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12 July 2024

Ref: CPS10626/1

[REDACTED]
Resource & Environmental Compliance Division
Department of Energy, Mines, Industry Regulation and Safety
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[REDACTED]
CPS 10626/1 – Alcoa of Australia Limited – Myara North Geotechnical Investigation - Public Submissions

Thank you for forwarding the public submissions relating to Alcoa's clearing permit application for the Myara North geotechnical investigation. Alcoa has considered the comments in the public submissions and provided a response which is included as Attachment 1 to this letter.

In addition, in response to public concerns about the number of hectares (ha) proposed to be cleared, Alcoa has reduced the clearing footprint to 18.4 ha and the clearing area to 11 ha. The revised application form and GIS data package are included as Attachments 2 and 3 respectively.

[REDACTED]
Yours sincerely

[REDACTED]
Approvals Manager – Major Projects Australia
Alcoa of Australia Ltd

Attachments:

1. Alcoa Response to Public Submissions.
2. Revised Application Form.
3. Revised GIS data package including test locations and clearing application area.
4. Weerheim, M. (2008). Distribution patterns and habitat use of black cockatoos (*Calyptorhynchus* spp.) in modified landscapes in the south-west of Western Australia.

Attachment 1: Alcoa Response to Public Submissions



Environmental Factor	Comment	Submission	Alcoa Response
General	Application is linked to larger Pinjarra Alumina Refinery Proposal currently under assessment via Part IV of the <i>Environmental Protection Act 1986</i> (EP Act) and under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). The application should be assessed as part of the broader proposal.	[Redacted]	<p>Noted. Alcoa sought guidance from the Department of Water and Environmental Regulation EPA Services Branch who advised that the geotechnical investigations are investigative works and as such these works do not require minor or preliminary work approval under section 41A(3) of the EP Act.</p> <p>Alcoa does not consider that the geotechnical investigation will have a significant impact on matters of national environmental significance and therefore has not referred the application under the EPBC Act.</p>
	Application is linked to the Environmental Protection (Darling Range Bauxite Mining Proposals) Exemption Order 2023 issued under Section 6 of the EP Act.	[Redacted]	This is incorrect. The Exemption Order relates to two proposals under assessment by the Environmental Protection Authority for Bauxite Mining on the Darling Range in the Southwest of WA for the Years 2022 to 2026 and the years 2023 to 2027 (assessment numbers 2384 and 2385 respectively). The application area is subject to a separate proposal under Part IV of the EP Act and the EPBC Act: the Pinjarra Alumina Refinery Revised Proposal (assessment number 2253).
	Concern about environmental impacts associated with the broader proposal, including forest collapse and contribution to climate change.	[Redacted]	Environmental impacts associated with the broader proposal to mine the Myara North region will be addressed through the Part IV EP Act and EPBC Act processes.

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	<p>Concern that GIS data contains inaccuracies which may relate to the use of different georeferencing coordinate systems.</p>	<p>██████</p>	<p>Alcoa is aware of the risk of using different coordinate systems and has been careful when using GIS data to ensure each dataset is in the same coordinate system, converting data as required before use. There can be minor discrepancies introduced during the conversion process. The geotechnical test locations, access routes and Alcoa produced maps were generated in coordinate system AGD84 Zone 50. The test and access route locations were pegged in the field by licenced surveyors using AGD84. Alcoa’s environmental and heritage survey data was generated in AGD84, GDA94 and GDA2020, depending on the consultant conducting the work. Older survey data available via the IBSA database was generated in GDA94. The Department of Biodiversity, Conservation and Attractions (DBCA) access road and other mapped access track shapefiles were generated in GDA94. The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) requested all application data be provided in GDA2020.</p> <p>Alcoa has reviewed the test locations and access routes to align them with DBCA access roads, mapped access tracks and unmapped access tracks which are visible on aerial imagery and have been verified in the field. Alcoa has a licence for regularly updated aerial imagery. Different aerial imagery sources are collected at different times and may have differing levels of accuracy. In addition, the thick overstorey of the jarrah forest prevents some mapped DBCA access roads and access tracks from being visible on Alcoa’s aerial imagery. Alcoa has also noted that the mapped DBCA access roads and mapped access track GIS data does not always match the location visible in Alcoa’s aerial imagery.</p>
	<p>Concern that GIS data does not match field pegs.</p>	<p>██████</p>	<p>The test and access route locations were pegged in the field by licenced surveyors using AGD84. As explained above, there may be minor discrepancies between different GIS datasets. Alcoa has also made some amendments to the test locations and access routes following a site visit with DEMIRS officers and in response to these public submissions. Updated GIS data for the test locations and access routes is included as Attachment 2. Should this application be approved, the test locations and access routes will be marked in the field by a licenced surveyor before the commencement of works.</p>

Environmental Factor	Comment	Submission	Alcoa Response
	The Myara North Geotechnical Investigation Environmental Management Plan (EMP) does not address the ten clearing principles.	[REDACTED]	Alcoa addressed the ten clearing principles in Attachment 4 of the clearing permit application package submitted in April 2024.
	Section 1.5 of the EMP does not reference the <i>Aboriginal Heritage Act 1972</i> .	[REDACTED]	The EMP will be updated to include reference to the <i>Aboriginal Heritage Act 1972</i> and Alcoa's procedure for dealing with unexpected items of Aboriginal heritage significance prior to submission to the geotechnical contractor.
	Section 1.5 of the EMP does not reference the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act). Does Alcoa require Section 26D licence for construction of the groundwater monitoring bores?	[REDACTED]	Alcoa does not require Section 26D licences under the RIWI Act as the groundwater monitoring bores will be used for monitoring only and not for abstraction purposes.

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Flora/Vegetation	20 hectares (ha) of vegetation clearing appears excessive. The amount of vegetation clearing required is unclear.	[REDACTED]	<p>As explained in the application supporting information, Alcoa does not intend to clear any vegetation, however vegetation will be disturbed by a drill rig and other supporting vehicles being driven over it to access test locations. Alcoa acknowledges that any native vegetation disturbance must be minimised and has therefore reduced its requested clearing footprint and clearing area (refer Attachment 2).</p> <p>Of the 116 test locations, Alcoa has located 42 in existing DBCA maintained access roads and no clearing will be required to access the test locations or conduct the tests. These locations are not included in the clearing footprint. 74 tests require some vegetation disturbance to access or conduct the tests and these are included in the revised clearing footprint. Of these 74, 18 test locations are within informal access tracks, some of which contain native vegetation regrowth. Following a site visit and consultation with DEMIRS officers Alcoa has included these areas within the clearing footprint. The remaining 56 test locations require disturbance of forest vegetation or vegetation regrowth within informal tracks to access and/or conduct the tests.</p> <p>The clearing area has been reduced to 11 ha, based on the following calculations for the 74 tests which require vegetation disturbance:</p> <ul style="list-style-type: none"> • 15 groundwater monitoring boreholes with an estimated 10m by 10m (100m²) disturbance – subtotal 1,500m²; • 59 test pits with an estimated 3m by 5m (15m²) disturbance – subtotal 885m²; • 21,000m (21km) of access routes within forest vegetation or informal access tracks with an estimated 5m width disturbance for drill rig/vehicle access – subtotal 105,000m²; • Total – 107,385m² rounded up to 110,000m² or 11ha. <p>The clearing footprint has been reduced to 18.4 ha, which allows some flexibility to avoid trees, rocks, fallen logs, steep slopes and uneven terrain etc as required.</p>

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	<p>The application does not detail the vegetation condition of areas proposed to be cleared. Application area is in a high conservation value area with the majority of vegetation ranked as very good and very good to excellent condition.</p>	<p>██████</p>	<p>Noted. Alcoa has located the tests and access routes within currently cleared DBCA access roads, cleared informal access tracks and other disturbed areas as far as possible. Test types and equipment have also been chosen to minimise the extent of vegetation disturbance, for example:</p> <ul style="list-style-type: none"> • Using a small 2.5m wide borehole drill rig which can manoeuvre around trees and large shrubs and drive over groundcover vegetation and small shrubs. No vegetation clearing is required to access the test locations. • No vegetation clearing or drill pad construction is required to complete the drilling. The drill location can be located to avoid vegetation and leaf litter can be raked away to expose bare ground. • A 100mm bore pipe has been chosen as the minimum bore diameter required to collect groundwater samples for water level and quality monitoring. • Test pits will be excavated using a small 3m wide excavator which can manoeuvre around trees and large shrubs and which has rubber tracks to minimise vegetation damage and wheel rutting. • Support vehicles, equipment and soil samples will be parked and laid on existing disturbed ground where possible.
	<p>Large area of vegetation disturbance located near Balmoral Road.</p>	<p>██</p>	<p>Most of the test locations align with the proposed haul road network and are spread across the region. The large concentration of test locations near Balmoral Road are where Alcoa propose to construct a mine facilities hub including a construction laydown area, offices and storage/maintenance sheds.</p>
	<p>Application is at variance with the native vegetation clearing principles.</p>	<p>██████</p>	<p>Alcoa has acknowledged in its application that it may be at variance with some of these principles and identified controls to minimise these impacts. Alcoa awaits DEMIRS' assessment and determination on this matter.</p>

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	Not all of the application areas have been subject to flora (and fauna) surveys.	[REDACTED]	<p>All of the clearing footprint has been subject to baseline/detailed flora and fauna surveys. More than 90% of the test locations and access routes have been subject to pre-clearance targeted flora and fauna surveys. Most of the areas which have not been subject to pre-clearance surveys are informal access tracks which contain limited native vegetation regrowth. Alcoa considers the level of pre-clearance targeted flora survey is sufficient given the limited flora/vegetation of conservation significance which has been identified:</p> <ul style="list-style-type: none"> • no threatened flora or ecological communities; • one priority ecological community associated with granite outcrops which is easily identifiable in the field and avoidable; and • one priority 3 flora and one priority 4 flora species identified at limited locations. <p>The baseline/detailed and pre-clearance targeted fauna surveys completed to date have provided a high level of certainty as to which conservation significant species have a medium or high probability of occurrence within the Myara North region. Risks to unidentified fauna habitat will be addressed with a licenced and experienced fauna spotter inspecting access routes and test locations just prior to work commencing, particularly to identify tree hollows, burrows and hollow logs. A fauna spotter will be onsite during the geotechnical investigation to relocate fauna if required.</p>
	Borehole location BHRCB2 is located on a slope which may require cut and fill construction.	[REDACTED]	BHRCB2 is located on a slope however the borehole drill rig has self-stabilising legs which means that it does not require the construction of a drill pad. All of the borehole sites have been visited by Alcoa's drilling contractor who have confirmed the slopes can be accessed and drilled with the nominated equipment.

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	<p>Borehole location BHRCB2 peg located in riparian vegetation. Discrepancy between Mattiske vegetation mapping and stream Vegetation mapping provided. Location falls within Drilling Approval Plan GDA2020-z50 between areas 'Approved' and 'Subject to Approval'.</p>	<p>█</p>	<p>The Pinjarra Alumina Refinery Revised Proposal Detailed Flora and Vegetation Survey For Huntly Mine – Myara North (Mattiske, 2021) vegetation mapping shows BHRCB2 as located within Open Forest of <i>Eucalyptus marginata</i> - <i>Corymbia calophylla</i> with scattered understorey, including <i>Leucopogon verticillatus</i>, <i>Pteridium sculentum</i>, <i>Clematis pubescens</i> and <i>Bossiaea aquifolium</i> subsp. <i>aquifolium</i> on sandy-loam gravelly soils. This vegetation type is noted as occurring on lower slopes and valley floors, although it is agreed that it is located close to a stream.</p> <p>The referenced Drilling Approval Plan GDA2020-z50 GIS dataset relates to a Huntly Mining and Management Program (MMP) which would have provided authorisation for exploration drilling previously. As explained in the clearing permit application, mining within the Myara North region is being assessed under Part IV of the EP Act instead of via an MMP under Alcoa's State Agreement Acts. The reference to 'Approved' and 'Subject to Approval' areas is therefore not relevant to this application.</p>
	<p>Mapping devices should be used in the field to ensure environmental constraints will be avoided in the field.</p>	<p>█</p>	<p>Agreed. Alcoa will ensure the test locations and access routes are pegged and flagged by a licenced surveyor prior to commencement of works. The contractor will be required to have the test locations, access routes and environmental/heritage constraints in GIS format onsite for real-time monitoring.</p>
	<p>The EMP does not reference a ground disturbance permitting process.</p>	<p>█</p>	<p>Alcoa has an internal ground disturbance permit (GDP) process which will be used for the geotechnical investigation. The GDP involves a final check of test locations and access routes against land tenure, environmental and heritage constraints, pegging in the field and signed off by the Environmental Supervisor and WA Manager of Mines. The GDP may be approved subject to conditions. Once the work is complete the Environmental Supervisor must sign off to confirm that the work was completed as described and in accordance with any conditions.</p>
	<p>Some access tracks contain native vegetation regrowth.</p>	<p>█</p>	<p>Agreed. Following a site visit and consultation with DEMIRS officers Alcoa has included these areas within the revised clearing footprint.</p>

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	Alcoa should use existing access tracks in preference to vegetated areas. Access routes should be ground-truthed.	[REDACTED]	Agreed. Alcoa has located the tests and access routes within currently cleared DBCA access roads, cleared informal access tracks and other disturbed areas as far as possible. The test locations and access routes have been ground-truthed and will be re-surveyed and pegged just prior to the commencement of work.
	Risk of dieback spread.	[REDACTED]	The geotechnical investigation will be conducted in accordance with the Dieback Management Guidelines Myara North Geotechnical Investigation, which have been provided to DEMIRS. These guidelines have been prepared in accordance with established dieback protocols developed with, and approved by, the Department of Biodiversity, Conservation and Attractions (DBCA).
	Risk of fire spread.	[REDACTED]	Alcoa has identified vehicle and equipment operation as a potential cause of fire associated with this work. No vehicle access or work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days. All vehicles will be required to carry fire-fighting equipment to fight small fires. Radios and mobile phones will be carried to contact emergency services in the case of more significant fires. All fire incidents will be reported to DBCA as soon as possible, recorded as incidents and investigated to identify corrective actions.
Fauna	Damage to habitat for fauna of conservation significance.	[REDACTED]	Fauna spotters will inspect access routes and test locations just prior to work commencing to identify potential habitat features for conservation significant fauna species such as tree hollows, burrows and hollow logs. Vehicles/equipment will avoid any identified potential habitat features.

Disturbance to nesting and foraging habitat for EP Act and EPBC Act protected black cockatoo species.

There will be no impact to nesting habitat from the geotechnical investigation as no large trees with potential or actual nesting hollows will be disturbed.

The Referral Guidelines for 3 WA Threatened Black Cockatoo Species (Department of Agriculture, Water and the Environment, 2022) list foraging and common food items. Species within these guidelines which have been recorded within the Myara North region include:

- *Corymbia calophylla* (Marri) seeds, flowers, nectar and grubs
- *Eucalyptus marginata* (Jarrah) seeds
- *E. wandoo* (Wandoo) seeds
- *C. haematoxylon* fruits
- *E. megacarpa* (Bullich) fruits
- *Pinus sp.* (Pine) cones
- *Allocasuarina* (Sheoak) cones
- *Persoonia longifolia* (Snottygobble) fruits
- *Banksia* seeds, flowers, nectar
- *Hakea* seeds, flowers, nectar
- *Anigozanthos flavidus* (Kangaroo Paw) pith
- *Grevillea* seeds, flowers and nectar
- *Callistemon* seeds, flowers and nectar
- Insects/insect larvae

A 2008 study titled *Distribution patterns and habitat use of black cockatoos (Calyptorhynchus spp.) in modified landscapes in the south-west of Western Australia* (Weerheim, M.) recorded black cockatoo feeding events and evidence of chewings on different species (refer Attachment 4). Forest red-tailed black cockatoos were found to feed mostly on Marri seeds, with 67% of all recorded feeding events being on this species. This is likely because Marri fruits are available year-round. Jarrah, Sheoak and Bullich seeds were the next most common feeding species. 92% of all Baudins' cockatoo feeding events were recorded on Marri seeds. Carnaby's cockatoos in breeding areas almost exclusively feed on seeds of native vegetation, primarily proteaceous shrubs, heath and marri. At end of the breeding season, they move south-west towards the coast to feed in pine plantations

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			<p>around metropolitan Perth. Feeding observations recorded in this study were most common on pine, then jarrah, marri, and <i>Banksia grandis</i>. The geotechnical investigation will not disturb the seeds, flowers or nectar found on <i>Eucalyptus</i> or <i>Corymbia</i> species as only those which are below 1.5m in height may be impacted and they generally would not have formed seeds or flowers. The remaining flora species such as Sheoak, Banksia and Snottygobble could produce seeds, flowers, fruits, cones or nectar at heights of less than 1.5m.</p> <p>The impact to black cockatoo foraging will be minimal as there will be no impact to their preferred food species of Marri and the impacts to species of less than 1.5m height will be temporary with these species expected to recover.</p>
	Noise disturbing black cockatoos and chuditch.	■	It is acknowledged that noise from vehicle/equipment access and operation may disturb black cockatoos, chuditch and other fauna species of conservation significance. This impact will be temporary however, as each test will take approximately 2-4 hours to complete and it is anticipated that fauna will return once vehicles/equipment leave each location.
Water	<p>Potential contamination of Serpentine Dam from hazardous chemicals associated with geotechnical investigation.</p> <p>Concern about clearing within the 1 km RPZ which could impact Perth's drinking water.</p>	■	<p>The contractor will only be allowed to take Alcoa approved chemicals into the Myara North region. These chemicals have been approved by the Water Corporation as low risk for use in the Serpentine Dam Public Drinking Water Source Area. Water Corporation approval will be required prior to access into the Reservoir Protection Zone (RPZ). Alcoa has identified the following controls to minimise the risk of contaminating the surface and groundwater:</p> <ul style="list-style-type: none"> • Refuelling of light vehicles and equipment will be undertaken outside the RPZ. • All wastes, including drill cuttings, will be removed from site and disposed of offsite to an appropriately licenced landfill. • Test holes will be backfilled with excavated material or surrounding topsoil to existing ground level with leaf litter respread. • No stockpiles will remain onsite which could pose an erosion risk.

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	Why are there test pits located in Serpentine Dam Reservoir Protection Zone (RPZ) which restricts mining operations.	[REDACTED]	Haul roads and a water pipeline will be constructed within the RPZ and this is the reason for inclusion of test pits in this area. Water Corporation approval will be required prior to access into the RPZ.
	Changes to the hydrology of the area.	[REDACTED]	The geotechnical investigation will involve minimal vegetation disturbance and all excavations will be backfilled. There will be no surface or groundwater abstraction or discharge to surface or groundwater. No changes to hydrology are anticipated as a result of the geotechnical investigation.