



Chapter 29

Historical
Cultural Heritage

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29. HISTORICAL CULTURAL HERITAGE

29.1 Introduction

As part of the environmental impact assessment, an analysis of the historical cultural heritage was undertaken for the area of the Byerwen Coal Project. This chapter is based on the non-indigenous history technical report prepared by Elizabeth Hatte (refer **Appendix 27**), and identifies and assesses the historical cultural heritage values within and immediately surrounding the project area. It also describes the measures proposed to be implemented to protect, mitigate and manage historical cultural heritage values that may be impacted by the project. This historical cultural heritage chapter addresses section 3.12 of the project's Terms of Reference.

For the purpose of this document, historical cultural heritage is taken to include specifically non-indigenous as well as shared indigenous and non-indigenous cultural heritage values. It relates to places or features of a place that are not solely associated with Aboriginal history, custom or occupation, that have aesthetic, architectural, historical, scientific, social or other significance to the present or past generations and potentially for future generations.

29.2 Legislative Context

29.2.1 The Burra Charter

The *Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (1999; Burra Charter) establishes the definition of cultural significance as “aesthetic, historic, scientific or social value for past, present or future generations”, and sets the basic principles for cultural heritage conservation legislation for all Australian states and territories. It also establishes criteria for assessing the significance of heritage values, including value of the site to part or all of the community (social), scientific and historical value (Australia ICOMOS Inc., 1999).

There are several pieces of Commonwealth and Queensland legislation relevant to cultural heritage within the project area. These have been briefly outlined below.

29.2.2 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) is the key piece of Commonwealth legislation for management of the environment and cultural heritage. The EPBC Act protects places with world heritage values – meaning places listed on the United Nations Educational, Scientific and Cultural Organisation’s (UNESCO) World Heritage List – or places of national significance – meaning places on the Australian Heritage List or the Commonwealth Heritage List (both of which incorporate places previously registered on the Register of the National Estate). In particular, the EPBC Act provides a legal framework, with ‘triggers’ which require approval for actions likely to have a significant impact on places of significance and cultural heritage aspects of the environment on Commonwealth land in order to protect and manage heritage values. There were no places registered on the World Heritage, National Heritage, or Commonwealth Heritage Lists for cultural heritage significance relevant to the project.

29.2.3 Queensland Heritage Act 1992

The *Queensland Heritage Act 1992* (Qld) (QH Act) is the primary piece of legislation of relevance to the project.

The QH Act provides for:

- the establishment of the Queensland Heritage Register (QHR) – a register of places significant to the state of Queensland
- a process for entering new places onto the QHR
- protection for places entered in the QHR
- the establishment of local heritage registers to be maintained by local government authorities
- a process for reporting discoveries of artefacts with potential historical cultural heritage significance
- a detailed process for managing historical cultural heritage items, sites or places during activities that may have an impact on cultural heritage values.

Additionally, the QH Act requires that discoveries of artefacts of potential historical significance are reported to the Department of Environment and Heritage Protection (EHP). Section 89 of the QH Act requires that anyone who discovers an archaeological artefact that may be an important source of information about an aspect of Queensland's history must report it to EHP. Under section 90 of the QH Act, it is an offence bearing a maximum penalty of 1000 penalty units (as defined by the *State Penalties Enforcement Act 1999* (Qld); currently \$100,000) to interfere with any discovery for at least 20 business days after EHP has been notified, unless consent has been granted under the QH Act to do so. Such consent would be contingent on the development of a reasonable strategy for management of the artefacts and a management plan for any further discoveries.

29.2.4 Nature Conservation Act 1992

The *Nature Conservation Act 1992* (Qld) (NC Act) dedicates and declares protected areas under 13 classes¹ for the conservation of natural and/or cultural heritage. The NC Act sets out management principles for each class of protected area. The NC Act also requires the declaration of 'management intent' with specific reference to the area's significant cultural and/or natural resources and values for any proposed protected area. Under the NC Act, it is an offence to take, use, keep, or interfere with a cultural or natural resource in a protected area except in accordance with the interim or declared management intent, or under permit.

29.2.5 Survey and Mapping Infrastructure Act 2003

Survey marks, reference marks and bench marks may have significant cultural heritage value not only to the organisation and individuals that placed them but also for the study of Australian culture as a whole. They can be used to show the routes taken by explorers, boundary changes over time, government policy changes and how population changes and historical events can affect perceptions and management of land and resources.

Under Part 4 of the *Survey and Mapping Infrastructure Act 2003* (Qld) (SMI Act), it is an offence to interfere with any permanent survey mark, whether knowingly or unknowingly, by any person who "ought reasonably to know" of their existence. Interfering with any type of survey mark can carry a penalty up to 100 penalty units (as defined by the *State Penalties Enforcement Act 1999* (Qld); currently \$10,000). There is provision within the SMI Act to allow marks to be removed or disturbed. However, in any case where this may happen prior application must be made to the Department of Natural Resources and Mines (NRM) under section 43 of the SMI Act. It may be decided by NRM that the mark

¹ These classes include national parks (scientific), national parks, national parks (Aboriginal land), national parks (Torres Strait Islander land), national parks (Cape York Peninsula Aboriginal land), national parks (recovery), conservation parks, resource reserves, nature refuges, coordinated conservation areas, wilderness areas, World Heritage management areas, and international agreement areas.

must be replaced in a nearby location or that sufficient adjacent marks exist to allow the reinstatement of the original at any time.

29.2.6 Legislation Regarding Human Remains

Under Section 236 of the *Criminal Code Act 1899* (Qld), it is an offence to improperly or indecently interfere with a human body or human remains, whether buried or not. An offence under this provision can result in imprisonment for up to two years.

The *Coroners Act 2003* (Qld) states that when human remains are located it is the duty of the person who found the remains to report the findings to the police or a coroner (s.7-8). Control of human remains by the coroner commences when coronial investigations into the deceased person's death begin (section 26(1)). If the coroner decides that it is not necessary to keep investigating the human remains, then the coroner will order the release of the body for burial (section 26(c)).

Additionally, exhumations are normally dealt with under local laws in terms of the *Local Government Act 1993* (Qld). Where these laws are not applicable, the *Land Act 1994* (Qld) permits exhumation. Approval to exhume human remains (section 83, to take out of a place of interment, whether above or below ground) may be granted by the Minister on receipt of a written application if a local government has not made a local law regarding exhumation of human remains from trust land for cemetery purposes.

29.3 Methodology of Assessment

The assessment of historical cultural heritage within the project area was undertaken by an archaeologist (Elizabeth Hatte) in three phases: a desktop review, followed by consultation with relevant stakeholders and a field survey of the study area (the project area contained within MLAs 70434, 70435, 70436, 10355, 10356, and 10357 and any sites of historical cultural heritage values with potential to be impacted by the project outside the boundaries of the project area).

The first stage of the assessment comprised a desktop review, including searches of Federal and State and local historic site registers, databases and archival material in order to:

- develop a regional historical framework
- make an initial identification of historic places and values within and around the project area that may potentially be impacted by the project
- provide a focus for the site survey.

Table 29-1 indicates the sources consulted in the preparation of this section.

Table 29-1 Cultural Heritage Registers and Sources Consulted

Register	Established/maintained by:
World Heritage List	<ul style="list-style-type: none"> • United Nations Educational, Scientific and Cultural Organisation (UNESCO).
Commonwealth Heritage List	<ul style="list-style-type: none"> • Established under the EPBC Act • Maintained by the Department of Sustainability, Environment, Water, Population and Communities (Cwlth) • Lists places of heritage values owned by the Commonwealth.
Australian Heritage List	<ul style="list-style-type: none"> • Established under the EPBC Act • Maintained by the Department of Sustainability, Environment, Water, Population and Communities (Cwlth) • Lists places of nationally important heritage values.

Register	Established/maintained by:
Queensland Heritage Register	<ul style="list-style-type: none"> Established by the QH Act Maintained by the Department of Environment and Heritage Protection (Qld)
Protected areas under the NC Act	<ul style="list-style-type: none"> Established by the NC Act Primarily focussed on protection of natural features, flora and fauna, but many protected areas also have associated heritage values Maintained by the Department of Environment and Heritage Protection (Qld).
Register of the National Estate (RNE)	<ul style="list-style-type: none"> Established by <i>Australian Heritage Commission Act 1975</i> (Cwlth; repealed) Previously maintained by the Department of Sustainability, Environment, Water, Population and Communities (Cwlth) The RNE was closed in 2007 and is no longer a statutory list. All references to the RNE were removed from the EPBC Act on 19 February 2012 The expiration or repeal of parts of the EPBC Act and the <i>Australian Heritage Council Act 2003</i> relating to the RNE does not diminish protection of Commonwealth heritage places The RNE is now a non-statutory archive of information on more than 13,000 places throughout Australia.
Records of the National Trust of Queensland (NTQ)	<ul style="list-style-type: none"> The Queensland branch of the National Trust of Australia, a community-based heritage association.
Local government registers and planning schemes	<ul style="list-style-type: none"> Under Part 11 of the QH Act, local governments are required to maintain a local cultural heritage register of heritage values within their respective boundaries. It should be noted that not all local governments maintain a heritage register, particularly in light of the amalgamation of local government areas that took place in 2008 The following local governments were contacted to identify if heritage records are maintained: <ul style="list-style-type: none"> Whitsunday Regional Council Isaac Regional Council. Additionally, the following local government planning schemes were reviewed for documented heritage values: <ul style="list-style-type: none"> Bowen Planning Scheme 2006 Nebo Shire Planning Scheme 2008.
Additional sources	<ul style="list-style-type: none"> Primary sources such as journals and diaries of early explorers and pastoralists (De Satge, Pages from the Journal of a Queensland Squatter, 1901; Fetherstonhaugh, 1918; Leichhardt, 1964) Local historical societies in Collinsville and Mackay Pastoral Run files in the Queensland Archives (QSA Series 14301 Items 27647, 27659, 27569, 306329, 306536, 306776, 306831, 307024, 307315, and QSA Series 1885 Item 629208) Regional and local histories and historical works (Breslin & James Cook University of North Queensland, 1992; Dunne, 1950; Fox M. , 1921; Hoch, 1993; Johnston, 1982; May, 1983; Pullar & National Trust of Queensland, 1995).

The second stage of the assessment of historical cultural heritage values consisted of consulting with local historical societies, local property owners and former station workers, and key people identified in Stage 1 to ensure that places not identified in the literature review might be identified in the field survey. This stage of the study incorporated window advertisements in Glenden (the nearest town to

the project area) asking for members of the local community to identify any places or provide anecdotal information relating to historical cultural heritage values in the area.

Field surveys to conduct site identification and recording were conducted as the final stage. Due to the size of the project, it would be infeasible to survey the entire ground surface. In the absence of intensive fieldwork, predictive modelling was applied. As well as developing a detailed contextual history, the basis of such work is research that places an emphasis on the following:

- early maps
- place names
- local knowledge
- infrastructure such as roads and railways.

Following the field surveys, a technical report was prepared detailing the known heritage values within and around the project area and providing predictive modeling for potential heritage values.

Preliminary assessments of historic significance were developed together with mitigation measures to protect and minimise negative impacts on identified places and others that may be identified in the course of the project.

29.3.1 Assumptions and Limitations

Due to the size of the project area, a complete archaeological survey of the whole area was infeasible. The identification and assessment of heritage values was undertaken through a combination of desktop reviews and on-site surveys (including engagement with the local community) and the heritage values identified in **Table 29-3** provides a clear indication of the types of heritage values that exist within the project area. However, is not an exclusive or comprehensive list and there remains the possibility that potential heritage values may exist. If any potential heritage values are identified during project activities, they will be managed in accordance with the discovery process discussed in **Section 29.6.2**.

The assessment of heritage values has relied heavily on the results of searches of archives, historical sources and anecdotal reports. Access to the study area was limited due to landholder access constraints.

The risks associated with project activities on known heritage values have been assessed based on the assumption that identified heritage values are extant and/or their value remains regardless of their current physical condition.

It is also assumed that the information provided in the sources reviewed is assumed to be accurate and complete. There is an abundance of information available concerning the general region around Glenden, field investigations concerning other projects in the region, and a wealth of knowledge and oral history held by local stakeholders. However, changes in ownership, the passing of previous generations and potential gaps in the available historical record mean that some knowledge of places and items of significance may not be available. Consequently there is the potential for previously unrecorded items to be identified in the field

29.4 Existing Values

Searches of the statutory and non-statutory heritage registers, previous studies and historical records were conducted to identify heritage receptors within the project area. The assessment of historical cultural heritage values within the project area draws heavily on primary and secondary historical records as there were no registered sites within the project area (see **Table 29-2**).

Table 29-2 Known Heritage Values Identified on Statutory and Non-Statutory Registers and Sources

Register	Existing values identified
World Heritage List	<ul style="list-style-type: none"> No heritage values were identified.
Commonwealth Heritage List	<ul style="list-style-type: none"> No heritage values were identified.
Australian Heritage List	<ul style="list-style-type: none"> No heritage values were identified.
Queensland Heritage Register ²	<ul style="list-style-type: none"> No heritage values were identified.
Protected areas under the NC Act	<ul style="list-style-type: none"> No heritage values were identified.
Register of the National Estate	<ul style="list-style-type: none"> No heritage values were identified.
Records of the National Trust of Queensland	<ul style="list-style-type: none"> No heritage values were identified.
Local government registers and planning schemes	<ul style="list-style-type: none"> No heritage values were identified.
Additional sources	<ul style="list-style-type: none"> See Table 29-3

The history of the broader region was primarily pastoral with associated services and infrastructure until the 1970s. From the late 1960s there was a rapid expansion in mining and associated infrastructure development in the region. At the same time there were also significant increases in land clearing for pastoral development, bolstered by Queensland State Government policies. In particular, brigalow and *Acacia spp.* forests (e.g. brigalow, bendee, rosewood, lancewood) and old *Eucalypt spp.* forests were cleared, often using techniques that led to considerable ground disturbance. This clearing significantly affected flora and fauna species dependent on the brigalow community and significant and widespread destruction of the context of the historical record. Additionally, this clearing and associated ground disturbance caused damage to places, items, and artefacts of historical cultural heritage significance (and in places destroyed them completely) and destroyed the context of the historical record as part of the cultural landscape.

It is likely that this scale of clearing, and the infrastructure associated with mining, has resulted in significant destruction of evidence of early European activity in the area. It is thought that the open cut mines at Newlands and Suttor Creek may have destroyed some of the old stockmen's and drover's camps. Recent linear infrastructure, notably the Collinsville-Elphinstone Road, the SunWater Burdekin River to Moranbah Pipeline and the Goonyella to Abbott Point (GAP) rail line (incorporating the Northern Missing Link) have had a significant impact on these camps.

As a result of the desktop review, engagement with local stakeholders and field surveys twelve sites of heritage significance were identified (refer **Figure 29-1**). Of the twelve sites, only two fall within the project area, being the 'Old drover's and ringers' camps' (sites 7 and 8). Site 8 is approximately 300 m from the out of pit waste rock dump associated with South Pit 1 and site 7 is approximately 800 m from the northern MIA and 2 km from the northern rail loop.

Five homestead complexes were identified, three of which are unoccupied, being Talwood homestead (site 4), Wollombi homestead (site 3) and Mount Lookout homestead (site 5). The heritage values of the occupied homestead complexes relate to the early construction and occupation of these values and

² N.B. At the time the non-indigenous history technical report was prepared in March 2012 (provided as Appendix 27), the Cultural Heritage Branch of DERM (now DEHP) was undertaking a state-wide heritage survey. Searches of the Queensland Heritage Register were undertaken to inform the technical report in March 2012, and again for confirmatory purposes in November 2012. DEHP has confirmed (phone corresp. 29 April 2013) that the Queensland Heritage Register, as searchable on the DEHP website, is complete and up-to-date. A recent search of the database and geospatial data was undertaken (29 April 2013) and there are no registered heritage places in the Project area.

impacts to present occupants are considered in other chapters of the EIS (e.g. Air, Noise and Vibration). The Wollombi homestead complex is the only homestead complex falling within 1 km of the project footprint (this site is approximately 850 m from the out of pit waste rock dump associated with South Pit 2).

14 Mile Camp (site 6) and the Byerwen homestead complex (site 1) are within 1 km of the project area. However 14 Mile Camp is approximately 1.5 km from the project's northern rail loop and the Byerwen homestead complex is more than 5 km from the project footprint.

Table 29-3 indicates the known historical heritage values identified in or around the project area that may be impacted by project activities. In addition to site location and description, an assessment of the level of significance, both spatially (local, regional or national) and qualitatively (low, medium or high), based on the assessment criteria of the Burra Charter for all twelve known heritage values has been completed.

As previously mentioned, due to the size of the project area, a comprehensive field survey of the whole area is infeasible, and there remains the possibility for potential heritage values not identified to be discovered during project activities.

The cultural landscape referred to in this chapter consist of a geographic area including both cultural and natural resources associated with a historical event, activity, person or place. There are generally four types of cultural landscapes (not mutually exclusive):

- sites
- designed landscapes³
- vernacular landscapes⁴
- ethnographic landscapes⁵.

The assessment of historical cultural heritage values for the project identified twelve sites connected to either ethnographic or vernacular landscapes surrounding the site. The extent of the ethnographic or vernacular landscape is variable and site specific but is nominally considered to be a 300 m radius surrounding the identified sites for the purpose of this assessment.

The ethnographic or vernacular cultural landscapes associated with the twelve sites have been assessed as having low significance (Hatte, 2012).

There are no designed landscapes identified in the study area or project area.

³ A designed landscape is a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect or horticulturist according to design principles or an amateur gardener working in a recognised style or tradition.

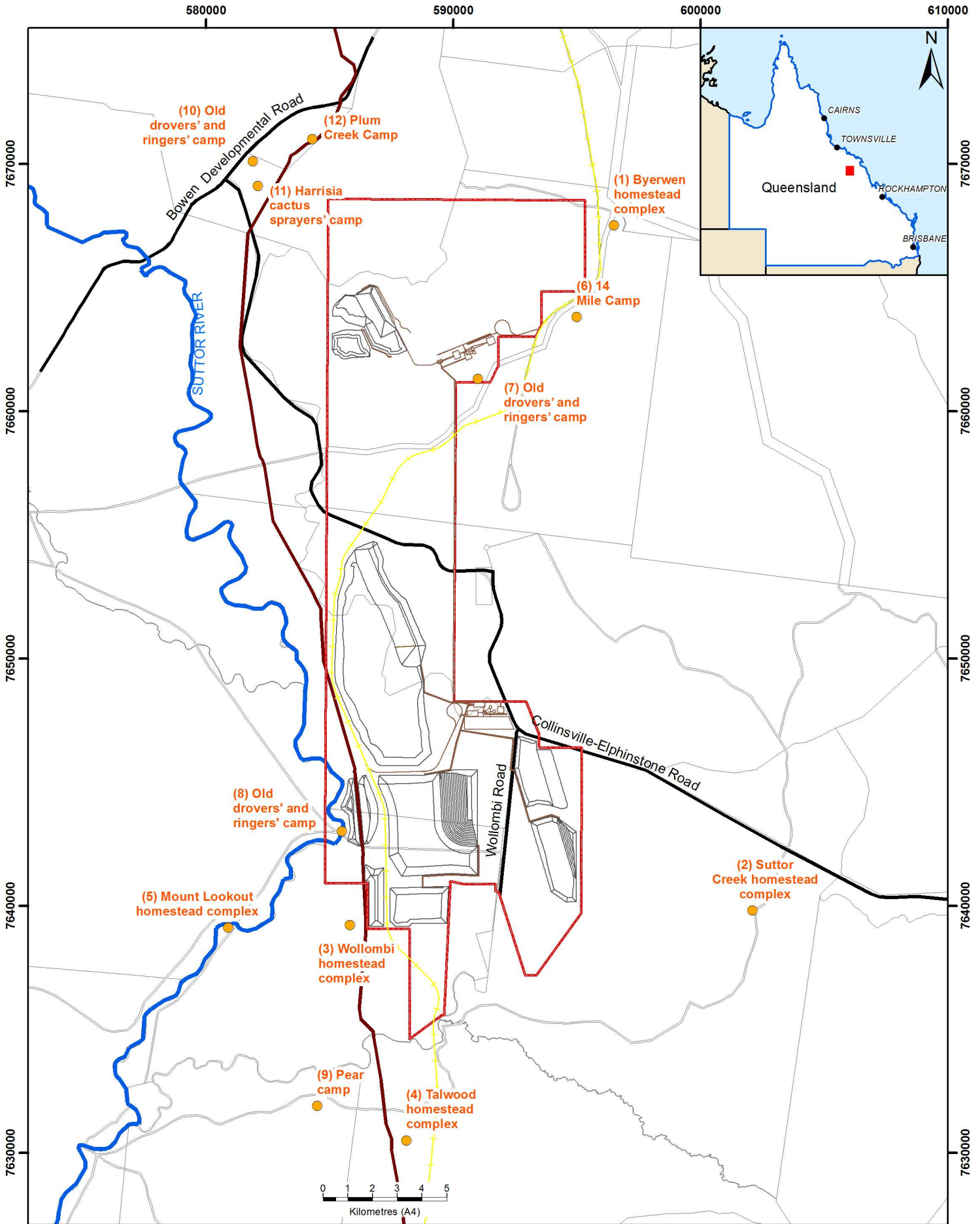
⁴ A vernacular landscape is a cultural landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives (e.g. relationship between old homesteads and the pastoral landscape).

⁵ An ethnographic landscape is a cultural landscape containing a variety of natural and cultural resources that the associated people define as heritage resources. (e.g. relationship between the old drovers and ringers camps and nearby creeks)

Table 29-3 Identified Historical Heritage Values

ID no.	Site name	Location (GDA 1994, MGA zone 55)	Description	Level of significance	Relation to project area
1	Byerwen homestead complex (late 19th C.)	E.596500/N.7667500 +/-300m	Buildings, ruins of old yards, mill, sheds, landing ground, historic grave with marble headstone.	Fabric of the early homestead has medium local significance. Grave has potential regional significance.	Outside project area
2	Suttor Creek homestead complex (late 19th C.)	E.602100/N.7639800 +/- 300m	Remains of old buildings, mill, tanks, yards, buildings.	Fabric of the early homestead has medium local significance. No regional or national significance.	Outside project area
3	Wollombi homestead complex (early 20th C.)	E 585818/N.7639207 +/-300m	Remains of old homestead; station dump, mill, tanks, yard.	Fabric of the early homestead has medium local significance. No regional or national significance.	Outside project area
4	Talwood homestead complex (early 20th C.)	E.588100/N.7630500 +/-300m	Old house, windmill, tanks, yards, landing ground.	Medium local significance. No regional or national significance.	Outside project area
5	Mount Lookout homestead complex (mid to late 19th C.)	West of Suttor River near E.580900/N. 7639100 +/-300m	Old slab house remains, yards, 12-14 historic graves. Old pump station in Suttor River waterhole nearby.	Could not access to fully assess significance. Complex has potential regional significance depending on integrity and condition.	Outside project area
6	14 Mile Camp (late 19th early 20th C.)	Junction of stock route and Kangaroo Creek near E.595000/ N.7663800 +/-300m	Old mill, tank and camp.	Low local significance.	Outside project area
7	Old drovers' and ringers' camp (late 19th early 20th C.)	Junction of Kangaroo Creek and stock route near E.591000/ N.7661300	Old tank, mill and camp on western side of creek.	Low local significance. No regional or national significance.	Within project area

ID no.	Site name	Location (GDA 1994, MGA zone 55)	Description	Level of significance	Relation to project area
		+/-300m			
8	Old ringers and drovers' camp (late 19th early 20th C.)	Eastern side of Suttor River near E.585500/ N.7643000 +/-300m	Black tank and remains of old camp.	Low local significance. No regional or national significance.	Within project area
9	Pear camp (early 20th C.)	On low ridge several hundred metres south of old track along southern side of Suttor Creek near E.584500/ N.7631900 +/-300m	Remains of old camp.	Low local significance. No regional or national significance.	Outside project area
10	Old drovers' and ringers' camp (late 19th early 20th C.)	Top of Leichhardt Range near E.581900/ N7670100 +/- 300m	Old wire cattle holding yard and remains of camp.	Low local significance. No regional or national significance.	Outside project area
11	Harrisia cactus sprayers' camp (mid 20th C.)	Top of Leichhardt Range near E.582100/ N.7669100 +/-300m	Remains of camp (drums, metal, posts etc.).	Low local significance. No regional or national significance.	Outside project area. Significantly affected by existing third party linear infrastructure (water pipeline and pump station).
12	Plum Creek Camp (late 19th or early 20th C.).	On low ridge west of Plum Creek in Fig Tree Station, near E.584300/ N.7671000 +/-300m	Wooden yards, tank, mill.	Low local significance. No regional or national significance.	Outside project area



Legend

- Project Area
- Waste Rock Dumps and Pits
- Mine Infrastructure
- Cadastre
- Historical Cultural Heritage Site Locations (+/- 300m)
- GAP Rail Line
- Burdekin to Moranbah Pipeline
- Formed Roads

Identified Historical Cultural Heritage

Figure 29-1

Byerwen Coal Project

Date: 1/03/2013

Author: samuel ferguson

Revision: R1

Map Scale: 1:200,000

Coordinate System: GDA 1994 MGA Zone 55



29.5 Potential Impacts

No sites of international or national significance were identified within the project area. Additionally, no registered sites of state significance (e.g. registered on the QHR) were identified within the project area. Therefore there will be no impact on international, national or registered state significant historical heritage sites unless there are additional discoveries of these during the project's cultural heritage surveys.

The majority of the known heritage values identified within and around the project area have local or local/regional significance and are not protected by legislation, however the grave on the Byerwen homestead complex (site 1) and the Mount Lookout homestead complex (site 5) have potential regional significance.

Project activities that have the potential at all stages of the project (including construction, operation, rehabilitation and mine closure) to impact cultural heritage include:

- ground disturbance (e.g. open cut mining, waste rock dumps and mine infrastructure)
- vibration from mine site activities (heavy vehicle movements)
- vibration from blasting
- traffic associated with the project using public roads.

Table 29-4 indicates key characteristics of the project activities and their potential impacts on heritage receptors, both known and potential.

Table 29-4 Potential Impacts of Activity Types within the Project Area

Activity	Potential impacts to heritage values
Ground disturbance	<ul style="list-style-type: none"> • Damage to/demolition of existing sites or structures • Damage or destruction to sites or features extending or hidden below topsoil • Damage or destruction of potential heritage values • Vibration may cause destabilisation and/or destruction of existing structures • Alteration of cultural landscape of associated heritage values • Additional impacts may occur by ancillary activities (e.g. heavy vehicle mobilisation, transport of materials, access routes and roads, etc.).
Heavy equipment/vehicle mobilisation	<ul style="list-style-type: none"> • Vibration may cause destabilisation and/or destruction of existing structures.
Vibration from blasting	<ul style="list-style-type: none"> • Vibration may cause destabilisation and/or destruction of existing structures.
Alteration of the cultural landscape	<ul style="list-style-type: none"> • Alteration of cultural landscape of associated heritage values.

The impacts associated with vibration from blasting and traffic on public roads have the potential to impact cultural heritage sites both within and outside the project area. These are referred to as indirect impacts below. Impacts associated with ground disturbance (project footprint) are referred to as direct impacts below.

There are no cultural heritage sites within the project area that are within the project footprint.

The cultural landscape associated with site 8 may be permanently altered by the creation of waste rock dumps and final voids. Other cultural landscapes will either not be impacted or experience negligible impacts.

Key characteristics of the activities listed in **Table 29-4** have been identified as the cause for potential impacts to known heritage values.

29.5.1 Impact to Known Heritage Values

Based on the results of the desktop review, stakeholder consultation, and field survey, **Table 29-5** provides an assessment of the potential for impact on known heritage values. Of the known heritage values listed in **Table 29-3**, only two sites fall within the project area, being the old drovers' and ringers' camps (sites 7 and 8).

Table 29-5 Potential Impacts to Known Heritage Values

ID no	Site name	Potential impacts	
		Direct (project footprint)	Indirect (e.g. vibration)
1	Byerwen homestead complex	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 6 km).
2	Suttor Creek homestead complex (late 19th C.)	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 7 km) and project being outside viewshed for site.
3	Wollombi homestead complex	None (outside project area and footprint)	Negligible potential for impact from South Pit 2 waste rock dump (approximately 600 m). The vibration assessment (refer Chapter 24) demonstrates that this site will not experience vibration levels in excess of vibration objectives for buildings. Negligible potential for impact due to vibration from blasting, with the nearest blasting occurring about 1.5 km away at South Pit 2. Temporary alteration of cultural landscape (project within immediate viewshed).
4	Talwood homestead complex	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 8 km) and project being outside viewshed for site.
5	Mount Lookout homestead complex	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 5 km).
6	14 Mile Camp	None (outside project area and footprint)	Temporary alteration of cultural landscape (project within viewshed).
7	Old drovers' and ringers' camp	None (inside project area, but not within footprint)	Negligible potential for impact due to increased vibration from traffic (approximately 1 km from central infrastructure corridor and northern MIA). Temporary alteration of cultural landscape (project within viewshed).
8	Old ringers and drovers'	Low. The camp is inside project area, but not	The vibration assessment (refer Chapter 24) demonstrates that this site will not

ID no	Site name	Potential impacts	
		Direct (project footprint)	Indirect (e.g. vibration)
	camp	within the project footprint, except for possible flood protection measures. The surrounding cultural landscape is potentially within the project footprint of the waste rock dump and flood protection measures.	experience vibration levels in excess of vibration objectives for buildings. Negligible potential for impact due to vibration from blasting, with the nearest blasting occurring about 2 km away at South Pit 1. Low potential for impact due to increased traffic associated with South Pit 1 waste rock dump which is approximately 300 m away and which will achieve its final landform by Year 3 of operations. Temporary alteration of cultural landscape (project within viewshed).
9	Pear camp	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 7 km).
10	Old drovers' and ringers' camp	None (outside project area and footprint)	Negligible potential for impact due to increased vibration from project traffic along the Bowen Developmental Road, although this is not the primary site access road. Road is approximately 200 m from the site. No likely impact from blasting due to distance from project footprint (approximately 6 km).
11	Harrisia cactus sprayers'	None (outside project area and footprint)	Negligible potential for impact from increased vibration from project traffic along to Collinsville-Elphinstone Road, although this section of road is not the primary site access road. Road is approximately 500 m from the site. No likely impact from blasting due to distance from project footprint (approximately 5 km).
12	Plum Creek Camp	None (outside project area and footprint)	No likely impact due to distance from project footprint (approximately 6 km) and project being outside viewshed for site.

The Byerwen homestead complex (site 1) and the old drovers' and ringers' camp (site 7) are approximately 500 m from the GAP rail line. Any impacts associated with increased rail traffic on the GAP rail line, including increased rail traffic associated with the Byerwen project, have been assessed by QR National as part of the Goonyella to Abbott Point Expansion (GAPE) Project EIS and do not form part of this EIS.

The old drovers' and ringers' camp (site 8) has potential for minor impacts from project activities due to the proximity to out of pit waste rock dump associated with South Pit 1. This site may be susceptible to impact due to their proximity to the waste rock dump and due to its current state of repair. A further archaeological assessment will be conducted if this site falls within 300 m of the project footprint to determine if a site-specific management plan will be required.

While the project is within the viewshed of a number of sites, it is likely this will have a negligible to minor impact on the sites during the life of the project as these sites are deserted (Hatte, 2012).

However, the final rehabilitation of the project will return the area to primarily pastoral land use and therefore the likely impact on the cultural landscape is anticipated to be negligible.

In the event any project activities will be undertaken within a buffer of 300 m around all known heritage values, a site-specific archaeological assessment will be undertaken and site-specific management strategies will be developed.

29.5.2 Impact to Potential Heritage Values

During all stages of the project (including construction, operation, and decommissioning) there is the potential for discoveries of potential heritage values. It is noted that under s.89 of the QH Act, it is a requirement to report the discovery of any archaeological artefact not previously identified in the historical cultural heritage study if the find should be of a scale to fulfil one of the significance criteria described in s.89 of the QH Act.

Several of the known heritage values (particularly Byerwen, Mount Lookout, Suttor Creek, Talwood, and Wollombi homesteads) also have a higher likelihood for associated potential heritage values to be discovered. For example, previously unidentified heritage sites may be discovered around homesteads, roads and occupied areas while it is unlikely that potential historical heritage sites will be identified in remote areas far from existing infrastructure or occupied areas.

There is also the likelihood of accidental impact on unidentified small sites or items in paddocks or on old watercourse crossings that are used as station tracks. Predictive modelling can be used to identify the types of potential heritage values that may exist and might be impacted by the project in the areas around the heritage sites shown in **Table 29-6**. Where predictive modelling indicates that there is a higher likelihood of discovering historical cultural heritage sites, persons undertaking activities in those areas will be briefed through, for example, site inductions or toolbox talks. If required, further field surveys will be undertaken.

If a project activity is anticipated to occur within 300 m of a known cultural heritage value, then a site-specific survey by a suitably qualified person will be undertaken, resulting in the preparation of site-specific management strategies upon discovery of significant cultural heritage values.

It is possible that survey marks might be discovered during mining activities. Many of the historical survey marks are not incorporated into modern databases, and it would not be feasible to conduct a comprehensive search of all historical survey documents for all organisations that created them.

Table 29-6 Potential Heritage Values That May Exist Around Types of Heritage Sites

Historical heritage sites types	Examples of associated potential heritage values
Pastoral stations, homesteads, and occupied areas	Artefacts relating to pastoral industry (fencing, tools, bottles, building materials, homewares, yards, wells, dips, camp sites, windmills and other water-control mechanisms such as small dams on creeks, etc.) may be distributed in and around (as well as along access tracks to and from) the stations, homesteads and occupied areas.
Cattle yards, early roads and stock routes	Potential heritage values may include, but not be limited to, evidence of camps near waterholes, graves, marked trees and survey marks, drains, cuttings, embankments or stone pitching, wheel ruts and jump-ups. There may be evidence of early camps used during the construction period.
Communication lines	A 1909 map of the mining districts shows a telegraph line and repeater station at Avon Downs north of the study area. Evidence of the construction and maintenance, as well as remaining examples of telegraph poles, may exist as potential heritage values.

29.5.3 Cumulative Impacts

In order to assess the cumulative impacts of this project, the known heritage values have been divided into two types – camp sites and homestead complexes.

The cumulative impacts of this project on camp sites cannot be accurately assessed as there is no way to determine the total number of such camps at a state or regional level or to determine the proportion of such camps being impacted by other projects in the region. However, only one such camp site has the potential to be impacted directly by the project (site 8) and it is likely that any impact on this heritage value would be a very small proportion of the total cumulative impact on sites of this type across the region.

There is some evidence for homestead complexes throughout the region, and many of these exist in areas near other projects. The cumulative impacts on homesteads as a heritage category across the region is difficult to accurately assess as there is limited information on the location, condition, and significance of these homesteads relative to the areas of impact from other projects. For the Byerwen project to contribute to cumulative impacts on homesteads in the region it must itself cause an impact on individual homesteads. The Byerwen project's potential to impact homesteads is low and therefore the project is not predicted to contribute to any cumulative impacts on homesteads in the region.

29.6 Management of Historical Cultural Heritage Values

The following strategies are for known heritage values that will be impacted by the final footprint and for potential heritage values that may be discovered during project activities in compliance with sections 89-90 of the QH Act. These management strategies for known heritage values will be included in the Historical Cultural Heritage Management Strategy section of the Environmental Management Plan (see **Appendix 10** of this EIS).

29.6.1 Management of Known Heritage Values

Avoidance is the preferred management strategy for heritage values. As such, project works will avoid the known heritage values (identified in **Table 29-3**) wherever possible. Known heritage values will be included in exclusion-zone mapping with fencing or pegging of the area if required.

Prior to any ground disturbing activities occurring in the immediate vicinity (within 300 m) of known heritage values, an archaeological assessment will be undertaken and a management plan or strategy specific to the item or place will be developed where required for each heritage value (identified or potential) likely to be impacted by project activities at the construction, operation and mine closure stages. This strategy will be developed in consultation with relevant stakeholders (these may include, but not be limited to, EHP, local heritage or preservation societies, and landowners) to determine the best management option and ensure full legislative compliance. At time of writing, the drovers' and ringers' camp (site 8) (while currently outside the project footprint) is the only known heritage values that may have a direct impact by the project. In the event project activity is anticipated to occur within 300 m of this site a management plan will be prepared for this site.

29.6.2 Management of Potential Heritage Values

In the event heritage values are discovered during project activities, an assessment by a suitably qualified person will be conducted to determine the best management strategy for the site and to prepare a site-specific management plan if required. The best management option can differ greatly depending on the nature of the discovery.

29.6.3 Site-specific Management Plans

Any site-specific management plan will, as a minimum, include:

- a clear procedure
- designated contacts and contact details
- resource allocation measures
- monitoring programs (including essential parameters and indicators specific to the heritage value, frequency of monitoring and reporting methodology)
- management actions (including corrective actions (e.g. repairs and/or reconstruction requirements), reporting, monitoring, staff training)
- any emergency or safety procedures relevant to the management options being applied.

The individual management plan will be developed in consultation with relevant stakeholders and will consider other management or mitigation measures such as environmental or social impact strategies being applied. A copy of the management plan will be kept by the proponent, with additional copies sent to relevant stakeholders (where applicable). The individual management plan can apply (but not be limited to) the management strategies listed below, and can be negotiated with EHP and any relevant stakeholders:

- a process for managing discoveries in full accordance with Part 9 of the QH Act
- ongoing in-situ management and/or conservation to mitigate the impact of project activities on the item or site which can include:
 - whole-of-project design changes; or, more commonly
 - small design changes to project activities in the immediate area
- removal of the object or artefact which can involve:
 - temporary relocation until project activities are completed; or
 - permanent storage at a conservation site or facility
- rehabilitation after project activities
- interpretive signage.

A plain English training manual on managing cultural heritage will be developed and provided to all site workers for their reference.

29.7 Inspections, Monitoring and Auditing

Specific inspection and/or monitoring regimes will be prescribed within any site-specific management plan to ensure the best management strategy tailored to the individual heritage value(s) is applied.

Audits of the management of any discoveries of significant historical cultural heritage (as determined by a suitably qualified person) will be conducted by the proponent after any discovery and at regular intervals during the development and implementation of a management plan to assess whether:

- the discovery was reported and managed in accordance with s.89 of the QH Act
- records of all relevant correspondence and forms is maintained
- the discovery was protected during the preparation of a management plan
- all management options were considered in consultation with relevant stakeholders, including EHP and an appropriate management plan developed
- the management plan implemented sufficiently managed the item, place or area to prevent negatively impacting historical cultural heritage values

- the item, place or area has not been negatively impacted by project activities.

Indicators to demonstrate the successful management of historical cultural heritage values may include but are not limited to:

- the item, place or area receiving no significant damage due to project activities or management activities
- the item, place or area being successfully relocated (where applicable) to a temporary or permanent location
- the item, place or area being successfully rehabilitated (where applicable) to levels established in the management plan
- the item, place or area being successfully excluded from the development (where applicable) and has not been negatively impacted by project activities.

29.8 Conclusion

Twelve sites containing historical cultural heritage values, in and surrounding the project area, were identified through desktop review, consultation with relevant stakeholders and a field survey. No sites of national, state or regional significance were identified on any registers of historical cultural heritage. Of these twelve sites, two are within the project area and are considered to have low local significance. These two sites and a third site (with medium local significance) near the project area boundary, are considered to have potential for impacts from the project, either through direct impacts of the project footprint or indirect impacts such as vibration (assessed as negligible to low impact). The other sites are considered to be at a distance from project activities where there would be no impacts or impacts would be negligible. Measures, including avoidance, detailed surveys, removal and relocation, and development of site specific management plans are proposed to mitigate potential project impacts. These mitigation measures will also be applied if additional sites of historical cultural heritage values are discovered throughout the life of the project. Given the low or medium local significance attributed to identified sites of historical cultural heritage and the adoption of mitigation measures, the significance of project impacts on historical cultural heritage is considered to be minor.