Appendix O – Aboriginal Cultural Heritage Assessment Report

ADDENDUM TO ACHAR - PROJECT AREA AMENDMENT

Drought Response Desalination Plant, Belmont, NSW

Addendum to ACHAR - Project Area Amendment
Addendum to ACHAR - Project Area Amendment
1.5a Project Update
24 June 2020

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Document status

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1 INTRODUCTION

RPS has been engaged by GHD on behalf of Hunter Water Corporation (the Proponent) to undertake an addendum letter report to support the EIS Aboriginal Cultural Heritage Assessment (RPS 2019) produced for the proposed drought response desalination plant at Belmont, NSW.

1.1 Project Area and Study Area

The Project Area describes the area specific for the proposed works. The term 'Project Area' is used throughout this report except at Section 5, which uses the term 'Study Area'.

The Study Area describes the area subject to a visual inspection/ archaeological survey. It encompasses a broader area than the Project Area. This was done, to ensure that it would be possible during the life of the project to allow for lay down areas to be used adjacent to the south and south western perimeters of the Project Area.

Figures 1 and 2 mark the Project Area and Figures 3-5 mark both the Project Area and the Study Area. Figure 1 shows a 'no-go' area immediately to the east of the existing treatment plant. RPS have been informed that no works will be undertaken in this area.

1.2 Proposed Project

Hunter Water Corporation (Hunter Water) is proposing to construct a drought response desalination plant (the 'Project) adjacent to the Belmont Wastewater Treatment Works (Belmont WWTW) in Belmont South, New South Wales (NSW) **(Figure 1).**

An Environmental Impact Statement (EIS) was prepared for the Project in accordance with relevant legislative requirements and the Department of Planning, Industry and Environment (DPIE) Secretary's Environmental Assessment Requirements (SEARs) issued for the Project on 12 December 2017 and revised on 24 January 2018. An Aboriginal Cultural Heritage Assessment (ACHAR RPS 2019) was completed for the Project in accordance with the SEARs. The EIS (including the associated ACHA) was submitted to DPIE for approval on 21 October 2019.

Following submission of the EIS, based on a review of the water requirements for the region, Hunter Water identified a need to increase the capacity of the Project from 15 megalitres per day (ML/d) of potable water to 30 ML/day. The change in proposed capacity has necessitated some design changes to the Project, which in turn has resulted in a proposed extension to the Project Area.

An Amendment Report (AR), in conjunction with the Response to Submissions Report, is being prepared to assess the proposed change to the capacity of the plant (and associated changes to the intake structure). This Addendum report forms part of the ACHAR (RPS 2019).

1.3 Background Information for the Addendum

A search of the Aboriginal Heritage Information Management System (AHIMS) database was conducted for the original EIS ACHAR assessment which revealed no previously registered Aboriginal sites within the Project Area **(Figure 3).**

An archaeological site inspection was undertaken together with the Registered Aboriginal Parties (RAPs). The Project Area has been disturbed by natural and modern processes; one new Aboriginal cultural site was recorded within the Project Area. The site comprised an Isolated Find (AHIMS #45-7-0397).

The Project Area was assessed as comprising a combination of disturbed landscape with low archaeological potential, areas of A horizon soils present in a disturbed context and areas with potential for intact A horizon soils. Key recommendations provided in the ACHAR (RPS 2019) relate to the collection of AHIMS #45-7-0397 and the completion of additional inspection and salvage activities where works will require impacts within the areas of disturbed A horizon soils and the area of potentially intact A horizon soils.

1.3.1 Overview

Like much of NSW, the Lower Hunter region is continuing to experience ongoing drought conditions. In February 2020, storages reached a 40 year low of 52.5 per cent. As at June 2020, storages were around 68 per cent, well below typical levels for this time of year. In response, Hunter Water is rolling out a program of drought response measures outlined in the 2014 Lower Hunter Water Plan (LHWP) including the staged introduction of water restrictions, implementation of a broad range of water conservation and water loss initiatives, as well as operational measures. The 2014 LHWP identified the implementation of emergency desalination as a last resort in response to a severe drought and would only be implemented if water storage levels reached a critical point and all other measures have been implemented.

The Project described in the EIS included the construction and operation of a desalination plant, designed to produce up to 15 megalitres per day (ML/day) of potable water, with two sub-surface intake structures.

Since commencing this Project, Hunter Water has begun a major review of the 2014 LHWP, now referred to as the Lower Hunter Water Security Plan (LHWSP). The LHWSP seeks to determine the preferred portfolio of supply and demand side options to ensure a sustainable and resilient supply for the region, over the long term as well as during drought. This work indicates that a drought response portfolio including a desalination plant at Belmont with a nominal production capacity of up to 30 ML/day would provide the best balance of meeting the community's needs should a severe drought occur, while still providing value for money. Furthermore, the proposed amendment would not compromise Hunter Water's ability to deliver a desalination scheme in the timeframe required in response to a severe drought.

In addition to the proposed increase in plant capacity, the amended Project includes the following design changes:

- Seawater intake: Further design development and liaison with Hunter Water's construction partners following completion of the EIS identified reliability and construction risks with the proposed horizontal sub-surface intake system as described in the EIS. An assessment of the horizontal sub-surface intake system was undertaken against alternative intake options. This assessment found that a direct ocean intake would perform considerably better than a sub-surface option across key criteria including reliability, efficiency, and scalability.
- Power supply: The EIS proposed to meet power requirements for the Project via a minor upgrade to the existing 11 kV power supply network in the vicinity of Hudson and Marriot Street. The amendment to the capacity of the water treatment process plant means this is now not feasible, due to inability to meet energy requirements. Instead, the Project will connect to Ausgrid's 33 kV network in the vicinity of the Project.

1.3.2 Key Features of the Amended Project

The amended Project for the construction and operation of a drought response desalination plant, designed to produce up to 30 ML/day of potable water, includes the following key components and as shown in **(Figure 2)**:

- **Direct ocean intake** – To ensure provision of sufficient quantities of raw feed water for the water treatment process plant, a direct ocean intake is proposed as part of the amended Project, as follows:
  - Sea Water Pump Station (On-shore), including a central well, screening and pump housing, be a concrete structure (referred to as a caisson) of approximately nine to 11 metres diameter, installed to a depth up to 20 m below existing surface levels.
  - Intake pipeline, the indicative pipeline alignment is approximately 1,000 m in length, extending outwards from the central housing to the off-shore intake structure. Construction of the intake pipeline would be determined during detailed design; however, the following construction methodologies/ considered and assessed included Construction method 1 (CM1) Horizontal directional drilling (HDD) and CM2 (Pipejacking/micro-tunnelling).
  - Intake structure (Off-shore), the intake structure would be in the form of a horizontal intake with a velocity cap structure and low through-screen velocity to minimise impacts on marine species and habitat. The intake structure would be 5 m in diameter, have a minimum of 5 m clearance from the seabed and a depth of approximately 18 m of water.

- **Water treatment process plant** – The water treatment process plant would not significantly change from that described in the EIS. The inclusion of buildings to house equipment rather than the installation of containerised equipment is the primary change. The buildings would be placed above ground level and located to allow incremental installation, if required. Services to and from the process equipment (e.g. power, communications, and raw feed water (seawater)) would comprise a mix of buried and overhead methods. The general components of the water treatment process would comprise:
  - *Pre-treatment:* a pre-treatment system is required to remove micro-organisms, sediment, and organic material from the raw feed water.
  - *Desalination:* a reverse osmosis desalination system made up of pressurising pumps and membranes. These would be comprised of modular components. In addition, a number of tanks and internal pipework would be required.
  - *Post treatment:* desalinated water would be treated to drinking water standards and stored prior to pumping to the potable water supply network.
- **Brine disposal system** – The desalination process would produce up to 56 ML/day of wastewater, comprising predominantly brine, as well as a small amount of pre-treatment and RO membrane cleaning waste. The waste brine from the desalination process would be transferred via a pipeline to a brine pump station at the Belmont WWTW for disposal via the existing ocean outfall pipe.
- **Power supply** – Power requirements of the amended water treatment process plant would require connection to Ausgrid's 33 kV line to the north-west of the water treatment process plant site, with new private power line connecting to a substation within the plant site.
- **Ancillary facilities** – including a tank farm, equipment housing sheds, chemical storage and dosing, hardstand areas, stormwater and cross drainage, access roads, parking areas, fencing, signage and lighting.

The desalination plant would be connected to Hunter Water's potable water network via a potable water pipeline proposed to be constructed to augment the existing water network. The pipeline does not form part of the Project and would be constructed and operated separately and would be part of a separate design and approvals process.

Paper Size ISO A4

0 110 220 330 440

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Hunter Water Corporation
Belmont Drought Response Desalination Plant
Addendum to ACHAR

Project No. **22-19573**
Revision No. **0**
Date **29/06/2020**

Project area

Figure 1

G:\22\19573\Design\04 Deliverables\02 Other\2219573_AR_ACHAR_0.aprx
Print date: 29 Jun 2020 - 07:11

Paper Size ISO A4

0 60 120 180 240

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

Hunter Water Corporation
Belmont Drought Response Desalination Plant
Addendum to ACHAR

Project area with proposed concept plan

Project No. **22-19573**
Revision No. **0**
Date **29/06/2020**

Figure 2

G:\22\19573\Design\04 Deliverables\02 Other\2219573_AR_ACHAR_0.aprx\2219573_H002_TheProject_0
Print date: 29 Jun 2020 - 07:09

Data source: HWC: Aerial Imagery, Existing outfall: 2019; LPI: DTDB / DCDB, 2017; public_NSW_Imagery: © Department of Customer Service 2020. Created by: fmackay

2 LEGISLATIVE CONTEXT

RPS provides the legislative context of the Project Area for information purposes only; it should not be interpreted as legal advice. RPS will not be liable for any actions taken by any person, body or group as a result of the summary below and recommend that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

The *National Parks and Wildlife Act 1974* (NPW Act) is the principal Act providing protection for Aboriginal cultural heritage (objects and places) in NSW. It provides protection for Aboriginal cultural heritage irrespective of the level of archaeological or cultural heritage significance or land tenure. The Department of Planning, Industry and Environment (DPIE) is responsible for the administration of the *NPW Act*.

2.1.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (*EP&A Act*) regulates a system of environmental planning and assessment for NSW. Land use planning requires the consideration of environmental impact, including the potential impact on Aboriginal cultural heritage. The *NPW Act* therefore provides protection for Aboriginal objects or places, and the *EP&A Act* necessitates an assessment of Aboriginal cultural heritage as part of the planning and approvals process

2.1.2 Secretary's Environmental Assessment Requirements (SEARs)

The ACHAR (2019) was prepared to address the requirements of the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning and Environment (DPE).

This Addendum, which will be appended to the ACHAR (RPS 2019) addresses the SEARs relevant to the amended Project Area.

2.1.3 State Significance Infrastructure (SSI)

Projects declared SSI under Part 5, Division 5.2 of the *EP&A Act* are exempt from the provisions of Section 90 of the *NPW Act*, and therefore an Aboriginal Heritage Impact Permit (AHIP) is not required if impacts to Aboriginal objects and/or places cannot be avoided. The project is State Significant Infrastructure (SSI), SSI8896.

2.1.4 National Parks and Wildlife Act 1974

The *NPW Act 1974* provides protection for Aboriginal cultural heritage in NSW. Section 86 of the *NPW Act 1974* states:

- "A person must not harm or desecrate an object that the person knows is an Aboriginal object"
- "A person must not harm an Aboriginal object"
- "A person must not harm or desecrate an Aboriginal place"

Under the *NPW Act 1974*, it is an offence to harm an Aboriginal object or place. Harming an Aboriginal object or place may result in a fine a fine of up to $550,000 for an individual and imprisonment for two years; and in the case of a corporation, a fine of up to $1.1 million. The fine for a strict liability offence (s86 [2]) is up to $110,000 for an individual and $220,000 for a corporation.

Harm under the *NPW Act 1974* is defined as any act that; destroys defaces or damages the object, moves the object from the land on which it has been situated, causes or permits the object to be harmed. However, it is a defence from prosecution if the proponent can demonstrate 1) that harm was authorised under Section 90 of the *NPW Act 1974,* or 2) that the proponent exercised due diligence in respect to Aboriginal cultural heritage. The due diligence defence states that if a person or company has exercised due diligence, liability from prosecution under the *NPW Act 1974* will be removed or mitigated if it later transpires that an Aboriginal object was harmed. If an Aboriginal object is identified during the proposed activity, all activity within that area must cease and DPIE notified (DECCW 2010:13). The due diligence defence does not authorise continuing harm. This Addendum, which will be appended to the ACHAR (RPS 2019) addresses the requirements for mitigation as per the *NPW ACT 1974*, relevant to the amended Project Area

Notification of Aboriginal objects

Under Section 89A of the *NPW Act 1974*, the proponent must report all Aboriginal objects and places to the Director General of OEH within a reasonable time, unless already recorded on the Aboriginal Heritage Information Management System (AHIMS). Fines of $11,000 for an individual and $22,000 for a corporation may apply for each object not reported.

Investigating, assessing and reporting Aboriginal cultural heritage

There are a number of procedural publications governing archaeological practice in NSW. The publications relevant to the investigation and assessment of Aboriginal cultural heritage include;

- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (DECCW 2010);
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (the Code) (DECCW 2010); and,
- Aboriginal cultural heritage requirements for proponents (DECCW 2010).

The Aboriginal cultural heritage consultation requirements for proponents (2010) codifies a process for consultation with Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal cultural heritage. The requirements are consistent with the *NPW Act* and seek, inter alia, to conserve Aboriginal objects and places of significance to Aboriginal people.

Consultation is therefore a fundamental part of the Aboriginal cultural heritage assessment process. This Addendum, which will be appended to the ACHAR (RPS 2019) addresses the consultation requirements relevant to the amended Project Area, Section 3.

2.1.5 Aboriginal cultural heritage consultation requirements for proponents (2010)

Consultation is required for any assessment of Aboriginal cultural heritage. In accordance with the Guide to investigating, assessing and reporting on Aboriginal cultural heritage and Aboriginal cultural heritage consultation requirements for proponents (2010), Section 3 documents consultation undertaken in relation to the Project Area. The purpose of consultation is to ensure adequate consideration of the cultural significance of the Project Area as determined through consultation with the RAPs for the project. The cultural significance of the Project Area may be associated with tangible or non-tangible elements or the connection that people experience with the landscape. Section 6 assesses the cultural significance of the Project Area.

2.2 Heritage Act 1977

The *Heritage Act 1977* provides protection for environmental heritage including historic places, structures, relics, moveable objects and landscapes of significance. The *Heritage Act 1977* also affords protection to Aboriginal places of State heritage significance included on the State Heritage Register (SHR) or subject to an Interim Heritage Order. No Aboriginal places included on the SHR or subject to an Interim Heritage Order are located within the Project Area.

2.2.1 Lake Macquarie Aboriginal Cultural Heritage Management Strategy 2011

Lake Macquarie City Council prepared the Lake Macquarie Aboriginal Cultural Heritage Management Strategy (Lake Macquarie City Council 2011) to guide its activities that influence or affect the City's Aboriginal cultural heritage values. The Strategy (2011) has been prepared in consultation with a working group comprising representatives of the local Aboriginal community and council staff, with input from the Office of Environment and Heritage (OEH). It includes recommendations for guidelines, protocols for communication and information management and referral processes and consultation with the relevant Local Aboriginal Land Councils and Traditional Owner Groups.

The Strategy (2011) has assessed site integrity and context status of cultural landscapes associated with Lake Macquarie. The present-day landscape integrity of those lake margins which are modified and disturbed by modern development is assessed as having a lower potential for the presence of Aboriginal

cultural materials and sites. Under the Strategy, investigations must occur if the site proposed for development has the following:

- Aboriginal sites within 200 metres (LMCC June 2017)
- Sensitive Aboriginal Cultural Landscape (SAL) designation

2.2.2 Aboriginal Cultural Heritage Mapping (Lake Macquarie ACHMP 2011)

A major component of the *Lake Macquarie ACHMP (2011)* is the identification and recognition of Aboriginal cultural heritage through landscape-based mapping. Cultural heritage landscape mapping is an extension of the process of identifying Aboriginal cultural objects or places using a co-ordinates capture of the specific location.

The heritage mapping associated with the *Lake Macquarie ACHMP (2011)* does not form part of Schedule 5 of the Lake Macquarie Council LEP. It is triggered by the definition of Aboriginal Culturally Sensitive Landscapes in the Lake Macquarie LGA (2011: Section 3.3).

The Aboriginal Culturally Sensitive Landscape has been addressed and illustrated within the ACHAR (RPS 2019).

2.2.3 Aboriginal Land Rights Act 1983

The purpose of this legislation is to provide land rights for Aboriginal people within NSW and to establish Local Aboriginal Land Councils. Under Section 36 of the *Act 1982*, a Local Aboriginal Land Council, on behalf of Aboriginal people, is able to claim certain Crown land that:

1. Is able to be lawfully sold, leased, reserved or dedicated;
2. Is not lawfully used or occupied;
3. Will not, or not likely, in the opinion of the Crown Lands minister, be needed for residential purposes;
4. Will not, or not likely, be needed for public purposes;
5. Does not comprise land under determination by a claim for native title;
6. Is not the subject of an approved determination under native title;

Claims for land are by application to the Office of the Registrar, *Aboriginal Land Rights Act 1983*.

2.2.4 Native Title Act 1993

The *Commonwealth Native Title Act 1993* establishes a framework for the protection and recognition of native titles where:

a. Aboriginal people have a native title interest to maintain traditional customs and laws.
b. Aboriginal people have sustained connection with the land or waters in question
c. The native title rights and interests are recognised by the common law of Australia.

The *Native Title Act 1993* establishes processes to determine where native title exists, how future activity affecting native title may be undertaken, and to provide compensation where native title is impaired or extinguished. The *Native Title Act 1993* provides Aboriginal people who hold native title rights and interests, or who have made a native title claim, the right to be consulted and in some cases, to participate in decisions about activities proposed to be undertaken on the land.

3 ABORIGINAL CULTURAL HERITAGE CONSULTATION

Consultation with Aboriginal people is important and needs to be sustained throughout the heritage assessment process to ensure cultural perspectives, view and concerns are taken into account (DECCW 2010:2). The Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010) outline a four- stage consultation process. Section 3 in the ACHAR (2019) describes the consultation process with reference to the Project Area.

RPS was informed of amendments to the Project Area on 17 December 2019. As a result of the Project Area amendments, RPS informed GHD that a letter of notification would be required to be sent to the RAPs for the project to inform them of the amendments.

The letter of notification was sent out to the RAPs for the Project, 8 January 2020, informing them of the extension to the existing Project Area, as identified in **Figure 1**. The notification also gave the RAPs the opportunity to express or comment on cultural heritage values and considerations, including the opportunity to inspect the additional areas.

No comments were received from the Letter of Notifications.

Four RAPs undertook the inspection of the amended project areas. Section 5 of this report provides further details.

Table 1: List of RAPs sent the Letter of Notification of Amendment to Project Area

RAPs and Organisation	Date Sent
Tara Dever - Mindaribba Local Aboriginal Land Council	8.01.2020
Deidre Perkins - Divine Diggers Aboriginal Cultural Consultants	8.01.2020
Tracie Howie - Guringai Tribal Link	8.01.2020
Scott Franks - Yarrawalk: A division of Tocomwall Pty Ltd	8.01.2020
Norm Archibald - Jumbunna Traffic Management Group Pty Ltd	8.01.2020
Des Hickey - Wattaka Wonnarua CC Service	8.01.2020
Arthur Fletcher - Kawul Pty Ltd Trading as Wonn1 Sites	8.01.2020
Paul Boyd - Didge Ngunawal Clan	8.01.2020
Steven Hickey - Widescope Indigenous Group	8.01.2020
Amanda Hickey - Amanda Hickey Cultural Services	8.01.2020
David Ahoy - Lower Hunter Aboriginal Incorporated	8.01.2020
Carolyn Hickey - A1 Indigenous Services	8.01.2020
Peter Leven - Awabakal Descendants Traditional Owners Aboriginal Corporation	8.01.2020

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3.1 Report Consultation

The draft Addendum was provided to the RAPs for comments and review, as per the ACHCRs (DECCW 2020). The responses were due 28 May 2020. The below Table 2, lists the response received.

Table 2: Response to the Draft report

RAPs and Organisation	Date Received Response	Response/Comment
Carolyn Hickey - A1 Indigenous Services	8.01.2020	Happy with the Addendum Report. No further comment/s.

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4 CONTEXTUAL INFORMATION

4.1 Environmental Context

An understanding of environmental context is important for the interpretation of Aboriginal objects and places. The local environment provided natural resources for Aboriginal people, such as stone (for manufacturing stone tools), plants and animals used for food, clothes and medicines; stone, wood and bark used to construct residential dwellings and; for the manufacture of implements such as shields, spears, canoes, bowls and shelters), as well as landforms suitable for occupation and cultural activities. The nature of Aboriginal occupation and resource procurement is inextricably linked to the local environment and needs to be considered as part of the Aboriginal cultural heritage assessment process.

4.1.1 Geology

The Project Area sits upon the Narrabeen Group—Munmorah Conglomerate Formation, comprising conglomerate, pebbly sandstone, grey green and grey siltstone and claystone; and Newcastle Coal Measures—Moon Island, Boolaroo and Adamstown Subgroups comprising conglomerate, sandstone, tuff siltstone, claystone and black coal (eSpade 2019). The predominant geology specific to the Project Area comprises Aeolian quartz dunes and sand sheets of Pleistocene age perched on Triassic and Permian bedrock. This is intermittently overlain with Quaternary sands of marine quartz sands, coarse with shell fragments, and alluvial and marine Quaternary sediments which consist of gravel, sand, silt and clay. Rock outcropping is absent across the Project Area (eSpade 2019).

4.1.2 Soils

The Project Area extends over two soil landscapes, Tuggerah (tg) and Narrabeen (na). The majority of soils are well-drained, siliceous sands with some acid peats associated with the wetland areas immediately to the west of the Project Area.

Table 3 below details the topsoil horizons of the two soil landscapes.

Table 3: Soil Landscapes across the Project Area

Soil Profile	Soil Layer	Description
Tuggerah (tg)	A1 Horizon	Loose speckled grey brown loamy sand. Grey brown speckled sand to loamy sand with a pedal single-grained structure and porous sandy fabric. It generally occurs as topsoil (A1 Horizon). Colour ranges from brownish grey (10YR 4/1) to brownish black (10YR 2/3) or black (10YR 2/1).
	A2 Horizon	Bleached loose sand. Bleached sand with single-grained structure and porous sandy fabric. It occurs as a shallow subsoil (A2 horizon). Colours are commonly bleached, and moist colours range from light grey (7.5YR 8/1) and greyish yellow (2.5Y 7/2) to dull yellow orange (10YR 7/4).
	B Horizon	Soft sandy pan. Black soft organic-stained sand to loamy sand with massive structure and sandy or, less commonly, earthy fabric. It often occurs as subsoil pan (B horizon). Colour is commonly black (10YR 1.7/1) or brownish black (10YR 3/1); dull yellow orange sand. Loose sand with single-grained structure and porous sandy fabric. It occurs as either deep subsoil or clay (B horizon). Colour varies from light yellow (2.5Y 7/4) to dull yellow orange (10YR 7/3).
Narrabeen (na)	A1 Horizon	Loose coarse shelly beach sand. Salty coarse-grained, quartz sand with single-grained structure and very porous sandy fabric. It occurs as topsoil and subsoil. Dull yellow orange (10YR 7/4), brownish yellow (10YR 6/6) and white.
	A2 Horizon	Loose medium yellowish brown quartz sand. Yellowish brown quartz sand with single-grained structure and loose porous sandy fabric. Dark brown (10YR 3/3), bright yellowish brown (10YR 6/6) or dull yellow orange (10YR 7/4).
	B Horizon	n/a

eSpade 2019: https://www.environment.nsw.gov.au/eSpade2Webapp

4.1.3 Topography

The Project Area is predominantly located across gently sloping, a low-lying coastal landscape with a range of 2 metres to 5 metres Australian Height Datum (AHD).

The shoreline and coastal area comprise gently undulating to rolling dune fields on low lying barrier dune systems. North-south oriented dunes and swales are the dominant landform elements. Slope gradients can be up to 45%, with convex narrow crests, moderately inclined slopes and gently inclined concave swales. Much of this soil landscape has been disturbed by sandmining and some dunes have been reformed from salt-laden southerly winds (eSpade 2019).

The landscape westward of the Project Area comprises gently rolling low hills with short side-slopes and numerous closely spaced drainage lines, swampy floodplains and depressions with gradients usually <2% and slope gradients <10 metres. Swampy flat land associated with drainage depressions is the dominant landscape feature, except in areas of urban development, where the soil infill has reformed these features (eSpade 2019).

4.1.4 Hydrology

Belmont sits on the barrier dune that separates the lake from the Pacific Ocean. This barrier dune is marked by low lying areas with eight distinct wetlands including Redhead Swamp, Jewells Swamp and Belmont Lagoon, all between Redhead and the northern side of Swansea Channel.

The wetlands to the north-west of the Project Area drain to the low-lying wetlands and ultimately south to Belmont Lagoon. Belmont Lagoon was once a freshwater lagoon. It became saline after excavation works in the 1940s introduced saline water from Lake Macquarie (Lake Macquarie City Council 2019).

4.1.5 Floral and Faunal Resources

The purpose of this section is to provide an indication of the types of flora and fauna resources likely to have been available to Aboriginal people in the past. It is based on broad scale vegetation mapping for NSW (Keith 2006) and does not replace more detailed studies undertaken for the Project Areas.

The vegetation in the Project Area has been extensively cleared however the surrounding area contains an ecologically rich landscape. On the coastal sand plains surrounding Belmont, Belmont Lagoon and Lake Macquarie (Awaba), past Aboriginal people are likely to have encountered swamp forests with the coastal heath swamps. Both create rich mosaics of different plant communities dominated by water tolerant herbs and emergent sclerophyllous shrubs. Common species include heath banksias, swamp banksias, crimson bottlebrush and wallaby grass (2006).

4.1.6 Non-Aboriginal Land Use

Following the clearance of the natural vegetation for non-Aboriginal settlement activities from the mid-nineteenth century, the land surrounding the region was predominantly used for sand mining and coal extraction.

The previous construction of evaporation ponds associated with the wastewater works has greatly disturbed ground surface through removal of vegetation and subsequent distribution of topsoils. Associated with these previous disturbances are vehicle tracks used for access to and from the wastewater treatment plant. To the north of the Project Area, sand extraction has occurred on marine sediments along the coastal sand dunes. West and south-west of the Project Area, the undisturbed landscape comprises of decreasing areas of uncleared swampland, with the majority now dominated or bordered by urban development.

The area extending eastward from Lake Macquarie, Belmont Lagoon, to the coast, was later used as a military defence barrier during the Second World War. Disturbance during this period mainly comprised of laying of tank traps and wire, the process of which resulted in shallow ground disturbance of the sand profiles from Lake Macquarie, eastward to Belmont Lagoon and the beach area.

4.2 Archaeological Context

The purpose of an archaeological context section is to present a synthesis of available archaeological information to provide an understanding of cultural heritage specific to the Project Area. It informs archaeological predictions for the Project Area and the assessment of archaeological significance.

The Aboriginal Heritage of the Lake Macquarie Region is abundant and diverse and includes some 500 recorded Aboriginal sites and many other locations that are identified by the local community languages and stories (Lake Macquarie City Council 2011:1.1).

4.3 Aboriginal Heritage Information Management System

A search of the Aboriginal Heritage Information Management System (AHIMS) undertaken 11 November 2018 and updated 23 August 2019 using the following coordinates revealed 51 and 53 previously registered Aboriginal sites within the region of the Project Area **(Figure 3)**;

- GDA Zone: 56
- Eastings: 373741 - 379741
- Northings: 6339793 - 6349793
- Buffer: 0 metres
- No. of Aboriginal sites: 51/53

No previously registered sites were identified within the Project Area in the initial site search. Two sites, AHIMS #45-7-0397 (RPS BEL IF01) registered for this current project, and AHIMS #45-7-0393 are included in the search results for 23 August 2019.

AHIMS #45-7-0393 is located approximately 1.1 kilometres north-west of the Project Area and is not under consideration for this report.

The two closest sites to the Project Area are AHIMS #45-7-0042 Artefact Site (Number Unspecified) and AHIMS #45-7-0130 Artefact Site (Number Unspecified) **(Figure 3).**

AHIMS #45-7-0042 is located approximately 120 metres south-east of the Project Area and AHIMS #45-7-0130 is located approximately 630 metres north-east of the Project Area. As such, the two sites will not be impacted from the works.

The following summarises the previously registered AHIMS #45-7-0397, AHIMS#45-7-0130 and AHIMS #45-7-0042.

4.3.1 AHIMS #45-7-0397 Isolated Find (RPS BEL IF01)

One Aboriginal cultural object, AHIMS #45-7-0397, was identified during the archaeological site inspection for the ACHAR (RPS 2019). It was located on the base of one of the dry evaporation ponds located at coordinates Easting: 375626 Northing: 6342539, within the proposed temporary desalination plant footprint. This Aboriginal cultural object comprises of a complete tuff flake.

The AHIMS #45-7-0397 site card is at **Appendix A.**

4.3.2 AHIMS #45-7-0130 Artefact Site (Number Unspecified)

The site card for AHIMS #45-7-0130 describes the cultural objects as between 50 and 70 flake pieces, down slope along foot tracks. The materials comprise of chert, quartz and quartzite. Disturbances noted were dumping of household rubbish, burning, and access tracks.

The site card for AHIMS #45-7-0130 is at **Appendix A**.

4.3.3 AHIMS #45-7-0042 Artefact Site (Number Unspecified)

The site card for AHIMS #45-7-0042 describes the cultural objects as comprising of flakes, flaked core and backed blade of chert and quartz. Disturbances noted included evidence of dredging, levelling and stabilisation associated with previous mining activities.

The site card for AHIMS #45-7-0042 is at **Appendix A**.

5 SURVEY OF THE AMENDED PROJECT AREA

The Study Area describes the area undertaken for the visual inspection. It encompasses a broader area than the Project Area. The distinction between the two is illustrated in the Figures within this report, but specifically and for more clarity in **Figure 1**.

A visual inspection of the Study Area, which encompasses the Project Area, was undertaken on 5 February 2020 by RPS Senior Heritage Consultant/Archaeologist, Ben Slack (B.A.) together with Hunter Water representative Nick Bates and the RAP representatives identified in **Table 4**.

Table 4: RAP attendees for survey

Name	Organisation
John Wegener	Lower Hunter Aboriginal Incorporated
Jackson Walker	Guringai Tribal Link Aboriginal Corporation
Peter Leven	Awabakal Descendants Traditional Owners Aboriginal Corporation
Kentan Proctor	Bahtabah Local Aboriginal Land Council

5 February 2020

5.1 Methodology

The survey was conducted on foot (pedestrian) and was separated into four Survey Units (SU) based on landforms, access and existing infrastructure **(Figure 4).**

The mapping of survey units was undertaken on the basis of GPS recorded data and with reference to aerial and topographic information. The recording of sites was undertaken using representative digital photographs and field notes which include observations of soils, ground surface exposure and visibility, vegetation cover, levels of ground surface disturbance, erosion and similar observations **(Table 5).**

Table 5: Effective coverage of Survey Units.

Unit	Unit Description	Area (m²) approx	Visibility (%)	Exposure (%)	Effective Coverage (m²)	Effective Coverage (%)
SU1	Dunes/Beachfront	1677	60-90	50-90	1006.2	60
SU2	Dunes (Modified)	635	90	70	444.5	70
SU3	Dirt Track/Vegetated Boundary	738	90/0	90/0	73.8	10

5.2 Survey Results

5.2.1 Survey Unit 1

Survey Unit 1 (SU1) consists of the beachfront and associated low-lying dunes east of Ocean Park Road but outside the boundary of the sewerage treatment plant, and the previously surveyed evaporation ponds and bunds. Vegetation comprised remnant grasses along the shoreline and low-lying shrubs throughout.

Surface visibility was relatively good throughout at approximately 60%, surface exposure was approximately 50%. Exposures were largely due to disturbances from recreational vehicles and prior vegetation clearing **(Plate 1).** Limited material was identified, some shell was observed; however, this was loosely scattered across surfaces and was likely natural deposits.

The beachfront contained a very high surface visibility (>90%) with only scattered grasses. The beachfront had undergone significant disturbances from recreational vehicles; no shell was identified but imported material and gravels were observed within disturbed area vehicle tracks **(Plate 2).** Other disturbances include a pipeline from the treatment plant to the beachfront and remnant tank traps. The traps are remnants of previous ground surface disturbance relating to a former military defence barrier which extended from Belmont Lagoon, across the foredunes to the coastal shoreline.

Archaeological potential of the beach front is considered low. Archaeological potential across the remaining areas of SU1 are considered to be low to moderate due to a combination of the lack of identified cultural material, but potential for intact A horizon soils. This area is illustrated in (**Figure 5**).

One Aboriginal artefact was identified within SU1.

Plate 1 SU1 is located within the dune system comprising of surface disturbances such as previous vegetation clearance and vehicle access tracks (RPS 2020).

Plate 2 Vehicle access through coastal dunes to beachfront within SU 1 (RPS 2020).

5.2.2 Survey Unit 2

Survey Unit 2 (SU2) comprised the small section of the amended boundary within the treatment plant. This survey unit was significantly modified and disturbed from the construction of the plant; no vegetation was noted within the SU apart from scattered grasses **(Plate 3).** Surface visibility was very high at approximately 90%, surface exposure was at 70% **(Plate 4).** Material observed appeared to be imported gravels and fill

brought in during construction and no natural A Horizon was identified. Considering the significant disturbances within SU2, archaeological potential is very low.

No Aboriginal sites or objects were identified within SU2.

Plate 3 View north-east within SU2 (RPS 2020).

Plate 4 Surface visibility within SU2 (RPS 2020).

5.2.3 Survey Unit 3

SU3 comprised a small section west of Ocean Park Road extending west to an unnamed dirt track **(Plate 5).** Accessibility was an issue due to the low-lying nature of the landscape which was heavily inundated and densely vegetated **(Plate 6).** The survey focused on the dirt track which had a very high surface visibility of approximately 90%, surface exposure was 90% across the track and low-to-nil in the vegetated areas. Material comprised imported fill and gravels.

The potential for the presence of surface Aboriginal cultural materials is considered to be low in the areas where ground surface was exposed. The potential for sub-surface cultural materials is considered to be low. This is largely due to the heavy inundation observed within SU3.

Areas not accessible due to dense vegetation may contain A horizon soils, as vegetation would minimise sheet wash erosion of potential topsoil. This area has therefore been identified as potential for A horizon soils to remain present in a disturbed context **(Figure 4).**

No Aboriginal sites or objects were identified within SU3.

Plate 5 Unnamed dirt track at SU3 provided high surface visibility (RPS 2020).

Plate 6 View of low-lying, inundated area within SU3 (RPS 2020).

5.3 Aboriginal Cultural Site

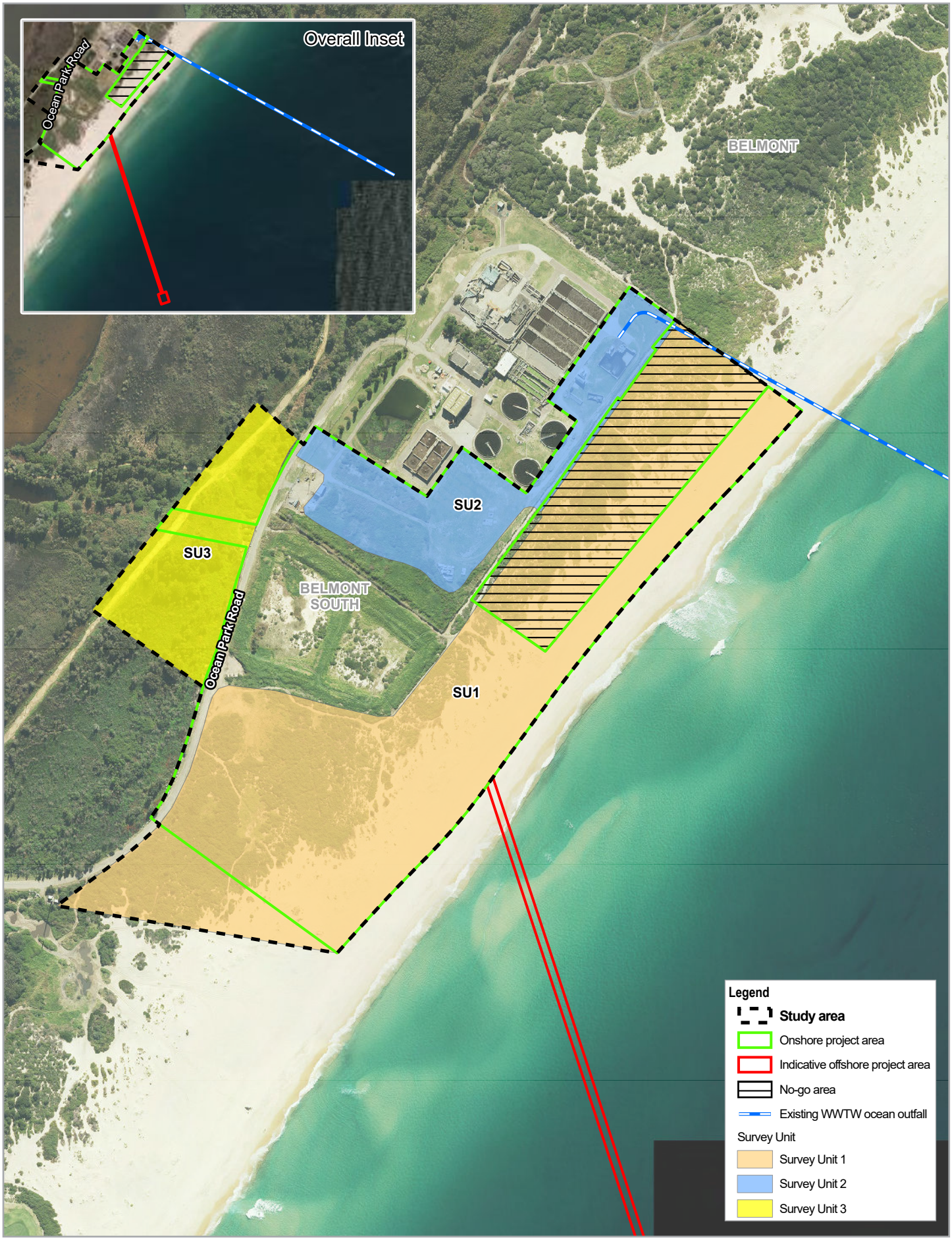
One newly identified Aboriginal cultural site was identified during the survey. The site has been registered as an isolated find (AHIMS #45-7-0402).

The site comprised an isolated find. The artefact was identified in a large clearing containing some remnant grasses. The artefact comprised a small, backed tuff flake approximately two centimetres in length **(Plate 7).** Disturbances appeared to be from recreational vehicles and vegetation clearing **(Plate 8).** Considering the disturbances and nearby vehicle tracks the flake has likely been transported to its current position and is not in situ.

Plate 7 Tuff flake identified in SU1 (RPS 2020).

Plate 8 The flake was identified within a cleared area containing disturbances from vehicles (RPS 2020).

The newly identified site AHIMS #45-7-0402 (RPS_IF2) is located approximately 200 metres south west of the previously identified artefact located in the Study Area, AHIMS #45-7-0397(RPS BEL IF01). Both artefacts are tuff flakes, and both have been identified within a disturbed context.



Paper Size ISO A4

0 30 60 90 120

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Hunter Water Corporation
Belmont Drought Response Desalination Plant
Addendum to ACHAR

Project No. **22-19573**
Revision No. **0**
Date **29/06/2020**

Project area with survey units

Figure 4

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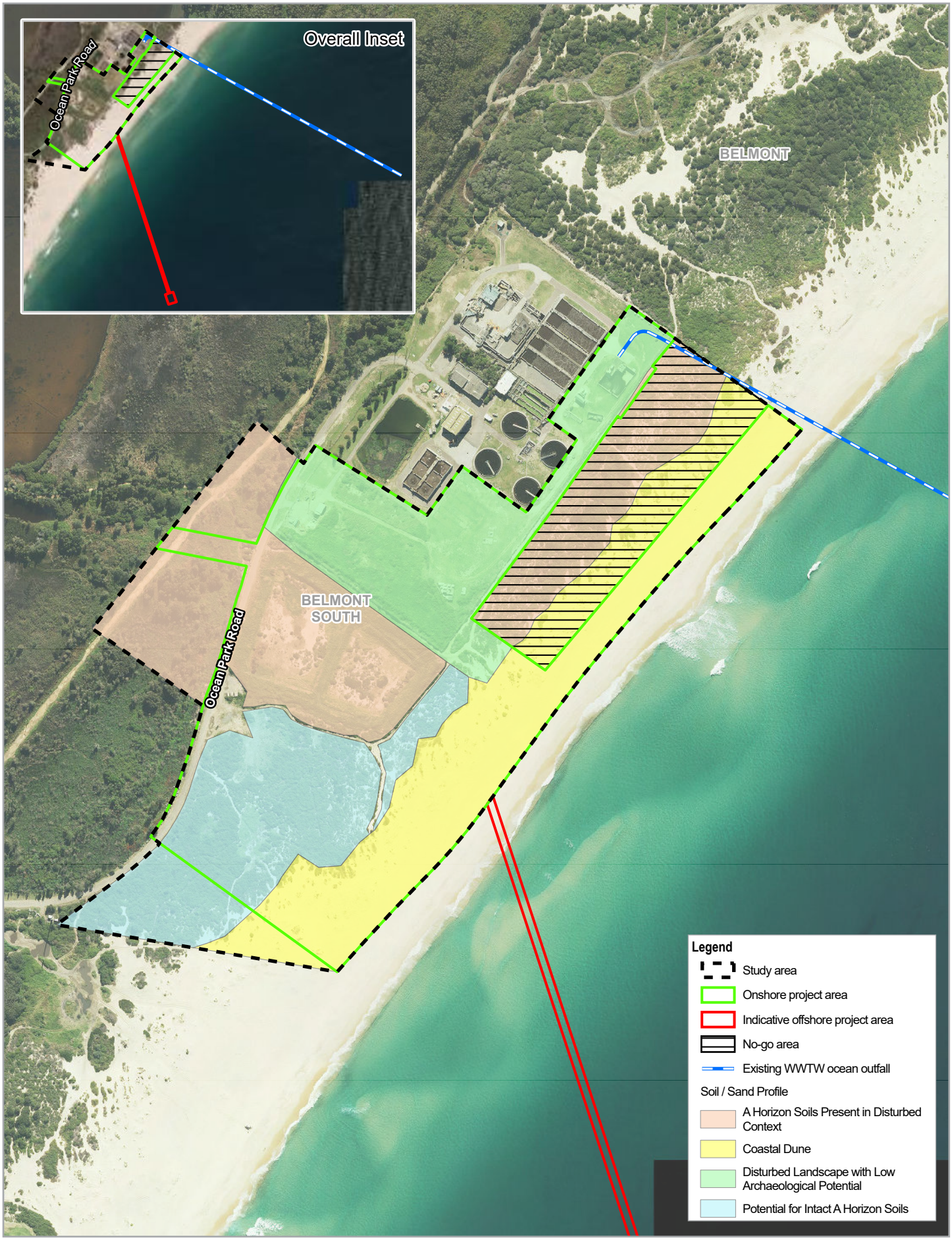
Print date: 29 Jun 2020 - 07:10

Data source: RPS: Survey Units, 2020; HWC: Aerial Imagery, 2018 public_NSW_Imagery: © Department of Customer Service 2020. Created by:



Paper Size ISO A4

0 30 60 90 120

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

Hunter Water Corporation
Belmont Drought Response Desalination Plant
Addendum to ACHAR

Project area with disturbance to soil / sand profile

Project No. **22-19573**
Revision No. **0**
Date **29/06/2020**

Figure 5

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Print date: 29 Jun 2020 - 07:11

Data source: RPS: Soil / sand profile, 2020; HWC: Aerial Imagery, 2018 public_NSW_Imagery: © Department of Customer Service 2020. Created by:

5.4 Assessment of Archaeological Potential

No Aboriginal sites or objects were identified in SU2 or SU3. One artefact was identified in SU1 which consists of a single tuff flake in a disturbed context.

5.5 Survey Unit 1

SU1 was the only survey unit to contain any artefacts; however, considering the continued disturbances from recreational vehicles and vegetation clearing, sub-surface integrity has likely been compromised. Limited evidence of intact shell deposits eroding from banks or exposures was observed, and the few shells identified were fragmentary and sparsely distributed.

Archaeological potential for the majority of SU1 across the vegetated dune area is considered to be low in areas exposed by erosion and low to moderate in vegetated areas which may contain A horizon soils in a disturbed context. Archaeological potential in the beachfront area of SU1 is considered low.

5.6 Survey Unit 2

SU2 was highly modified due to the construction and operation of the treatment plant. Surface visibility was extremely high, yet no suitable material for the production of stone tools was identified and no intact A Horizons observed. There was also a significant amount of foreign material imported for use in construction.

Archaeological potential for SU2 is considered to be very low.

5.7 Survey Unit 3

SU3 was located in a low-lying swampy environment which was heavily inundated during the visual inspection. The high surface visibility of the nearby dirt track offered some opportunity for inspection; yet this had been raised above nearby inundation and was largely imported fill used in construction. Considering the level of inundation and low-lying aspect of this SU, it is unlikely to contain archaeological sites and/or sub-surface deposits. The vegetated areas may contain remaining A horizon soils, albeit in a disturbed context.

Inundation which although disturbs the topsoil, may not always remove it. As such, the vegetated areas of SU3 which were observed to be inundated may have potential for A horizon soils in a disturbed context. It therefore cannot be stated that cultural material would be absent. Archaeological potential for SU3 is considered to be low to nil across the dirt track based on the observed disturbance to ground surface. Archaeological potential across the vegetated areas was not assessed based on the inability to access the area.

5.8 Site Inspection Summary – Archaeological Inspection

The majority of the Study Area has been disturbed through previous vegetation clearance to facilitate access and construction of the existing evaporation ponds and wastewater treatment plant. The surrounding vegetation comprises intermittent low shrubs and clumps of short coastal grasses.

Redistribution of A horizon soil profiles was observed at the evaporation ponds and associated bunds. One Aboriginal cultural object was observed in the south-east portion of the Study Area. No other cultural raw materials were observed during the site inspection for this Addendum.

Based on the presence of the isolated artefact and the presence of A horizon soils in a disturbed context, as illustrated in Figure 5, soils may contain archaeological deposits, albeit at relatively low densities and highly disturbed. As shown in Figure 5, there is a section of vegetated dune where the potential for intact A horizon soils and associated archaeological deposits may remain in a less disturbed context.

5.9 Site Inspection Summary – Cultural Sensitivity

All the RAPs present during the site inspection expressed the cultural sensitivity of the broader area surrounding the Study Area. For example, song lines are associated with Belmont Lagoon, immediately the west of the Project Area.

6 SIGNIFICANCE ASSESSMENT

The Burra Charter provides guidance for the conservation and management of places of cultural significance or cultural heritage places and is based on the knowledge and experience of the Australian ICOMOS members. Conservation management of places of cultural significance is an integral and ongoing responsibility. The definition of cultural significance as supplied by the Burra Charter focuses on scientific, aesthetic, historic, or social values of the past, present and future generations (Australia ICOMOS 2013). The Burra Charter defines cultural significance as "embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects" (2013).

Aboriginal cultural heritage is assessed using the categories developed by the Burra Charter:

- Social and cultural value (assessed by Aboriginal people only)
- Spiritual value
- Historical value
- Aesthetic value
- Scientific/archaeological value

This section of the report provides an assessment of these values within the Project Area.

6.1 Cultural Heritage Values Assessment

RPS assessed the cultural significance of the Project Area in consultation with the RAPs. Consultation with the RAPs and an understanding of the archaeological and cultural landscape inform the assessment of cultural significance.

6.1.1 Social and Cultural Value

Social cultural value refers to *"refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds them to"*.

The consultation process to date has indicated that all Aboriginal objects within the Project Area and surrounding area have social and cultural values to all RAPs.

The cultural value of the Project Area was discussed with representatives of RAPs who attended the archaeological survey. RAPs have been invited to comment on the cultural significance of the Project Area throughout the consultation process for this ACHAR.

The nearby Belmont Wetlands hold a high cultural significance for the RAPs; however, when viewed in isolation, no specific cultural values or associations have been identified.

6.1.2 Spiritual Value

Spiritual value refers to: "the intangible values and meaning embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations and be expressed through cultural practices and related places" (Australia ICOMOS 2013).

No specific comment on the spiritual value of AHIMS site #45-7-0402 was identified; however, the high cultural significance of the Belmont Wetlands as an important spiritual area was identified by the RAPs during the visual inspection.

6.1.3 Historical Value

Historic value refers to the associations Aboriginal people have with places, historically important people, events and phases. Post Contact places such as missions, reserves and massacre sites.

The historical value of the Project Area was discussed with representatives of RAPs who attended the archaeological survey of the Project Area. RAPs were invited to comment on the historical significance of the Project Area throughout the consultation process for this ACHAR.

No specific historic values were identified during the consultation with the RAPS process for this ACHAR.

6.1.4 Aesthetic Value

Aesthetic value refers to the sensory, scenic, architectural and creative aspects of a place. It may consider form, scale, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (OEH 2011:9).

The Project Area is of a low to medium aesthetic value. The majority of the Project Area comprises a modified landscape associated with the Belmont wastewater works. It occupies a varied landscape comprising a low area of slightly undulating, beach landforms prone to inundation associated with Belmont Lagoon, with vegetated, undulating and areas stretching between the coastline foreshore, and the vegetated boundary of Belmont Lagoon.

6.1.5 Scientific/Archaeological Value

The scientific and archaeological values are assessed through further defining the rarity, representativeness, integrity, connectedness, complexity and potential for further archaeological deposits **(Table 6).**

Table 6: Archaeological significance criteria

Summary	
Criteria	**Description**
Rarity	Is the subject important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practiced? Is it in danger of being lost or of exceptional interest?
Representativeness	How much variability (outside and /or inside the subject area) exists, what is already conserved, how much connectivity is there?
Research Potential	Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use function or design no longer practised? Is it in danger of being lost or of exceptional interest?
Education Potential	Does the subject area contain teaching sites or sites that may have teaching potential?

The archaeological significance of the Project Area has been assessed as low. This has been summarised in **Table 7**.

Table 7: Archaeological significance assessment of AHIMS #45-7-0402 (RPS 2020).

Summary	
Criteria	**Description**
Rarity	Is the subject important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practiced? Is it in danger of being lost or of exceptional interest?
Representative	How much variability (outside and /or inside the subject area) exists, what is already conserved, how much connectivity is there?
Research Potential	Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use function or design no longer practised? Is it in danger of being lost or of exceptional interest?
Education Potential	Does the subject area contain teaching sites or sites that may have teaching potential?

6.2 Statement of Significance

AHIMS #45-7-0402 (RPS_IF2) has been found to be of low archaeological significance. The site area has been disturbed. The artefact is not assessed to be rare in the context of Belmont/Lake Macquarie archaeology. The type of artefact is consistent with residue of stone tool production and the artefact does not possess any educational potential.

The above mentioned withstanding, all the RAPs present during the site inspection expressed the significance of the intangible heritage associated with area, specifically the cultural sensitivity of the area in the form of songlines that are associated with the adjacent Belmont Wetlands and Lagoon. Highly sensitive areas are located around the coastline, including to the south toward Swansea Heads and Black Neds Bay and the north towards Newcastle.

The Project Area provides a tangible connection to past culture and land use by Aboriginal people.

RPS acknowledges that all Aboriginal artefacts, objects and places hold cultural significance to Aboriginal people as they form part of the wider cultural landscape. RPS acknowledges that the Project Area is culturally significant as part of the wider Aboriginal cultural landscape, however when viewed in isolation, no specific cultural values or associations have been identified by the RAPs for the Project Area.

7 IMPACT ASSESSMENT

This section assesses the impact of the amended project on identified surface artefacts and areas of subsurface archaeological potential and the cultural significance of the Project Area.

7.1 Previous Impacts to the Project Area

Modern disturbances and modifications to the natural landscape were identified during the site inspections and are associated with previous vegetation clearance, the existing WWTW, recreational vehicles and earthworks associated with bunds and evaporation ponds.

7.2 Impact Assessment Summary

The proposed works within the Project Area will involve excavation, installation of pipes, lay down of equipment and vehicular movements which will impact the surface and subsurface.

That there has been cultural material identified atop the ground surface within the Project Area and the broader region indicates some potential for further material to be observed. The level of disturbance in the topsoil profiles across the Project Area has direct influence on the level of potential for insitu cultural material in that it reduces the likelihood of intact deposits which are generally always located within topsoils. Where topsoils are present but disturbed, cultural materials may still be present but in a reduced number, and in a disturbed context.

Areas comprising of existing disturbance where no A horizon soils were observed, such as in SU2 which contained previous ground surface disturbance associated with the existing WWTW, or the access track identified in SU3, are considered to have a low potential for sub-surface Aboriginal objects and or places.

Areas identified as having A horizon soils, such as that observed in SU1 or the potential for A horizon soils in a disturbed context as in areas of SU3, may contain the potential for either insitu or non-insitu Aboriginal cultural materials.

Previously identified surface artefacts as identified in the ACHAR (RPS 2020) and AHIMS #45-7-0402 as identified in this report, would be impacted during the construction of the desalination plant and therefore surface collection prior to works would be required.

AHIMS site #45-7-0402 will be salvaged through Community Collection.

The impact assessment is summarised in **Table 8**.

Table 8: Impact Assessment AHIMS #45-7-0402.

Summary			
AHIMS	**Harm**	**Degree**	**Consequence**
45-7-0402	Direct	Total	Total Loss of Value

RPS 2020

8 MANAGEMENT AND MITIGATION STRATEGIES

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved. If conservation if not practicable, measures should be taken to mitigate against impacts to Aboriginal sites.

The nature of the mitigation measures recommended is based on the assessed significance of the site/s and is informed by the cultural significance provided by the registered Aboriginal parties during consultation.

Mitigation measures vary depending on the assessment of archaeological significance of a particular site and are based on the significance criteria discussed in Section 6. In general, the significance of a site would influence the recommended conservation outcomes and appropriate mitigation measures, on the following basis:

- Low archaeological significance – conservation where possible, an AHIP would be required to impact the site prior to works commencing.
- Moderate archaeological significance – conservation where possible. If conservation is not practicable, salvage excavations or similar mechanisms determined in consultation with the Aboriginal community may be necessary under an AHIP.
- High archaeological significance – conservation as a priority. Only if all practicable alternatives have been exhausted would impacts under an AHIP be considered justified. Comprehensive salvage excavations may be necessary.

AHIMS #45-7-0402 has been assessed to be of low archaeological significance. The proposal would impact the entirety of AHIMS #45-7-0402 **(Table 9)**, and as such, salvage of the site will be applicable to manage and mitigate harm for the Project Area.

Table 9: Summary of Impacts and Mitigation and Management Measures for AHIMS #45-7-0402.

Summary				
AHIMS	**Site Type**	**Significance**	**Consequence**	**Mitigation/Management Measures**
45-7-0402	Isolated Find	Low	Total Loss of Value	AHIP for surface salvage. Submit a site impact recording form to AHIMS following impacts.

8.1 Avoiding and Minimising Harm

The artefact associated with AHIMS site #45-7-0402 (RPS_IF2) is considered to be of cultural significance in the wider Aboriginal cultural landscape.

AHIMS site #45-7-0402 will be collected through Community Collection prior to the proposed works. Section 10 of this report provides guidance for further management of the Aboriginal cultural material specific to the Project Area.

In vegetated areas where intact A horizon soils have been identified, it is recommended that site inspection after vegetation clearance or the monitoring of ground disturbance works during the works should be made available to Aboriginal parties. Where any additional artefacts are identified during this proposed process, the management of the artefacts should follow as that provided in Section 10 of this Addendum.

Cultural heritage inductions are recommended to be undertaken by all personnel involved in the impact works to ensure any unexpected finds are managed.

8.2 Principals of Ecological Sustainable Development

When assessing harm, the NPW Act requires consideration of the principles of ecologically sustainable development (ESD). The principles of ESD include the precautionary principle and the principle of inter-generational equity.

8.2.1 Precautionary Principle

The precautionary principle states that if there is a risk of serious or irreversible harm, lack of certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation. The precautionary principle requires “careful evaluation to avoid, wherever practicable serious or irreversible damage to the environment” and “an assessment of the risk-rated consequences of various options” (DECCW 2010). It is important to consider the precautionary principle when:

- The proposal involves a risk of serious irreversible damage to an Aboriginal object or place, or to the value of that object or place.
- There is uncertainty about cultural or archaeological value, including in relation to the condition, rarity or representativeness of an Aboriginal object or place (DECCW 2010).

8.2.1.1 AHIMS #45-7-0402

The archaeological survey identified the nature and extent of AHIMS site #45-7-0402. The site has been assessed as isolated find in a disturbed context. Due to this, it is considered that the potential for sub-surface artefact is low.

The proposal does involve irreversible damage to an Aboriginal site; however, considering the disturbed nature it is likely that the surface artefact is not in-situ and has been transported to the current location.

Consultation, undertaken as part of the ACHAR (RPS 2019), has provided certainty regarding the cultural value of the site. AHIMS site #45-7-0402 has been found to be common in the local context and have low archaeological value. The artefact at AHIMS #45-7-0402 is considered to be of cultural significance in terms of the wider Aboriginal cultural landscape.

In addition to collection of identified cultural materials, the precautionary principle which requires “careful evaluation to avoid, wherever practicable serious or irreversible damage to the environment” and “an assessment of the risk-rated consequences of various options” have been considered. In areas where intact or disturbed-context A horizon topsoils have been identified, and which may contain potential for cultural material, monitoring and inspection of ground surface during vegetation clearance and ground disturbance works would provide an opportunity to manage harm to cultural objects and mitigate risk to cultural heritage.

8.2.2 Intergenerational Equity

Intergenerational equity is defined as the principle that the “present generation should ensure the health, diversity and productivity of the environment for the benefit of future generations” (DECCW 2009:29).

Intergenerational equity requires an understanding of the cultural and archaeological landscape and must consider the cumulative impact of a proposal.

8.2.2.1 AHIMS #45-7-0402

Previous studies conducted around the project area and across the Hunter have identified the ubiquitous nature of isolated surface artefacts in the region. The Aboriginal cultural site has been assessed to be of low archaeological significance due to the significant disturbance such as erosion and use by recreational vehicles.

The artefact retrieved from AHIMS site #45-7-0402 may contribute new information to research questions about Aboriginal land use practices across the Hunter valley in the past through further analysis. This analysis may provide potential information for educational purposed which in turn may go some way to supporting the principle of Intergenerational equity through the passing on of the collected information as well as collating it with existing and future new information.

8.2.3 Ongoing Consultation with Aboriginal Stakeholder Groups

Consultation with registered Aboriginal stakeholders would continue throughout the life of the project if necessary.

9 CONCLUSIONS AND RECOMMENDATIONS

This Aboriginal Cultural Heritage Assessment for the proposed temporary desalination plant has assessed the heritage impact arising from the proposed works. It provides a review of previous studies, a summary of consultation undertaken with RAPs, site inspection results and impact assessment. The visual inspection of the Project Area was conducted by RPS personnel in collaboration with RAP site officers on 5 February 2020. Based on the outcome of the visual inspection, one isolated find was identified.

RPS prepared the following recommendations with consideration of the cultural and archaeological landscape of the Project Area. Salvage will need to be undertaken for AHIMS #45-7-0402 isolated find, prior to works proceeding. The cultural site has been registered on the AHIMS. The site card is at Appendix A.

Due to the significant disturbances of the Project Area, the potential for sub-surface artefacts to be identified has been assessed as low.

The following recommendations are as reflected within the ACHAR (RPS 2019) and have been formulated to guide the proposed works as identified in this Addendum ACHAR.

Two Aboriginal cultural sites have been recorded as a result of the two site surveys.

In addition to the identification of AHIMS #45-7-0397 (RPS BEL IF01) on 24 May 2019, the Aboriginal cultural site, AHIMS #45-7-0402 Isolated Find (RPS_IF2), has been identified within the Project Area.

The following recommendations have been formulated to guide the proposed works as identified in the ACHAR (RPS 2019);

Recommendation 1 - Unexpected Finds Procedure

An unexpected finds procedure will provide a method to manage potential heritage constraints and unexpected finds during construction works. If suspected Aboriginal objects are identified during construction work should stop immediately and Bahtabah LALC, DPIE and an archaeologist contacted to identify and record the objects. This procedure should be made accessible to all relevant employees and contractors working within the Project Area via toolbox talks and display in break out rooms/ sites offices.

Recommendation 2 - ACHMP

An Aboriginal Cultural Heritage Management Plan (ACHMP) should be formulated following approval of the project to provide management and protection process for known and unknown Aboriginal objects and places.

Recommendation 3 – ACHMP Provisions

The ACHMP should include provision for the completion of the following activities. Additional inspection described within this Recommendation is referring to either further site inspection of A horizon soils after vegetation clearance or the monitoring of ground disturbance works during the works:

- Surface collection of AHIMS #45-7-0397 (RPS BEL IF01) and AHIMS #45-7-0402 (RPS_IF2).
- Additional inspection and surface collection of any artefacts exposed in the area mapped in **Figure 4** as containing A horizon soils in a disturbed context. The opportunity to undertake the additional inspection and surface collection should be provided to an archaeologist and Aboriginal party representatives following vegetation clearance and respreading of A horizon soils currently within the bunds and adjoining area.
- Additional inspection of the areas with the potential for intact A horizon soils mapped in **Figure 4**, with the opportunity to undertake the additional inspection to be provided to an archaeologist and Aboriginal party representative following vegetation clearance and during earthworks (where the earthworks will occur within A horizon soils). Methodologies should be included for collection of surface artefacts.

Recommendation 4 – Harm

All Hunter Water personnel and subcontractors involved in the proposed works should be advised of the requirements of the NPWS Act 1974 that it is an offence for any person to knowingly destroy, deface, damage or permit destruction, or defacement to an Aboriginal object or place without a relevant approval.

Recommendation 5 – Human Remains Protocol

In the event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, Department of Planning, Industry and Environment (DPIE), must be contacted on Enviroline 131 555. A DPIE officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.

10 MANAGEMENT OF ABORIGINAL OBJECTS

The recommendations above include provision for the salvage of Aboriginal objects under an ACHMP. This section addresses the temporary and permanent storage options for the artefacts that may be salvaged within the Project Area.

10.1 Temporary Storage of Salvaged Artefacts

Artefacts salvaged over the course of recommended activities for the project will be temporarily stored at the Hunter Water Corporation office, Honeysuckle Drive, Newcastle, NSW.

10.2 Long-Term Care of Salvaged Artefacts

The registered Aboriginal parties are asked to consider potential options for long-term care of salvaged artefacts. Some examples are provided below.

10.2.1 Reburial

The Aboriginal objects recovered during surface salvage works could be reburied within the Project Area within an area that would not be impacted by any future development works. This would be done in consultation with the proponent and the RAPs.

The proposed reburial methodology would adhere to the Code of Practice (page 35) this would include the following steps

- Completion of full artefact catalogue including photographic and drawn records for diagnostic artefacts
- Production of the catalogue in hardcopy and softcopy to be included with the artefacts
- All stone artefacts would be individually bagged and tagged with the artefact ID, provenance and project details written on the outside of the bags as well as individual tags so that they can be referenced back to the catalogue
- All artefacts would be double bagged in good quality plastic zip-lock bags
- The artefact and catalogue would be placed in a suitable impervious and permanent container which would also be labelled as above.
- A site update card would be forwarded to the AHIMS registrar with information on the location and depth of reburial.

10.2.2 Storage at the Bahtabah Local Aboriginal Land Council

The Aboriginal object recovered during salvage works could be stored at the Bahtabah LALC office under a Care and Control Agreement.

10.2.3 Other Location

Additional options nominated by the RAPs would be considered in consultation with all RAPs and DPIE.

In response to this draft report, the RAPs are asked to identify their preferred option.

References

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DECCW (2010). Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (the Guide).

Keith, D. (2006). Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT. Sydney, Department of Environment and Conservation NSW.

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NSW Office of Environment & Heritage. (2019). "eSPADE: NSW soil and landscape information." from http://www.environment.nsw.gov.au/eSpadeWebApp/.

OEH (2011). Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, State of NSW and the Office of Environment and Heritage, Department of Premier and Cabinet.

Appendix A AHIMS Site Card #45-7-0402 (RPS_IF2)

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 45-7-0402 **Date recorded:** 05-02-2020

Site Location Information

Site name: RPS_IF2

Easting: 375603 **Northing:** 6342332 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 56 **Location method:** Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr.	Slack	Ben

Organisation: RPS

Address: 241 Denison St, Broadmeadow NSW 2292

Phone: 0249404200 **E-mail:** ben.slack@rpsgroup.com.au

Site Context Information

Land Form Pattern: Dune Field **Land Use:** Recreation

Land Form Unit: Dune **Vegetation:** Grasslands

Distance to Water (m): 100 **Primary Report:**

How to get to the site: Site is located approximately 75 metres east of Ocean park Road

Other site information:

Site location map

Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	1	1				

Description:

Single Tuff Flake, approximately 10mm in length, 5mm wide and 2mm thick. Some backing and retouch identified

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: Context Shot

Description: Tuff flake

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**