

# Caason Fingal Tiers Mine Project

Aboriginal Heritage Impact Report

Break O'Day Local Government Area

August 2012

Prepared for  
CBM Sustainability and Design

on Behalf of  
HardRock Coal Mining

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## EXECUTIVE SUMMARY

Kayandel Archaeological Services (KAS) in association with Vernon Graham (Aboriginal Heritage Officer) was engaged by HardRock Coal Mining to undertake an archaeological pedestrian survey for an Aboriginal Heritage Impact Report under the current standards and guidelines issued by Aboriginal Heritage Tasmania (AHT) for the proposed development of a thermal coal mining operation in the former Valley Coal Mine in the Fingal Tiers, to be known as the Caason Fingal Tiers Mine.

The field assessment was carried out on the 21st October 2011. Consultation with the wider Aboriginal community was undertaken by the Aboriginal Heritage Officer (AHO).

As part of the pedestrian survey assessment, areas proposed for the surface infrastructure were focused on, with additional survey areas were targeted if/when sensitive landforms or favourable visibility conditions were identified for locations immediately adjacent to those proposed for impact. Isolated find, TASI 11696 was identified *in situ* on the southern alignment of an existing forestry access road. Isolated find, TASI 11697 was identified on a spur line between two unnamed drainage lines. Isolated find, TASI 11698 identified during a pre-survey inspection of the project area by Lance Syme. One Potential Archaeological Deposit was identified based upon landscape formation and level of previous disturbance and the views of the AHO present on the day of the survey.

It is recommended that:

1. a permit under Section 14 of the Aboriginal Relics Act 1975 be obtained to impact TASI 11696 and TASI 11698, before the proposed development begins;
2. an Aboriginal Heritage Management Plan be prepared for the project.

More specifics of each recommendation is available in Section 6.3.

## ABBREVIATIONS

AHIR:	Aboriginal Heritage Impact Report
AHT:	Aboriginal Heritage Tasmania (former Tasmanian Aboriginal Heritage Office)
ATSIHP Act:	Aboriginal and Torres Strait Islander Heritage Protection Act, 1984
CFTM:	Caason Fingal Tiers Mine
EPBC Act:	Environment Protection and Biodiversity Conservation Act, 1999
HCM:	Hardrock Coal Mine
KAS:	Kayandel Archaeological Services
TALSC:	Tasmanian Aboriginal Land & Sea Council
TASI:	Tasmanian Aboriginal Site Index

## Definitions

The following terms are used throughout this report and within this context are defined as follows:

**Aboriginal values:** a wide range of attributes or 'values' described by Aboriginal people to exist within a particular area. These are generally used by Aboriginal people to describe their association to that area. These attributes have been defined in this report to include spiritual/cultural values, family values, resource values, educational values and Aboriginal sites and places. However, Aboriginal people may use other terms or identify other aspects of Aboriginal values.

**Aboriginal place:** a place where Aboriginal values and associations to that location have been identified, which may or may not bear any physical signs of Aboriginal use.

**Aboriginal site:** an Aboriginal place which has physical signs of Aboriginal occupation or use.

**Aboriginal resources:** an aspect of Aboriginal values which focus on the Aboriginal use of plants and animals. This encompasses the use of these resources for subsistence and economic reasons but also recognises that plant and animal resources are an important aspect of educational, spiritual and family values.

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# 1. INTRODUCTION

## 1.1. The Proponent

The proponent for the Caason Fingal Tiers Mine (CFTM) is Hardrock Coal Mining (HCM), an Australian company that belongs to the Caason Group of companies.

## 1.2. Purpose and Project Brief

Kayandel Archaeological Services (KAS) was commissioned by HCM to conduct an Aboriginal Heritage Impact Report (AHIR) for the Project of the subject area, in accordance with current standards and guidelines issued by Aboriginal Heritage Tasmania (AHT). The documents include, but are not limited to:

- ✦ "Aboriginal Heritage Guidelines and Standards Package for Consulting Archaeologists" prepared by Aboriginal Heritage Tasmania;
- ✦ The Aboriginal Relics Act 1975;
- ✦ The Burra Charter

## 1.3. The Subject Area

The subject area is located in the Fingal Tiers in northeast Tasmania approximately 7 kilometres east of township of Fingal (Figure 1 and Figure 2).

The proposed development site lies nestled within a small trough between the 410-450m contours, on the northeastern slopes of Spion Kop, at the northern edge of the Fingal Tier State Forest, straddling Cardiff Creek (Figure 1 and Figure 2). The Valley Road passes the site on the western side, looping around to the south where it continues generally southeast towards Dukes Road. Access to the site is via existing roadways on the west side leading off Valley Road.

## 1.4. The Development Proposal

HCM is currently reviewing the viability of a proposal to develop a thermal coal mining operation in the former Valley Coal Mine in the Fingal Tiers in northeast Tasmania. The Project would involve redevelopment of an existing inactive underground mine, for which some above-ground infrastructure, such as access roads, already exists (Figure 3). The main impacts associated with the proposed development of the Project would include:

- ✦ Installation of a new mine portal close to the east of the old mine entrances
- ✦ Upgrading of the existing access road and haul road associated with the old mine, both connecting the Valley Road and the mine portal, to make them fit for use again.
- ✦ Construction of a mine office towards the end of the access road, about 100 m before the western entrance to the old mine
- ✦ Construction of a workshop and amenities immediately to the north of the new mine portal
- ✦ Placement of receiving hoppers at the end of the haul road
- ✦ Installation of a belt road from the mine portal to the receiving hoppers and the beginning of the haul road
- ✦ Creation of a water improvement area north of the road systems
- ✦ Installation of creek culverts and stormwater management areas in regard to the existing watercourses.

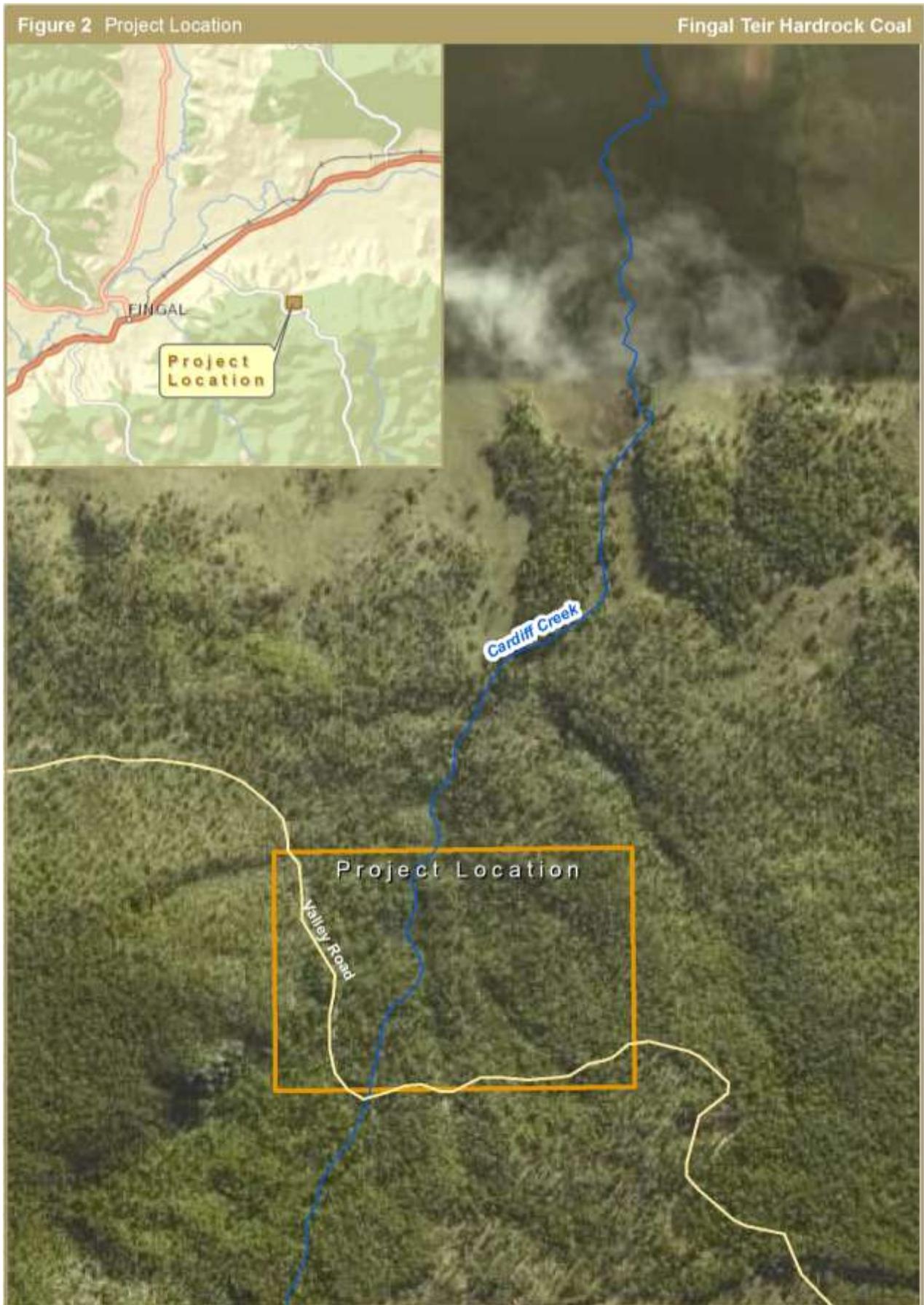
### **1.5. Aim and Objectives of the Assessment**

The objective of this study is to provide HCM with an AHIR suitable for inclusion in an Environmental Impact Study (EIS) for the project. This study involves a description of context of the subject area, identification of heritage places and cultural values in the subject area, an assessment of the potential impacts to Aboriginal heritage as a result of the Project and development of recommendations to minimise, manage and mitigate potential impacts.

### **1.6. Report Authors**

This report was drafted jointly by Lance Syme, Patrick Ball and Stuart Elder. Patrick prepared an initial draft, which was formatted and added to by Stuart. Lance Syme edited the final report.





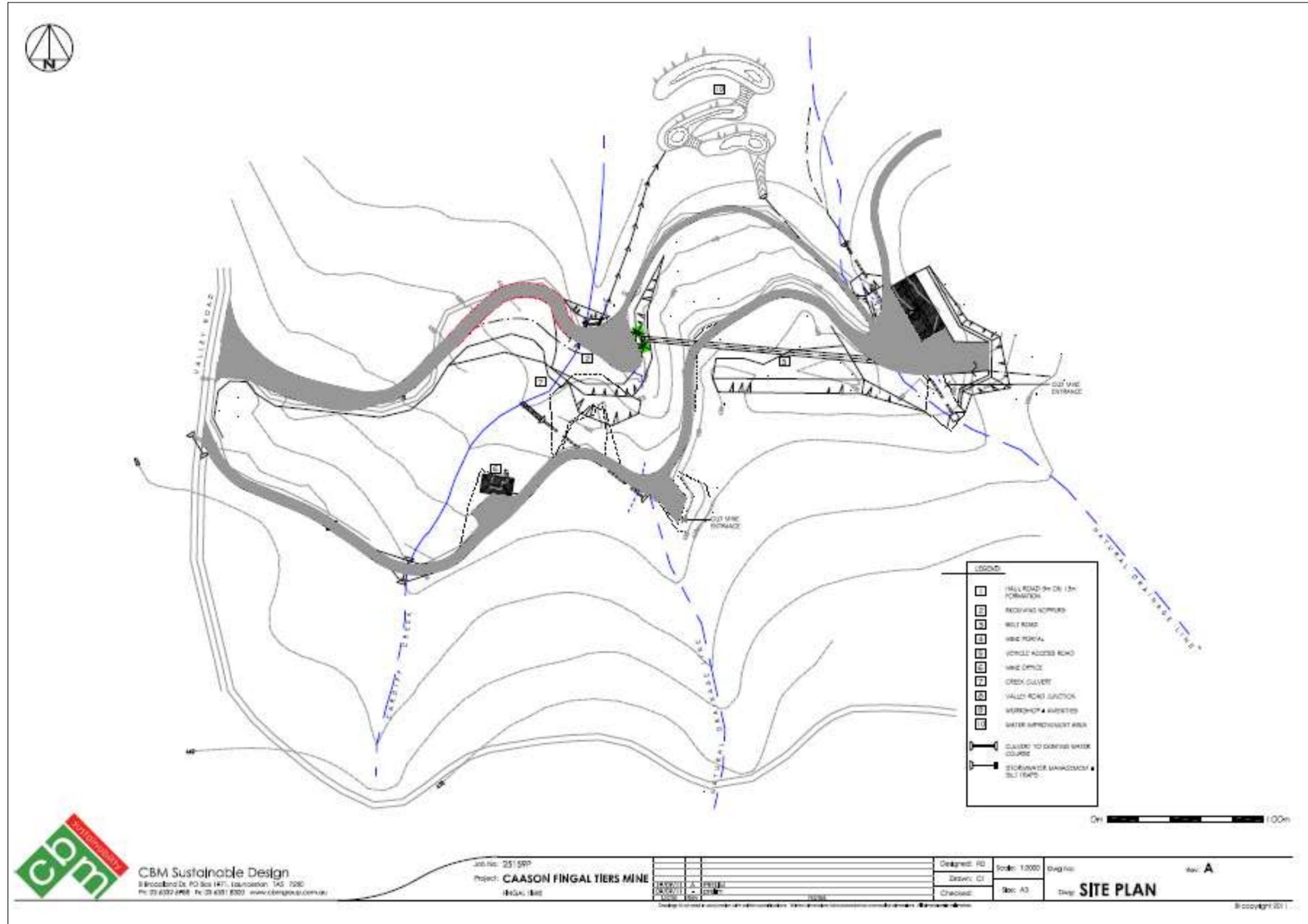


Figure 3: Project development layout

## 2. ENVIRONMENTAL BACKGROUND

The natural environment of an area influences the availability of local resources such as food and raw materials for artefacts, rock platforms for engravings and axe sharpening, and rock outcrops that may provide shelter. The landscape also provides the sediments which may bury objects and archaeological features, as well as the erosive processes that might expose or disperse them. Detailing the landscape context is an integral procedure that assists with the modelling of potential past Aboriginal landuse practices and/or predicting site distribution patterns within any given landscape (Guilfoyle, 2006).

With respect to Aboriginal archaeology, land formation processes may impact upon the type and frequency of archaeological remains. Past climate may also impact upon the location and types of resources available, which in turn would impact upon settlement and mobility patterns of past Aboriginal groups in the area (Mulvaney and Kamminga, 1999: 297-319).

The location of different site-types (such as middens, open artefact scatters, axe grinding grooves, petroglyphs [engravings], etc.) are strongly influenced by factors such as these along with a range of other associated features, which are specific to different land systems and bedrock geology (Mulvaney and Kamminga, 1999: 297-319).

Conducting a review of landscape context assists in the determination or prediction of the potential of a landscape to have accumulated or preserved objects, the ways Aboriginal people may have used the landscape in the past, with regard to identifiable resources or focal points for activities, and the likely distribution of the material traces of Aboriginal land use based on these factors.

### 2.1. Land Use History

The location of the proposed development has previously been an operational coal mine, and much of the area intended for redevelopment has already been exploited in a similar manner to what is proposed.

In the pre-contact period, Aborigines used the Fingal Valley, including the South Esk and Break O'Day Rivers, as a travel route from Ben Lomond Tier to the coast. The Oyster Bay tribe preferred to use 'well-defined routes' (Ryan 1996, p. 20). Conversely, John Batman was informed, by Aborigines of other tribes, that the Ben Lomond tribe did not follow defined tracks and reports them travelling cross-country near the Break O'Day Plains a

little to the north (Kee 1987; 1991). These tribes seem to have fired the land at times, possibly to facilitate movement. Descriptions of their seasonal movements suggest that this may not have been an intensively exploited tract of territory (see Ryan).

## 2.2. Climate

The temperature buffer provided by the ocean gives northeast Tasmania a mild maritime climate, without seasonal extremes. However, this buffering effect diminishes with distance from the coast (Kee 1987, p. 3).

Average temperature, rainfall and wind-speed readings for Fingal, taken from the online service of the Australian Government Bureau of Meteorology, are provided below in Table 1. The recording station is in Legge Street, Fingal (237 m altitude; 41.64°S, 147.97°E), and records date back to 1882.

	March 2011	June 2011	September 2011	December 2011
Maximum temperature (°C)	21.5	12.7	15.3	21.4
Minimum temperature (°C)	7.9	1.1	3.2	8.7
Total monthly rainfall (mm)	45.2	64.9	49.3	50.0

**Table 1:** Fingal local quarterly rainfall summary for 2011

(Source: [http://www.bom.gov.au/climate/averages/tables/cw\\_092012.shtml](http://www.bom.gov.au/climate/averages/tables/cw_092012.shtml))

The total rainfall recorded in the twelve months between February 2011 and January 2012 was 872.2 mm.

It should be noted that the Project site is around 200 metres higher altitude than Fingal itself, lying as it does between the 415 and 450 metre contours.

## 2.3. Hydrology

The subject area is situated in the Fingal Tier region, approximately 7 km east of Fingal township, where the Break O'Day River joins Tasmania's longest river system, the South Esk. The Break O'Day River curves northeast around Fingal Tier, with tributaries flowing into it from the Tier. Cardiff Creek passes through the Project site, draining north from local peak Spion Kop and into the Break O'Day River to the north. Three smaller, nameless creeks flow into Cardiff Creek in the vicinity of the Project site. Other creeks flowing down from the

Tier, to the east of the subject area, flow into the Fingal Rivulet and join the South Esk near Fingal.

## 2.4. Vegetation

Tasmania's northeast region has a diverse flora and fauna (Kee 1991). Much of the Fingal Valley has been cleared for grazing, so consists of paddocks. Graham notes that the remaining vegetation is essentially native, but does not elaborate as to species.

Present satellite imagery (Google maps - accessed 20/04/2012, 1515AEST) shows the site area to have reverted to natural reforestation since the suspension of mining activities (Plate 1).

## 2.5. Geology

The region consists of a series of strata, with the early Palaeozoic Mathinna Beds (slate, phyllite and siltstone) at the base, overlain by the Permian/Triassic Parmeener Super Group (conglomerate, sandstone, mudstone, siltstone and limestone); above these are Tertiary deposits present as 'valley fillings' and Quaternary silt and sand on valley floors. The Parmeener Super Group contains extensive Jurassic dolerite sills, including those that form the plateau known as the Fingal Tier, while Devonian Ben Lomond Granite can be found intruded among the Mathinna Beds. Coal seams are present in the Parmeener Super Group sediments, most significantly in its upper 200 metres, as well as the lowest sediments (the Mersey Coal Measures). The major faultline in the region is the Cornwall Fault, which runs north of St Marys but, to the south, curves off westwards (Salway, Hancock and Jago 1979, pp. 3-12).

The Mathinna Beds are exposed in the South Esk and St Pauls but not the Break O'Day river valley, except east of the Cornwall Fault and where it converges with the South Esk. Various substrata of the Parmeener Super Group outcrop in the Break O'Day river valley, including the Mersey Coal Measures and the Cascade Group. On the other hand, the coal measures of the upper Parmeener Super Group are poorly exposed in the river valleys of the region, as they tend to be covered by extensive dolerite scree and alluvium. This scree has been observed up to 116 metres deep.

In his archaeological survey of the Cullenswood 3 extension, Huys (2011) noted that the underlying rock was dolerite. He observed different soil types in the two areas he investigated, both slightly above the valley floor. One consisted of a brown, sandy loam;

the other had a 20 cm layer of sandy loam, with many doleritic nodules, above a light brown regolith clay deposit, containing the same nodules. These were presumably the Quaternary deposits described by Salway et al. (1979), with input from dolerite scree.

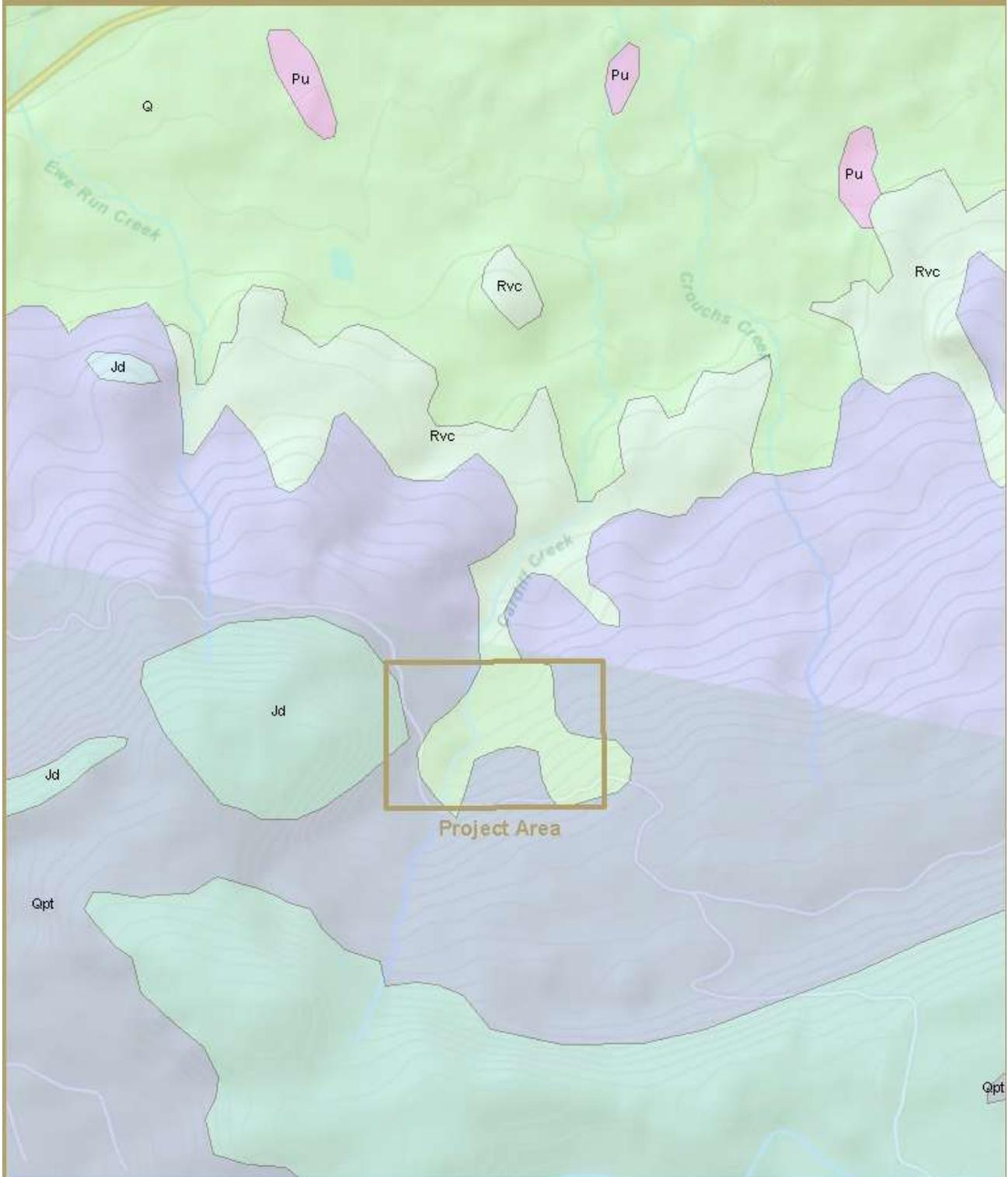
## **2.6. European Land Use History**

European settlement of the Fingal area from the early 1800s, led to extensive sheep farming, with clearing and logging of the land for pastoral purposes.

Following Milligan's discovery of coal reserves in the Fingal Valley in 1849, there have been intermittent mining operations in the region, a good summary of which can be found in Bacon (1983, 1991). The Cornwall Coal Company incorporated in 1886 (Southgate 1983, p. 1-2). It has been '*a major employer [in the Fingal Valley since then] with considerable influence on the pattern of settlement and community structure*' (*ibid.*, p. 13). The Fingal Coalfields, associated with the Fingal Tier and Fingal Valley, contain rich seams of coal, which have since been exploited by Cornwall Coal, notably at the Cullenswood Mine, near St Marys, and the Duncan Mine, near Fingal itself. In the late 1970s the Hydro-Electric Commission was investigating development of coalmining in the Exempt Area. The Valley Coal Company Pty Ltd operated the Valley Mine (or Barber's Mine) from 1955 to 1964. It is this mine that the Project aims to redevelop.

Figure 4 Local Geology

Fingal Teir Hardrock Coal



-  Jd - Dolerite (tholeiitic) with locally developed granophyre.
-  Pu - Upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone.
-  Q - Undifferentiated Quaternary sediments.
-  Qpt - Talus, vegetated and active
-  Rvc - Lithic sandstone, siltstone and mudstone with some coal and basal quartz sandstone.

### 3. ABORIGINAL ASSOCIATIONS WITH THE LANDSCAPE

The Fingal area appears to be on the boundary of two Aboriginal rangelands. The Project location is approximately 6.7 kilometres east of Fingal township, which lies just east of the junction of the Break O'Day and South Esk Rivers. While the precise territorial limits of Tasmania's various tribes are uncertain, this river system formed a boundary between the lands of the Ben Lomond tribe and the Oyster Bay tribe. Maynard's (2009) survey of the Ormley property, 15 kilometres southwest of Fingal, places it in the 'overlapping country' of the *Plinderaimeener* and *Tonenerweenerlarmenne*, both bands of the Ben Lomond tribe. However, Fingal lies east of the rivers, with Fingal Tier further east still. This should place it on the edge of the Oyster Bay territory (the *Leetermairremenner* band).

Given the relative proximity of the Fingal Tier to the Fingal Valley (associated with the South Esk and Break O'Day Rivers) and the fact that both tribes used the Valley as a route to and from the coast, Aboriginal heritage connected with either tribe might potentially be present at the study area. There is no evidence, however, that either tribe frequented the Fingal Tier. In his survey of the Cullenswood 3 mine extension, Huys (2011) found Aboriginal sites most frequent (and most likely to be present) along the lower slopes of the river valley, left by groups travelling through the area. He considered that this finding was likely to hold good for the Fingal Valley more generally.

#### 3.1. Ethnographic Information

There is limited ethno-historical material about these tribes. Kee's survey of the north east of Tasmania deals with the Ben Lomond tribe but not the Oyster Bay one. She notes that early European descriptions of Tasmanian Aborigines say less about northeastern groups than about more southern ones, as there was less contact with them (Kee 1991, pp. 28, 31). The Ben Lomond tribe appears to be especially poorly known. There is almost no record of its religious or artistic culture and no ethno-historical references to their material culture, although she does cite a reference to huts that seem to have been constructed by this tribe (*ibid*, pp. 28, 31).

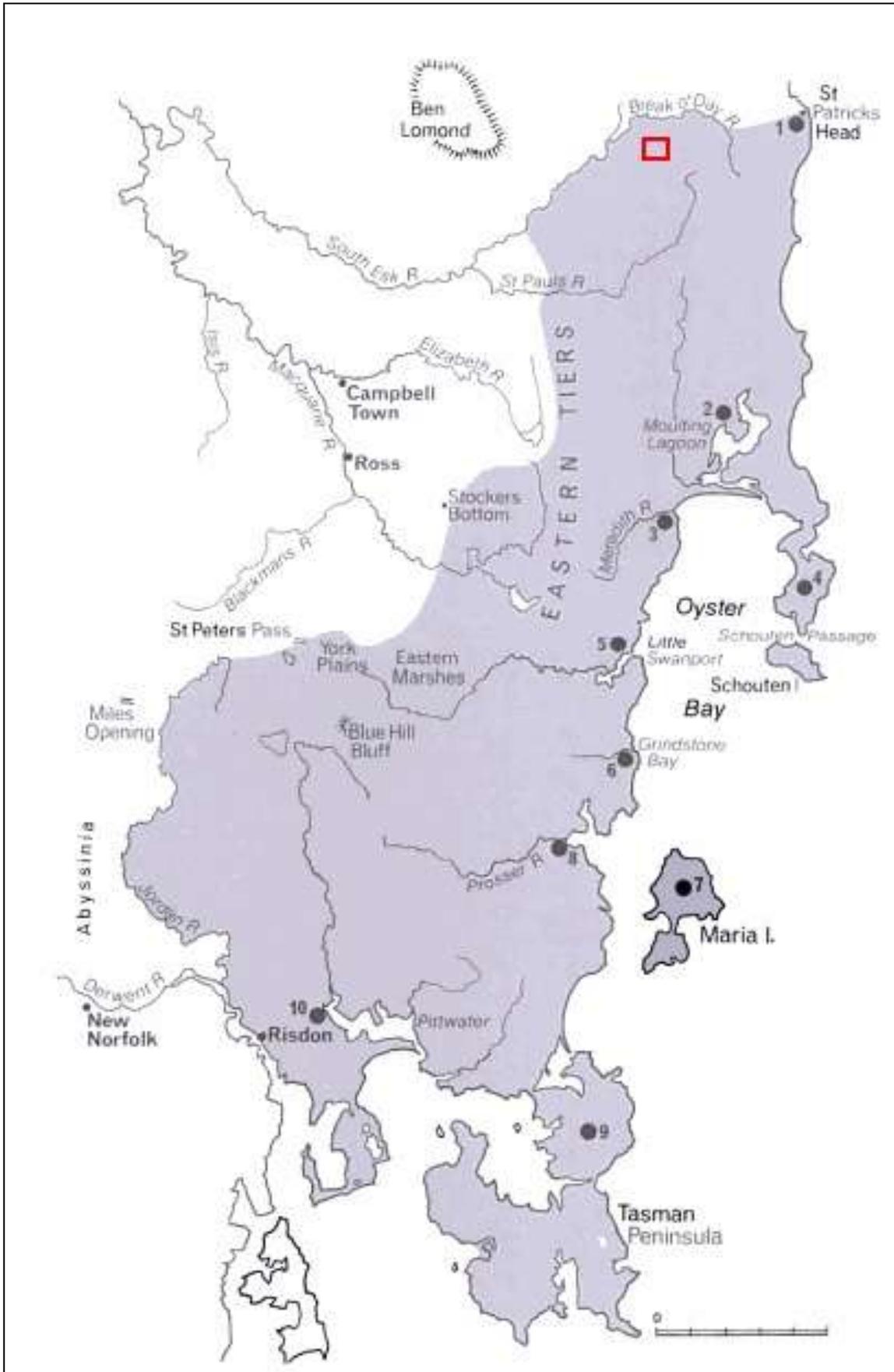


Figure 5: Geographical spread of Oyster Bay tribe (After Ryan)

Brown's (1986) equivalent survey of south-eastern Tasmania, which does take in the Oyster Bay territory, states that southern tribes are relatively poorly documented, as by Robinson's day this area had been thoroughly settled and depopulated of Aboriginal people (p. 24). While he presents ethnographic information about the Oyster Bay tribe, none of his examples come from the northern part of its territory, the area relevant to this survey. The information he provides often does not specify which of the three tribes covered by his survey is being described.

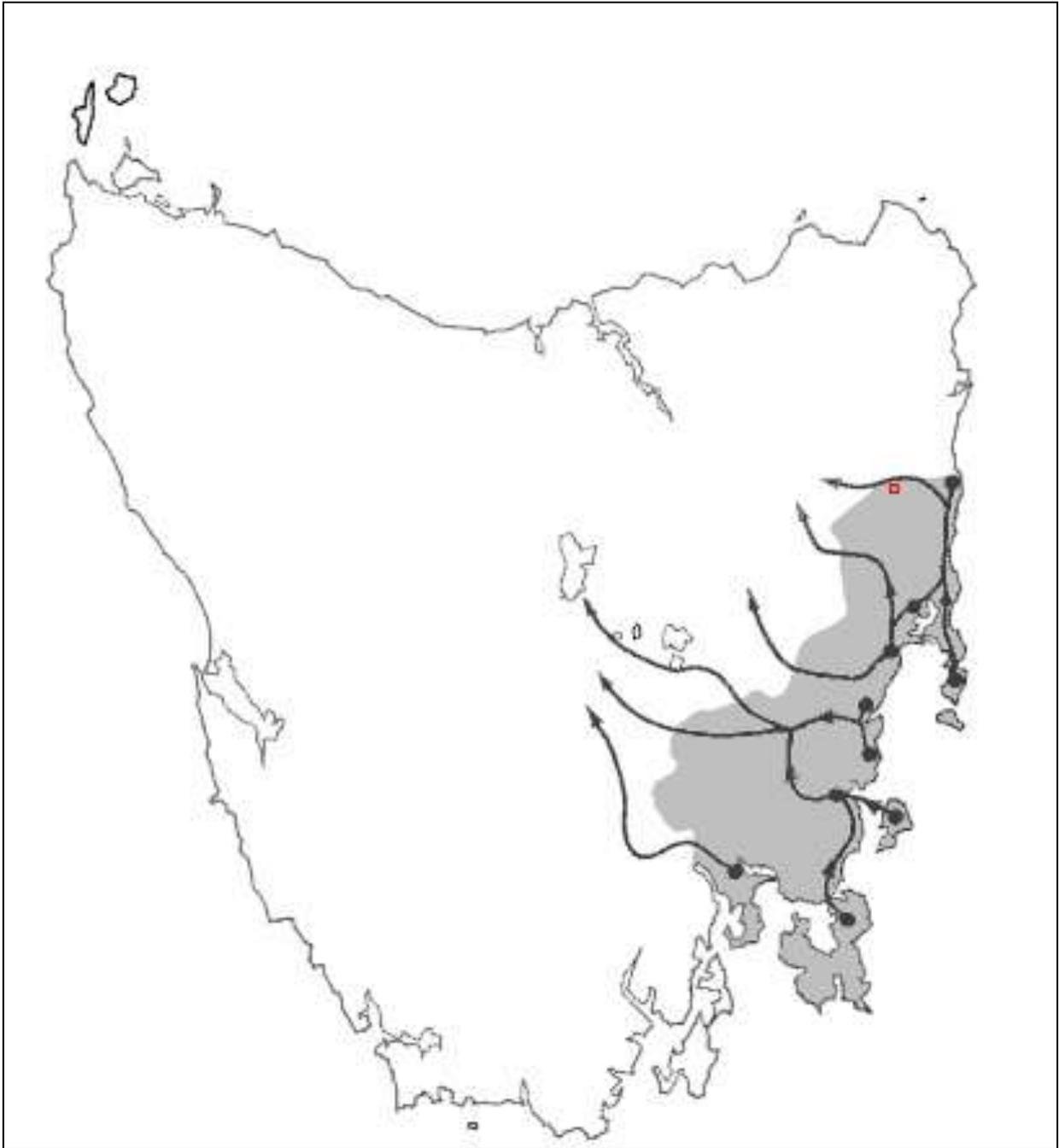
However, his description of the Oyster Bay tribe more generally is likely to hold true for the *Leetermairremenner* band, which occupied the Moulting Lagoon area. Little is known of the religious beliefs of southern tribes and what Brown cites (Brown 1986, p. 47-8) seems not to be about the Oyster Bay tribe. There are no ethno-historical references to Aboriginal art in the south-east, except for body art in the form of cicatrices (*ibid.*, p. 45). Brown cites descriptions of material culture (dwellings, weapons, clothing, ropes, containers and tools) but it is not clear whether these relate to the Oyster Bay tribe, or to the South East or Big River tribes (*ibid.*, pp. 34-42).

### **3.1.1. Tribal territories and seasonal movements**

For both tribes, the Fingal area seems to have been a place through which they passed rather than an intensively exploited area. Maps of the territories and travel routes of Tasmanian tribes can be found in Ryan, p. 15 and pp. 34-35 (Figure 5 and Figure 6).

The Ben Lomond tribe had a territory of around 260 square kilometres, which contained the Ben Lomond mountain region and the South Esk river valley. There seem to have been around 150-200 members altogether, in three or four bands (Kee 1991). The *Tonenerweenerlarmenne* band probably contained 50-80 people pre-contact and was present on the eastern edge of this territory. (In general, Tasmanian tribes consisted of bands of 40-70 individuals, composed of 5-7 family groups with 2-8 members each (Kee 1991, p18). However, information on the structure and precise territories of these bands is limited.

The tribe was landlocked but had seasonal passage to the coast through Oyster Bay land. The *Tonenerweenerlarmenne* moved along the Fingal Valley to get there, which took them past Fingal Tier and the nearby Break O'Day Plains. According to Ryan, the tribe travelled via St Marys Pass (*ibid.*, p. 33):



**Figure 6:** Routes of travel of the Oyster Bay tribe (after Ryan)

*One band (apparently the Tonenerweenerlarmenne) had foraging rights at North Oyster Bay at Moulting Lagoon between August and October, and then moved to the North Midlands territory at Stockers Bottom in November, retiring to the Ben Lomond Tier for the summer. Sometimes they went with some North Midlands people to visit Big River country for hostile purposes. In January they were known to visit the east coast for seals and muttonbirds, returning to the Midlands Plain in autumn and then back to the coast for the winter (Ryan 1996, p. 33).<sup>1</sup>*

Although they followed the Fingal Valley, the Ben Lomond tribe seems not generally to have followed beaten tracks but instead roamed the countryside (they may have fired the land partly to facilitate movement (*ibid.*, p. 25), although there is debate as to the degree to which fire management actually took place (*ibid.*, p. 13) John Batman, looking for its surviving members in 1830 with the assistance of women of the tribe, noted that the women had been searching for them in the Fingal Tier area: '*Heard today that the women was coming down from Break O'Day Plains ... Had been round towards Georges River and St Patrick's Head*' (Batman, (4/8/1830), cited in Kee 1991, p. 101).

The Oyster Bay tribe was Tasmania's largest, with 700-800 members. Its territory covered 7800 square kilometres from the Derwent River north to St Patricks Head (Plate 1). It consisted of ten bands, of which the *Leetermairremenner* was the most northerly (Ryan 1996, p. 17). Gatherings of around 500 members were recorded around Hobart in 1804 and earlier (Brown, pp. 23-4). These must have involved most of the tribe, which may indicate that bands were fairly mobile within the tribal range, although whether the *Leetermairremenner* would have come so far south is questionable.

The Oyster Bay tribe too passed through the Fingal Valley from the coast to Ben Lomond Tier (Figure 4). The movements of northern bands of the tribe, such as the *Leetermairremenner*, resembled those of the Ben Lomond tribe. They tended to travel in spring or autumn. They spent winter on the coast, eating shellfish and marine plants. From August to October they went to coastal places such as Moulting Lagoon for birds and

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<sup>1</sup> (Note, though, that Hiatt (1968) suggests that Aboriginal seasonal movements should be regarded as trends, not invariable mass movements: not all bands would have moved every year (Brown 1986, p. 33)).

their eggs. From late October many travelled to Stockers Bottom, in the North Midlands, or to Ben Lomond Tier, via the St Pauls and Break O'Day Rivers, to spend the summer. At the end of January they revisited the coast, for seals and muttonbirds, then returned inland to hunt marsupials.

Near the coast, the tribe appears to have favoured open forests close to the shore for its campsites. There is no ethnohistorical mention of their choices when camping inland. However, Robinson's descriptions of Aborigines of the Central Highlands suggest that these preferred to camp near lagoons, lakes, rivers or other water bodies. Brown suggests that the Oyster Bay tribe may have done the same (Brown 1986, p. 31).

Although the seasonal movements of this band and the *Tonenerweenerlarmenne* were similar, so they may have spent time in each other's company, there were differences between them in terms of wider tribal interactions. The northern Oyster Bay bands seem to have been on close and friendly terms with the Big River people, for instance, (Ryan 1996, p. 20), whereas the *Tonenerweenerlarmenne* had hostile relations with this group and sometimes allied with the North Midlands tribe against them (*ibid.*, p. 33).

By the time of European arrival, the Ben Lomond tribe was settled in the interior and the Oyster Bay tribe on the coast (Plate 1). Since the Fingal Valley seems to have been used as a corridor between coast and interior, until both areas were settled the usage patterns may have been different. Glaciation prevented Aboriginal occupation of the north eastern highlands until around 10,000 years ago, although it seems that formerly glaciated areas may have been settled rapidly once deglaciation took place. Territorial expansion may also have been promoted by the vegetation changes that accompanied a cooler and drier period that began around 3500 years ago. Conversely, before around 6000 years ago the sea level was 150 metres lower than at present, with the result that the coastlines were different (Kee 1991, p. 14). These kinds of factors are likely to have influenced which parts of Tasmania were settled and also the seasonal travel routes taken. This makes it hard to be certain how long the territorial and travel patterns observed by early Europeans had been in existence.

European arrival from 1803 brought swift disruption to the Aboriginal way of life, with the last groups from the Fingal Valley captured and deported around 1832. Fingal, being inland, was not exposed to European contact until the settlement expansion of the 1820s. However, since both Aboriginal tribes who frequented the area spent part of the year on

the coast they are likely to have encountered Europeans before British expansion into the Fingal Valley.

The seal trade resulted in trading connections between Aboriginal peoples and the sealers, with Aborigines gathering along the coast by 1810 at suitable points, such as Eddystone Point, to barter sealskins and kangaroo skins for commodities. Aboriginal women began to be hired out to sealers for the season in exchange for dogs. This had several consequences. The depletion of women in Aboriginal bands began to produce a population decline. Trade affected Aboriginal seasonal movements and intertribal interactions, with coastal tribes tending to remain near the coast all year and abducting the women of neighbouring groups to sell to the sealers. As seal populations declined, the larger sealing operations moved elsewhere, leaving smaller bands of sealers, generally rougher and sometimes escaped convicts, whose interactions with the Aborigines became more violent.

Meanwhile, between 1817 and 1823, four thousand free settlers migrated to Tasmania, many to begin farming. This resulted in a dramatic increase in the numbers of land grants and consequent expansion of the 'settled districts', generally along river systems. The sheep population rose significantly, at the expense of the kangaroos that the Aborigines hunted (Ryan 1996, pp. 83-85). As a result, pressure for valuable resources was placed on Aboriginal communities inland.

From the start of the 1820s the Fingal Valley and Break O'Day regions began to be opened up to Europeans. In 1820, Rice reported fertile land in the Fingal Valley region. Settlement around Fingal started in the 1820s, with James Grant, William Talbot, Robert Hepburn, Francis Groom and others allocated land from 1821 onward. In 1825 John Helder Wedge, the Government Surveyor, reported fertile territory around the Break O'Day Plains, a little to the north of the Fingal Tier, with settlement commencing within the next few years.

In late 1830, George Augustus Robinson was informed that there were only two groups of Aborigines left in the northeast, one in the Fingal Valley (Ryan 1996, p. 150). Anthony Cottrell was sent to capture this band in early 1831 (*ibid*, p. 153) and succeeded in January 1832, in north Oyster Bay. By this time it was the last surviving group (*ibid*, p. 157). These locations suggest the group was the *Tonenerweenerlarmenne*, as they correspond

to its known distribution and travel patterns. The band seems to have moved along the Fingal Valley to Oyster Bay shortly before being captured.

### 3.2. Archaeological Context

No archaeological field investigations had been undertaken for the study area, other than those carried out for the purposes of assessing the impact of the present proposed development.

#### 3.2.1. Previous Aboriginal Cultural Heritage Investigations

##### **Graham, 2007-2008; Huys, 2011: The Cullenswood coal-mine (and extensions)**

Graham (2007-2008) examined the area around the nearby Cullenswood open cut coalmine for Aboriginal heritage. As individual blocks of land were cleared and bulldozed, in preparation for extension of the mine, Graham carried out site surveys and documented his findings in a series of reports numbered 1-34. Most of the reports for 2007-2008 have been examined (Numbers 21, 22, 26-28, 31-32, 34) but earlier reports have not. These surveys located several artefact scatters and isolated artefacts, although some surveys (26, 28, 31 and 34) found no material. The unseen reports seem also to have documented sites in some cases.

Huys undertook an assessment of Cullenswood 3 and proposed a model of Aboriginal occupation of the Fingal Valley on the basis of his findings. He refers to two earlier surveys of 2010, which identified two PADs (Potential Archaeological Deposits) in the study area, one associated with an isolated artefact (TASI 11265). Because PADs often feature poor surface visibility, meaning artefacts can be hidden in the subsoil, three transects were ploughed and examined to check whether material was in fact present. No Aboriginal material was found in any of the transects and, in view of the intensive nature of the investigation, Huys concluded that Aboriginal artefacts were either absent, or present in very low densities in these locations.

He combined this information with earlier data from a study of the Cullenswood 2 extension area to form hypotheses about Aboriginal settlement patterns more generally in this part of the Fingal Valley. Sites and artefacts appear to be concentrated on the *'elevated and level terraces that fringe the southern edge of the low-lying valley floor'* (Huys 2011, p. 15). On the valley floor itself and the steeper hill slopes that surround it, artefact densities are very low. The chosen campsites (TASI sites 10945 and 10946 in

Cullenswood 2) probably represent 'interim locations' used by groups in transit through the Fingal Valley and chosen because they were raised and level sites on well-drained soil and close to the food resources of the valley floor (*ibid.*, p. 15). People are likely to have foraged but not camped on the valley floor, because of the poor drainage, the regular flooding and the cold air that collected there. Site density is likely to be low there and consist of isolated artefacts. From the fact that one of the PADs resembled the favoured campsite areas but had no artefacts, Huys concluded that sandy soils were preferred to loam for campsites, as soil type was the only difference from the favoured sites. Huys argued that these conclusions about site distribution and density should hold for the rest of the Fingal Valley and predicted a low density of material throughout the Cullenswood 3 study area.

Other surveys for Aboriginal heritage in the Fingal area have been carried out by Sim (1997) and Maynard (2009).

Sim (1997) examined the proposed route of a subsurface telephone cable for Aboriginal heritage material. This ran 3.545 km from Fingal township to the foothills of Bare Rock, through heavily disturbed land (pasture and dwellings). No sites were located. Sim remarked that (at that time) few Aboriginal sites had been recorded around Fingal or from the base of the Fingal Valley; he noted that this could reflect lack of investigation or pastoral disturbance of the land. Numerous sites had previously been found by Kee (1991; 1987) 20 km west of Fingal, by Sim 15 km north-west, and Moore reported artefacts from near Avoca.

Maynard (2009) carried out an Aboriginal heritage values survey of a proposed dam extension on the Ormley property, near Fingal. The dam was on a tributary of the South Esk River, a known travel route of Aboriginal people in the past. No heritage sites were located.

### **3.3. Registered Aboriginal Site Distribution**

A search of the Tasmanian Aboriginal Site Index (TASI) completed on the 20th of August 2011 identified 25 known Aboriginal sites within the surrounding area (See Figure 7 and Table 2).

The majority of Aboriginal sites identified from TASI were located in the last fifteen years during surveys arising from the proposed extension to Cornwall Coal's open cut mine at Cullenswood, 3.6 km west of St Marys, some 9km north east of the current project area.

The majority of these sites were found by Graham in 2004-08, on or around the blocks of land being cleared of vegetation and topsoil in preparation for extension of the mine (the Cullenswood mine extension). Some were situated near disturbed or eroded soil, such as around access tracks, perhaps because the investigation did not involve targeted digs but rather inspection of cleared and later bulldozed land. Nine sites consisted of artefact scatters while five involved isolated artefacts. TASI 10641 consisted of two artefacts in the vicinity of a historical site (although the site card does not specify what this site was). A range of items was observed: debitage, flakes, cores, manuports, scrapers and multipurpose tools. The most common material used was quartz. The only one of these sites directly affected by the mining excavation was TASI 10328, which was salvaged and relocated to prevent destruction; the letter (dated 25.06.2007) granting permission for relocation can be found in an appendix at the end of Graham's Report No. 22. (The other sites either fell outside the zone of operations or were protected by the erection of a fenced buffer around them for the duration of the work.)

A further four sites were identified by Huys and O'Sullivan, in the course of surveying in 2010 and 2011. TASI 10945 and 10946 were in the Cullenswood 2 extension zone; these were isolated artefacts on elevated ground a little above the valley floor. TASI 11265 and 11266, in the Cullenswood 3 extension area, were also isolated artefacts. Huys identified a Potential Archaeological Deposit lying around TASI 11265, where the presence of further Aboriginal material was anticipated. However, archaeological investigation failed to find anything, leading him to conclude that sites in this vicinity were likely to be of low density or else absent (see above).

A number of other sites are poorly documented on the TASI site cards. Three sites were recorded by Ferguson in 1986 (TASI 3275, 3294 and 3295), another three by Hamilton in 2001 (TASI 8904, 8905 and 8906) and another, TASI 8866, consisting of two flakes, by Scotney in 2001. All were artefact scatters or isolated artefacts, but the site cards present little other information.

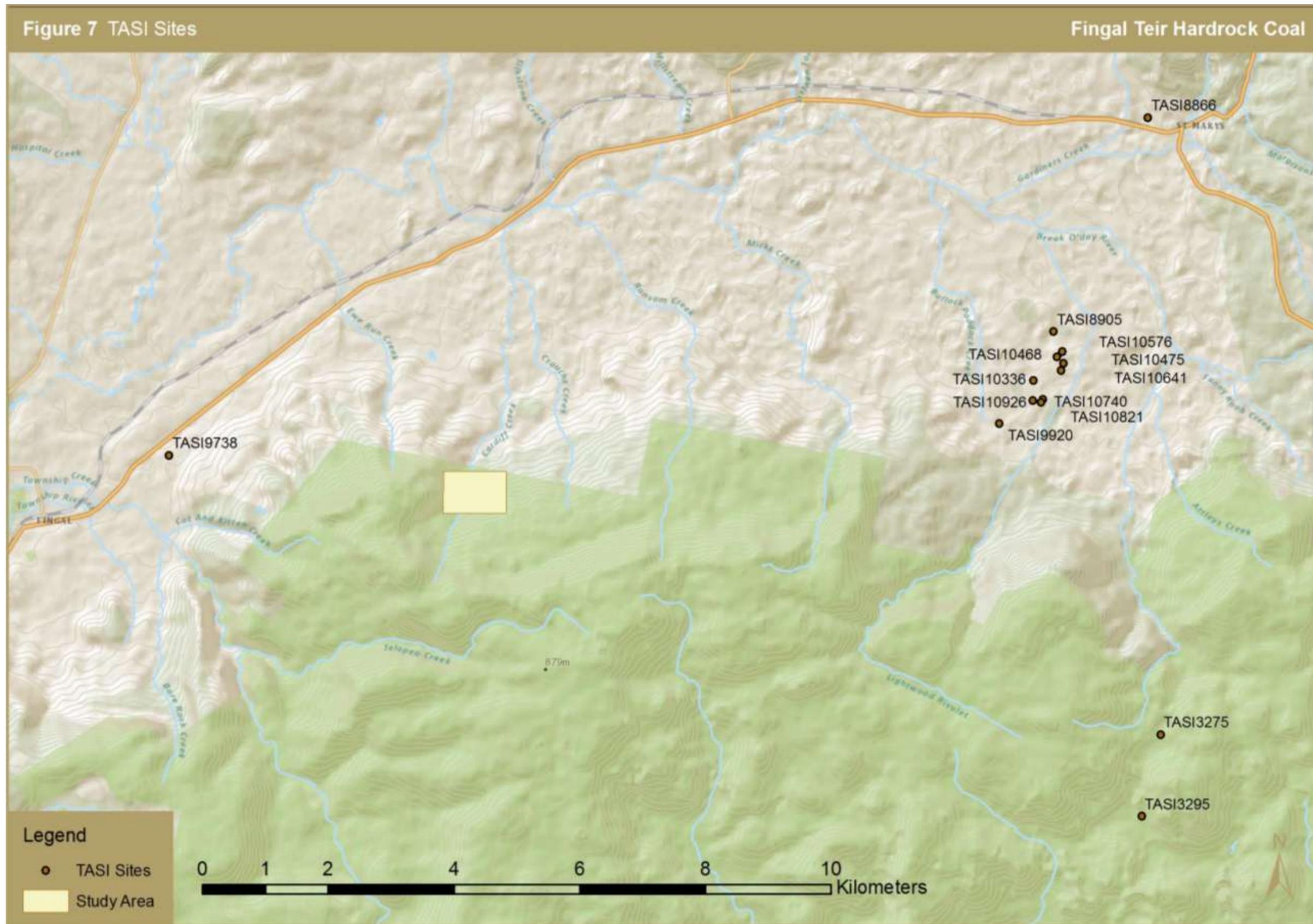
TASI	Site Type	Site description from TASI
3275	Artefact Scatter	-
3294	Isolated Artefact	-
3295	Artefact Scatter	-
8866	Artefact Scatter	2 flakes, silcrete and cherty hornfels
8904	Isolated Artefact	-
8905	Artefact Scatter	-
8906	Isolated Artefact	-
9738	Artefact Scatter	4 items, 1 quartz, 3 cherty hornfels
9920	Isolated Artefact	cherty hornfels broken flake and red ochre
9967	Isolated Artefact	damaged cherty hornfels flake
10328	Isolated Artefact	brown chert
10336	Artefact Scatter	scrapers, debitage, manuports
10337	Isolated Artefact	broken cherty hornfels flake
10419	Isolated Artefact	white quartz broken flake
10468	Artefact Scatter	two quartzite flakes, various quartz bits
10475	Artefact Scatter	cores, scrapers, manuports, m/purpose tools
10576	Artefact Scatter	14 artefacts
10641	Artefact Scatter	2 stone items associated with a historical site
10740	Artefact Scatter	various flakes
10821	Artefact Scatter	-
10926	Artefact Scatter	various flakes
10945	Isolated Artefact	-
10946	Isolated Artefact	-
11265	Isolated Artefact	quartzite flake
11266	Isolated Artefact	chert broken flake

**Table 2:** Sites recorded on the TASI database in the vicinity of the project study area

It is interesting to note that the entire 25 sites from TASI are open context artefact sites of varying artefactual densities (see Table 3). Given that TASI is a record only of those sites that have been reported to AHT it is highly likely that there are further Aboriginal heritage sites within the surrounding area and that based upon the available landforms these sites may be of different types to those currently recorded.

Site Type	Frequency	%
Artefact Scatter	13	52%
Isolated Artefact	12	48%

**Table 3:** Site Type Frequency



## 4. FIELD ASSESSMENT

Consultation with AHT regarding the projects scope, schedule and proposed methodology for the completion of the archaeological survey was undertaken on 21<sup>st</sup> October 2011. During the discussions the it was explained that initially the proponent was assessing only those areas proposed to be impacted by the necessary surface infrastructure to enable to project to be economically viable and that once it was determined that the project was viable additional survey and assessment would be undertaken to assess the impacts associated with the extraction or the coal resource.

Areas identified for survey were those areas proposed for surface infrastructure (as shown in Figure 3). It was proposed that these areas be subject to a pedestrian archaeological assessment with additional targeted survey being undertaken if/when sensitive landforms or favourable visibility conditions where identified for locations immediately adjacent to those proposed for impact. On the day of the survey no other issues where identified that would require a re-evaluation of this decision and accordingly the survey was carried out employing pedestrian survey techniques.

### 4.1. Method, Coverage and Limitations

Pedestrian survey was carried out across the study area; the location and survey routes of the survey leader were captured using a handheld Global Positioning Satellite (GPS) system (see Figure 8). All Aboriginal heritage items were individually way pointed (See Figure 9). Due to the proposed development utilising much of the pre-existing mine infrastructure, the survey was in the main confined to the areas of proposed ground disturbance, including:

- ✦ the roadways entering the site from the Valley Road;
- ✦ the proposed Water Improvement Area;
- ✦ the proposed Receiving Hopper and Belt Road areas;

Additionally, the higher ground to the east and southeast of the main workings was walked, as was the northern and north-eastern periphery of the proposed Water Improvement Area.

The survey was conducted by Lance Syme and Vernon Graham, walking approximately 3-5m apart, closely inspecting the ground surfaces for traces of Aboriginal cultural material.

Ground surface visibility was generally low to moderate due to grass and vegetation cover over most of the survey area, though occasional areas of exposure that had improved visibility. Plate 2 shows the typical visibility within the south eastern portions of the study area.

Transect	Landform	Exposure Type	Length (m)	Width (m)	Av. Vis (%)	Effective Coverage (length x width x visibility) (m2)
T1	Mid-slope	Patchy grass, logging track	220m	20m	30	1320
T2	Mid and Lower Slope	Patchy grass, logging track, mullock heaps	385m	20m	30	2310
T3	Mid-slope	Patchy vegetation	210m	20m	40	1680
T4	Mid-slope	Patchy vegetation, logging track, mullock heaps	345m	20m	35	2415
T5	Mid-slope	Dense vegetation	15m	20m	25	75
T6	Mid-slope	Dense Vegetation, Mullock Heaps	275m	20m	25	1375
T7	Mid-slope	Patchy Vegetation	220m	20m	25	1100
T8	Lower Slope	Patchy Vegetation	660m	20m	40	5280
T9	Lower Slope	Patchy vegetation, logging track	345m	20m	40	2760
T10	Lower Slope	Open scrubland	255m	20m	40	2040
T11	Mid and Lower Slope	Open scrubland, logging track	110m	20m	40	880
T12	Mid-slope	Patchy grass, logging track	515m	20m	30	3090

Table 4: Survey Coverage



**Plate 1: View west along T1. Existing Track to be upgraded.**



**Plate 2: View South at beginning of T2.**



**Plate 3: View of erosion high( south) side of access track approx.. 1/3 along T2**



**Plate 4: Midpoint of T2 view of small flat area north of access track**



**Plate 5: View of gravel deposits in Cardiff Creek, western end of T12**



**Plate 6: View of section of Cardiff Creek showing excess coalwash from historic mining activities**



**Plate 7: View of northern of a Area of Aboriginal Sensitivity, T9**



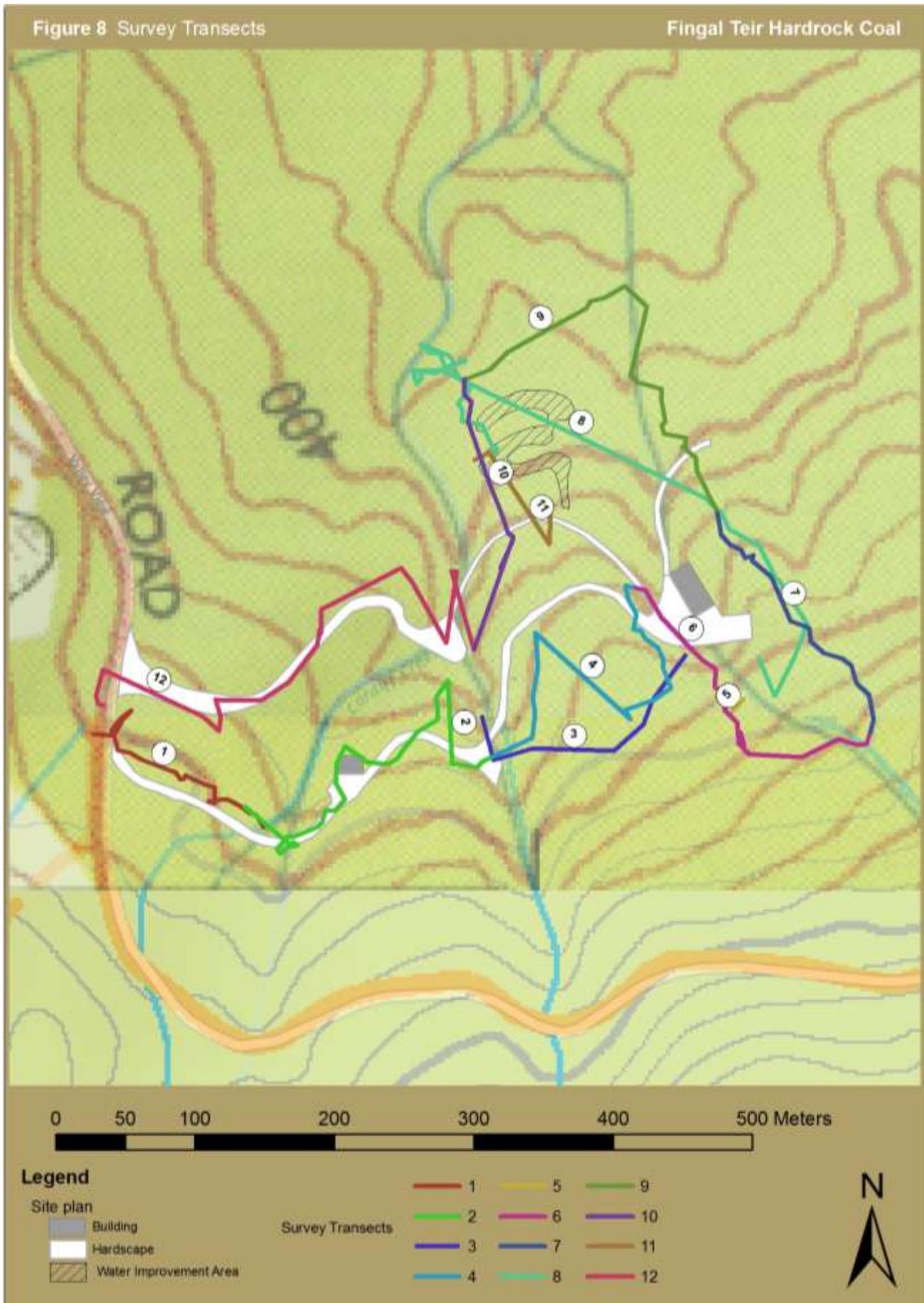
**Plate 8: View of Cardiff Creek showing high levels of previous disturbance and coalwash deposits**

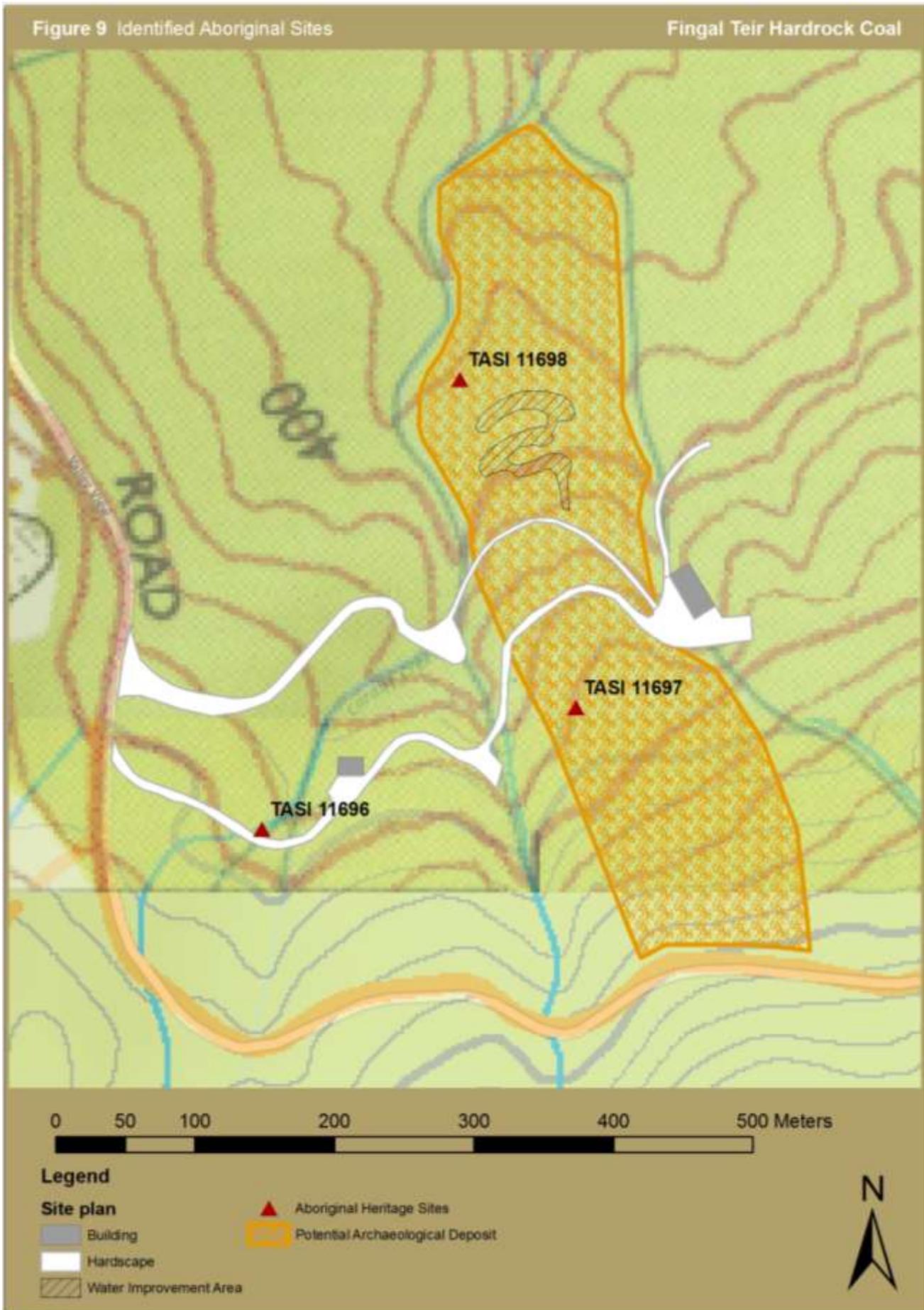
#### **4.2. Aboriginal Sites**

Two Aboriginal sites, both identified as single artefact sites, 1 and 2 were noted during the field assessment. One isolated artefact was located on the western side of an old bridge crossing Cardiff Creek, and another was located on a spur line c.100m east of Cardiff Creek, on the southern side of a former mine access track (Figure 8).

The isolated artefact sites comprise single pieces of worked Quartz, and attest to the opportunistic utilisation of loose Quartz pebbles found in the locality, most likely the Cardiff Creek or one of the other natural drainage channels that cross the site. This activity suggests transient passage through the study area rather than periodic settlement. That said however, the vegetation and other ground cover noted during the site survey could easily have masked any more significant artefact scatters, such as those found elsewhere in the Fingal valley, which may otherwise point towards temporary settlement and/or hunting activity.

An area of Potential Archaeological Deposits was also identified (Figure 8, Site 3). It lay to the south of the proposed overland conveyor site, between the 440m and 450m contours.





#### 4.2.1. Aboriginal Site TASI 11696

This isolated artefact is situation on the southern alignment of an existing forest c.5m from the crossing of Cardiff Creek (see Figure 9).

The artefact is a quartzite core that exhibits 6 flake scars across 3 platforms. Pebble cortex is present across 50% of the exterior surface of the artefact.



Plate 9: Artefact's at TASI 11969



Plate 10: General Location of TASI 11969 view east along existing track

#### 4.2.2. Aboriginal Site TASI 11967

This isolated artefact was found upon a spur line between two unnamed drainage lines that drain into the main channel of Cardiff Creek in the western portions of the study area (See Figure 9).

The artefact is manufactured from white quartzite and exhibits characteristics for bi polar flaking techniques.



Plate 11: Artefact from TASI 11697



Plate 12: General View of TASI 11697 looking south up spur line

#### **4.2.3. Aboriginal Site TASI 11698**

This isolated find was identified during a pre-survey inspection of the project area by Lance Syme. The artefact was unable to be related during the survey.

The artefact was a core manufactured from tuff.

It is situated to the east of Cardiff Creek, slightly above the creek channel in a flattish elevated position (See Figure 9).



Plate 13: Artefact from TASI 11698



Plate 14: General Location of TASI 11698

### **4.3. Aboriginal Site Potential**

Formulating Aboriginal site predictive statements for the project study area is an essential part of any cultural heritage assessment. The potential for Aboriginal sites to exist needs to be considered so that all possible impacts of the development can be evaluated. The predictive model below has been developed through assessing the nature and distribution of Aboriginal sites identified during the field assessment, and taking into consideration other sites types in the immediate vicinity of the proposed development.

This is supplemented through an understanding of landform development and environmental factors (vegetation communities, distribution of potable water).

The relatively small footprint of the proposed development and the landforms within the study area, along with the low levels of surface visibility during the field survey are considered to have allowed the formation of a sound Aboriginal site predictive statement (Table 3). This model does not apply to the Aboriginal cultural landscape or to Aboriginal people's relationship to that landscape.

### **4.4. Broader Aboriginal Values**

This section requires the input of Vernon Graham, Aboriginal Heritage Officer.

### **4.5. Significance of Aboriginal Sites**

The significance of Aboriginal values is described within a framework provided by 'The Burra Charter' (Australia ICOMOS 1999), which defines aesthetic, historic, scientific, social and spiritual values. A general statement of the significance for each value is presented below. This is based on discussions with and information provided by Vernon Graham, and the results of the field assessment.

*Aesthetic values:* This includes aspects of sensory perception, including form, scale, colour, texture and material, smells and sounds associated with a place and its use (Australia ICOMOS 1988, section 2.2). The aesthetic value of the study area has been altered by modern clearing and land use. This has reduced the aesthetic value of the study area in relation to Aboriginal heritage.

Site type	Potential for Aboriginal Sites	Comments
Artefact scatters and/or isolated artefacts	Moderate	Stone artefact scatters are the most common site type, and may occur across a range of landforms. Elevated locations adjacent to an important resource habitat would have been targeted by Aboriginal people.
Burial sites	Low	Whilst burial sites cannot be ruled out completely, they are an uncommon find, and no previous sites of this type have been recorded in the vicinity to date.
Carved or scarred trees	Low	No culturally-modified trees were identified during the fieldwork phase of the assessment, and there are no recorded sites in the vicinity. Much of the site was cleared of all vegetation during the lifetime of the original mine working.
Ceremonial grounds or 'bora'	Very low	Such sites tend to occur on relatively flat ground at lower altitudes. No ceremonial sites were identified during the field inspection.
Engravings	Low	There are no recorded sites within the proposed development area or immediate vicinity. Such sites are usually found in areas of rock shelves or flattened outcrops, but no such areas were identified during the field inspection.
Fish traps	Very low	Cardiff Creek flows roughly centrally through the site, but at the time of the field inspection, it was noted that there were several areas of ingress and course alteration. A low flow rate also suggests that this location would not have been a suitable key habitat for fish.
Grinding bowls/groove sites	Low	There are no recorded sites within the proposed development area or immediate vicinity. Such sites are usually found in areas of rock shelves or flattened outcrops, but no such areas were identified during the field inspection.
Post-contact sites	Low	There are no recorded sites within the proposed development area or immediate vicinity, and no material evidence (i.e. knapped glass artefacts) was noted during the field inspection.
Potential Archaeological Deposits (PADs)	Moderate	Areas which may contain PADs are often on slightly elevated ground close to a reliable water source, and where settlement-related may reasonably be expected to have occurred. One such area was identified during the field inspection, and therefore the presence of hitherto unknown subsurface archaeological deposits cannot be ruled out.
Rock shelters/Rock Art sites	Low	There are no recorded sites within the proposed development area or immediate vicinity. Such sites are usually found in areas of rock shelves or overhangs, but no such areas were identified during the field inspection.
Stone alignments	Very low	There are no recorded sites within the proposed development area or immediate vicinity, and no such sites were located during the field inspection. Due to the nature of the recent mining activity in the study area, it is highly unlikely that any such sites would have survived, if they existed prior to development.
Stone or Ochre quarries	Low	There are no recorded sites within the proposed development area or immediate vicinity, and no such sites were located during the field inspection. The two isolated artefacts identified during the field inspection were of Quartz, suggesting that there is no ready source of workable stone in the vicinity, other than Quartz pebbles recovered from the creek. There were no signs of Ochre-bearing rock within the study area.
Water holes, wells and/or pot holes	Very low	There are no recorded sites within the proposed development area or immediate vicinity. Such sites are usually found in areas of rock shelves or flattened outcrops, but no such areas were identified during the field inspection.

**Table 5:** Predictive Model of Aboriginal Site Potential

*Historic values:* A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity, or as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives *in situ*, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Australia ICOMOS 1988, section 2.3). The study area has evidence of Aboriginal occupation, and as such has some historic value, as it demonstrates Aboriginal occupation of the area.

*Scientific values:* The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information (Australia ICOMOS 1988, section 2.4). The study area has some scientific potential given that Aboriginal artefacts are present and other buried artefacts are likely to be present. The higher eastern part of the study area has higher archaeological potential as it appears to be less disturbed than the lower western and central parts of the study area. Archaeological excavation would be needed to assess this potential. The site could contribute new information on Aboriginal occupation of Frogmore Peninsula/Midway Point.

*Social values:* These embrace the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group (Australia ICOMOS 1988, section 2.5).

Significance Attribute	TASI 1	TASI 2	TASI 3	General Project Area
Aesthetic	Low	Low	Low	The aesthetic value of the project study area has been substantially altered by European land use practices, and as such has reduced aesthetic values to Aboriginal people.
Historic	Low	Low	Low	No historical values to Aboriginal people for the project area have been established.
Scientific	Low	Moderate	Moderate	The study area is assessed as having low to moderate archaeological potential
Social	Low	Low	Low	The study area has no known social values to Aboriginal people
Spiritual	N/A	N/A	N/A	Refer to Section below

**Table 6: Assessed Significance Values**

## **Aboriginal Cultural Significance**

Insert Statement from Vernon Graham report here

## **Archaeological Significance**

The area has been assessed as having a low archaeological significance, based upon the three isolated artefact sites, and an area of Potential Archaeological Deposit. The archaeological significance may be elevated if further sites are located, and/or if the PAD is tested and proves to yield evidence of Aboriginal occupation.

## 5. LEGISLATION

### 5.1. State Legislation Protecting Aboriginal Sites

#### 5.1.1. Aboriginal Relics Act 1975

The primary State legislation that relates to the protection and management of Aboriginal cultural values is the Aboriginal Relics Act 1975, which provides protection for Aboriginal relics made prior to 1876 and relevant details are summarised below.

The Aboriginal Relics Act 1975 defines a relic as:

- ✦ any artefact, painting, carving, engraving, arrangement of stones, midden, or other object made or created by any of the original inhabitants of Australia or the descendants of any such inhabitant;
- ✦ any object, site, or place that bears signs of the activities of any such original inhabitants or their descendants; or
- ✦ the remains of the body of such an original inhabitant or of a descendant of such an inhabitant who died before the year 1876 that are not interred in-
  - any land that is or has been held, set aside, reserved, or used for the purposes of a burial ground or cemetery pursuant to any Act, deed, or other instrument; or
  - a marked grave in any other land.

The Act specifies that: *No object made or created after the year 1876 shall for the purposes of this Act be treated as a relic, and no activity taking place after that year shall for those purposes be regarded as being capable of giving rise to such a relic.*

Section 14 specifies that:

*Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister of Environment, Parks, Heritage and the Arts on the recommendation of the Director –*

*Destroy, damage, deface, conceal, or otherwise interfere with a relic;*

*Remove a relic from the place where it is found or abandoned;*

A permit is required under Section 14: Subsection (f), for *'an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic'*.

This permit would apply to works such as archaeological subsurface testing and excavation.

## **5.2. Commonwealth Legislation Protecting Aboriginal Sites**

### **5.2.1. Aboriginal and Torres Strait Islander Heritage Protection Act (ATSIHP Act), 1984**

Whereas the State Act provides legal protection for all physical evidence of past Aboriginal occupation (pre 1876), the Aboriginal and Torres Strait Islander Heritage Protection Act 1984, and subsequent amendments provides for the preservation and protection of Aboriginal cultural property in a wider sense. Such cultural property includes any places, objects and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. There is no cut-off date and the Act may apply to contemporary Aboriginal cultural property as well as Aboriginal sites. The Act is not intended to exclude or limit the operation of State legislation in those situations where the latter makes adequate provision for the protection of sites, objects and skeletal remains.

It is considered unlikely that Aboriginal sites and values identified in the project study area would receive protection under this legislation. This is due to the adequate provisions of the Aboriginal Heritage Act 1975 for the protection of Aboriginal sites. In order for Aboriginal places, objects and folklore to be protected under this legislation, proof of their 'particular significance to Aboriginal in accordance with Aboriginal tradition' would be required.

### **5.2.2. Environment Protection and Biodiversity Conservation Act (EPBC Act), 1999**

The EPBC Act enhances the management and protection of Australia's heritage places, including World Heritage properties. It provides for the listing of natural, historic or Indigenous places that are of outstanding national heritage value to the Australian nation as well as heritage places on Commonwealth lands and waters or under Australian Government control.

World heritage properties and national heritage places are recognised as a matter of national environmental significance under the EPBC Act. Consequently, any action that is likely to have a significant impact on heritage properties and places must be referred to the Minister and undergo an environmental assessment and approval process. No Aboriginal sites or places in the project study area fall within this category.



## 6. MANAGEMENT ISSUES AND RECOMMENDATIONS

This section outlines the legislative framework protecting Aboriginal sites, the views of Aboriginal stakeholders regarding this assessment and the development, and the impact of the development on Aboriginal values. Management implications and consultation with TALSC have informed the recommendations that conclude this report.

### 6.1. Aboriginal View Regarding the Development

Views documented by the consultants during meetings with Aboriginal stakeholders are provided below.

#### **Tasmanian Aboriginal Land & Sea Council (TALSC)**

TALSC raised the following matters regarding this assessment and the proposed development:

 Insert once available

#### **Aboriginal Heritage Tasmania (AHT)**

The following issues were raised in relation to this project by the AHT:

 Insert once available

### 6.2. Impact of the Development on Archaeological Values

The implications of this assessment are discussed in terms of the potential impact of the proposed Caason Fingal Tiers Mine on Aboriginal sites and values.

#### **Aboriginal Sites and Zones of Aboriginal Site Potential**

Three Aboriginal sites have been identified as part of this assessment. Each of the identified artefacts was manufactured from different raw materials i.e. quartzite, quartz and tuff.

TASI 11696 is located immediately adjacent to the existing access roadway and is proposed to be widened and have water management structures installed within the immediate area. TASI 11697 is situated in the vicinity of the proposed route of the overland conveyor and should be able to be avoided. TASI 11698 is situated down slope of the proposed Water Improvement Area and is likely to be subject to impact from

ground works associated with the construction of the Water Improvement facilities. One Potential Archaeological Deposit was identified based upon the combination of landform, local topography, level of previous disturbance and the views of the Aboriginal Heritage Officer present on the day of the survey (Figure 9).

### **6.3. Recommendations**

The following recommendations have been formulated in response to the identified management implications.

#### **Recommendation 1: Impact to TASI 11696 and TASI 11698**

A Permit under Section 14 of the Aboriginal Relics Act 1975 should be sought for impact to TASI 11696 and TASI 11698.

#### **Recommendation 2: Preparation of an Aboriginal Heritage Management Plan**

A Management Plan should be prepared for the project. The management plan should be prepared by an individual with recognised training and qualifications and experience in Aboriginal cultural heritage management. The management plan should as a minimum identify the scale and scope of future investigatory works i.e. archaeological survey, sub-surface testing and/or salvage (as appropriate), strategies for dealing with un-anticipated identification of Aboriginal relics, identify managements zones and applicable controls for ground disturbance works within these zones, identify any permits and approvals that would be required with respect to impacts to Aboriginal heritage, provide consideration for the curation of Aboriginal relics that may be retrieved to the project area and a timeframe for regular update and review.

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