Jurien Bay Borefield Expansion Bore 29/01

Application Number: **02695** Commencement Date: **21/11/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Jurien Bay Borefield Expansion Bore 29/01

1.1.2 Project industry type *

Water Management and Use

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

02/02/2025

1.1.4 Estimated end date *

01/01/2040

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The proposal will involve the direct clearing of 6.23 ha of Carnaby's Cockatoo (Zanda latirostris) foraging habitat and 3.84 ha of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community. No groundwater dependent ecosystems are located within the Jurien Water Reserve.

Water Corporation currently operates the Jurien Water Supply Borefield located approximately 4.2 km northeast of the Jurien Bay townsite, Western Australia (Attachment 2, Figure 1). The Jurien Borefield has been in operation since operates three groundwater abstraction bores that abstract from a shallow unconfined aquifer in the Tamala Limestone that is licenced under the WA *Rights in Water and Irrigation Act 1914* to supply up to 420,000 kL per annum of drinking water to Jurien townsite and surrounds. Due to high salinity associated with the current borefield operations, Water Corporation proposes to equip and operate existing water production bore 29/01 that will replace bores within the scheme with high salinity to supplement the water supply scheme. Bore 29/01 is located 1.5 km to the east of the

existing borefield (Attachment 2, Figure 1). Bore 29/01 will abstract up to 250,000 kL per annum, within the licenced 420,000 kL per annum limit for the borefield, from the Lesueur Sandstone aquifer which will improve water quality to the scheme and increase flexibility for duty/standby arrangements.

The scope of works for the project includes:

- Equipping bore 29/01 with headworks and variable speed pump/s
- Establishing a fenced bore compound
- Construction of a new ~2.5 km pipeline and access track from bore 29/01 to the existing Jurien Tank to the west
- Construction of a temporary filtration Water Treatment Plant (WTP), then installing a new permanent WTP and evaporation/infiltration ponds for bore 29/01
- Installation of above-ground and below-ground powerlines along Jurien Road to the south to connect bore 29/01 to the existing power supply
- Road widening along a portion of Jurien Road to allow for safe access to and from the new bore site
- Operation of bore 29/01 including abstraction of groundwater from the Lesueur Sandstone aquifer and transfer of water into the scheme.

The works will occur within the Project Area of 8.82 ha that consists of 1.32 ha of land previously cleared. Up to 7.5 ha of native vegetation is proposed to be cleared to facilitate the project, of which 2.13 ha is temporarily required to be cleared for construction purposes and will be revegetated.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

***Water Services Act 2012 and Water Services Regulations 2013* WA**

Water Corporation is required to provide and maintain water services infrastructure to supply safe drinking water and manage drainage and wastewater in Western Australia under the *Water Services Act 2012* and the *Water Services Regulations 2013.*

***Rights in Water and Irrigation Act 1914* WA**

The administration of groundwater entitlements in Western Australia is managed and regulated by the Department of Water and Environmental Regulation (DWER) under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The Jurien Bay Borefield is currently operated and licenced under Groundwater Licence No. GWL62152(6) issued under 5C of the RIWI Act for 420,000 kL per year.

Bore 29/01 will be operated in accordance with the Water Resource Management Operation Strategy (WRMOS) as approved by DWER in November 2024 (Water Corporation, 2024). The WRMOS sets out the following requirements:

- Annual abstraction is limited to 250,000 kL from bore 29/01
- Regular periodic monitoring of water levels and water quality parameters at production and monitoring bores
- Salinity target of <500 mg/L TDS with a trigger level of 800 mg/L is to apply to specific bores that are currently producing “fresh water”.
- When the salinity level is triggered as been exceeded:
    - Water Corporation is notify DWER within 14 days of becoming aware and with consideration fo the peak summer demand and where operationally possible, until salinity falls below the trigger level:
        - Abstraction to cease from bore 29/01
        - Bore 29/01 to be rested until the bore has recovered back to target levels
- The drawdown profile at 500 m from Bore 29/01 must not exceed 0.5 m as modelled (Water Corporation, 2024).

Environment Protection and Biodiversity Conservation Act 1999

This proposal has been referred for the direct impacts on the following Matters of National Environmental Significance (MNES) associated with the construction of the proposal:

- Clearing of 6.23 ha of Black Cockatoo foraging habitat
- Clearing of 3.84 ha Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community

The proposed operation of bore 29/01 to abstract up to 250,000 kL/year of groundwater from the deep Lesueur Sandstone aquifer is not considered to have a significant indirect impact on MNES due to the lack of connectivity between the Lesueur Sandstone aquifer and the superficial and surficial aquifers. In addition, the depth to groundwater level in the Project Area ranges between ~30-40 mbgl demonstrating the vegetation on site is not groundwater dependent.

***Environmental Protection Act 1986* WA**

Water Corporation operates under two State-wide Native Vegetation Clearing Permits, which authorises the permit holder to clear native vegetation for the purposes of constructing, maintenance, removal and decommissioning of water services infrastructure and the prevention of imminent danger to human health under Part V of the *Environmental Protection Act 1986.*

Water Corporation will conduct the proposed clearing under the Statewide Purpose Permit CPS185/10 or will obtain a new Clearing Permit for the project from DWER as required.

***Biodiversity Conservation Act 2016* WA**

Water Corporation will obtain Authorisation to Modify a Threatened Ecological Community from the Department of Biodiversity, Conservation and Attractions (DBCA) under Section 45 of the *Biodiversity Conservation Act 2016,* as required, prior to the commencement of the Proposal.

The following policies and guidance documents are relevant to the Proposal and have been considered as part of design of the Proposal, application of the mitigation hierarchy and environmental impact assessment:

- Matters of National Environmental Significance - Significant Impact Guidelines 1.1 (DoE, 2013)
- Referral Guideline for Three Threatened Black Cockatoo Species (DAWE, 2022)
- Approved Conservation Advice (incorporating listing advice) for Calyptorhynchus baudinii (Baudin's Cockatoo) (TSSC 2018)
- Recovery Plan for Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red tailed Black Cockatoo Calyptorhynchus banksii naso) (DEC 2008)
- Approved Conservation Advice for Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo) (DEWHA 2009)
- Commonwealth Listing Advice on Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo) (TSSC 2009)
- Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community (TSSC 2016)
- EPBC Referral Guidance - Banksia Woodlands of the Swan Coastal Plain ecological community (DEE, 2019).

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Aboriginal Heritage

An Aboriginal cultural heritage survey was conducted across the Project Area on 21 May 2024 (ALS, 2024) (Attachment 10 - Heritage Survey). The survey confirmed no approvals are required under the *Aboriginal Heritage Act 1972.* The outcome of the survey identified that Cultural Heritage monitors be present during clearing or excavation works. In addition, avoid any WA Christmas Trees (*Nuytsia floribunda*) and observe a 10 m buffer around the trees, where possible (ASLS, 2024) (Attachment 10 - Heritage Survey).

Should any human skeletal or cultural material be discovered whilst undertaking the Proposal, all works will cease immediately and additional care to be taken at the scene in accordance with Water Corporation's 'Aboriginal Heritage Discovery Procedure'.

Native Title

The Project Area is located within the Yued Indigenous Land Use Agreement Area (ILUA) and Native Title Interests will not be impacted by the Proposal. As such, the works will be in compliance with the *Native Title Act 1993* and the Yued ILUA.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

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Alternatively, email us at privacy@awe.gov.au.

☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	28003434917
Organisation name	WATER CORPORATION
Organisation address	6007 WA

Referring party details

Name	Aaron Thorburn
Job title	Team Leader - Environmental Approvals
Phone	(08) 9420 2843
Email	environment@watercorporation.com.au

Address	629 Newcastle Street, Leederville WA 6007

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

Yes

Person proposing to take the action organisation details

ABN/ACN	28003434917
Organisation name	WATER CORPORATION
Organisation address	6007 WA

Person proposing to take the action details

Name	Aaron Thorburn
Job title	Team Leader - Environmental Approvals
Phone	(08) 9420 2843
Email	environment@watercorporation.com.au
Address	629 Newcastle Street, Leederville WA 6007

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Water Corporation operates according to an environmental management system that is certified to AS/ISO 14001:2015. The system has been externally certified since 2008. The system includes processes and standards to ensure that Water Corporation complies with its environmental obligation, prevents pollution, and improves our environmental

performance. This is reflected in a range of evidence for excellence in environmental performance, including the climate adaptation award from Banksia Environmental Foundation (2013), the Earth awards (2011) for the Walkington Avenue Community Verge Garden Project (Margaret River), the Prime Minister's Award (2004) for environmental excellence in Public Sector management, the WA Premier's Award (2004), the 2003 Australian Greenhouse Office Gold Award, and the United Nations Association of Australian World Environment Day Award 2004 for excellence in Marine and Coastal Management.

Water Corporation has had no actions brought against it in relation to its environmental performance under Commonwealth legislation. Water Corporation has received two modified penalty notices from WA State authorities. Note that under the applicable WA legislation modification penalty notice do not represent an admission for the purposes of criminal or civil proceedings. The number of notices is negligible considering the magnitude of the Water Corporation's operations across Western Australia and the diversity of the natural environment in which it operates. Water Corporation has been responsible for the safe treatment and distribution of drinking water; collection, treatment, and disposal of domestic wastewater; and the transport of drainage water in WA for over 100 years.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Please find Water Corporation's Environmental Policy provided in Attachment 6. Water Corporation provides essential water, wastewater, and drainage services to its customers across Western Australia. It takes water from the environment and then returns drainage water, treated wastewater and by-products to the environment. Water Corporation is committed to accelerating environmental sustainability of the water cycle through leadership and improvement. Water Corporation is committed to and takes responsibility for protecting and improving the environment in which it works or influences by complying with environmental obligations, reducing environmental impacts, and improving environmental performance. Environmental objectives and measures are regularly reviewed to ensure they remain relevant, and performance is reported both internally and publicly.

Environmental obligations include:

• No net greenhouse gas emissions by 2050

• Protecting the oceans and waterways it influences

• Increasing reuse of treated wastewater

• Reducing water use per capita to conserve resources

• Sustainable use of resources with no net clearing of native vegetation.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	28003434917
Organisation name	WATER CORPORATION

Organisation address	6007 WA

Proposed designated proponent details

Name	Aaron Thorburn
Job title	Team Leader - Environmental Approvals
Phone	(08) 9420 2843
Email	environment@watercorporation.com.au
Address	629 Newcastle Street, Leederville WA 6007

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	28003434917
Organisation name	WATER CORPORATION
Organisation address	6007 WA
Representative's name	Aaron Thorburn
Representative's job title	Team Leader - Environmental Approvals
Phone	(08) 9420 2843
Email	environment@watercorporation.com.au
Address	629 Newcastle Street, Leederville WA 6007

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

Same as Referring party information.

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled

action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

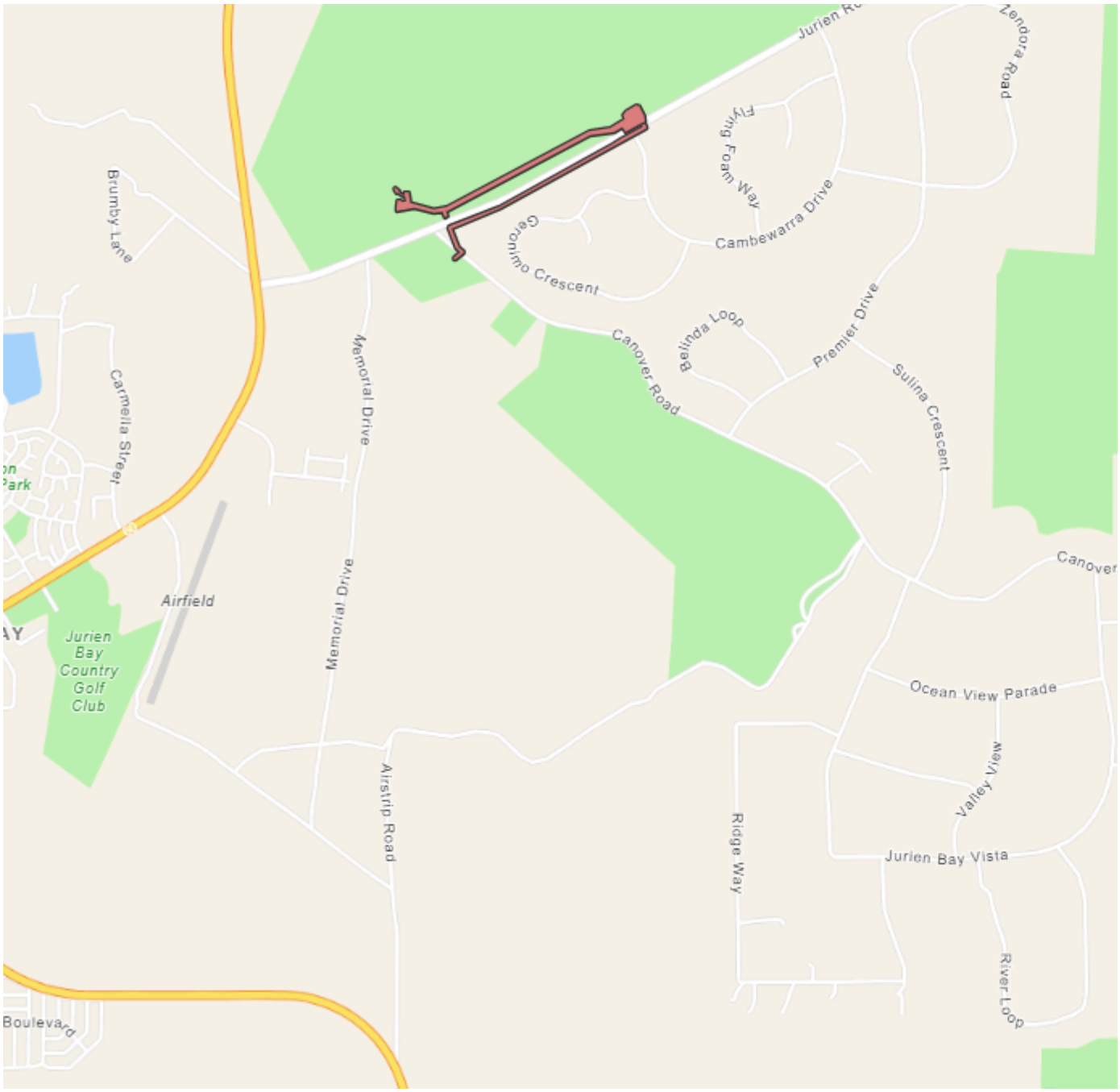
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Referring party

2. Location

2.1 Project footprint



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Corner of Indian Ocean Drive and Jurien Road, Western Australia.

2.2.2 Where is the primary jurisdiction of the proposed action? *

Western Australia

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Project Area occurs across the following land parcels designated as Other Crown land, freehold or road reserve:

- Lot 12085 on Plan 092340
- Lot 10968 on Plan 173142
- Lot 1801684 on Plan 023313 10
- Lot 1801686 on Plan 023313 9
- Lot 1801675 on Plan 023312 8
- Lot 1801673 on Plan 023312 7
- Lot 1801678 on Plan 023312 6
- Lot 1797219 on Plan 022973 4
- Lot 1797222 on Plan 022973 45
- Jurien Road reserve.

Water Corporation has designated operation of the Jurien Water Reserve. Landowner permissions will be obtained for any clearing occurring on private freehold land and road reserve.

The Jurien Bay Borefield is located approximately 4 km to the north-east of the Jurien Bay townsite and is located within the Shire of Dandaragan Local Government Area, Western Australia (Attachment 2, Figure 1).

The Project Area is partially located within the following designated zones or reserves under the Shire of Dandaragan's Local Planning Scheme No. 7 (DPLH, 2021):

- Public Purpose reserve
- Road reserve
- Rural Residential
- Parks and Recreation (DPLH, 2021).

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Project Area is across land with the following planning zones and reserves:

- Public Purpose Reserve
- Parks and Recreation Reserve
- Rural Residential
- Road reserve (DPLH, 2021).

The proposal is consistent with the existing prescribed land uses and no amendments to the Local Planning Scheme is required to facilitate the borefield expansion.

Approximately 1.32 ha (15 %) of the 8.82 ha Project Area has been previously cleared or disturbed as the Project Area runs alongside Jurien Road. The Drovers Cave National Park is located approximately 300 m east of the Project Area and covers approximately 2,573 ha (DPLH, 2021) (Attachment 2 - Figure 1).

The Interim Biographic Regionalisation of Australia (IBRA) categorised the Australian continent into 89 bioregions of similar geology, landforms, vegetation, fauna, and climate (DCCEEW, 2000). The Project Area lies within the Swan Coastal Plain IBRA region, and the Perth subregion (SWA02). The Swan Coastal Plain bioregion is described as low lying coastal plain, mainly covered with woodlands (Mitchell, Williams, & Desmond, 2022). It is dominated by Banksia or Tuart on sandy soils, *Casuarina obesa* on outwash plains and paperbark in swampy areas. In the east, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah woodland. The outwash plains, once dominated by *Casuarina obesa*-marri woodlands and Melaleuca shrublands, are extensive only in the south of the IBRA bioregion.

Spring biological surveys were conducted in 2020 (Survey Area 1), 2022 (Survey Area 2) over the wider Jurien Borefield area (GHD, 2020 & Eco Logical, 2023; Attachments 3 and 4). Additional vegetation mapping was conducted by Biota Environmental Sciences (2024) to provide complete vegetation mapping in the Project Area (Survey Area 3). The additional vegetation mapping was completed by Biota Environmental Sciences by aligning the vegetation descriptions and mapping from Surveys 1 and 2 with photographs of the vegetation in the additional areas mapped (Attachment 5). In this document, ‘survey area’ refers to the combined Survey Area 1, Survey Area 2, and Survey Area 3 (Figure 2 of Attachment 2). As the surveys were completed by different consultants, vegetation types have been described from both spring surveys (Figure 3 of Attachment 2). Vegetation condition across the Project Area ranges from Completely Degraded to Pristine:

- Pristine: 0.08 ha.
- Very Good: 4.80 ha
- Good: 0.18 ha
- Degraded-Good: 1.28 ha
- Degraded: 0.39 ha
- Completely Degraded: 0.04 ha
- Cleared: 1.32 ha (Figure 4 of Attachment 2) (GHD, 2020; Eco Logical, 2023; Biota Environmental Sciences, 2024).

3.1.2 Describe any existing or proposed uses for the project area.

The existing uses of the Project Area include the Jurien Bay Borefield, road reserves and private properties. The proposal will not change the use of the land that it occurs within. Minor clearing/pruning is required on the private properties within a portion of the powerline Project Area to facilitate the installation of the powerlines within the Jurien Road reserve.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

There are no outstanding natural features within the Project Area.

The Drovers Cave National Park is located approximately 300 m east of the Project Area with a total extent of 2,573 ha. Drovers Cave National Park is a conservation estate managed by DBCA under the *Conservation and Land Management Act 2007* (CALM Act) (Attachment 2 - Figure 1). No access or works will occur within the National Park.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

Elevation within the Project Area ranges from approximately 38 metres Australian Height Datum (mAHD) at the south-west end of the Project Area to 26 mAHD towards the centre of the Project Area, and 36 mAHD at the north-east end of the Project Area (Attachment 2 - Figure 6). The change in elevation occurs over a distance of approximately 1.68 km.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

The following investigations were undertaken across the Project Area and surrounds as part of the development planning of the Proposal:

- Spring Flora, Vegetation, Fauna and Black Cockatoo Survey (GHD, 2020) (Attachment 3).
- Spring Flora, Vegetation, Fauna and Black Cockatoo Survey (Eco Logical, 2023) (Attachment 4).
- Vegetation Review: Survey Gap Areas (Biota, 2024) (Attachment 5).

FLORA

No Threatened flora species pursuant to the EPBC Act were recorded during the 2020 or 2022 surveys (GHD, 2020; Eco Logical, 2023) (Attachment 3; 4).

A Protected Matters Search Tool database search identified four (4) Threatened flora species pursuant to the EPBC Act as potentially occurring in the Project Area. The likelihood of occurrence of each of these species was assessed by Eco Logical (2023) based on consideration of recorded distribution and habitat suitability in the Project Area. All four (4) species were found to have a low likelihood of occurrence. Refer to Table 1 of Attachment 1 for the list of identified Threatened flora species and likelihood of occurrence assessments.

The Spring GHD (2020) survey recorded 180 flora taxa, comprised of 146 native species and 34 introduced species (GHD, 2020). The dominant families were Fabaceae (18 taxa), Asteraceae (17 taxa), Poaceae (16 taxa), and Proteaceae (13 taxa) (GHD, 2020) (Attachment 3). The Spring Eco Logical (2023) survey recorded a total of 193 flora species, which comprised 172 native species and 21 introduced species (Eco Logical, 2023). Dominant families were Fabaceae (21 species), Proteaceae (19 species) and Myrtaceae (15 species) (Eco Logical, 2023) (Attachment 4).

Of the introduced flora species recorded, none of the species were listed as Weeds of National Significance (WONS) and one species recorded during the surveys is listed as a Declared Pest under the *Biosecurity and Management Act 2007* (BAM Act):

- Paterson's Curse (**Echium plantagineum*) (Eco Logical, 2023) (Attachment 4).

FAUNA

A PMST search identified 15 Threatened fauna species pursuant to the EPBC Act as potentially occurring in the Project Area. The likelihood of occurrence of each of these species was assessed by Eco Logical (2023) and GHD (2020) based on consideration of recorded species distribution and habitat suitability in the Survey Area. One species, Carnaby's Cockatoo (Zanda latirostris) was considered likely to occur and the remainder 14 fauna species were considered Unlikely to occur. Refer to Table 3 of Attachment 1 for the Threatened fauna likelihood of occurrence assessment.

The PMST also identified 14 Migratory species as potentially occurring in the Project Area, of which seven (7) of these species are also included in the 15 Threatened fauna species identified. The likelihood of occurrence of each Migratory species was assessed, and all 14 species are considered Unlikely to occur in the Project Area. Refer to Table 5 of Attachment 1 for the Migratory species likelihood of occurrence assessment.

The GHD (2020) survey recorded a total of 37 fauna species, including 26 bird, five (5) mammal and six (6) reptile species. Three (3) of the recorded fauna species are introduced. No Threatened fauna listed pursuant to the EPBC Act were recorded during the survey (GHD, 2020) (Attachment 3).

The Eco Logical (2023) survey recorded a total of 29 vertebrate fauna species, including 25 bird and five (5) mammal. Four (4) of the recorded fauna species are introduced. One (1) Threatened fauna species was recorded during the survey, Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered under the EPBC Act (Eco Logical, 2023) (Attachment 4).

The following potential fauna habitats were recorded and mapped within the Project Area:

- Banksia woodland (3.75 ha)
- Low shrublands on sand dunes (0.06 ha)
- Acacia shrublands (0.01 ha)
- Melaleuca shrublands on limestone outcropping (0.16 ha)
- Melaleuca shrubland on limestone ridges (0.40 ha)
- Melaleuca shrubland on sandy slopes (0.44 ha)
- Myrtaceous- Proteaceous heathland (1.86 ha)
- Acacia thicket (0.76 ha)
- Planted (0.05 ha) (Attachment 2 - Figure 7) (GHD, 2020; Eco Logical, 2023; Biota, 2024).

Black Cockatoo Foraging Habitat

The Project Area is located within the non-breeding range of the Carnaby's Cockatoo (*Zanda latirostris*) and is outside of the modelled distribution for the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and the Baudin's Cockatoo (*Calyptorhynchus baudinii*) (DAWE, 2022).

The Project Area comprises 6.23 ha of potential foraging habitat for the Carnaby's Cockatoo (Attachment 2 - Figure 8) (GHD, 2020; Eco Logical, 2023; Biota, 2024).

The GHD (2020) survey did not record any Black Cockatoo species or evidence of their presence during the field survey. The Eco Logical (2023) survey recorded foraging evidence (Eco Logical, 2023).

Black Cockatoo Breeding and Roosting Habitat

The Project Area and wider Survey Areas do not contain any Black Cockatoo breeding or roosting habitat and is outside of the breeding and roosting range for the Carnaby's Cockatoo *(Zanda latirostris*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and Baudin's Cockatoo (*Calyptorhynchus baudinii*) (DAWE, 2022). The surveys did not

record any potential or actual Black Cockatoo breeding trees and no roosting habitat was recorded. The Survey Areas and Project Area contain mostly low lying shrubland and woodland that does not support potential breeding or roosting habitat (GHD, 2020; Eco Logical, 2023; Biota, 2024).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Soil landscapes and land system mapping of WA describes broad soil and landscape characteristics from regional to local scales, ranging from 1:20,000 to 1:125,000 (DPIRD, 2022). The Project Area occurs predominantly within the Spearwood System, which is characterised by sand dunes and plains with yellow deep sands, pale deep sands and yellow/brown shallow sands (DPIRD, 2022). The west end of the Project Area occurs within the Quindalup South System, which is described as coastal dunes, of the Swan Coastal Plain, with calcareous deep sands and yellow sands; coastal scrub (DPRID, 2022).

Mapping of pre-European broad vegetation types within WA was completed on a broad scale (1:1,000,000) by Beard (1976). These vegetation types were later re-assessed by Shepherd *et al.* (2002), resulting in 819 vegetation associations within WA.

Regional vegetation association mapping shows the Project Area occurs across two vegetation associations, Guilderton 1026 and Jurien 1029 (DPIRD, 2018):

- **Guilderton 1026** – Mosaic: Shrublands; *Acacia rostellifera, A. cyclops* (in the south) & *Melaleuca cardiophylla* (in the north) thicket / Shrublands; *Acacia lasiocarpa* & *Melaleuca systena* heath.
- **Jurien 1029** – Shrublands; scrub-heath *Banksia-Calothamnus* association with *Banksia prionotes* on limestone in the northern Swan Region.

Twelve vegetation types were mapped across the Survey Area from the three surveys (GHD, 2020; Eco Logical, 2023; Biota, 2024). Areas previously cleared of native vegetation such as roads and tracks were mapped as cleared (GHD, 2020). Vegetation mapping in the Project Area from the three surveys was merged with overlaps between survey areas removed to avoid double-counting to produce the final mapping shown in Figure 3 of Attachment 2.

Descriptions of each vegetation type are provided in Table 2 of Attachment 1. The vegetation types and extent of each in the Project Area are as follows:

- **VT01 Melaleuca Mid Shrubland** - 0.44 ha
- **VT02 Banksia Low Open Woodland** - 1.66 ha
- **VT03 Acacia Tall Closed Shrubland** - 0.01 ha
- **VT05 Melaleuca Low Open Shrubland** - 0.06 ha
- **BaBmEp** - 0.52 ha
- **BpCqHh -** 1.57 ha
- **CqHhDa** -1.88 ha
- **MhMsDa -** 0.12 ha
- **MsAlDa -** 0.44 ha
- **Ar** - 0.76 ha
- **Planted -** 0.05 ha (Attachment 2 - Figure 3) (GHD, 2020; Eco Logical, 2023; Biota, 2024)

Vegetation condition across the survey areas ranged from Excellent to Completely Degraded. A strip of vegetation approximately 100 m wide running parallel to Jurien Road that is estimated to have been burnt approximately 20 years ago is present in the Survey Area. This area is now regenerating and whilst dominated by colonising shrub species, juveniles of the key species (e.g. *Banksia prionotes*) present in the adjacent unburnt bushland are present and healthy, indicating a recovery of this area. Vegetation condition within the Project Area ranges from Excellent to Cleared/Completely Degraded with the majority of the project area in Very Good condition (Attachment 2 - Figure 4) (GHD, 2020; Eco Logical, 2023; Biota, 2024).

Threatened Ecological Communities

A total of 114.71 ha of Banksia Woodlands TEC is mapped across the combined survey areas. A total of 3.84 ha of Banksia Woodlands TEC occurs within the Project Area representing 3.35% of the combined survey areas (GHD, 2020; Eco Logical, 2023; Biota, 2024).

The PMST report identified two (2) Threatened Ecological Communities (TECs) as potentially occurring in the Project Area:

- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain (SCP) ecological community (Critically Endangered).
- Banksia Woodlands of the Swan Coastal Plain ecological community (Endangered)

The primary defining feature of the Tuart Woodlands TEC is the presence of at least two living established Tuart (*Eucalyptus gomphocephala*) trees in the uppermost canopy layer (DoEE, 2019a). No Tuart trees were recorded in the Survey Area; therefore, the Tuart Woodlands TEC is not present in the Survey Area or Project Area (GHD, 2020; Eco Logical, 2023; Biota, 2024).

The surveys identified the presence of Banksia Woodlands TEC in the Survey Area (GHD, 2020; Eco Logical, 2023). In Survey 1, the vegetation community VT02 was assessed as meeting the key diagnostic characteristics for the Banksia Woodlands TEC. A total of 14.03 ha of VT02, representative of Banksia Woodlands TEC, was recorded in Survey Area 1 across five (5) patches (GHD, 2020).

In Survey 2, the vegetation communities BaBmEp and BpCqHh were assessed as meeting the key diagnostic characteristics, and four (4) patches of Banksia woodland were recorded across Survey Area 2. Two of these patches do not meet the patch size criteria to be considered representative of the Banksia Woodlands TEC, and two patches meet the criteria and are classified as Banksia Woodlands TEC (Eco Logical, 2023).

In Survey 3, the vegetation types identified as VT02, BaBmEp or BpCqHh are considered as part of the Banksia Woodlands TEC (Biota, 2024).

A total of 114.71 ha of Banksia Woodlands TEC is mapped across the combined survey areas. A total of 3.84 ha of Banksia Woodlands TEC occurs within the Project Area representing 3.35% of the combined survey areas (GHD, 2020; Eco Logical, 2023; Biota, 2024). The Banksia Woodlands TEC vegetation condition within the Project Area ranges between Pristine to Completely Degraded, of which majority is in Very Good condition:

- Pristine - 0.083 ha
- Very Good - 2.331 ha
- Good-Degraded - 1.294 ha
- Degraded or Complete Degraded - 0.039 ha (Attachment 2 - Figure 5) (GHD, 2020; Eco Logical, 2023; Biota, 2024).

The GHD (2020) survey recorded a patch of the Honeymyrtle Shrubland on Limestone ridges of the SCP TEC (also known as the *Melaleuca huegelii - Melaleuca systena* shrublands on limestone ridges TEC) listed as Critically Endangered under the EPBC Act. The Honeymyrtle Shrubland on limestone ridges TEC covers an area of 6.26 ha located approximately 765 m north of the Project Area (Section 4.1.1 and Figure 6 of Attachment 3) (GHD, 2020).

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

There are no Commonwealth, World or State Registered Heritage Places registered in the vicinity of the Project Area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

Aboriginal Cultural Heritage

There are no registered Aboriginal Heritage sites registered within the Project Area (DPLH, 2024). The closest registered Aboriginal Heritage Places include:

- **Hasting's Cave (ID 405)**: located within Drovers Cave National Park, approximately 2.2 km northeast of the Project Area (DPLH, 2024). Hasting's Cave place type is artefacts / scatter; midden.
- **Padbury Yam Ground (ID 4624):** located approximately 8.6 km northeast of the Project Area and is an artefacts / scatter; plant resource place type.
- **Middle Head Midden (ID 5338):** is an artefacts / scatter; midden site and is located approximately 2.6 km northwest of the Project Area (DPLH, 2024).

Water Corporation consulted with the Department of Planning, Lands and Heritage (DPLH) regarding the proposal and potential cultural heritage significance of the Project Area. Due to the natural landscape of dune formations, DPLH advised a heritage survey would be required.

An Aboriginal Heritage Survey of the Project Area was conducted by ALS on 21 May 2024 (Attachment 10). The survey identified that no approvals would be required under the *Aboriginal Heritage Act 1972*, however has recommended the following:

- Cultural Heritage Monitors are to be engaged for any clearing or excavation works that will take place for the duration of the project
- Avoid any WA Christmas Trees and a 10 m buffer from them where possible (Attachment 10)
- Should any human skeletal or cultural material be discovered whilst undertaking the project, all works will cease immediately and Water Corporation's *Aboriginal Heritage Discovery Procedure* will be implemented (ALS, 2024).

Native Title

The Project Area is located within the Yued Indigenous Land Use Agreement Area under the *Native Title Act 1993*, however, Native Title interests will not be impacted by the Proposal.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

SURFACE WATER

The Project Area is located in the Eneabba Coastal Tributaries proclaimed surface water area (DWER, 2024a). There are no RAMSAR declared wetlands or geomorphic wetlands within the vicinity of the Project Area (DBCA, 2017a; 2017b). The nearest surface water feature is a wetland classified as a 'sumpland' located approximately 1.5 km to the west of the Project Area. The management category of this sumpland is 'Rehabilitation Potential'. The nearest major river, The Hill River (UFI: 62) is located approximately 8.9 km to the south of the Project Area (DWER, 2017).

GROUNDWATER

The Project Area falls within the proclaimed Jurien groundwater resource area (DWER, 2024b). The Project Area overlaps with a Priority 1 Public Drinking Water Source Area (PDWSA), the Jurien Water Reserve (UFI: 909) (DWER, 2024c).

The depth to the water table is approximately 30-50 m below ground level in the Project Area (DoW, 2009; Baddock and Lach, 2003; DWER, 2017).

Groundwater within the Jurien Water Reserve flows in a westerly direction towards the ocean. The horizontal hydraulic gradient is steeper in the east and flattens towards the coast (DoW, 2009; Baddock and Lach, 2003).

Hydrogeology

The following aquifers occur within the Jurien groundwater area listed in accordance to age and depth:

- Superficial
- surficial
- Mirrabooka
- Leederville - Parmelia
- Yarragadee
- Cattamarra
- Eneabba
- Lesueur (DoW, 2010).

The Jurien Bay Borefield comprises two major groundwater aquifers including the Tamala Limestone aquifer and the Lesueur Sandstone aquifer (DoW, 2009). Water Corporation currently operates three production bores that abstract from the Tamala Limestone aquifer at depths between 16.5 and 22 mbgl. The Tamala Limestone aquifer is highly transmissive and karstic with a saturated thickness of up to 20 m that thins towards the east. The saturated thickness of the Tamala Limestone is limited to a narrow strup of the aquifer approximately 5 km inland from the coast and becomes further unsaturated toward the east (DoW, 2009).

Lesueur Sandstone Aquifer

The Lesueur Sandstone aquifer is a major regional aquifer that comprises layers of sandstone interbedded with relatively thin clay layers with very low permeabilities. Bore lithological log data from 29/01 identified a clay layer intersected between 93 m to 111 mbgl and is interpreted as an aquitard that separates the upper more transmissive portion of the Lesueur Sandstone aquifer from the lower, less transmissive portion (Baddock and Lach, 2003).

The Lesueur Sandstone aquifer is bounded by the Lesueur Fault to the east and the Beagle fault to the west. The presence of these faults has regional significance whereby the Beagle Fault acts as a groundwater flow barrier for the Lesueur Sandstone (Baddock and Lach, 2003).

The Lesueur Sandstone aquifer is recharged by rainfall infiltration and by receiving leakage from the overlying superficial formation where the vertical gradient is downward. Recharge of the Lesueur Sandstone is approximately 0.3 to 1.0 GL/a (Baddock and Lach, 2003; Water Corporation, 2024). No Groundwater Dependent Ecosystems occur within the Survey Area, with the nearest GDE relevant to the Lesueur Sandstone aquifer are springs and estuarine flows of Hill River located approximately 8.5 km to the south of the Project Area (Rutherford et al. 2005; DoW, 2017).

Water Corporation are proposing to operate bore 29/01 and abstract groundwater from the deepest aquifer, the Lesueur Sandstone aquifer at depths between 189 mbgl and 249 mbgl. Groundwater quality varies across the aquifer, with water quality at production bore 29/01 being characterised as having the following groundwater qualities as at June 2022:

- pH 7.71
- Temperature 28.1
- Salinity of 493 mg/L TDS. Groundwater salinity within the Lesueur Sandstone aquifer is low, being less than 500 mg/L TDS across the Project Area.

Saltwater Interface

A saltwater interface is located approximately 300 m west of the Jurien Bay borefield (Figures 23 to 29 of Attachment 8) (Southern Geoscience, 2021). The source of saline water in the Tamala Limestone production bores has been identified as likely from the underlying Woodada Formation via up-coning. The outcome of an electromagnetic survey concluded that the saltwater interface extends 4 to 5 km further inland north of the existing Tamala Limestone production bores and may potentially impact upon any future expansion to the borefield to the north (DoW, 2009; Baddock and Lach, 2003; Southern Geoscience, 2021).

Catchment Protection

The existing Jurien bay bores are located within the Jurien Water Reserve that was last expanded and proclaimed in August 2012 under the Country Areas Water Supply Act 1947 for the purpose of public drinking water source protection. All Crown Land within the Jurien Water Reserve is classified as Priority 1 and private land is classified as Priority 2 Public Drinking Water Source Areas (PDWSAs) (DoW, 2009; 2011). DWER's (2021) Water Quality Protection Note 25 defines PDWSAs into the following categories:

- **Priority 1:** generally located over land under Government ownership, such as conservation areas. The objective is to avoid unnecessary water quality contamination risks.

- **Priority 2:** are generally located over land zoned rural, such as farm land and rural-residential lots. The objective is to minimise water quality contamination risks.
- **Priority 3:** are located over land zoned urban, commercial and light industrial with the objective to manage water quality contamination risks so that the drinking water source is maintained for as long as possible (DWER, 2021).

Groundwater Dependent Ecosystems

The Project Area and Survey Area do not contain any Groundwater Dependent Ecosystems (GDE) relevant to the Lesueur Sandstone aquifer.

GDEs can be defined as complex communities of organisms where groundwater is a critical element required for consumptive use, biophysical processes or as habitat for species. GDEs are permanently or periodically dependent on the prevailing groundwater regime, including terrestrial flora, vegetation and fauna, river base flow systems., aquifer cave ecosystems, wetlands and estuaries or near shore marine systems (Rutherford *et al.* 2005).

Rutherford *et al.* (2005) identified approximately 100 potential GDEs in the Northern Perth Basin by inspection of remnant vegetation maps and groundwater level maps produced from the integration of bore hole, topographical, geological and hydrogeological data. They identified one potential GDE in the vicinity of the borefield named 'Jurien' relating to the general coastal vegetation and ecosystem in the Jurien townsite area (DoW, 2017).

Rutherford *et al.* (2005) identified the Lesueur Sandstone aquifer may support GDEs where associated with spring flows and riverine baseflow of Hill River located ~8.5 km to the south-east of the Project Area (DoW, 2017). Given the project area and the associated drawdown radius do not intersect with any surface water features, it is highly unlikely that the deep Lesueur Sandstone aquifer would support GDEs within the Jurien Water Reserve or within the modelled drawdown area of bore 29/01.

The study identified that groundwater depths in the Jurien greater than 20 mbgl are likely to have GDEs with low dependency. Generally, tree roots are known to access groundwater up to 15 mbgl in the northern Perth basin (DoW, 2017). The abstraction from bore 29/01 will occur from the Lesueur Sandstone aquifer at a depth of between 189 mbgl and 249 mbgl (Water Corporation, 2024).

The extent of potential GDE area within the Lesueur Sandstone and Eneabba aquifers was calculated to be 42 km2 representing 1% of GDEs in the total GDE area (Rutherford *et al.* 2005). The GDEs relevant to the Lesueur Sandstone and Eneabba aquifers are associated with the springs and estuarine flows of Hill River located approximately 8.5 km south of the Project Area (Rutherford *et al*. 2005; DoW, 2017).

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposal is unlikely to have an indirect or direct impact on any World Heritage areas.The proposal is limited to the following extents:

- Direct clearing and construction for the water treatment plant, pipeline, access track and bore compound infrastructure
- Operation of bore 29/01 abstracting water from the Lesueur Sandstone aquifer with a modelled drawdown of groundwater by 0.5 m within a 1.5 km radius.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage places are located within or near the Project Area and will not be directly or indirectly impacted on by the proposal.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Ramsar wetlands are located nearby the Proposal area.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
No	No	Andersonia gracilis	Slender Andersonia
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
No	No	Dasyurus geoffroii	Chuditch, Western Quoll
No	No	Egernia stokesii badia	Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink
No	No	Eucalyptus argutifolia	Yanchep Mallee, Wabling Hill Mallee
No	No	Hemiandra gardneri	Red Snakebush
No	No	Leipoa ocellata	Malleefowl
No	No	Macroderma gigas	Ghost Bat
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
No	No	Pristis pristis	Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish
No	No	Rostratula australis	Australian Painted Snipe
No	No	Sternula nereis nereis	Australian Fairy Tern
No	No	Thelymitra stellata	Star Sun-orchid
No	No	Tringa nebularia	Common Greenshank, Greenshank
Yes	No	Zanda latirostris	Carnaby's Black Cockatoo, Short-billed Black-cockatoo

Ecological communities

Direct impact	Indirect impact	Ecological community
Yes	Yes	Banksia Woodlands of the Swan Coastal Plain ecological community
No	No	Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion
No	No	Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Threatened Flora

No Threatened flora pursuant to the EPBC Act were recorded or considered Likely or Potentially occurring within the Project Area (GHD, 2020; Eco Logical, 2023) and therefore the Proposed action is unlikely to have a direct or indirect impact on these species.

Refer to the following attached survey reports for the likelihood assessments for Threatened flora demonstrating that all conservation significant flora pursuant to the EPBC Act identified in the PMST database searches are considered Unlikely to occur within or near the Project Area:

- Appendix D - Post survey likelihood of Occurrence Assessment of Attachment 3 Biological Survey Report (GHD, 2020)
- Appendix F - Pre and post-survey Flora Likelihood of Occurrence of Attachment 4 Biological Survey Report (Eco Logical, 2023)

Threatened Fauna

Likelihood assessments and surveys of the Project Area and surrounds identified one Threatened fauna species pursuant to the EPBC Act as likely to occur within the Project Area; Carnaby's Cockatoo (*Zanda latirostris*), due to the presence of suitable foraging habitat and foraging evidence within the Survey Areas (GHD, 2020; Eco Logical, 2023).

The Proposal will have a direct impact on the Carnaby's Cockatoo as a result of the following:

- Direct loss of suitable foraging habitat from the clearing of up to 6.23 ha of foraging habitat, of which 1.66 ha is High-Quality and 4.45 ha is Low Quality and the remainder 0.12 ha of Low to Negligible quality (Attachment 2 - Figure 8)

Indirect impacts to Carnaby's Cockatoo may include:

- Degradation of surrounding habitat from dust, noise and vibration from construction activities
- Degradation of surrounding habitat from the introduction or spread of weeds and/or disease.

All other fauna species were considered Unlikely to occur and therefore the Proposed Action is considered unlikely to have a direct or indirect impact on these species. Refer to the following attached survey reports for the likelihood assessments for Threatened fauna:

- Appendix E - Post survey likelihood of occurrence assessment of Attachment 3 Biological Survey Report (GHD, 2020)
- Appendix G Pre and post-survey Fauna Likelihood of Occurrence assessment of Attachment 4 Biological Survey Report (Eco Logical, 2023)

Threatened Ecological Communities

Post-survey likelihood assessments and surveys identified the following:

- Recorded presence of the Banksia Woodlands TEC
- Absence of the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the SCP TEC
- Recorded presence of 6.26 ha of the Honeymyrtle Shrubland on limestone ridges of the SCP (*Melaleuca huegelii – Melaleuca systena* shrublands on limestone ridges) TEC.

The primary defining feature of the Tuart Woodlands TEC is the presence of at least two living established Tuart (*Eucalyptus gomphocephala*) trees in the uppermost canopy layer (DoEE, 2019a). No Tuart trees were recorded in the Survey Area; therefore, the Tuart Woodlands TEC is not present in the Project Area (GHD, 2020; Eco Logical, 2023; Biota, 2024). As such, the Proposed Action is not likely to have a direct or indirect impact on the Tuart Woodlands TEC.

The GHD (2020) survey recorded a 6.26 ha patch of the Honeymyrtle Shrublands TEC located approximately 765 m north of the Project Area ranging in Good to Excellent condition (Figure 6 of Attachment 3 - Survey Report) (Section 4.1.1 of Attachment 3 - Survey Report) (GHD, 2020).

The surveys identified 40.16 ha of Banksia Woodlands TEC patches within the combined survey areas (Figure 5 of Attachment 2) (GHD, 2020; Eco Logical, 2023; Biota, 2024) (Attachment 3, 4 and 5).

The proposal will have a direct impact on the Banksia Woodlands TEC:

- Clearing of 3.84 ha within greater surveyed patches of 40.16 ha, consisting of the following conditions:
    - Pristine - 0.083 ha
    - Very Good - 2.331 ha
    - Good-Degraded - 1.294 ha
    - Degraded or Completely Degraded - 0.039 ha.

The proposal may have an indirect impact on the Banksia Woodlands TEC:

- Potential degradation of vegetation due to edge effects from clearing, construction activities and ongoing access
- Introduction or spread of weeds or disease.

Refer to the following attached survey reports for the full likelihood assessments for Threatened Ecological Communities:

- Section 4.1.1 of Attachment 3 Biological Survey Report (GHD, 2020)
- Section 4.2.6 of Attachment 4 Biological Survey Report (Eco Logical, 2023)
- Appendix H - Pre-survey communities likelihood of occurrence assessment within Attachment 4 Biological Survey Report (Eco Logical, 2023).

Groundwater Dependent Ecosystems

The proposal is not likely to have an indirect impact on the Banksia Woodlands TEC or Black Cockatoo foraging habitat due to the proposed operation of bore 29/01, which abstracts groundwater from the Lesueur Sandstone aquifer.

Banksia species trees can access groundwater and deep soil moisture through their deep roots. The more drought-tolerant Banksia species (*B. attenuata, B. menziesii, B. prionote*s) can survive and co-dominate various topographic locations because of their ability to use multiple water sources (Groom, 2004). Banksia woodland woody shrub species are classified as shallow (<1 m), medium (1-2 m), or deep-rooted (>2 m). Shallow-rooted species dominate areas with relatively low groundwater depth, although these species and deep-rooted species co-occur over a range of groundwater depths and topographic positions (Groom, 2004). Medium and deep-rooted species also cope with summer drought by conserving leaf water loss and tolerating extremely low soil water potential (Groom, 2004).

Banksia attenuata and *B. menziesii,* the co-dominant canopy species of community BaBmEp, depend on groundwater during the drier summer months (i.e., summer obligate phreatophytes) and can access groundwater to depths of 4-5 m and 6-7 m, respectively (Groom, 2004). The deep-rooted shrub Eremaea pauciflora, dominant in the ground layer of this community, has been shown to access groundwater to a depth of 6 m (Groom 2003) and probably also accesses soil moisture at depths of 2-6 m during drought (Groom et al., 2000). Banksia prionotes, the dominant canopy species in community BpCqHh, uses shallow soil moisture during winter via its lateral roots and accesses mostly groundwater in summer through its deep taproot (Dawson & Pate 1996). The shrub Hibbertia hypericoides, dominant in the ground layer of this community, is shallow-rooted and hence rarely accesses groundwater, relying on shallow soil moisture year-round (Groom 2004).

Given that the proposed groundwater abstraction is from the deepest aquifer, the Lesueur Sandstone, at depths between 189 and 249 mbgl, and the depth to water at the Project Area being at least 30-40 mbgl, it is highly unlikely that the abstraction would impact the remaining Banksia Woodlands TEC and Black Cockatoo foraging habitat within and surrounding the Project Area.

The proposed abstraction is from the Lesueur Sandstone aquifer, which the native vegetation within the Project Area and immediate surrounds is not considered to be dependent upon. Instead, the river baseflow systems, wetlands, and springs of Hill River, located approximately 5.8 km south of the Project Area, are considered to be GDEs of the Lesueur Sandstone aquifer (DoW, 2009; 2017; Rutherford et al. 2005). Therefore, the proposed abstraction of bore 29/01 is not expected to have indirect impacts on any MNES associated with groundwater abstraction. The proposed abstraction from bore 29/01 aligns with the Environmental Considerations for Groundwater Management in the Northern Perth Basin

Report (DoW, 2009; DoW, 2017). The bore is located approximately 5.8 km north of the Hill River channel, well beyond the modelled 1.2 km drawdown area, and is therefore unlikely to have any drawdown impacts on the Hill River or any indirect impacts on GDEs associated with the aquifer's drawdown (DoW, 2017).

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Carnaby's Cockatoo (*Zanda latirostris*)

The Project is unlikely to have a significant impact on the Carnaby's Cockatoo due to:

- The Proposal will involve the clearing of up to 6.23 ha of 123.43 ha of foraging habitat that was recorded during the surveys.
    - consisting of 1.66 ha of High Quality, 4.45 ha of Low-Quality and 0.12 ha of Low to negligible habitat.
- The Project Area is outside of the breeding and roosting range for the species in addition, the Project Area and wider survey area does not contain any potential breeding or roosting habitat.
- The Project Area is located approximately 300 m from the Drovers Cave National Park that would likely provide significant area of foraging habitat in conservation tenure
- The Proposal will not cause fragmentation between patches of foraging habitat of 4 km or greater
- Strict weed and hygiene management will be implemented during construction.

Refer to Table 6 of Attachment 1 for a detailed impact assessment against the MNES significant impact criteria in accordance with the *Significant Impact Guidelines 1.1* (DEWHA, 2013) and Table 7 of Attachment 1 for an assessment against the referral guidelines for the Black Cockatoos in accordance with the Referral Guideline for 3 WA Threatened Black Cockatoo Species (DAWE, 2022).

Banksia Woodlands of the SCP TEC

The Proposal is not considered to have a significant impact on the Banksia Woodlands of the SCP TEC due to:

- The Proposal will clear up to 3.75 ha of 40.16 ha of Banksia Woodlands TEC
- The Proposal will not cause additional fragmentation or severing of patches of TEC greater than 30 m.
- The Proposal will not cause fragmentation of the patches of the Banksia Woodlands TEC within the wider survey area
- Will not result in the remaining Banksia Woodlands TEC being excluded from the current TEC patches or no longer meeting the condition requirements to be protected under the EPBC Act.

Refer to Tables 6 and 7 of Attachment 1 for the full impact assessments of the Proposal conducted in accordance with the MNES Significant Impact Guidelines 1.1 (DoE, 2013).

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

Carnaby's Cockatoo

The proposal will involve the clearing of 6.14 ha of suitable foraging habitat, however is outside the range for breeding and roosting and does not contain any roosting or breeding habitat (GHD, 2020; Eco Logical, 2023; Biota, 2024). The Project Area therefore does not provide critical habitat for the species.

The proposed clearing of 6.23 ha represents:

- 5.05% of foraging habitat surveyed (123.43 ha) (GHD, 2020; Eco Logical, 2023; Biota, 2024)
- 0.16% of potential foraging habitat within the wider Jurien Water Reserve and Drovers Cave National Park (~3,825 ha) (DBCA, 2023)

- 0.03% of potential foraging habitat within 12 km of the Project Area (DBCA, 2023).

The proposed clearing of up to 6.23 ha foraging habitat and revegetation of 2.13 ha post-construction, it is not considered to be significant given the extensive representation of the Black Cockatoo foraging habitat locally and regionally. As such, it is not considered to be a significant impact, environmental risks can be managed adequately and therefore the proposal is not considered to be a Controlled Action.

Banksia Woodlands TEC
The Proposed action will require the clearing of 3.84 ha of Banksia Woodlands TEC within a wider patch size of 32.0 ha.

The proposed clearing of 3.84 ha represents:

- 12.0% within the patch (GHD, 2020; Eco Logical, 2023; Biota, 2024)
- 9.56% of the Banksia Woodlands TEC surveyed (40.5 ha) (GHD, 2020; Eco Logical, 2023; Biota, 2024)
- 0.004% of the potential Banksia Woodlands TEC within the Shire of Dandaragan LGA as at 2015 (DEE, 2016a)
- 0.002% in the Perth Swan Coastal Plain subregion (253,540.60 ha) as at 2015 (DEE, 2016a).

The proposed clearing of up to 3.84 ha of Banksia Woodlands TEC and revegetation of 2.13 ha post-construction, is not considered to be significant given the extensive representation of the TEC locally and regionally. As such, it is not considered to be a significant impact, environmental risks can be managed adequately and therefore the proposal is not considered to be a Controlled Action.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Water Corporation followed the mitigation hierarchy throughout the development and planning phases of the Proposal, which included:

- Reviews to utilising an existing drilled bore within a deep aquifer to reduce the risks of indirect impacts to surrounding MNES
- Utilising existing cleared areas where possible and where the terrain and topography allows, noting the Project Area is located within a sand dune system with highly variable elevations
- Limiting the construction corridors to the extent necessary for construction within a highly undulating landscape whilst minimising environmental impacts
- Revegetation 2.13 ha of native vegetation cleared for construction purposes that will no longer be required to be maintained as cleared land as part of operations. The Revegetation Plan is under preparation by a specialist revegetation consultant and will be in accordance with relevant guidelines, policies and the site surveys undertaken.
- Implementation of environmental management measures as outlined in the Construction Environment Management Framework (CEMF) (Attachment 9) of which the Contractor will use as a basis to develop the Construction Environment Management Plan (CEMP) that will contain more detailed construction specific information to manage environmental risks.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

The impacts are not considered significant in the context of the MNES represented locally and regionally compared to the magnitude of the impacts on MNES. On this basis, no offsets are proposed.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
No	No	Motacilla cinerea	Grey Wagtail
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
No	No	Pristis pristis	Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish
No	No	Sterna dougallii	Roseate Tern
No	No	Tringa nebularia	Common Greenshank, Greenshank

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

All migratory species identified in the PMST database search were considered Unlikely to occur based on consideration of the species' distribution and unsuitable habitat within the Project Area.

Refer to the following attached survey reports for the full likelihood assessments for migratory species:

- Appendix E - Post survey likelihood of occurrence assessment of Attachment 3 Biological Survey Report (GHD, 2020).
- Appendix G - Pre and post-survey Fauna Likelihood of Occurrence assessment of Attachment 4 Biological Survey Report (Eco Logical, 2023).

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposal does not involve a nuclear action.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposal will not impact on a Commonwealth Marine Area.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposal will not impact directly or indirectly on the Great Barrier Reef.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposal does not relate to coal seam gas or coal mining development and therefore will not have an impact on water resources in relation to these activities.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Project Area does not occur on Commonwealth land and the proposal will not have a direct or indirect impact on any Commonwealth land.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposal is limited to the Project Area and the abstraction of groundwater from the Lesueur Sandstone aquifer. The proposal will not have an indirect or direct impact on any Commonwealth heritage overseas places.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The existing groundwater bore 29/01 within the Jurien Bay borefield needs to be equipped to supplement the water supply scheme to the area due to poor water quality abstracted from some of the existing bores in the borefield. This issue should be addressed as soon as possible to increase the reliability of the water source for supply to the Jurien Bay water scheme, increase flexibility for duty/standby arrangements for operating the bores on the scheme and improve water quality to mitigate salinity issues.

The Jurien Bay borefield is an existing borefield that is currently in use to supply water to the Jurien Bay water scheme. Water Corporation has reviewed several options for the Project Area to limit the direct impacts to native vegetation and MNES. However, due to the challenging topography of the borefield being part of a dune system with elevations ranging between 26 and 38 mAHD, the Project Area has been identified as the best option for the project which utilises existing disturbed areas as well as having ideal ground conditions. No other locations within the borefield were suitable given existing infrastructure is present.

5. Lodgement

5.1 Attachments

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 6_Water Corporation Environment Policy (1).pdf Water Corporation's Environment Policy		No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Shire of Dandaragan Local Planning Scheme No. 7 https://www.wa.gov.au/government/document-collec..			High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_Figures.pdf Figures		No	High
#2.	Document	Attachment 3_Biological Survey Report 1 (GHD 2020).pdf Biological survey report		No	High
#3.	Document	Attachment 4_Biological Survey Report 2 (EcoLogical, 2023).pdf Biological survey report		No	High
#4.	Document	Attachment 5_Biological Survey Report 3 (Biota, 2024).pdf Biological survey report		No	High
#5.	Link	Revision of the Interim Biogeographic Regionalisation of Australia (IBRA) Summary Report https://www.dcceew.gov.au/environment/land/nrs/p..			High
#6.	Link	Shire of Dandaragan Local Planning Scheme No. 7 https://www.wa.gov.au/government/document-collec..			High
#7.	Link	Swan Coastal Plain 2 (SWA2 – Swan Coastal Plain subregion). https://N/A			High

3.1.3 Natural features, important or unique values that applies to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_Figures.pdf Figures		No	High

3.1.4 Gradient relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_Figures.pdf Figures		No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_Figures.pdf Figures		No	High
#2.	Document	Attachment 3_Biological Survey Report 1 (GHD 2020).pdf Biological survey report		No	High
#3.	Document	Attachment 4_Biological Survey Report 2 (EcoLogical, 2023).pdf Biological survey report		No	High
#4.	Document	Attachment 5_Biological Survey Report 3 (Biota, 2024).pdf Biological survey report		No	High
#5.	Link	Referral Guideline for 3 WA Threatened Black Cockatoos https://www.dcceew.gov.au/sites/default/files/do..	28/02/2022		High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_Figures.pdf Figures		No	High
#2.	Document	Attachment 3_Biological Survey Report 1 (GHD 2020).pdf Biological survey report		No	High
#3.	Document	Attachment 4_Biological Survey Report 2 (EcoLogical, 2023).pdf Biological survey report		No	High
#4.	Document	Attachment 5_Biological Survey Report 3 (Biota, 2024).pdf Biological survey report		No	High
#5.	Link	Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Co https://www.environment.gov.au/biodiversity/thre..	02/02/2016		High
#6.	Link	Approved Conservation Advice for the Tuart Woodland and Forests TEC http://www.environment.gov.au/biodiversity/threa..	28/02/2019		High
#7.	Link	Banksia Woodlands of the Swan Coastal Plain: a nationally protected ecological community https://www.agriculture.gov.au/sites/default/fil..			High

#8.	Link	EPBC Referral Guidance – Banksia Woodlands of the Swan Coastal Plain ecological community https://www.dcceew.gov.au/environment/biodiversi..	28/02/2019		High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 10 - Heritage Survey ALS 2024 Redacted CONFIDENTIAL NOT FOR PUBLIC CONSUMPTION.pdf Aboriginal cultural heritage survey report - CONFIDENTIAL NOT FOR PUBLIC CONSUMPTION		Yes	High
#2.	Link	Aboriginal Cultural Heritage Inquiry System https://www.wa.gov.au/government/document-collec..			High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 11 - Hydrogeological Report Baddock and Lach 2003 Commercial in Confidence.pdf Jurien Hydrogeological investigation report - CONFIDENTIAL	31/07/2003	Yes	High
#2.	Document	Attachment 8_Jurien Aerial Electromagentic Survey Report.pdf Aerial electromagnetic survey of the Jurien water reserve	28/02/2022	No	High
#3.	Link	Environmental Considerations for groundwater management in the Northern Perth Basin https://www.wa.gov.au/system/files/2022-10/Envir..	01/05/2009		High
#4.	Link	Jurien Groundwater Allocation Plan. Report No. 27 https://www.wa.gov.au/system/files/2022-07/Jurie..	01/01/2010		High
#5.	Link	Jurien water reserve drinking water source protection plan. Report No. 109 https://www.wa.gov.au/system/files/2022-04/Jurie..	01/12/2009		High
#6.	Link	Jurien Water Reserve Drinking water source protection review https://www.wa.gov.au/system/files/2022-04/Jurie..	30/06/2011		High
#7.	Link	Northern Perth Basin: Geology, Hydrogeology and Groundwater Resources https://www.wa.gov.au/system/files/2022-04/North..	01/01/2017		High
#8.	Link	The Hydrogeology of Groundwater Dependent Ecosystems in the Northern Perth Basin https://library.dbca.wa.gov.au/static/Journals/0..	30/06/2005		High
#9.	Link	WQP 25 Land use compatability tables for public drinking water source areas https://www.wa.gov.au/system/files/2022-04/Land-..	01/01/2021		High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1 - EPBC Referral Supporting Document.pdf MNES significant impact assessment		No	High
#2.	Document	Attachment 2_Figures.pdf Figures		No	High
#3.	Document	Attachment 3_Biological Survey Report 1 (GHD 2020).pdf Biological survey report		No	High
#4.	Document	Attachment 4_Biological Survey Report 2 (EcoLogical, 2023).pdf Biological survey report		No	High
#5.	Document	Attachment 5_Biological Survey Report 3 (Biota, 2024).pdf Biological survey report		No	High
#6.	Link	Groundwater-dependency and water relations of four Myrtaceae shrub species during a prolonged summer https://espace.curtin.edu.au/bitstream/handle/20..	30/08/2002		High
#7.	Link	Plants used by Carnabys Black Cockatoo https://www.armadale.wa.gov.au/sites/default/fil..	15/04/2011		High
#8.	Link	Rooting depth plant water relations explain species distribution patterns within a sandplain landsc https://www.publish.csiro.au/FP/FP03200	02/06/2004		High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1 - EPBC Referral Supporting Document.pdf MNES significant impact assessment		No	High

4.1.4.9 (Threatened Species and Ecological Communities) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1 - EPBC Referral Supporting Document.pdf MNES significant impact assessment		No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1 - EPBC Referral Supporting Document.pdf MNES significant impact assessment		No	High
#2.	Document	Attachment 9 - Jurien Bay Borefield Project CEMF.pdf Construction Environment Management Framework	28/11/2024	No	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1 - EPBC Referral Supporting Document.pdf MNES significant impact assessment		No	High

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 3_Biological Survey Report 1 (GHD 2020).pdf Biological survey report		No	High
#2.	Document	Attachment 4_Biological Survey Report 2 (EcoLogical, 2023).pdf Biological survey report		No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	28003434917
Organisation name	WATER CORPORATION
Organisation address	6007 WA
Representative's name	Aaron Thorburn
Representative's job title	Team Leader - Environmental Approvals
Phone	(08) 9420 2843
Email	environment@watercorporation.com.au
Address	629 Newcastle Street, Leederville WA 6007

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Aaron Thorburn of WATER CORPORATION**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

Same as Referring party information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Aaron Thorburn of WATER CORPORATION**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I, **Aaron Thorburn of WATER CORPORATION**, the Person proposing the action, consent to the designation of **Aaron Thorburn of WATER CORPORATION** as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Aaron Thorburn of WATER CORPORATION**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *