Alcoa of Australia Limited

Myara North Geotechnical Investigation

Environmental Management Plan

March 2024

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1 Introduction

1.1 Background

Alcoa of Australia Ltd (Alcoa) operates two bauxite mines in Western Australia at Huntly and Willowdale which are located approximately 100km south-east of Perth. Alcoa propose to transition the Huntly Mine operations into the Myara North region which is located within the Jarrahdale State Forest 22. State Forest 22 is vested in the Conservation and Parks Commission and managed by the Department of Biodiversity, Conservation and Attractions (DBCA) under the *Conservation and Land Management Act 1984* (CALM Act).

The Huntly Mine is located within mineral lease ML1SA and operated in accordance with the *Alumina Refinery Agreement Act 1961*. Environmental approval for Huntly Mine and the associated Pinjarra Refinery was granted under Ministerial Statement 646, issued under Part IV of the *Environmental Protection Act 1986* (EP Act). The Myara North mine move is currently under assessment under Part IV of the EP Act as part of the Pinjarra Alumina Refinery Revised Proposal (assessment number 2253). Approval is anticipated in late 2025.

Alcoa intends to conduct a geotechnical investigation within the Myara North region to assist in refining designs for the proposed infrastructure including haul roads, workshops, site offices, parking, laydown areas and drainage infrastructure.

1.2 Scope

Alcoa has engaged Tetra Tech Coffey (TTC) to complete a geotechnical investigation which will include testing at a total of 116 locations (see Figure 1-1). The test types and potential disturbance extents are outlined in Table 1 with GPS coordinates provided in Appendix 1.

The geotechnical investigation is planned to commence as soon as the required regulatory approvals have been secured, as discussed in Section 1.3.

The geotechnical investigation will include:

- excavation and backfill of 100 test pits; and
- installation of 16 groundwater monitoring bores.

The test pits will involve temporary disturbance and be backfilled upon completion.

The groundwater bores will be installed to monitor groundwater levels and quality on a quarterly basis by Alcoa personnel or contractors for up to ten years. Ongoing access to the groundwater bores will also be required for periodic maintenance.

Test locations have been preferentially located on existing access roads, tracks and disturbed ground. Access to test locations for test equipment, including heavy machinery and light vehicles will be via existing DBCA access roads as far as possible. Existing informal access tracks will be used as a second preference with access through vegetation the last resort. Proposed access routes for this investigation are included in Figure 1-1.

A maximum of 20 ha of vegetation is anticipated to be disturbed for access and completion of the investigation.

1.3 Approvals

The following approvals are required prior to commencement of the geotechnical investigation:

- Section 101 Licence from the Director General of Biodiversity, Conservation and Attractions under the CALM Act to conduct activities within a State Forest;
- Part V Clearing Permit from the Department of Mines, Industry Regulation and Safety under the EP Act; and
- Water Corporation approval to conduct activities within the Reservoir Protection Zone of Serpentine Dam.

The Department of Water and Environmental Regulation has advised that no approval under Part IV of the EP Act is required for the geotechnical investigation.

1.4 Purpose of this Plan

The purpose this plan is to:

- Outline the measures to be implemented to protect the environment, forest users and heritage during the geotechnical investigation and subsequent groundwater monitoring; and
- Provide assurance to regulators and stakeholders that the potential environment and heritage risks can be appropriately managed.

The commitments in this management plan apply to both Alcoa personnel and contractors engaging in the activities described in the scope above.

1.5 Legal and Other Statutory Project Requirements

The contractor will be required to comply with the following legislation when completing the geotechnical investigation:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Biodiversity Conservation Act 2016* (BC Act);
- *Environmental Protection Act 1986*;
- *Conservation and Land Management Act 1984*; and
- *Metropolitan Water Supply, Sewerage and Drainage Act 1909*.

Figure 1-1: Myara North Geotechnical Investigation Proposed Test Locations

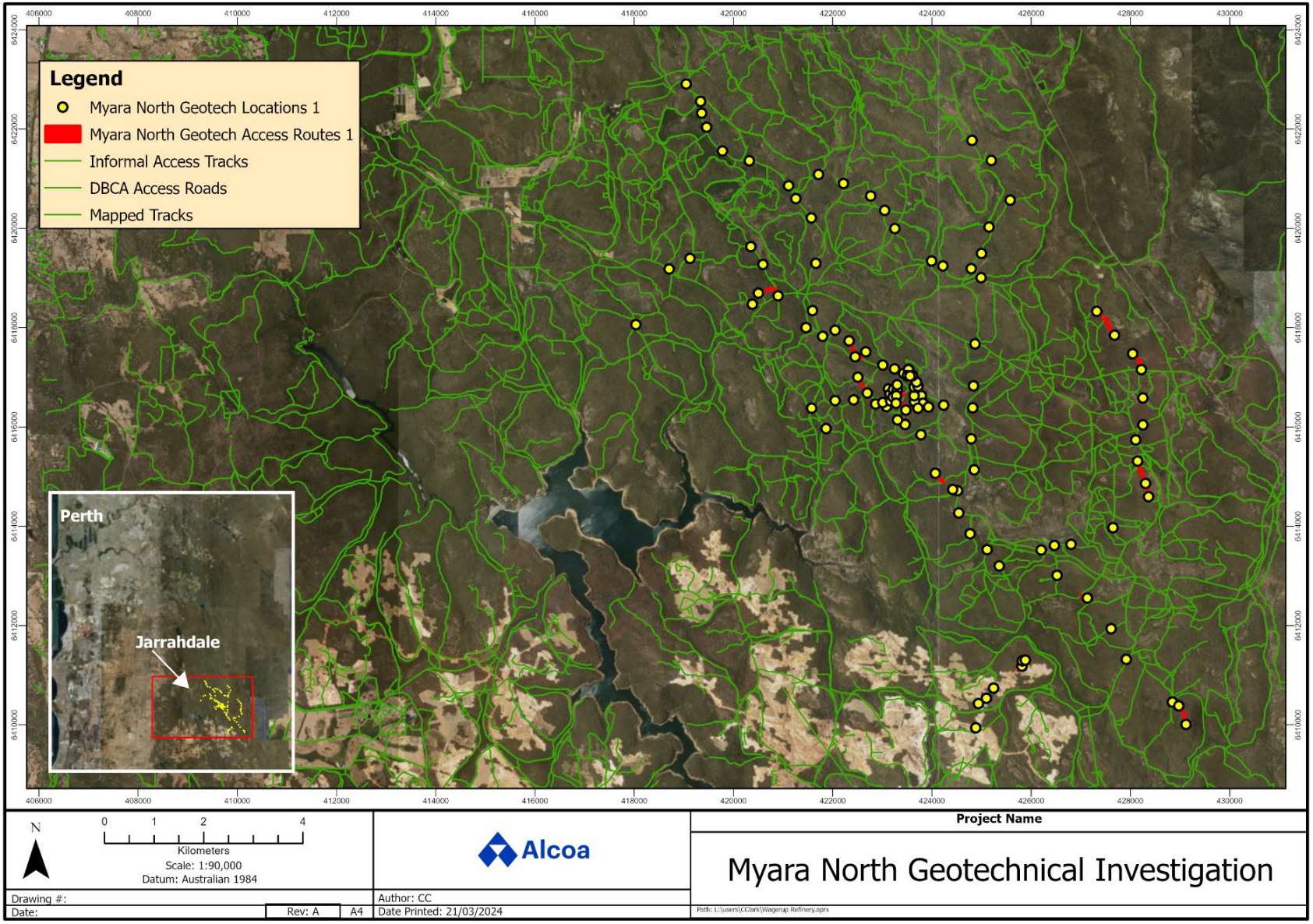


Table 1-1: Myara North Geotechnical Investigation Test Types and Disturbance

Investigation Type	Locations	Equipment Used	Access Disturbance	Test Disturbance	Remediation	Ongoing Disturbance
Dynamic Cone Penetrometer (DCP)	Up to 100 (a selection of the test pit locations in Appendix 1)	Hand held penetrometer Light vehicle to access test locations 	Personnel access only	Maximum 1m^2 total disturbance area 20mm diameter	Backfilling of penetration Replacement of leaf litter	None

Investigation Type	Locations	Equipment Used	Access Disturbance	Test Disturbance	Remediation	Ongoing Disturbance
Borehole Installation	16 (refer borehole locations within Appendix 1)	Light vehicle Drill rig Rigid 6-wheeler truck to transport water for drilling and drill cuttings in Intermediate Bulk Containers (IBCs) 	2.5m track width Rubber tyres Trees and large shrubs avoided Small shrubs pushed down	Maximum 100m^2 total disturbance area Excavated material temporarily stockpiled over 4m^2 footprint Installation of 100mm bore pipe topped with metal casing and concrete pad	Backfill of borehole with excavated material Excess excavated material to be spread over maximum 10m^2 disturbance area No covering of shrubs with excavated material Replacement of leaf litter	Quarterly light vehicle access to borehole to collect groundwater samples for a minimum of ten years post construction Ad hoc light vehicle access for maintenance purposes

Investigation Type	Locations	Equipment Used	Access Disturbance	Test Disturbance	Remediation	Ongoing Disturbance
Test Pit (in case of ground refusal, test pits may be replaced with additional boreholes)	100 (refer test pit locations within Appendix 1)	Light vehicle 8 tonne rubber-tracked excavator with blade 	3m track width Rubber tracked Trees and large shrubs avoided Small shrubs pushed down	Maximum 15m^2 total disturbance area Maximum 5m by 1m pit dug to 3m depth Excavated material temporarily stockpiled over 5m^2 footprint	Pit backfilled with excavated material after temporary stockpiling Backfilled pit to be level with surrounding ground Replacement of leaf litter	None

2 Existing Environment

2.1 Flora and Vegetation

Flora and vegetation surveys were undertaken in the Myara North region over multiple seasons in 2020, 2022 and 2023 in accordance with the Environmental Protection Authority (EPA) Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (2016). The surveys included:

- Detailed and targeted surveys over two seasons in 2020 as documented in Pinjarra Alumina Refinery Revised Proposal Detailed Flora and Vegetation Survey for Huntly Mine – Myara North (Mattiske, 2021). Refer Appendix 2;
- Targeted pre-clearance survey for threatened and priority flora in spring 2022 as documented in Myara North Pre-Clearance Surveys 2022 (WEPL, 2023). Refer Appendix 3; and
- Targeted pre-clearance surveys for threatened and priority flora in spring 2023 as documented in Myara North Targeted Flora Survey (AECOM, 2024) and Targeted Flora Search Myara North Region 2023 (WEPL, 2024). Refer Appendices 4 and 5.

All of the geotechnical test locations and access routes have been subject to detailed and targeted surveys. The pre-clearance flora survey coverage is depicted in Figure 2.

No Threatened Ecological Communities (TECs) were identified within the Myara North region and none are likely to occur, based on the vegetation associations present. One Priority Ecological Community (PEC) was identified: granite communities of the northern jarrah forest.

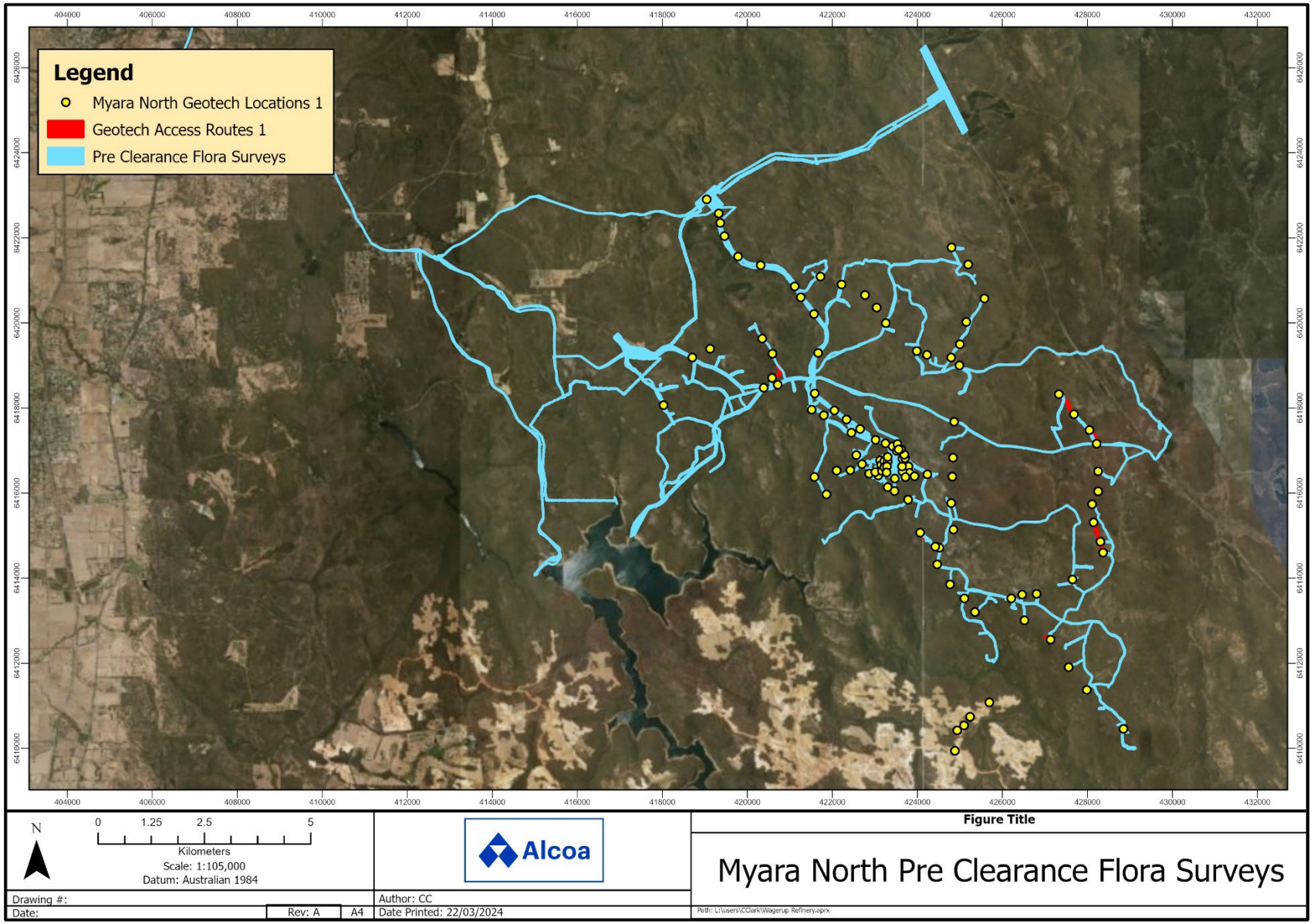
All geotechnical test locations and access routes have been located to avoid PEC occurrences.

Mattiske (2021) identified a total of 17 threatened flora species listed under State or Commonwealth legislation and 49 priority flora species as either recorded or likely to occur within the Myara North region. Eight priority flora species and zero threatened flora species were recorded within the Myara North region.

Targeted pre-clearance surveys for threatened and priority flora species with a high likelihood of occurrence were completed for the geotechnical test locations and access routes. Two priority flora species were identified: *Thysanotus anceps* (Priority 3) and *Pimelea rara* (Priority 4). All geotechnical test locations and access routes have been located to avoid priority flora records by at least 50m.

Test locations and access routes have been preferentially located within existing cleared/disturbed areas to minimise vegetation disturbance. They have also been located near existing access tracks where possible to minimise disturbance from equipment access.

Figure 2-1: Pre-Clearance Flora Surveys



2.2 Dieback

Dieback surveys have been completed across the Myara North region. The test locations are located within both dieback infested and dieback free areas. The geotechnical testing and ongoing groundwater sampling will be conducted in accordance with Alcoa's Dieback Management System and the Alcoa/DEC Working Arrangements.

2.3 Fauna

Multiple fauna surveys have been conducted within the Myara North region over multiple seasons in 2020 and 2024 in accordance with the EPA Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (2020) and EPBC Act guidelines for threatened species likely to occur within the region. The surveys included:

- Detailed and targeted surveys over two seasons in 2020 as documented in Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine – Myara North (GHD, 2021). Refer Appendix 6;
- Targeted pre-clearance survey for conservation significant fauna in autumn 2023 as documented in Pre-Clearance Survey – Autumn, Myara North (GHD, 2023). Refer Appendix 7; and
- Targeted black cockatoo surveys in 2022, 2023 and 2024 as documented in Myara North Power/Water Alignments, Black Cockatoo Breeding Habitat Survey (Kirkby, 2022) and Myara North Power/Water/Boundary Alignments, Black Cockatoo Breeding Habitat Survey (Kirkby, 2024). Refer Appendices 8 and 9.

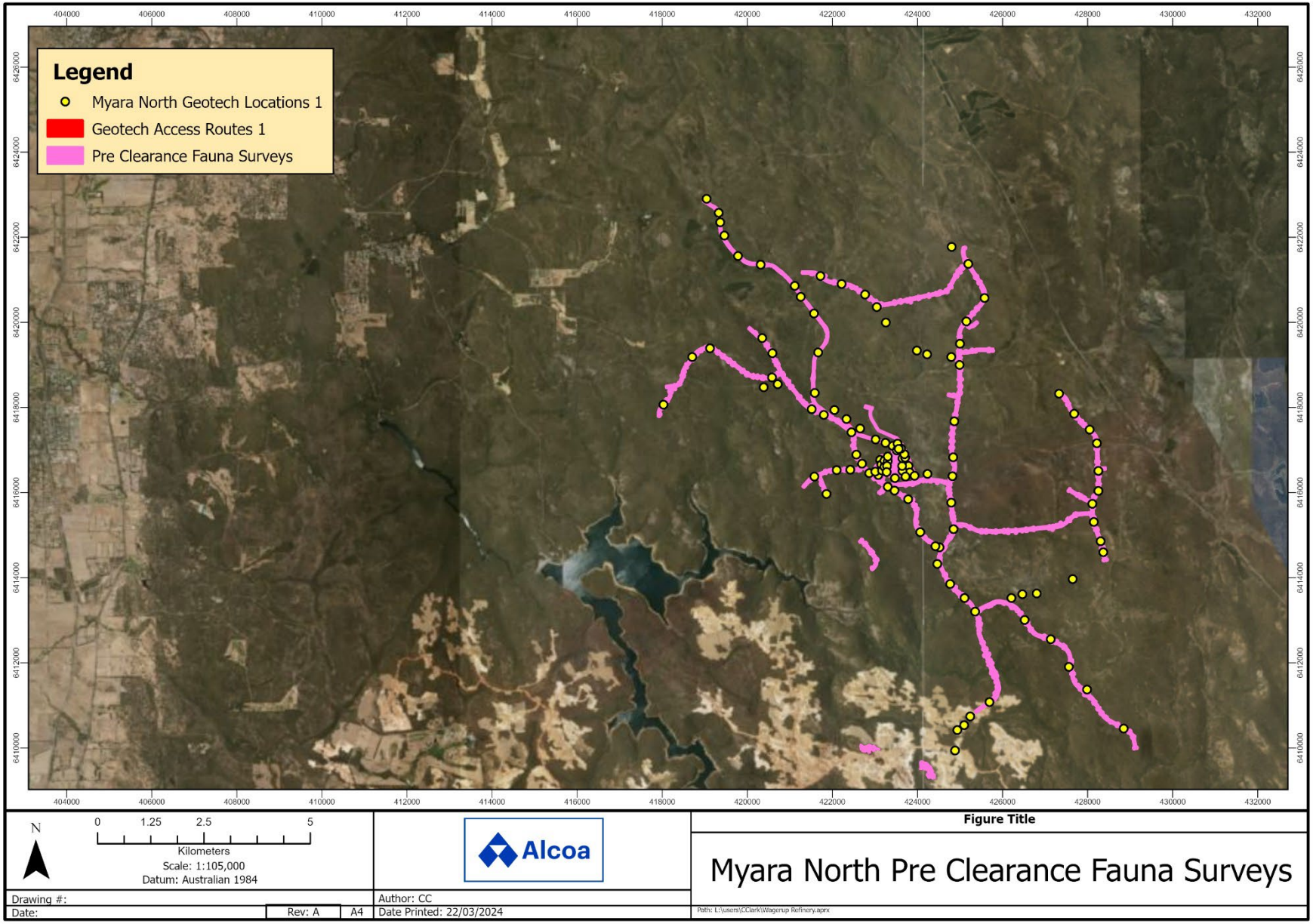
It should be noted that some of the geotechnical test locations and access routes have not been subject to a targeted surveys for conservation significant species likely to occur within the Myara North region. However, the survey coverage combined with the mitigation measures/controls outlined in Table 3-4 are deemed sufficient to identify and manage risks to these species.

The detailed fauna survey identified 13 conservation significant species as occurring or likely to occur within the region. The targeted pre-clearance survey recorded six significant fauna species:

- Baudin's and Forest Red-tailed Black Cockatoos (Endangered and Vulnerable respectively under the EPBC Act and BC Act);
- Chuditch (Vulnerable under the EPBC Act and BC Act);
- Quenda (Priority 4);
- Western Bush Wallaby (Priority 4); and
- South-Western Brush-Tailed Phascogale (Conservation Dependent as per

DBCA).

Figure 2-2: Pre-Clearance Fauna Surveys



- Western Brush Wallaby (Priority 4); and
- South-Western Brush-Tailed Phascogale (Conservation Dependent as per DBCA).

No Carter's Freshwater Mussels were identified within the Myara North region and due to the ephemeral nature of the streams present this species is unlikely to be present within the region (SLR, 2022).

The geotechnical test locations and access routes have been selected to avoid recorded black cockatoo nesting and potential nesting trees and other fauna burrows by at least 50m.

2.4 Heritage

The following Aboriginal and historic heritage surveys have been completed over the Myara North region:

- Pinjarra Alumina Refinery Revised Proposal Historical Archaeological Assessment Holyoake, Myara North and Pinjarra Alumina Refinery (Archae-aus, 2021b)
- Pinjarra Alumina Refinery Revised Proposal Aboriginal Archaeological Heritage Report - Myara North and Holyoake (Archae-aus, 2021a); and
- Ethnographic Assessment of Alcoa's Proposed Huntly Mine Expansion at Myara North, Western Australia (Archae-aus, 2022).

Several sites of historic (European), Aboriginal archaeological and Aboriginal ethnographic sites were identified during these surveys. The geotechnical test locations have been selected to avoid these sites by at least 50m. Access to these heritage sites will be maintained at all times during the geotechnical investigation.

The Department of Planning, Lands and Heritage (DPLH) shapefile for Aboriginal ethnographic site 3582 Serpentine River appears to intersect some of the test locations and access routes. Alcoa has consulted with representatives from the Gnaala Karla Booja Traditional Owner group who had no objections to mining within the Myara North region, subject to seeking Section 18 *Aboriginal Heritage Act 1972* approval to construct a haul road crossing over the Serpentine River. There will be no impact to the Serpentine River heritage site from the proposed geotechnical investigation.

2.5 Forest Access

State Forest 22 is used by the community for:

- Recreation;
- Firewood collection;

- Use of walking and bicycle trails, for example the Munda Biddi trail;
- Access to historic heritage sites, for example the Prisoner of War Camp; and
- Access to country by Noongar people for cultural purposes.

The forest is also accessed by the DBCA and the Water Corporation for activities associated with conservation, bushfire management and drinking water protection.

Access to State Forest 22 will be maintained at all times during the geotechnical investigation. There may be some temporary blockage of access tracks for safety purposes during testing, however all equipment will be packed up at the end of each day and access reinstated.

3 Environmental Risk Assessment

Alcoa has conducted an environmental risk assessment for the proposed geotechnical investigation, as requested by DBCA. The risk assessment follows the methodology outlined in the DWER's 2017 Guideline: Risk Assessments and Alcoa's risk assessment process. The likelihood, consequence and risk rating matrices are included in Tables 3-1, 3-2 and 3-3 below.

The risk assessment is included as Table 3-4 and identifies activities, receptors, potential impacts and management measures (controls) to be implemented to prevent adverse impacts. The risk rating is based on residual risk with management measures in place.

Table 3-1: Consequence Matrix

Consequence	Consequence Description	
	Environment	Health
Severe	On-site impacts: catastrophic Off-site impacts (local scale): high level Off-site impacts (wider scale): mid level Mid to long term or permanent impact to an area of high conservation value or special significance	Loss of life Adverse health effects: high level or ongoing medical treatment Local scale impacts: permanent loss of amenity
Major	On-site impacts: high level Off-site impacts (local scale): mid level Off-site impacts (wider scale): low level Short term impact to an area of high conservation value or special significance	Adverse health effects: mid level or frequent medical treatment Local scale impacts: high level impact to amenity
Moderate	On-site impacts: mid level Off-site impacts local scale: low level Off-site impacts wider scale: minimal	Adverse health effects: low level or occasional medical treatment Local scale impacts: mid level impact to amenity
Minor	On-site impacts: low level Off-site impacts (local scale): minimal Off-site impacts (wider scale): not detectable	Local scale impacts: low level impact to amenity
Slight	On-site impacts: minimal	Local scale impacts: minimal impacts to amenity

Table 3-2: Likelihood Matrix

Likelihood	Likelihood Description
Almost certain	The risk event is expected to occur in most circumstances.
Likely	The risk event will probably occur in most circumstances.
Possible	The risk event could occur at some time.
Unlikely	The risk event will probably not occur in most circumstances.
Rare	The risk event may only occur in exceptional circumstances.

Table 3-3: Risk Rating Matrix (Consequence x Likelihood)

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

Table 3-4: Risk Assessment

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating
Heavy and light vehicle access to test locations	TECs/PECs	No impact likely to TECs as none have been recorded or identified as potentially occurring within the Myara North region. Disturbance to PEC granite communities of the northern jarrah forest. Spread of weeds decreasing condition of PEC granite communities of the northern jarrah forest. Decrease in vegetation condition as a result of bushfire.	• Detailed flora and vegetation survey completed for the Myara North region. • Granite outcrops have been identified across the Myara North region to a high degree of certainty by a combination of flora surveys, aerial photography and mining exploration drilling data. • Alcoa has assumed that all granite outcrops may meet the definition of the PEC even if they have not been subject to a detailed site walkover by a botanist. • Access routes have been preferentially located on existing DBCA access roads, tracks and disturbed areas and avoided all mapped granite outcrops by at least 50m. • TTC and subcontractors will be required to ensure all machinery, equipment and laydown areas are located on mapped disturbed access tracks or within access route polygons approved by DBCA and DMIRS. • All light and heavy vehicles and equipment to be clean on entry prior to entering State Forest 22 with completed Alcoa Mobile Equipment Hygiene Inspection Checklists completed to prevent the spread of weeds. • No work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days.	Slight	Unlikely	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating
	Threatened/ priority flora species	Eight priority flora species and zero threatened flora species were recorded within the Myara North region. Two Priority 4 flora species (*Thysanotus anceps* and *Pimelea rara*) have been recorded within the targeted flora surveys. Disturbance to individual plants of threatened or priority flora species. Spread of weeds leading to a decrease in threatened/priority flora species individuals. Decrease in threatened or priority flora populations as a result of bushfire started by equipment.	• Detailed and targeted flora and vegetation surveys completed for all geotechnical test locations and access routes, including targeted searches for threatened and priority flora species. • Access routes have been preferentially located on existing DBCA access roads, tracks and disturbed areas and avoided all threatened and priority flora records by at least 50m. • TTC and sub-contractors will be required to ensure all machinery, equipment and laydown areas are located on mapped disturbed access tracks or within access route polygons approved by DBCA and DMIRS. • All light and heavy vehicles and equipment to be clean on entry prior to entering State Forest 22 with completed Alcoa Mobile Equipment Hygiene Inspection Checklists completed to prevent the spread of weeds. • No work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days.	Slight	Unlikely	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating

	Threatened/ priority fauna species	Death/injury to mammal or reptile individuals.
		Death/injury to individuals of conservation significant fauna species.
		Disturbance to habitat of conservation significant fauna species such as black cockatoos, chuditch, quenda and quokka.
			• Detailed fauna surveys completed across the Myara North region, including targeted searches for conservation significant fauna species.
			• All vehicles and machinery to limit speeds to 40km/hr when driving within State Forest 22.
			• Access routes chosen to minimise vegetation disturbance and known habitat for conservation significant fauna.
			• Trees, large shrubs and hollow logs which may provide habitat for conservation significant fauna species will be avoided.
			• Appropriately experienced and licenced fauna spotter to inspect access routes and test locations just prior to use to identify potential habitat for conservation significant species such as:
			  ○ Trees with hollows potentially suitable for black cockatoos;
			  ○ Burrows for ground dwelling species such as chuditch, quenda and quokka.
			• Black cockatoos nesting within tree hollows are unlikely to be disturbed by vehicles and personnel passing by to reach geotechnical test locations.
			• Trees with hollows and burrows will be avoided by all vehicles, test equipment and personnel.
			• Appropriately experienced and licenced fauna spotter to be present during heavy vehicle and equipment access to test locations to act as a fauna spotter and relocate fauna if required.
				Slight	Possible	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating

	Soil	Spread of dieback causing ecosystem decline.
		
		Generation or deepening of existing wheel ruts from vehicle and equipment tyres resulting in soil compaction and erosion.
			• Alcoa has current dieback mapping across the Myara North region. This will be provided to TTC and subcontractors.
			• The DBCA access roads within the Myara North region are open to the public who are unlikely to practice dieback hygiene. Therefore, Alcoa will assume all DBCA access roads and informal tracks are dieback affected.
			• Alcoa will ensure that geotechnical testing is undertaken in dry weather conditions.
			• All Alcoa, TTC and subcontractors' vehicles and heavy equipment will be clean on entry with Mobile Equipment Hygiene Inspection Checklists completed for each vehicle or piece of heavy machinery.
			• When travelling off DBCA access roads or informal tracks into dieback free or uninterpretable areas all vehicles and heavy machinery will be brushed down first.
			• When crossing dieback boundaries in vegetated areas all vehicles and heavy machinery vehicles will be brushed down when moving from:
			  ○ Dieback infected to dieback free areas;
			  ○ Dieback infected to uninterpretable areas; and
			  ○ Uninterpretable to dieback free areas.
			• Use of tracked instead of wheeled equipment where possible to minimise the generation or exacerbation of wheel ruts.
			• Upon completion of the work access tracks will be ripped with a tyne to prevent soil compaction and erosion and promote natural recruitment of vegetation. DBCA Perth Hills District officers will be consulted to confirm the locations requiring ripping.
				Slight	Unlikely	Low

	Heritage sites	Disturbance to Aboriginal or historic heritage sites.	• Archaeological and ethnographic Aboriginal heritage and historic heritage surveys have been completed across the Myara North region. • Access routes have been preferentially located on existing DBCA access roads, tracks and disturbed areas and avoided all known heritage sites by at least 50m. • Alcoa pre-start briefing to TTC and subcontractors on potential Aboriginal heritage and historic heritage artefacts and procedures to address if found.	Slight	Unlikely	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating
Conducting dynamic cone penetrometer tests, test pits and groundwater bore installation Installing groundwater monitoring bores	TECs/PECs	No impact likely to TECs as none have been recorded or identified as potentially occurring within the Myara North region. Disturbance to PEC granite communities of the northern jarrah forest. Decrease in vegetation condition as a result of bushfire started by equipment.	• Detailed flora and vegetation survey completed for the Myara North region. • Granite outcrops have been identified across the Myara North region to a high degree of certainty by a combination of flora surveys, aerial photography and mining exploration drilling data. • Alcoa has assumed that all granite outcrops may meet the definition of the PEC even if they have not been subject to a detailed site walkover by a botanist. • Access routes have been preferentially located on existing DBCA access roads, tracks and disturbed areas and avoided all mapped granite outcrops by at least 50m. • TTC and subcontractors will be required to ensure all machinery, equipment and laydown areas are located on mapped disturbed access tracks or within access route polygons approved by DBCA and DMIRS. • No work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days.	Slight	Unlikely	Low
	Threatened/ priority flora species	Eight priority flora species and zero threatened flora species were recorded within the Myara North region. Two Priority 4 flora species (*Thysanotus anceps* and *Pimelea rara*) have been recorded within the targeted flora surveys. Disturbance to individual plants of threatened or priority flora species. Decrease in threatened or priority flora populations as a result of bushfire started by equipment.	• Detailed and targeted flora and vegetation surveys completed for all geotechnical test locations and access routes, including targeted searches for threatened and priority flora species. • Access routes have been preferentially located on existing DBCA access roads, tracks and disturbed areas and avoided all threatened and priority flora records by at least 50m. • TTC and sub-contractors will be required to ensure all machinery, equipment and laydown areas are located on mapped disturbed access tracks or within access route polygons approved by DBCA and DMIRS. • No work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days.	Slight	Unlikely	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating

	Threatened/ priority fauna species	Death/injury to mammal or reptile individuals.
		Death/injury to individuals of conservation significant fauna species.
		Disturbance to habitat of conservation significant fauna species such as black cockatoos, chuditch, quenda and quokka.
		Abandonment of eggs or chicks by black cockatoos due to noise from test equipment.
		Increased predation on native fauna by introduced fauna attracted by food waste.
			• Detailed fauna surveys completed across the Myara North region, including targeted searches for conservation significant fauna species.
			• Test locations chosen to minimise vegetation disturbance and known habitat for conservation significant fauna by at least 50m.
			• Appropriately experienced and licenced fauna spotter to inspect access routes and test locations just prior to use to identify potential habitat for conservation significant species such as:
			  ○ Trees with hollows potentially suitable for black cockatoos;
			  ○ Burrows for ground dwelling species such as chuditch, quenda and quokka.
			• Trees with hollows within 50m of test locations will be inspected by the fauna spotter to determine if any black cockatoo eggs or chicks are present. If eggs or chicks are present then the test will be relocated to at least 50m away. If the test location can't be relocated to a disturbed access track or area within the access route polygons approved by DBCA and DMIRS then it will postponed until such time as a fauna spotter can confirm that no eggs or chicks are present.
			• Trees with hollows and burrows will be avoided by all vehicles, test equipment and personnel.
			• Trees, large shrubs and hollow logs which may provide conservation significant fauna habitat will be avoided.
			• Appropriately experienced and licenced fauna spotter to be present to act as a fauna spotter and relocate fauna if required.
			• All excavations will be backfilled prior to leaving site to avoid fauna entrapment.
			• TTC and subcontractors will be required to remove all waste, including food waste, prior to leaving each test location.
				Slight	Possible	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating

	Soil	Spread of dieback causing ecosystem decline.
		Contamination of soil from hydrocarbon or chemical spills.
			• When travelling off DBCA access roads or informal tracks into dieback free or uninterpretable areas all vehicles and heavy machinery will be brushed down first.
			• When crossing dieback boundaries in vegetated areas all vehicles and heavy machinery vehicles will be brushed down when moving from:
			  ○ Dieback infected to dieback free areas;
			  ○ Dieback infected to uninterpretable areas; and
			  ○ Uninterpretable to dieback free areas.
			• Refuelling of light vehicles will be undertaken offsite or at Alcoa's designated refuelling bay at Myara.
			• Refuelling of the drill rig will need to occur onsite. Diesel for the drill rig will be stored in double skinned containers on support vehicles. Spill mats will be laid underneath the refuelling point and a spill kit kept on the support vehicle.
			• All wastes, including drill cuttings, will be removed from site and disposed of appropriately.
				Slight	Unlikely	Low

	Streams and Groundwater	Contamination of surface water or groundwater. Erosion of soil from cleared ground resulting in turbidity in streams.	• Refuelling of light vehicles will be undertaken offsite or at Alcoa's designated refuelling bay at Myara. • Refuelling of the drill rig will need to occur onsite. Diesel for the drill rig will be stored in double skinned containers on support vehicles. Spill mats will be laid underneath the refuelling point and a spill kit kept on the support vehicle. • All wastes, including drill cuttings, will be removed from site and disposed of appropriately. • Test holes will be backfilled with excavated material or surrounding topsoil to existing ground level with leaf litter respread. No stockpiles will remain onsite.	Slight	Unlikely	Low
	Heritage sites	Disturbance to Aboriginal or historic heritage sites.	• Archaeological and ethnographic Aboriginal heritage and historic heritage surveys completed across the Myara North region. • Test locations have been located to avoid heritage sites by at least 50m. • Alcoa pre-start briefing to TTC and subcontractors on potential Aboriginal heritage and historic heritage artefacts and procedures to address if found. • If any potential artefacts are found work will cease until Alcoa's Aboriginal heritage specialist can inspect the site and determine appropriate action.	Slight	Unlikely	Low

Activity	Receptor	Potential Impact	Management Measures (Controls)	Residual Consequence	Residual Likelihood	Residual Risk Rating
Accessing groundwater monitoring bores for sampling and maintenance	Threatened/ priority flora species	Disturbance to individual plants of threatened or priority flora species. Decrease in threatened or priority flora populations as a result of bushfire started by equipment.	• Ongoing vehicle access to groundwater bores for sampling and maintenance will only be allowed on existing DBCA access roads. Bores which are not located on DBCA access roads must be reached by foot to minimise potential disturbance to threatened/priority flora species. • No work will occur on Total Fire Ban and/or Harvest and Vehicle Movement Ban days.	Slight	Unlikely	Low
	Threatened/ priority fauna species	Death/injury to conservation significant fauna species. Increased predation on native fauna by introduced fauna attracted by food waste.	• All vehicles and machinery to limit speeds to 40km/hr when driving within State Forest 22. • TTC and subcontractors will be required to remove all waste, including food waste, prior to leaving each test location.	Slight	Possible	Low

4 Responsibilities

4.1 Alcoa Construction Coordinator

The Alcoa Construction Coordinator is responsible for:

- Reviewing and approving the TTC Job Safety Analysis Form;
- Coordinating a pre-start briefing with TTC;
- Ensuring incidents are investigated and recorded within Alcoa's incident management system; and
- Advising the Alcoa Environmental Representative of any incidents which relate to non-compliance with this plan or other environmental or heritage incidents.

4.1.1 Alcoa Environmental Representative

The Alcoa Environmental Representative will be responsible for:

- Reviewing the environmental and heritage elements of the TTC JSA;
- Attending the pre-start briefing with TTC to ensure all personnel are aware of the requirements of this plan;
- Monitoring Alcoa and TTC compliance with this plan;
- Investigating incidents relating to non-compliance with this plan or other environmental or heritage incidents; and
- Liaising with the DBCA and Water Corporation regarding the commencement and completion dates of work and other issues which may arise.

4.1.2 TTC Project Manager

The TTC Project Manager is responsible for:

- Defining environmental policies and objectives for this investigation;
- Providing adequate resources, in terms of human, time and financial, to fulfil its environmental responsibilities and ensure compliance with the requirements of this plan;
- Liaising with the Alcoa Construction Manager and TTC Supervisor when managing environmental issues;
- Conducting inspections to ensure TTC and subcontractor compliance with this plan;
- Reviewing the environmental performance of the investigation.

4.1.3 TTC Contractor Responsible Person

The TTC Contractor Responsible Person will be in the field at all times and will be responsible for:

- Preparing a JSA for Alcoa approval prior to commencement of work;
- Attending the pre-start briefing with Alcoa;
- Ensuring TTC and subcontractor employees comply with the requirements of this plan; and
- Reporting any incidents to the Alcoa Construction Manager as soon as possible.

4.1.4 TTC and Subcontractor Employees

All TTC and subcontractor employees will be responsible for

- Complying with all requirements of this EMP; and
- Immediately reporting all environmental incidents, non-compliances and near misses to the TTC Contractor Responsible Person.

5 Monitoring

The Alcoa Environmental Representative will monitor Alcoa personnel and contractor compliance with the requirements of this management plan. Non-compliances will be recorded as incidents in accordance with Section 6 below.

6 Incident Management

All incidents, non-compliances with this plan or other relevant Alcoa procedures, or stakeholder complaints will be recorded as incidents and investigated as part of Alcoa's Environmental Incident Reporting Guidelines. Incidents relevant to the scope of this Environmental Management Plan (EMP) will be reported to DBCA.

7 Stakeholder Consultation

Alcoa has consulted with the following stakeholders regarding the geotechnical investigation:

- DWER;
- Water Corporation; and
- DBCA.

This management plan will be submitted to the DBCA for review and approval as part of the Section 101 CALM Act Licence application.

8 Review

This management plan will be reviewed and updated:

- On receipt of comments from the DBCA as part of the Section 101 CALM Act Licence application assessment;
- Should the scope of the geotechnical investigation change significantly; or
- In the event of an environmental incident during the course of the geotechnical investigation or groundwater monitoring.

9 References

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