting archaeology and will be useful to guide any similar future projects in Te Tai o Poutini.

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Appendix A Development Plans

Appendix B Site Record Forms of Previously Recorded Archaeological Sites

NZHP has identified that the sites listed in the table below may be affected by the proposed works, and site record forms for each site are provided in the following pages.

Table B-1. Archaeological sites located within the project area.

NZAA Site ID	Site Name	Site Type	Brief Description
J33/214	-	Historic – domestic	Demolition debris associated with four former dwellings.
J33/215	-	Mining – gold	Three water races.



Site Record Form

NZAA SITE NUMBER: J33/214

SITE TYPE: Historic - domestic

SITE NAME(s):

DATE RECORDED:

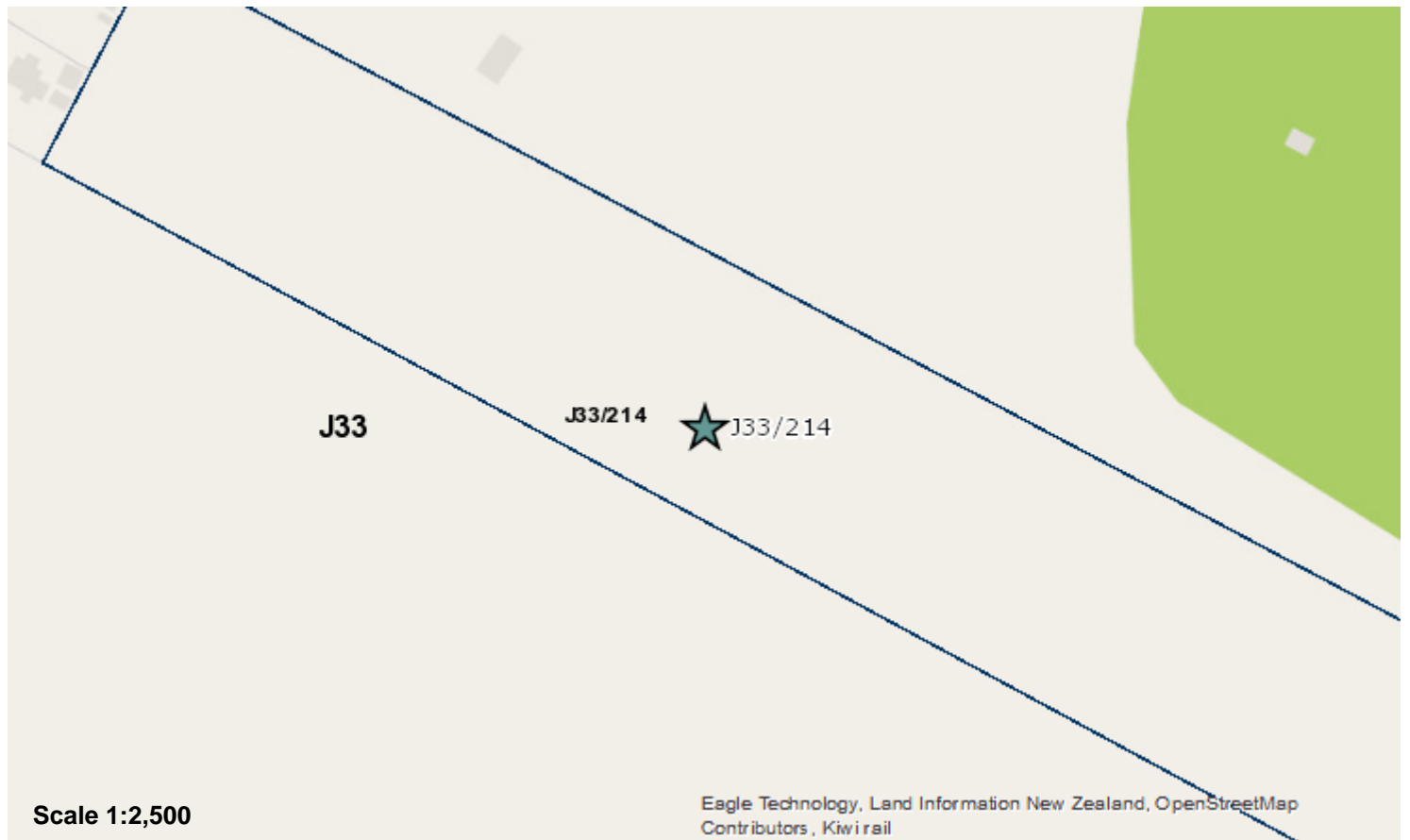
SITE COORDINATES (NZTM) Easting: 1429617

Northing: 5262714

Source: On Screen

IMPERIAL SITE NUMBER:

METRIC SITE NUMBER: J33/214



Finding aids to the location of the site

~8km south of Hokitika, westwards adjacent to 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854).

Brief description

Bricks, building debris, historic artefacts, associated with sites of c1880s houses

Recorded features

Artefact - historic, Building, Artefact - bottle

Other sites associated with this site

SITE RECORD HISTORY**NZAA SITE NUMBER:** J33/214**Site description**

Updated 15/09/2023 (Field visit), submitted by indiagillespie , visited 18/07/2023 by Gillespie, India
Grid reference (E1429617 / N5262714)

In July 2022, New Zealand Heritage Properties (NZHP) undertook a site survey of a forthcoming project area at 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854).

Prior to the arrival of Pakeha, the landscape surrounding the project area was part of a system of various lifeways activities. Situated in a prime location, the wider Mananui area provided access to mahinga toi and mahinga kai resources. Following the arrival of Pakeha to Te Tai o Poutini, the valuable resources surrounding the project area became a focus for various activities, for both labour and profit, and leisure.

The project area has a long history of nineteenth century activities, beginning with various forestry activities from the 1860s, followed by mining from the 1870s through into the twentieth century. Historical research has revealed that there were at least four dwellings present within the project area by 1912 (see DP 313), and these were likely associated with the home for aged and infirm miners that was established in the project area from 1887 onwards (West Coast Times, 1887). The newly endowed reserve, which was formally referred to as Reserve No. 271, was owned by the Crown and gazetted by the Provincial Government, who planned to construct a home for miners who, through old age, accident, or infirmity, could not support themselves (West Coast Times, 1887).

Gold mining activities were also identified as taking place within the project area from the 1870s onwards, with at least five prospecting licenses granted in 1900 alone (West Coast Times, 1900), and fluming associated with some of these is detailed on a historic map from the same year (Deverell, 1900).

The site survey identified nine points of interest (POI) across the project area, with five of these (POI # 1-5) relating to the four dwellings along the north of the project area. These POI were discrete areas of demolition debris, assumed to relate to the demolition of the dwellings.

The site boundary is based upon Figure 8 (LINZ, 1970) wherein the fence line demarcating the division between the domestic and mining activities is visible, measuring approximately 80m wide by 515m long. Please note that the site boundary has been drawn on-screen, and there may be slight errors.

An archaeological assessment has been prepared that contains further details regarding this site. "Mananui Mineral Sands. An Archaeological Assessment". Report prepared by India Gillespie (New Zealand Heritage Properties Ltd) (2023).

References:

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Condition of the site

Updated 15/09/2023 (Field visit), submitted by indiagillespie , visited 18/07/2023 by Gillespie, India

The visible above surface features across the site are in poor condition, having suffered damage from vegetation, weathering, and from successive modifications to the landscape.

Statement of condition

Updated: 18/09/2023 - Poor - Visible features are incomplete, unclear and/or the majority have been damaged in some way

Current land use:

Updated: 18/09/2023 - Grazing

Threats:

Updated: 18/09/2023 - Farming practices, Quarrying

SITE RECORD INVENTORY

NZAA SITE NUMBER: J33/214

Supporting documentation held in ArchSite

Additional Information for Site J33/214 (Gillespie, I., NZHP, 2023).

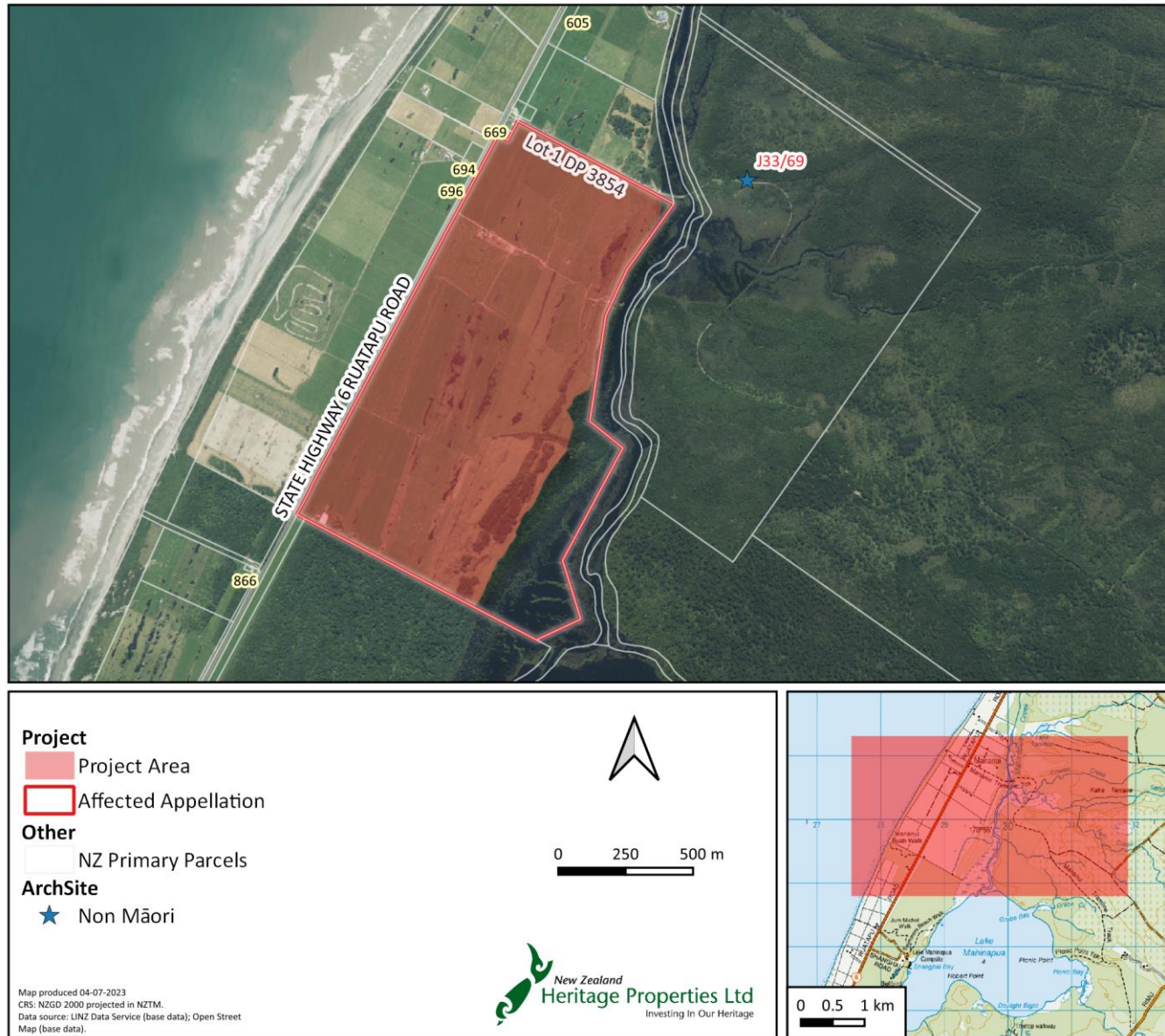


Figure 1. Location of the project area.

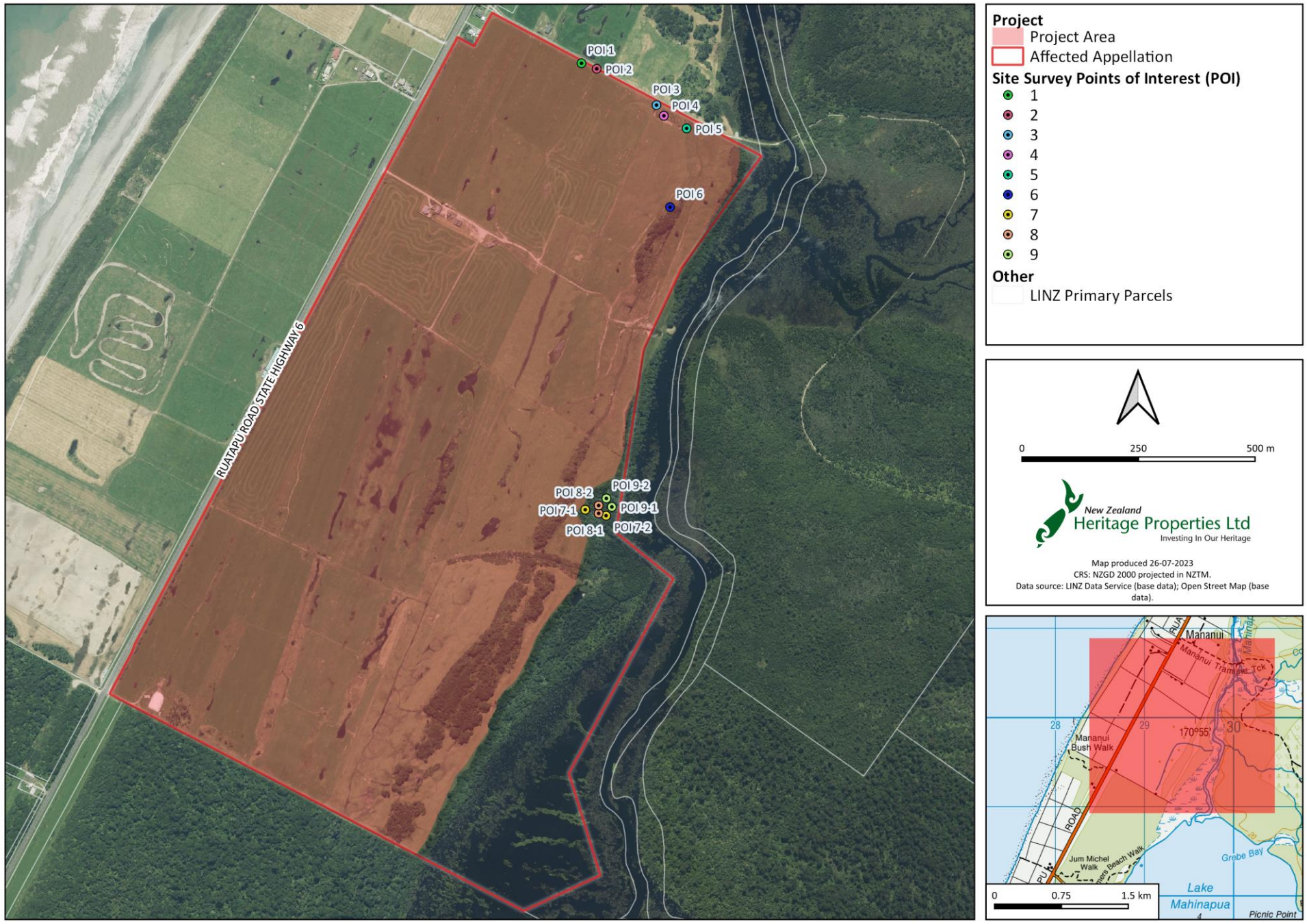


Figure 2. Map showing the POI recorded during the site survey. POI # 1-6 relate to this archaeological site.



Figure 4. Photographs showing POI # 1, looking north (left) and west (right).



Figure 5. Left: photograph of POI # 3, looking north-east. Right: photograph of POI # 4, looking north-northeast.



Figure 6. Photograph of POI # 2, looking north-northeast.



Figure 7. Left: photograph of POI # 5 showing brick debris, looking south-east. Right: detail of glass vessel fragments, looking south.

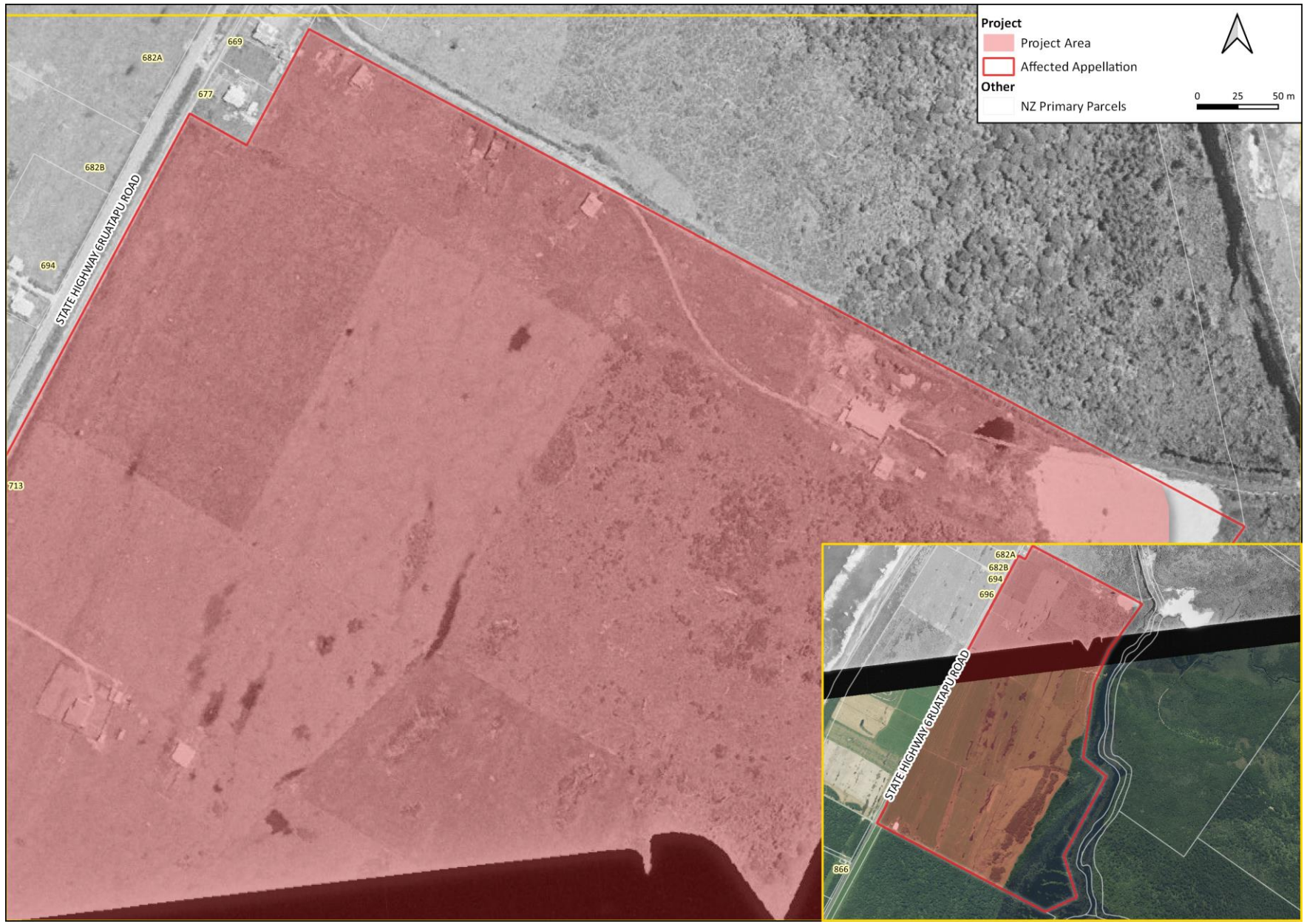


Figure 8. Georeferenced aerial photograph with the project area overlain (LINZ, 1970). Note the buildings present along the northern boundary.



Site Record Form

NZAA SITE NUMBER: J33/215

SITE TYPE: Mining - gold

SITE NAME(s):

DATE RECORDED:

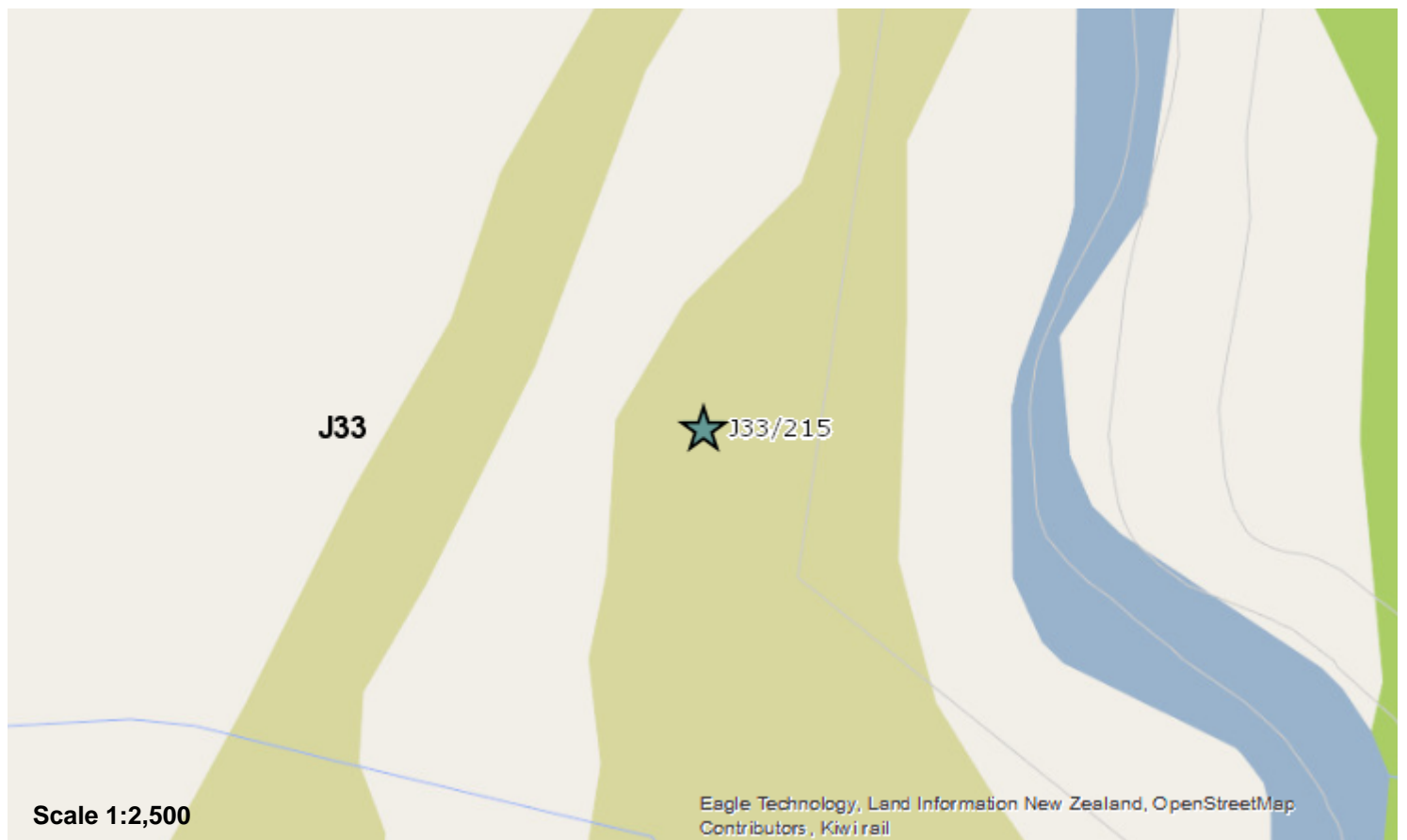
SITE COORDINATES (NZTM) Easting: 1429657

Northing: 5261815

Source: Handheld GPS

IMPERIAL SITE NUMBER:

METRIC SITE NUMBER: J33/215



Finding aids to the location of the site

~8km south of Hokitika, westwards adjacent to 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854).

Brief description

Three water races associated with mining from late 1890s

Recorded features

Water race

Other sites associated with this site

J33/214

SITE RECORD HISTORY

NZAA SITE NUMBER: J33/215

Site description

Updated 15/09/2023 (Field visit), submitted by indiagillespie, visited 18/07/2023 by Gillespie, India
Grid reference (E1429657 / N5261815)

In July 2022, New Zealand Heritage Properties (NZHP) undertook a site survey of a forthcoming project area at 713 Ruatapu Road, Ruatapu, Westland (Lot 1 DP 3854).

Prior to the arrival of Pakeha, the landscape surrounding the project area was part of a system of various lifeways activities. Situated in a prime location, the wider Mananui area provided access to mahinga toi and mahinga kai resources. Following the arrival of Pakeha to Te Tai o Poutini, the valuable resources surrounding the project area became a focus for various activities, for both labour and profit, and leisure.

The project area has a long history of nineteenth century activities, beginning with various forestry activities from the 1860s, followed by mining from the 1870s through into the twentieth century. area by 1912 (see DP 313), and these were likely associated with the home for aged and infirm miners that was established in the project area from 1887 onwards (West Coast Times, 1887). The newly endowed reserve, which was formally referred to as Reserve No. 271, was owned by the Historical research has revealed that mining was undertaken within the project area from the 1870s onwards. By the end of the nineteenth century, the project area was site of various mining developments, with at least two extended claims applied for by 1899, where lead was being extracted (West Coast Times, 1899). A survey plan (SO 266) from 1897 shows the extent of a mining reserve adjacent to the project area. However, it is likely that mining was undertaken within the project area itself, along with the adjacent reserve, as in 1900, there were five prospecting license applications submitted for the project area (West Coast Times, 1900). A district survey map from the turn of the century details fluming, referred to as 'Macfarlane's Fluming', noted as being present within the project area, towards the centre-east (Figure 3; Deverell, 1900). The Macfarlane referred to is James Chicago Macfarlane, who was a surveyor connected with various mining ventures, especially those associated with large tunnels and syphons (Cyclopedia Company Limited, 1906).

The site survey identified nine points of interest (POI) across the project area, with three of these (POI # 7-9) identified in the location of Macfarlane's Fluming. These POI were three water races that were identified, followed, and recorded; however, please note that the GPS data for these POI may contain accuracy errors, owing to the dense vegetation coverage in this area.

The first water race identified, POI 7, extended ~50m downwards towards Mahinapua Creek. This water race, which meandered in a general east to west orientation, was approximately 600mm wide and, depending on the topography, featured cuttings of up to 2m in depth for the sidewalls. There is evidence of race infilling and vegetation growth, however, the race remained in fair condition. The next POI located was POI # 8, which has been interpreted as being a branch-race, given that it connects to POI # 7. This branch-race was smaller, approximately ~20m in length, and was orientated north to south, connecting into POI # 7. Vegetation growth hampered the recording of this race; however, it was approximately 500mm wide, and up to 1m deep in areas.

The final water race identified was POI # 9, located to the north of the previous two POI. This race, orientated north-east to south-west, was approximately 25m in length by up to 1m in width. This race was in fair condition, with less vegetation infilling present. However, the edges of the race were difficult to define in areas, and there has been prior stock trampling. The termination of this race (labelled POI 9-2) opens into a large area just to the west of Mahinapua Creek. The coordinates (NZTM) below detail the start and end points for each races (± 3 m accuracy). Please note that the site location has been position approximately in the centroid of these races.

POI # 7:

Start (POI 7-1) = N 5261811.8 E 1429624.2

End (POI 7-2) = N 5261799.3 E 1429668.9

POI # 8:

Start (POI 8-1) = N 5261804.0 E 1429653.4

End (POI 8-2) = N 5261820.6 E 1429652.9

POI # 9:

Start (POI 9-1) = N 5261818.2 E 1429681.4

End (POI 9-2) = N 5261836.2 E 1429669.6

An archaeological assessment has been prepared that contains further details regarding this site. "Mananui Mineral Sands. An Archaeological Assessment". Report prepared by India Gillespie (New Zealand Heritage Properties Ltd) (2023).

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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

<https://nzetc.victoria.ac.nz/tm/scholarly/tei-Cyc05Cycl-t1-body1-d3-d22-d3.html>

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Condition of the site

Updated 15/09/2023 (Field visit), submitted by indiagillespie , visited 18/07/2023 by Gillespie, India

The visible above surface features associated with this site, comprised of three water races, are generally in fair condition. This is despite infilling from vegetation, weathering, and stock trampling.

Statement of condition

Updated: 18/09/2023 - Fair - Some intact features, but others may be unclear or damaged

Current land use:

Updated: 18/09/2023 - Grazing, Indigenous vegetation

Threats:

Updated: 18/09/2023 - Farming practices, Vegetation clearance, Quarrying

SITE RECORD INVENTORY

NZAA SITE NUMBER: J33/215

Supporting documentation held in ArchSite

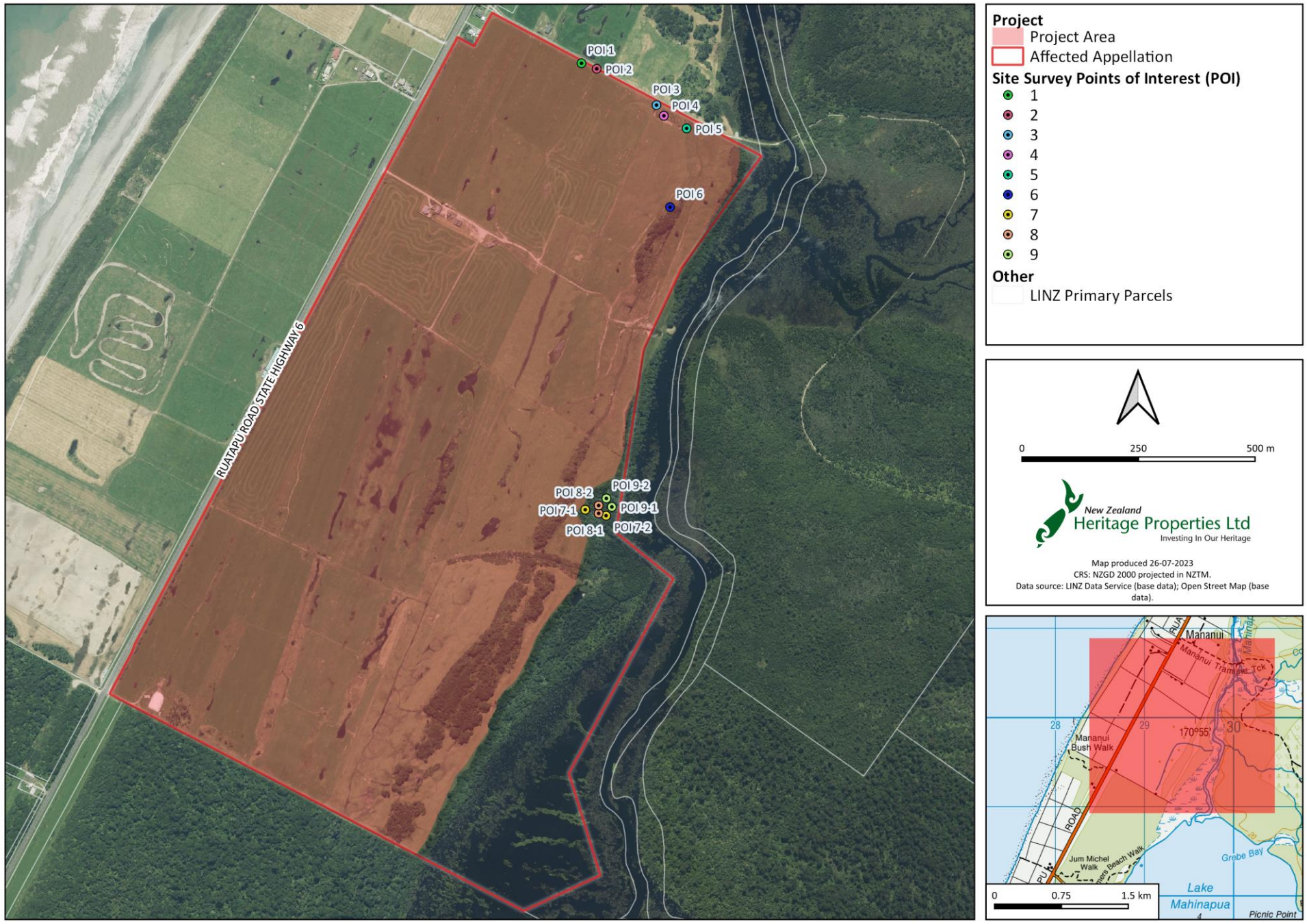


Figure 2. Map showing the POI recorded during the site survey. POI # 7-9 relate to this archaeological site.

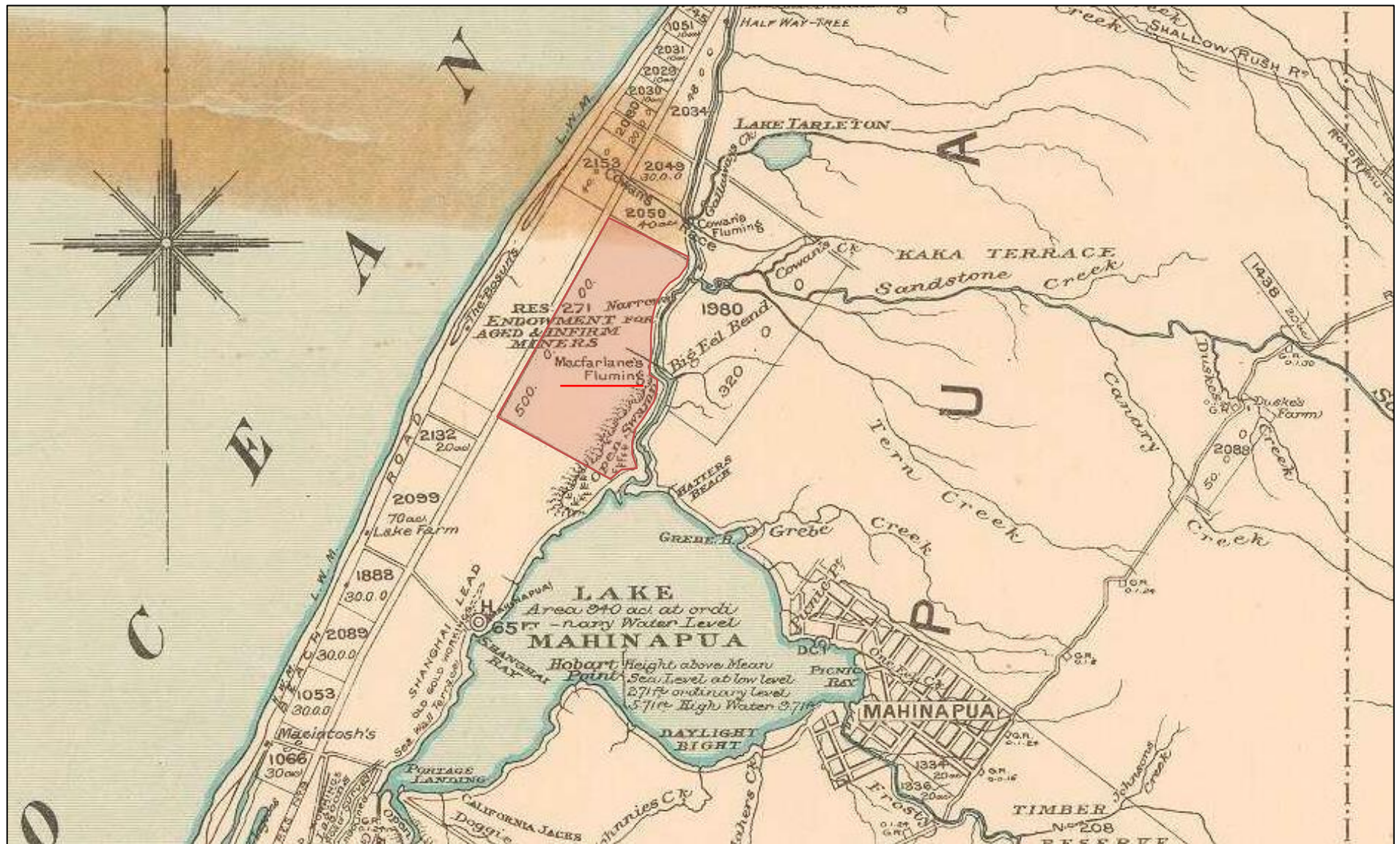


Figure 3. Detail of a map of the Kaniere and Mahinapua survey district, with the project area highlighted red and fluming associated with this site underlined red (Deverell, 1900).



Figure 4. Photographs showing the start (7-1, left, looking east) and finish (7-2, right; looking west) of POI # 7.



Figure 5. Photographs showing the start of POI # 8 (8-1; left, looking south) and finish (8-2; right, looking north).



Figure 6. Photographs showing POI #9, looking north-west (left) and south-east (right).