Huntly Bauxite Mine Transition – O'Neil Mining

Application Number: **02609** Commencement Date: **27/09/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Huntly Bauxite Mine Transition – O'Neil Mining

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Other

1.1.4 Estimated start date *

01/01/2026

1.1.4 Estimated end date *

31/12/2045

1.2 Proposed Action details

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

Alcoa of Australia Limited (Alcoa) operates the Huntly Mine (the mine) within ML1SA, located approximately 100 km south-east of Perth, which supplies bauxite to the Pinjarra and Kwinana refineries (Note: on 30 June 2024, production of alumina was curtailed at the Kwinana Refinery). See Figure 1.2.1.

The Proposed Action is a mining area located within the O'Neil mine region of the Huntly Mine, including:

- Clearing of native vegetation;
- Bauxite mining;
- Rehabilitation; and
- Internal haul roads and surface water drainage infrastructure.

There are no directly overlapping disturbance activities between the Proposed Action and Alcoa's existing and ongoing mining activities within its Huntly mine (see description at section 1.2.5).

The Proposed Action has a total clearing extent of 1,800 ha within a Development Envelope of 5,571 ha.

Previously mined and rehabilitated areas within the O'Neil region have been selectively excluded from the Development Envelope where feasible, as all economic ore has been extracted from them. However, the region still contains remnant, viable ore deposits which are intended to be mined as part of this Proposed Action. Some previously mined and rehabilitated areas are included within the Development Envelope and some disturbance of these areas will be required for internal haul road infrastructure. These areas are in varying stages of rehabilitation (~11 to 3 years), however, have been included in the total clearing extent of the Proposed Action.

Initial analysis has identified five proposed avoidance areas which are contained within and make up 2.3 per cent (126.4 ha) of the Development Envelope. Granite Outcrops and vegetation with the potential to support groundwater dependent ecosystems are the focus of these avoidance areas. No disturbance will take place within the avoidance areas during the course of the Proposed Action. It is anticipated that further avoidance areas within the Development Envelope may be identified during the impact assessment.

The activities the subject of this Proposed Action are described in detail below:

Clearing of Native Vegetation

- The first step of the Proposed Action is the salvaging of commercial timber within the area to be disturbed for bauxite mining, which is then provided to the State's Forest Products Commission.
- Following completion of timber salvage any remaining vegetation is cleared, with some supplied to Simcoa for use in their silicon manufacturing process; the rest is mulched.
- The topsoil and overburden within the cleared area is removed and either stockpiled separately for re-use at a later time or re-used immediately on an area undergoing rehabilitation (note: this material may be used for rehabilitation that is outside of the scope of the Proposed Action, and associated with Alcoa's existing and ongoing Huntly mine activities). Stockpiles are preferentially located on ore bodies, to reduce the amount of required vegetation clearing.

Bauxite Mining

- Bauxite occurs as tabular ore bodies averaging 3.5 metres in depth and varying approximately 0.5 to 150 hectares in area. The bauxite ore is overlayed with gravel and soils in depth from 0 to 1.5 metres. The upper part of the ore frequently presents as cemented caprock, ranging in thickness from 0 to 2.5 metres.
- At the pit locations caprock is broken by drilling and blasting, and in some areas by mechanical fragmentation.
- Beneath the caprock is a friable zone containing the majority of the ore body, this then merges into clay with uneconomic quantities of bauxite. Once the overburden is removed, the economic extent of the bauxite ore in each pit will be mined.
- Short term haul roads will be constructed within the Development Envelope that then connect the ore bearing pits to the long-term road network located outside of the Development Envelope associated with Alcoa's existing and ongoing Huntly mine activities (note the long-term road network is outside of the scope of the Proposed Action).
- The ore is removed from the pits by excavators and deposited into trucks which haul the ore to central processing facilities located outside of the Development Envelope, for primary and secondary crushing. Ore is then transported on the existing conveyor network to the refineries (note: central processing

facilities, conveyor network and the refineries are existing infrastructure and outside of the scope of the Proposed Action).

Rehabilitation

Following mining, exhausted pits and short-term haul roads in the Development Envelope will be rehabilitated to Jarrah Forest by:

- Removing compaction of pit floors/ road surfaces.
- Recontouring the surface.
- Returning gravels and topsoil.
- Seeding, planting of nursery-raised seedlings and fertilising.
- Coarse woody debris in the form of logs and stumps is also returned as fauna habitat.

Internal haul roads and surface water drainage infrastructure

- The Proposed Action, as described in this referral, will not require significant amounts of new infrastructure other than internal haul roads to connect bauxite mining pits.
- As noted above, central Huntly Mine processing facilities will be utilised for crushing and processing of bauxite and are not within the scope of the Proposed Action. No new overland conveyors, administrative and operational support facilities, public access roads or electrical power infrastructure are proposed.
- Installation of surface water drainage infrastructure will be required within the Development Envelope to maintain surface water flows along natural waterways and to manage surface water runoff and sediment from new mining and internal haul road areas. Drainage infrastructure to be constructed will include culverts, sumps, bunds and open drains.

Exclusions

In addition to the exclusions noted above, the scope of the Proposed Action does not include the following activities:

- Low impact activities, including drilling and associated activities (such as upgrades or maintenance to existing roads/tracks) for the purpose of resource evaluation, geotechnical assessment, and hydrogeological investigation for the Proposed Action and that will be necessary to undertake prior to approval.
- Environmental, heritage and other studies/investigations involving fieldwork.
- Activities relating to the ongoing rehabilitation of historical disturbance in the Development Envelope
- All activities that are related to Alcoa's existing and ongoing mining operations at the Huntly Mine (outside of the Development Envelope for the Proposed Action).

Note: An indicative disturbance footprint of ~2,000 ha is provided in Section 2.1; approval is only being sought for an 1,800 ha total clearing extent within the Development Envelope (Project Area) shown in Section 2.1.

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

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

EPBC Number	Project Title
2022/09204	Huntly Bauxite Mine Transition

1.2.5 Provide information about the staged development (or relevant larger project).

Prior mining operations in the O'Neil Region

- Alcoa has historically mined bauxite within the northern portion of the O'Neil mine region. In 2014, Alcoa ceased mining operations within the O'Neil region and transitioned its Huntly Mine operations to the Myara region (where Alcoa currently operates). Open areas contained within the O'Neil mine region have since been progressively rehabilitated up until 2021.

Alcoa's existing and ongoing mining operations conducted under State Agreement legislation

- Alcoa's 2023-2027 Mining and Management Programme (MMP) outlines Alcoa's planned existing and ongoing operations for the Huntly mine. The MMP is a rolling five-year operational plan that identifies the areas of proposed vegetation clearing and mining activities within ML1SA. It is a requirement to submit an MMP annually for approval to the Minister responsible for State Development.
- Alcoa's existing and ongoing mining operations occur in accordance with the MMP. These operations include mining and associated activities adjacent to, but not overlapping, the Development Envelope. Other that the activities comprising the Proposed Action (which will not be implemented until EPBC Act approval is obtained), Alcoa will continue to operate and develop the existing Huntly Mine in accordance with the MMP, and future MMPs approved by the Minister.

Other referrals under Commonwealth and State legislation

- The scope of the Proposed Action forms part of the scope of two proposals that are being assessed under Part IV of the *Environmental Protection Act 1986* (WA) (EP Act):
- *Bauxite mining on the Darling Range in the southwest of WA for the years 2023 to 2027* (Assessment number 2385) - A third-party referral of Alcoa's 2023-2027 Mining and Management Programme (MMP). This includes conceptual bauxite mining pits and internal haul roads within the O'Neil mining area and form part of the Proposed Action.
- *Pinjarra Alumina Refinery Revised Proposal* (Assessment number 2253) – This Revised Proposal was originally referred in 2020. Alcoa has recently requested an amendment to the scope of this proposal under section 43A of the EP Act to incorporate additional conceptual mining areas outlined in the draft 2025-2029 MMP. This additional conceptual mining areas include bauxite mining pits and internal haul roads within the O'Neil mining area and form part of the Proposed Action, see Figure 1.2.5.
- Alcoa has referred *EPBC 2022/09204 - Huntly Bauxite Mine Transition.* This action is the same scope as the *Pinjarra Alumina Refinery Revised Proposal* (Assessment number 2253) and is being assessed via an accredited assessment (except for the s43A amendment to the scope described above which incorporates additional conceptual mining areas outlined in the draft 2025-2029 MMP).
- *EPBC 2022/09204* will see Alcoa's Huntly mining operations transition to the Myara North and Holyoake regions once approved, see Figure 1.2.5. Mining operations are anticipated to commence ~2028. Construction of significant new mine infrastructure will be required to facilitate this transition, which is forecast to commence ~2026. As part of implementation of this action, Alcoa is proposing to increase the rate of bauxite mining sufficient to supply a corresponding 5% production increase at the Pinjarra Refinery.
- Implementation of the Proposed Action is required at an earlier timeframe to EPBC 2022/09204. To reduce complexity and support timing requirements, following consultation with EPA and DCCEEW assessment branches, Alcoa has separately referred the Proposed Action, as described in this referral, under the EPBC Act (rather than seeking to amend the scope of EPBC 2022/09204).

- This Proposed Action can be developed, operated and rehabilitated independently, and may ultimately be developed and operated sequentially or concurrently with other mining areas to meet the demand for ore volume and grades.

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

Western Australian (State) Government

Environmental Protection Act 1986

The *Environmental Protection Act 1986* (EP Act) is the primary legislation governing environmental impact assessment (EIA) in WA.

As described in Section 1.2.5, the Proposed Action is being assessed under Part IV of the EP Act via two proposals.

Implementation of the Proposed Action will be subject to two Part IV EP Act approvals.

Alumina Refinery Agreement Act 1961

Alcoa was granted the right to mine bauxite within Mining Lease 1SA under the *Alumina Refinery Agreement Act 1961*. Mining Lease 1SA covers 7,129 square kilometres across the Darling Plateau and extends from east of Perth in the north, to east of Bunbury in the south.

Alumina Refinery (Pinjarra) Agreement Act 1969

Alcoa was granted approval to develop the Pinjarra Alumina Refinery under the *Alumina Refinery (Pinjarra) Agreement Act 1969*. The Refinery was commissioned in 1972, before the introduction of environmental protection legislation in WA. The Refinery is now subject to approvals under environmental legislation including MS 646 under Part IV of the EP Act, an environmental licence under Part V of the EP Act, in addition to water abstraction licences under the WA *Rights in Water and Irrigation Act 1914* (RIWI Act).

Alumina Refinery (Wagerup) Agreement and Acts Amendment Act 1978

Environmental management of the Huntly Mine is undertaken in accordance with the approved five-year rolling Mining and Management Programme (MMP) as defined in the *Alumina Refinery (Wagerup) Agreement and Acts Amendment Act 1978 (WA),* Environmental Protection (Alcoa – Huntly and Willowdale Mine Sites) Exemption Order 2004 made by the Minister for the Environment under section 6 of the EP Act and Ministerial Statement (MS) 728. This applies to operations at Wagerup Refinery / Willowdale Mine and is customarily applied to Pinjarra Refinery / Huntly Mine operations.

Aboriginal Heritage Act 1972

Consent under Section 18 of the *Aboriginal Heritage Act 1972* is required to impact any Aboriginal heritage sites. Aboriginal heritage surveys will be completed in the Development Envelope to understand if any Aboriginal heritage sites are present which could be impacted by the Proposed Action. If an Aboriginal heritage site cannot be avoided, Alcoa will attain consent under Section 18 of the *Aboriginal Heritage Act 1972* prior to impacting Aboriginal heritage or ethnographic sites.

Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) provides for species, subspecies or populations of native animals (fauna) to be listed as Specially Protected, Threatened (Critically Endangered, Endangered or Vulnerable) or Extinct in Western Australia. A Ministerial Authorisation under section 40 of the BC Act is required to take or disturb threatened species (critically endangered, endangered or vulnerable). Alcoa will obtain Ministerial Authorisation under section 40 of the BC Act prior to undertaking management operations in areas inhabited by threatened fauna species.

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. *

Public Consultation

Developing and maintaining strong, mutually beneficial relationships with our stakeholders, including in the communities where we operate, is fundamental to Alcoa's way of working.

We believe it is important to maintain transparent and regular dialogue with stakeholders to ensure a mutual understanding of issues, concerns and opportunities. Alcoa has developed its neighbour relations and stakeholder engagement program in Western Australia over many years. Dedicated community relations representatives are located at each Alcoa operation, as well as being embedded within the community. These important resources foster relationships with the community, respond to local questions and concerns and proactively manage local engagement programs, including Alcoa's community investment and volunteer programs.

Alcoa has also established a comprehensive engagement plan for the transition of its mine activities to the new mine regions of Myara North and Holyoake. The recent Proposed Action within the O'Neil mining area will now form part of this plan. A register of the consultation undertaken up to mid-November 2024 is provided as Attachment 3 - Consultation Register.

Engagement with community members and other stakeholders occurs via a range of channels and forums as outlined below.

Stakeholder briefings with local, state and federal government representatives and other stakeholders occur both on a scheduled and responsive basis. The meetings provide an opportunity for Alcoa for two-way dialogue on business developments and questions and feedback.

One-on-one neighbour engagement is ongoing, with community relations personnel at each of Alcoa's operations available to meet with neighbours to discuss questions and concerns. Each year, as part of the preparation of the five-year MMP, Alcoa invites mine neighbours to participate in discussions about the mine plan.

Direct mail or email is utilised for timely project and business updates allowing stakeholders to review information and seek further details via return email, conversation or formal meeting.

Pop-Up Offices have been established in host communities such as Jarrahdale and Dwellingup, staffed by community relations team members. The community is invited to "drop-in and have a cuppa" to discuss any questions or concerns. Any questions or feedback are logged and followed up.

Community Consultative Network (CCN) meetings provide a forum for two-way discussion with interested parties residing or working in and around the communities near Alcoa's operations. In addition to our three long standing CCNs, two new networks have been established in the last year and a half for community members representing Jarrahdale and Dwellingup. The forums are attended by individuals as well as representatives from local community groups and businesses, schools and local government. These forums continue to be an important mechanism for information sharing about the Proposal and related studies.

Open house/community forums – provide an opportunity for broader community engagement in an open setting. This format is typically used to share information about specific projects with relevant subject matter

experts available to share insights and answer questions. The last of these forums were held in May 2024 and the channel will continue to be used as part of consultation on the Proposal.

Site tours have been offered by Alcoa for more than 40 years, providing opportunities for people to visit and see our operations first-hand. They continue to provide an important role in Alcoa's stakeholder engagement activities.

Advertorials published in community newspapers where Alcoa operates provide a regular information flow to the broader community about the company's activities.

Community newsletters are distributed to all community members in host communities of Jarrahdale and Dwellingup and provide another channel to ensure the community is kept up to date with the latest Alcoa news.

Employee and contractor communications occur via a variety of channels including townhall meetings, newsletter articles and briefings.

Engagement with Traditional Owners

Alcoa has commenced engagement with the relevant Traditional Owners through their representative body, the Gnaala Karla Boodja Aboriginal Corporation. To date this has consisted of initial capacity building workshops (in May and August 2024) on Alcoa's approvals framework and referred proposals, along with discussions on the establishment of a consultative committee through which further engagement would occur. It is planned that further detailed and ongoing consultation will occur through this committee once its composition is formalised through Gnaala Karla Boodja Aboriginal Corporation's internal governance processes.

Responses to stakeholder engagement

To date, this ongoing stakeholder engagement, alongside study outcomes, has led to changes to Alcoa's proposal to transition mining to new mining areas. Changes made to proposals currently under assessment include:

• Increasing the distance between Jarrahdale townsite and future proposed mining by creating a ~2,600 hectare mining avoidance zone
• Significantly reducing the size of the Myara North and Holyoake infrastructure corridors
• Maintaining public access to many recreational facilities and surrounding tracks and trails
• Ensuring 100 per cent of bauxite mined is refined at our WA refineries to support local jobs and economies.

Alcoa remains committed to engaging and listening to stakeholders to enable a positive outcome. The recent addition of the O'Neil mining area to our plans triggered an update to stakeholders on this change and notification of the likely public comment period for this referral.

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.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA

Referring party details

Name	Ashley Bird
Job title	Regulatory Approvals Manager, Capital Projects Australia
Phone	0477512381
Email	ashley.bird@alcoa.com
Address	576 Marmion Street, Booragoon, WA, 6154

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? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA

Person proposing to take the action details

Name	Matt Reed
Job title	Executive Vice President and Chief Operations Officer
Phone	08 9316 5807
Email	matt.reed@alcoa.com
Address	181-205 Davy Street, Booragoon, Western Australia, 6154

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. *

Alcoa's Huntly Bauxite Mine has had an Environmental Management System certified to ISO14001 requirements for many decades.

In 2019, Alcoa became a member of the International Council on Mining and Metals, whose Mining Principles serve as a best practice framework on sustainable development for the mining and metals industry. In 2020, Alcoa also received certification by the Aluminium Stewardship Initiative (ASI) for its Western Australian operations. This certification recognises, in part, our environmental policies and management systems, including Alcoa's compliance with international standards.

In the years between 2002 and 2006 Alcoa was subject to proceedings under the WA *Environmental Protection Act* 1986 and associated regulations in relation to five unauthorised discharges, one for causing pollution and one for non-compliance with licence conditions relating to dust emissions. None of these proceedings related to the Huntly Bauxite Mine. These enforcement actions are not reflective of Alcoa's current environmental management practices and Alcoa has not been the subject of any proceedings for well over a decade.

Alcoa's corporate EHS Policy (Attachment 1 – Alcoa EHS Policy) requires all locations globally to operate in a safe, responsible manner respecting the environment and the health of our employees, our customers, suppliers, contractors, and the communities in which we operate.

In addition to the corporate EHS Policy, in 2020 Alcoa established a corporate Biodiversity Policy (Attachment 2 – Alcoa Biodiversity Policy) aimed at minimising Alcoa's environmental impacts and promoting sustainable land use. This is achieved by applying the mitigation hierarchy of avoidance, minimisation, mitigation through restoration, and offsets during all lifecycle stages of our operations.

Alcoa is also working toward the goal of no net loss of biodiversity for new sites and major expansion projects and is committed to meeting international standards in biodiversity protection, including alignment with the International Council on Mining and Metal´s Mining Principles.

Alcoa respects legally designated protected areas, such as national parks and nature reserves, where nature conservation is the management objective. We also have committed to not explore, mine or operate in World Heritage sites.

Alcoa's approach to project development and management of existing operations involves the identification of risks to, and opportunities for, biodiversity, such as the presence of listed threatened species in the regions where we operate. We manage these risks by developing clear and measurable targets or indicators against which Alcoa and our stakeholders can assess our effectiveness. We adopt science-based solutions and form research partnerships to better understand potential impacts and inform management practices. We undertake progressive rehabilitation of our mines to approved performance criteria, recognising that ecosystem restoration plays a key role in mitigating unavoidable biodiversity impacts.

Underpinning these policies is a comprehensive range of corporate environmental standards that set the minimum environmental performance standards for all operations. These standards include specific requirements for residue management, air emissions, water quality, waste and biodiversity. The environmental compliance framework, audit and EHS management systems define Alcoa's key environmental governance and assurance processes.

Actions Alcoa has previously referred under the EPBC Act:

2017/8060 Anglesea Mine South Wall Vegetation Removal [not controlled action]

2022/09204 Huntly Bauxite Mine Transition [under assessment]

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

Alcoa's corporate EHS Policy applies worldwide to its operations and focuses on maintaining a culture of safety and environmentally responsible actions in line with its vision and core values.

Refer to Attachment 1 – Alcoa EHS Vision, Values, Mission, and Policy – May 2022

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	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA

Proposed designated proponent details

Name	Matt Reed
Job title	Executive Vice President and Chief Operations Officer
Phone	08 9316 5807

Email	matt.reed@alcoa.com
Address	181-205 Davy Street, Booragoon, Western Australia, 6154

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	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA
Representative's name	Ashley Bird
Representative's job title	Regulatory Approvals Manager, Capital Projects Australia
Phone	0477512381
Email	ashley.bird@alcoa.com
Address	576 Marmion Street, Booragoon, WA, 6154

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.

ABN/ACN	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA
Representative's name	Matt Reed
Representative's job title	Executive Vice President and Chief Operations Officer
Phone	08 9316 5807
Email	matt.reed@alcoa.com

Address	181-205 Davy Street, Booragoon, Western Australia, 6154

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

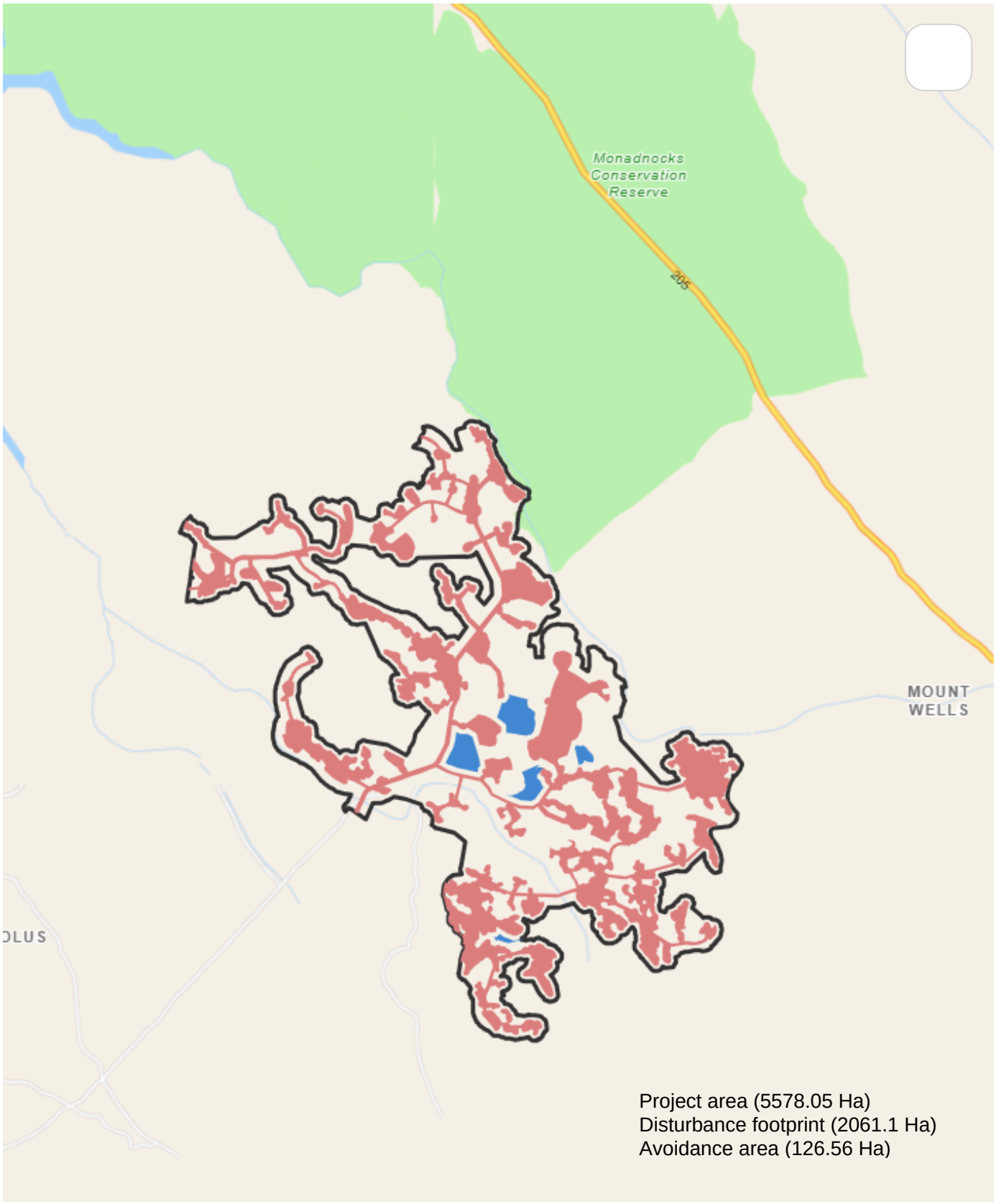
1.4 Payment details: Payment allocation

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

Referring party

2. Location

2.1 Project footprint



Project area (5578.05 Ha)
Disturbance footprint (2061.1 Ha)
Avoidance area (126.56 Ha)

Maptaskr © 2024 -32.503358, 116.565387

Powered By Esri - Sources: Esri, TomTom, Garmin, F…

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Access to O’Neil region of the Huntly mine via Windsor Road, Mount Wells, WA.

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 Development Envelope lies entirely within Alcoa’s Mineral Lease ML1-SA granted under the *Alumina Refinery Agreement Act 1961*. See Figure 2.2.5.

3. Existing environment

3.1 Physical description

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

The Development Envelope is situated within Alcoa's O'Neil mine region, approximately 24 km east of the North Dandalup townsite and 25 km north-east of the Dwellingup townsite, see Figure 1.2.1.

The Development Envelope predominantly comprises Jarrah Forest regrowth at an immature or juvenile age (< 70 years from timber harvesting). About 17.8 per cent of the Development Envelope has been assessed to be infested with dieback, meaning that Alcoa will apply its standard practices for mining activities in dieback infested areas, to minimise the risk of spread.

Portions (488.3 ha) of the Development Envelope have been previously cleared for mining and associated activities with 391.3 ha of the cleared areas rehabilitated between 2012-2021, see Figure 3.1.1.

The Development Envelope has been subject to regular prescribed burning and occasional wildfires, consistent with the fire regime in the Northern Jarrah Forest IBRA subregion. Since the 1970s rain fall has reduced over the Northern Jarrah Forest, which has resulted in declining groundwater levels in the regolith and declining stream flows.

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

The Development Envelope lies exclusively in State Forest with multiple historical land uses including timber harvesting, recreation, mining, firewood collection and apiaries. The WA Government announced that timber harvesting of native forests will cease from 2024 onwards, with the exception of forest management activities for approved mining. There are no existing uses within the Development Envelope that will be displaced.

Portions (488.3 ha) of the O'Neil Development Envelope were previously cleared and mined as part of the Huntly Mine within ML1SA, 391.3 ha of which was rehabilitated between 2012-2021.

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

The Development Envelope is located in the Southwest of Australia which is recognised for its biodiversity values. The Development Envelope lies within State Forest and borders the Monadnocks Conservation Park to the north-east.

The Development Envelope contains small pockets of vegetation associated with granite outcrops which may potentially constitute a Priority Ecological Community (PEC) as recognised at the State level.

The Development Envelope is located approximately 3 km south-east of two Regional Forest Agreement Accredited Comprehensive, Adequate and Representative (CAR) Informal Reserves. A series of Diverse Ecotype Zones and lengths of rivers and

streams constituting the CAR Informal Reserves traverse through Development Envelope, overlapping 7 per cent (392 ha) and 1.3 per cent (74 ha) respectively, of the Development Envelope, see Figure 3.1.3.

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

Alcoa's Huntly Mine lies on the Darling Plateau, which has elevations ranging from about 240 m to 370 m above sea level, see Figure 3.1.4.

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 Huntly mine is located within the Southwest Botanical Province, within the Jarrah Forest bioregion and Northern Jarrah Forest (NJF) subregion as described by the Interim Biogeographic Regionalisation of Australia (IBRA).The NJF subregion comprises a total of approximately 1.90 million ha and is broadly characterised by Jarrah (*Eucalyptus marginata*) forest on ironstone gravels and Marri-Wandoo (*Corymbia calophylla - Eucalyptuswandoo*) woodlands on loamy soils, with sclerophyll understoreys.

The Development Envelope is predominantly covered by Dwellingup complexes (57.5 per cent) on the uplands and Yarragil and Pindalup complexes (32.4 per cent) on the slopes and valley floors. It is the uplands and mid slopes which contain enriched bauxite and are subject to mining.The remaining 10.1 percent of the Development Envelope predominantly comprises the Cooke complex on granite outcrops and the Swamp complex,which are not subject to bauxite mining and are the key habitats for EPBC listed threatened flora. See Figure 3.2.1a.

The Development Envelope lies within a large continuous extent of the Northern Jarrah Forest that has a high native fauna diversity, providing habitat for approximately 240 terrestrial vertebrate fauna species, including 29 mammals, 45 reptiles, 11 frogs, four fish and about 150 birds. Introduced fauna in the Jarrah Forest include the Fox (*Vulpes vulpes*), feral Cat (*Felis catus*) and feral European Honey-Bee (*Apis mellifera*). The Fox and Cat contribute threatening processes to threatened fauna of the Northern Jarrah

Forest including the Woylie (*Bettongiapenicillata ogilbyi*), Quokka (*Setonix brachyurus*), Numbat (*Myrmecobius fasciatus*) and Chuditch (*Dasyurus geoffroii*), while feral Honey-Bee contributes a threatening process to Black Cockatoos through invading and occupying breeding hollows.

Baseline fauna surveys over the Development Envelope identified three main vegetation types associated fauna communities to be present, see Figure 3.2.1b:

- Granite outcrop
- Woodlands/forests
- Damplands/riparian.

The granite fauna community is present within the granite outcrop habitat type. This habitat type provides shelter and foraging for a range of reptile and frog fauna.

The woodlands/forests fauna community occurs in the Jarrah-Marri Forest, Bullich Forest, Blackbutt Forestand Wandoo Woodland fauna habitat types. The woodland and forest habitat areas within the Development Envelope provides habitat for a range of species including birds, such as the 3 Black Cockatoo species(Forest Red-tailed, Baudin's and Carnaby's) and mammals such as the Chuditch, Numbat and Woylie.

The damplands/riparian fauna community occurs in the low dense understory and near creek lines present in the majority of fauna habitat types (Bullich Forest, Blackbutt Forest, Mixed Shrub Damplands), Quokkaare known to utilise this community.

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

The Development Envelope is predominantly covered by Dwellingup complexes (57.5 per cent) on the uplands and Yarragil and Pindalup
complexes (32.4 per cent) on the slopes and valley floors. It is the uplands and mid slopes which contain enric hed bauxite and are subject to mining.The remaining 10.1 percent of the Development Envelope predominantly comprises the Cooke complex on granite outcrops and the
Swamp complex,which are not subject to bauxite mining and are the key habitats for EPBC listed threatened f lora, see Figure 3.2.1a.

Vegetation condition has been mapped over the full extent of the O'Neil mine region.
The mapping indicates that the mine region is predominantly (91.2 per cent) in Excellent condition, with approximately 8.8 per cent in Completely Degraded condition. The predominantly Excellent condition reflects the Juvenile to Immature forest structure (< 70 years since last harvest), the presence of occasional forest tracks, presence of Phytophthora Dieback vulnerable vegetation with limited infestation, and small portions of previously cleared area. The Development Envelope borders small pockets of old growth forest to the south-east and east. See Figure 3.2.2.

Topography,geology and soils

The Huntly Mine lies within the Darling Plateau,an undulating lateritic regolith over Archaean granite with dolerite intrusions,
which has elevations ranging from about 240 m to 370 m above sea level. The Darling Plateau occupies the south-
western fringe of the Yilgarn Craton and is bordered by the Darling Fault and Perth Basin to the west. Bedrock underlying the Huntly Mine is over two billion
years in age and predominantly comprises granite with areas of granitic gneiss.Faults run in an approximate south-east to north-west direction. Dolerite dykes are common, intruding through the granite mostly in a north-northwest direction and ranging from 1-
200 m thick (about 10 m average).The presence of granite, gneiss or dolerite is a major determinant on the characteristics of the regolith which overlies most of the bedrock. The bedrock out crops

in pockets throughout the Darling Plateau, including
on hills or ‘monadnocks’ as well as within incised valleys where rivers have eroded through the regolith materi al. The bedrock has an irregular topography, with pinnacles and isolated boulders occurring at shallow depths in the regolith, at places reducing the thickness of laterite.

The regolith that covers the bedrock was formed through a long period of bedrock weathering, and averages about 30 m thick over the
Darling Plateau. The upper layers of the regolith are lateritic, being rich in iron and aluminum derived from the bedrock, with a characteristic rusty-
redcolour. The regolith has a complex vertical sequence which is generalised as follows (from surface to bedrock):

- Overburden, comprising sandy gravels about 0.2-4 m thick (average 0.5 m)
- Lateritic bauxite about 4-6 m thick comprising two distinct layers:
    - Duricrust or caprock, comprising iron or aluminium cemented rock about 1-2 m thick
    - Friable fragmental layer about 2 m or more thick
- Mottled and pallid clays (saprolite) about 20-30 m thick
- Saprock, comprising rock fragments about 2-5 m thick that define a basal interface between saprolite and bedrock.

The regolith is partially
or fully eroded in valleys that dissect the Darling Plateau, with the upper lateritic layers often absent and repla ced by colluvial or alluvial deposits. In some areas the regolith is fully eroded to expose bedrock.

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.

No World Heritage Sites, National Heritage places, Commonwealth heritage places, Local Heritage Survey places or State Heritage Register places are located within 5 km of the Development Envelope.

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

The Development Envelope lies within the South West Native Title Settlement Area and specifically the Gnaala Karla Booja Agreement Area, which falls under the representative body of the Gnaala Karla Booja Aboriginal Corporation.

The Department of Planning, Lands and Heritage(DPLH) Aboriginal Heritage Places database has no records of any registered archaeological sites within the O'Neil Development Envelope. One unregistered Aboriginal archaeological site partially contained within the Development Envelope has been lodged with DPLH.

The DPLH database records a registered ethnographic site buffer within the O'Neil Development Envelope, comprising the Serpentine River mythological / ceremonial site. Alcoa understands that the boundary of the site extends out to 100 m from the river. Accordingly, the O'Neil Development Envelope does not extend over this site boundary.

Alcoa will conduct Aboriginal heritage surveys in accordance with a Noongar Standard Heritage Agreement (NSHA) to address all surveys gaps within the Development Envelope, including engagement of Aboriginal Consultants nominated by the Gnaala Karla Booja Aboriginal Corporation.

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 hydrology

The Development Envelope is located within the Murray River basin. The Development Envelope lies entirely within the catchment of the Peel Estuary - Serpentine River, a tributary of the Murray River which discharges into the Peel Inlet near Mandurah on the Swan Coastal Plain. The Peel Inlet forms part of the Peel-Yalgorup System Ramsar wetlands of international importance, see Figure 3.4.1.

The Development Envelope lies within the regulated subcatchment of the Serpentine Dam which is a public water supply dam forming part of the Integrated Water Supply Scheme (IWSS).

Groundwater

The Huntly Mine lies over the Darling Plateau which comprises of a weathered regolith typically 20 m to 30 m in depth with unconfined aquifers.In the higher rainfall areas of the Plateau, depths to groundwater in stream zones range from 0 m to 10 m below ground level. Gro undwater saturated thickness decreases on hill slopes away from stream zones with limited groundwater above bedrock on hilltops and ridgelines. Groundwater exists in rock fractures within the first few metres of unweathered bedrock and in sediments laid down along creek lines or which have accumulated in valleys.There may be localised areas of groundwater held in seasonally perched water tables in caprock overlying relatively less permeable pallid zone clays. Due to the clayey nature of the weathered profile nearly all water bores have very low yields and there is no groundwater abstraction at the mine.

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	Yes	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
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. *

No World Heritage properties in vicinity of the Development Envelope.

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 in vicinity of Development Envelope.

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.

Direct impact	Indirect impact	Ramsar wetland
Yes		Peel-Yalgorup System

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

Yes

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

The Proposed Action will not cause direct impacts to the Peel-Yalgorup System, as the Development Envelope lies 40-50 km east (upstream) of the Ramsar site.

The Proposed Action has potential to cause indirect impacts to the Peel-Yalgorup System as the Development Envelope lies within the regulated subcatchment of the Serpentine Dam which is a public water supply dam forming part of the Peel Estuary - Serpentine River Catchment, a tributary of the Murray River which discharges into the Peel Inlet near Mandurah on the Swan Coastal Plain. The Peel Inlet forms part of the Peel-Yalgorup System Ramsar wetlands of international importance.

Alcoa implements preventative risk management at its mine sites, which incorporates multiple preventative mitigation measures or ‘barriers’. These measures seek to prevent the occurrence of hazards to downstream drinking water reservoirs, or reduce the likelihood of occurrence. The barriers act to prevent and minimise the discharge of pathogens, sediment and hydrocarbons into downstream reservoirs.

The key components of the barriers which will be implemented for the Proposed Action include:

- Well developed drainage controls including the appropriate use of drainage protection slots (stormwater infiltration beds in blasted/ripped rock) in mine pits and drainage sumps for all mine infrastructure areas.
- Roofed and sealed refuelling bays and workshops at all mine facilities.
- Vehicle wash bays that drain to an oily water treatment system at all mine facilities.
- Fuel and oil storage in above ground double walled tanks at all mine facilities.

Given the multiple-barriers maintained
to protect drinking water quality downstream of mining areas, the Proposed Action is expected to have a negligible impact to either water quantity or quality of inflows to the Peel Inlet and therefore
a negligible impact to the Peel-Yalgorup System Ramsar site.

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

No

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

The Development Envelope lies entirely within the regulated subcatchment of the Serpentine Dam which is a drinking water supply dam that retains all or most of the incoming streamflow, with a negligible portion released downstream into the Serpentine or Murray rivers.

The Proposed Action does not include the development of any groundwater abstraction infrastructure, which removes the potential for the Proposed Action to have abstraction related impacts to surface water flow quantity.

The Proposed Action will be subject to a number of preventative risk management processes including the construction and ongoing management of multiple barriers to prevent impacts to drinking water quality in downstream reservoirs. As such, it is expected that the Proposed Action will have a negligible impact to either water quantity or quality of inflows to the Serpentine Dam and subsequently the Peel Inlet, therefore no tangible impact to the Peel-Yalgorup System Ramsar site.

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

No

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

The Proposed Action is unlikely to cause a significant impact to the Peel-Yalgorup System Ramsar wetland due to the Proposed Action being undertaken subject to preventative risk management including multiple barriers to prevent impacts to drinking water quality in downstream reservoirs.

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

The Proposed Action is unlikely to cause a significant indirect impact to the Peel-Yalgorup System Ramsar site, and therefore no avoidance and/or mitigation measure is proposed.

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

The Proposed Action is unlikely to cause a significant indirect impact to the Peel-Yalgorup System Ramsar site and therefore no offsets are proposed.

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
Yes		Aphelocephala leucopsis	Southern Whiteface
Yes		Bettongia penicillata ogilbyi	Woylie
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Calyptorhynchus banksii naso	Forest Red-tailed Black-Cockatoo, Karrak
Yes		Dasyurus geoffroii	Chuditch, Western Quoll
Yes		Diuris micrantha	Dwarf Bee-orchid
Yes		Diuris purdiei	Purdie's Donkey-orchid
Yes		Leipoa ocellata	Malleefowl
Yes		Morelotia australiensis	Southern Tetraria
Yes		Myrmecobius fasciatus	Numbat
Yes		Pseudocheirus occidentalis	Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit
Yes		Rostratula australis	Australian Painted Snipe

Direct impact	Indirect impact	Species	Common name
Yes		Setonix brachyurus	Quokka
Yes		Verticordia fimbrilepis subsp. fimbrilepis	Shy Featherflower
Yes		Westralunio carteri	Carter's Freshwater Mussel, Freshwater Mussel
Yes		Zanda baudinii	Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo
Yes		Zanda latirostris	Carnaby's Black Cockatoo, Short-billed Black-cockatoo

Ecological communities

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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. *

No listed threatened ecological communities (TECs) are known or likely to occur within or adjacent to the Development Envelope. Therefore, it is highly unlikely any TECs will be impacted by the Proposed Action.

The Development Envelope contains suitable habitat and has recorded or likely occupation for:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris)*
- Baudin's Cockatoo (*Calyptorhynchus baudinii)*
- Forest Red-tailed Black Cockatoos *(Calyptorhynchus banksii naso)*
- Woylie *(Bettongia penicillata ogilbyi)*
- Chuditch *(Dasyurus geoffroii)*
- Quokka *(Setonix brachyurus)*
- Numbat (*Myrmecobius fasciatus)*

The Western Ringtail Possum (*Pseudocheirus occidentatlis*), Malleefowl (*Leipoa ocellata)* and Carter's Freshwater Mussel (*Westralunio carteri)* species were identified in the Protected Matters Search Tool (performed on 7th August 2024) but were not recorded and considered unlikely to occur within the Development Envelope due to no recent sightings (within the last decade).

The Western Ringtail Possum occurs in coastal and near coastal Peppermint Tree (*Agonis flexuosa*) forest and Tuart (*Eucalyptus gomphocephala*) dominated forest with a Peppermint Tree understorey from Bunbury to Albany. They are also known to occur in in Jarrah (*E. marginata*) forest and Jarrah-Marri *(Corymbia calophylla*) forest associated with Peppermint Tree. Surveys over the Development Envelope have identified that suitable habitat (forest over peppermint understory) is not present to support this species and the Development Envelope is beyond the current range of the species. The Proposed Action is unlikely to cause direct or indirect impacts to Western Ringtail Possum.

The occurrence of Malleefowl is associated with long unburnt thick vegetation and occupies shrublands and low woodlands that are dominated by mallee vegetation, native pine Callitris woodlands, Acacia shrublands, Broombush vegetation and/or coastal heathlands. In WA they are found from the southwest - Nullarbor to Albany, north, and then west from Moore River up to Shark Bay, past Cue, across to Wiluna and east to the northern Victoria Desert south of the Blackstone Ranges (Nevill 2013; Pizzey & Knight 2012). Surveys over the Development Envelope highlight that the Development Envelope does not contain suitable undisturbed habitat to support this species (GHD 2024). The Development Envelope has been readily subject to historical logging, mining and fire disturbance, and the lack of recent sightings indicates that the species does not persist in the area. The Proposed Action is unlikely to cause direct or indirect impacts to Malleefowl.

Carter's Freshwater Mussels are usually found in freshwater river pools. They are most common in areas with muddy, silty and sandy bottoms and flowing permanent water. The species require permanent water bodies to persist; there are no permanent water bodies within the Development Envelope. Old shells of the Carter's Freshwater Mussel were found at Lake Banksiadale situated 19-21 km south-west of the Development Envelope. The species has the potential to occur upstream of the South Dandalup Dam in Kennedy's Pool and Mundalup Pool as well as the Serpentine Dam further downstream of the Development Envelope. There is no suitable habitat for the species within the Development Envelope. The Proposed Action is unlikely to result in direct or indirect impacts to Carter's Freshwater Mussel due to the lack of records and suitable habitat within the Development Envelope. The Proposed Action will be subject to water-related preventative risk management including multiple barriers to prevent impacts to drinking water quality in downstream reservoirs. As such it is expected that the Proposed Action will have a negligible impact to either water quantity or quality of inflows to Lake Banksiadale, South Dandalup Dam, or Serpentine Dam.

Carnaby's Cockatoo are known to occur within the Development Envelope with foraging evidence recorded in recent surveys of the Development Envelope. Carnaby's Cockatoo occurs in uncleared or remnant native eucalypt woodlands, especially those that contain Salmon gum, Wandoo, Marri, Jarrah and Karri, and in shrubland or kwongan heathland dominated by Hakea, Dryandra, Banksia and Grevillea species. The Proposed Action is likely to cause direct impacts to the species' habitat through the clearing of Jarrah-Marri Forest as well as other suitable habitat areas for mining or the construction of infrastructure.

Baudin's Cockatoo are known to occur within the Development Envelope, surveys of the Development Envelope have recorded sightings as well as foraging evidence (GHD 2024). Baudin's Black Cockatoo mainly occurs in eucalypt forests, especially Jarrah, Marri and Karri forest that receives 750 mm of annual rainfall. The species is less frequently sighted in woodlands of wandoo (*Eucalyptus wandoo*), blackbutt (*E. patens*), flooded gum (*E. rudis*), yate (*E. cornuta*), partly cleared farmlands and urban areas. The Proposed Action is likely to result in direct impacts to the species' habitat through the clearing of Jarrah-Marri Forest as well as other suitable habitat areas for mining or the construction of infrastructure.

The Forest Red-tailed Black Cockatoo is endemic to the south-west humid and sub-humid zones of WA (Mawson and Johnstone 1997). It inhabits the dense Jarrah (*Eucalyptus marginata*), Karri (*E.diversicolor*) and Marri (*Corymbia calophylla*) forests receiving more than 600 mm of annual average rainfall. This species was recorded in recent surveys and suitable foraging and roosting habitat is found within the Development Envelope. The Proposed Action is likely to cause direct impacts to the species' habitat through the clearing of Jarrah-Marri as well as other suitable habitat areas for mining or the construction of infrastructure.

Chuditch are known to occur locally and are predominately associated with Jarrah (Eucalyptus marginata) forests and woodlands, mallee shrublands and heathlands (DBCA 2017). They are readily recorded via remote camera and have also been caught in cage traps in past surveys in the area surrounding the Development Envelope (GHD 2024). Jarrah-Marri Forest and Granite Outcrop fauna habitat types host suitable foraging, denning and breeding habitat for the species. Alcoa's avoidance strategy will avoid mining in Granite Outcrops and the lower slopes of Jarrah-Marri Forest fauna habitat types. However, the clearing of the upper slopes of Jarrah-Marri Forest and other suitable habitat areas will likely result in direct impacts to the species' habitat.

Current Numbat populations, including source populations and re-introduced animals occupy eucalypt forest, woodland, and tall shrubland. Habitats generally require an abundance of termites (food) in the soil, and hollow logs, tree hollows, burrows and branches for shelter (DAWE 2021e; Van Dyck & Strahan 2008). Eastern portions of the Development Envelopehave open Wandoo woodlands representing suitable Numbat habitat. The Proposed Action is likely to result in indirect impacts to the species through the clearing of native vegetation (some of which may constitute suitable habitat for the species) for mining or construction of infrastructure.

Woylie have been previously recorded regionally in the Dwellingup area and recorded in an area immediately to the east of the Development Envelope, but no occurrence has been recorded within the Development Envelope from surveys to date. The species is associated with open forest and woodland with a tussock grass ground layer or understorey of woody scrub and the presence of thickets of the plant genus Gastrolobium (Van Dyck & Strahan 2013). The Proposed Action is likely to result in indirect impacts to the species through the clearing of native vegetation (some of which may constitute as suitable habitat for the species) for mining or construction of infrastructure.

Quokka are known to occupy dense forests and thickets, streamside vegetation, heaths, shrublands, *Agonis linearifolia*-dominated swamps in the Jarrah (*Eucalyptus marginata*) forest, and sometimes tea-tree thickets on sandy soils along creek systems. The species have been previously recorded in the region by recent surveys in the area surrounding the Development Envelope. Areas associated with creek lines provide refugia and movement corridors for Quokka. These swamps and valley floors, and riparian areas are proposed to be avoided as part of Alcoa's mining avoidance strategy. The Proposed Action is likely to result in direct impacts to the species' habitat through the clearing of native vegetation for mining or construction of infrastructure.

Four EPBC Act listed threatened flora species identified through the Protected Matters Search Tool have not been recorded within the Development Envelope during flora surveys and have a very low likelihood of occurrence due to no historical sightings within the Huntly Mine and known distributions away from the region. These include:

- Dwarf Bee-orchid (*Diuris micrantha*)
- Purdie's Donkey-orchid (*Diuris purdiei*)
- Southern Tetratria (*Morelotia australiensis* listed as *Tetraria australiensis*)
- Shy Featherflower (*Verticordia fimbrilepis subsp. fimbrilepis*)

The Proposed Action is unlikely to cause direct impacts to any recorded populations of EPBC Act listed flora species due to the lack of recorded populations and suitable habitat within the Development Envelope.

The Proposed Action may cause direct and indirect impacts to unrecorded EPBC listed threatened flora as a result of clearing of vegetation for mining or associated activities within the Development Envelope.

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

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

The Proposed Action will not cause direct or indirect impacts to EPBC Act listed TECs, as no TECs are known or likely to occur within or adjacent to the Development Envelope.

The Proposed Action is unlikely to cause direct impacts to any recorded populations of EPBC Act listed flora species due to the lack of recorded populations within the Development Envelope and no historical sightings within the Development Envelope. These threatened flora species have known distributions outside the Development Envelope.

The Proposed Action may cause direct impacts to unrecorded EPBC listed threatened flora as a result of clearing of vegetation for mining or new mine infrastructure within the Development Envelope.

As a result of clearing habitat for mining or associated activities within the Development Envelope, the Proposed Action is likely to cause direct impacts to EPBC Act listed fauna species: Chuditch, the three species of Black Cockatoo (Baudin's, Carnaby's and Forest Red-tailed), Quokka, and indirect impacts to Woylie and Numbat.

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

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

The Proposed Action is likely to cause significant impacts to the three species of Black Cockatoos (Baudin's, Carnaby's and Forest Red-tailed), Chuditch and Quokka.

The Proposed Action may cause significant impacts to the four EPBC Act listed threatened flora species.

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. *

Alcoa proposes to implement a mining avoidance strategy to avoid clearing in areas of high ecological value which supports habitat for EPBC listed fauna and flora based on site-vegetation types (SVTs) as noted by Havel (1979). SVTs are categorised into fauna habitat types to identify associated areas which provide high value habitat to threatened fauna and flora species and ecological communities, the following fauna habitat types have been defined within the Development Envelope:

- Jarrah-Marri Forest
- Wandoo Woodland
- Mixed Shrub Dampland
- Bullich Forest
- Blackbutt Forest
- Granite Outcrop
- Cleared Area
- Rehabilitation

As part of Alcoa's mining avoidance strategy and company commitments, the following habitat areas are proposed to be contained within an Avoidance Zone (AZ), where practicable:

- Granite outcrops
- Swamps and valley floors
- Habitats associated with Groundwater dependent ecosystems (GDEs)
- Previously rehabilitated areas.

A summary of Alcoa's avoidance measures is provided below:

- Mining avoids granite outcrops
- Haul roads avoid granite outcrops, where practicable
- Mining and associated activities avoid formal conservation reserves and old growth forest
- Mining avoids swamps areas, creeklines and clay pans, which are preferred habitat for Quokka
- All known and suitable Black Cockatoo nesting trees are retained, where practicable
- Mining and associated activities avoid perennial water areas and adjacent reservoirs

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

Alcoa proposes to counterbalance the significant impacts to EPBC Act listed species through an Offset Program, a draft of which is currently being finalised.

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
Yes		Actitis hypoleucos	Common Sandpiper
Yes		Apus pacificus	Fork-tailed Swift
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Calidris melanotos	Pectoral Sandpiper
Yes		Motacilla cinerea	Grey Wagtail

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. *

Migratory species are unlikely to use the Jarrah forest habitats of the Darling Plateau, which lie away from coastal and wetland habitats on the Swan Coastal Plain. No migratory bird species were recorded in the Development Envelope during fauna surveys and are highly unlikely to occur due to the lack of suitable habitat favoured by wetland species and the location of the Development Envelope, beyond the general range of non-wetland species.

Migratory wetland species identified by the Protected Matters Search Tool which potentially occur within the Development Envelope include:

- Common Sandpiper (*Actitis hypoleaucos*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Curlew Sandpiper (*Calidris ferruginea*)
- Pectoral Sandpiper (*Calidris melanotos*)

The mixed Shrub Dampland habitat within the Development Envelope comprises seasonally waterlogged areas and may have areas that are seasonally inundated. The Flooded Gum Woodland habitat within the Development Envelope is comprised of either natural shallow swamp or areas where swamp has historically been partially excavated to provide water supply for the former timber industry. There are relatively shallow and seasonal to semi-permanent ponds of standing water or with very slow drainage. Both Mixed Shrub Dampland and Flooded Gum Woodland fauna habitat types within the Development Envelope do not containlarge areas of wading habitat with mudflat, grasses, sedges, rushes or reeds favoured by the migratory wetland bird species.

Other migratory species identified by the Protected Matters Search Tool to potentially occur within the Development Envelope include:

- Fork-tailed Swift (*Apus pacificus*)
- Grey Wagtail (*Motacilla cinerea*)

The Fork-tailed Swift (*Apus pacificus*) is common in coastal and sub coastal areas between Carnarvon and Augusta including near and offshore islands. The species is considered unlikely to occur in the Development Envelope as the species is rarely observed inland and its use of habitat inland is rare and opportunistic. It is considered that the Development Envelope is beyond the general range of the species.

The Grey Wagtail (*Motacilla cinerea*) is an opportunistic migrant to Australia. The species typically migrates to Indonesia occasionally landing in Australia. Most records for the species are from Northern Australia and South Australia (Morcombe 2004). It is considered highly unlikely that the species will occur in the Development Envelope due to it being beyond the range of the species.

Alcoa concludes that it is highly unlikely that the Proposed Action will have direct or indirect impacts on EPBC listed migratory species having considered:

- The lack of recorded sightings from recent surveys of the Development Envelope.
- Available data indicating that the likelihood of occurrence for the EPBC listed migratory species is very low.

The distance from the Peel-Yalgorup System Ramsar wetlands (40-50 km) coupled with the proposed preventative risk management strategy including multiple barriers to prevent impacts to drinking water quality in intervening reservoirs.

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. *

Proposed Action is not 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.

—

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. *

Proposed Action is not located offshore.

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. *

Proposed Action is on the west coast of Australia (Western Australia).

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. *

Proposed Action does not involve coal seam gas or coal mine development.

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.

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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. *

Proposed Action does not involve 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.

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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. *

Proposed Action does not involve Commonwealth heritage places overseas.

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:

- Threatened Species and Ecological Communities (S18)

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)
- 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. *

Alternate timeline

As set out above, Alcoa has referred EPBC 2022/09204 Huntly Bauxite Mine Transition under Part IV of the EP Act and the EPBC Act. In 2020 Alcoa anticipated that approval for the transition project would enable construction of infrastructure to commence in 2023, with mining commencing in 2025. Alcoa is now targeting approval in Q1 2026, with mining to commence in late 2027 or early 2028.

It has therefore been necessary to identify an area within the Huntly Mine, from which ore can be mined in 2026, to ensure continuity of supply to the Pinjarra Alumina refinery. The Proposed Action has been identified by Alcoa as the most appropriate area, as the Development Envelope is located within an area that has been previously mined, the environmental values are understood, and is close to existing supporting infrastructure.

Alternative location

The Development Envelope is bounded to the north by Alcoa's existing mining activities and to the west by existing infrastructure, which supported past mining in the O'Neil mining region. Mining of the Development Envelope enables the utilisation of the existing mine facilities and infrastructure.

Alcoa previously withdrew from mining in the O'Neil region due to issues related to the refining of impurities in the bauxite ore from this region. While improvements to the refining process at the Pinjarra refinery subsequently overcame these issues, Alcoa did not previously propose to reenter the O'Neil region due to the limited life of mine (being around 4-5 years). This can be compared to the area currently under assessment (being the Huntly mine transition to the Myara North and Holyoake mine regions), where the combined life of mine is 10+ years.

Access to the remnant bauxite ore in the Development Envelope is the only feasible avenue Alcoa has identified to ensure continuity of ore supply before transition to the Myara North and Holyoake.

Alternative activity

Alcoa engages in the mining of bauxite within Mineral Lease ML1SA to supply ore to its respective active refineries - being currently the Pinjarra Alumina Refinery and Wagerup Alumina Refinery.

No alternative activities are possible in order for Alcoa of Australia Limited to access bauxite, a critical component of Alcoa's operations both locally and globally.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 1.2.1 Proposed Action Location.pdf The location of the Proposed Action relative to Perth	19/11/2024	No	High

1.2.5 Information about the staged development

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 1.2.5 Proposed Future Mining Areas.pdf Proposed future mining areas currently under assessment	19/11/2024	No	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 3 - Consultation Register.pdf Register of the consultation undertaken in relation to the addition of the O'Neil mining area	19/11/2024	No	High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1 – Alcoa EHS Vision, Values, Mission, and Policy.pdf Alcoa EHS Policy	30/05/2022	No	High
#2.	Document	Att 2 – Alcoa Biodiversity Policy.pdf Alcoa Biodiversity Policy	20/12/2021	No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 2.2.5 Tenure of Action Area.pdf Mining and other tenure surrounding the Action Area	19/11/2024	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 1.2.1 Proposed Action Location.pdf The location of the Proposed Action relative to Perth	18/11/2024		High
#2.	Document	Figure 3.1.1 Current Condition.pdf Dieback, clearing and rehabilitation condition of the Action Area	19/11/2024	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3.1.3 Natural Features.pdf Location of Comprehensive, Adequate and Representative (CAR) informal reserves	19/11/2024	No	High

3.1.4 Gradient relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3.1.4 Terrain.pdf Topography of the Action Area	19/11/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3.2.1a Vegetation Complexes.pdf Vegetation Complexes across the Action Area	19/11/2024	No	High
#2.	Document	Figure 3.2.1b MNES Fauna Habitats.pdf Habitats associated with MNES fauna species	19/11/2024	No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3.2.1a Vegetation Complexes.pdf Vegetation Complexes across the Action Area	18/11/2024		High
#2.	Document	Figure 3.2.2 Vegetation Condition.pdf Mapped vegetation condition across the Action Area	19/11/2024	No	High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3.4.1 Hydrology.pdf Hydrological features across the Action Area and proximity of a Ramsar site	19/11/2024	No	High

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED

Organisation address	6154 WA
Representative's name	Ashley Bird
Representative's job title	Regulatory Approvals Manager, Capital Projects Australia
Phone	0477512381
Email	ashley.bird@alcoa.com
Address	576 Marmion Street, Booragoon, WA, 6154

☑ 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, **Ashley Bird of ALCOA OF AUSTRALIA LIMITED**, 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.

ABN/ACN	93004879298
Organisation name	ALCOA OF AUSTRALIA LIMITED
Organisation address	6154 WA
Representative's name	Matt Reed
Representative's job title	Executive Vice President and Chief Operations Officer
Phone	08 9316 5807
Email	matt.reed@alcoa.com
Address	181-205 Davy Street, Booragoon, Western Australia, 6154

☑ 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, **Matt Reed of ALCOA OF AUSTRALIA LIMITED**, 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 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, **Matt Reed of ALCOA OF AUSTRALIA LIMITED**, 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. *