

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

**AND**

**IN THE MATTER** of an application by Meridian  
Energy Limited for resource  
consents for the Mokihinui Hydro  
Project

---

**STATEMENT OF EVIDENCE OF CATHRYN ELIZABETH BARR ON  
BEHALF OF MERIDIAN ENERGY LIMITED**

---

---

**ANDERSON LLOYD**  
LAWYERS  
DUNEDIN

Solicitor: Stephen Christensen/  
Philippa Jones

Level 10, Otago House  
Cnr Moray & Princes Street,  
Private Bag 1959,  
DUNEDIN 9054  
Tel 03 477 3973  
Fax 03 477 3184

## 1. QUALIFICATIONS AND EXPERIENCE

- 1.1 My full name is Cathryn Elizabeth Barr.
- 1.2 I hold a Master of Arts (Honours) degree in Anthropology, specialising in archaeology, from the University of Auckland. I am currently completing a Master of Cultural Heritage degree through Deakin University, Australia.
- 1.3 I have 20 years experience in the field of archaeology and historic resource management. I am currently employed as Senior Archaeologist and Team Leader – Heritage, for Opus International Consultants, based in Napier. I have held this position since April 2004. Prior to this I was employed as a Technical Support Officer (Historic) with the Department of Conservation in Northland and in the Kaitaia Area Office. In the past I have worked as a Regional Archaeologist for the NZ Historic Places Trust (Tauranga), and as an independent archaeological consultant.
- 1.4 I have read the Code of Conduct for Expert Witnesses (Rule 330A, High Court Rules and Environment Court Practice Note) and I agree to comply with it. I have complied with it in the preparation of this statement of evidence.
- 1.5 I have been involved in the following work in relation to Meridian Energy Limited's (Meridian's) Mokihinui Hydro Project (MHP):
- a. Carried out historic research on the gold mining and settlement of the Mokihinui River Valley; carried out several site surveys of the proposed project area, both upstream and downstream of the proposed dam site;
  - b. As a result of the above work I have completed the following reports:  
  
*2006 – Archaeological Assessment Mokihinui*

2007 – *Archaeological Effects Assessment Mokihinui Hydro  
Proposal*

and I have prepared my statement of evidence in reliance on this work.

1.6 I have also reviewed:

- a. The reports and statements of evidence of other experts giving evidence on behalf of Meridian relevant to my area of expertise, including:
  - i. *Rob Greenaway - Recreation*
  - ii. *Peter Rough - Landscape*
- b. The NZ Historic Places Trust Guidelines for Archaeological Assessments, and Heritage Management Guidelines for Government Departments produced by the Ministry for Culture and Heritage (2004). Department of Conservation policies for management and assessment of historic heritage were also consulted.
- c. Relevant submissions of others, namely the New Zealand Historic Places Trust, the NZ Green Party, West Coast Branch and Mark Pickering.

## 2. **SCOPE OF EVIDENCE**

2.1 I have been asked by Meridian to prepare evidence in relation to the actual and potential effects of the MHP on historic heritage. This includes:

- a. Identification of historic resources within the project areas (inundation area, transmission line, substation site);
- b. Identification of historic resources within the wider area that may be affected by the proposal;
- c. An assessment of effects of the proposal on identified heritage resources.

- 2.2 My evidence is based on the historic research and site surveys and assessments discussed above. Statements are made based on guidelines developed by the Historic Places Trust, the Ministry for Culture and Heritage and the Department of Conservation. My evidence does not represent the views or history of tangata whenua regarding the cultural heritage of this area.

### 3. **EXECUTIVE SUMMARY**

- 3.1 As a result of the work that I have carried out I have identified that there are sites containing historic values located within the project areas and some of these will be adversely impacted upon. In some instances adverse effects can be mitigated by avoiding features where possible. In other instances, further work is recommended that will assist in investigating, recording and recovering information from those heritage sites that will be affected by the project. While in these instances the sites will be negatively impacted by the project, recording and recovery of information will provide a better understanding of sites of this nature. The potential for this to occur is therefore considered as a positive benefit.

### 4. **THE PROPOSAL**

- 4.1 I confirm my evidence is based on the project proposal as described in the Assessment of Environmental Effects, brief details of which are described in Appendix 1.

### 5. **EXISTING ENVIRONMENT**

- 5.1 A brief outline of the history of the area is provided below in order to provide some context in which the discussion of interpretation of archaeological sites and the archaeological potential of the area can be understood.

- 5.2 Little is recorded of the traditional or pre-European history of the Mokihinui River valley, although several historic accounts refer to the valley as being used as an inland route to Karamea and the north. According to Spencer (1986) the name Mokihinui means “big reed raft” and refers to an occasion when a raiding party making its way down the coast was constantly harassed by Ngai Tahu Maori. They constructed a large raft, big enough to take all the warriors across the Mokihinui River in one trip, to avoid leaving any vulnerable on one side. The raft was reported to have been used for many years and such were the reports that when Heaphy and his party first travelled through the area in the early 1840s they expected to be able to use the raft to cross the river (ibid).
- 5.3 Traditional history and early geological survey maps note the use of the Mokihinui as an access route inland and to the northern coast. By 1915 this route was described as “... a horse track which follows the south bank of the Mokihinui from Seddonville to the Rough and Tumble Creek, and then, crossing the Mokihinui by means of a fine single span bridge, continuing up the Rough and Tumble Valley” (New Zealand Geological Survey Bulletin 11 1910:5).
- 5.4 There is little physical evidence of pre-European sites in the area and the only Maori site recorded on the New Zealand Archaeological Association (NZAA) site record database is an occupation site recorded at the mouth of the river (L28/1). There is no visible evidence of this site today.
- 5.5 The Mokihinui area was the site of two main gold rushes. Gold was first prospected along the beach around the mouth of the Mokihinui River in 1866 and a small township of several thousand miners sprung up, approximately a mile up river from the mouth. While there is mention of some attempts at prospecting up the river around this time, the harsh nature of the country appears to have limited exploration.
- 5.6 It is around this time that there is the first official mention of construction of a track, on the recommendation of Mr Kynnersley, the mining warden for the district (Hokitika Evening Star 1 Nov 1867). This does not appear

to have commenced for several years however, as newspaper accounts of the time refer to flat bottom boats being used by prospectors to access areas up the river.

- 5.7 By June 1868 the Mokihinui rush appears to have been over and the West Coast Times reported that the township of thousands was deserted, although prospecting up the river appears to have continued. Within 12 months there was another small rush, when coarse gold was struck about 3 miles up the river, but this rush had ended 17 days later.
- 5.8 Four years later the Mokihinui again became a focus for gold miners when a quartz reef containing good gold was found approximately 20 miles up the river, and it was this area that was to become the main focus of gold mining for the next 60 years. On 3 October 1874 the Inangahua Times reported that the track had been completed from the township (possibly Mokihinui) to Coal Creek (approximately 1km east of Seddonville).
- 5.9 The mine warden's report in the Appendices to the Journal of the House of Representatives in 1873 notes that in the Mokihinui River Valley:
- “Some very good specimens from this reef were brought to the Warden in February last, and a lease was applied for by the prospectors. The ground has been surveyed, with the surveyor forming a good opinion of the reef. The country is rough but a track can be made there. The conveyance of machinery will be a matter of difficulty, as the river affords more obstacles than facilities”.*
- 5.10 Several prospecting licences were granted for the area but the Halcyon was first company to establish a claim approximately 22 miles up the river in 1874, near Maori Creek and ½ mile above the junction with the Mokihinui River. It is reported that the Halcyon Company took a small stamper battery up the river and while the reef was worked for a short time the Halcyon Company wound up after a few short years of

operation, showing little return for their investment. The company was reborn in 1882 and renamed the Mokihinui Quartz Gold Mining Company, reworking the old Halcyon claim and using the battery that had been taken up the river in the 1870s.

- 5.11 By 1884 following further discoveries of reefs there was a marked revival of mining within the Maori Creek area and in addition to the Mokihinui Quartz Mining Company, at least five other companies were formed to work the different finds. The main companies were the Red Queen, South Pacific, Southern Light, Lady Agnes and Guiding Star (Downey 1928).
- 5.12 The Red Queen mine was located on the southern bank of the river and was the only operation to meet with any measure of success and earn a moderate profit. During the years 1885 to 1886 the mine crushed 1,560 tons of quartz for a yield of 2,263 oz gold, valued at £8,999 9s and paid in dividends of £2,400 (ibid.).
- 5.13 The Southern Light mine was located on the same reef as the Red Queen, but higher on the range, in the area later worked by the Swastika Mining Company in the early 1900s. Downey (1928) notes that there was no information on the returns for the mine, but by 1887 a quantity of stone was ready for crushing. There was a tramway connecting the Southern Light with the Mokihinui Company battery, and it is possible that the ore was crushed there.
- 5.14 The warden's report to the House of Representatives for 1887 notes that the Mokihinui Company owned the only crushing machinery in the district, and for a small charge they carried out the crushing for the other companies working the district.
- 5.15 The population of the area must have been sizable and a small settlement called Seatonville was established along the banks of the river, within the vicinity of the Mokihinui reefs, and close to the Mokihinui Quartz Mining Company battery (Matthews 1999:180).

- 5.16 The Red Queen was worked until around 1940, with small crews of around six miners continuing exploration of the reef throughout the depression (E Collier n.d.). Collier's reports also note that two of these staff were employed almost permanently on clearing slips and making repairs to the track. During the 1920s and 1930s the Swastika mine was also worked and there is record of several small, independent prospecting operations over this period.
- 5.17 While the focus of mining was around the Red Queen mine and the associated reefs, exploration continued up the tributaries of the Mokihinui, particularly Maori Creek, Cascade Creek and the Rough and Tumble Creek. Access to these creeks, all on the northern side of the Mokihinui was either by a small bridge at the Rough and Tumble (Matthews 1999:180), or via a flying fox cableway (ibid.183). Exploration and mining of reefs found in these areas would also have seen the establishment of tracks, workshops and camps, and the location of some of these have been identified on historic survey plans.
- 5.18 Prior to work carried out by me for the MHP, there was very little formally recorded on historic sites in the area. As a result of two field surveys, carried out in April 2006 and March 2007, and associated research, a total of nine archaeological sites have been entered into the New Zealand Archaeological Association national data base. A brief description of these sites is attached in Appendix 2. In addition, historic research has assisted in identifying the location of Seatonville, a mining settlement that many had heard of, but whose location was uncertain (see survey plan Appendix 3). All the archaeological sites recorded are along the lower edges of the River and it is anticipated that further sites will be located in higher altitude areas in the Valley. There is also a potential for isolated hut and mining sites, currently inaccessible and/or hidden by regenerating bush, to be located in the area.
- 5.19 Historic features within the Mokihinui Valley include evidence of mining operations (adits dug into the high hill sides), processing areas (machinery sites and stamper battery operations) and habitation (hut sites and the Seatonville settlement). Linked with these features is evidence of historic transportation routes (e.g. the pack track from

Seddonville; the bridge at Rough and Tumble). These features provide physical evidence of past activities; evidence of adaptation to a harsh environment linked with extractive industry, and are echoed in many other remote locations throughout the West Coast. Full details of archaeological sites identified as part of my surveys are provided in my 2007 report which was appended to the Assessment of Environmental Effects.

- 5.20 Within the footprint of the transmission line route and within the area of the substation, as identified in the project documents, there are no recorded archaeological sites. Within the wider area there are known to be unrecorded historic sites associated with timber and coal extraction. Of note are the sites of Denniston, Coalbrookdale and Burnetts Face. The proposed substation site is over 2km east of Burnetts Face.

### **Heritage and Archaeological Values**

- 5.21 Statements of heritage and archaeological values are made in relation to criteria identified in the Historic Places Act 1993 (Section 23) and with reference to criteria and policies outlined in the Buller District Plan and the West Coast Regional Policy Statement. Assessment of the values of a heritage site can then be used to make statements as to the overall significance of sites and the area as a whole. As a rule for heritage statements of significance, individual sites are generally not ranked or accorded numerical ranking. However, in my assessment report (Barr 2007), it is noted that having identified the values of a site, statements as to levels of significance can be made using a recognized scale, with sites identified in terms of being of considerable or high significance, some or moderate significance, and little or low significance (using Kerr 1996:19; and Walton 2002:12). It is also necessary to acknowledge that statements are based to a large part on the potential information that sites may contain, because with archaeological sites, an unknown proportion of the resource is underground or subsurface and will not be revealed until a site is excavated or disturbed.

- 5.22 In relation to the MHP, the values of known sites were assessed in regard to their condition, rarity, contextual value, information potential, amenity values and cultural association (Historic Places Trust criteria). This is also in line with the assessment criteria outlined in “Guidelines for writing archaeological assessments” produced by the Historic Places Trust (NZHPT 2006) and other non-regulatory guideline documents such as the ICOMOS (NZ) charter<sup>1</sup>.

### **Condition**

- 5.23 The condition of the historic features located along the lower banks of the Mokihinui River is variable. Of the features identified during the field visits the most intact are the machinery platform at the compressor site (NZAA site L28/26) and the hut site platforms (L28/27). Parts of the pack track (L28/28) are in good condition but this is not standard along the length of the track as there has been no regular maintenance on the track since the mid 1980s. Some of the sites such as hut sites at the upper area of Seatonville and the battery site at the junction of Maori Creek and the Mokihinui River have little or no visible evidence of physical features. Other sites such as lower Seatonville hut sites, the battery site at Jones Creek and the compressor site appear relatively intact, with features and associated structures clearly visible. Many of the features however have been modified and adversely affected by human activity with remains being moved or modified to create huts or bivouacs by trampers and hunters. Similarly natural events such as earthquakes, land slips and flood events have also altered the landscape changing what can be seen or perceived as well as shifting parameters for the survival of artefactual material. There is no active management of these sites.

---

<sup>1</sup> ICOMOS is the International Charter for the Conservation and Restoration of Monuments and Sites

## Rarity

- 5.24 The West Coast of the South Island was the scene of many gold rushes in the 1800s and there are remains of many sites associated with these activities throughout the coast. The link of a well defined pack track and abandoned mine workings, settlement site, battery, and a compressor is relatively rare. There are however other more accessible examples of similar cultural landscapes on the West Coast. Examples include the gold mining settlement and operations at Lyell, Big River and Waitua in the Reefton area and coal mining infrastructure and settlement at Denniston and Charming Creek. As is noted, these sites contain similar working and settlement elements as those in Mokihinui, but Lyell, Waitua, Big River, Denniston and Charming Creek are all in better condition and more accessible.
- 5.25 There is potential for isolated mining camps and operations to be located along the route of the proposed transmission line. The identification of such features on the West Coast is not a rarity.

## Contextual value

- 5.26 As discussed above individually many of these sites are considered to have low heritage values. However as a group these sites comprise a historic landscape with evidence of exploration, prospecting, mining and settlement in the Mokihinui Valley.
- 5.27 It is important that archaeological sites are not viewed as isolated, individual entities but as part of a wider historic landscape. In this regard the significance of a group of sites or a heritage landscape also needs to be assessed in regard to its place both regionally and nationally. The historic sites in the Mokihinui Valley are considered as a group to be of moderate to high heritage value. As a group the sites add to the overall picture of gold exploration, associated settlement and mining on the West Coast. There do remain however similar examples of this type of group of sites on the West Coast (e.g. Lyell).

- 5.28 As is noted elsewhere in my evidence and in my reports, there are likely to be isolated heritage sites along the route of the transmission line. Individually the archaeological and heritage values of these sites may be considered to be moderate to low. But again, in considering them in the wider landscape, how they relate to each other and to the picture they provide of historic extraction industries (timber, gold, coal) in this district, their significance increases.

### **Information Potential**

- 5.29 Investigation of archaeological sites has the potential to provide information on the every day life and activities of miners in the Mokihinui River Valley as well as changes in mining operations. Many of the identified sites associated with the mining and settlement in the Mokihinui River appear to have been affected by flooding in the valley over the years. This includes a large flood following the 1929 Murchison Earthquake that created Lake Perrine and damaged the central concrete support of the Rough and Tumble Bridge. These events will have affected not only the condition of the sites but potentially the information that they contain.
- 5.30 The potential for these sites to provide information on past technology and social patterns is also considered to be moderate to high. There are a large number of old mining operations and settlements in the West Coast dating from the same period, and miners often moved between fields, so that technology and techniques were often passed between fields. Similarly camps associated with mines, particularly smaller operations were often transient in nature, with accommodation being small huts or even tents, so that limited structural evidence can be found. The small hut sites identified by Jones Creek (NZAA Site Number L28/23 see plan in Appendix 2 for location and description of sites) and near the compressor site (L28/27), do however suggest longer term occupation. There is likely to be subsurface archaeological material in the area of the settlement that can provide information on the periods and nature of the settlement.

### **Amenity values**

5.31 In their current state, with a lack of interpretation and with limited access to many of the locations, the amenity values of all sites are considered currently to be moderate to low. Sections of the track are still used, but access to the area is limited due to slips on the pack track and lack of track maintenance for over twenty years.

### **Cultural Associations**

5.32 In discussing cultural associations with a place, statements are made not only in relation to links of tangata whenua to that place, but the links or associations of the wider community. The area of archaeological and heritage interest in the Mokihinui Valley is associated with the reported route used during pre European times, and gold mining exploration and operations between the 1870s and 1940s. There are strong local associations with heritage features in the area, reflected in some of the submissions received as part of this project. This association is linked with a general appreciation for the role that gold mining played in the development of the West Coast, and with the fact that many residents are descended from those miners who explored, settled and mined the area. The valley also has more recent cultural associations, linked with recreational use of the area as outlined in evidence provided by Mr Greenaway (hunting, fishing and rafting).

### **Regional and Local Authority Policy**

5.33 In relation to criteria outlined in local policy documents (West Coast Regional Policy Statement Section 6.1), the following comments are made:

a) *The extent to which the place reflects important or representative aspects of New Zealand history*

- 5.34 As is noted elsewhere, the Mokihinui River valley was the site of gold exploration and mining, primarily in the 1870s and 1880s. Associated with this was the development of the small settlement of Seatonville, and associated hut sites, machinery work sites and pack tracks. This pattern of exploration, settlement and associated extractive industry and abandonment is evident in other areas of the West Coast (for example Lyell) and elsewhere in New Zealand (Otago, Coromandel).
- 5.35 It is my professional opinion that the Mokihinui gold mining sites, as a group do reflect a significant aspect of New Zealand's history, but that these sites are similar to many others linked with the gold rushes in New Zealand in the late 1800s.
- 5.36 The Mokihinui and Rough and Tumble Creek areas are also regionally significant in terms of the role that they played in both pre-European and European periods as transportation routes. Tracks existed alongside both waterways to provide access north to Karamea and inland to the Mokihinui Forks and Lyell.

*b) the level of association of the place with events, persons, or ideas of importance in the history of the district / region*

- 5.37 The gold mining activities and evidence that remains is of regional significance. As is noted above, many of the events, features and activities that occurred are reflected in other similar sites on the West Coast and elsewhere in New Zealand. It is noted that there are memorials on part of the Mokihinui pack track to individuals associated with the area (eg the Russell Crosses). These are of local significance.
- 5.38 The surviving evidence associated with quartz gold mining up the river valley, and potential isolated sites along the transmission line are of regional significance in the role that they played in the historic development of local communities along the West Coast and the fact that the residents of many of these small communities are descendants of the miners and settlers.

*c) the importance of the place to Poutini Ngai Tahu*

5.39 Statements on the importance of a place to tangata whenua can only be made by tangata whenua. Meridian has carried out consultation with Ngati Wae Wae on this matter. I am not aware of any sites of significance within the project area that have been identified by Ngati Wae Wae.

*d) the level of community association with or public esteem for, the place*

5.40 There is strong local community association with the history of mining activities and related sites and pack tracks along Mokihinui and Rough and Tumble Creek, and the values attached to these features should be considered as high. Similarly there are strong associations with sites within the Charming Creek area and along the route of the proposed transmission line. The community association with the historic sites in the area can be attributed not only to the general appreciation for the heritage sites, but also to the fact that many of the older residents have some personal association with the historic mining operations in the area, as descendants of many of those who worked at the sites. Having stated this however, due to the poor general condition of sections of both pack tracks and difficulties of access, visitation numbers are low, particularly past the site of the Iron Bridge over the Mokihinui to Rough and Tumble. Due to their condition sections of the tracks are generally only used by experienced back country trampers and hunters (R Greenaway pers. comm.).

*e) the potential of the place for public education*

5.41 As is noted in my report, at present there is little potential for interpretation of many of the sites within the MHP area. This is largely a result of poor access, dense vegetation growth obscuring features, and the poor condition of some of the features. With the development of the MHP, while some features will be negatively impacted (generally within

the inundation area) the potential to present and interpret features and the history of the Mokihinui district will be greatly increased.

*d) the level of technical accomplishment or value, or design of the place, including the rarity of technical accomplishment or design*

5.42 The nature and type of sites located within the project area appear to be similar to other sites associated with mining (gold and coal), timber extraction and isolated settlements. Movement of miners around gold fields, nationally and internationally, was common and it was often through this that new information and technologies were shared. While locally significant, the heritage sites within the MHP area (river valley and transmission line) do not represent high or significant technological accomplishments. It is of note however that some of the place names in this area are linked with significant mining and industrial sites in the United Kingdom (e.g. Coalbrookdale), identifying a social and cultural link.

5.43 It is noted in my report that there are potentially moderate to high archaeological values associated with the settlement site and examples of social adaptation to settlement in isolation. The potential recovery of this information through archaeological investigation (pending the granting of Historic Places Trust authorities), will provide an opportunity to understand and interpret this information for visitors to the area.

*g) The symbolic or commemorative value of the place*

5.44 The sites within the MHP area can be considered to have moderate commemorative value, in terms of sites representing the achievements of explorers, surveyors, miners and settlers. There is no one symbolic or commemorative value that can be associated with this place.

5.45 Submissions made on the MHP referred to the memorials located near the beginning of the Mokihinui Track, particularly the Russell Crosses. It is of note however that these are possibly not in their original location.

Plans associated with earthwork carried out in the 1970s as part of previous investigations for a dam site in this area, suggests that these crosses were moved, and relocated close to their original position following completion of work (Ministry of Works Plan WPT 2723 Figure 6a 1975).

h) *Whether it is an historic place known to date from early periods of the district's settlement*

5.46 All of the identified (and potentially unidentified) heritage sites within this area are significant in that they are associated with some of the earliest European exploration and settlement of this part of the West Coast. One of the routes that later became a pack track and dray road is also significant in that it is a route that was originally used by pre-European Maori as access along the coast to Karamea and inland.

i) *The rarity of the type of historic place; and*

5.47 As is stated, the historic sites within this area are not considered to be rare as similar sites can be found elsewhere on the West Coast. Having stated this, all archaeological sites potentially contain significant information on the use of any place. Any archaeological work that is carried out on these sites will only be done under an authority from the Historic Places Trust.

j) *the extent to which the place forms a key part of a wider historical and cultural complex or historic and cultural landscape.*

5.48 On their own, the heritage sites within the MHP area are considered to be of regional significance. The sites do however form part of the wider picture of gold mining and exploration not only of the West Coast in the 1860s – 1880s, but also nationally and internationally. Appropriate recording and investigation of those sites that are to be physically impacted by the project will allow a better understanding of the sites.

Retention of some of the features (settlement, mines, parts of pack track) and provision of a better access track will allow better access to the sites.

- 5.49 In relation to the objectives and policies in the Buller District Plan (Objective 4.6.7.1 and Policy 4.6.8.2), and based on the information provided above, as a group the heritage features in the Mokihinui Valley are considered to be of regional significance, and therefore potentially worthy of listing in the district plan. Of the 250 sites listed in the schedule of the District Plan, there are currently 95 sites identified as gold mining sites. Additionally there are 7 miners tracks identified, as well as four other features simply identified as tracks. As such, gold mining sites and historic tracks make up 42% of the scheduled sites in the plan. While it is not suggested that this detracts from the level of significance of the Mokihinui sites, it does indicate that sites of this nature are not uncommon and are already well represented in the Plan. Similarly, there is an indication that while other sites have been identified by the community for inclusion in the plan, none of those within the Mokihinui area have been.
- 5.50 In relation to Objective 4.6.7.1 it is noted that while some of the heritage landscape will be affected by the MHP, the opportunity will also be created to enhance access, interpret sites and provide a better understanding of this aspect of the history of the West Coast.

## 6. ACTUAL AND POTENTIAL EFFECTS

### Hydro Dam

- 6.1 The resulting lake has the most potential to affect the heritage values in this area. Beginning at the western extent of the river (refer plan Appendix 2), at the dam site, potential effects on historic features are as follows:

*a) the memorials in the area of, and including the Russell Crosses will be inundated.*

- b) *the remains of the Iron Bridge (the abutments, remains of central pile and the remains of the steel truss) will be inundated.*
- c) *over 60% of the pack track from the dam site to the Mokihinui Forks will be inundated for much of its length, where it is below 100m a.s.l.*
- d) *remains of the track (old road) at the junction of the Mokihinui and Rough and Tumble Creek will be inundated.*
- e) *evidence of the mining settlement at Seatonville on the river flat, the hut and battery site at Jones Creek, the compressor site and associated huts will be affected by the creation of the lake, as all these features will be below the waterline..*
- f) *Hut sites located along the top of the narrow ridge at this location (upper area of Seatonville) will not be affected by the change in the water level. These features will not be physically affected but they will lose their contextual link with features on the lower area of the settlement.*
- g) *Some of the sites that are recorded on historic plans but which could not be identified during field visits on the northern side of the river around Maori Creek and Cascade Creek will be inundated. These sites are identified as the location of machinery workshops and battery locations, but examination of the area did not identify physical evidence of features.*
- h) *It is possible that there are unknown / unrecorded features between the dam and the river mouth. These may be affected by changes in sedimentation of the river and potential changes to erosion patterns meaning they may be eroded away.*

6.2 All of the above are potentially negative effects on the heritage values of these features.

### **Transmission Line**

6.3 Along the route of the transmission line physical impacts will include the construction of some access tracks into transmission poles, and the construction of the pole foundations themselves. With the exception of

the section of line on Solid Energy land, where a large span is required, the transmission line will be supported by single poles. A desk top assessment of the corridor route has indicated that there are no recorded archaeological sites within the corridor of the transmission line. It has however been identified that there is potential for isolated evidence of historic mining activity to be located in the course of work, particularly in the area of Burma Road. Effects on these features as a result of the construction of the transmission line have the potential to be minimal as there is potential to modify the location of tracks and poles prior to construction. As single poles are proposed it is suggested that potential effects can be managed on a site by site basis. It is possible that individual poles can be moved within the 200m width of the transmission corridor in order to avoid any historic features identified during work. The greatest potential impact will be as a result of possible access tracks to the pole sites.

- 6.4 No detailed archaeological survey of the entire 28 kilometre length of the transmission line has been carried out to date. It is proposed that this is done following the completion of detailed planning (micro-siting) for the location of poles and tracks. At that time it will be possible to make specific recommendations to avoid historic features.
- 6.5 The proposed substation is located approximately 3km to the north-east of the nationally significant site of Denniston and nearby Coalbrookdale. There are no recorded archaeological or historic features within the area of the proposed substation. There is potential for isolated historic material to be found in this area, given the proximity to Denniston and Coalbrookdale, and evidence of an old telegraph line, track and mine (burning mine) were seen in the general area. A field inspection of the proposed substation site did not result in any historic features being identified (Barr 2008).

### **Summary of effects**

- 6.6 The creation of the MHP will result in the loss of several individual features located in the Mokihinui River Valley, all associated directly or

indirectly with gold mining activities in the area. This will impact on the overall heritage landscape and its values. Not all of the heritage features currently identified in the Valley will be physically affected, but the inundation of some features will affect the overall values of the group.

- 6.7 The installation of the transmission line from the dam site to the substation near Coalbrookdale has the potential to impact on heritage sites associated with early coal mining and timber extraction activities, although there are no formally identified sites within the area of the proposed transmission line. Until final access track locations are identified conclusions as to the potential impact of these on heritage features cannot be reached, although the ability to avoid particular pole sites which may be discovered means that the overall effect on heritage features in the area of the transmission line is likely to be low.
- 6.8 There is potential for indirect impact on heritage features downstream of the hydro dam, primarily as a result of changes to sedimentation and the rate of erosion, although no such sites are presently known or recorded.

### **Recommended Mitigation**

- 6.9 The best outcome for heritage or archaeological sites located within any area is avoidance of any physical impact on the site. In situations where this is not possible, recommendations can be made to ensure that adverse effects are remedied or mitigated. There is also a legal requirement to obtain an authority to modify archaeological sites under the provisions of the Historic Places Act 1993, when sites meet the legal definition of archaeological sites. Meridian has already identified that it will apply for such authorities as part of this project and if granted, the Historic Places Trust will impose conditions on the authorities.
- 6.10 Mitigation will assist in retaining some of the heritage values identified within the overall Mokihinui heritage landscape. Mitigation measures which are commonly employed and that could be employed here include heritage site mapping and recording, archaeological excavation and the

erection of interpretive panels, along with improved public access to remaining features in the area. Investigation and recovery of information using archaeological techniques could provide a positive outcome to the loss of some of the historic mining sites in the Mokihinui Valley. The main focus of identified archaeological sites is around Maori Creek/Jones Creek at the location of Seatonville. Some of the lower sites associated with this settlement will be inundated as a result of the formation of the reservoir. The other key historic feature to be affected is the pack track. Suggested methods to remedy or mitigate adverse effects are made below and are separated into four sections – Seatonville and environs, the pack track, isolated features and the transmission route.

### **Seatonville and Environs**

- 6.11 In my opinion the effects on modifying Seatonville can be mitigated if a detailed archaeological investigation of the Seatonville area is undertaken first. This work should include the recording and mapping of visible features as well as excavation of features using accepted archaeological techniques. This information will provide evidence of the lifestyle of miners and their families as well as allowing comparisons to be made with social conditions experienced by miners in other areas of New Zealand, for example Central Otago (Ritchie 1984; 1986) and on Kawau Island (Clough 1988). To date, while there are a large number of mining sites (gold and coal) recorded on the West Coast, detailed archaeological investigations of such settlements has been limited. This is partly as many of the recorded sites are on conservation land, combined with the fact that most archaeological investigations in New Zealand have been development led, with investigations only taking place when a site will be affected by development.
- 6.12 There is a variety of mining equipment around the area of the battery site by Jones Creek including the stamp head, stamper box, remains of water pipes and small pelton wheel. The location of this material should be logged and the material collected and moved to another location to remain in the immediate area, but above the inundation level. This

ensures that the material remains in the area with which it is associated, retaining some of its context, but is placed outside the area of physical impact by the hydro lake, and can assist with the improved interpretation of the area. It is also necessary to ensure that any material moved or relocated is secure so that it is not open to potential damage by either natural processes or future visitors to the site.

- 6.13 Relocation of historic material or structures, while not a preferred heritage management option, is a recognised heritage practice. Part 8 of the ICOMOS (NZ) Charter states that:

*“Relocation ... can be a legitimate part of the conservation process where assessment shows that:*

*(i) the site is not of associated value (an exceptional circumstance); or*

*(ii) relocation is the only means of saving the structure; or*

*(iii) relocation provides continuity of cultural heritage value.*

A new site should provide a setting compatible with cultural heritage values.

- 6.14 Research of historic plans did not show a battery at the Jones Creek location, but there was one indicated on the northern side of the river (Appendix 4). In environments such as this where it was difficult to transport heavy mining machinery from the coast, it was not uncommon for machinery such as batteries to be moved around, particularly from an abandoned area or claim to a working operation or a new area being developed. It is therefore possible that this feature (which includes the stamper box, head, water pipes and pelton wheel) is not on its original site, and there is no indication as to the date that it was established at the Jones Creek site. For these reasons it is my opinion that relocation is an appropriate form of mitigation.

## Pack track

- 6.15 The existing pack track follows the route first cut along the banks of the Mokihinui River in the 1870s, and its location has been determined largely by the topography of the area. Mining department records indicate that the track was maintained while mining continued at the Red Queen and Swastika Mines into the 1940s, and there is considerable reference in Mines Department documents as to the regular need to carry out work on the track due to slips. Until the late 1980s the track was kept open by the Department of Lands and Survey and Forest Service. Little maintenance has been carried out on the track by the Department of Conservation and as a result there are a number of large and small slips along the route. Parts of the track do however remain in good condition, as noted in my assessment report. Given difficulties of access and the condition of some sections of the track, parts are considered a remote or back country track and visitor numbers are low, and this is discussed in the evidence of Mr Rob Greenaway. There are features characteristic of back country mining pack tracks along the Mokihinui track – low dry stone walling, culverts and small fords. At several places along the track informal accommodation or bivouacs have been built in the more recent past such as Tylers hut / tent camp. There are no recognised or formal huts along the route of either of the tracks.
- 6.16 The Rough and Tumble track originally formed part of the route from Mokihinui to Karamea. There was originally a small wooden bridge over the river linking the two pack tracks. This was later replaced by a more substantial bridge, identified as the Iron Bridge, the remains of which sit in the bed of the river today. Dulcie Harmon (1975) relates that work on the Bluff Road, following the existing alignment of the Karamea Highway over the Bluff, began early in the 20<sup>th</sup> century, and this route was being used by horse traffic before the First World War instead of the old track up the Rough and Tumble Creek.
- 6.17 It has been recommended that a detailed base line inspection and record of the Mokihinui pack track and that part of the Rough and Tumble Track that will be impacted by the project (approximately 1 km from the junction

with the Mokihinui River), is carried out, in line with guidelines for such work developed by the Department of Conservation (Breen & Nelson 2006). This record base line inspection will provide an opportunity to develop a detailed record of features along the track prior to inundation of the feature.

### **Isolated Features**

- 6.18 There is potential for isolated heritage features to be located in the course of work for this project. These features could be located along the pack track, or below the dam towards the river mouth, and potentially revealed as a result of changes to sediment levels. Features along the pack track will be identified and recorded as part of the recommended base line inspection. Annual monitoring of the riverbanks and coastal strip around the river mouth will allow for the identification and recording of any features revealed in this area.
- 6.19 All contractors working on this project will be aware of Meridian's Historic Site Accidental Discovery Protocol (Appendix 5). This protocol outlines steps to be taken should a suspected heritage feature be identified in the course of work.

### **Transmission Line**

- 6.20 As is noted, there is potential for isolated features to be located along the route of the transmission line. It will be possible, within the transmission corridor, to relocate single poles to avoid historic features. It has been recommended that an archaeologist inspect individual sites following cutting of vegetation and prior to any earth disturbance. This work cannot be carried out until such time as the exact location of tracks and poles has been identified within the approximate 28km length of the 200m wide transmission corridor.
- 6.21 Based on the results of the inspection of individual earthwork sites, it will be possible for an archaeologist to identify whether there is any impact

on heritage resources and if the alignment of the proposed track requires modification to avoid any physical impact on these features.

- 6.22 Because the proposed sub-station site does not have any historic features I do not need to suggest any specific mitigation for this site. All work within this area however will be carried out in accordance with Meridians Historic Site Accidental Discovery Protocol.

### **General**

- 6.23 I have reviewed the draft consent conditions for the MHP and response from Council to these, with particular reference to draft conditions 9 to 11 and 65 to 70. Specific comments on the draft conditions are provided below in my evidence in response to the Councils' S42a report.
- 6.24 All necessary authorities from the Historic Places Trust will be applied for prior to any physical works commencing as part of this project, and it is anticipated that consultation already established with the Historic Places Trust will continue throughout the project.
- 6.25 All earthworks outside specifically identified areas of heritage concern will be carried out following an Accidental Discovery Protocol that all staff and contractors working for Meridian are advised and aware of (copy of protocol attached with this report as Appendix 5).

## **7. ISSUES RAISED BY SUBMISSIONS**

### **Green Party (West Coast) and Forest and Bird**

- 7.1 Two submissions were received from representatives of the Green Party (West Coast Branch) and one from Forest and Bird that raise similar issues, and they are addressed here together. Comment is made only on the archaeological and historic heritage issues raised in the submissions.

- 7.2 Both the Green Party and Forest and Bird submissions suggest that the relocation of metal features associated with the Iron Bridge will denigrate the significance of these remains. The proposal to move these remains from the bed of the river and place them close to the proposed new track will allow more people to see and appreciate the remains, will visibly link the remains to the river valley landscape, albeit altered, and provide a better opportunity for visitors to the area to interpret the history of the transport route both along the river, and up the Rough and Tumble.
- 7.3 Recovery of items such the Iron Bridge will also provide an opportunity to carry out any necessary conservation work on the metal object. Left in the river, the iron work will eventually disappear as a result of flood events and natural corrosion processes, leaving no visible evidence of this structure.
- 7.4 It is suggested in the submissions that the significance of the pack track and the route alongside the Rough and Tumble Creek have been inadequately recognized in the archaeological assessment report. It is clearly stated in the assessment report that the route up the Rough and Tumble was the main access up the coast to Karamea, both in pre-European times and for early European settlers. It is not my place to make statements as to the significance of this place, or this route to Maori. These are statements only tangata whenua can make.
- 7.5 Research carried out on the origins and use of the Rough and Tumble track has indicated that this was a pack track, constructed through very rugged terrain. The track is marked and clearly identified on an 1886 topographical plan (SO3758) as a pack track. During this period there is reference in historic accounts of a narrow wooden bridge crossing the Mokihinui River. This was replaced some time in the early 1900s with a larger structure, known as the Iron Bridge, which allowed carriage of greater loads. This track was replaced as the main access to Karamea prior to World War One (Harmon 1975) with the opening of the road over the Bluffs, following the route still followed by the Karamea Highway today. The Rough and Tumble access is likely to have been used for a

period after this, particularly after the 1929 earthquake, which caused significant damage and closed the Bluff Road. Unlike the Mokihinui Track, no maintenance of the route was carried out by government agencies during the 1950s – early 1980s.

- 7.6 According to the information provided by Meridian just over 1km of the Rough and Tumble Creek, from the junction with the Mokihinui River, will be affected by inundation as a result of the construction of the MHP. Access to this area was not possible at the time that the archaeological surveys were carried for the MHP due to difficulty in physically accessing the area at the time of the visit. It is proposed that this section of the Rough and Tumble track is surveyed and recorded in line with recommendations made for the pack track along the Mokihinui River. It is noted however that based on discussion with a hunter and DoC employee who has visited this area, this track is in poor condition.
- 7.7 It is suggested in submissions that “*no amount of mitigation can replace what would be lost of archaeological significance, and the loss could only be considered major*”. The loss of any archaeological site or information in a site is considered significant, whether this loss is a result of development or natural erosion processes. The potential to recover information in a controlled manner and therefore gain a better understanding of sites of this nature however needs to be considered as a positive aspect to aid in the understanding and management of sites. Such recovery of information also means that it is not lost. Detailed investigation provides not only a better understanding of the sites investigated but also of those of similar nature that will be retained and preserved. Based on information gathered as a result of investigations, it is also then possible to better understand and interpret these sites for visitors as well understand management issues for sites of a similar nature, in a similar environment or facing similar threats. While it is preferable that heritage sites are not physically affected by development, it is my opinion that the opportunity to recover information from these sites as part of the MHP will assist in developing interpretation of the area, and assist in developing better management for similar sites nationally that will be protected in perpetuity.

- 7.8 It is suggested in the Green Party submissions that changes in sedimentation as a result of the hydro dam will result in the inundation of the wreck of the *Lawrence* in the long term. The *Lawrence* was grounded on the bar of the Mokihinui in 1891. The wreck is currently only visible at low tide, and it is my understanding that the extent of this visibility has fluctuated over the years. Coastal erosion will occur naturally at this location, but it is acknowledged that the construction of a dam on the Mokihinui River will accelerate this process at the river mouth. It is proposed that erosion monitoring of the coastal edge (discussed below) in regard to archaeological sites that may be exposed or affected is extended to include photo monitoring of the visibility and condition of the wreck of the *Lawrence*.
- 7.9 Other potential historic features (old jetty and wharf) are identified in the submissions. It is however noted that these features are no longer visible and that one (the wharf on the true right of the river mouth), has been built over by a groyne. As such the features are no longer physically present, and it is not possible to make statements as to the impacts on these features or on their heritage values.
- 7.10 The Mokihinui River was, at the time of mining, and until around the 1929 earthquake, navigable for a distance upstream of the river mouth. It is possible that there are physical features associated with this use of the river remaining, but these are covered in river sediment. Changes in siltation levels below the hydro dam may reveal some of these features. Linked with coastal monitoring of changes as a result of erosion annual surveys and photographic records of this will assist in identifying any heritage features as well as assist in determining appropriate management.

### **Historic Places Trust**

- 7.11 It is acknowledged in the archaeological assessment reports that it is necessary to obtain an authority to modify archaeological sites under the Historic Places Act 1993 and I understand that Meridian will apply for these once resource consents are obtained. Meridian has begun

consultation with the Historic Places Trust in regard to these applications, and it is anticipated that this process will be on-going throughout the project.

- 7.12 Several issues identified in the Historic Places Trust submission relate to areas that were identified along the pack track and Rough and Tumble Creek. It was not possible to access these areas during field assessments. It is proposed in my assessment report (Barr 2007) that features located on the tracks would be identified as a result of the detailed base line inspection of the track recommended in the assessment reports. This would include historic track features (culverts, stone facing) as well as more modern features on the track (post 1940 huts or bivouacs that have been built but are not formally recognised, such as Tylers (which was a canvas structure with a fireplace and chimney constructed in the 1970s). This work would be carried out prior to any application made to the Historic Places Trust. It is noted in the reports that this inspection and record would be carried out to Department of Conservation recommended historic track recording standards.
- 7.13 It is suggested by the Historic Places Trust in their submission that the archaeological assessment report recommends limited archaeological investigation of archaeological sites to be affected by the MHP. While it is acknowledged that the level and detail of work will be a legal requirement of any authority that may be granted by the Trust, it is noted that on page 44 of the assessment report (Barr 2008) that “*detailed investigation*”, is to be carried out to accepted archaeological standards.
- 7.14 The Historic Places Trust submission suggests that a detailed assessment of the transmission lines and any proposed access tracks should be carried out as part of the consent assessment. As the exact final location of tracks and poles has not yet been established, Meridian have applied for a 200m wide corridor for the approximate 28km length of the transmission line to allow for variation of the final transmission line pole sites depending on historic or ecological values that may be identified. As is noted in my evidence above, recommendations are made that the route of all access tracks proposed for the transmission

line are assessed by an archaeologist when the exact location of these features is identified, and prior to any ground disturbance. This will allow modification of routes should heritage features be identified. It is my opinion that in this instance this is an appropriate process.

- 7.15 The Trust recommends in its submission that an overall interpretation concept plan for the area is developed to determine a consistent overall approach to interpretation at the site. This recommendation is recognised as best practice and is a recommendation that both Meridian and I support.

### **Mark Pickering**

- 7.16 Mr Pickering's submission suggests that the submergence of the historic pack track would be a significant loss of heritage for the area and that other than two main areas of slips 90% of the track remains in good condition. Mr Pickering also outlines some of the history of the construction of the track. Several points he raises however do require clarification.
- 7.17 The Mokihinui track does not date from the earliest exploration for gold in this district in the 1860s. Early exploration and quartz mining within the Maori Creek / Jones Creek area began in the early 1870s. Accounts of the first "rush" in the area relate how many attempts to travel and move equipment up the river were done on flat bottom boats, with several accounts referring to the difficulties related to this, including boats capsizing and loss of all equipment. By 1874 the track from the coast only reached as far as Coal Creek, just over a mile east of Seddonville. Over the next six years the track was continually extended, and by 1880 it is indicated on historic plans as terminating at the Mokihinui Forks, from which point miners travelled overland to link with miners working in the Lyell fields.
- 7.18 My assessment report states that parts of the track are in good condition, and there are sections where benching and cuttings remain clear. It is

also stated that this feature is a significant part of the overall historic landscape. I do not disagree with Mr Pickering on this point. However, there are also however sections of the track where culverts have blown out and slips block the track, making access to some areas difficult. As is detailed in the evidence of Mr Greenaway, he considers that between 70 and 80% of the track remain in good condition, and there are several areas that are suited only to those with more remote or back country experience.

- 7.19 Mr Pickering states that he knows of 16 or so pack tracks on the West Coast. Information on the New Zealand Archaeological Association national site recording scheme indicates that within the West Coast file there are 50 sites recorded as pack tracks or miners' tracks, and an additional 26 sites recorded as historic tracks, suggesting that this type of site is not uncommon, particularly in a district that was intensively searched and worked for gold. These tracks cover a variety of terrain and include for example the Croesus Track, Moonlight Track and large area of tracks to the south of Reefton in the Big River area.

## 8. **Response to Section 42A Report**

- 8.1 I have reviewed the report provided to Council by Chris Jacomb (Southern Pacific Archaeological Research) as well as the draft conditions and response provided by Council and these are addressed separately below.

### **Jacomb Report**

- 8.2 I do not consider the results presented as part of the assessment report to be "preliminary" as suggested by Mr Jacomb (Section 3.2.1), with the exception of the proposed route of the transmission line, which is discussed in more detail below. As part of my involvement in the MHP I have carried out considerable historic research on mining operations in the Mokihinui district, which has involved a review of mining department records, an extensive review of historic survey plans, and other historic documents such as newspaper accounts and local histories. As a result

of this work two reports were produced, the first in 2006 was a preliminary statement as to the archaeological and historic potential of the area. The second report (2007) provided a more detailed assessment of sites, as well as the results of more extensive site visits, building on the results of the first report.

- 8.3 Mr Jacomb considers that it is not appropriate to base the assessment of significance on the criteria for the registration of historic places in the HPA and the draft West Coast Conservation Management Strategy (CMS). I would note however that in my opinion reference to the draft CMS is of relevance in that the heritage sites referred to are on Conservation land, and a review as to how decisions as to their current management or lack of management have been made does reflect levels of significance accorded to the sites by that government agency, on behalf of the public.
- 8.4 Use of the heritage criteria provided in the Historic Places Act 1993 in relation to assessing the significance of heritage sites is standard practice by archaeologists, and these criteria are outlined in the *Guidelines for writing archaeological assessments* produced by the Historic Places Trust in 2006. It is noted in the guidelines that they were developed “*within the current framework of best practice for archaeological and heritage management in New Zealand, as espoused in international ICOMOS charters, national legislation, government heritage policy and codes of ethics for archaeological practice in New Zealand.*”
- 8.5 It is further suggested that the criteria I used in assessing the significance of sites and the overall heritage values of the area were flawed in that they did not specifically reference section 6(f) RMA. It is my belief that there is direct correlation between significance statements made in my report and subsequent information provided as a result of the S92 requests, in regard to the heritage values of sites within the MHP area and the RMA criteria. Using any of the different criteria, the heritage values of the sites discussed are, as a group, considered to be of moderate to high value, and of regional significance.

- 8.6 In relation to the pack track – and all of the heritage sites within the MHP area, it is clearly stated in my report that the best outcome for the sites is for them to not be affected, either directly or indirectly, as a result of the hydro project. Options were discussed with Meridian in regard to lowering the level of the lake to avoid impact on the heritage features. However I understand that bearing in mind other considerations this would not be feasible. In situations where it is not possible to avoid resources, features or sites mitigation measures are recommended that ensure the retention of some of the values of that item, and at least the opportunity to recover some information from the feature. It remains my professional opinion that in the absence of avoiding the heritage sites identified as part of the MHP, that the recommendations made in my report provide adequate mitigation.
- 8.7 Comment is made by the technical reviewer as to possible indirect effects on the heritage values of the Charming Creek walkway and possible direct effects on sites in the path of the transmission lines. It is unclear from the report what is being referred to as an indirect effect, and it is assumed that this is in reference to visual impact of the transmission line on the walkway. It is noted that the landscape assessment carried out as part of this project has indicated that visual effect on the walkway a minor. More information on this is provided in the evidence of Mr Peter Rough and Mr Andrew Craig. I agree with the technical reviewer that there is potential for heritage sites to be located along the route of the transmission line, not just in the vicinity of Charming Creek. As is noted in my reports, the exact physical location of tracks and poles within this area has yet to be determined, and it remains my opinion that it is appropriate to carry out specific surveys when the physical impact in this area has been determined.
- 8.8 Section 3.5 of the technical review report says that the reviewer was advised that the project would have an impact on the historic railway tunnel at Chasm Stream and that no information was provided on this. Following completion of the heritage assessment report it was identified that, either works would be required at this location to ensure the road was suitable for heavy vehicles associated with the project or traffic

lights will be installed to manage traffic. Following discussion a proposed design was developed that will not impact on the historic tunnel. This design will move the road slightly to the south, away from the tunnel so that realignment, accommodating wider widths on the corners adjacent to the tunnel, are no closer in plan than the current situation. Similarly at the eastern portal, the required embankment supporting the widened road's shoulder will be constructed on a gabion type retaining wall, rather than a traditional embankment so as to minimise the encroachment of the works footprint in the direction of the portal. Either this work or the use of traffic lights should ensure there is no impact on the historic tunnel. Further information on this is provided in the evidence of Mr Andrew Whaley.

### **Draft Conditions**

- 8.9 I agree with the draft conditions proposed by Meridian. Comment in my evidence is made specifically on the Council's suggested amendments to conditions 9 – 11 and 65 – 70.
- 8.10 Condition 9 – I have no issues with the proposed additions as outlined in Council's response. I would note however that as is outlined in my evidence, Tylers is the location of a camp set up in the 1970s, of which, I have been advised, nothing remains. Therefore I do not consider it necessary to survey and report on Tylers.
- 8.11 As is noted in my evidence, the option of lowering the level of the lake was discussed with Meridian as part of the project. While this would be preferable in regard to the preservation of an even greater extent of the historic track, it has been indicated that this is not a feasible option as part of the MHP.
- 8.12 Condition 10 –. I note that the comments provided by Council suggest expanding this condition to include recommended excavation. This would not be appropriate as any disturbance of an archaeological site requires authority to do so under the Historic Places Act. It would

however be appropriate to refer to excavation and the requirement for an authority in an advice note to any consent.

- 8.13 New condition – with reference to the Chasm Creek rail tunnel. As is noted in my evidence, redesign of roading options in this area will mean that there will be no physical impact on the historic tunnel. I would however consider it appropriate to establish monitoring of the condition of the tunnel to ensure that there is no long term indirect impact of heavy vehicles on the feature.
- 8.14 New condition – As part of the Historic Places Trust processes a copy of any authority issued is sent to the local authority. I would have no issues in regard to supplying additional copies of any authorities issued as part of the MHP to the consenting authority.
- 8.15 New condition – Similarly, I have no issues with the addition of a condition requiring the development of an archaeological management plan to be included in the construction management plan. The development of an archaeological management plan for any project of this nature or scale would be standard best practice and is likely to form part of any authority application made to the Historic Places Trust.
- 8.16 In Council's comments on draft conditions 65 – 70 four suggestions are made, relating primarily to the transmission line, telecommunication towers and the construction of roads in the vicinity of the Chasm Creek rail tunnel. As has been outlined in my evidence, Meridian has applied for a 200m wide, and approximately 28km long corridor within which the transmission lines will be located. The exact location of poles and access tracks within this area has yet to be finalised. In applying for a corridor, Meridian will have the flexibility to locate tracks and poles within the area, avoiding natural and historic features that may be located in the area. As has been outlined, my recommendation is that when the proposed location of structures and tracks has been identified, these are surveyed and assessed by an archaeologist and should it be necessary, the location of the proposed work can be modified to avoid any features identified. I agree with the suggested set back of 20m from any identified

site. All work for the construction of tracks and poles will be carried out in accordance with Meridian's Accidental Site Discovery Protocol and any requirements of the Historic Places Trust. If it has been possible to identify and avoid sites, it is my view that there should be no requirement for an archaeologist to be on site during the construction of all poles and telecommunication towers.

- 8.17 As is noted above in my evidence, redesign of the road within the vicinity of the Chasm Creek rail tunnel (or the use of traffic lights to manage traffic along here) have meant that there will be no physical effects on this feature, and as such there should be no need for an archaeologist to be on site during construction in this area. I do however agree with the proposal that effects of heavy vehicles in this area passing close to the tunnel should be monitored. Monitoring should take the form of photographic and descriptive records of the tunnel, with baseline data collected before any increased heavy vehicle use of the road associated with this project commences. Such data will allow comparison over time to assess whether increased heavy vehicle use is having an indirect impact on the tunnel.

## 9. **CONCLUSION**

- 9.1 The MHP with its associated transmission line and substation will negatively impact on heritage features in the area. Identified heritage sites will be directly affected by inundation and earthworks, changes in sedimentation characteristics below the dam, and changes to the rate of coastal erosion, and indirectly by a change in the overall heritage landscape.
- 9.2 As a result of historic research and field inspections carried out to date nine archaeological sites have been recorded in the Mokihinui River Valley. There is potential for further, isolated sites associated with gold mining operations, settlement and exploration to be located in this valley during the course of this development.

- 9.3 It has been identified that there is also potential for heritage sites to be located along the route of the transmission line, within the 200m wide corridor identified as part of this application.
- 9.4 It is my professional opinion that on their own, the Mokihinui gold mining sites, as a group, and sites within the transmission corridor can be considered to be of regional significance, forming part of the original European settlement history of this part of the West Coast. It is important however to link this area of gold mining exploration with that elsewhere on the West Coast and around New Zealand.
- 9.5 As a result of an archaeological assessment as part of the MHP it has been identified that an authority to modify archaeological sites as part of the project is required from the Historic Places Trust. It has also been identified that further archaeological sites may be located in the area that it was not possible to access during site inspections and surveys.
- 9.6 It is my professional opinion that recommendations made in the assessment report will assist in mitigating the loss of some of the heritage features within the project area. Other features associated with the overall heritage landscape will remain unaffected by the proposal.
- 9.7 By carrying out assessments of access tracks and pole sites when their location has been firmly identified within the transmission corridor, it will be possible to identify possible impacts on heritage fabric, and where necessary amend location within the 200m corridor to avoid these features.
- 9.8 The establishment of a monitoring regime below the dam and along the coast at the river mouth will provide the opportunity to identify, record and if appropriate recover archaeological material that may be revealed as a result of sediment change and coastal erosion processes. At present, sites uncovered as a result of these natural processes are generally lost before they can be recorded or examined.

- 9.9 Access to several key features associated with the historic settlement and exploration of the Mokihinui River Valley will be lost as the result of inundation following the construction of the dam. It is my opinion that this loss can be positively mitigated by the opportunity to record features such as the pack track in detail, record and investigate features associated with the Seatonville settlement and mining operations (Jones Creek Battery). Based on this information there is an opportunity to develop an area wide interpretive package that presents this information to visitors to this place, linked with the provision of better access by way of a new access track. This will have an overall positive benefit for heritage.