

## Aboriginal Due Diligence Report

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Hexham Depot Modification  
22 March 2022



## Aboriginal Due Diligence Report

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## Executive summary

This report presents the results of an Aboriginal Archaeological Due Diligence Assessment for the development of a depot, warehouse and wagon storage (the Modification Proposal) to support the ongoing operations of the Hexham Long Term Train Support Facility (Hexham LTTSF Project)

The assessment has been prepared to ensure Aurizon Holdings Ltd exercises due diligence when carrying out the construction of all developments in the Modification proposal to ensure that Aboriginal objects are not harmed. This report has been prepared to satisfy the Due Diligence Code of Practice for the Protection of Aboriginal objects in New South Wales (DECCW 2010).

The Due Diligence assessment follows the procedures outlined in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010). The assessment concludes that that the proposed works areas do not contain and are not likely to contain any Aboriginal objects. As a result of the high levels of modifications to the original landform and the disturbance caused by the historical land use of the area, the assessment has concluded that it is highly unlikely that Aboriginal objects will be present in the Site.

It is recommended that no further Aboriginal cultural heritage assessment actions or mitigation measures in addition to pre-existing controls are required, and the proposed works can proceed with caution.

This Due Diligence assessment does not constitute consent to harm Aboriginal objects, nor it is a 'site clearance' mechanism to allow activities to occur in an area where Aboriginal objects are likely or known to be present.

If Aboriginal objects are discovered during the proposed works, works must stop immediately, and an assessment must be undertaken in accordance with Part 6 of the *National Parks and Wildlife Act 1974*. If the activity cannot avoid harm to Aboriginal objects, works cannot proceed until an Aboriginal Heritage Impact Permit has been issued.

### Important note about your report

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## Acronyms and abbreviations

**ACHAR** Aboriginal Cultural Heritage Assessment Report

**ACHRP** Aboriginal Cultural Heritage Consultation Requirements for Proponents

**AHIMS** Aboriginal Heritage Information Management System

**AHIP** Aboriginal Heritage Impact Permit

**CHL** Commonwealth Heritage List

**DECCW** Department of environment, Climate Change and Water NSW

**Due Diligence Code** Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales

**DPE** Department of Planning and Environment

**EPBC Act** Environmental Protection & Biodiversity Act 1999

**EIS** Environmental Impact Statement

**EP&A Act** Environmental Planning and Assessment Act 1979

**Heritage Act** The Heritage Act 1977

**Km** kilometres

**LALC** Local Aboriginal Land Council

**LEP** Local Environmental Plan

**LGA** Local Government Area

**M** Metres

**NPW** National Parks and Wildlife

**NSW** New South Wales

**OEH** Office of Environment and Heritage

**PAD** Potential Archaeological Deposit

**PAS** Potential Archaeological Sensitivity

**SHR** New South Wales State Heritage Register

## 1. Introduction

### 1.1 Purpose of Report

This Due Diligence Report has been prepared for the development of a depot, warehouse and wagon storage (the Modification Proposal) to support the ongoing operations of the Hexham Long Term Train Support Facility (Hexham LTTSF Project), Hexham (the Hexham LTTSF Site).

The Modification Proposal is to be undertaken as a modification (under Part 5, Section 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act)) to the Hexham LTTSF Approval (MP07\_0171).

This report has been prepared in accordance with the following, identified within the DPIE letter (dated 17/09/2021):

- The Secretary's Environmental Assessment Requirements (SEARs) issued for SSI-6090 Mod 1 (previously MP 07\_0117 MOD 1)
- The relevant industry specific SEARs applicable to warehouse development.

### 1.2 What is Due Diligence?

The *National Parks and Wildlife Act 1974* establishes the strict liability offence of harming Aboriginal objects where they were not known to be present. The Due Diligence process was established to provide a defence to this offence. Therefore, Due Diligence is a legal defence against prosecution where Aboriginal objects are harmed when it was reasonably considered that they would not be present in an activity area. In effect, following a due diligence process amounts to taking reasonable and practicable steps to protect Aboriginal objects.

The determination of whether Aboriginal objects are present or are likely to be present can be made by following the Due Diligence Code of Practice, in situations where it is appropriate and applicable to do so. A Due Diligence assessment will allow the identification of where Aboriginal objects are, or are likely to be, whether the proposed activity is likely to harm those objects and determine whether an AHIP is required prior to the commencement of that activity.

Due Diligence assessments do not constitute consent to harm Aboriginal objects, nor are they a 'site clearance' mechanism to allow activities to occur in an area where Aboriginal objects are likely or known to be present. If it is known or considered likely that Aboriginal objects are present, a full assessment must be undertaken and an AHIP granted prior to the activity taking place.

### 1.3 Limitations

This due diligence assessment comprises:

- A search of the Aboriginal Heritage Information Management System (AHIMS)
- Limited desktop assessment, including a review of previous heritage assessments, environmental data, past land use activities and other relevant information
- Site inspection of the impact footprint of proposed works, which consist of the proposed locations of the boreholes, and vehicle access tracks
- Production of this report

In preparing this report, Jacobs has relied on information recorded on the AHIMS database and other documentation, such as previously prepared heritage assessments. Jacobs has not independently verified or checked the information provided beyond the agreed scope of work. Jacobs does not accept liability in

connection with such unverified information, including errors and omissions in this report caused by errors or omissions in that information.

This report addresses the archaeological potential for Aboriginal objects only. It has not included consultation with any Aboriginal groups or individuals, and so does not include input from potential Aboriginal stakeholders and cultural knowledge-holders. The due diligence assessment does not include an assessment of Aboriginal cultural values associated with the proposed works area.

### 1.4 Authorship

The report was prepared by Jake Ferguson (Graduate Archaeologist, Jacobs). Jake has worked for Jacobs for over 2 years as an intern, he is currently studying a bachelor of archaeology at Macquarie University.

The report was reviewed by Fran Scully (Principal Archaeologist, Jacobs). Fran holds an MSc in archaeological geophysics from the University of Bradford and has over 29 years' experience as an archaeologist and cultural heritage advisor.

Mapping was prepared by Noah Tarlo (Undergraduate GIS analyst).

### 1.5 Proposed development background

Aurizon ('the proponent') owns 255 hectares of industrial zoned land located at Hexham in the Hunter Valley of New South Wales (NSW). The Hexham Long Term Train Support Facility (LTTSF) occupies approximately 38 hectares of this industrial zoned land.

- The proponent is proposing to construct new infrastructure for a depot at Hexham LTTSF to support the relocation of the Newcastle Train Crew Depot and Maintenance Warehouse from 121 Woodstock Street, North Mayfield, to a designated area at the Hexham LTTSF, and
- store wagons on soil at a designated area at the Hexham LTTSF due to a reduction in coal haulage demand

The functions of the Newcastle Train Crew Depot and Maintenance Warehouse, and Hexham LTTSF are intrinsically related in that the Newcastle Train Crew Depot and Maintenance Warehouse primarily provides rail, safety and maintenance staff and supplies which are utilised and mobilised by the Hexham LTTSF. As a result, there is a considerable amount of transportation of personnel and goods between these operational facilities.

The depot relocation aims to provide efficiencies in the deployment of train crews accessing locomotives servicing the Hunter Valley; and consolidate Aurizon's operations, maintenance and warehousing staff and facilities into a single location.

### 1.6 Proposal location

The development site is located to the west of the Hunter River at Hexham and is bounded by Maitland Road and the Hunter railway line in the east and the Hunter Wetlands National Park (Hexham Swamp Nature Reserve) in the west (refer to Figure 1-1). It is approximately 12 kilometres to the Port of Newcastle and is situated adjacent to the main northern railway line within the Newcastle Local Government Area. The development site is legally described as Lot 104 in DP 1189565.

The project area has been comprehensively modified from its original state and now exists as highly modified land, with a notable absence of trees, shrubs and native ground layer vegetation, evidence of widespread soil disturbance (excavation and filling), interspersed with primarily exotic flora species and depressions. Moreover, the Site has been historically cleared of any native vegetation and has been reportedly used in the past for heaped placement of spoil material (coal reject, gravel and brick), and subsequently seeded with



hardy annual grasses, mainly *Cenchrus clandestinus* (Kikuyu Grass) to stabilise the material and prevent erosion.

## 1.7 Key Terms

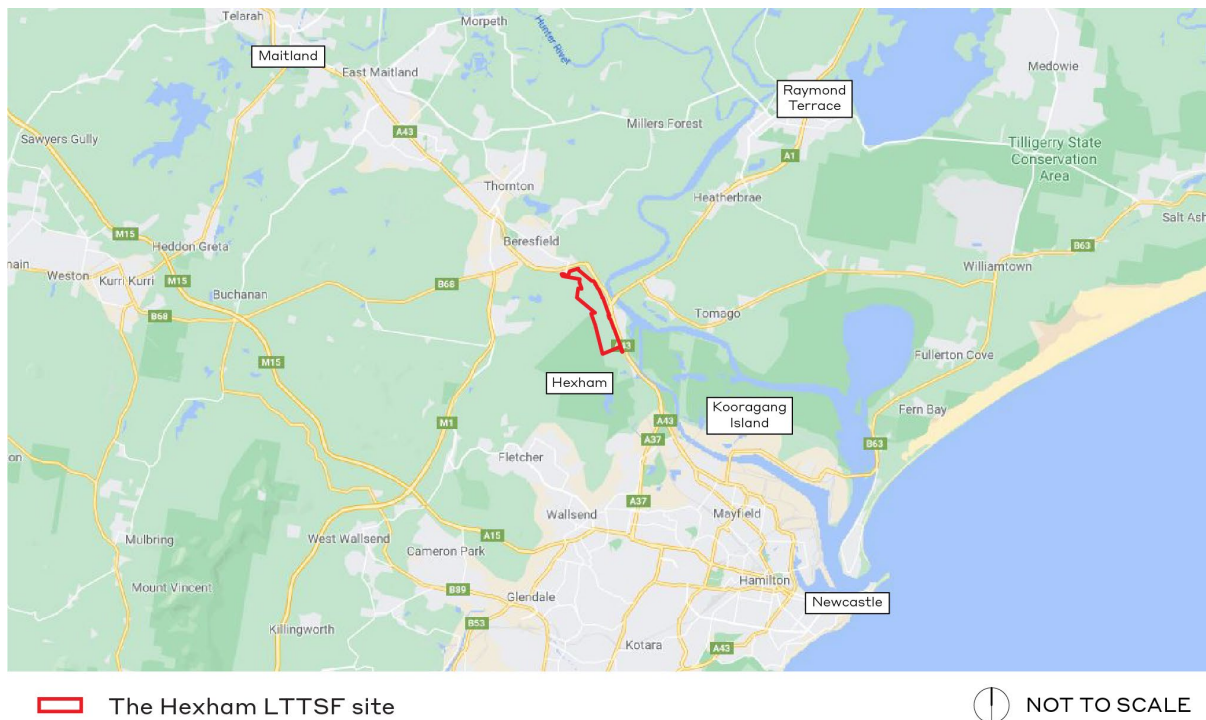
Table 1-1 identifies the key terms which are relevant to this report.

**Table 1-1. Key project terms**

Term	Description
The Modification Proposal	The depot, warehouse, wagon storage and associated development for which approval is sought, as SSI-6090 – Mod 2.
Hexham LTTSF Project	The Hexham Long Term Train Stabling Facility (and associated development) approved under MP 07_0117, now SSI 6090 (inc. Mod 1).
The Hexham LTTSF Project Site	Area on which the Hexham LTTSF is located, and the surrounds assessed under the MP 07_0117, now SSI 6090 (inc. Mod 1).
The Site	The area where the Modification Proposal works are to be undertaken. This area signifies the area to be directly impacted/disturbed by the Modification Proposal.

## 1.8 Site Description

The LTTSF site is located at Maitland Road, Hexham within the Newcastle Local Government Area approximately 16km north-west of Newcastle CBD. The Hexham LTTSF site has a total area of 255ha with the LTTSF Project developed on a 38ha portion of the site parallel to (and to the west of) the Great Northern Railway (GNR). The LTTSF site is located within an industrial setting with only a small number of dwellings within the local vicinity of the site. The site’s locational context, depicting proposed wagon storage area, depot warehouse and carpark is shown in Figure 1-2.



**Figure 1-1. The Hexham LTTSF is located north-west of Newcastle**

The Modification Proposal is fully contained within Lot 104 DP1189565 which is owned by Aurizon. The Hexham LTTSF Project Site covers multiple lots which are not affected by the Modification Proposal. The location of the Site in the context of the Hexham LTTSF Project Site is provided within Figure 1-3 with the project boundary shown in Figure 1-4.



Figure 1-2. Site Context (consideration of previous approvals)

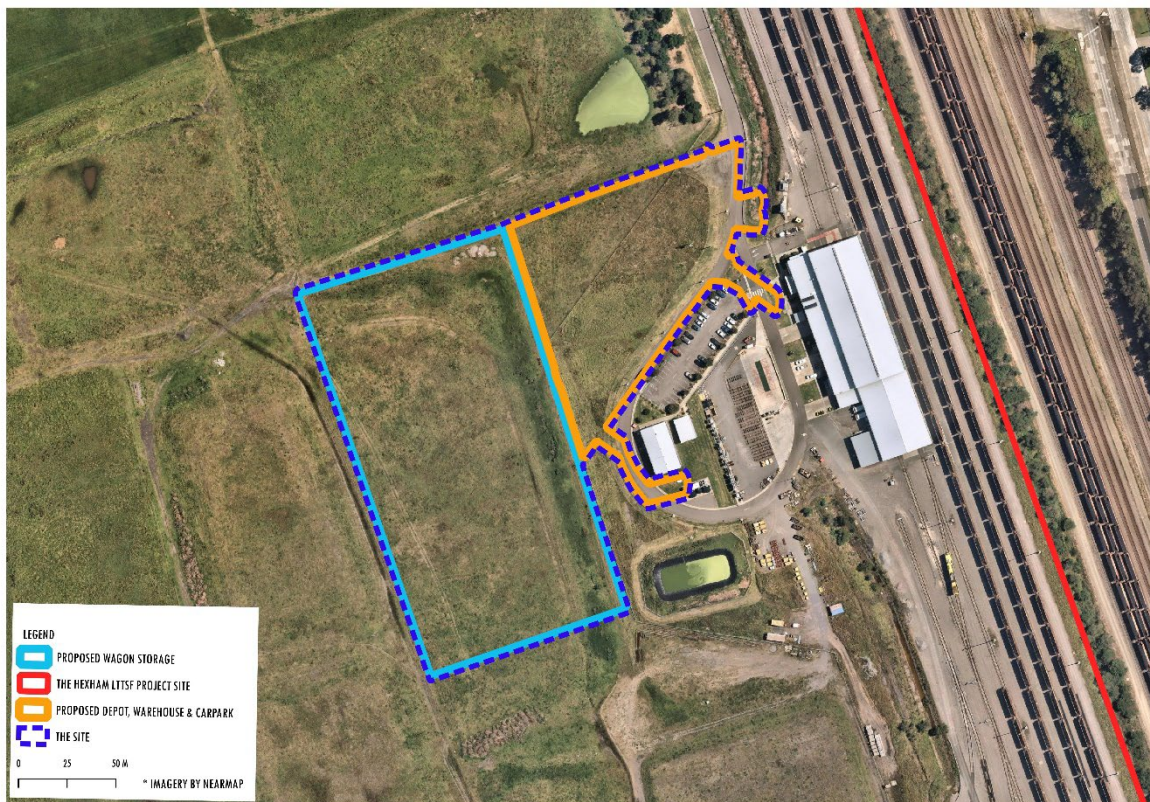


Figure 1-3. Site Location

## 1.9 Modification Proposal Description

The Modification Proposal is located within the Hexham LTTSF site (identified within the Hexham LTTSF Project) at a location previously cleared and disturbed by historical coal handling activities and the LTTSF Project construction.

The Modification Proposal includes the development of a depot, warehouse, wagon storage and associated development to support the ongoing operations of the Hexham LTTSF Project.

An overview of the Modification Proposal is as follows:

- Site preparation and earthworks, including the construction of the following elements:
- A warehouse for the storage of rail maintenance equipment.
- A depot for office staff and train crew
- Ancillary staff and visitor carpark connected to the private roadway (existing main access road)
- Rail wagon storage area located on the western portion of the site
- Ancillary infrastructure (hardstand, water management, landscaping, lighting etc).
- Connection to utilities.

The depot and warehouse would be operated 24 hours per day, 7 days per week.

## 2. Legislative Context

The following sections outline Aboriginal heritage legislation relevant to the assessment.

### 2.1 Environmental Planning & Assessment Act 1979 (EP&A Act)

The Environmental Planning and Assessment Act 1979 (EP&A Act) provides the legislative framework for environmental planning and assessment in NSW. The EP&A Act includes the requirement for environmental impacts to be considered prior to development approval. It includes a requirement for impacts or likely impacts upon Aboriginal cultural heritage to be assessed as part of a project's environmental approval, and for Local Government Areas (LGAs) to prepare Local environment plans and development control plans in accordance with the EP&A Act to provide guidance on the level of environmental assessment required.

SEARs for the project were approved on 19 December 2018 by the Secretary of the Department of Planning and Environment.

### 2.2 National Parks and Wildlife Act 1974 (NPW Act)

The National Parks and Wildlife Act 1974 (NSW) (NPW Act) protects Aboriginal heritage within NSW.

An 'Aboriginal object' is defined by the NPW Act (Section 5(1)):

*Aboriginal object means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

An 'Aboriginal place' is a place gazetted by the Minister, under the NPW Act (Section 84):

*The Minister may, by order published in the Gazette, declare any place specified or described in the order, being a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture, to be an Aboriginal place for the purposes of this Act.*

Protection of Aboriginal heritage is outlined in Section 86 of the NPW Act, as follows:

- *"a person must not harm or desecrate an object that the person knows is an Aboriginal object" (Section 86(1))*
- *"a person must not harm an Aboriginal object" (Section 86(2))*
- *"a person must not harm or desecrate an Aboriginal place" (Section 86(4))*
- Harm is defined under the NPW Act (Section 5) as *any act or omission that destroys, defaces or damages the object or place, or – in relation to an object – moves the object from the land on which it had been situated.*

Section 87(1) of the NPW Act provides that it is a defence to these provisions if the harm is authorised by an AHIP.

Section 87(2) of the NPW Act provides that it is a defence to the provisions of Section 86(2) if the defendant exercised due diligence to determine whether an Aboriginal object would be harmed, and reasonably determined that no Aboriginal object would be harmed. That is, a proponent could be found not guilty of the strict liability offence if they can demonstrate that all reasonable steps were taken to investigate the likelihood of Aboriginal objects and places being present and impacted by the proposed activity.

This is not a defence to the offence of knowingly harming an Aboriginal object (offences that contravene Section 86(1)).

### 2.3 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales

The Due Diligence Code of Practice (DECCW 2010) is a document that details a generic Due Diligence Code of Practice with regard to Aboriginal objects and places.

This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

- Identify whether Aboriginal objects are, or are likely to be, present in an area

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- Determine whether their activities are likely to harm Aboriginal objects (if present)
- Determine whether an Aboriginal Heritage Impact Permit (AHIP) application is required

Consultation with the Aboriginal community is not a formal requirement of the due diligence process. However, proponents may wish to consider undertaking consultation if it will assist in informing decision-making. If at any point an application is made for an AHIP then the consultation must be undertaken in accordance with the requirements in clause 60 of the National Parks and Wildlife Regulation 2019 (NPW Regulation).

### 3. Environmental Context

#### 3.1 Landform

The subject area is located approximately 2km west of the Hunter River and is within Hexham Swamp. Hexham Swamp covers over 900 hectares and is the largest freshwater swamp on the north coast of NSW (NSW National Parks and Wildlife Service 2008). The site is located south west of the Aurizon buildings and is accessed via unsealed roads.

#### 3.2 Geology and Geomorphology

Hexham is located in the Sydney Basin, bounded to the north by the New England Fold Belt, and the Lachlan Fold Belt to the south. The underlying geology of the Site can be viewed in Figure 3.1, is comprised of Triassic, Permian and Quaternary deposits. The Narrabeen group is made up by Triassic deposits, with the Newcastle Coal Measures dominating as the Permian deposits. These areas are characterised by alternating siltstone and sandstone layers, with coal, shale, tuff and conglomerates also present (Matthei 1995).

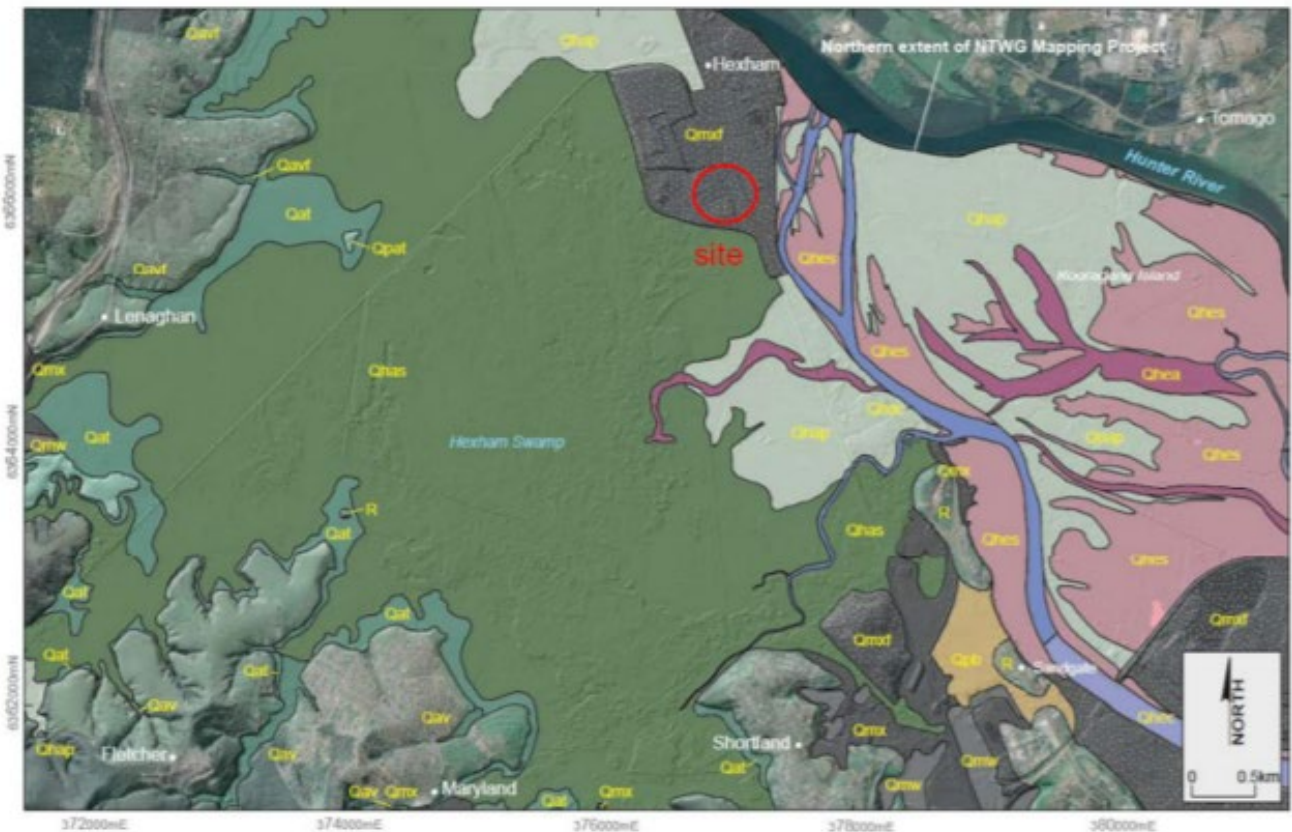


Figure 3-1. Underlying Geology of the site  
(Department of Industry, 2015 report as cited by Aurizon 2018)

Within the greater Hunter Valley, soils are typically duplex with discernible soil horizons that relate to weathering of the parent rock. Archaeologist often classify these soil horizons as A, B, and C Horizons. Topsoils are typically classified as the A horizon and are known to most typically contain Aboriginal objects. B horizon soils are subsoils and may contain Aboriginal objects at the interface with the A horizon. The C horizon is the parent rock. In the Hunter Valley, these soils typically comprise fine grained sand, silt, clay and fluvial deposits. This alluvium is derived from erosion of Bringelly Shale and may be suited to the preservation of chronologically discrete archaeological deposits. Although the site has been disturbed it can be assumed that these soil horizons were previously present across the Site.

### 3.3 Climate and Vegetation

The climate of the study area typically ranges from a minimum average temperature of 1 degree Celsius, to a maximum average of 43 degrees Celsius (Aurizon Operations Ltd 2018). It is typically warm, or warm to hot with humid summers and cool to mild winters. Annual rainfall is an average of 1155mm.

Hexham Swamp is the largest freshwater swamp on the north coast of NSW (NSW National Parks and Wildlife Service 2008). In the 1970 the swamp contained 11 of the 14 types of coastal wetland types found in NSW (NSW National Parks and Wildlife Service 2008, p. 9). Vegetation patterns of the area are relatively unknown prior to European settlement, however in 1978 the swamp was described as four main zones:

- The south-east zone - predominantly saltmarsh and mangroves. Dominated by grey mangrove, red samphire (*Sarcocornia quinqueflora*), saltwater couch, and paspalum
- The central portion - predominantly a reed community dominated by *Fimbristylis ferruginea* with minor areas of the common reed (*Phragmites australis*).
- The upper reaches – described as freshwater meadows and seasonal freshwater swamps. Most diverse area and is dominated by cumbungi (*Typha australis*) and many other freshwater species, for example, water hyacinth (*Eichhornia crassipes*).
- To the north-west - freshwater grassy swamps consisting of submerged aquatic plants, reeds, paspalum, *Eleocharis spp.* and other agricultural fodder plants. Hexham Swamp currently appears to be dominated by one single community, the reed *Phragmites*

### 3.4 Summary

The environmental context of the surrounding area depicts a potentially rich area in terms of archaeology. However, the extreme disturbance of the Site negates the potential for archaeology within the immediate area of the Site boundaries. Before the disturbance of the area, Indigenous land use would be seen within the use of rich resources within the swamp and surrounding lands. Tools associated with fishing, campsites and shell middens may have been present in the Site.

## 4. Cultural context

### 4.1 Historical land use

The Hunter Valley was settled by Europeans from 1804 when the Hunter River was used as an outpost for punishment for prisoners who had re-offended. The area subsequently developed into an agricultural area with a farming and dairy industry. The 2019 study area played a significant role within the coal industry from the 1930s onwards. In the mid-1930s coal preparation occurred on the Site, and only increased in 1955 with the construction of a coal washery. The processing and washing of coal continued until 1967.

Since the earliest days of European settlement in the Hunter Valley, the area's development has been driven by the coal mining and rural industries. Both industries underpin the history of the site which was used for agricultural and dairying purposes from the 1830s and were linked to the coal industry from 1857 following the construction of John Eales' railway to carry coal from his Minmi mines to loading facilities on the Hunter River at Hexham. Over the ensuing years, however, developments associated with the rural industry may be considered minimal when compared to those related to the transport and treatment of coal.

### 4.2 Aboriginal Context

#### 4.2.1 Regional Context

Occupation of Australia has been established to have occurred over 60,000 years ago. Although Australia is a Late Pleistocene occupied continent, there are few sites dated to this age especially on the Eastern coastal strip. Well-known Late Pleistocene sites occur within the Cumberland Plain, where occupation comes primarily from fluvial sand bodies next to the Parramatta and Hawkesbury Rivers (McLaren et al. 2018), with sites such as Shaws Creek KI and KII demonstrating human occupation from 15,000 years onwards (Williams et al. 2012).

Within the Central Lowlands of the Hunter Valley Aboriginal occupation commonly dates and/ or is associated with the Late Holocene Period around 3,000- 5,000 years ago (calibrated before present) (Hughes et al. 2014, p. 35). The sites that are common are open sites with surface scatters and lithics/ stone tools as the dominant archaeological material.

#### 4.2.2 Ethnohistory

As in many places throughout Australia, there is not a significant amount of systematically recorded ethnographic accounts of Aboriginal people. Additionally, it is important to recognise that the accounts that do exist are not necessarily accurate or objective reflections of encounters with Aboriginal people.

The Pambalong (also known as the Bambalong) tribe have been recorded as occupying the Hexham Swamp area (Gunson 1974, p. 30). Due to mixed accounts, it is unclear whether the Pambalong were a sub-group of the Awabakal group or a separate group entirely. Threlkeld (1892) provides detailed ethnographic information on the Awabakal who are suggested to have occupied the Newcastle area (refer to Figure 4.1). Hexham Swamp is referred to by local Aboriginal people as Burraghinhbihng (Dangar 1826 as cited in Hartley 1995, p. 87). There are some accounts which provide brief descriptions of the environment prior to European clearing. Hartley (1995) described the presence of Paperbark species surrounded by the shallow swamp margins, with these margins contained reeds, casuarinas, and a mix of eucalyptus undergrowth.

Other accounts in the area include James Askew, who in the early 1850s described an Aboriginal male as an 'old native, the last of his tribe, wall-eyes and nearly blind', continuing to describe him as a man of 'frankness and intelligence, [whose] wants were abundantly supplied by a few individuals residing near the river, on whose banks he spent much of his time basking in the sunshine.' (Askew 1857, p. 298- 230).

#### 4.2.3 Social Organisation and Subsistence

The Awabakal were divided into several clan groups which had their country in different areas (refer to Figure 4.2). The clans were divided between the lands of the Pambalong (or Swamps District), Ash Island, Kurungbong, and Lake Macquarie. Each land allowed its clan to look for food and materials for tools and weapons. Specifically, in relation to the study is Ironbark Creek. This is an area which not only provided



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Aboriginal people with good resources, but also contained a knob or hillcrest. The knob was and still is highly significant spiritual area to Aboriginal people today.

The language of these tribes of the Awabakal group, as well as the wider region is called Worimi. It is part of the Pama- Nyungan languages (Dixon 2002).

## 5. Archaeological Context

### 5.1 Aboriginal Heritage Information Systems (AHIMS)

A search of Aboriginal objects, sites and places registered on the AHIMS within the site was obtained on 9th December 2021. The search was conducted by Jake Ferguson (Graduate Archaeologist, Jacobs) and consisted of a 2.5 km buffer surrounding the Site.

No Aboriginal sites, objects or places were registered directly within the confines of the Site. However, 5 sites were registered in the northern and southern portions of Hexham swamp (Table 5-1), depicting that the ridges of the swamp were more favourable for Aboriginal occupation. The Hexham Swamp is located 0.5km southwest of the Site. The Hexham Swamp is a well-documented area of high cultural and archaeological significance.

**Table 5-1. AHIMS search results**

AHIMS ID	Site Name	Datum	Coordinates (Zone 56) Eastings	Coordinates (Zone 56) Northings	Site Features
38-4-0249	T 8;	AGD	378200	6367400	Open camp site
38-4-0250	T 8_A_(T9);	AGD	378400	6367300	Open camp site
38-4-2026	HS-IF-1	GDA	378437	6364343	One recorded artefact
38-4-1581	HS PCD 1 (not a site)	GDA	376000	6367970	Potential Archaeological Deposit Site had been deleted
38-4-1581	HS PCD 1(not a site)	GDA	376000	6367970	Potential Archaeological Deposit Site had been deemed invalid



**Figure 5-1. AHIMS search results**  
 AHIMS sites within the radius of the project

## 5.2 Previous Archaeological Investigations

Previous investigations within the wider region have included reports by Dean-Jones and Mitchell (1993), Haglund (1999) and Kuskie (2000). These investigations have assessed that open camp sites are the dominant site type, closely followed by isolated finds. Other site types within the region include grinding grooves, scarred trees, rock shelters, shelters with art and burials although all of these site types occur to a lesser extent than open camp sites.

In relation to the Site, two previous Aboriginal archaeological assessments have been conducted. Their findings are as follows:

### AMBS (2013)

AMBS (2013) was commissioned by Upper Hunter Valley Alliance UHVA to undertake an archaeology test excavation for the Hexham Relief Roads Project. The excavations were located on an alluvial plain near the margins of Hexham Swamp (north of the 2019 Site). Site distribution was predicted as:

- likely to be located within 200m of water sources, and on the margins of Hexham Swamp;
- some sites likely to have high numbers of artefacts, particularly if located on the margins of Hexham Swamp or the Hunter River; and
- some may occur within flat, open depression, simple slope and crest formations.

Furthermore, sites were predicted to contain flaked stone artefacts such as flakes and cores, often made from raw material such as silcrete and Indurated Mudstone/Tuff/Chert (IMTC), with smaller amounts of quartz and other materials. The excavation confirmed the prediction that the northern section of the study area was less favourable for occupation as it is low lying and waterlogged. Rather than using the swamp plain for occupation, the swamp edges would have supported long-term camping, while the plain would have provided rich resources.

### McCardle Cultural Heritage Pty Ltd (2012)

The study area for the McCardle Cultural Heritage Pty Ltd (2012) report overlays with the current Site, with an extra extension north into land which was not part of the coal washing facility. The northern section is referred to as Survey Unit 1 and is a low-lying swamp/ flat which has been previously cleared for agricultural purposes and remains pastureland. The southern section is referred to as Survey Unit 2 and this is land which has had extensive land use, used as a coal stockpile and coal washery, which has meant the original landform has been significantly modified. The McCardle assessment of the Hexham region aimed to assess whether any Aboriginal material would be uncovered during construction of the TSF. The 2012 report provides a variety of site type and location predictions for archaeological material for the broader Central Lowlands of the Hunter Valley region. These predictions take into account previous archaeological reports and can be summarised as follows:

- a wide variety of site types are represented in the broader region with open campsites and isolated artefacts by far the most common
- lithic artefacts are primarily manufactured from mudstone and silcrete with a variety of other raw materials also utilised but in smaller proportions
- site numbers and artefact volumes are greatest within close proximity to water
- there appears to be a secondary peak in site numbers and artefact volumes at distances over 100 metres from water and
- creek lines, crest/ridges and slopes are the most archaeologically sensitive landforms.

Furthermore, McCardle Cultural Heritage Pty Ltd (2012) provides a more specific predictive model for Survey Unit 1, which was to the north of the Hexham LTTSF:

- Artefact scatters are the most common site type encountered within Survey Unit 1 and increase in numbers and density on low gradient landforms bordering wetlands and watercourses such as simple slopes, basal slopes and ridge crests/spur crests
- Surface artefact scatters are generally low in numbers and density, but are not an indication of the numbers and density of any subsurface artefacts
- Subsurface artefacts are typically located in the topsoil and shallow "A" horizons. Because of this, artefacts are particularly subject to post depositional processes, therefore affecting the integrity of a site
- Isolated finds may be encountered in any landform
- Middens may be found along the margins of the wetlands, but post-depositional processes may not have been favourable to their preservation. The potential for them to occur in the study area is considered low and
- Other site types who's potential to occur is low include scarred trees, mythological/traditional sites, quarry sites, scarred trees and stone arrangements.

Of particular relevance to this report, McCardle assessed the current site (Survey Unit 2) as being disturbed with none of the original landforms remaining (McCardle, 2012: 13).

### **Jacobs (2019)**

In 2019 Jacobs visited the site Aurizon train depot in response to the creation of the Hexham train support facility. The results of the desktop assessment and site inspection confirm that there are no Aboriginal sites, objects, or PADs within the site. Given the destruction of the original landform and the disturbance caused by historical land use of the area, the assessment concluded that it is highly unlikely that the proposed works would harm any identified or potential Aboriginal objects.

## **5.3 Predictive Modelling**

A review of previous archaeological reports suggests there is potential for Aboriginal archaeological sites, objects and deposits in certain landscape contexts to the north of the Site. These results conform to the established local archaeological predictive model, which generally considers that the low-lying land of Hexham Swamp would have been unfavourable for camping because of water saturation. long-term cultural activities that would result in extensive in situ archaeological sites are considered unlikely to occur in this landscape.

However, the Site has been assessed to be significantly disturbed and has limited to no potential for Aboriginal objects or sites to be located within it.

## 6. Site Visit

### 6.1 Timing and Personnel

An inspection of the Site was undertaken by Jacobs archaeologists Clare Leever and Jake Ferguson on 21 December 2021 with Aurizon representative, Harry Egan.

#### Site Context

The weather on the day of the survey was hot and dry with minimal cloud cover. The general landscape was dry yet lush. The area surrounding the Site is used as pastoral land which is reflected in the grazed vegetation. The Site was accessed via an unformed road which bounds the Site on its western side. The land is used as pastoral land for dairy cattle and is heavily eroded due to agriculture and rain. Erosion can be seen on various slopes and drainage sections within the Site.

Geotechnical investigations have previously occurred in the Site. Their locations were identified during the survey, which provided insight into the subsurface deposits in the Site. The subsurface remnants from geotechnical testing displayed fill, consisting of coal and rail ballast. This reinforced the previous assessment of the area as being highly disturbed.

The geotechnical data provides an indication that the landform across the Site has been completely modified. Two spoil piles from geotechnical studies are present within the proposed location for the depot area. In the wagons storage 4 minor spoil piles have been created due to unknown ground disturbances. The presence of these spoil piles and the knowledge that the entire landscape has had decades of coal deposition emphasises the destruction of the original landform.

Mixed in within the coal refuse is the presence of whole and fragmented shell as can be seen in Figure 6-4 and is seen exclusively in the proposed wagon storage area. This material is understood to have been brought in with bedding sand dredged from the Swansea Channel as fill material. Also observed within the Site was the frequent occurrence of historical material such as metal nails of varying size where also present, often pressed into the earth. Alongside this, on the southern section of the Site two stormwater inlets exist to assist during times of flooding.



**Figure 6-1. South facing photo of Site**  
*Proposed location for depot, warehouse and carpark*



**Figure 6-2. Remnants of past geotechnical investigation**  
*Example of sub surface spoil in project area (depot, warehouse and carpark)*



**Figure 6-3. North facing photo of area surveyed**  
*Proposed location for wagon storage*



**Figure 6-4. Hole in ground with erosion**  
*Example of subsurface spoil in the project area (wagon storage)*



## 6.2 Results

The Site comprised of two areas with distinct landforms. The raised undulating slopes within the proposed wagon storage area were unnatural within the context of the general area.

Proposed depot, warehouse and car park consisted of flat ground which is seen to have been raised through years of activity and dumping of fill in the area. When viewing the surrounding the area including the swamp, the project appears to be 2 to 3 metres raised from its natural level.

Overall, the Site displayed clear signs of previous and extensive modification through analysis of the landscape and previous geotechnical investigations that have taken place. Ground surface visibility was low, with extensive grass coverage. At the bottom of each slope erosion was evident from water, which revealed layers of fill. A total of 2 Geotech areas were identified and visited, showing the highly disturbed subsurface layers underneath.

One stone with potential flaking was observed during the survey, of indeterminate material. No other examples of this type of material were identified in the Site. It is considered probably that this item was imported within spoil brought into the Site. Although the stone had potential flaking, closer inspection indicated that it had been fractured mechanically and further damaged during the spoil transportation. It is not considered to be cultural in origin and not classified as an Aboriginal object.

Shells were identified in the proposed wagon storage area and were seen all throughout areas of high exposure. They comprised of varieties of shellfish, whole and fragmentary, predominantly juvenile. Any adult sized shellfish were closed. There was no evidence that any of the shellfish had been eaten. No cultural material was identified within, or in any proximity to the shells. The presence of whole and fragmented shells consisting of primarily juvenile shellfish, indicates that the shell is likely to be of natural, rather than cultural, origin. Anecdotal evidence indicated that fill on site was taken from dredging the bottom of the Swansea Channel, which supports the interpretation that this shell does not represent cultural material.

There are no sites recorded on AHIMS for the Site and no Aboriginal objects were identified as a result of the site visit.

Sites located in AHIMS are located on the boundaries of the swamp plain, predominantly to the north of the Site which is an area previously highlighted as containing potential objects and sites. The Site was assessed to have a low potential for the presence of Aboriginal archaeological material. As the area was used as a coal production facility and a washery for over 30 years, the original landscape has been significantly modified and there is a low chance of any Aboriginal objects or sites remaining.



**Figure 6-5. Shell littered throughout wagon storage area**  
*Minor shell fragments*



**Figure 6-6. Stone with potential flaking**  
*Raw material found in wagon storage area*



**Figure 6-7. Picture of stone with potential flaking**

*Raw material found in wagon storage area*

## **7. Assessment of potential impact to Aboriginal heritage**

No previously recorded Aboriginal objects are located within the Site. No Aboriginal objects were identified during the site visit. The Site was used as a coal production facility and a washery for over 30 years, as a result, the original landscape has been significantly modified. The Site was previously assessed to have a low potential for the presence of Aboriginal archaeological material. This was confirmed by the site visit. There is a low to negligible chance of any Aboriginal objects or sites being located within the Site.

As the Site has been assessed as not having a likelihood of containing any Aboriginal objects, the ground disturbance that would occur through the proposed works would not harm Aboriginal objects. The proposed works are consequently assessed as having a negligible potential to impact Aboriginal heritage and no additional mitigation measures are proposed.

## 8. The Due Diligence Process

The Due Diligence Code of Practice provides a series of questions that must be answered to determine the outcome of the due diligence process. These questions are addressed in Table 8-1.

**Table 8-1. Due Diligence questions and responses**

Question	Answer	Comment
Will the activity disturb the ground surface or any culturally modified trees	No	The area has already been highly disturbed. The Site lacks any form of trees.
Are there any Confirmed AHIMS records Other sources of information Landscape features	no	Recorded AHIMS sites are far from the Site and are irrelevant for the Site The Site landforms depict a highly disturbed landscape
Can harm to Aboriginal objects be avoided	yes	The Site does not display signs of having any form of Aboriginal objects
Does a desktop assessment and visual inspection confirm the presence of Aboriginal objects, or that they are likely to be there	no	The Site does not display signs of having any form of Aboriginal objects
Is further assessment required	no	

## 9. Recommendations

No further archaeological investigation or other Aboriginal cultural heritage assessment work is required for the Modification Proposal. No Aboriginal objects were found to be present in or around the proposed activity areas, and the areas were assessed as not having a likelihood to contain Aboriginal objects.

Following the procedures set out in the Due Diligence Code of Practice (DECCW 2010), it is assessed here that the proposed works would not harm any Aboriginal objects.

Based upon the potential impacts of the Modification Proposal and the previously established mitigation measures (most recent within the Mod 1) no additional mitigation measures are considered necessary. The relevant mitigation measures established as part of the Hexham LTTSF Project (MP 07\_0117 – now SSI 6090 Mod 1) would be implemented as relevant for the Modification Proposal.

It is recommended that the proposed works occur only within the areas considered by this Due Diligence investigation. If works occur outside these areas, this Due Diligence investigation would not constitute a defence in the event that Aboriginal heritage was impacted.

It should be noted that this Due Diligence report would not constitute a defence to the intentional harming of any Aboriginal object that might be identified within the proposed works area subsequent to the writing of this report.

## 10. References

AMBS 2013 Hexham Relief Roads Project: Test Excavation Reports, Unpublished report prepared for Yooer Gunter Valley Alliance.

Askew, J. 1857 *A Voyage to Australia and New Zealand*. London.

Aurizon Operations Ltd 2018 Aurizon NSW Long Term Train Support Facility Turning Angle Design Report (100% Issue), Hexham.

BMT Eastern Australia Pty Ltd 2018 Hexham Train Support Facility Turning Angle- Flood Assessment, Broadmeadow.

Dean-Jones, P. and P.B. Mitchell 1993 Title. Unpublished report prepared for the, Unpublished report to NPWS.

Department of Environment Climate Change and Water (DECCW) 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW. Sydney: NSW Government.

Dixon, R.M.W. 2002 *Australian Languages: Their Nature and Development*. Volume 1. Cambridge: Cambridge University Press.

Gunson, N. 1974 *Australian Reminiscences & Papers of L.E. Threlkeld*. Canberra: AIAS.

Haglund, L. 1999 Ulan Coal Mine's Second Longwall Project Environmental Impact Statement: Preliminary survey for Aboriginal sites, Report to Kinhill Engineers.

Hartley, D.T. 1995 *Men of their Time: Pioneers of the Hunter River*. North Arm Cove, NSW: Aquila Agribusiness Pty Ltd.

Hughes, P., N. Spooner and D. Questiaux 2014 *The Central Lowlands of the Hunter Valley, NSW: Why so Few Early Sites Have Been Found in This Archaeologically-Rich Landscape*. Australian Archaeology 39.

Kuskie, P.J. 2000 An assessment of two aboriginal grinding groove sites at Ulan coal mine, Central Tablelands, New South Wales, Report to Ulan Coal Mines Limited.

Matthei, L.E. 1995 *Soil landscapes of the Newcastle 1:100 000 (Allworth, Stockton, Maitland, Paterson)*.

McCardle Cultural Heritage Pty Ltd 2012 QR National Hexham Train Support Facility, LGA: Newcastle: Aboriginal Heritage Impact Assessment, Unpublished report to ADW Johnson Pty Ltd,.

McLaren, A.P., G. Oakes, L. Atkinson, D. Jordan and P.S. Toms 2018 *Mid-to-Late Holocene Aboriginal Flaked Stone Artefact Technology on the Cumberland Plain, Sydney, New South Wales, Australia: A View from the South Creek Catchment*. Lithic Technology 43(4):202-227.

NSW National Parks and Wildlife Service 2008 *Kooragang Nature Reserve and Hexham Swamp Nature Reserve Plan of Management*. Unpublished Report, NSW National Parks and Wildlife Service.

OEH 2012 National Parks and Wildlife Act 1974. <http://www.legislation.nsw.gov.au/>.

Threlkeld, L.E. 1892 *An Australian Language*.

Sydney. Williams, A.N., P. Mitchell, R.V.S. Wright and P.S. Toms 2012 *A terminal pleistocene open site on the Hawkesbury River: Pitt Town, New South Wales*. Australian Archaeology(74):85-97.

Wonnarua People 2014 *The boundaries of the Hunter Valley Aboriginal people*. Retrieved from <<http://wonnarua.org.au/images/Boundaries%20of%20the%20hunter%20valley%20aboriginal%20people.pdf>>

## A. AHIMS search results



### AHIMS Web Services (AWS)

#### Search Result

Your Ref/PO Number : Hexham Mod Depot

Client Service ID : 646221

Jacobs Group (Australia) Pty Ltd - North Sydney

Date: 09 December 2021

Level 7 177 Pacific Highway  
North Sydney New South Wales 2060  
Attention: Alexandra Seifertova

Email: alexandra.seifertova@jacobs.com

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 374767.0 - 378718.0, Northings : 6363982.0 - 6368054.0 with a Buffer of 0 meters, conducted by Alexandra Seifertova on 09 December 2021.**

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

<b>5</b>	<b>Aboriginal sites are recorded in or near the above location.</b>
<b>0</b>	<b>Aboriginal places have been declared in or near the above location. *</b>



## B. Extensive AHIMS Search



### AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : Hexham Mod Depot  
Client Service ID : 646221

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-0249	T 8;	AGD	56	378200	6367400	Open site	Valid	Artefact : -	Open Camp Site	1845,102116,1 02568
	<b>Contact</b>									
	<b>Recorders</b>									
	<b>Permits</b>									
38-4-0250	T 8_A_(T9);	AGD	56	378400	6367300	Open site	Valid	Artefact : -	Open Camp Site	1845,102116,1 02568
	<b>Contact</b>									
	<b>Recorders</b>									
	<b>Permits</b>								3993	
38-4-2026	HS-IF-1	GDA	56	378437	6364343	Open site	Valid	Artefact : 1		
	<b>Contact</b>									
	<b>Recorders</b>									
	<b>Permits</b>									
38-4-1610	HS PCD 1 (not a site)	GDA	56	376000	6367970	Open site	Deleted	Potential Archaeological Deposit (PAD) : 1		
	<b>Contact</b>									
	<b>Recorders</b>									
	<b>Permits</b>									
38-4-1581	HS PCD 1(not a site)	GDA	56	376000	6367970	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
	<b>Contact</b>									
	<b>Recorders</b>									
	<b>Permits</b>									

**\*\* Site Status**

**Valid** - The site has been recorded and accepted onto the system as valid

**Destroyed** - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

**Partially Destroyed** - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

**Not a site** - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 09/12/2021 for Alexandra Seifertova for the following area at Datum :GDA, Zone : 56, Eastings : 374767.0 - 378718.0, Northings : 6363982.0 - 6368054.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 5

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.