Form

Referral of a proposal under s. 38 of the EP Act

PART A: PROPONENT AND REFERRER INFORMATION AND PROPOSAL DESCRIPTION	
Referrer information	
Who is referring this proposal?	☐ Proponent ☐ Decision-making authority ✓ Community member/third party
Name (print) **Western Australian Forest Alliance Inc**	**Signature** [redacted]
[redacted]	
Does the referrer request that the EPA treat any part of the proposal information in the referral as confidential? *Provide confidential information in a separate attachment.*	☐ Yes ✓ No
Does the referrer confirm that they consent to receive correspondence electronically?	✓ Yes ☐ No
Referral declaration for proponent and Authorised representative: I, [redacted] declare that I am authorised to refer this proposal on behalf of Western Australian Forest Alliance and further declare that the information contained in this form is true and not misleading. Date: 27/2/23	
Proponent information	
Name of the proponent/s *Include Trading Name if relevant*	The referrer is a third party. The proponent is Alcoa of Australia Limited
Australian Company Number(s) ☐ **OR** Australian Business Number(s) ✓	93 004 879 298

Pre-referral discussions	
Have you had pre-referral discussions with the EPA (including the EPA Services of DWER)? *If so, provide name, date, and overview of discussions.*	☐ Yes ✓ No
Proposal information	
Proposal name	Mining and Management Plan 2022-2026
What is the proposal? (Include general description in the *Instructions and template: How to identify the content of a proposal)*	Alcoa's Mining and Management Plan (MMP) for bauxite mining on the Darling Range in the South West of WA for the years 2022 – 2026
Have you provided electronic spatial data, maps, and figures in the appropriate format?	☐ Yes ✓ No The referrer is a third party and does not have access to spatial data, maps and figures.
What type of proposal is being referred? *For significant amendment or derived proposal, provide the associated existing Ministerial statement number/s* *For a proposal under an assessed planning scheme, provide the scheme number and name*	✓ significant proposal. *Choose which type of significant proposal* ✓ new proposal ☐ significant amendment (proposal only) ☐ significant amendment (conditions only) ☐ significant amendment (proposal and conditions) ☐ strategic proposal ☐ derived proposal ☐ proposals of a prescribed class ☐ proposal under an assessed planning scheme
Proposal content: *Complete the corresponding template (Proposal Content Document) from the* *Instructions and template: How to identify the content of a proposal* *for the type of proposal identified above. The completed form* ***must be*** *submitted with the referral.* The MMP being referred is not publicly available and the referrer does not have access to the level of detail requested in the form. Instead, information has been provided in Part B below. We hope it is sufficient for the EPA's purposes.	
Alternatives	n/a

PART B: ASSESSMENT OF ENVIRONMENTAL IMPACTS	
Environmental factors	
What are the likely significant environmental factors for this proposal?	☐ Benthic Communities and Habitat ☐ Coastal Processes ☐ Marine Environmental Quality ☐ Marine Fauna ✓ Flora and Vegetation ✓ Landforms ☐ Subterranean Fauna ✓ Terrestrial Environmental Quality ✓ Terrestrial Fauna ✓ Inland Waters ✓ Air Quality ✓ Greenhouse Gas Emissions ✓ Social Surroundings ✓ Human Health
*For **each** of the environmental factors identified above, complete the following table, or provide the information in a supplementary report*	

Potential environmental impacts – for each environmental factor **Flora and vegetation**		
1	**EPA policy and guidance**	Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
2	**Receiving environment**	Jarrah / Marri forest ecosystems and associated waterways on Darling Range SE of Perth. Priority water catchments and Reservoir Protection Zones. Riparian vegetation fringing rivers and streams.

3	**Likely environmental impacts**	Clearing of high gradient slopes in close proximity to drinking water dams poses an unacceptably high level of risk to water quality and drinking water supply. Rehabilitation not keeping up with clearing rates, and the poor rehabilitation quality overall, add to the likelihood of a major run off event causing contamination of Perth's drinking water supply. Clearing of several thousand hectares of native forest ecosystems, including mature biodiverse forests of excellent habitat quality. Likely disturbance and / or loss of rare and threatened plant species and ecological communities including Federally listed flora (MNES). Loss of carbon storage in vegetation. Consumption of significant volumes of water, and associated impacts on flora and vegetation and the ecological values that the flora and vegetation support. Hydrology changes resulting from dewatering, bauxite removal, soil removal and storage, and water consumption from operational use and dust suppression causing reduced groundwater availability and drought stress, as well as waterlogging and dieback exacerbation. Dust impacts on vegetation. Key scientifically robust biodiversity indicators must be identified to assess the impacts resulting from the MMP on the ongoing ecological integrity of the Northern Jarrah Forest, and must take account of the additional, cumulative and holistic impacts and ongoing pressures such as fire, water availability and climate change. The above impacts as well as the additional, cumulative and holistic impacts must be fully considered, understood and assessed (as has been required of Alcoa's Huntly mine clearing and expansion proposals that are currently before the EPA). This clearing must be assessed in the context of the other 9,273 ha of clearing proposed by Alcoa and the

		overall clearing rates must be assessed in terms of the ongoing ecological integrity of the Northern Jarrah Forests, taking into account the principles of the EP Act. The significant degree of public concern warrants that the data and assessments are made publicly available.
4	**Application of the mitigation hierarchy**	It is unclear how the mitigation hierarchy including the offsets system applies to the MMP and this needs to be clarified through an EPA process. The expectation must be that current WA government policy and aspirations are applied and maintained and that the safety of drinking water and integrity of ecological function is prioritised. The application of the mitigation hierarchy should be in keeping with the State Native Vegetation Policy objectives of net-gain and transparency and be 'underpinned by sound science; reliable information on its ecological, social, cultural and economic values; and understanding of cumulative impacts.' (Native Vegetation Policy for WA, 2022).

5	**Assessment and significance of residual impacts**	The ongoing ecological integrity of the Northern Jarrah Forests is dependent on the health, biodiversity and resilience of the region's flora and vegetation. To adequately understand the significance of residual impacts of the MMP, it must be assessed in the context of the other 9,273ha of clearing that Alcoa has proposed. The significance of the likely impacts to the NJF warrants a thorough holistic and cumulative environmental impact assessment. Rehabilitation is failing to keep up with clearing rates and even where rehabilitation is occurring, the habitat quality is poor; the carbon storage capacity is a fraction of that of the original forest; and the high evapotranspiration rates put both the rehabilitation and the surrounding forest at increased risk of drought impacts. Only a fraction (1,500ha) of the area Alcoa has mined has been certified as successfully meeting rehabilitation criteria – but this happened in 2001, on the basis of pre-2016 (not current) completion criteria that 'are designed to ensure [rehabilitated] areas will display self-sustaining characteristics of a forest ecosystem' (Alcoa Australia, *Alcoa's Bauxite Mine Rehabilitation Program: Completion Criteria and Overview of Area Certification Process*, 2015)**.** The threat that ongoing clearing and poor rehabilitation results pose to the ongoing ecological integrity of the region was identified in the IPCC's 6th assessment report, which found that the NJF is at particular risk of climate collapse, and that stopping clearing would improve the region's resilience. Clearing on high gradient slopes in close proximity to drinking water dams poses a significant risk of contamination of the Serpentine dam.

6	**Likely environmental outcomes**	Contamination of Serpentine dam and major impacts to Perth's water supply and the health and productivity of the region. Flora and vegetation support the ecological functioning and values of the ecosystem and the region. Clearing under this MMP would result in the loss of several thousand hectares of mature, biodiverse native flora and vegetation including excellent quality Jarrah / Marri forest ecosystems. Loss of rare and threatened flora. Loss of ecosystem function and ecological values supported by flora and vegetation. Fragmentation of habitat. Flora and vegetation degradation from dust impacts, exacerbation of disease and weed incursions. Drought stress. Reduced regional scale climate change resilience. Reduced carbon storage capacity. To fully understand the likely environmental outcomes, a cumulative impact assessment is required.

Landforms
1. EPA Policy and Guidance Objective: To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected.
2. Receiving Environment Hills, valleys, mountain peaks, rivers and dams in the Darling Range. High visual amenity and environmental value impact to Serpentine Dam, Serpentine River, Mt Vincent, Mt Solus and other peaks along the Darling Scarp and from the Bibbulmun Track and Munda Biddi Trail.
3. Likely Environmental Impacts The MMP provides for bauxite mining to occur on high gradient slopes in close proximity to drinking water dams and other competing land uses and impinge more directly on landforms and the integrity of the landscape.

This MMP should be assessed in the context of the other 9,273ha that Alcoa proposes to clear and in terms of the holistic and cumulative impacts that would result. The hiking and mountain biking communities, and local residents and visitors to the region are increasingly impacted by disturbance and destruction of physical landforms and loss of environmental values, and this is a matter of significant public concern. It has been demonstrated that recreational users of the landscape (for example hikers and cyclists) avoid areas that have been mined because of the loss of quality of the landforms and landscape in those areas. Mining impacts are more and more prevalent and difficult to avoid across the Northern Jarrah Forests.
4. Application of the mitigation hierarchy It is unclear how the mitigation hierarchy is applied to Alcoa's mining under MMPs and this needs to be addressed through an EPA process.
5. Assessment and significance of residual impacts Mining in close proximity to drinking water dams, National Parks, campsites, hiking and cycling trails, mountain peaks and other significant places in the region is causing loss and long-term degradation of distinctive physical landforms and major impacts to environmental values. This proposal must be considered in the context of the 30,000ha of already mined forest and woodland in the region, and the other additional 9,273ha that Alcoa proposes to clear. A holistic, cumulative impact assessment is warranted given the scale of historic and proposed mining, conveying and haulage across the region and the resulting impacts on landforms.
6. Likely environmental outcomes Loss of integrity of physical landforms and degradation of environmental values.
Terrestrial Environmental Quality
1. EPA Policy and Guidance Objective: To maintain the quality of land and soils so that environmental values are protected.
2. Receiving Environment Forest, woodland and riparian ecosystems on Darling Range
3. Likely Environmental Impacts The clearing and removal of substrate associated with the proposal would significantly disturb and degrade soils, with significant impacts on the ongoing ecological integrity of the region. Soil disturbance at such significant levels results in loss of soil carbon to the atmosphere, and reduced soil health and fertility. Evapotranspiration rates of exposed soils is significantly higher relative to soils in intact forest ecosystems, impacting hydrology and reducing resilience of the immediate and surrounding areas to drought stress and climate impacts. The removal of bauxite from below the jarrah ecosystems significantly alters the hydrology and the ecological integrity of the jarrah forests, exacerbated by reductions in rainfall and increasing temperatures. The proposal risks the disturbance of acid sulphate soils and acidification of rivers and streams.

4. Application of the mitigation hierarchy It is unclear how or whether the MMP applies the mitigation hierarchy.
5. Assessment and significance of residual impacts The residual impacts to soil health and quality of land and soils are significant and a cumulative impact assessment, in the context of the other 9,273ha Alcoa proposes to clear, is necessary to understand and assess the full impacts.
6. Likely environmental outcomes The proposal would result in an overall loss of the quality of land and soils, and significant impacts on environmental values. To fully understand these impacts, a cumulative impact assessment that takes into account the other clearing proposed by Alcoa and the additional, past, present and reasonably foreseeable impacts is required.
Terrestrial Fauna
1. EPA Policy and Guidance Objective: To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
2. Receiving Environment Forest and woodland habitat on Darling Range SE of Perth
3. Likely Environmental Impacts Loss of excellent quality habitat for a number of terrestrial fauna species including rare threatened and endangered species and Federally listed MNES. The referrer does not have access to mapping showing the locations of proposed clearing, or a full list of fauna that would be impacted by the proposal, so we are relying instead on our knowledge of the Northern Jarrah Forests and its fauna. Habitat loss and increased mining and haulage activity would significantly impact Carnaby's, Baudin's and Forest Red-tailed Black Cockatoos; Quokkas; Brush-tailed Possums, Quenda, Chuditch and Brush-tailed Phascogales and depending on locations, possibly also Western Ring-tailed Possums, Red Phascogales, Woylies, Numbats and others. The loss of an additional several thousand hectares of habitat and potable water sources for terrestrial fauna and the additional impacts of mining and haulage activity need to be fully understood and assessed through a cumulative impact assessment that considers past, present and reasonably foreseeable impacts to terrestrial fauna.
4. Application of the mitigation hierarchy It is unclear how or whether the MMP applies the mitigation hierarchy. The expectation must be that the most current and rigorous fauna protection policy and practice must be applied.
5. Assessment of significance of residual impacts The residual impacts of clearing and fragmentation of habitat are profound for fauna, particularly those species already at risk. A thorough assessment of the residual impacts is warranted and should be conducted against both State and Federal requirements.

6. Likely environmental outcomes Reduction in breeding success Loss of local populations Reduction in overall numbers, health and resilience of species Impacts on biodiversity and ecological integrity of the ecosystems.
Inland Waters
1. EPA Policy and Guidance Objective: To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.
2. Receiving Environment Priority water catchments including the Serpentine Dam (drinking water supply for Perth), and rivers, streams and water points on the Darling Range SE of Perth.
3. Likely Environmental Impacts * Contamination of Perth's drinking water – there is a very real risk that mining in close proximity to the Serpentine dam could result in contamination levels that render Perth's water supply undrinkable for up to 5 years. * PFAS and hydrocarbon contamination of water sources and aquatic environment * Contamination of rivers and streams from haulage road run-off * Significant hydrological changes exacerbate drought stress and the effects of dieback and other pathogens and reduce the overall resilience of forest ecosystems to climate change and fire.
4. Application of the mitigation hierarchy It is unclear how or whether the MMP applies the mitigation hierarchy.
5. Assessment and significance of residual impacts The residual impacts to hydrological regimes and quality or groundwater and surface water of mining in close proximity to Perth's drinking water dam and already climate change-affected forest ecosystems, are significant.
6. Likely environmental outcomes Contamination of critical water supplies; substantial reduction in the health and resilience of the affected forest ecosystems; reductions in surface water flow; reduced quality of rivers and streams; changed groundwater flows and reduced water availability to flora and fauna; water-logging and dieback exacerbation. To fully understand the environmental outcomes of this proposal, a thorough, holistic, cumulative impact assessment in the context of the other 9,273 ha that Alcoa proposes to clear is required.
Air Quality
1. EPA Policy and Guidance Objective: To maintain air quality and minimise emissions so that environmental values are protected.
2. Receiving Environment Pinjarra, Wagerup and Kwinana areas affected by Alcoa refineries, and regions surrounding Huntly and Willowdale and any additional proposed Alcoa bauxite minesites, haulage and conveyor routes.

3. Likely Environmental Impacts Dust and air-borne toxins from mine-sites, roads, conveyors and refineries impact visibility and air quality, and the toxins, particularly in the dust from refineries, is a significant risk to human and environmental health.
4. Application of the mitigation hierarchy It is unclear how or whether the mitigation hierarchy has been applied in the MMP.
5. Assessment and significance of residual impacts Local communities are severely impacted by dust and toxins and the residual impacts are highly significant.
6. Likely environmental outcomes Reduction in air quality and increase in dust and air-borne toxins impacting human health and environmental values.
Greenhouse Gas Emissions
1. EPA Policy and Guidance Objective: To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.
2. Receiving Environment The local and global atmosphere
3. Likely Environmental Impacts Bauxite mining and refining is a major cause of GHG emissions in WA. The proponent has not published information detailing the GHG emissions that would result from this proposal or quantified the reduction in carbon carrying capacity of the forests that results from clearing.
4. Application of the mitigation hierarchy It is unclear how or whether the mitigation hierarchy has been considered in the MMP.
5. Assessment and significance of residual impacts The GHG emissions associated with this proposal are likely to be significant and the residual impacts of these emissions, particularly given the reduced resilience of the region to climate change warrant a thorough assessment.
6. Likely environmental outcomes Exacerbation of local climate impacts, contribution to increased atmospheric carbon and environmental harm associated with worsening climate change. The significant volume of emissions and reduction in carbon carrying capacity associated with this proposal requires a thorough assessment. The expectation must be that GHG emissions are assessed against current best-practice policy and assessment frameworks.
Social Surroundings and Human Health
1. EPA Policy and Guidance Objective: Social Surroundings – To protect social surroundings from significant harm Human health – To protect human health from significant harm.
2. Receiving Environment Serpentine Dam and associated rivers and streams Northern Jarrah Forest region including towns, National Parks, trails and campsites.

3. Likely Environmental Impacts Clearing and mining in close proximity to the Serpentine Dam poses a major risk of contamination to Perth's drinking water. Such a contamination event could result in the dam being off-line for up to 5 years and drinking water having to be supplied to Perth in some other way – adding to the environmental costs of water supply. Benign activities like bushwalking are excluded from the catchment to prevent a contamination event because of the clear need to protect human health and social surroundings. It is insupportable for mining to be occurring in this highly sensitive environment without the highest level of environmental assessment.
4. Application of the mitigation hierarchy It is unclear how or whether the mitigation hierarchy has been considered in the MMP but avoidance is clearly the only option in this case.
5. Assessment and significance of residual impacts The residual impacts of a contamination event of Perth's drinking water would be profound and there is very high level of public concern regarding the quality and safety of drinking water being maintained. The high level of public concern extends to the impacts on social surroundings more broadly – users of public forests avoid mined areas because the quality of the landscape is so poor.
6. Likely environmental outcomes The likely outcomes have been broadly set out in the impacts section above. A full, transparent and cumulative impact assessment is necessary given the nature and potential significance of the risk.
Holistic impact assessment
Outline the holistic impact assessment for the Proposal. The referrer is not the proponent and is unable to provide this.
Cumulative environmental impact assessment
Outline the relevant cumulative environmental impacts of the Proposal (based on scoping). As far as the referrer is aware, no cumulative impact assessment has been done against this proposal to date.
Consultation
Outline the outcomes of consultation on the Proposal and its likely environmental effects. Consultation has only occurred between the proponent and the MMPLG as far as we are aware. We submit that the significance of the proposal – and the risk it poses to Perth's drinking water and the health and ecological integrity of the region – warrants a public environmental review by the EPA.
Supporting documents

Provide a list of the supporting documents	
Has the referrer provided survey information according to the *Instructions and Form: IBSA Data Packages* and/or the *Instructions and form: IMSA Data Packages*	☐ Yes ✓ No
Conclusion	
Do you consider the proposal may have a significant effect on the environment? **Yes**	

PART C: OTHER APPROVALS AND REGULATION	
Decision-making authorities and their approvals	
Provide a table list of the decision-making authorities, associated legislation or agreement regulating the activity and the specific approval required. (Example table at the end of form)	n/a
Provide a summary of the statutory decision-making processes you consider can mitigate the potential impacts of the proposal on the environment. (Note: this should be a summary of the information provided in Part B section 2.4).	n/a
Tenure and Local Government approvals	
Location of proposal: a) street address, lot number, suburb, and nearest road intersection; or b) if remote, the nearest town and distance and direction from that town to the proposal site.	Not publicly available
Name of the Local Government Authority in which the proposal is located.	
Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.	☐ Yes ☐ No
What is the current land use on the property, and the extent (area in hectares) of the property?	
Does the proponent have the legal access required for the implementation of all aspects of the proposal? ***If yes**, provide details of legal access authorisations / agreements / tenure.* ***If no**, what authorisations / agreements / tenure is required and from whom?*	☐ Yes ☐ No
Commonwealth Government approvals	

Does the proposal involve an action that may be or is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)?	✓ Yes ☐ No
Has the proposed action been referred? If yes, when was it referred and what is the reference number (EPBC No.)?	☐ Yes ✓ No Date: _____ EPBC No.: _____
If referred, has a decision been made on whether the proposed action is a controlled action? If 'yes', check the appropriate box and provide the decision in an attachment.	☐ Yes ☐ No ☐ Decision – controlled action ☐ Decision – not a controlled action
If the proposal is determined to be a controlled action, do you request that this proposal be assessed under a Bilateral Agreement or as an accredited assessment?	✓ Yes - Bilateral ☐ No ☐ Yes - Accredited
Is approval required from other Commonwealth Government/s for any part of the proposal? *If yes, describe.*	✓ Yes ☐ No Approval: Clearing of habitat for MNES (including Carnaby's, Baudin's and Forest Red-tailed Black Cockatoos) require approval under the EPBC. Federal Ministerial Statement 646 does not cover clearing under the MMPs
Decision-making authority referrals <u>ONLY</u>	
What approval/s, under your authority, are required for this proposal? *Please provide details.*	

Example Table: Other approvals

Decision-making authority	Legislation or Agreement regulating the activity	Approval required (and specify which proposal element the approval is related to)	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons. Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)