



May 2026

Surface Water Assessment for Proposed Bobs Farm Sand Quarry, Bobs Farm



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Revision Table

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11/03/2026	D0	TO	GVT/RD	TO
19/03/2026	D1	TO	RD	TO
20/04/2026	F0	TO	RD	TO
1/5/2026	F1	TO	RD	TO
5/5/2026	F2	TO	RD	TO

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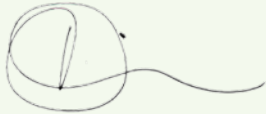
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Bobs Farm Sand Quarry Surface Water Assessment	
Name of Quarry	Bobs Farm Sand Quarry
Applicant	Newcastle Sand Pty Ltd
Contact Details of the Applicant	Rob Drew Senior Planner ADW Johnson Pty Ltd
Author of Report	Tara O'Brien CPESC no 8255
Signature	
Date	5/05/2026

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1 Introduction

1.1 CONTEXT

This Surface Water Assessment (SWA) has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued to Newcastle Sand Pty Ltd (Proponent) on the 18th of December 2025 in response to a State Significant Development proposal for a sand quarry located at Bobs Farm, NSW. This plan will be incorporated into the Environmental Impact Statement to be submitted to the Department of Planning, Housing and Infrastructure, as the responsible consent authority.

1.2 LOCATION

The proposed sand quarry (Site) is accessed off Nelsons Bay Road at Bobs Farm within Lot 254 DP 753204, Parish of Tomaree, County Gloucester, located at 3631 Nelsons Bay Road. *Figure One* shows the site location regionally and locally.

1.3 PROJECT DESCRIPTION

The Proponent seeks to develop the site for an extractive industry as a sand quarry. Consent is sought for annual extraction of 530,000tpa for 10 years, equating to a total life-of-quarry of approximately 4.4 million tonnes. It is anticipated the proposal will average sales of 10,000 to 12,000 tonnes per week.

The site has an area of approximately 40.9ha with the proposal seeking to use most of the subject site for extractive industry purposes with the exception of:

- A minimum 15m buffer between the site boundary and any areas of extraction;
- The existing right-of-carriage way including a 3m buffer located in the north-east of the site and the area east of this right-of-carriageway; and
- The existing electricity easement including a 3m buffer at the southern end of the site and the vegetated area to the south of this easement.

No dredging is proposed with only dry (surface) sand extraction being employed.

Preparation of the site and proposed sand quarry operations would broadly comprise:

- Construction of a new left-in left-out intersection;
- Establishment of processing and sales area including installation of onsite office (Atco structure), installation of screening and wash facilities, designation of stockpiling areas, associated ancillary structures, and use of the existing dwelling at the site for a manager's residence;
- Staged vegetation clearing and topsoil stripping in accordance with the approved staging plan with topsoil stored onsite to be used for future rehabilitation works;
- Dry extraction down to a maximum of 0.7m above the ground water table; and
- Ongoing rehabilitation.

Day-to-day operations would require two (2) articulated haul trucks (Volvo A40G) loaded by a hydraulic excavator (Volvo EC350) to transport sand from the extraction area to the on-site processing facility being a full electric screen and wash plant. Equipment will include excavators, front-end loaders, haul trucks, conveyors and water carts. Operations will utilise modern, well-maintained equipment incorporating advanced noise attenuation and water saving measures as well as fuel efficiency technology to reduce operational impacts on the surrounding environment.

The site benefits from a Water Access Licence (WAL5960) for 40ML per annum which is proposed to be used for sand washing purposes. Approximately 85% of extracted sand will be washed requiring a total of approximately 32ML per annum which is within the current Water Access Licence.

All essential services are available, or able to be made available, at the site including electricity, water tanks for potable water, pump-out system for sewage management, stormwater drainage and suitable vehicular access.

Sales would be by haulage truck at a maximum of ten (10) loaded trucks per hour equating to a maximum of 120 loaded trucks per day but with an average of 46 loaded trucks per day. All transport trucks would travel east along Nelson Bay Road and complete a U-turn at the Port Stephens Drive roundabout. Haulage trucks will be prohibited from using Marsh Road.

The site will be accessed by way of a new left-in left-out intersection onto Nelson Bay Road. The existing access to the site at the electricity easement is proposed to be retained for light vehicle access for the quarry as well as for access to the manager's residence.

Progressive rehabilitation of exhausted areas will take place in accordance with the approved rehabilitation plan. The proposed post-quarry use of the site is to return the site to its current condition, being the same ratio of vegetated land and land used for the purpose of extensive agriculture.

1.4 CONSULTATION

The proponent sought the Planning Secretary's Environmental Assessment Requirements (SEARs) which were prepared in consultation with relevant government agencies. Relevant requirements from the SEARs are reproduced below.

Table 1. SEARs Requirements for the Environmental Impact for Surface Water

SEARs Requirements	Where Addressed in this Report
The EIS must address the following specific matters:	
A water resources impact assessment, including:	
A detailed site water balance for the life of the development, including a description of site water demands, water take from any water source, water disposal methods (inclusive of anticipated volumes, quality and frequency of any water discharges), water supply infrastructure and water storage structures as defined by the relevant Water Sharing Plan;	Section 6
Identification of any licensing requirements or other approvals under the <i>Water Act 1912</i> and/or <i>Water Management Act 2000</i> ;	Section 3
Demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP);	Section 3 Section 6
A description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP;	Section 3
A conceptual groundwater model that assesses the potential groundwater hazards and impacts associated with the development in accordance with the <i>Australian Groundwater Modelling Guidelines</i> (Commonwealth, 2012) having regard to the <i>NSW Aquifer Interference Policy</i> (2012);	Not addressed in this report. <i>Included in the separate Groundwater Assessment</i>
An assessment of the likely impacts on the quality and quantity of existing <u>surface</u> and ground water resources [<i>included in the Groundwater Assessment</i>], including a detailed assessment of proposed water discharge quantities and quality against receiving water quality and flow objectives;	Section 5 Section 7

SEARs Requirements	Where Addressed in this Report
A detailed assessment of the need to maintain an adequate buffer between excavations and the highest predicted or recorded regional groundwater table;	Not addressed in this report. <i>Included in the separate Groundwater Assessment</i>
An assessment of any likely flooding impacts of the development;	Section 4.4.3 Section 5.6.4
An assessment of the likely impacts (including cumulative impacts) of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users;	Section 5 Section 7
An assessment of the potential water quality hazards surrounding the site including acidity, metals, salinity and contaminants including poly-fluoroalkyl substances (PFAS). This assessment must include measures proposed to reduce or manage the hazards and potential interactions of the development and surrounding water users;	Section 4.1 Section 5.4 Section 7
A detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts; and	Section 5
Include a detailed consideration of any potential impacts on sensitive downstream receiving environments.	Section 5 Section 7

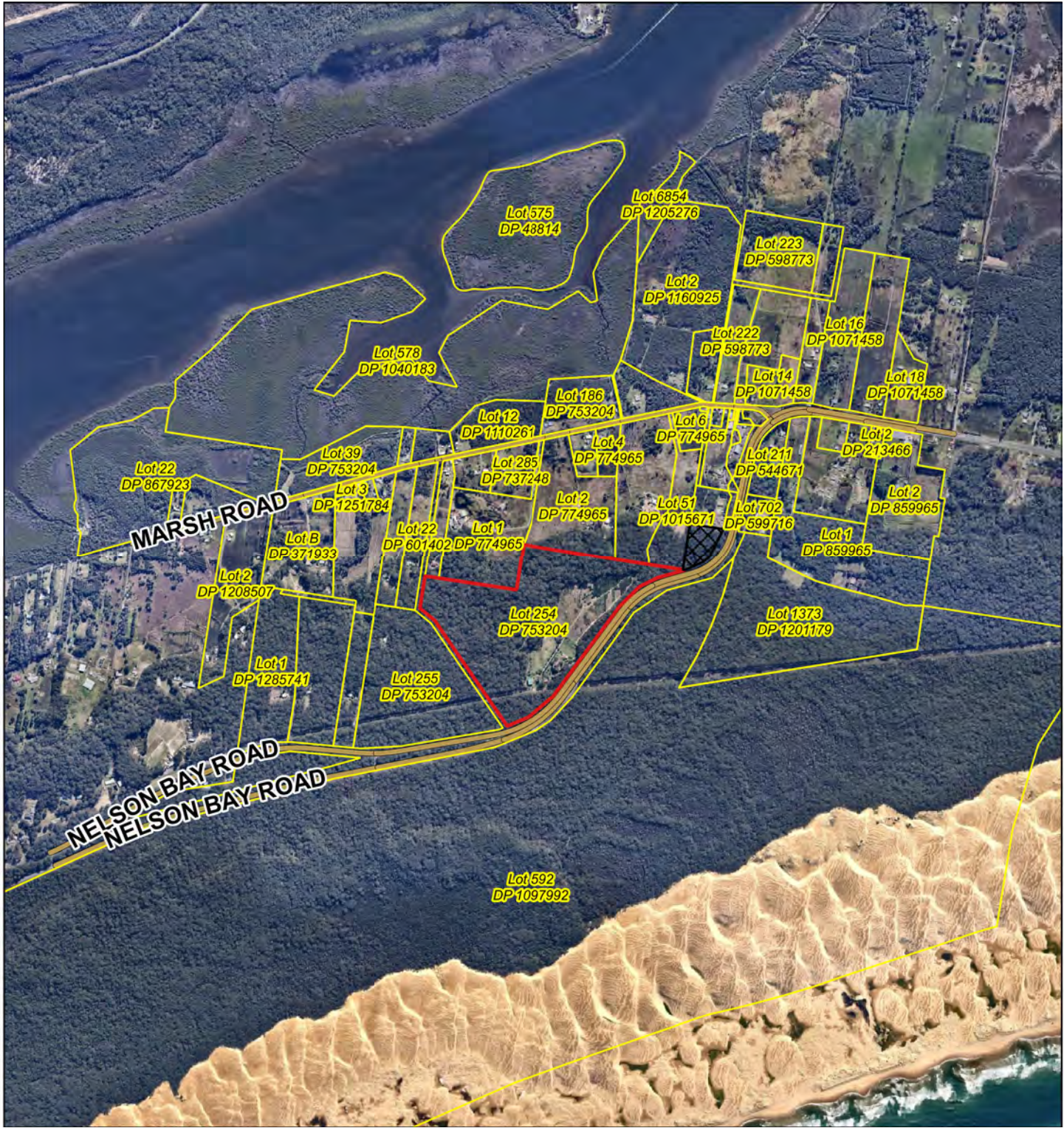
Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Site Location	Location:	Lots 10 & 11 DP 1071458 & Lot 254 DP 753204 Nelson Bay Road, Bobs Farm, NSW	Source:	Google OpenStreet Map & nearmap - Image Date 09/01/2026 Zone MGA 56.	Plan By:	SK/JD
Figure:	ONE	Council:	Port Stephens Shire Council	Survey:	Not Applicable	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856	Office:	Thornton
Our Ref:	12790_BF_SWA2026_Q001_V1_F1	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



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0 1 2 km



0 250 500 m

Legend

- Site Boundary
- Lot Boundary (Cadastral)
- Road Easement

Plan of: Surface Water Assessment for Proposed Bobs Farm Sand Quarry 2026 - Site Layout

Figure: TWO

Version/Date: V2 20/04/2026

Our Ref: 12790_BF_SWA2026_Q002_V2_F2

Location: 3631 Nelson Bay Road, Bobs Farm, NSW

Council: Port Stephens Shire Council

Tenure: Not Applicable

Client: Newcastle Sand

Source: nearmap - Image Date 24/07/2025 Zone MGA 56

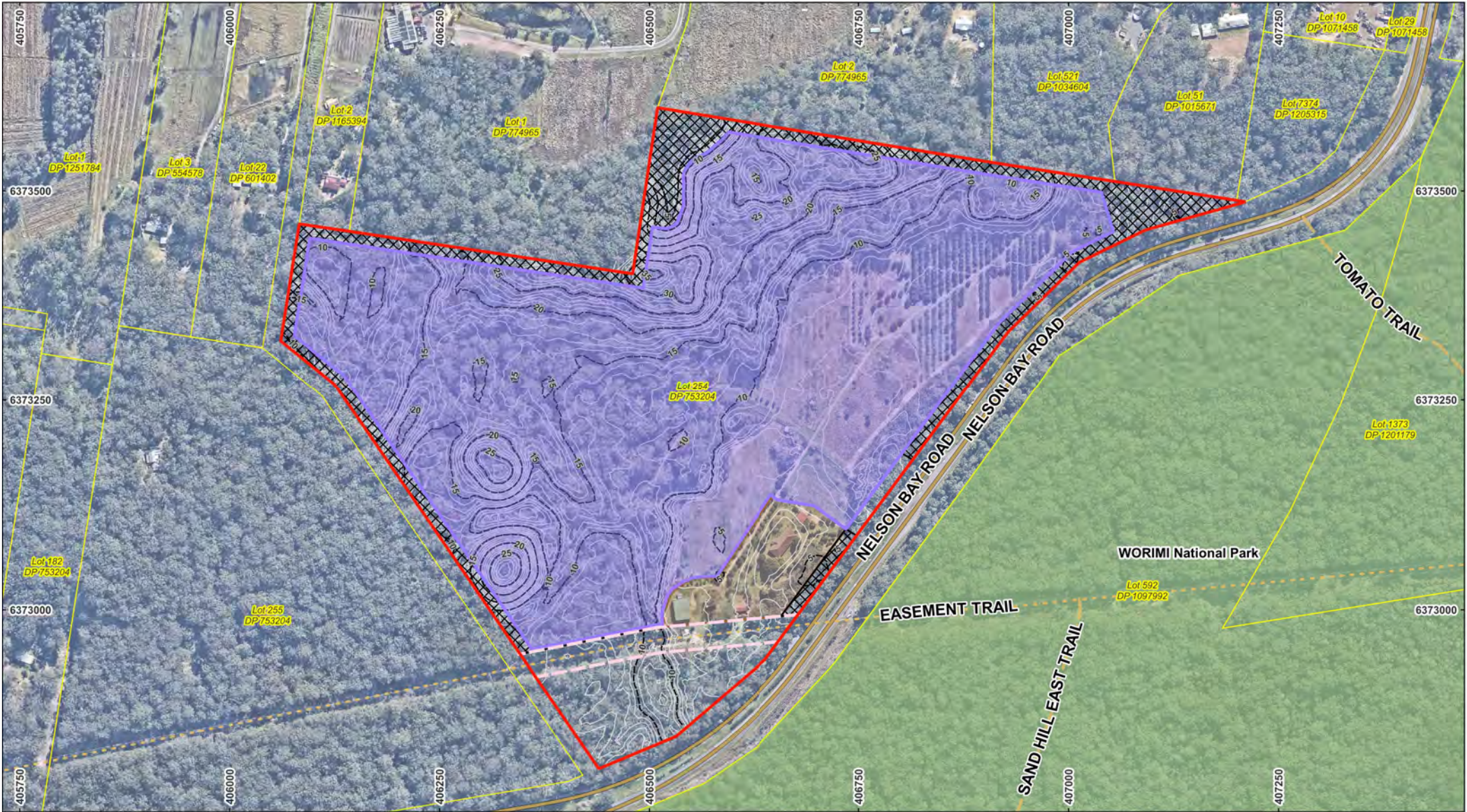
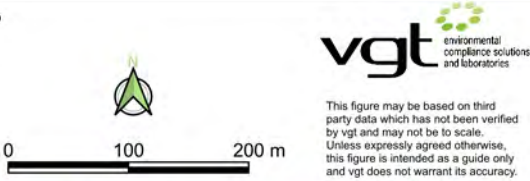
Survey: NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary and Contours.

Projection: GDA2020/MGA Zone 56 EPSG:7856

Contour Interval: 1m

Plan By: SK/JD

Project Manager: TO



Legend

- | | | | |
|--------------------------|----------------------|---------------------|----------|
| Site Boundary | Sand Extraction Area | Existing Topography | Roads |
| Lot Boundary (Cadastral) | Buffers | 5m | Easement |
| Electricity Easement | Stage 1 Works Area | 1m | Road |
| NPWS Reserve | | | Trail |

2 Surface Water Strategy

2.1 PURPOSE OF THE ASSESSMENT

The purpose of this Assessment is to describe the proposed water management system for the Site and to clarify how potential water impacts generated by the development will be managed.

2.2 OBJECTIVES OF THE WATER MANAGEMENT SYSTEM

The principle objectives of the water management system are set out below:

- To minimise erosion and sedimentation from all active and rehabilitated areas, thereby minimising sediment ingress into surrounding surface waters;
- To ensure the segregation of 'dirty' water from 'clean' water and manage 'dirty' water appropriately such that any discharge from the Site meets the relevant water-quality limits, including limits contained in the relevant guidelines and any limits imposed by specific project approvals. 'Dirty' water is defined as surface runoff from disturbed catchments. 'Clean' water is defined as surface runoff from catchments that are undisturbed or rehabilitated catchments;
- To minimise the volume of water discharged from the Site but, should the discharge of water prove necessary, ensure sufficient settlement time is provided prior to discharge or employ other means such as flocculants to ensure the water meets the objectives identified in the point above;
- That appropriate licences and approvals are held or can be obtained under the Water Management Act 2000, or any relevant exemptions that apply under Schedule 4 of the Water Management (General) Regulation 2018;
- To ensure any water used in the processing of materials is contained within the closed system on the Site;
- To monitor the effectiveness of surface water and sediment controls and to ensure all relevant surface water quality criteria are met; and
- To determine a water balance for the Site based on projected usage.

3 Legislative Requirements

3.1 RELEVANT LEGISLATION

3.1.1 Environmental Planning and Assessment Act 1979 (EP&A Act)

The proposal will be subject to the provisions of the EP&A Act. Additionally, the operations will need to be able to demonstrate compliance against any Conditions of Approval issued under the provisions of the EP&A Act.

3.1.2 Protection of the Environment Operations Act 1997 (POEO Act)

The operations are a Scheduled Activity under the PoEO Act and as such, an Environmental Protection Licence (EPL) will be required.

3.1.3 Water Management Act 2000

The objectives of the Water Management Act 2000 (WM Act) are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations.

The WM Act describes, under Sections 89, 90 and 91, a range of approvals including water use approvals, water management work approvals and activity approvals. The provisions of Sections 89 and 90 are in force only within water sharing areas. Given the site is within the Karuah River Water Source Water Sharing Plan (WSP) (see *Figure Three*), these provisions must be considered. Controlled activity approvals under Section 91 of the WM Act now apply in all areas of the state.

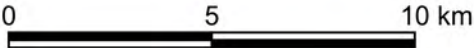
In relation to the proposed development, Section 89J (g) of the WM Act applies:

- a water use approval under Section 89 of the WM Act is not required as the dry extraction of sand does not involve the extraction of surface water;
- a water management work approval under Section 90 of the WM Act is not required as the proposed development does not involve water supply work, drainage work or flood work; and
- an activity approval under Section 91 of the WM Act is not required as the proposed development will not undertake a controlled activity within waterfront land or undertake aquifer interference.

Harvestable Rights relates to a landholder's right to capture a measured amount of annual rainfall on his/her property up to a point where they do not need a water access licence. Once a dam is measured at over harvestable rights, then then a Water Access Licence (WAL), for the amount above the measured Maximum Harvestable Right Dam Capacity (MHRDC), is required. As the site will not require any dams for processing or surface water management, a WAL is not required.

The site holds WAL5960 for 40ML per annum for extraction of groundwater for the purposes of Farming and Irrigation on the site (see *Appendix C*).

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Karuah River Water Source/ Water Sharing Plan Extent	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	Google Satellite Map.	Plan By:	SK/JD
Figure:	THREE	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary.	Project Manager:	TO
Version/ Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q003_V1_F3	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



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Legend

-  Site Boundary
-  Water Sharing Plan - Unregulated River Water Sources

3.2 RELEVANT GUIDELINES AND STANDARDS

3.2.1 Managing Urban Stormwater: Soils and Construction Vol1 and Vol 2E (Mines and Quarries)

Design details for stormwater and sediment control structures for mine and quarry sites are detailed in Volume 1 of the Managing Urban Stormwater: Soils and Construction Guidelines (the Blue Book). Additional measures are outlined within Managing Urban Stormwater, Soils and Construction, Volume 2E Mines and Quarries (DECC, 2008).

3.2.2 Best Practice Erosion and Sediment Control (IECA 2025)

The document has been developed by the International Erosion Control Association (IECA Australasia) to provide assistance to erosion and sediment control practitioners in the planning, design, installation, and maintenance of erosion and sediment control measures on construction and building sites.

3.2.3 ANZECC (2000) Guidelines for Fresh and Marine Water Quality

Water Quality Objectives will be consistent with the indicators and trigger values/criteria, for the identified environmental values, outlined in the ANZECC (2000) Guidelines for Fresh and Marine Water Quality.

3.2.4 Risk Based Framework for Considering Water Health and Outcomes in Strategic Land-use Planning Decisions (OEH and EPA 2017)

The Framework allows decision-makers to determine management responses that meet waterway health outcomes which reflect the community's environmental values and uses of waterways – what the community believes is important for a healthy ecosystem, for public benefit, welfare, safety or health. It includes identification of water quality and flow objectives and a risk-based approach to mitigating the impacts of development.

3.2.5 NSW Aquifer Interference Policy (2012)

A licence to take groundwater, outside of the existing licenced groundwater bore, will not be required as the extraction activities are unlikely to intercept any groundwater.

3.2.6 Guidelines for Controlled Activities on Waterfront Land (2018)

According to the online Waterfront Land e-tool (Department of Planning and Environment) no Controlled Activity Approval is required from Natural Resources Access Regulator (NRAR).

Works are not planned within 40 metres of a watercourse or wetland and as such, the works are exempt from requiring a Controlled Activity Approval.

A water management work approval under Section 90 of the WM Act is not required as there are no water supply work, drainage work or flood works.

3.2.7 National Water Quality Management Strategy: Guidelines for Sewerage Systems

Reviews the overall management of sewerage systems and specifically addresses effluent management, forming the basis for a common and national approach throughout Australia.

Deals with effluent from wastewater treatment plants for domestic and industrial waste, but not effluent discharged directly to the environment from sources such as septic tanks, industry and stormwater drains.

The site will use a portable amenities facility which will be pumped out by a licenced contractor as required. Effluent will not be treated in an on-site sewerage system nor applied to the land therefore the guideline does not apply.

3.2.8 Environmental Guidelines: Use of Effluent by Irrigation (EPA)

The site will not manage effluent by irrigation to land. The site will use a portable amenities facility which will be pumped out by a licenced contractor as required

3.2.9 NSW Water Conservation Strategy (2000)

This document sets out the New South Wales Water Conservation Strategy, a set of strategies, aims and actions which will enable New South Wales to use water more efficiently and effectively, to accommodate changes in population, support economic growth and maintain a healthy environment. The document also reflects the context in which the Water Conservation Strategy was developed and provides information on water use and some current conservation initiatives.

The site will maximise water conservation through recycling in the sand processing plant and rainwater collection in the office and amenities blocks.

3.2.10 State Water Management Outcomes Plan

The Water Management Act 2000 provides for the establishment of this State Water Management Outcomes Plan (SWMOP) to set out the over-arching policy context, targets and strategic outcomes for the development, conservation, management and control of the State's water sources.

3.2.11 NSW State Rivers and Estuary Policy (1993)

The objectives of the state rivers and estuaries policy are to manage the rivers and estuaries of NSW in ways which

- Slow, halt or reverse the overall rate of degradation in their systems;
- Ensure the long-term sustainability of their essential biophysical functions; and
- Maintain the beneficial use of these resources.

The development is not anticipated to impact waterways or estuaries.

3.2.12 Technical Guidelines: Bunding & Spill Management (EPA)

Bunding and spill management is described in the relevant Australian Standards. The site will comply with the relevant Australian Standards.

3.2.13 NSW Floodplain Development Manual 2005 (OEH)

The manual provides for the development of sustainable strategies for managing human occupation and use of the floodplain and considers risk management principles based on a hierarchy of avoidance, minimisation and mitigation works. It provides council with a framework for implementing the Flood Prone Land Policy (NSW Government) to achieve its objectives.

3.2.14 Floodplain Risk Management Guideline (OEH)

Studies to understand and manage flood risk funded under the Floodplain Management Program in New South Wales generally follow guidance provided in the Floodplain Development Manual (FDM) (DIPNR 2005) and associated technical guides. They are also informed by national best practice as outlined in the Australian Institute of Disaster Resilience Handbook 7 series of documents (AIDR Handbook 7 series) and the national guide for flood estimation, Australian Rainfall and Runoff (ARR).

In July 2016, a significant update of techniques and base information in ARR was released (ARR2016; Ball et al. 2016), to replace earlier versions (ARR1987). The NSW Office of Environment and Heritage (OEH) developed the guide to assist councils to transition to ARR2016 when developing and implementing floodplain risk management (FRM) plans under the process outlined in the FDM.

3.2.15 Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites 1992 (ANZECC & NHMRC)

The aim of the guideline is to provide a systematic framework for the prevention, assessment, clean-up and management of existing and future contaminated sites. The guideline has been updated and replaced by the National Environment Protection (Assessment of Site Contamination) Measure1999 (NEPC).

3.2.16 National Environment Protection (Assessment of Site Contamination) Measure1999 (NEPC)

The aim of the measure is to establish a nationally consistent risk-based approach to the assessment of site contamination to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, landowners, developers and industry.

A search of the NSW EPA Contaminated Land Register shows that the site has not been notified to the EPA. Historical land use indicates a low risk of contamination being located on the site.

4 Existing Environment

4.1 LAND USE

The existing cleared footprint has not increased since 2004 and the land has been used primarily for olive production alongside rural residential pursuits. The project area is zoned *RU2- Rural Landscape* (see *Figure Six*) under the Port Stephens LEP (2013).

Figure Four. 2025 Nearmaps Aerial Photograph



A description of the land uses surrounding the Site has been reproduced below.

Table 2. Surrounding Land Use Within 500m of the Proposed Quarry

Direction	Land Use Description
North and Northeast	North of the Site the land comprises rural residential allotments which are predominately cleared. Access to these allotments is from Marsh Road. The nearest residential dwelling is approximately 60m from the site boundary. Some of the allotments undertake tourist activities such as The Shark Ray and All Creature Rescue located at 686 Marsh Road, which is located approximately 300m north of the Site. The Bobs Farm Primary School is located approximately 860m to the northeast of the Site on March Road.
South and East	East of the site lies Nelson Bay Road, a dual carriage way, and further the east lies the Worimi National Park which extends from Nelson Bay Road to the edge of the coastal vegetation. The Worimi Regional Park extends from the edge of the National Park to Stockton beach. An electricity easement crosses the southern corner of the site.
West	There are rural residential dwellings located within 500m to the west and northwest of the property. The dwellings are surrounded by bushland and very little land is cleared.

Dwellings within 500m are shown in *Figure Five*.

Plan of: Surface Water Assessment for Proposed Bobs Farm Sand Quarry 2026 - Surrounding Land Ownership & Land Use

Figure: FIVE

Version/Date: V2 20/04/2026

Our Ref: 12790_BF_SWA2026_Q005_V2_F5

Location: 3631 Nelson Bay Road, Bobs Farm, NSW

Council: Port Stephens Shire Council

Tenure: Not Applicable

Client: Newcastle Sand

Source: nearmap - Image Date 24/07/2025 Zone MGA 56.

Survey: NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary.

Projection: GDA2020/MGA Zone 56 EPSG:7856

Contour Interval: Not Applicable

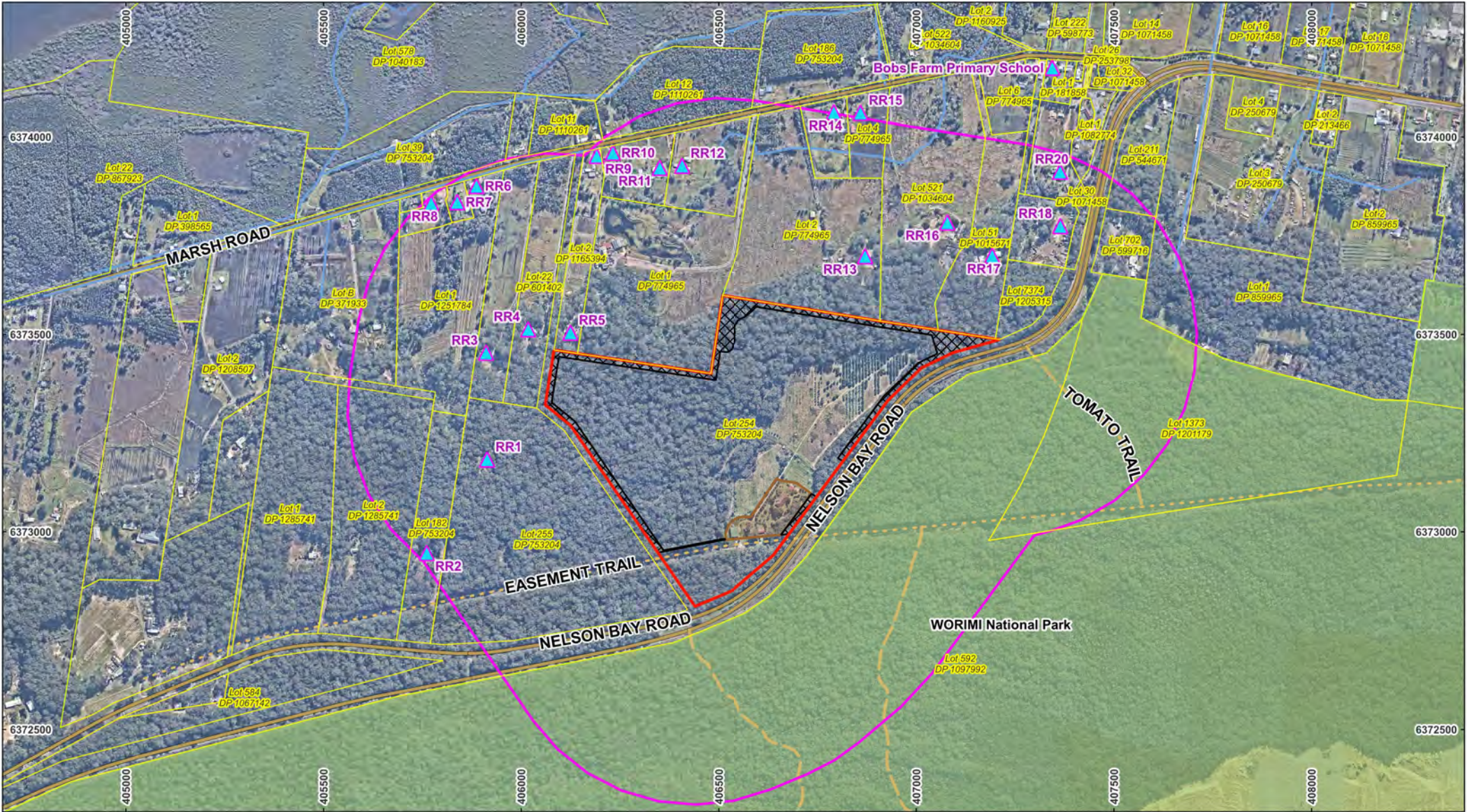
Plan By: SK/JD

Project Manager: TO



vgt environmental compliance solutions and laboratories

This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



Legend

- | | | | |
|--------------------------|--------------------|--------------|--------------------------------|
| Site Boundary | Hydroline | Roads | Buffers |
| Lot Boundary (Cadastral) | Sensitive Receptor | Easement | Buffers from Lot and Easements |
| NPWS Reserve | Stage 1 Works Area | Road | 500m Buffer |
| Electricity Easement | | Trail | |

4.2 GEOLOGY AND SOILS

The site was subject to a detailed study regarding the geology and soils in the previous SSD for extraction of sand on the site (SSD-6395) which was subsequently withdrawn. Work undertaken within this study remains applicable to the site and excerpts are reproduced below for this updated assessment.

4.2.1 Regional Geology

From the Tattersall Lander EIS (2018):

'According to the regional geological map (Newcastle 1:250,000 Geological Series Sheet S1 56-2 First Edition - 1966), the site is underlain by Permian gravel, sand, silt, clay, 'Waterloo Rock', marine and freshwater deposits. The Stockton Dune lies on the Tomaree Peninsula/ Headland which is a relatively low-lying coastal area characterised by extensive unconsolidated sand dunes and estuarine deposits. Local hills are dominated by rocky outcrops that are acid volcanic and sedimentary (Carboniferous) in origin and are located mainly at Nelson Bay to the east at the end of the peninsula. To the north of the deposit lies Tilligerry Creek and the Tilligerry Peninsula, another source of sand mining activity on the Inner Barrier.'

4.2.2 Site Geology

From the Tattersall Lander EIS (2018):

'Marine, aeolian and estuarine sands and mud deposits dominate the coastal margin in this location. The Site lies in the northern part of the Holocene deposits that began to form about 6500 years ago. The sandbeds are east-northeast trending sand ridges comprised of two barriers: the Inner Barrier (Tomago Sand Beds) and the Outer Barrier (Stockton Sand Beds). The site is located on the Outer Barrier, which extends from east of Tomago to the Tomaree Peninsula

The site consists of a series of rounded dunes of varying heights separated by lower areas with significant sand deposits, laid down by wind and marine processes. The rounded beach dune ridges have been reworked through aeolian processes in the late Quaternary into a series of discontinuous parabolic, longitudinal and transgressive dunes. Dune depth and heights vary considerably from relatively lower levels around ~10m AHD to high dunes up to 30 m AHD in height.'

4.2.3 Soil Landscape

The site has predominately two soil landscapes, the **Boyces Track Soil Landscape** to the north and the **Hawks Nest Soil Landscape** to the south. Although there are minor variations within these landscapes, the main soil characteristics are summarised below.

4.2.3.1 Site North

According to eSPADE mapping by the NSW Government, the majority of the northern portion of the site lies within the **Boyces Track Soil Landscape (9332bt and 9232bt)** (see *Figure Seven*) which is summarised in *Table 3*.

Table 3. Boyces Track Soil Landscape Summary from eSpade

Item	Boyces Track Soil Landscape (9232bt)	Boyces Track Soil Landscape (9332bt)																																																																																																														
Landscape	Steep Quaternary Holocene sand dunes on the Tomago Coastal Plain. Local relief 10–30 m, slopes >25%, elevation 10–40 m. Uncleared tall open-forest.	Steep, stable, aeolian, Holocene transgressive dunes. Local relief 10–30 m, slope gradients often >25%. Minor swampy swales occur. Predominantly uncleared tall open-forest.																																																																																																														
Soils	Deep (>300 cm), well-drained weakly developed Podzols (Uc2.2).	deep (>300 cm), very well-drained weakly developed Podzols																																																																																																														
Limitations	Wind erosion hazard, steep slopes, mass movement hazard (if disturbed), ground water pollution hazard, non-cohesive acid soils of low fertility	Wind erosion hazard, potential mass movement hazard (if disturbed), steep slopes, foundation hazard, ground water pollution hazard, strongly acid, non-cohesive sandy soils with very low fertility.																																																																																																														
Occurrence and Relationships	Up to 40 cm of speckled loose loamy sand (bt1) overlies up to 100 cm of bleached loose light grey sand (bt2), which overlies up to a 50 cm of faintly mottled sand (bt3) and >500 cm of loose dull yellow orange sand (bt4) [well-drained weakly developed Podzols (Uc2.2)]. Boundaries are clear except for bt3/bt4 which is diffuse. Total soil depth >300 cm	Up to 30 cm of speckled loose loamy sand (bt1) overlies up to 100 cm of bleached loose light grey sand (bt2), which overlies up to 50cm of faintly mottled sand (bt3) which overlies >500 cm of loose dull yellow orange sand (bt4) [well-drained weakly developed Podzols (Uc2.21)]. Boundaries are clear except for bt3/bt4 which is diffuse. Total soil depth >300 cm,																																																																																																														
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Item	Boyces Track Soil Landscape (9232bt)	Boyces Track Soil Landscape (9332bt)
Landscape Limitations	• High wind erosion hazard • Mass movement hazard (if disturbed) • Steep slopes (localised) • Non-cohesive soils • Foundation hazard • Ground water pollution hazard	• High wind erosion hazard • Mass movement hazard (if disturbed) • Steep slopes • Non-cohesive soil • Foundation hazard • Ground water pollution hazard (if developed)

The northernmost corner of the site drops in elevation into the Bobs Farm Soil Landscape (9332bf) as summarised in Table 4.

Table 4. Bobs Farm Soil Landscape Summary from eSpade

Item	Bobs Farm Soil Landscape (9332bt)																																																						
Landscape	Broad (0.5–2.0 km), flat, swampy, Holocene estuarine plain. Slope gradients																																																						
Soils	Deep (>300 cm), very poorly drained Humic Gleys (Dy5.11)																																																						
Limitations	Flood hazard, foundation hazard, seasonal waterlogging, waterlogging (localised), permanently high watertables, high run-on, saline subsoils (localised) with acid sulphate potential.																																																						
Occurrence and Relationships	Generally up to 30 cm of black strongly pedal organic-rich loam (bf1) overlies 20→80 cm of grey saturated plastic clay (bf2). bf2 occasionally overlies >50 cm of saturated greyish yellow brown massive sandy clay loam (bf3) [very poorly drained Humic Gleys (no suitable PPF, Dy5.11)]. Boundaries between soil materials are sharp. Total soil depths exceed 300 cm. Layers of the shelly materials can occur interspersed with clays at depth. Near the boundary with the sand dunes Acid Peats/ Humus Podzol intergrades (O) can occur.																																																						
Erodibility	<table><tr><th colspan="5">Erodibility</th></tr><tr><th></th><th>K factor</th><th>Non-concentrated flows</th><th>Concentrated flows</th><th>Wind</th></tr><tr><td>bf1</td><td>peaty</td><td>very low</td><td>low</td><td>low</td></tr><tr><td>bf2</td><td>0.056</td><td>high</td><td>low</td><td>low</td></tr><tr><td>bf3</td><td>0.019</td><td>low</td><td>low</td><td>low</td></tr><tr><th colspan="5">Erosion Hazard</th></tr><tr><th></th><th></th><th>Non-concentrated flows</th><th>Concentrated flows</th><th>Wind</th></tr><tr><td>grazing</td><td></td><td>slight</td><td>slight</td><td>slight</td></tr><tr><td>cultivation</td><td></td><td>slight</td><td>slight</td><td>slight</td></tr><tr><td>urban</td><td></td><td>slight</td><td>slight</td><td>slight</td></tr></table>					Erodibility						K factor	Non-concentrated flows	Concentrated flows	Wind	bf1	peaty	very low	low	low	bf2	0.056	high	low	low	bf3	0.019	low	low	low	Erosion Hazard							Non-concentrated flows	Concentrated flows	Wind	grazing		slight	slight	slight	cultivation		slight	slight	slight	urban		slight	slight	slight
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cultivation		slight	slight	slight																																																			
urban		slight	slight	slight																																																			

Item <i>Bobs Farm Soil Landscape (9332bt)</i>	
Landscape Limitations	• Flood hazard • Seasonal waterlogging • Waterlogging (localised) • Permanent high watertables • High run-on • Foundation hazard

4.2.3.2 South Site

The Southern portion of the site, encompassing most of the existing cleared land (see *Figure Seven*) lies within the **Hawks Nest Soil Landscape (9332hn and 9232hn)** which is summarised in *Table 5*.

Table 5. Hawks Nest Soil Landscape Summary from eSpade

Item	<i>Hawks Nest Soil Landscape (9332hn)</i>	<i>Hawks Nest Soil Landscape (9232hn)</i>
Landscape	Stable, gently undulating, Holocene sand sheets and beach ridges. Local relief <3 m, slope gradients <10%, elevation 3–12 m. Generally well drained apart from isolated low lying poorly drained swales. Uncleared and extensively cleared dry shrubland, woodland and tall open-forest.	Low Holocene sandsheets and low transgressive dunes on the Tomago Coastal Plain. Local relief <3m, slope gradients <10%, elevation 3-12m. Dry scrub land, woodland and tall open-forest.
Soils	<i>Deep (>300 cm), well-drained Podzols (Uc2.3) on dunes with deep (>300 cm) minor Acid Peats/Siliceous Sands in swampy swales</i>	Deep (>300 cm), well-drained Podzols (Uc2.3) and Siliceous Sands/Podzols (Uc2.21) on dunes, deep (>200 cm), poorly drained Humus Podzols (Uc5.1) on sandsheets.
Limitations	Wind erosion hazard, localised high watertables, localised seasonal waterlogging, localised permanent waterlogging (small swamps), high run-on (localised swampy swales) and acid, non-cohesive soils of very low fertility.	Wind erosion hazard, high watertables (localised), seasonal waterlogging (localised), permanent waterlogging (localised), non cohesive, potential acid sulphate soils, ground water pollution hazard

Item	Hawks Nest Soil Landscape (9332hn)	Hawks Nest Soil Landscape (9232hn)																																																																																																														
Occurrence and Relationships	Dunes. Up to 40 cm hn1 overlies 10–150 cm of bleached loose sand (hn2). hn2 overlies 30–>100 cm of mottled sand (hn3) which overlies >300 cm of greyish yellow brown sand (hn4) [well-drained Podzols (Uc2.3)]. Total soil depth is >300 cm and the boundaries between the soil materials are clear except for the boundary between hn3 and hn4 which is often diffuse. Swampy swales. Small areas of Acid Peats (O) of the Eurunderree Swamp soil landscape occur in low lying poorly drained swales with up to 10 cm es1 overlying >100 cm es2 [very poorly drained shallow Acid Peats overlying Siliceous Sands]’	Dunes. Up to 40 cm of hn1 overlies 10–150 cm of bleached loose sand (hn2). hn2 overlies 30–>100 cm of coloured mottled sand (hn3) and over 300 cm of greyish yellow brown sand (hn4) [well-drained Siliceous Sand/Podzol intergrades (Uc2.21) on the seaward fringe, Podzols (Uc2.3) occur landward]. Total soil depth is >300 cm and the boundaries between the soil materials are clear except for the boundary between hn3 and hn4 which is often diffuse. Swampy swales. Small areas Acid Peats (O) occur in low lying, poorly drained swales with up to 10 cm ba1 overlying >100 cm ba2 [very poorly drained Acid Peat/Siliceous Sand intergrades]. (See Blind Harrys Swamp (ba) soil landscape.)																																																																																																														
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Landscape Limitations	• Wind erosion hazard • Non-cohesive soil • High watertables (localised, swales) • Seasonal waterlogging (localised, swales) • Permanent waterlogging (localised, small swamps) • High run-on (localised swampy swales) • Ground water pollution hazard	• Wind erosion hazard • Non-cohesive soil • High watertables (localised, swales) • Seasonal waterlogging (localised, swales) • Permanent waterlogging (localised, swamps) • Ground water pollution hazard																																																																																																														

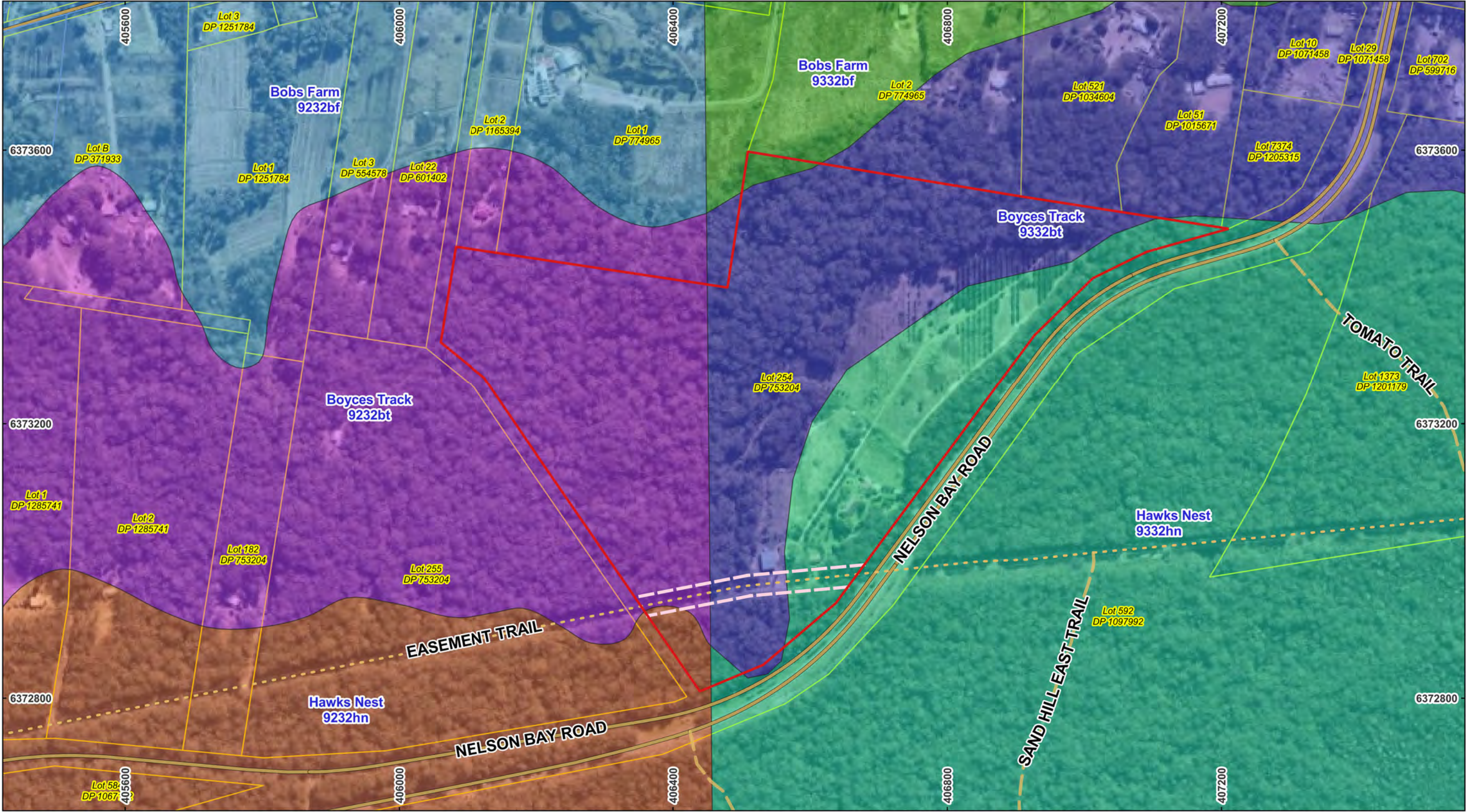
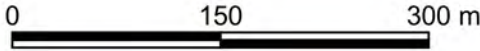
Photoplate 1. Soil Profile



Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Soil Landscapes from eSpade (NSW Government) Spatial Data	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	nearmap - Image Date 24/07/2025 Zone MGA 56 & eSpade (NSW Government) Spatial Data.	Plan By:	SK/JD
Figure:	SEVEN	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary and Contours.	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q007_V1_F7	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



Legend

- Lot Boundary (Cadastral)
- Site Boundary
- Electricity Easement

Roads

- Easement
- Road
- Trail

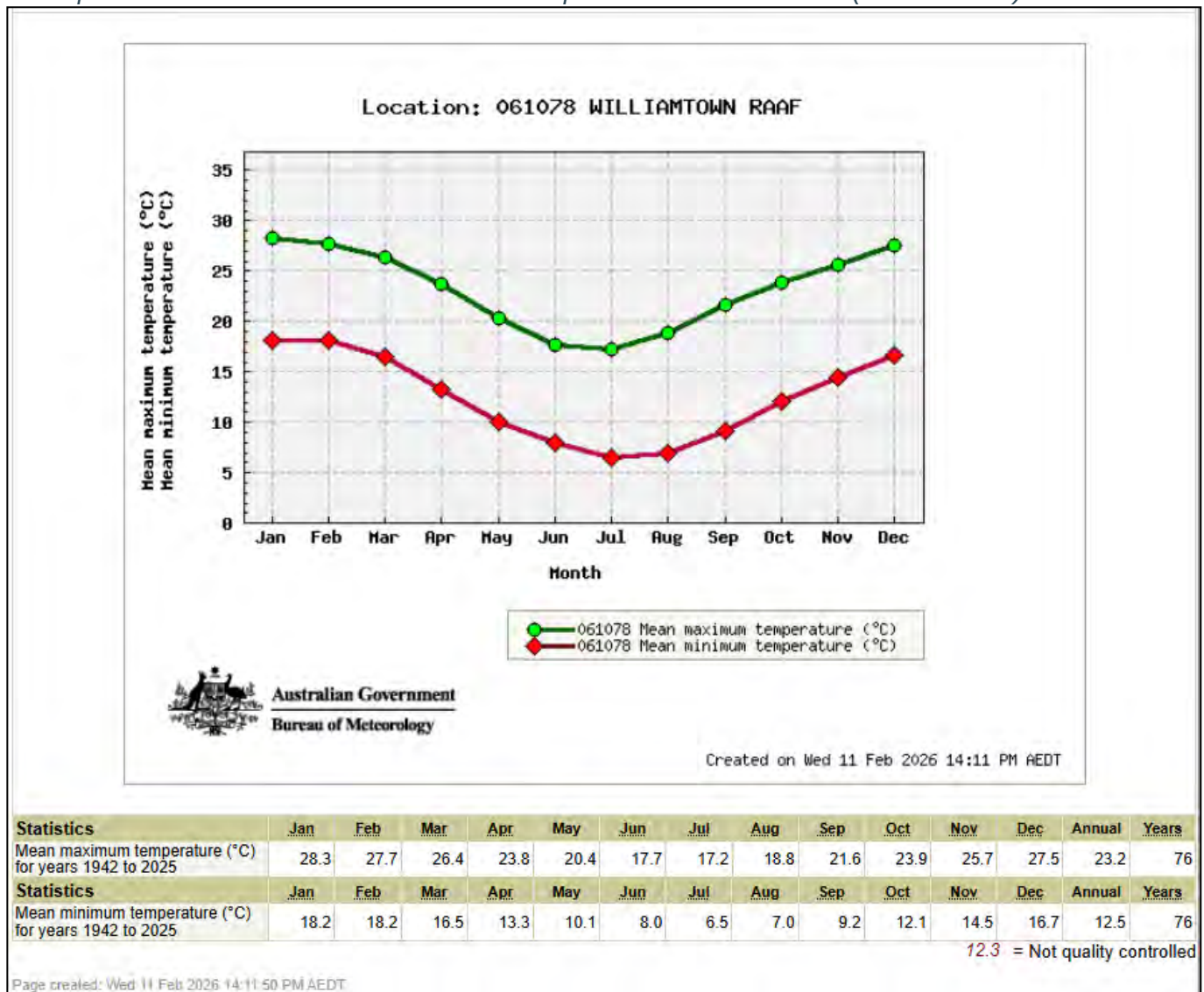
Soil Landscapes - Published 100K - 250K

- 9332bf
- 9332bt
- 9332hn
- 9332sk

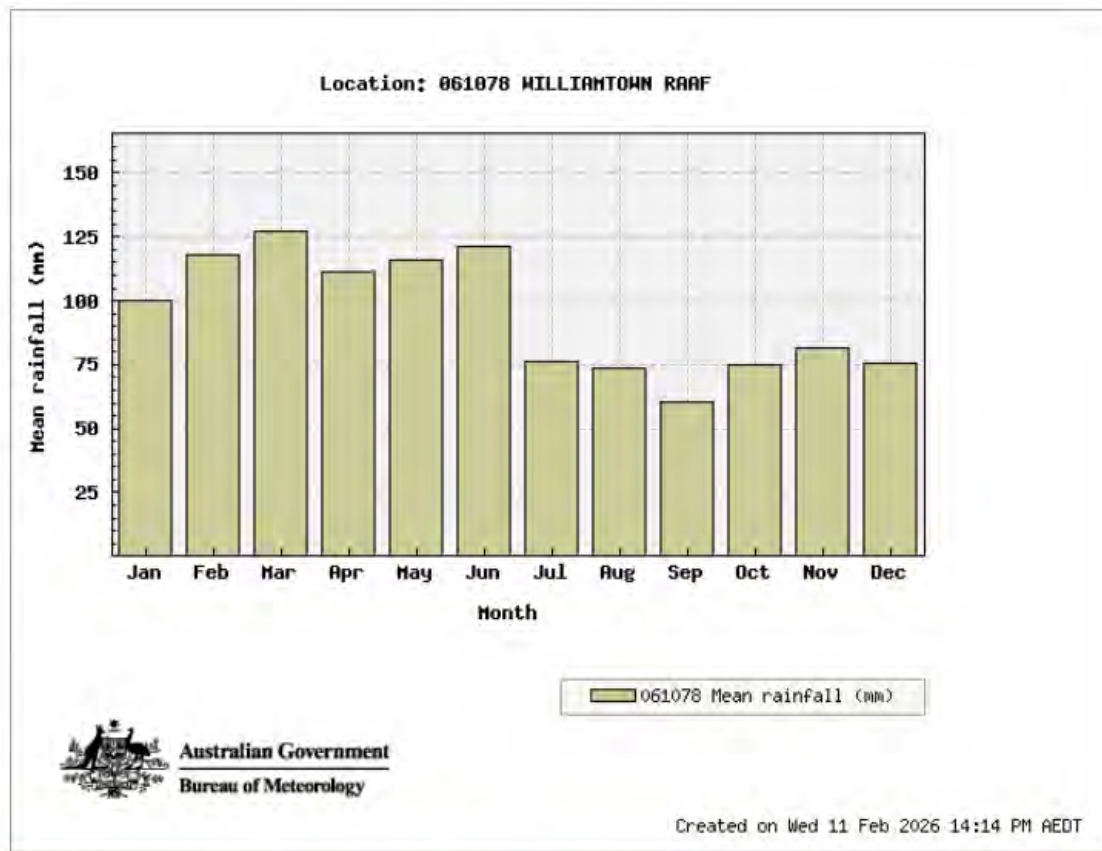
4.3 CLIMATE

Climate averages are summarised below from Bureau of Meteorology (BOM) statistics for Site 061078- Williamtown.

Graph 1. Mean Minimum and Maximum Temperatures at Williamtown (BOM-061078)



Graph 1. Rainfall at Williamtown (BOM-061078)



Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years
Mean rainfall (mm) for years 1942 to 2026	100.2	117.6	127.2	111.6	115.8	121.4	76.4	73.8	60.1	75.1	81.8	75.5	1134.4	78

12.3 = Not quality controlled

Page created: Wed 11 Feb 2026 14:14:39 PM AEDT

Graph 2. Wind Roses for 9am at Williamtown (BOM-061078)

Rose of Wind direction versus Wind speed in km/h (10 Sep 1942 to 10 Feb 2026)

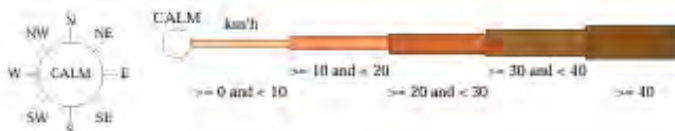
Custom times selected, refer to attached note for details.

WILLIAMTOWN RAAF

Site No: 061078 • Opened Jan 1942 • Still Open • Latitude: -32.7939° • Longitude: 151.8364° • Elevation 7.m

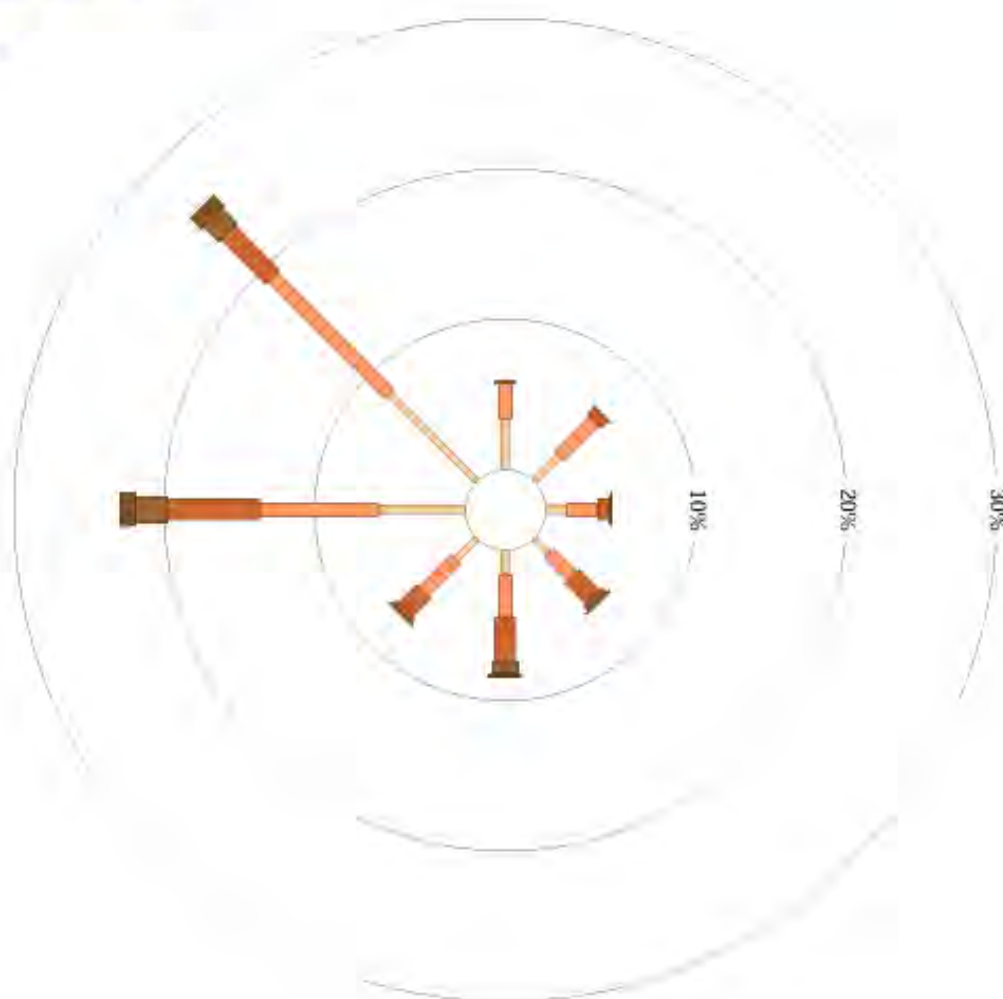
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
28544 Total Observations

Calm 13%



Graph 1. Wind Roses for 9am at Williamtown (BOM-061078)

Rose of Wind direction versus Wind speed in km/h (10 Sep 1942 to 10 Feb 2026)

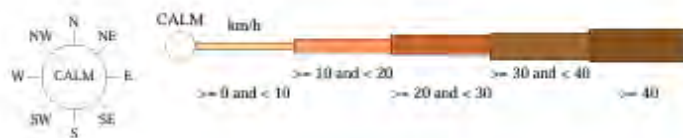
Custom times selected, refer to attached note for details

WILLIAMTOWN RAAF

Site No: 061078 • Opened Jan 1942 • Still Open • Latitude: -32.7939° • Longitude: 151.8364° • Elevation 7.m

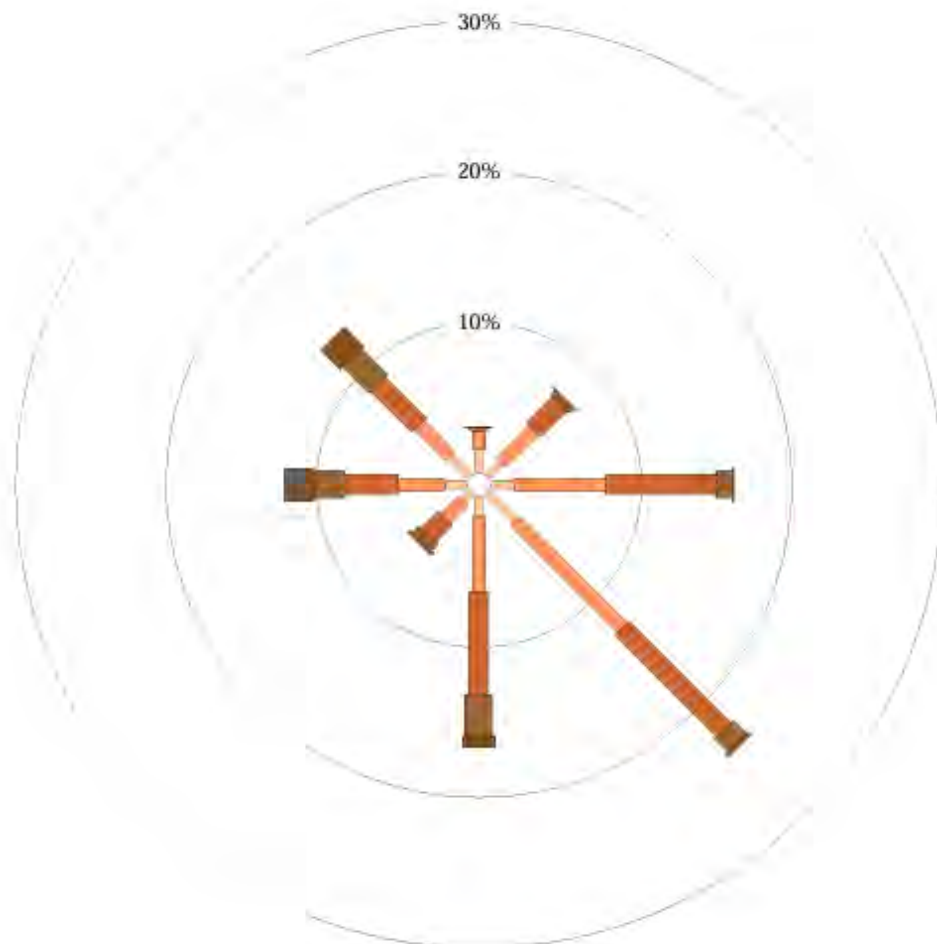
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
28520 Total Observations

Calm 4%



4.4 EXISTING HYDROLOGY

4.4.1 Regional Hydrology

Regionally the Karuah River is the primary fresh water source that drains into the Port Stephens Bay area. The other two main tributaries comprise the Myall River in the north and Tilligerry Creek in the south, closest to the project (see *Figure Eight*). The project area is bounded in the north by the Tilligerry Creek in the north and Stockton Beach in the south. The dune system upon which the project is located forms the uppermost slopes of the localised catchment.

4.4.2 Site Drainage and Water Courses

Most of the project site slopes towards the east, however, some portions of the site slope to the north, west and southwest. Slopes are low (typically 0-5 %) in the eastern portion of the site and higher (typically 10-50 %) over the remainder of the site. The high slopes occur on dune knolls.

Site elevation ranges from approximately 35 mAHD at a knoll in the northwest to approximately 2 mAHD at a depression in the site's north.

No watercourses, drainage features or surface ponding are noted onsite.

Most of the site drains east into Worimi National Park. The northwest portion drains northwest into a large dam on the neighbouring Shark and Ray Centre property or into the drainage network of Tilligerry Creek, located approximately 1km northwest of the site.

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Regional Drainage	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	Google National Base Map.	Plan By:	SK/JD
Figure:	EIGHT	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary.	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q008_V1_F8	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



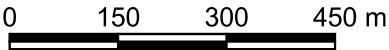
This figure may be based on third party data which has not been verified by vgt and may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and vgt does not warrant its accuracy.



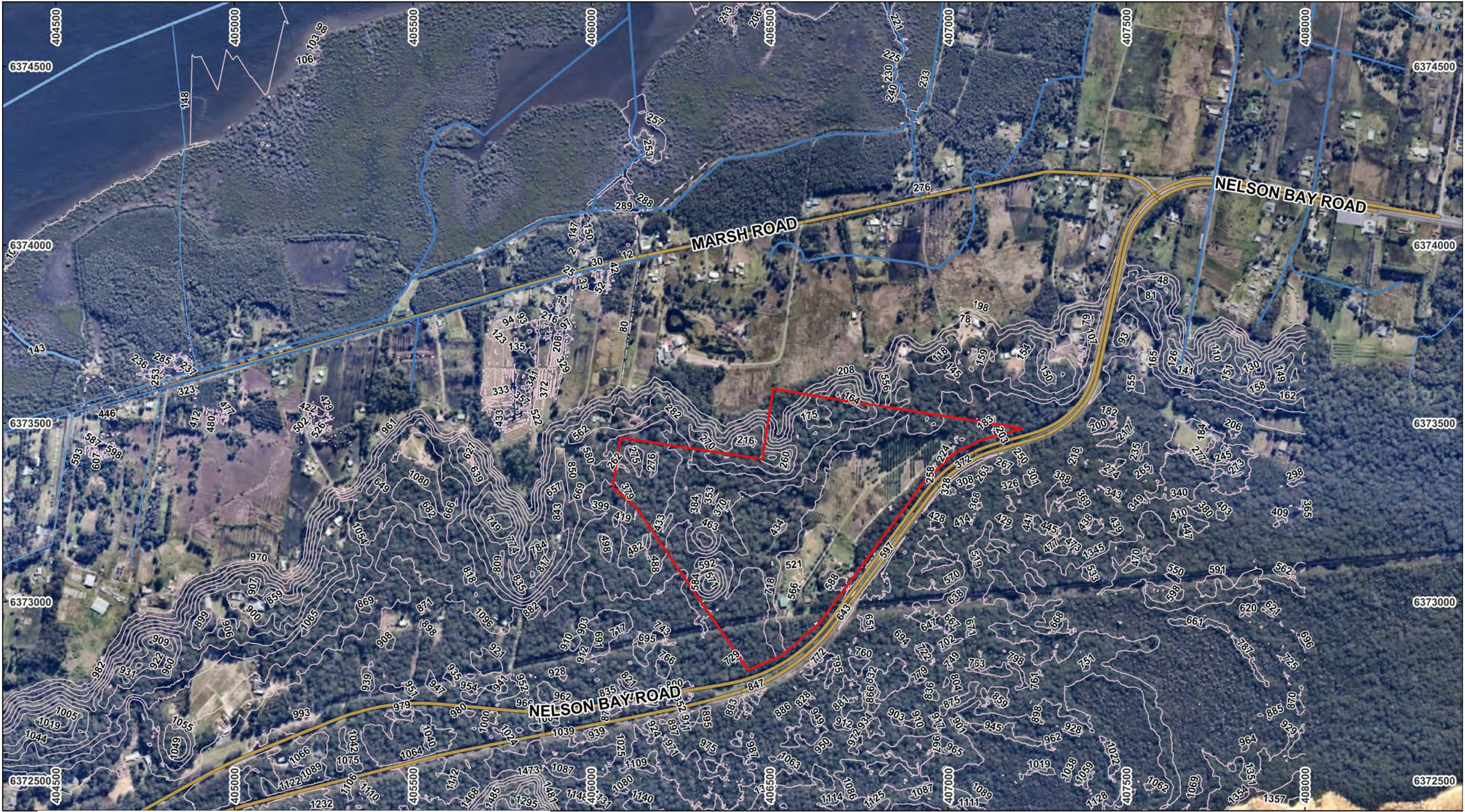
Legend

- Site Boundary
- Hydroline

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Site Drainage	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	nearmap - Image Date 09/01/2026 Zone MGA 56.	Plan By:	SK/JD
Figure:	NINE	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship ELVIS Spatial Data	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q009_V1_F9	Client:	Newcastle Sand	Contour Interval:	1m		



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Legend

- Site Boundary
- Road Corridor
- Hydroline
- 1m Contour

4.4.3 Flooding

The site is mapped as having a small portion designated Flood Planning Area, in the northern most portion of the site (approximately 0.33Ha) and some Flood Prone Land in the south, with the Port Stephens Council Local Environment Plan (LEP) (see *Figure Ten*) The Port Stephens Council Development Control Plan (DCP) describes and assessment pathway for land contained within the Flood Planning Area or Flood Prone Land. It is noted that the State Environmental Planning Policy (Planning Systems) 2021 states that a DCP (whether made before or after the commencement of the SEPP) does not apply to State Significant Development.

The area for extraction adjacent to flood prone land will maintain a buffer to the Flood Prone Land area by limiting extraction in this area to the 8.5m AHD contour.

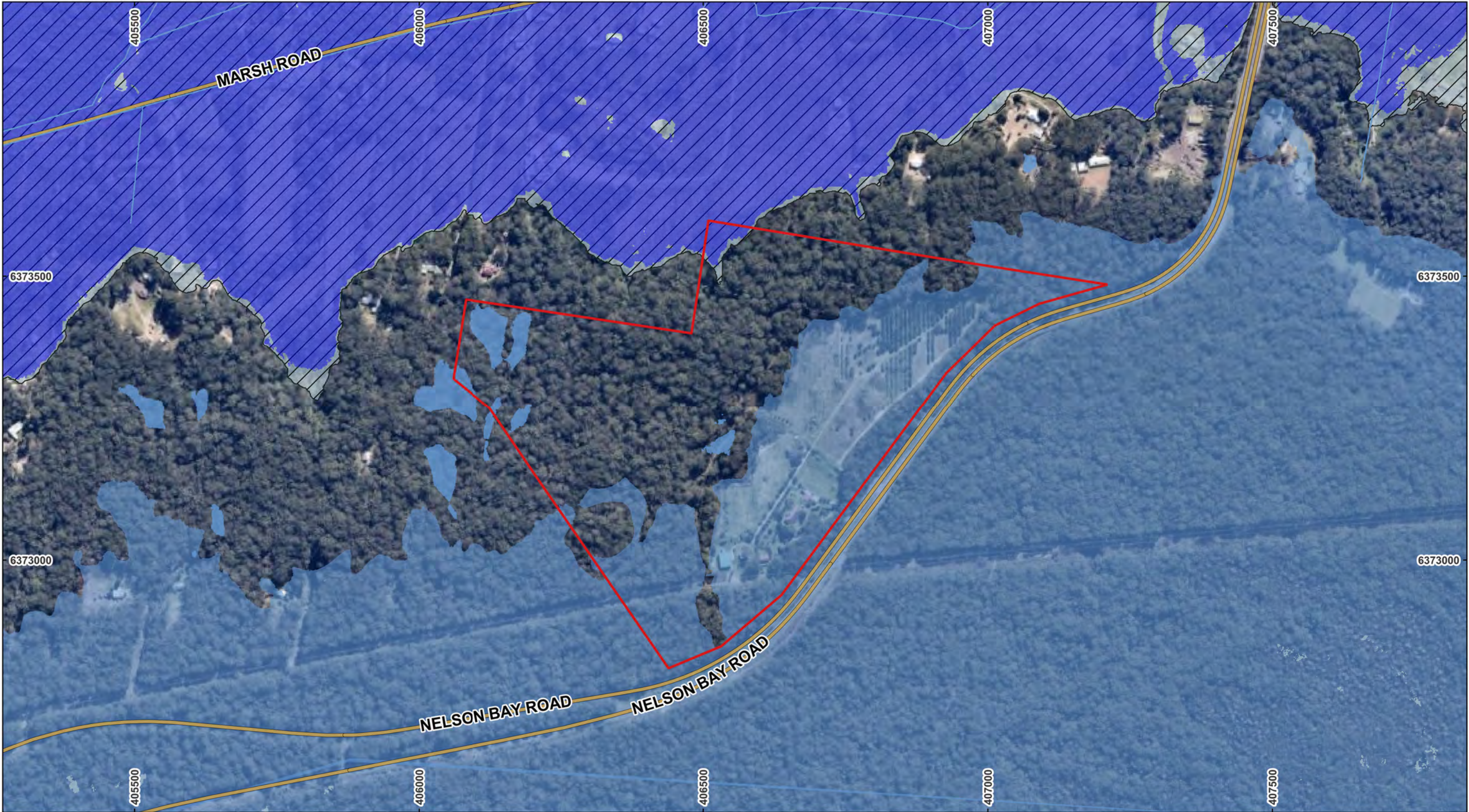
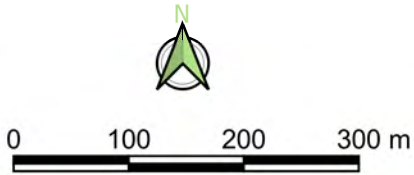
4.4.4 Surface Water Quality

There are no dams or watercourses on the site and therefore no data on surface water quality. Tilligerry Creek to the north is a saline receiving environment into which freshwater tributaries and overland flows from properties along Marsh Road flow. There are no watercourses to the south of the site.

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Flood Prone Land	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	nearmap - Image Date 09/01/2026 Zone MGA 56 & Port Stephens Council Flood Certificate.	Plan By:	TO/JD
Figure:	TEN	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary.	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q010_V1_F10	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



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Legend

Site Boundary

Road Corridor

Hydroline

Probabale Maximum Flood Level (3.2m AHD)

Probable Maximum Flood Level (10.7m AHD)

1% AEP Flood Level

Flood Planning Area (3.2m AHD)

5 Proposed Water Management

5.1 WATER USE

The processing of sand will be identical to the existing processing plant at the Cabbage Tree Sand Quarry, at 398 Cabbage Tree Road, Williamstown (approved under SSD-6125), which is nearing exhaustion of the sand resource. Essentially all the plant and equipment will be transported by the Proponent from the Cabbage Tree Sand Quarry to the Bobs Farm site (see *Photoplate 2* and *Figure Eleven*). The operation and management of this processing plant is well understood and has minimal impact to the environment.

The Project will separate the clay and silt particles from the extracted sand through washing in the processing plant (see *Photoplate 2*). The washed sand is drained of excess water, within the processing plant, and returned to the water recycling system. Washed sand is conveyed to a stockpiling area (see *Photoplate 4*) where any remaining water permitted to drain to a central sump and is pumped back to the recycling system (see *Photoplate 5*).

Other water required for the Project will be for dust suppression on stockpiles and unsealed haul roads. Water for dust suppression will be drawn from the recycled water, supplemented by the licenced groundwater bore.

The only water management supply infrastructure required to service the operations on-site will be a standpipe and tanks to fill water carts and irrigation pipes to supply water to sprinklers used on dust suppression on stockpiles and other trafficked areas. This enables water to be applied at rate that achieves the required dust suppression needs but does not result in runoff or loss through seepage or evaporation from dam storages.

Water for dust suppression will be applied at a rate of up to 2L/m²/hour to trafficked areas. It is estimated that water demand will range from nil on wet days to approximately 140kL/day during periods of high evaporation.

Limited water will be required for potable purposes to supply the on-site office and ablution facilities. This will be less than 1.5kL/day as is currently experienced at the Williamstown site. Ablution facilities will be serviced by an on-site pump-out system with all wastewater taken off-site to an approved facility for treatment and disposal.

Photoplate 2. Existing Cabbage Tree Sand Quarry Processing Plant Overview



Photoplate 3. Processing Plant Output



Photoplate 4. Washed Sand Stockpiling



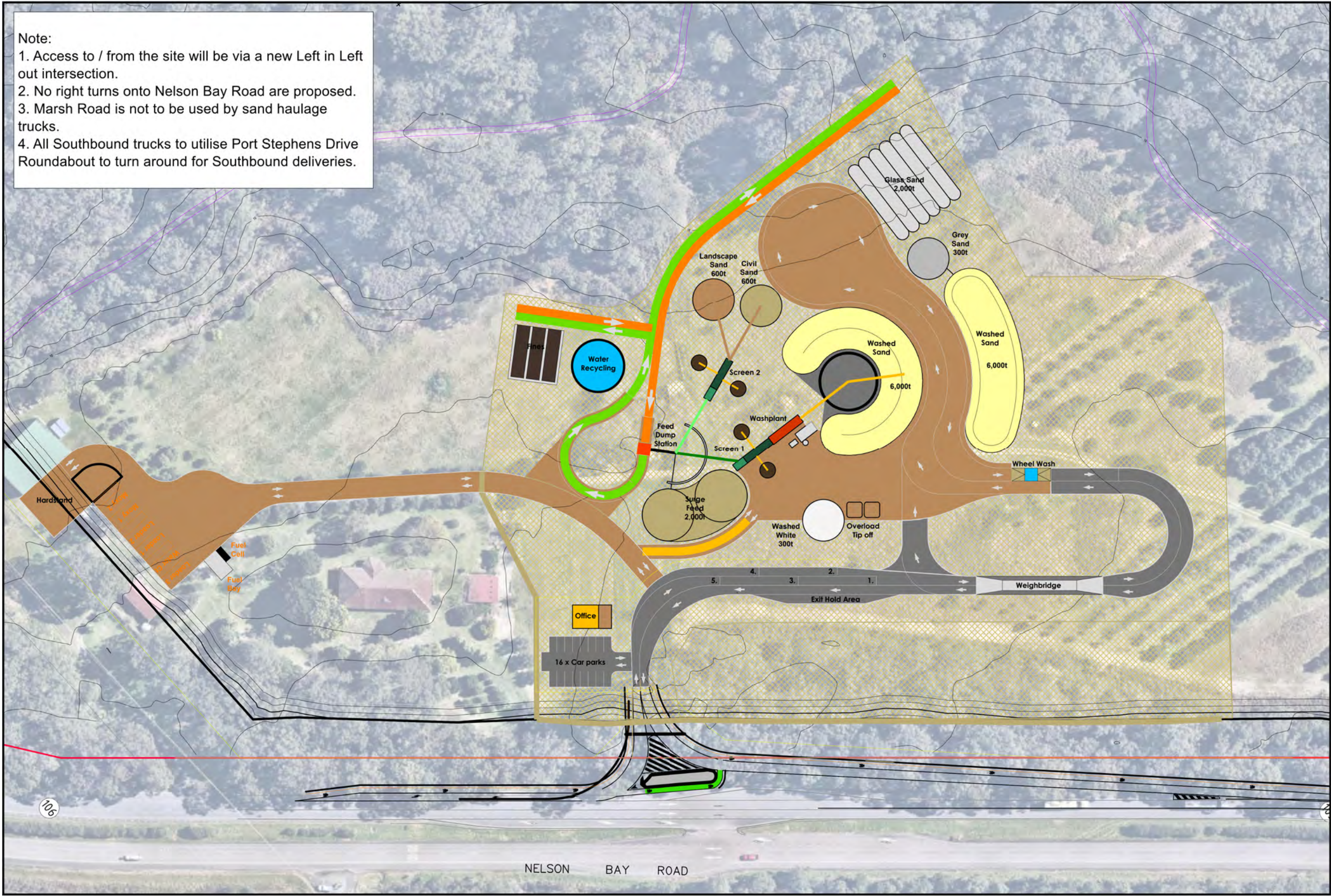
Photoplate 5. Water Recycling Plant



Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Indicative Processing & Sales Area Layout	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	Nearmap 24/07/2025	Plan By:	SK/JD
Figure:	ELEVEN	Council:	Port Stephens Shire Council	Survey:	Newcastle Sands 2026	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	Not Applicable		
Our Ref:	12790_BF_SWA2026_Q011_V1_F11	Client:	Newcastle Sand	Contour Interval:	2m		



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Note: Indicative Layout Only

5.2 SOURCES AND SECURITY OF WATER SUPPLY

Water for processing and dust suppression will be drawn from the recycled water, tank water and from the on-site groundwater bore held under WAL5960 pending application to amend the use from Farming and Irrigation to Industrial use. The WAL is held for 40ML of water per annum, which is a significant portion of the anticipated water requirements for the operations.

5.3 DISCHARGE

No surface water discharge will be required from the site operations as water will be recycled for processing and dust suppression. Surface water captured on the site over the disturbed area will infiltrate the sandy soils and recharge the groundwater system.

5.4 CONTAMINATED WATER

The primary risk of contamination of the surface water, apart from sediment, is from the fuels and oils (lubricants and hydraulic fluid) used by the plant and machinery on the site. No chemical manufacturing, processing, pressurised storage, explosive materials or bulk hazardous transfer facilities are proposed. Flocculants and coagulants will be used within the processing plant to treat recycled water.

Refuelling and minor repairs and maintenance is undertaken in the workshop/ hardstand areas or offsite. Oils, greases and lubricants etc will be stored in the workshop area in appropriately bunded storage and a covered concrete bunded fuel area will be constructed to contain a maximum 35,000L fuel cell. The site will maintain a spill kit and all contractors are required to be trained in emergency procedures.

A Hazard Assessment has been undertaken as part of this EIS (see relevant EIS Section) and concluded that potential hazards associated with fuel storage, mobile plant operation and dangerous goods transport are low risk and would be effectively managed through standard industry controls.

Portable self-contained amenities will be installed on the site, and no sewerage or septic system will be required.

The extraction depth is limited to avoid intersection with groundwater and potential acid sulphate soils (PASS), although further testing will confirm the presence of PASS. There are no other known site contaminants on the site that could be mobilised through surface water flows.

5.5 EROSION AND SEDIMENT CONTROL

5.5.1 Potential Soil Impacts

Impacts of soils erosion comprise two components, loss of soil from the site and entrainment of sediment to the downstream environment. Loss of soil from the site has a localised impact, predominately to the maintenance of vegetation and agricultural productivity over the affected area. Erosion that results in the entrainment of sediment may potentially impact the downstream environment if released.

5.5.2 Topsoil Stripping and Storage and Re-Spreading

Prior to stripping, the vegetation should ideally be sprayed for weeds to assist in reducing the weed content in topsoil that may be transferred to new rehabilitation areas.

Stripping should not occur in either excessively dry or wet conditions. When a new cell is required to be extracted, topsoil will be stripped by an excavator, loaded into a truck and emplaced directly on the final surfaces. The final surfaces are not generally ripped as the sandy soils are prone to compaction with the weight of equipment and this can impact the final levels of the landform. Instead, the extraction is conducted to approximately 1m above the final contour, leaving a level bench/base above the floor. Extraction is then undertaken in the final 1 metre of sand by commencing at the furthestmost point of the cell and retreating. This method avoids excessive disturbance and compaction of the substrate. Topsoil is then emplaced directly onto the final surface and logs and vegetative matter, separately felled and windrowed, is placed on the topsoil on the batter slopes. Vegetation generally establishes readily from the seed bank retained in the topsoil, logs and vegetative matter. On the floor, where the orchards may be re-established, suitable pasture species may be seeded over the emplaced topsoil.

Where final surfaces are not available for emplacement, topsoil will be stockpiled in stockpiles not exceeding 2m in height with a minimum crest width of 2m and are to be seeded with a temporary vegetation cover if stockpiles are to remain longer than 12 months. If necessary, earth banks or drains will be constructed to divert localised surface water run-off. Stockpiles of topsoil to be located at least five metres from areas of likely concentrated or high velocity flows, especially drainage lines and access roads. The surface of soil stockpiles should be left in as coarsely structured a condition as possible to promote infiltration and minimise erosion until vegetation is established, and to prevent anaerobic zones forming.

Internal barrier fencing will be installed around rehabilitation stages to limit access to rehabilitated areas or the stockpiles. Management practices will be carried out to minimise areas being affected by wind and water erosion.

5.5.3 Topsoil Quality

Generally, topsoils will not require additional ameliorants in areas where native vegetation is to be established. Experience from the Cabbage Tree Sand Quarry rehabilitation indicates that native vegetation readily establishes.

In the pit floor, in areas where horticulture may be re-established, topsoil will be sampled and analysed prior to respreading to determine if amelioration measures are required such as lime, fertilisers or other nutrients to make the soil suitable for the species to be planted.

5.5.4 Seedbed Preparation for Horticultural Landuses

Thorough seedbed preparation should be undertaken to ensure optimum establishment and growth of vegetation. All areas to be topsoiled should be lightly contour ripped to create a “key” between the soil and the spoil. Ripping should be undertaken on the contour. Best results will be obtained by ripping when soil is moist and when undertaken immediately prior to sowing. The respread topsoil surface should be scarified prior to, or during seeding, to reduce run-off and increase infiltration. This can be undertaken by contour tilling with a fine-tynded plough or disc harrow.

Photoplate 6. Spreading of Topsoil on Pit Floor at Cabbage Tree Sand Quarry



Photoplate 7. Emplacement of Vegetative matter and Logs at Cabbage Tree Sand Quarry



Photoplate 8. Natural Vegetation Establishment at Cabbage Tree Sand Quarry



Photoplate 9. Existing Woodland



Photoplate 10. Existing Olive Orchard



5.5.5 Erosion Control

Generally, the site is prone to erosion on exposed slopes, but this will be limited to the worked areas of the quarry. Eroded soils and sediment will be captured within the pit void where, due to the sandy soils, surface water transporting sediment, is rapidly infiltrated into the sandy soils.

Soil stabilisation is primarily achieved through the rapid rehabilitation of exposed areas. Here, rehabilitation means achieving a C-factor (Revised Universal Soil Loss Equation) of less than 0.1 (equivalent of 60% groundcover) and the

program that ensures it will drop permanently, by reducing the risk of erosion by vegetation, paving, armouring, etc. as soon as practicable after activities cease.

NOTE: The cover factor, C, is the ratio of soil loss from land under specified crop or mulch conditions to the corresponding loss from continuously tilled, bare soil. A C-factor of 1.0 corresponds to that of bare soil.

The required C factors can be achieved with such techniques as:

- Mulching; or
- Vegetative cover; or
- Application of a suitable soil binder/hydromulch in areas of sheet flow, e.g. topsoil stockpiles; or
- Anionic bitumen emulsion sprayed over hessian cloth in areas of concentrated flow, e.g. diversion banks and waterways.

All erosion and sediment control will be designed in accordance with the *Best Practice Erosion and Sediment Control* (IECA 2025)^{Ref 4}.

Access to rehabilitation areas will be limited to vehicles to reduce the risk of damage to soils and vegetation. Access tracks shall be well defined and gravel sealed where practicable.

5.5.6 Post Closure

The impact of the proposed final landform on surface water is not expected to be significant. The final landform will be a self-contained depression, where surface water captured will infiltrate the sandy soils. Perimeter slopes will be no greater than 3H:1V and stabilised with native vegetation, which has proven effective at the Cabbage Tree Sand Quarry. The base of the final landform will be a flat pastured area suitable for establishment of an orchard or other agricultural activities. There will be no surface water drainage lines leading off-site in the final landform that could impact the downstream environment, as is currently found on the site. There will be no water bodies remaining in the final landform.

5.6 SURFACE WATER

5.6.1 Surface Water Flows

Appropriate sediment and erosion controls such as silt fence, table drains and level spreaders will be established along sections of the haul road the traverse through or adjacent to vegetated areas.

The staged extraction and lowering of the floor of the site will not impact any surface water flows off the site. Due to the high permeability of the underlying sand aquifer, there is negligible potential for the proposed development to result in concentrated runoff off-site for sediment transportation.

In addition, extraction will be limited by the 8.5m AHD contour, which will prevent any potential surface water flows exiting the site.

5.6.2 Downstream Water Users

Downstream land use is primarily rural. The watercourses located off-site are generally only used for stock water or recreational purposes and not large-scale irrigation. The capture of the surface water on the site is not expected to adversely impact downstream water users as there will be no discharge off-site.

5.6.3 Riparian and Ecological Values of the Watercourses

The project is expected to have negligible impacts on the existing condition of nearby watercourses as there will be no change to the existing surface water flows. The site is located within an identified Terrestrial Groundwater Dependant Ecosystem according to the Bureau of Meteorology Groundwater Dependant Ecosystem Atlas (see *Figure Twelve*). No Aquatic GDEs are identified on or near the site. As extraction will not intersect the groundwater, there will be minimal impacts to the groundwater dependant ecosystems surrounding the site, whilst acknowledging the loss of vegetation from within the extraction footprint.

5.6.4 Flooding

The Flood Certificate from Council indicates that the 1% AEP flood level in the northern portion of the site is at RL2.0m AHD and the Flood Planning Level is 3.2m AHD (see *Figure Ten*). Extraction will be down to the 8.5m AHD contour above the Flood Planning Area level, in this northern area, and be battered into the pit. This leave a natural barrier that will prevent inundation of the site from the Tilligerry Creek flood area to the north of the site and will not exacerbate flooding to neighbouring properties.

Inundation from the Probable Maximum Flood Level event (10.7m AHD) into the Flood Prone Land on the site would have to ingress from a low-lying area of Tilligerry Creek near Salt Ash, some 8km distant from the site according to the Port Stephens Council Online Map Tool, *Experience Arcgis*. There is no other linkage to Tilligerry Creek nor Stockton Beach from where flood water could ingress. Given the porous nature of the dune sands, it is unlikely that flood waters from this distance would have sufficient remaining volume to reach the site or be retained within the site.

There will be no change to the dwelling on the site and its access to Nelsons Bay Road. It should be noted that the Online Map Tool indicates a flood of this magnitude would inundate Nelson Bay Road.

5.7 CUMMULATIVE IMPACTS

With the absence of discharge of surface water from the site, negligible flood impacts and sediment and erosion controls in place, it is predicted that there will be negligible impacts to the surface water above that experienced by the current system due to surrounding agricultural landuse.

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Terrestrial Groundwater Dependant Ecosystems	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	nearmap - Image Date 09/01/2026 Zone MGA 56.	Plan By:	SK/JD
Figure:	TWELVE	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary.	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q012_V1_F12	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



0 250 500 m



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Legend

Site Boundary

Road Corridor

Terrestrial Groundwater Ecosystems

High Potential GDE - from Regional Studies

Low Potential GDE - from Regional Studies

Moderate Potential GDE - from Regional Studies

6 Water Balance

6.1 OVERVIEW

The objective of the water balance is to understand the water demands for on-site water usage. The primary source of water on the site will be from the on-site groundwater bore held under WAL5960 (pending application to amend the use from Farming and Irrigation to Industrial use). Incident rainfall may be collected in rainwater tanks from the roof tops of the office and amenities blocks and used to supplement the potable water usage. No rainfall is retained over the surface of the site due to the permeable nature of the sand and does not contribute to the processing requirements. Similarly, rainfall captured over access tracks and roads is directed to swales alongside the road and infiltrates the soils.

The processing plant is the primary consumer of water and recycles water at approximately 3,000L per minute. Note the actual volume utilised each day may vary according to site needs.

Other water losses include those due to dust suppression, evaporation/infiltration of stockpiles and losses due to the moisture content of the finished product that is transported off-site. Water for dust suppression will be applied at a rate of up to 2L/m²/hour to trafficked areas. It is estimated that water demand will range from nil on wet days to approximately 140kL/day during periods of high evaporation.

Rainwater tanks are estimated to collect approximately 400kL per month (4ML per annum). Limited water will be required for potable purposes to supply the on-site office and ablution facilities. This will be less than 1.5kL/day as is currently experienced at the Williamstown site. The tanks may also be used to supply water for bushfire fighting, if required.

A breakdown of the site daily water usage is estimated in the table below.

Table 6. Site Water Usage

Input or Loss	Estimated Average Daily Usage (kL)
Processing Plant System	
Water Extracted from Groundwater Bore	85
Evaporation/Infiltration (by difference)	-10
Exported Material*	-45
Dust Suppression (estimated)	-30
Surplus/ Deficit	0
Rainwater Tank System	
Office and Ablutions	-1.5
Rainwater Tank Collection	13
Surplus/ Deficit	11.5

*3% moisture of exported product assumed at an average of 1,500 tonnes of product exported per day, 530,000 tonnes per annum.

The site intends to vary the existing groundwater bore licence for the supply of 40ML per annum (WAL5960) from Farming and Irrigation to Industrial use to meet the water demands.

7 Risk Assessment

A risk-based approach has been undertaken to assess the impacts and mitigation measures in accordance with the *Risk Based Framework for Considering Water Health and Outcomes in Strategic Land-use Planning Decisions* (OEH & EPA 2017).

7.1 CONTEXT OF PROPOSED DEVELOPMENT

The context of the proposal is described in *Section 1*.

7.2 EXISTING AND PROPOSED LANDUSE

The existing landuse, surrounding landuses and existing environment are discussed in *Section 4*. The proposed landuse of quarrying is discussed in *Section 1* and the final landuse is discussed in *Section 5.5.6*.

7.3 NSW WATER QUALITY AND RIVER FLOW OBJECTIVES

Water Quality Objectives (WQOs) and the River Flow Objectives (RFOs) for the Karuah and Great Lakes Catchment, have been defined by the Office of Environment and Heritage (OEH) and have been used to develop plans and actions affecting water quality and river health. The Karuah River Catchment has four main sub-catchment/management areas as defined by the Department of Environment and Heritage and shown on their on-line map (<https://www.environment.nsw.gov.au/ieo/Karuah/map.htm>). Applicability to the site is summarised below.

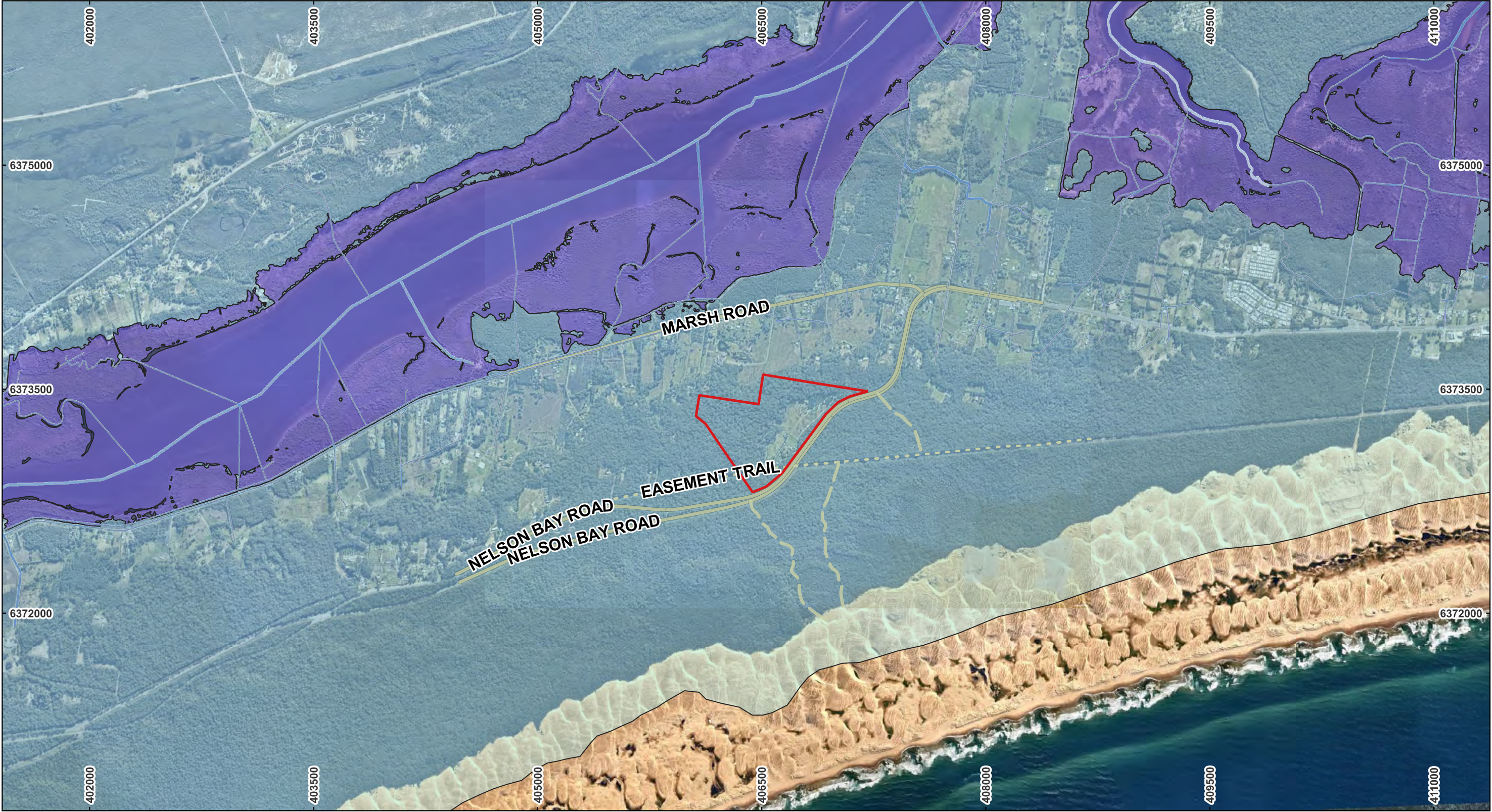
Table 7. Karuah and Great Lakes Sub-Catchments Applicable to the Project Site

Catchment/Management Area	Applicable
Town water supply sub-catchments Includes the Tomago sandbeds, Tea Gardens/Hawks Nest groundwater supply and Tomaree Peninsula groundwater supply (Nelson Bay, Fingal Bay and adjacent areas).	No
Mainly forested areas Streams running through areas coloured green on the map (state forests, national parks and nature reserves); and through other forested areas, if any are defined locally	No
Waterways affected by urban development These are streams within urban areas that are frequently substantially modified and carry poor quality stormwater. Local communities are often keen to see such streams returned to more natural conditions.	No
Uncontrolled streams These uncontrolled streams and waterbodies are not in estuaries or the other categories. Their flow patterns are largely natural but may have been altered to a limited degree.	No
Estuaries Being dominated by saline conditions, estuaries have hydraulic and water quality characteristics, and potential problems, that are often very different from those of freshwater systems.	Yes Although the site is not within an estuary or river, it is within the Tilligerry Creek Catchment Estuary.

Plan of:	Surface Watert Assessment for Proposed Bobs Farm Sand Quarry 2026 - Estuary Drainage Catchments	Location:	3631 Nelson Bay Road, Bobs Farm, NSW	Source:	nearmap - Image Date 09/01/2026 Zone MGA 56.	Plan By:	SK/JD
Figure:	THIRTEEN	Council:	Port Stephens Shire Council	Survey:	NSW Clip & Ship. Centurion Survey 2025 for Lot Boundary. SEED Spatial Data	Project Manager:	TO
Version/Date:	V1 13/03/2026	Tenure:	Not Applicable	Projection:	GDA2020/MGA Zone 56 EPSG:7856		
Our Ref:	12790_BF_SWA2026_Q013_V1_F13	Client:	Newcastle Sand	Contour Interval:	Not Applicable		



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Legend

- Site Boundary
- Road Corridor
- Hydroline

Estuary Drainage Catchments

- Catchment - Estuary
- Estuary

Suggested objectives and key indicators are shown below as well as an assessment of how the land use activity will affect the indicator.

7.4 EFFECTS BASED RISK ASSESSMENT

The following describes the risk-based assessment on effects on the Water Quality Objectives (WQOs) and the River Flow Objectives (RFOs) for the Karuah and Great Lakes Catchment for Aquatic Ecosystems. The system is identified as an Estuarine system therefore WQOs and RFOs that relate to Estuaries have been reviewed.

As there will be no discharge of water off-site, nor permanent water bodies or watercourses in the active extraction phase or final landform, Water Quality Objectives that relate to the following are not relevant to the proposed operations:

- Visual Amenity;
- Secondary Contact Recreation;
- Primary Contact Recreation, Livestock Water Supply;
- Irrigation Water Supply;
- Homestead Water Supply;
- Drinking Water;
- Aquatic foods (cooked); and
- Industrial Water Supplies.

River Flow Objectives have been reviewed regarding potential impacts to the nearby Tilligerry Creek despite the absence of watercourses on the site.

7.4.1

Water Quality Objectives and Measures to Achieve Objectives

Table 8. Effect Base Assessment of Karuah and Great Lakes Catchment Water Quality for Aquatic Ecosystems

Objective	Indicator	Numerical criteria (trigger values)	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
Aquatic Ecosystems- To maintain or improve the ecological condition of waterbodies and their riparian zones over the long term.	Total phosphorus	Estuaries: 30 µg/L	The sand extraction activity is not a source of phosphorus and will not contribute phosphorus to the aquatic ecosystem. Rehabilitation activities such as fertilisation of areas to be revegetated may contribute phosphorus at levels equivalent to surrounding agricultural practices. There are no water bodies in the final landform, nor linkages to watercourses that would contribute phosphorus to the estuarine catchment.	Effective. Any fertiliser to be applied to rehabilitation areas will be at a rate determined through analysis of growth medium material and requirement of target species to be planted. Rate of release of phosphorus in fertilisers may be limited by using slow-release fertilisers.	Low	Control measures are cost effective and feasible.
	Total nitrogen	Estuaries: 300 µg/L	The quarrying activity is not a source of nitrogen and will not contribute nitrogen to the aquatic ecosystem. Rehabilitation activities such as fertilisation of areas to be revegetated may contribute nitrogen at levels equivalent to surrounding agricultural practices. There are no water bodies in the final landform, nor linkages to watercourses that would contribute nitrogen to the estuarine catchment.	Effective. Vegetation and topsoil stockpiles will be suitably stabilised and not located in areas of concentrated flows. Any fertiliser to be applied to rehabilitation areas will be at a rate determined through analysis of growth medium material and requirement of target species to be planted. Rate of release of nitrogen in fertilisers may be limited by using slow-release fertilisers.	Low	Control measures are cost effective and feasible.
	Chlorophyll-a	Estuaries: 4 µg/L	The quarrying activity is not a source of Chlorophyll-a (from algae and cyanobacteria in water bodies) and will not contribute nitrogen to the aquatic ecosystem. There are no water bodies in the final landform, nor linkages to watercourses that would contribute Chlorophyll-a to the estuarine catchment.	Effective. There will be no final water bodies in the final landform, nor linkages to watercourses that will contribute to the growth of algae and cyanobacteria and distribution to the estuarine catchment.	Low	Control measures are cost effective and feasible.
	Turbidity	Estuaries: 0.5-10 NTU	Quarrying activities may be a source of turbidity during rainfall periods however surface water is rapidly infiltrated into the sandy soil. The processing plant is a closed system, and all water is recycled and treated with coagulants and flocculants before re-use. There are no water bodies in the final landform, nor linkages to watercourses that would contribute sediment to the estuarine catchment.	Effective No surface water is discharged off-site.	Low	Control measures are cost effective and feasible.

Objective	Indicator	Numerical criteria (trigger values)	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
	Salinity (electrical conductivity)	Lowland rivers: 125–2,200 µS/cm	The quarrying activity is not considered a source of salinity and will not contribute salinity to the aquatic ecosystem. Groundwater conductivity is low ($<500\mu\text{S/cm}$) and it will not be intersected.	Effective	Low	Control measures are cost effective and feasible.
	Dissolved oxygen	Estuaries: 80–110%	Quarrying activities are unlikely to reduce oxygen levels in waterways, particularly due to biological activity. There are no water bodies in the final landform, nor linkages to watercourses that would reduce oxygen levels in the estuarine catchment, particularly due to biological activity.	Effective No discharge of water from the site will occur.	Low	Control measures are cost effective and feasible.
	pH	Estuaries: 7.0–8.5	Rainwater is generally of a lower pH than that of estuarine waters, however received rainfall is quickly infiltrated into the sand soils and recharges the groundwater. The processing plant is a closed system, and all water is recycled and treated with coagulants and flocculants and pH adjusted before re-use. There are no water bodies in the final landform, nor linkages to watercourses that would contribute to pH change to the estuarine catchment.	Effective No discharge of water from the site will occur.	Low	Control measures are cost effective and feasible.
	Temperature	See ANZECC 2000 Guidelines, table 3.3.1. ($>80\%$ ile and $<20\%$ ile)	Quarrying activities are unlikely to change the natural temperature variations of waterways.	Effective No discharge of water from the site will occur.	Low	Control measures are cost effective and feasible.
	Chemical contaminants or toxicants	See ANZECC 2000 Guidelines, chapter 3.4 and table 3.4.1.	Quarrying activities are unlikely to be a source of chemical contaminants or toxicants. Fuel may be the most likely contaminant however there are no water bodies in the extraction areas or in the final landform, nor linkages to watercourses that would contribute to contaminants or toxicants to the estuarine catchment. Refuelling is undertaken within the hardstand area which will be adequately bunded. Fuel held on site is within a covered and bunded fuel cell.	Effective No discharge of water from the site will occur.	Low	Control measures are cost effective and feasible.

Objective	Indicator	Numerical criteria (trigger values)	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
	Biological assessment indicators	This form of assessment directly evaluates whether management goals for ecosystem protection are being achieved (e.g. maintenance of a certain level of species diversity, control of nuisance algae below a certain level, protection of key species, etc). Many potential indicators exist and these may relate to single species, multiple species or whole communities. Recognised protocols using diatoms and algae, macrophytes, macroinvertebrates, and fish populations and/or communities may be used in NSW and interstate (e.g. AusRivAS).	Not Applicable. There is no permanent water or water courses on the site.	Effective No discharge of water from the site will occur.	Low	Control measures are cost effective and feasible.

7.4.2 Catchment Flow Objectives and Measures to Achieve Objectives

Table 9. Effect Base Assessment of Karuah and Great Lakes Catchment Water Flow

Objective	Indicator	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
Protect natural water levels in pools of creeks and rivers and wetlands during periods of no flows.	Watercourse flows	Extraction may prevent surface water from returning to the downstream environment.	Effective No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system. Extraction will not proceed below the groundwater level.	Low	Control measures are cost effective and feasible.
Protect natural low flows.	Watercourse flows	Extraction may prevent surface water from returning to the downstream environment.	Effective No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system. Extraction will not proceed below the groundwater level.	Low	Control measures are cost effective and feasible.
Protect or restore a proportion of moderate flows ('freshes') and high flows	Watercourse flows	Rain causes peaks in river flows. This 'pulsing' of flows, and their duration, may trigger migration of animals and reproduction of plants and animals; provide over-bank flows to wetlands and floodplains; shape the river channel; and control water quality and nutrients. Water storage and extraction can alter or remove freshes, inhibiting these vital processes.	Not applicable. No surface water is discharged from the site and will not require restrictions to protect moderate or high flows.	-	-
Maintain or restore the natural inundation patterns and distribution of floodwaters supporting natural wetland and floodplain ecosystems	Floodplain or Wetland inundation	Floodplain works can change the flooding patterns, which will then lead to changes in habitat and vegetation. These changes can be expected to reduce or change the diversity and abundance (or both) of species in the ecosystem.	Extraction will be down to the 8.5m AHD contour, above the Flood Planning Area in the north, and battered to the pit floor, which will prevent inundation of the site from the Tilligerry Creek flood area. This will be above the Flood Planning Level of RL3.2m and will not exacerbate flooding to neighbouring properties.	Low	Control measures are cost effective and feasible.

Objective	Indicator	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
Mimic the natural frequency, duration and seasonal nature of drying periods in naturally temporary waterways	Watercourse flows	Continuous or seasonal water releases from water storages, irrigation drainage, or urban uses (e.g. garden-watering, effluent release) can sometimes make streams or wetlands 'wetter' than natural. In streams and wetlands that would dry out naturally if these impacts were absent, this can create problems in maintaining habitat and vegetation, nutrient cycling, and signals for breeding. It can also lead to a high-water table and associated salinity problems	Not applicable No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system. Extraction will not proceed below the groundwater level.	-	-
Maintain or mimic natural flow variability in all streams	Watercourse flows	Extraction could interrupt that natural surface water flow variability returning to the downstream environment.	Not applicable No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system.	-	-
Maintain rates of rise and fall of river heights within natural bounds	Watercourse heights.	If water levels fall too fast, water does not drain properly from riverbanks and they may collapse. Migration of aquatic animals may also be restricted by such sudden falls in river height. Very fast increases in flow and stream height can endanger people or aquatic organisms and contribute to bank erosion.	Not applicable No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system.	-	-
Maintain groundwater within natural levels and variability, critical to surface flows and ecosystems	Groundwater levels.	Quarrying is unlikely to appreciably change the groundwater levels as it will not intercept groundwater.	Effective No groundwater interception or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system. Extraction will not proceed below the groundwater level.	Low	Control measures are cost effective and feasible.
Minimise the impact of instream structures	Watercourses	Habitat alteration and increasing the risk of algal blooms or other water quality problems. Barriers restricting the passage of plant propagules (e.g. seeds) and animals.	Not applicable No water extraction (except for the existing licenced bore) or discharge from the site is undertaken. There are no water bodies or watercourses on the site.	-	-

Objective	Indicator	Effect of Land Use Activity on Indicator	Effectiveness of Proposed Management Responses	Risk of Impact	Strategic Impact Assessment (feasibility of achieving intended outcomes)
Minimise downstream water quality impacts of storage releases	Discharge water quality.	Discharge of water from the site may impact the quality of water downstream.	Not applicable No water extraction (except for the existing licenced bore) or discharge from the site is undertaken.	-	-
Ensure river flow management provides for contingencies	River flows.	Alleviation of downstream water-quality or environmental problem by better managing river flows.	Not applicable No discharge from the site is undertaken.	-	-
Maintain or rehabilitate estuarine processes and habitats	Coastal lagoons, estuaries and river mouths	Flood-mitigation structures, weirs and other works also affect estuaries by limiting tidal flow, changing salinity conditions or altering water levels. Development of estuarine areas can also disturb acid sulphate soil deposits, which may release large amounts of sulfuric acid and toxic metals into the estuarine environment. Stormwater carries nutrients, organic matter and sediments. Scouring as a result of flooding can affect the opening and closing of river mouths. Reduced freshes and flooding in estuaries severely depletes food sources for estuarine species. These effects can contribute to a decline in the number and abundance of species that use estuaries as habitat, nursery grounds or both.	Effective No groundwater interception or discharge from the site is undertaken. There are no water bodies or watercourses on the site. Surface water received is not retained and quickly infiltrates the sandy soils to recharge the groundwater system. Extraction will not proceed below the groundwater level. The development depth has been restricted to reduce the potential of encountering acid sulphate soils.	Low	Control measures are cost effective and feasible.

8 Monitoring and Maintenance

A Surface Water Management Plan (SWMP) will be developed for the site to describe in detail the management of surface water on the site.

8.1 SURFACE WATER QUALITY

As there is not on-site retention of surface water outside of the processing plant nor water courses, no ongoing assessment of water quality is proposed.

Samples, if required are collected and tested by a NATA Accredited Facility in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA).

Analytes tested and concentration limits are expected to be at a minimum, as follows:

- pH is to be between 6.5 to 8.5; and
- TSS is <50mg/L.

Any additional analytes and criteria will be consistent with the Water Quality Objectives for the Karuah River and Great Lakes catchment.

Water quality monitoring of process wastewater recycled through the plant is automatically monitored in real time. Additional monitoring parameters and frequency will be determined by the plant operator based on operational requirements.

8.2 SURFACE WATER FLOWS

The following management checks on the surface water flows, particularly alongside haul roads and access tracks will be undertaken at least quarterly and recorded:

- Visual check of stability and operation of all drains, swales, and level spreaders, effecting any necessary repairs;
- Visually check there is no discharge of surface water off-site;
- Drains and culverts for both clean water and dirty water will be examined for vegetation cover and blockages and maintenance will be performed to ensure they are working as designed;
- Diversion bund walls will be inspected regularly to assess the integrity and effectiveness. Maintenance will be performed when required;
- Removal of spilled materials from hazard areas, including lands closer than five metres from areas of likely concentrated or high velocity flows, especially waterways and access roads;
- Ensuring that rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate; and
- Constructing additional erosion and /or sediment control works as might become necessary to ensure the desired water quality control is achieved.

8.3 EROSION AND SEDIMENT CONTROLS

Monitoring of the soil erosion, sediment and water is undertaken at least quarterly and recorded.

- Topsoil stripping to be visually monitored to check moisture content of soil and depth of stripping;
- Stockpiles to be visually assessed at time of forming to check they do not exceed two metres high;
- Removal of spilled soil or other materials from hazard areas, including lands closer than five metres from areas of likely concentrated or high velocity flows, especially waterways and access roads;
- Ensuring rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate; and
- Constructing additional erosion and/or sediment control works as might become necessary to ensure the desired water control is achieved.

9 Reporting and Auditing

Annual surface water management reporting is to be completed as part of the site's long-term management. Reporting is to include:

- Rainfall conditions for the calendar year.
- Progress of quarrying operations.
- Any changes to the surface water management system.
- Any sediment and erosion 'events' experienced (e.g. major storm event, failure of erosion control).
- Records of water use and water quality monitoring.
- Comparison of water balance records with the previous year and any long-term observations/trends.
- Identification of events/issues experienced and management/remedial process.
- An audit of the stormwater management and monitoring system and any recommendations for continued operation.

10 Conclusion

The proposed surface water and sediment and erosion controls for the quarry development will result in minimal impacts to the surrounding environment. There are no watercourses on the site, and none are proposed to be constructed. Rainwater water received over the disturbed surfaces will infiltrate the sandy soils and recharge the groundwater with negligible change to the downstream flows and riparian communities. The quarry will not intersect groundwater and thus the impact to aquifers is considered negligible.

The extraction to the 8.5m AHD contour in the north is above the Flood Planning Area RL of 3.2m in north will not exacerbate flooding to neighbouring properties.

Water usage is well understood, with the processing plant at Cabbage Tree Sand Quarry to be transported to the site, and an adequate water supply can be provided by the existing Groundwater Bore. A Water Access Licence (WAL) will not be required for retention of surface water on the site. Rainwater from the roof of the portable office and amenities will be collected in tanks to supplement the potable water requirements for this infrastructure. The amenities block waste will be self-contained and emptied by a licenced contracted as required. No effluent will be applied to the land.

The final landform will be a self-contained depression, where surface water captured will infiltrate the sandy soils. Perimeter slopes will be no greater than 3H:1V and stabilised with native vegetation, which has proven effective at the Cabbage Tree Sand Quarry. The base of the final landform will be a flat pastured area suitable for establishment of an orchard or other agricultural activities. There will be no surface water drainage lines leading off-site in the final landform that could impact the downstream environment, as is currently found on the site. There will be no water bodies remaining in the final landform.

A risk assessment based on *Risk Based Framework for Considering Water Health and Outcomes in Strategic Land-use Planning Decisions* (OEH & EPA 2017) found that the risks are low and potential impacts can be managed adequately and feasibly.

References

- Ref 1 ADW Johnson (2025) Scoping Report 3631 Nelson Bay Road, Bobs Farm
- Ref 2 DECC (2004) Managing Urban Stormwater Soils and Construction V1
- Ref 3 DECC (2004) Managing Urban Stormwater Soils and Construction V2E Mines and Quarries
- Ref 4 IECA (2025) Best Practice Erosion and Sediment Control
- Ref 5 eSpade spatial data (<https://espade.environment.nsw.gov.au/>)
- Ref 6 Planning, Industry and Environment (2025) Planning Secretary's Environmental Assessment Requirements
- Ref 7 SEED spatial data (<https://geo.seed.nsw.gov.au/>)
- Ref 8 Tattersall Lander (2018) Bobs Farm Sand Mine- Environmental Impact Statement
- Ref 9 Umwelt (2015) Environmental Impact Statement Proposed Sand Quarry, Cabbage Tree Road, Williamtown

Appendix A

SEARs

Planning Secretary's Environmental Assessment Requirements

Section 4.12(8) of the *Environmental Planning and Assessment Act 1979*

Part 8 of the *Environmental Planning and Assessment Regulation 2021*

Application Number	SSD-99860959
Project	Bobs Farm Sand Quarry, which involves: • development of a new quarry to extract and process up to 530,000 tonnes of sand per year for up to 10 years; • extraction of the resource using an excavator loading into articulated haul trucks; • onsite processing, dry screening, washing and stockpiling; • transport of material offsite via public roads; and • progressively rehabilitating the site.
Location	3631 Nelson Bay Road Bobs Farm within the Port Stephens local government area. Located within Lot 254 DP 753204
Proponent	NEWCASTLE SAND
Date of Issue	18/12/2025
General Requirements	The Environmental Impact Statement (EIS) must meet the minimum form and content requirements as prescribed by Part 8 of the <i>Environmental Planning and Assessment Regulation 2021</i> (EP&A Regulation) and must have regard to the <i>State Significant Development Guidelines</i>. In particular, the EIS must include: • a stand-alone executive summary; • a full description of the development, including: ○ the resource to be extracted, including the amount, type and composition; ○ the site layout and extraction plan, including cross-sectional plans; ○ the production process and processing activities, including the in-flow and out-flow of materials and points of discharge to the environment; ○ surface infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process); ○ a waste (overburden, rejects, tailings etc) management strategy; ○ a water management strategy; ○ a rehabilitation strategy to apply during, and after completion of,

	extraction operations, and proposed final use of site; and ○ the likely interactions between the development and any existing, approved or proposed development in the vicinity of the site; • a strategic justification of the development focusing on site selection and the suitability of the proposed site; • a list of any approvals that must be obtained before the development may commence; • an assessment of the likely impacts of the development on the environment, focussing on the key issues identified below, including: ○ a description of the existing environment likely to be affected by the development, using sufficient baseline/background data; ○ an assessment of the likely impacts of all stages of the development, including any cumulative impacts, taking into consideration any relevant laws, environmental planning instruments, guidelines, policies, plans and industry codes of practice; ○ a description of the measures that would be implemented to avoid, minimise, mitigate and/or offset the likely impacts of the development, and an assessment of: ▪ whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented; ▪ the likely effectiveness of these measures; and ▪ whether contingency measures would be necessary to manage any residual risks; and ○ a description of the measures that would be implemented to monitor and report on the environmental performance of the development; • a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; • consideration of the development against all relevant environmental planning instruments (including Part 2 of the <i>State Environmental Planning Policy (Resources and Energy) 2021</i> and Section 4.6 of <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i>); • the reasons why the development should be approved, having regard to: ○ relevant matters for consideration under the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act; ○ the biophysical, economic and social impacts of the development, including the principles of ecologically sustainable development; ○ the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses; ○ feasible alternatives to the development (and its key components), including the consequences of not carrying out the development; • a signed declaration from the author of the EIS, certifying that the
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	information contained within the document is neither false nor misleading. Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development. The EIS must also be accompanied by an Estimated Development Cost (EDC) report, providing: - a detailed calculation of the EDC of the development prepared in accordance with the relevant planning circular using the Standard Form of EDC Report; - be accurate at the date of application and include details of all components and assumptions from which it is derived; - the EDC of the extractive industry component of the development; and - an estimate of the retained and new jobs that would be created during the construction and operational phases, including details of the methodology to determine the figures provided.
Key issues	The EIS must address the following specific matters: 1. Statutory and Strategic Context Address the statutory provisions applying to the development contained in all relevant environmental planning instruments, including: - o <i>State Environmental Planning Policy (Resources and Energy) 2021;</i> - o <i>State Environmental Planning Policy (Planning Systems) 2021;</i> - o <i>State Environmental Planning Policy (Transport and Infrastructure) 2021;</i> - o <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021;</i> - o <i>State Environmental Planning Policy (Resilience and Hazards) 2021;</i> and - o <i>Port Stephens Local Environmental Plan 2013</i> Address the relevant planning provisions, goals and strategic planning objectives in the following: - o Hunter Regional Plan 2041; - o Port Stephens Local Strategic Planning Statement; and - o Port Stephens Regional Economic Development Strategy 2021-2025. 2. Biodiversity - accurate predictions of any vegetation clearing on site; - a detailed assessment of the potential biodiversity impacts of the

development, paying particular attention to threatened species, populations and ecological communities and groundwater dependent ecosystems undertaken in accordance with Sections 7.2 and 7.7 of the *Biodiversity Conservation Act 2016* and the Biodiversity Assessment Method 2020;

- a detailed consideration of the potential for off-site and in-direct impacts on local biodiversity and surrounding ecological corridors or habitat;
- a strategy to offset any residual impacts of the development in accordance with the Biodiversity Offsets Scheme; and
- a detailed description of the proposed measures to maintain or improve the biodiversity values of the region in the medium to long term.

The application is required to be submitted with a Biodiversity Development Assessment Report using the template available at:

<https://www.environment.nsw.gov.au/research-and-publications/publications-se-arch/guidance-for-the-biodiversity-development-assessment-report-template>.

3. Noise

A noise impact assessment including:

- a detailed assessment of the likely construction, operational and off-site transport noise impacts of the development in accordance with the *Interim Construction Noise Guideline*, *NSW Noise Policy for Industry* and the *NSW Road Noise Policy* respectively and having regard to the *Voluntary Land Acquisition and Mitigation Policy*. If a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the *Interim Construction Noise Guideline*;
- reasonable and feasible mitigation measures to minimise noise emissions; and
- consideration of monitoring and management measures, in particular, real-time and attended noise monitoring.

4. Air Quality

An air quality impact assessment including:

- a detailed assessment of potential construction and operational air quality and odour impacts, in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, and with a particular focus on dust emissions including PM2.5 and PM10, and having regard to the *Voluntary Land Acquisition and Mitigation Policy*;
- an assessment of potential dust and other emissions generated from processing, operational activities and transportation of quarry products;
- an assessment of the greenhouse gas emission impacts of the development;

- reasonable and feasible mitigation measures to minimise dust and emissions; and
- details of proposed monitoring and management measures in particular, real-time air quality monitoring.

5. Water resources

A water resources impact assessment, including:

- a detailed site water balance for the life of the development, including a description of site water demands, water take from any water source, water disposal methods (inclusive of anticipated volumes, quality and frequency of any water discharges), water supply infrastructure and water storage structures as defined by the relevant Water Sharing Plan;
- identification of any licensing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*;
- demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP);
- a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP;
- a conceptual groundwater model that assesses the potential groundwater hazards and impacts associated with the development in accordance with the *Australian Groundwater Modelling Guidelines* (Commonwealth, 2012) having regard to the *NSW Aquifer Interference Policy* (2012);
- an assessment of the likely impacts on the quality and quantity of existing surface and ground water resources, including a detailed assessment of proposed water discharge quantities and quality against receiving water quality and flow objectives;
- a detailed assessment of the need to maintain an adequate buffer between excavations and the highest predicted or recorded regional groundwater table;
- an assessment of any likely flooding impacts of the development;
- an assessment of the likely impacts (including cumulative impacts) of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users;
- an assessment of the potential water quality hazards surrounding the site including acidity, metals, salinity and contaminants including poly-fluoroalkyl substances (PFAS). This assessment must include measures proposed to reduce or manage the hazards and potential interactions of the development and surrounding water users;
- a detailed description of the proposed water management system

(including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts; and

- include a detailed consideration of any potential impacts on sensitive downstream receiving environments.

6. Heritage

An assessment of impacts to Aboriginal and historic heritage, including:

- an assessment of the potential impacts on Aboriginal heritage (cultural and archaeological), including evidence of appropriate consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage; and
- identification of any historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items.

7. Traffic and Transport

A traffic and transport impact assessment, including:

- accurate predictions of the road traffic generated by the construction and operation of the development, including a description of the types of vehicles likely to be used for transportation of quarry products;
- a detailed assessment of potential traffic impacts on the capacity, condition, safety and efficiency of the local and State Road network (as identified above), including a road safety audit detailing the nature of the traffic generated, transport routes, traffic volumes and potential impacts on local and regional roads;
- an assessment of cumulative traffic impacts, having regard to any other proposed developments in the locality;
- a description of the measures that would be implemented to mitigate any impacts, including concept plans of any proposed upgrades, developed in consultation with the relevant road authorities (if required);
- evidence of any consultation with relevant roads authorities, regarding the establishment of agreed contributions towards road upgrades or maintenance; and
- a description of existing and proposed access roads.

8. Land resources

A land resources impact assessment, including:

- potential impacts on soils and land capability (including potential erosion, land contamination and biosecurity risks) and the proposed mitigation, management and remedial measures (as appropriate);
- potential impacts on landforms (topography), paying particular attention to the long-term geotechnical stability of any new landforms (such as

overburden dumps and bunds etc); and

- the compatibility of the development with other land uses in the vicinity of the development in accordance with the requirements in Section 2.17 of *State Environmental Planning Policy (Resources and Energy) 2021*, paying particular attention to the agricultural land use in the region.

9. Waste management

A waste management assessment, including:

- estimates of the quantity and nature of the waste streams that would be generated or received by the development; and
- any measures that would be implemented to minimise, manage or dispose of these waste streams.

10. Hazards

An assessment of the likely risks to public safety, paying particular attention to potential bushfire risks and the transport, handling and use of any hazardous or dangerous goods.

11. Visual

A detailed assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, including with respect to any new landforms.

12. Social

Provide a Social Impact Assessment prepared in accordance with the *Social Impact Assessment Guideline for State Significant Projects*

13. Economic

A detailed assessment of the likely economic impacts of the development, paying particular attention to:

- the significance of the resource;
- the costs and benefits of the project; identifying whether the development as a whole would result in a net benefit to NSW, including consideration of fluctuation in commodity markets and exchange rates; and
- the demand for the provision of local infrastructure and services.

14. Cumulative Impacts

An assessment of likely cumulative impacts of the proposed quarry operating in combination with other developments in the locality, paying particular attention to likely impacts on road safety, water resources, land capability and shared infrastructure.

15. Rehabilitation

The proposed rehabilitation strategy for the site having regard to the key principles in the Strategic Framework for Mine Closure, including:

- a detailed description of the proposed rehabilitation measures that would be undertaken throughout the development and during quarry closure;

	- rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - justification for the nominated final landform; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; - the potential for integrating this strategy with any other rehabilitation and/or offset strategies in the region; and - a detailed description of the measures that would be put into place to ensure sufficient resources are available to implement the proposed rehabilitation measures, and the ongoing management of the site following the cessation of quarrying.
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Part 8 of the Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include high quality files of maps and figures of the subject site and proposal.
Engagement	During the preparation of the EIS, you must consult with the relevant local, State or Australian Government authorities, service providers, community groups and affected landowners. In particular you must consult with: - Aboriginal stakeholders - Port Stephens Council - NSW National Parks and Wildlife Service - Environment Protection Authority - Transport for New South Wales - Conservation Programs, Heritage and Regulation (CPHR) within the Department of Climate Change, Energy, the Environment and Water (DCCEEW) - The Water Group within DCCEEW - Hunter Water Corporation - Heritage NSW - Heritage Council of NSW - NSW Rural Fire Service - Fire and Rescue NSW - Department of Primary Industries (Agriculture) The EIS must detail the engagement undertaken and demonstrate how it was

	consistent with the <i>Undertaking Engagement Guidelines for State Significant Projects</i> . The EIS must detail how issues raised and feedback provided have been considered and responded to in the project.
Expiry Date	If you do not lodge a Development Application and EIS for the development within 2 years of the issue date of these SEARs, your SEARs will expire. If an extension to these SEARs will be required, please consult with the Planning Secretary 3 months prior to the expiry date.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this proposal.

ATTACHMENT 1

Technical and Policy Guidelines

The following guidelines may assist in the preparation of the environmental impact statement. This list is not exhaustive and not all of these guidelines may be relevant to your proposal.

Many of these documents can be found on the following websites:

<http://www.planning.nsw.gov.au>

<http://www.shop.nsw.gov.au/index.jsp>

<http://www.australia.gov.au/publications>

<http://www.epa.nsw.gov.au/>

<http://www.environment.nsw.gov.au/>

<http://www.dpi.nsw.gov.au/>

Policies, Guidelines & Plans

Air	
	Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (DP&E)
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA)
	Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion into the 'Approved Methods for the Modelling and Assessments of Air Pollutants in NSW, Australia'
	National Greenhouse Accounts Factors (Commonwealth)
	EPA Climate Change Policy (EPA)
	Climate Change Action Plan 2023-26 (EPA)
Noise & Blasting	
	Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (DP&E)
	NSW Noise Policy for Industry (EPA)
	Interim Construction Noise Guideline (DECC)
	NSW Road Noise Policy (EPA)
	Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC)
Water	
Groundwater	NSW State Groundwater Policy Framework Document (NOW)
	NSW State Groundwater Quality Protection Policy (NOW)
	NSW State Groundwater Quantity Management Policy (NOW)
	NSW Aquifer Interference Policy 2012 (NOW)
	Office of Water Guidelines for Controlled Activities (2012)
	Groundwater Monitoring and Modelling Plans – Information for prospective mining and petroleum exploration activities (NOW)
	Australian Groundwater Modelling Guidelines 2012 (Commonwealth)
	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Guidelines for the Assessment & Management of Groundwater Contamination (EPA)
Surface Water	NSW Government Water Quality and River Flow Objectives (EPA)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)
	National Water Quality Management Strategy: Australian Guidelines for Fresh and

	Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems –Effluent Management (ARMCANZ/ANZECC)
	NSW Water Conservation Strategy (2000)
	State Water Management Outcomes Plan
	NSW State Rivers and Estuary Policy (1993)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA)
	Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (EPA)
	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control (EPA)
	Technical Guidelines: Bunding & Spill Management (EPA)
	Environmental Guidelines: Use of Effluent by Irrigation (EPA)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	NSW Guidelines for Controlled Activities on Waterfront Land (NOW)
Flooding	NSW Floodplain Development Manual 2005 (OEH)
	Floodplain Risk Management Guideline (OEH)
Soil	Soil Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC & NHMRC)
	National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC)
Land	
	Soil and Landscape Issues in Environmental Impact Assessment (NOW)
	Agfact AC.25: Agricultural Land Classification (NSW Agriculture)
	Agricultural Issues for Extractive Industries (DPI)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
	Land Use Conflict Risk Assessment Guide (DPI)
Traffic	
	NSW Guide to Traffic Generating Development (RMS)
	NSW Road Design Guide (RMS) & relevant Austroads Standards
	Austroads Guide to Traffic Management, Part 2, Integrated Traffic Assessments for Developments
Biodiversity	
	Biodiversity Assessment Method (2020)
	Fisheries NSW policies and guidelines
	Guidelines for developments adjoining Department of Environment, Climate Change and Water (DECCW, 2010)
	Guidelines for Threatened Species Assessment (DP&E)
	Guidance to assist a decision-maker to determine a serious and irreversible impact (OEH)
	NSW State Groundwater Dependent Ecosystem Policy (NOW)
	Risk Assessment Guidelines for Groundwater Dependent Ecosystems (NOW)
Heritage	
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
	Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH)
	Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (OEH)
	Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH)
	NSW Heritage Manual (OEH)

	Statements of Heritage Impact (OEH)
Hazards	
	State Environmental Planning Policy (Resilience and Hazards) 2021
	Hazardous and Offensive Development Application Guidelines – Applying SEPP 33
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis
	Planning for Bush Fire Protection 2019 (RFS)
Waste	
	Waste Classification Guidelines (EPA)
	NSW Waste and Sustainable Materials Strategy 2041 (EPA)
Rehabilitation	
	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)
	Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth)
	Strategic Framework for Mine Closure (ANZMEC-MCA)
Social & Economic	
	Social Impact Assessment Guideline for State Significant Projects (DPE, 2023)
Cumulative	
	Cumulative Impact Assessment Guideline for State Significant Projects

ATTACHMENT 2
Government Authority Responses to Request for Key Issues

Available at
<https://www.planningportal.nsw.gov.au/major-projects/projects/bobs-farm-sand-quarry>

Appendix B

Flood Certificate

FLOOD CERTIFICATE

File No: PSC2013-05401
Issue date: 9-Mar-26
Property ID: 38360

VGT ENVIRONMENTAL COMPLIANCE SOLUTIONS c/o TARA O'BRIEN
PO BOX 2335
GREEN HILLS NSW 2323

Certificate number: 83-2026-1899-1

Property details: 3631 Nelson Bay Road BOBS FARM NSW 2316 (LOT: 254 DP: 753204)

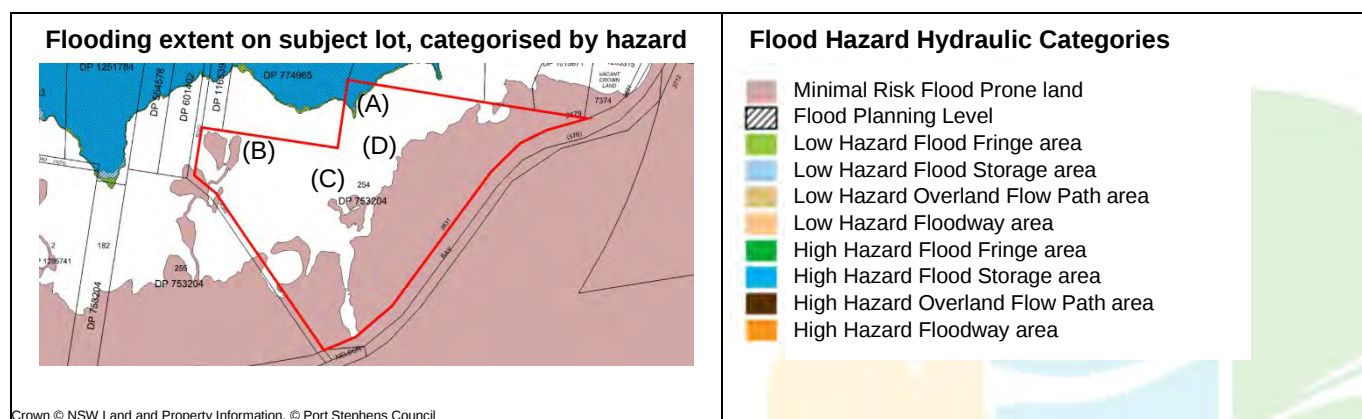
Thank you for your recent flood enquiry regarding the above property. This certificate confirms that this property **is** located in a **flood prone** area. This **is** a "flood control lot" for the purposes of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

Flood Planning Level (A) **3.2 m AHD** (This level defines the minimum floor level for habitable rooms and land that is subject to flood-related development controls (refer to Port Stephens DCP Section B4).)
(velocity = 0.1 m/s)

Highest Hazard Category **High Hazard Flood Storage area**

Flood levels that may be useful are:

Probable maximum flood level	(A) 3.2 m AHD (B) 10.7 m AHD (C) 11.7 m AHD (D) 10.7 m AHD	(The highest flood level that could conceivably occur at this location. If required, onsite flood refuges are built at or above this level, refer to the Port Stephens Development Control Plan B4)
Current day 1% AEP flood level	(A) 2.0 m AHD	(This level is useful for insurance purposes, refer to your insurance policy and the Insurance Contracts Regulation 1985 (Cwealth).)
Minimum onsite wastewater level	(A) 2.0 m AHD	(The 5% AEP level 50 years from now, refer to the Port Stephens On-site Sewage Management Development Assessment Framework and AS/NZS 1547:2012 5.5 land application system design.)



Information derived from Port Stephens Council 2017, *Anna Bay and Tilligerry Creek Flood Study*, Jacobs, North Sydney and Port Stephens Council 2017, *Overland Flow GridFlow Surfaces*, Advisian, North Sydney.

PORT STEPHENS COUNCIL

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ABN 16 744 377 876

IMPORTANT INFORMATION

This Certificate is provided in good faith and in accordance with the provisions of section 733 of the Local Government Act 1993. This certificate provides an estimate of real flood characteristics. Any particular flood may be different to the conditions that were assumed to determine the information shown in this certificate.

The provided flood information has been compiled from information provided by external consultants and flood studies completed by Council in accordance with the NSW Floodplain Development Manual. The information has not been independently verified or checked beyond the agreed scope of work and Council does not accept liability in connection with unverified information.

Council acknowledges that its flood information may be incomplete and varying in accuracy, however it is the best information available to Council at the time of issue.

The information is provided to give the applicant an understanding as to the extent of flooding affecting the property as well as assist in the preparation of a Floodplain Risk Management Report. The information is subject to change if more accurate data becomes available to Council. Accordingly, the information in this certificate is not warranted after the day of issue.

Council is not responsible for updating flood data when site conditions have change from the time of the original flood study and does not accept responsibility arising from any change in site conditions.

Where the relevant information is available, Council's Flood Planning Levels include the estimated impact of climate change.

Council recommends that the information contained in this Certificate be interpreted by a suitably qualified professional. It is the responsibility of the applicant to obtain survey level data (in metres AHD) for the site.

Council disclaims responsibilities to any other person other than the person nominated on the Flood Certificate arising from or in connection with the information provided.

The floor level survey for the property (if available) is based on the conditions on the date of the survey. Any changes to buildings since the survey may alter the appropriate floor level. Refer to the Port Stephens LEP 2013 Section 5.21 and Port Stephens Development Control Plan Section B4 for details on development controls on flood prone land.

For information, the insurance industry uses its own estimates of flood risk and its own definitions for flooding, which may differ when compared with Council's information and the NSW Floodplain Development Manual. You should contact your insurance company to find out if a flood certificate may influence your insurance premium.

The information provided may contain personal information as defined under the Privacy and Personal Information Protection Act 1998. The purpose of collecting this information is to enable Council to consider matters under related legislation, issue related documentation where required and other associated matters as provided by law and will be utilised by Council officers in assessing the proposal and other associated activities. The information may also be made available to other persons in accordance with the relevant Acts and regulations, such as the Government Information (Public Access) Act 2009 and will be stored in Council's record system.

DEFINITIONS

"Flood Planning Level" defines the area of land below the 1% AEP flood event in the year 2100 plus freeboard and is the area of land subject to flood-related development controls (refer to Port Stephens Development Control Plan Section B4). The Flood Planning Level defines the minimum floor level for habitable rooms.

"Freeboard" is a factor of safety typically used in relation to the setting of minimum floor levels and aims to provide reasonable certainty that the risk exposure selected in deciding on a specific event for development controls is achieved (see Section 6 in the NSW Flood risk management manual).

"Habitable room" in a residential situation, a living or working area, such as a lounge room, dining room, rumpus room, kitchen, bedroom or workroom. In an industrial or commercial situation, it refers to an area used for offices or to store valuable possessions susceptible to flood damage in the event of a flood (see Chapter 14 of the Australian Institute for Disaster Resilience Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia).

"Adaptable minimum floor level" is the reduced flood planning level allowed in Council's Development Control Plan where the proposed development facilitates ongoing flood adaptation (for example, where the design facilitates building raising in the future, such as a pier and beam housing design).

"Probable maximum flood level" is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation (PMP), and where applicable, snow melt, coupled with the worst flood-producing catchment conditions. It is used for emergency response planning purposes to address the safety of people and defines the floodplain and identifies "Flood Prone" land (see Section 6 in the NSW Flood risk management manual).

"AEP" (Annual Exceedance Probability) is the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage (for example, the 1% AEP event has a 1% chance of occurring every year; the 5% AEP event has a 5% chance of occurring every year).

"Surveyed floor level" is the surveyed level at the entrance to the residence, usually measured as part of the floodplain risk management plan undertaken for the area.

"AHD" (Australian Height Datum) a common national surface level datum often used as a referenced level for ground, flood and flood levels (approximately corresponding to mean sea level set in the mid to late 1960s).

Hazard Categories

"High hazard" flood area is the area of flood which poses a possible danger to personal safety, where the evacuation of trucks would be difficult, or where there is a potential for significant damage to buildings (see Section 3 of the NSW Flood risk management guideline FB03).

"Low hazard" flood area is the area of flood where, should it be necessary, a truck could evacuate people, though the area could be unsafe for some people and some vehicles (see Section 3 of the NSW Flood risk management guideline FB03).

Hydraulic Categories

"Floodways" are those areas of the floodplain which generally convey a significant discharge of water during floods and are sensitive to changes that impact flow conveyance. They often align with naturally defined channels or form elsewhere in the floodplain (see Section 6 in the NSW Flood risk management manual).

"Overland flow path" is land inundated by local run-off on its way to a waterway, rather than overbank flow from a waterway (see Section 6 in the NSW Flood risk management manual).

"Flood Storage" areas are those parts of the floodplain that are outside floodways which generally provide for temporary storage of floodwaters during the passage of a flood and where flood behaviour is sensitive to changes that impact on temporary storage of water during a flood (see Section 6 in the NSW Flood risk management manual).

"Flood Fringe" is that part of the flood extents for the event remaining after the flood function areas of floodway and flood storage areas have been defined (see Section 6 in the NSW Flood risk management manual).

"Minimal Risk Flood Prone Land" is land on the floodplain that is above the Flood Planning Level. This means that there are no flood-related development controls that apply to residential development, but there may be development controls for sensitive and hazardous development types.

Appendix C

Water Licence

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.
- **Controlled Activity Approval:** a controlled activity approval number starts with a three letter code (CAA), followed by the year (four digit number), and then several numbers.

Search for information about either a:

☒ Water access licence (WAL) issued under the *Water Management Act 2000*

Water Access Licence (WAL) Number

WAL 5960

A WAL number starts with the letters 'WAL' followed by several numbers

Can't find your WAL number? Do you have a reference number? A reference number starts with a two digit number, followed by 'AL' and then several numbers. Use the following tool to find your WAL by entering your reference number.
[Enter the reference number to find the WAL number.](#)

Cancelled WALs are not searchable on the NSW Public Water Register.

Notes:

The search results will list the conditions imposed on the water access licence. Any approved water supply work/s nominated on the water access licence are identified by the approval number/s for the work/s.

The information about a water access licence provided in the search results is a summary and may not always be up to date. If you require full and up to date details about a particular water access licence (including current holders, share and extraction component details, encumbrances and notations) you should search the [Water Access Licence Register](#) administered by NSW Land Registry Services.

- ☐ *Water Act 1912* Licences and Authorities
- ☐ Approval issued under the *Water Management Act 2000* (excluding Controlled Activities)
- ☐ Controlled Activity Approval issued under the *Water Management Act 2000*

Find out if a *Water Act 1912* licence has been converted

- ☐ Water licence conversion status

«Previous Search

Print Export

Search Results

Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)	IDEC (Daily flow shares)
Aquifer	Current	Stockton Groundwater Source	Continuing		40.00	N/A
Extraction Times or Rates						
Subject to conditions water may be taken at any time or rate						
Nominated Work Approval(s)						
20CA202365						
- Conditions						
Plan Conditions						
Water sharing plan	North Coast Coastal Sands Groundwater Sources 2016					
Take of water						
MW0547-00001	The total volume of water taken under this licence in any water year must not exceed a volume equal to: A. the sum of water in the account from the available water determination for the current year, plus B. the water carried over in the account from the previous water year, plus C. the net amount of water assigned to or from the account under a water allocation assignment, plus D. any water re-credited by the Minister to the account.					
MW4507-00001	The maximum water allocation that may be carried over in the account for this access license from one water year to the next water year is: A. a volume equal to 20 % of the share component of the licence, or B. 0.2 ML/unit share of the share component of the licence.					
Monitoring and recording						
MW2336-00001	The purpose or purposes for which water is taken, as well as details of the type of crop, area cropped, and dates of planting and harvesting, must be recorded in the logbook each time water is taken. This condition ceases to apply to a work on the day that the recording and reporting requirements apply to that work under the Water Management (General) Regulation 2018.					
MW2339-00001	A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by the relevant licensor.					
MW2338-00001	The completed logbook must be retained for five (5) years from the last date recorded in the logbook.					
MW2337-00001	The following information must be recorded in the logbook for each period of time that water is taken: A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and B. the access licence number under which the water is taken, and C. the approval number under which the water is taken, and D. the volume of water taken for domestic consumption and/or stock watering. This condition ceases to apply to a work on the day that the recording and reporting requirements apply to that work under the Water Management (General) Regulation 2018.					
Reporting						
MW0051-00003	Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable. The Minister must be notified by: A. email: water.enquiries@dpi.nsw.gov.au , or B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.					
Other Conditions						
NIL						

Disclaimer: WaterNSW is making the information available on the understanding that it does not warrant that the information is suitable for any intended use. In using the information supplied, the user acknowledges that they are responsible for any deductions or conclusions arrived at from interpretation of the data.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to customer.helpdesk@waternsw.com.au or contact 1300 662 077



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