# NON-ABORIGINAL CULTURAL HERITAGE

18

#### 18.1 INTRODUCTION

Non-Aboriginal contact with the region of the EIS Study Area began in 1802, when Matthew Flinders sailed up Spencer Gulf, naming Point Lowly and other areas along the shore. Inland exploration began in the early 1800s, with the primary objective of finding good sheep-grazing land for wool production. The region's non-Aboriginal history for the next 100 years was driven by the struggle between the economic urge to produce wool and the limitations imposed by the arid environment. This resulted in boom/crash cycles associated with periods of good rains or drought.

Early exploration of the Far North by Edward John Eyre and Charles Sturt in the 1840s coincided with a drought cycle, and led to discouraging reports of the region, typified by the naming of Mount Hopeless. The expansion of pastoral settlements north of the Flinders Ranges occurred in the 1850s over several good seasons, and was encouraged by government surveys, high wool prices, and the establishment of Port Augusta in 1854. Blanchewater Station was established in 1858 and became the most northern sheep station in South Australia. Over time, the pastoral leases of the 1850s became too small to be viable and either failed or were amalgamated into larger holdings. In 1890, Blanchewater and other nearby runs were joined together to form Murnpeowie. Further north, German missionaries moved into the Cooper Creek region and established a number of Aboriginal missions in the late 1860s, including an outpost at Lake Boocaltaninna.

Infrastructure projects assisted the spread of European settlement in the north. This included the construction of the Overland Telegraph from Port Augusta to Darwin and the Great Northern Railway from Port August to Quorn and Marree in the late 1800s. Water tanks, coal bins and workers' cottages were built at regular intervals along the railway, bringing a form of permanent non-Aboriginal settlement to the region.

During the 1880s, the South Australian Government assisted the pastoral industry by drilling chains of artesian water wells along stock routes. These included wells at Clayton (on the Birdsville Track) and Montecollina (on the Strzelecki Track). The government also established a camel breeding station at Muloorina near Lake Eyre in 1900, which provided camels for police and survey expeditions until 1929.

Pernatty Station was established in 1868 and was stocked with sheep in 1871. Other stations followed, including Andamooka in 1872 and Arcoona and Chances Swamp (which later became Roxby Downs) in 1877 (see Chapter 9, Land Use, Figures 9.3 and 9.4 for location of pastoral stations). A government water reserve for travelling stock was also established further south in 1882 at a series of waterholes called Phillips Ponds, near what would later be the site of Woomera.

The connection of the rail line to Port Augusta, and the significant reductions in travel times brought about by the railway, resulted in increased shipping in the gulf. The projecting headland at Point Lowly became a significant hazard to ships, and a lighthouse was built in 1883.

Historically, mining was not an important economic activity in the region, with only minor deposits discovered in the late 1800s and early 1900s. These included the Clara Saint Dora copper mine, near Finniss Springs, which operated intermittently from 1888 to 1915. It was not until the discovery of Olympic Dam in 1975 and thereafter that mineral exploration and mining became important in the region. The name 'Olympic Dam' was taken from a small stock dam, built during the Melbourne Olympics in 1956 near the ore discovery hole, within the current mining lease (see Plate 18.1).



Plate 18.1 Olympic Dam — the small stock dam located in the existing mining lease

Defence facilities were established around Woomera following World War Two, when the flat and mostly uninhabited lands were chosen as a suitable site for testing long-range missiles. The township of Woomera was established in 1947 and supported a population of 6,000 people at its peak in the 1960s.

Today, the evidence of past non-Aboriginal settlement, such as old fences, stockyards, ruined huts and windmills, is scattered throughout the South Australian Outback. Most of these features are commonplace, and few are of heritage significance.

This chapter describes the known sites and places of non-Aboriginal cultural significance, measures to protect those sites and a process for managing new or potential sites identified during the project definition or construction phases.

## **18.2 ASSESSMENT METHODS**

### 18.2.1 APPROACH

A desktop assessment of non-Aboriginal heritage in the southern infrastructure corridor was conducted in September 2006 by heritage consultant specialists Woodhead International Pty Ltd in association with Historical Research Pty Ltd. The gas pipeline corridor options were further assessed by Historical Research Pty Ltd in 2008. Field observations were made by other EIS project scientists to confirm the findings of the desktop assessments during numerous field surveys conducted as part of the Draft EIS. Community and stakeholder consultations undertaken for the Draft EIS also provided an opportunity for people to identify issues about non-Aboriginal heritage and sites of local significance to the community.

The following steps were taken to conduct the assessment of non-Aboriginal heritage:

- discussions with pastoralists and government representatives to establish known sites of non-Aboriginal heritage value within the EIS Study Area
- · a search of the following national databases:
  - Commonwealth Heritage Places maintained under the EPBC Act and searched via the Australian Heritage Database

- Register of the National Estate (RNE) formerly created under the Australian Heritage Commission Act 1975 but now also maintained under the EPBC Act and searched via the Protected Matters Search Tool
- National Heritage Places created under the EPBC Act and searched via the Protected Matters Search Tool
- Register of Historic Shipwrecks administered under the South Australian *Historic Shipwrecks Act 1981* and searched via the National Shipwrecks database
- a search of the following South Australian and Northern Territory databases:
  - South Australian Heritage Register (SAHR) created under the Heritage Places Act 1993
  - State Heritage Areas created under the Heritage Places Act 1993
  - Northern Territory Heritage Register created under the *Heritage Conservation Act*
- · a search of the following local heritage databases:
  - Local Heritage Places these places are listed in a Schedule of Local Heritage Places within a local council's development plan
  - Historic Conservation Zones these zones are incorporated into local councils' development plans
- a review of heritage assessments undertaken as part of the two previous Olympic Dam Environmental Impact Statements (Kinhill-Stearns Roger 1982; Kinhill 1997) and the National Radioactive Waste Repository Draft EIS (PPK 2002). Prior to the Draft EIS, the two previous EIS studies for Olympic Dam were the only reports on non-Aboriginal heritage that were held by BHP Billiton. Reports cited in this chapter have now been added.
- a review of the heritage surveys conducted in areas overlapping or adjacent to the EIS Study Area, including Port Augusta, Whyalla, Andamooka, the Oodnadatta, Birdsville and Strzelecki Tracks, Cultana and Woomera (Pearce 1980; Brasse and Sanders 1984; Donovan and Associates 1984; Austral Archaeology and Donovan and Associates 1995; Austral Archaeology and Historical Research 2001; Historical Research and Austral Archaeology 2002; and Bell 2006)
- a review of aerial photographs and topographic maps to identify buildings or sites within the EIS Study Area that may have required a field visit
- observations from field surveys, including helicopter reconnaissance, conducted by scientists from other EIS disciplines to provide anecdotal evidence of non-Aboriginal heritage sites within the EIS Study Area to Historical Research Pty Ltd for review and interpretation.

A summary of previous non-Aboriginal cultural heritage surveys and assessments, and literature reviewed as part of this assessment, is provided in Appendix P2.

#### 18.2.2 IMPACT AND RISK ASSESSMENT

The assessment of impacts and risks for the proposed expansion has been undertaken as two separate, but related, processes (see Section 1.6.2 of Chapter 1, Introduction, and Figure 1.11).

Impacts and benefits are the consequence of a known event. They are described in this chapter and categorised as high, moderate, low or negligible in accordance with the criteria presented in Table 1.3 (Chapter 1, Introduction).

A risk assessment describes and categorises the likelihood and consequence of an unplanned event. These are presented in Chapter 26, Hazard and Risk.

#### 18.3 EXISTING ENVIRONMENT

The arid environment of central and northern South Australia attracted few early non-Aboriginal settlements and these were often short-lived. Evidence of these settlements, such as old fences, stockyards, hut ruins and windmills, is scattered throughout the South Australian Outback.

The EIS Study Area contains no world heritage properties or national heritage places, however, the EIS Study Area does contain places on the RNE and other heritage registers. Those places within the EIS Study Area which are listed on various heritage registers are (see Figures 18.1 and 18.2 for locations in the gas pipeline corridor options and southern infrastructure corridor respectively):

- Blanchewater Homestead ruins listed on the RNE and the SAHR. It includes the ruins of two major buildings, smaller huts, stockyards and rubbish deposits. This was the first homestead in the region, established in 1858. Blanchewater was incorporated into Murnpeowie in 1890, and Blanchewater became an outstation. The buildings were abandoned in 1940 (see Plate 18.2)
- the Point Lowly Lighthouse Complex listed on the RNE and the SAHR. It includes the lighthouse, two keepers' cottages, the power house, oil store, signal flag mast and reserve land (2.14 hectares). The lighthouse was constructed in 1883, raised in height in 1909 and decommissioned in 1993. Whyalla City Council now operates it as a tourist attraction

- two sites in Andamooka the Andamooka Heritage Area (listed on the RNE and SAHR) and Dick Clark's residence (listed on the RNE)
- thirteen sites in Port Augusta the RNE lists the drinking fountain, Institute on Commercial Road, Port Augusta Courthouse, the rotunda on Marryatt Street, St Augustine's Anglican Church and Hall, the Town Hall and Waterworks Building and water tower as heritage places, all located in the urban area. The SAHR provides legal protection for these sites, as well as for the first railway station in Commercial Road and second railway station in Stirling Street, the former School of the Air in Flinders Terrace, the former Bank of South Australia in Tassie Street and the railway wharf
- three historic shipwreck sites off Point Lowly the Register of Historic Shipwrecks lists the protected sites of the Sarah (1876), Parara (1882) and Angler (1913) shipwrecks.

The Quarantine Anti-Aircraft Battery Site, located at the Port of Darwin (East Arm), is listed on the Northern Territory Heritage Register. It was established in 1941 to defend the south west section of Darwin, and consists of reinforced gun placements (or revetted emplacements), a central bunker, and slabs where the administration, mess and kitchen building stood.

Consultations and field observations undertaken during the Draft EIS identified the following sites in the EIS Study Area not listed on heritage registers but considered to be of local significance (see Figures 18.1 and 18.2 for locations):

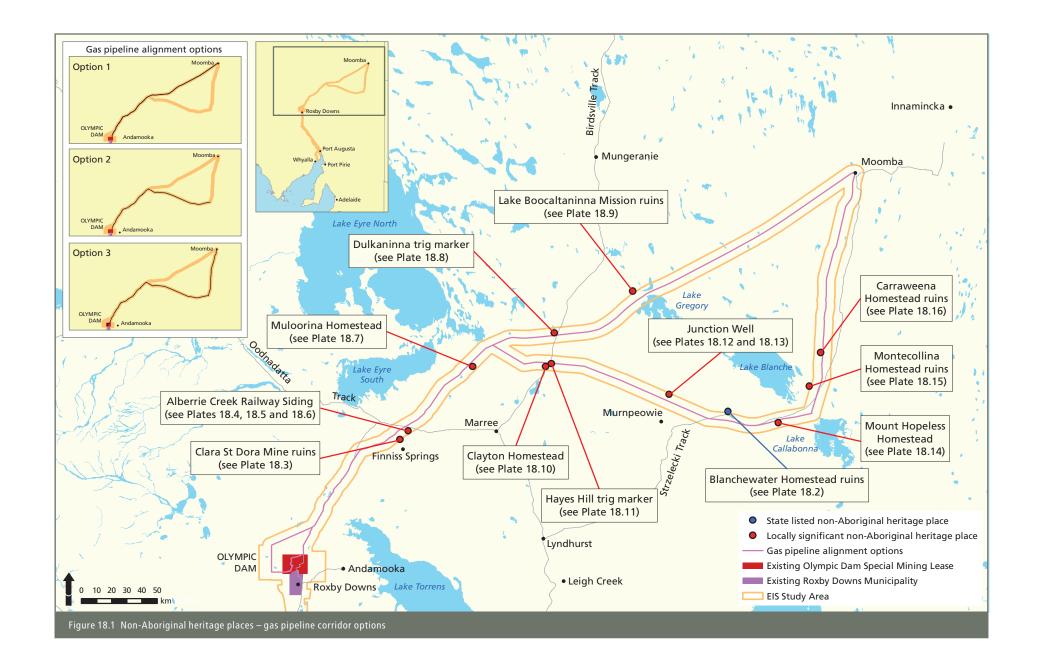
- Clara St Dora Mine ruins earthworks including open pits, boilers and machinery from an early 20th century mining operation (see Plate 18.3)
- Alberrie Creek Siding a railway dam and water tank (1884), railway house (1926) and modern sculpture including Plane Henge (2000) (see Plates 18.4, 18.5 and 18.6)
- Muloorina Homestead a complex of modern buildings (see Plate 18.7)
- Dulkaninna trig marker a stone cairn on open plain (see Plate 18.8)
- · Lake Boocaltaninna Mission ruins stone and timber ruins of two buildings (see Plate 18.9)



Plate 18.2 Blanchewater Homestead ruins



Plate 18.3 Clara St Dora Mine ruins



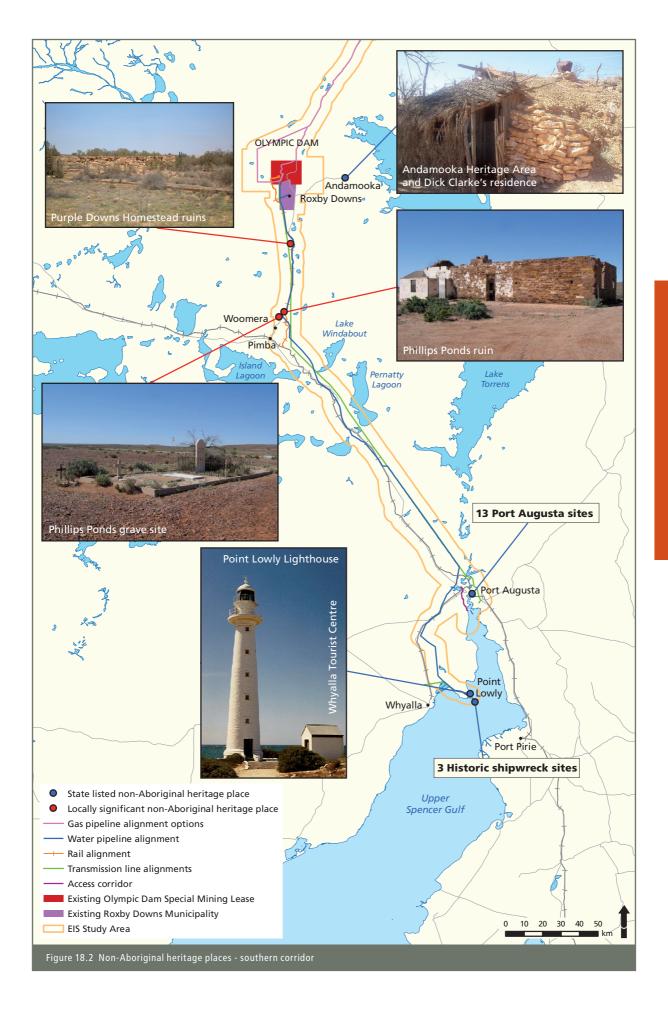








Plate 18.7 Muloorina Homestead

Clayton Homestead – a complex of modern buildings (see Plate 18.10)

- Hayes Hill trig marker a stone cairn on a hilltop (see Plate 18.11)
- Junction Well windmill, large stone watering trough and an accommodation hut (see Plates 18.12 and 18.13)
- Mount Hopeless Homestead a stone house and outbuildings (see Plate 18.14)
- Montecollina Homestead ruins remains of a stockyard. Other building relics may be buried in drifting sand (see Plate 18.15)
- Carraweena Homestead ruins remains of two stone buildings (see Plate 18.16)
- Phillips Ponds ruins a building ruin and grave site (see Figure 18.2 for picture)
- Purple Downs Homestead ruins a cluster of buildings, a groundwater well, stone tank, trough and cemetery (see Figure 18.2 for picture).

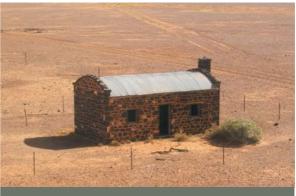
A draft report to the Department of Defence identifies additional sites in the Woomera-Nurrungar areas (Environmental Resources Management 2005). This draft report, which includes a heritage significance listing for the Woomera site as a whole, has not been accepted yet by either the Department of Defence or the Australian Department of the Environment, Water, Heritage and the Arts. If the report is accepted, its findings and their relevance to the proposed Olympic Dam expansion would be reconsidered. The South Australian Department for Environment and Heritage (DEH) has indicated that Woomera is considered to be of significant heritage value, even though a formal study has not been undertaken.

No sites of non-Aboriginal heritage value have been identified in the vicinity of the proposed landing facility, access corridor or pre-assembly yard near Port Augusta. Although the Register of Historic Shipwrecks lists four other protected historic shipwreck sites between Point Lowly and Port Augusta – the Letty (1866), James and Margaret (1878), Apollo (1889) and Alpha (1921) shipwrecks – these are outside the EIS Study Area.

The proposed facilities at Outer Harbor would be constructed on currently disturbed or reclaimed land that has no significant sites of non-Aboriginal heritage.











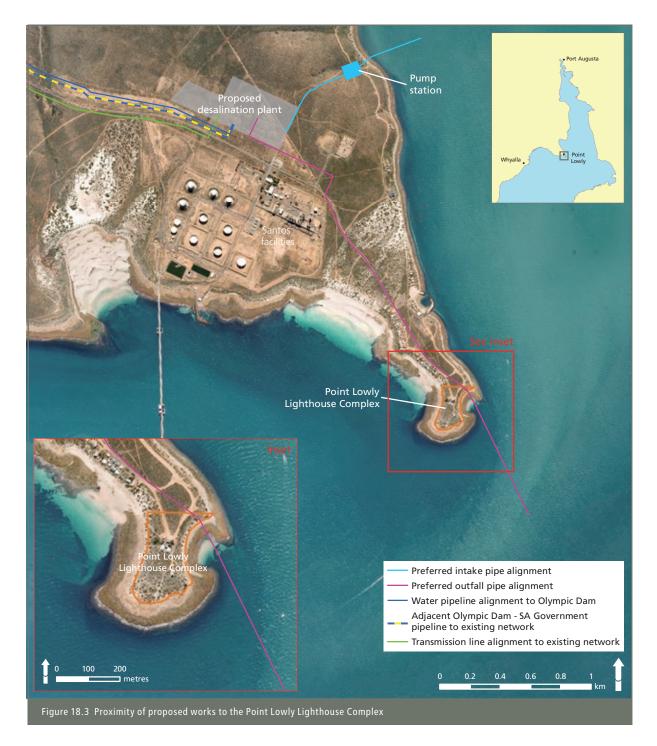








Olympic Dam Expansion Draft Environmental Impact Statement 2009



## 18.4 DESIGN MODIFICATIONS TO PROTECT ENVIRONMENTAL VALUES

#### 18.4.1 ENVIRONMENTAL VALUES

Section 18.3 notes there are no national non-Aboriginal heritage places or world heritage properties within the EIS Study Area. There are 20 sites within the EIS Study Area that are listed on various heritage registers, and consultation and field observations for the Draft EIS identified 13 additional sites that are not listed on registers but are considered to have local heritage value. One site at the Port of Darwin, near the proposed BHP Billiton facility at East Arm, is listed on the Northern Territory Heritage Register.

Protecting non-Aboriginal cultural heritage sites and places is a project planning, design and management objective.

#### 18.4.2 MAJOR ELEMENTS OF THE PROJECT DESIGN

Planning has focused on aligning linear infrastructure to avoid sites and places of non-Aboriginal cultural heritage significance. Disturbance footprints would also be minimised during design, construction and operations of infrastructure.

Section 18.5 describes the additional mitigation measures that would be implemented during construction and operations to manage and protect non-Aboriginal heritage sites and places.

# 18.5 IMPACT ASSESSMENT AND MANAGEMENT 18.5.1 POINT LOWLY LIGHTHOUSE COMPLEX

The Point Lowly Lighthouse Complex is located about 2.5 km from the proposed desalination plant (see Figure 18.3). The return water outfall pipe may be located within the Point Lowly Lighthouse Complex but would avoid the heritage structures (see Figure 18.3). The pipe would be buried completely, limiting potential impacts on the visual appeal of the lighthouse to the construction phase only.

A combination of land-based and underwater blasting may be required to excavate the trenches to bury the intake and outfall pipes for the proposed desalination plant. Should blasting be required, a maximum charge size of 10 kg would be used, and would involve sequential detonations to minimise potential airblast, overpressure and vibration impacts. An assessment of the likely impact of blasting on the Point Lowly Lighthouse, marine life and nearby residences has been undertaken (see Appendix O12.2, Blasting). The assessment found that predicted airblast and vibration levels from blasting would comply with recommended building damage criteria for sensitive sites, based on Australian and international standards. In the event that the ultimate pipeline alignment requires blasting to be within 100 m of the Point Lowly Lighthouse, the charge size of blasts in the area would be adjusted to ensure compliance with these criteria. A review of the Conservation Plan for the Point Lowly Lighthouse found that the buildings are in good condition, with no apparent structural defects. The conclusions of the assessment were that neither airblast or ground vibration levels from land-based nor underwater blasting would be expected to cause structural building damage.

Should the pipe be located in the heritage complex, the predicted residual impact is categorised as low, because blasting would comply with recommended building damage criteria, such that there would be no direct impact on the heritage structures.

Management measures to further reduce and monitor potential impacts on this site include:

- minimising the construction period and disturbance footprint of the outfall pipe within the heritage complex
- providing prior notice of construction works to the South Australian DEH and prospective tourists to the lighthouse
- consultation with the South Australian DEH to establish acceptable design and construction criteria for the pipeline and other requirements during the construction phase
- undertaking pre- and post-blasting building conditions surveys at the Point Lowly Lighthouse
- monitoring blast patterns to ensure compliance with the appropriate airblast and vibration criteria
- keeping accurate records describing the location of each blast and all blastholes, the design of the blast in terms of explosives and initiating system usage, and ground vibration and airblast measurement data.

#### 18.5.2 OTHER SITES ON HERITAGE REGISTERS

The search of heritage registers identified one site of non-Aboriginal heritage value in the gas pipeline corridor options, and 15 sites in the southern infrastructure corridor – two sites in Andamooka and 13 sites in Port Augusta (see Section 18.3 for the Port Augusta sites). One site was also identified at the Port of Darwin (East Arm).

Blanchewater Homestead ruins are in an isolated location beside the road from Lyndhurst to Innamincka. This site is listed in the SAHR. It is an offence to excavate in the vicinity without a permit from the South Australian Heritage Council. The homestead ruins and nearby archaeological remnants lie on the edge of the southern gas pipeline corridor options (alignment options 2 and 3 on Figure 18.1) and would be avoided if the gas supply pipeline was constructed. Locating mobile work camps away from the site and implementing codes of practice/behaviour would further reduce potential impacts.

The Andamooka sites are the Andamooka Heritage Area and Dick Clark's residence. All sites are located in urban areas that would not be disturbed by the proposed expansion. As a consequence, the expansion has been assessed as having no residual impact on these sites.

Three historic shipwreck sites were identified in the sea off Point Lowly (see Section 18.3). The wreck of the Parara was sold and salvaged in 1882, and no remnants remain *in situ*. No physical evidence of the two other shipwrecks has been located. The proposed construction works associated with the desalination plant intake and outfall pipelines have been categorised as having a negligible residual impact on these sites.

The Quarantine Anti-Aircraft Battery Site, at the Port of Darwin, would not be disturbed or impacted by the construction or operation of the proposed BHP Billiton facility at East Arm. The proposed construction and operation of the facility has been categorised as having a negligible residual impact on this site.

#### 18.5.3 OTHER SITES NOT ON HERITAGE REGISTERS

Thirteen places within the EIS Study Area that are not listed on national, state or local heritage registers were identified as being of local heritage significance. Four places have been identified as being of local significance in a heritage survey, but no action has yet been taken to include them in a schedule under the *Development Act 1993*. The remainder have been assessed as having local heritage value on the basis of the historical research and observations gained from field surveys conducted for the Draft EIS.

Most of these sites are in the gas pipeline corridor options (see Figure 18.1). The proposed gas supply pipeline and associated ancillary infrastructure (e.g. construction camps and main valve lines) would avoid the sites listed below. Codes of practice/behaviour would also be developed for construction workforce to help avoid indirect impacts.

The Clara St Dora Mine ruins and earthworks include open pits, boilers and machinery from an early 20th century mining operation. Although the site has been identified as being of local heritage value, it has not been included yet in a schedule of the Development Act. The South Australian Government would be responsible for doing this under provisions of the Development Act because the ruins fall within the unincorporated (out-of-council) area of South Australia.

The Alberrie Creek Siding includes a railway dam and water tank (1884), railway house (1926) and modern sculpture. The two Beechcraft Baron aircraft standing upright beside the track are known as Plane Henge (see Plate 18.6), and were erected by sculptor Robin Cooke in 2000 'to mark the passing of the Earth Dream Journey'. The site has not been identified as being of local heritage value because it was located outside the boundaries of previous outback heritage surveys.

The Muloorina Homestead had a complex history as an early homestead from the 1880s. It became a government camel depot from 1900 to 1929, and was abandoned in 1938. The site now comprises a complex of occupied modern buildings. The site has not been identified as being of local heritage value, as it was located outside the boundaries of previous outback heritage surveys.

Dulkaninna trig marker is a stone cairn built as a survey marker by government surveyor Samuel Parry in 1858. Although a heritage survey has identified the site been as being of local heritage value (Historical Research et al. 2002), it has not been included yet in a schedule under the Development Act.

Lake Boocaltaninna Mission was established as a Lutheran mission in 1867 and remained occupied as an outstation until about 1916. There are fragmentary stone and timber ruins of two buildings that probably date from 1867. Although a heritage survey has identified the site as being of local heritage value (Historical Research et al. 2002), it has not been included yet in a schedule under the Development Act.

A government artesian well was sunk on Clayton Homestead in 1908 to provide water for travelling stock. The homestead became a horse change station on the mail route to Birdsville. The Clayton pastoral lease was taken up in 1956, and the homestead comprises a complex of occupied modern buildings. The site has not been identified in a heritage survey as being of local heritage value.

Hayes Hill trig marker is a stone cairn built as a survey marker by government surveyor Samuel Parry in 1858. The site has not been identified as being of local heritage value, because it was located outside the boundaries of previous outback heritage surveys.

Junction Well was built as a watering place for stock in about 1890. It includes a large stone watering trough and an accommodation hut. Although a heritage survey has confirmed that the site is of local heritage value (Historical Research et al. 2002), it has not been included yet in a schedule under the Development Act.

Mount Hopeless Homestead was built as an outstation of Murnpeowie in about 1890. The house is still occupied and has been modernised. The site has not been identified in a heritage survey as being of local heritage value.

Montecollina Homestead ruins form part of the pastoral station established in 1873. A government artesian well was sunk at Montecollina Homestead in 1903 to provide water for travelling stock. The homestead became a horse change station on the mail route to Innamincka. It was abandoned during a drought in 1935. The site has not been identified in a heritage survey as being of local heritage value.

Carraweena Homestead ruins form part of the pastoral station established in the 1870s, which later became a horse change station on the mail route to Innamincka. It was abandoned during a drought in 1935. The site has not been identified in a heritage survey as being of local heritage value.

In the southern infrastructure corridor, the Phillips Ponds ruins are a prominent local landmark with an interesting history, forming a link with the earliest decades of pastoral settlement. As such, they are of local heritage value. They are located next to the main road north of Woomera. No disturbance works for the rail line, transmission line or water supply pipeline would affect this site.

A cluster of buildings, a groundwater well, stone tank, trough and cemetery on the Purple Downs homestead are also considered to be of minor local significance. The proposed electricity transmission line, water supply pipeline and rail line alignments, which are located approximately one kilometre away, would have no direct impact on these sites.

Active management is not considered necessary to conserve Phillip Ponds or the Purple Downs sites. The linear infrastructure in the vicinity of these sites has been aligned in such a way as to avoid direct impact on them. Additional disturbance activities associated with ancillary works (e.g. siting of laydown areas and borrow pits) would also avoid these sites.

If changes made to linear infrastructure alignments resulted in direct impacts on these sites, the requirements of the *Heritage Places Act 1993* would be followed. This would include taking a photographic record of the site and its context, which would be provided to the South Australian DEH.

#### 18.5.4 MANAGEMENT PROCESS FOR NEW SITES

If new or potential non-Aboriginal heritage sites were identified in South Australia during the project definition or construction phases, the sites would be managed according to the *Heritage Places Act 1993*. A photographic record of the site and its context would be taken and provided to the South Australian DEH. If the remnants or relics of historic shipwrecks were located, the South Australian DEH would be contacted and remnants managed according to the *Historic Shipwrecks Act 1981*.

In the event that a site or relic was found during construction or operation of the proposed facility at East Arm in the Northern Territory, the relic would be managed in accordance with the *Heritage Conservation Act*, such that the finding would be reported to the Northern Territory Department of Natural Resources, Environment, The Arts and Sport, and a permit obtained for any work on, or removal of, the heritage site or item.

#### 18.6 FINDINGS AND CONCLUSIONS

Early non-Aboriginal settlements were scarce and often short-lived in the arid environment of the EIS Study Area. Twenty places listed under relevant heritage databases and 13 places of local significance have been identified in the EIS Study Area.

Two places listed on heritage registers (Blanchewater Homestead ruins and the Point Lowly Lighthouse Complex), four places identified in previous heritage surveys (Clara St Dora Mine ruins, Dulkaninna trig marker, Lake Boocaltaninna Mission ruins and Junction Well) and nine other places of local heritage value identified by EIS project scientists, fall within the infrastructure corridors.

Blasting may be required to construct the intake and outfall pipes for the proposed desalination plant at Point Lowly, near the heritage listed Point Lowly Lighthouse Complex.
Blasting would comply with recommended building damage criteria for sensitive sites, such that no direct impact on the heritage structures would be expected. The residual impact has therefore been categorised as low. Management measures have also been provided to further reduce and monitor potential impacts on this site.

None of the other heritage sites in the EIS Study Area would be directly affected as a result of the proposed expansion because linear infrastructure alignments and ancillary infrastructure (e.g. construction camps) would avoid these sites. Management measures have also been provided to minimise the indirect impacts on these sites.

The proposed facility at Outer Harbor would be constructed on currently disturbed or reclaimed land that has no significant sites of non-Aboriginal heritage. One heritage site has been identified at the Port of Darwin, but this would not be disturbed or impacted by the construction or operation of the proposed BHP Billiton facility at East Arm.