Asset(s):

Mt Dimer

Subject:

SUPPORTING DOCUMENT FOR NATIVE VEGETATION CLEARING PERMIT APPLICATION - PURPOSE PERMIT – MT DIMER GOLD PROJECT M77/427 AND M77/428

For:

Aurumin Limited Internal Use / External Use

By:

Manager – Land and Environment

Justin Robins

Date:

13th April 2022

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1 Background

The Mt Dimer Gold Project (MDGP) is located in the Yilgarn Shire, approximately 420 kilometres northeast of Perth and 120 kilometres northeast of Southern Cross in Western Australia (Figure 1). MDGP is owned by Aurumin Mt Dimer Pty Ltd (AMDR), a wholly owned subsidiary of Aurumin Limited (Aurumin). AMDR is proposing to clear two areas to construct a:

- track and work area to gain access to the base of Karli West Waste Rock Dump and Karli West Open Pit Abandonment bunds to then undertake remedial earthworks to existing rehabilitation, including the installation of sediment capture structures (Area A), and
- a new access road to the operational Mt Dimer Airstrip thus removing airstrip vehicle traffic from traversing across mining areas (Area B).

The MDGP was actively mined using open pit and underground methods by various groups between the early 1990s until April 1997 and produced more than 123,000 ounces of gold. The processing plant was decommissioned in April 1997. Subsequently a low impact underground mining operation below one of the opencut pits was carried out between mid-2001 and early-2002. The mining campaign mined an estimated 5,000 tonnes. Since cessation of mining the project has been on care and maintenance.

In March 2021, an inspection by environmental officers of Department of Mine, Industry Regulation and Safety (DMIRS) noted the presence of erosion gullies on the external batters of the Karli West Waste Rock Dump and requested remedial action be taken to stabilise the erosion and prevent sediment from entering the surrounding environment. To complete this request native vegetation clearing is required to gain access and create cleared areas around the base of the waste rock dump to install sediment capture structures and remediate the erosion (Area A of application).

Additionally, access to the operational Mt Dimer Airstrip is via a road that runs through the mining area. A safety review highlighted that if mining recommenced in the area the interaction of airstrip traffic and mobile mining equipment poses a safety risk, therefore it is proposed to construct a new access road to the airstrip that does not traverse the mining areas (Area B of application).

The MDGP mining tenements relevant to this Native Vegetation Clearing Permit (NVCP) Purpose Permit Application Areas are Mining Leases 77/427 and 77/428 (Figure 1). All the tenements subject to this (NVCP) Purpose Permit Application (Application) are 100% owned by AMDR (Appendix A).

The NVCP application seeks approval to clear 3.5 ha across M77/427 and M77/428. It is proposed that 1.22 ha of clearing will be used for the airstrip road access and 2.28 ha for access tracks, sediment capture structures and topsoil stockpiles for the remedial work at the Karli West Waste Rock Dump. (Table 1). This clearing is within a total purpose permit area (note the purpose permit area is composed of two areas A and B) of 13.84 ha. The purpose permit areas are displayed in Figure 1 and 2.

A mining proposal for the proposed activities is yet to be lodged with the Department of Mines, Industry Regulation and Safety (DMIRS). The site is in a Schedule 1 Area pursuant to the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

The purpose of this document is to provide supporting information for the AMDR application. This document provides context and background information for the NVCP. Sections 2 to 4 cover details of the project, Sections 5 to 7 cover environmental information, Section 8 covers heritage and Section 9 addresses the 10 Clearing Principles.

The contact for any queries or further information for the Mt Dimer Gold Project NVCP application is:

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As required, an ESRI shapefile in GDA 1994 for the NVCP purpose permit areas has been provided.

The Index of Biodiversity Surveys for Assessment (IBSA) data packages for flora/vegetation (IBSA number IBSA-2022-0145) and fauna surveys (IBSA submission number IBSASUB-20220407-45BE83FD completed by Woodgis Environmental Assessment and Management (WG) and Bamford Consulting Ecologists (BC) have been lodged on the IBSA system.

Also provided is the following electronic information:

- Copy of this report and appendices A, B, C and D, and
- Purpose Permit application form (NV-F01).

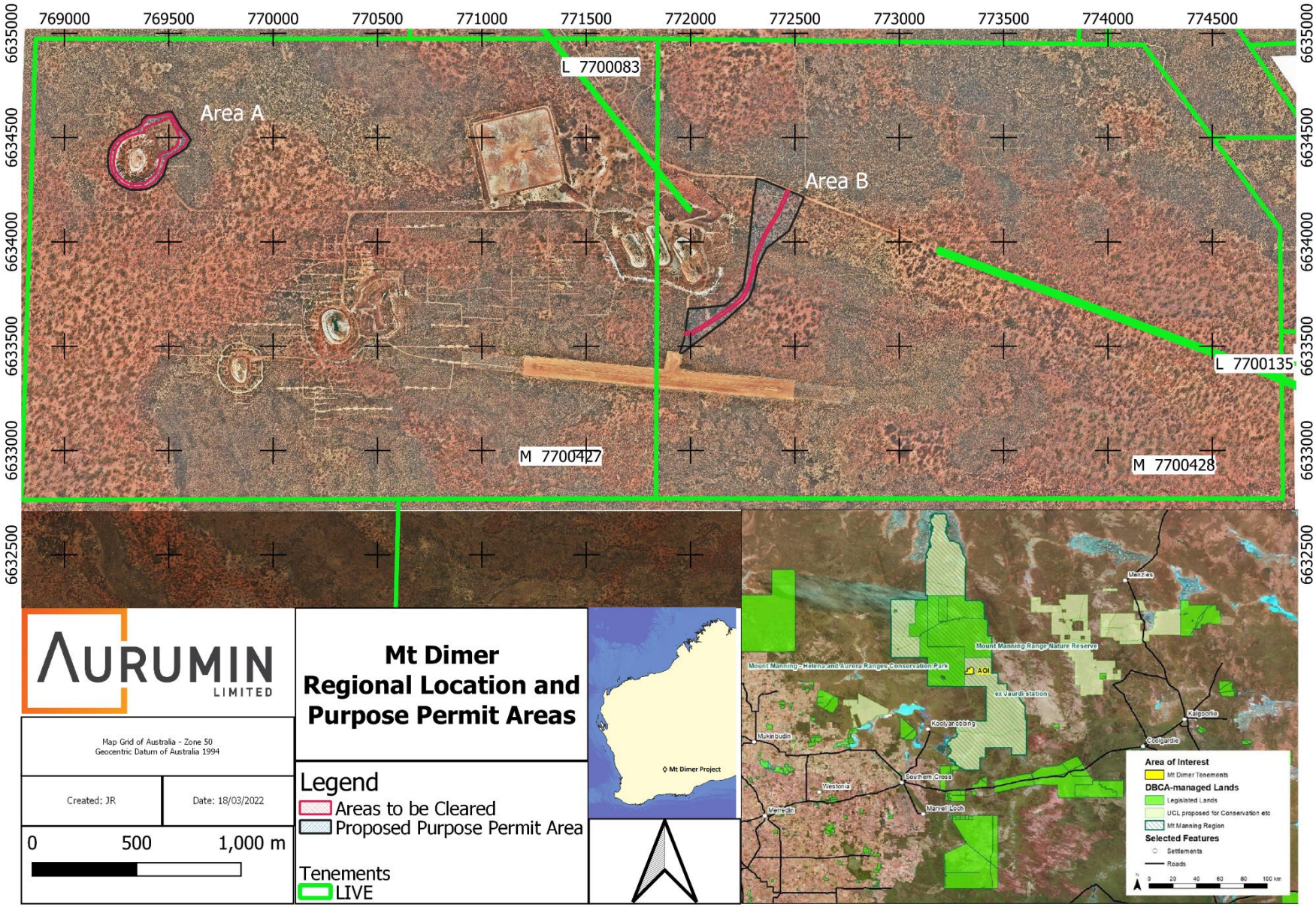

Figure 1: Proposed Purpose Permit Areas and Regional Location.

2 Clearing Permit Application and Support Information

The following information is provided in accordance with DMIRS's webpage located at (http://www.dmp.wa.gov.au/Environment/Information-required-to-assess-4944.aspx):

- Site overview, project tenure and background information.
- Summary and map of the proposed works to be carried out.
- Aerial photographs and site photographs of the area proposed to be cleared.
- Flora and vegetation surveys. Details include:
  - Mapping of vegetation types/associations/communities, their condition and their representation in a regional context. Photographs of each vegetation type to be cleared.
  - Threatened Flora and Priority Flora species present or likely to be present.
- A fauna assessment. Details include:
  - The fauna present, or likely to be present, and their conservation significance; and
  - An assessment of the significance of the vegetation and landform to be cleared as a habitat for fauna, including mapping of any significant fauna habitats.
- A hydrological summary, which includes discussion of the likelihood of impact from the clearing on riparian vegetation, wetlands, watercourses, surface water or groundwater.
- A vegetation degradation summary, which includes discussion of the likelihood of the spread of dieback disease and/or weeds.
- A land degradation summary that includes discussion of the likelihood of land degradation, including waterlogging, acidification, salinisation, deep subsoil compaction and erosion.
- An outline of environmental management measures and rehabilitation practices that will be undertaken du ring and subsequent to the completion of the project.
- A statement against each of the 10 Clearing Principles.

The majority of the above information is provided in Table 1. Detailed biological information is provided in Sections 5 to 7, heritage information in Section 8 and a statement against each of the 10 Clearing Principles in Section 9.

AMDR commissioned:

- Woodgis Environmental Assessment and Management (WG) to conduct several Flora and Vegetation Survey across the larger Mt Dimer Project (Appendix B),
- WG to write a document using the Flora and Vegetation Survey information from the above document to detail the flora and vegetation values in the proposed Clearing Areas A and B (Appendix C), and
- Bamford Consulting Ecologists (BC) to conduct a Fauna Assessment across Areas A and B (Appendix D).

The above flora reports are titled "Mount Dimer Vegetation and Priority Flora Update February 2022" (Woodgis 2022a) and "Mount Dimer Application of Selected Land Clearing Principles to Proposed Clearing February 2022" (Woodgis 2022b) respectively. The fauna report is titled "Mt Dimer Project

Assessment of Fauna Values". All three reports have been used to provide the biological information in this document.

The majority of information from Table 1 has been sourced from the above reports and from internal AMDR information sources.

Table 1 – Project and Environmental Information for the Mt Dimer Gold Project

Category	*Information*
GENERAL PROJECT, TENURE AND BACKGROUND INFORMATION	
Tenure information:	A land tenure search for the NVCP application area is provided in Section 4. Information is summarized below.
Tenements:	• M77/427 - commenced 30/03/1990, expires 29/03/2032. • M77/428 – commenced 30/03/1990, expires 29/03/2032.
Tenement holders:	Aurumin Mt Dimer Pty Ltd C/McMahon Mining Title Services Pty Ltd, PO Box 592, Maylands WA 6931
Proponent:	Aurumin Mt Dimer Pty Ltd (ABN 42 130 460 525/ACN 130 460 525)
Operator:	Aurumin Mt Dimer Pty Ltd (ABN 42 130 460 525/ACN 130 460 525)
Primary contact:	**Name:** Justin Robins **Company:** Aurumin Limited **Address:** Suite 2 Ground Floor, 17 Ord Street, Western Perth, WA, 6005 **Postal Address:** PO Box 466, Subiaco, WA 6904 **Phone:** 04 0673 8786 **Email:** justin.robins@aurumin.com.au
Other tenure:	• Groundwater Area 21 • Proposed 5(1)(H) Reserve for Conservation and Mining (PSH 34) managed by Department of Biodiversity, Conservation and Attractions (DBCA)
Shire:	Shire of Yilgarn
Conservation areas:	There are no National Parks or Nature Reserves intersecting the proposed permit areas. The closest Nature Reserve is the Mt Manning Conservation Park located approximately 480 metres west of proposed clearing Area A.
TECs/PECs:	There are no State and/or Commonwealth listed Threatened Ecological Communities ("TECs") or Priority Ecological Communities ("PECs") that are present. The closest PEC known as the "Finnerty Range/Mt Dimer/Yendilberin Hills Banded Ironstone Formation" is located approximately 3.3km from Area B. The clearing areas occur on sand plains and do not occur on a Band Ironstone Formation (BIF) that is the basis of PEC's in the area. The PEC classification of BIF ranges in the region is due to the presence of high biodiversity value, as a consequence of their unique geology, soils and relative isolation (DEC/DOIR 2007 cited in Woodgis 2020).
Schedule 1 or Environmental Sensitive Area:	The clearing areas are in a Schedule 1 Area pursuant to the Environmental Protection (Clearing of Native Vegetation) Regulations 2004. But are not located in an Environmental Sensitive Area (ESA).

Category	***Information***
IBRA region:	Under the Interim Biogeographic Regionalisation for Australia (IBRA) the project is placed within the Coolgardie (COO) IBRA region. The Coolgardie bioregion is divided into three subregions; Mardabilla (COO 01), Southern Cross (COO 02) and Eastern Goldfields (COO 03) (Thackway and Cresswell 1995). The proposal is in the Southern Cross subregion (COO 02). This subregion is characterised by: • subdued relief of gently undulating uplands dissected by broad valleys with bands of low greenstone hills, • valleys of duplex and gradational soils that contain chains of saline playa-lakes, and • upper levels in the landscape are the eroded remnants of a lateritic duricrust yielding yellow sandplains, gravelly sandplains and laterite breakaways. The vegetation is described as mallee, acacia thickets and shrub-heaths on sandplain, with dwarf shrublands of samphire adjacent to salt lakes, and surrounded by Eucalyptus woodlands. Further details are contained in Section 4.
EPBC Act Search:	A search was conducted for listings under the *Environmental Protection and Biodiversity Act 1999* (EPBC Act) using the Protected Matters Search Tool for the purpose permit areas (Area A and B) as part of both the flora/vegetation and fauna surveys. The EPBC Act search results are discussed in Section 5. There were: • No World Heritage Properties, National Heritage Places, Critical Habitats, Commonwealth Reserves, Other Commonwealth Reserves and Regional Forest Agreements intersect the proposed areas; • No EPBCA listed TECs; and • No Nationally important wetlands (Ramsar Sites); There were EPBCA listings for: • Two State or Territory Reserves • Ten Threatened Species (five fauna and five flora species); • Six Migratory Species (all fauna species); and • Nine Marine Species. The ten Threatened Species were assessed the: • five threatened flora species were not identified in the area and are highly unlikely to be in the area due to the local habitat not being suitable (i.e. granitic and Band Iron Formation outcrops do not occur in the area) (Section 5), and • of the five threatened fauna species that may occur in the area, only one the Malleefowl was identified as potentially occurring. A fauna survey over Area A and B did not identify any breeding mounds or activity and an impact assessment concluded that the impact would be minimal to this species. Section 5 and Appendix D.

Category	*Information*
	The overall assessment was that the proposed clearing was considered unlikely to impact on the conservation status of the above Threatened Fauna and Flora Species. The six Migratory Species were assessed in Section 5 in relation to their likely occurrence in the NVCP application area and potential impacts from the proposed clearing. The overall assessment was that the proposed clearing was considered unlikely to impact on the conservation status of these Migratory Species as the area did not provide suitable habitat due to the lack of permanent water or wetlands. The Marine Species included five of the Migratory Species and an additional four species. These species were assessed in Section 5 and Appendix D in relation to likely occurrence in the NVCP application area and potential impacts from the proposed clearing. The overall assessment was that the proposed clearing was considered unlikely to impact on the conservation status of these Marine Species. The search recorded two State and Territory Reserve with 25km of the project. The reserves are known as the Mount Manning – Helena and Aurora Ranges and Mount Manning Range, neither of these reserves intersect Area A or B of the NVCP.
Previous mining disturbance:	Mining at the MDGP occurred from early 1990's until 2002. In the proposed areas (A and B), previous disturbance has been associated with exploration drilling. In addition, at Area A (Karli West mining area) clearing associated with the establishment of the existing Waste Rock Dump and Opencut pit abandonment bund has also occurred.
Aboriginal heritage:	Aboriginal heritage is discussed in Section 8. A due diligence assessment was undertaken in 2019 across the greater project area on which the proposal is located. No Aboriginal heritage sites were identified within the application areas.
European heritage:	A search was conducted using the Heritage Council of Western Australia's Places Database for the Shire of Yilgarn. No places of European heritage significance are listed for the proposal or in the general vicinity. European heritage is discussed in Section 8.
Land use and community:	The entirety of the Mt Dimer tenements M77/427 and M77/428 are located on lands managed by DBCA. Over the specific purpose permit clearing areas is a proposed 5(1)(H) Reserve to be managed for the purposes of Conservation and Mining (Reserve number P5H 34). There are no adverse social or community impacts associated with the clearing proposal as the closest settlement is Koolyanobbing, approximately 55 kms to the southwest of the project.
DESCRIPTION OF THE PROPOSED WORKS	

Category	***Information***
Waste Rock Dump Remediation and Access Road to Airstrip	Area A will comprise clearing around the perimeter of the Karli West open pit abandonment bund and the Karli West Waste Rock Dump. The clearing will provide: • access, • locations to stockpile topsoil, • working zones to complete remedial actions to prevent erosion, and • allow for the installation of sediment capture structures. Remedial work and sediment capture structures will be constructed from inert mine waste on site and/or from material located within the footprint of the proposed clearing. Area B. will have a conventional gravel road constructed on grade. The road will be within a 12 metre wide corridor. The corridor will include an eight metre wide running surface for the road and 2 metre wide zones on either side of the road for drainage. Gravel for construction of the road surface will be sourced from inert mine waste.
Processing:	No mineral processing will occur under this application.
Power:	No changes to power generation will be required as the site is on care and maintenance and uses mobile gensets when required.
Water:	To manage dust, water will be extracted and used under the existing Groundwater Licence GWL201297 that has an allocation of 470,000 kilolitres per annum.
Rehabilitation Topsoil:	Across the area of native vegetation clearing, topsoil is to be salvaged up to a depth of 200mm and stockpiled for future rehabilitation. Topsoil stockpiling will occur within the clearing footprint and away from low lying areas to avoid surface water erosion. In addition, vegetation removed during clearing will be stockpile separately and will be respread with topsoil once areas are no longer required.
Tailings:	The area of clearing will not be used for tailings management.
Prescribed Premise Licence (DWER):	The site does not currently have a Prescribed Premise Licence. This proposal does not require a Licence or associated Works Approval.
NVCP permit type:	Purpose Permit
Total area of purpose permit:	13.84 ha (Refer Figure 1 and 3)
Clearing area applied for:	3.5 ha (Refer Figure 1 and 3)
AERIAL PHOTOGRAPHS AND SITE PHOTOGRAPHS OF THE AREA PROPOSED TO BE CLEARED	

Category	***Information***
Aerial photo:	Figure 1 and 3
Site photos:	Plates 1 to 4.
FLORA AND VEGETATION SURVEY	
Flora survey:	The proposed purpose permit envelope of 13.84 hectares occurs in the larger Mt Dimer project area of 2773 hectares that has had six flora surveys conducted across it. The surveys have included: • 99 quadrants and 24 relevés that have sampled all landforms and geological units at a density of one quadrant/relevé per 22.5 hectares. • Targeted flora searches over several areas that covered 459 hectares. Within these areas traverses at 20-25 metre spacing were undertaken. It is estimated 100% of perennial plant taxa and 74% of annual plant taxa present were recorded (Woodgis 2022a). The above information is presented in the document titled "Mount Dimer Vegetation and Priority Flora Update February 2022" (Woodgis 2022a: Appendix B). To summarized, the flora information pertinent to the clearing of native vegetation at the two proposed areas (Area A and B) a second flora document titled "Mount Dimer Application of Selected Land Clearing Principles to Proposed Clearing February 2022" (Woodgis 2022b: Appendix C) was produced. Surveying was conducted in accordance with the Environmental Protection Authority's ("EPAs") *Environmental Factor Guideline – Flora and Vegetation and Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment, 2016.*
	The objective of the flora surveys were to identify the distribution of priority species and map vegetation units across the Mt Dimer area that covers 2773 hectares (Figure 2). The proposed purpose permit areas within this application only covers 13.84 Hectares of which 3.5 hectares will be cleared. The six surveys completed across the Mt Dimer project have covered all of the landforms and geology units via 99 quadrats and 24 relevés. All quadrats and relevés were: • 20 m x 20 m in size; • permanently marked in the field; • a photograph taken in the northwest corner; and • a GPS location recorded in the northwest corner. Sampling intensity was one site per 22.5 ha. In addition, 459 hectares were searched via a targeted priority flora search. The large vegetation survey area surrounding and including the proposed purpose permit areas are presented in Figure 2 and 3. A total of 281 plant taxa were recorded within the broader area. Six major vegetation types were recorded across the larger Mt Dimer project with

Category	*Information*
	only four of these vegetation types occurring in the proposed areas of clearing. Most vegetation outside of mining areas were in very good to excellent condition (Woodgis 2022a). In the purpose permit area that encompasses the clearing footprints, no Threatened or Priority Ecological Communities were identified. Also, all vegetation types/communities are not restricted or extensively cleared and are well represented in the Southern Cross subregion (Woodgis 2022b). There were no Threatened Flora recorded within the proposed purpose permit area. In Area A, three Priority species were identified these species were Neurachne annularis (Priority 3), Eucalyptus Formanii (Priority 4) and Grevillea erectiloba (Priority 3). Within Area B, 10 Priority species could occur, however due to the small area of the proposed clearing the vegetation habitats of the priority species to be disturbed are small in comparison to the habitat extents identified in the broader Mt Dimer project area (Woodgis 2022b). Six introduced flora species were recorded over the broader Mt Dimer area. No Declared Weeds, as listed by the Department Primary Industries and Regional Development, were recorded (Woodgis 2022a). Further details are presented in Section 6.
Summary:	The proposed purpose permit area: • Does not intersect any Threatened Ecological Communities or Priority Ecological Communities. • Occurs in state-wide system associations that are not restricted or extensively cleared. • Does not have vegetation types that are restricted. • Has landforms that do not have an elevated likelihood of supporting restricted vegetation of flora (i.e. are Banded Iron Formations, granite outcrops, riparian vegetation or permanent water). • No threatened flora are present. Of the Priority taxa that could occur in the purpose permit envelopes (i.e. three Priority Species in Area A) and (i.e. 10 Priority Species in Area B) the 3.5 hectares of clearing will result in the clearing of between 0.2% to 1.1% of the known habit (dependent on the Priority species) within the Mt Dimer Area. In the case of Area A the number of priority species that could be disturbed represents only 0.0005% to 0.3% of the known individual populations. Based on the known priority taxa populations and distribution in the surrounding Mt Dimer region (approximately 2773 hectares) it is considered that the removal of a small number of Priority Species are unlikely to effect the integrity of the species at a regional level. A more detailed summary of the flora and vegetation survey conducted by Woodgis is provided is Section 6.
FAUNA ASSESSMENT	

Category	***Information***
Fauna assessment:	Bamford Consulting conducted a vertebrate fauna survey that included findings from previous fauna assessment in the area (Appendix D). The survey was completed in accordance with the EPA's "*Technical Guidance Terrestrial Fauna Surveys, December 2016"* and *Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment.* Environmental Protection Authority, Perth, Western Australia 2020. The objectives of the fauna survey were to: • Conduct a literature review and searches of Commonwealth and State fauna databases; • Review the list of fauna expected to occur on the site in the light of fauna habitats present, with a focus on investigating the likelihood of significant species being present; • Identify significant or fragile fauna habitats within the project area; • Identify any ecological processes in the project area upon which fauna may depend; • Identify general patterns of biodiversity within or adjacent to the project area; and • Identify potential impacts upon fauna and propose recommendations to minimise impacts, including an assessment against relevant NVCP principles and Guidance 1.2 of the Department for Agriculture, Water and the Environment (DAWE). Four broad fauna "vegetation and substrate associations" (VSAs) were identified across the site. VSAs are a combination of vegetation types, the soils or other substrate with which they are associated, and the landform that provide habitats for fauna. The sites are generally flat. The fauna VSAs vary from disturbed areas to Eucalypt woodlands; the more degraded areas are due to historical and recent exploration activity and, rehabilitation. In combination with the findings of previous work in the area, forty three species of fauna including thirty six birds, two reptiles and five mammals were recorded. No conservation listed fauna (threatened) were recorded in the study area. No Malleefowl mounds or activity was observed in the purpose permit envelope. During the survey the Priority 4 Tree-Stem Trapdoor Spider (*Idiosoma castellum)* was identified to occur in the area. Signs were noted of rabbits (scats), cats (tracks) and camels (tracks) in the area.
Summary:	A single Priority 4 Species, the Tree-Stem Trapdoor Spider *Idiosoma castellum* was recorded in both Area A and B. Regionally, the proposal is unlikely to affect the integrity of the species as the Tree-stem Trapdoor Spider occurs in the southern mid-west, northern and central wheatbelt and south-western goldfields regions of Western Australia. More detail on the fauna survey conducted by Bamford Consulting is provided is Section 7.

Category	*Information*
SITE OVERVIEW, WITH A BRIEF DESCRIPTION OF GEOLOGY, LANDFORMS, SOILS AND HYDROLOGY	
Geology:	Regionally the MDGP lies within the southern area of the Marda-Diemals Greenstone Belt within the Southern Cross Geological Domain (SCD) of the Yilgarn Craton. The SCD consists of multiple greenstone belts that are bounded by granites. The Marda-Diemals Greenstone Belt is found in the central area of the SCD and occurs as a sigmoidal shape over a strike length of approximately 200km. The following description of Marda-Diemals Greenstone Belt is from Chen and Wyche (2003). They identified two greenstone sequences: the lower succession consisting of mafic volcanic rocks and banded iron formation (BIF), and an upper succession consisting of felsic to intermediate volcanic rocks. The lower succession has three lithostratigraphic associations: • the lower association that is predominantly tholeiitic basalt with subordinate ultramafic and high-Mg basalt, • the middle association that consists of BIF and chert with quartzite to a lesser extent, and • the upper association that consists predominantly of basalt with lesser horizons of siltstone, shale, and mafic tuff. The upper succession, also known as the Marda Complex, lies unconformably above the lower succession. The Marda Complex consists of conglomerate, sandstone and siltstone units, and is conformably overlain by rhyolite and andesite. Granitoid rocks occur predominantly as monzogranite between the greenstone belts. The majority of the granitoid rocks are younger than the greenstones. Locally the MDGP is predominantly under cover with transported material and laterite obscuring the bedrock units. The depth of weathering varies within the project from shallow (<20m), to deeper (80m) zones where kaolin has formed. There are limited exposures of mafic and granitic units throughout the project. Geological interpretation of the project area by Chen and Wyche (2003) shows a granodiorite unit occurs in the southern section while metabasalt from the lower succession is found in the northern section. The contact between the granodiorite and the lower succession is not sharply defined instead, is broad and consists of a mixture of mafic-ultramafic rocks and granodiorites. Within the broader project area, late stage cross-cutting mafic dykes, generally trending in an east-west direction along geological structures, have been identified from magnetics.
Landforms:	Locally, the topography has minor relief with broad areas of sheet flow transected by poorly defined creeklines. Soils are mainly reddish-loamy earths with some occurrences of laterite on the surface. Various levels of land disturbance occur with the area through mining activities, as well as current impacts from feral animals including rabbits and camels.

Category	***Information***
Soils:	Regionally, soil characteristics in the area vary with the position in the landscape. Upper levels in the landscape are the eroded remnants of a lateritic duricrust yielding yellow sandplains, gravelly sandplains and laterite breakaways (Cowan et al, 2001). Low lying areas are characterised by quaternary duplex and gradational soils, including red loamy earths with red-brown hardpan, some red sandy earths, red shallow loams and loamy gravels. At the MDGP soils are characterised as red loamy earths (with or without some red sand or gravel or red loamy duplexes) usually massive in structure and hard setting (Schoknecht and Pathan, 2013).
Hydrology/Hydrogeology	No permanent surface water features or Groundwater Dependent Ecosystems were observed within the NVCP application area (Rockwater 1996). Surface water in the form of sheet wash flows across the areas. The clearing will occur in the headwaters of two separate surface water catchments as a drainage divide exists between the two areas. The Karli West area (Area A) ultimately drains to the south south-east while the access road area (Area B) drains to the south south-west, both catchments drain into hypersaline playa (or salt lake) systems located approximately 56 km to the south of the site. Sediments composed of lateritic gravels or sands can conduct shallow subsurface water flow, however these systems are short lived, ephemeral and do not form part of a larger palaeochannel system. Groundwater levels at MDGP are reported to range from 50 to 65 metres below ground level (Rockwater 1996). Aquifer systems in the vicinity of MDGP generally occur within fractured rock settings in a range for geological units and do not represent groundwater resources of note.
A SUMMARY AND/OR MAP OF THE PROPOSED DEVELOPMENTS ON THE SITE	
Proposed developments:	Airstrip access road and the clearing area for remediation of sediment erosion within Karli West Mining Area (includes erosion from waste rock dump and abandonment bunds).
Map:	An indicative site layout plan is provided in Figure 1 and 3.
Workforce:	During construction activities, contractors will be mobilized to site. These additional personnel can be accommodated within existing accommodation facilities located adjacent to MDGP. No changes to the workforce will be required for the proposal.
HYDROLOGICAL SUMMARY, WHICH INCLUDES DISCUSSION OF THE LIKELIHOOD OF IMPACT FROM THE CLEARING ON RIPARIAN VEGETATION, WETLANDS, WATERCOURSES, SURFACE WATER OR GROUNDWATER	
Hydrological summary:	The proposal is contained within the Goldfields Groundwater Area 21 proclaimed under the *Rights in Water and Irrigation 1914*. There are no water reserves near the application area.

Category	*Information*
	The areas of clearing are characterized by flat sand plains of low relief, therefore only small poorly defined ephemeral drainage lines are present in the area with the major surface water movement by sheet flow. To cross these small drainage lines and prevent sheet flow ponding upstream of the access road and activities will be constructed on grade (i.e. not raised above the land surface). Groundwater in the area is typically recorded at depths ranging from 50 to 65 metres below ground level. The physical water quality characteristics recorded from site bores have a neutral pH of 7.0 with salinity of 31,000mg/L total dissolved solids (TDS) (Rockwater 1996).
Hydrological Impact:	Hydrological impacts are expected to be localised as the clearing areas are small. The access road and clearing associated with rehabilitation remediation has the potential to reduce localised surface water infiltration. As the areas will be 3.5ha in size the reduced infiltration will be minimal. Upstream ponding of water against the proposed airstrip access road and remediation area will be minimal as the areas occur high in their respective catchments with small upstream catchments being present. Also, these catchments have been reduced further in size from previous mining activities. Project water table levels are between 50 to 65 metres below the natural ground surface, the proposed activities will not intersect the water table thus there will be no groundwater impacts. The nature of the proposed activity will have negligible impacts on surface and groundwater hydrological.
VEGETATION DEGRADATION SUMMARY, WHICH INCLUDES DISCUSSION OF THE LIKELIHOOD OF THE SPREAD OF DIEBACK DISEASE AND/OR WEEDS	
Degradation:	At MDGP, dependent on the level of historical mining disturbance, rehabilitation and feral animal activity determines the vegetation condition. In areas of least rehabilitation and greatest activities, degradation is the highest. For the proposal, there is some potential to exacerbate land degradation, although only minor and over a relatively small area. It is considered the clearing of vegetation for an access road and to remediate erosion around the Karli West Waste Rock Dump is unlikely to cause appreciable land degradation as: • clearing will be progressive, • once cleared the surfaces will become self-armed, and • progressive rehabilitation will be implemented when areas are no longer required. Further details on the measures to prevent land degradation are presented in Section 9

Category	***Information***
Disease and weed spread:	Six introduced species were recorded during the flora survey of the area. No Declared Plants pursuant to *Biosecurity and Agriculture Management Act 2007* were recorded. There is no recorded occurrence of dieback disease in the area. Therefore, no specific measures outside those normally implemented for the control of weeds and weed hygiene across site will be required. This includes: • minimising disturbed areas and rehabilitating areas of disturbance to avoid colonisation by weed species; and • ensuring that no weed-affected materials are brought into the area to be cleared.
LAND DEGRADATION SUMMARY, WHICH INCLUDES DISCUSSION OF THE LIKELIHOOD OF LAND DEGRADATION, INCLUDING WATERLOGGING, ACIDIFICATION, SALINISATION, DEEP SUBSOIL COMPACTION AND EROSION	
Land degradation:	Disturbance will be contained to the access road and around the Karli West Waste Rock Dump and Opencut Pit. The total area will cover 3.5 ha. The clearing around Karli West Waste Rock Dump and Opencut Pit is to provide access to remediate erosion within existing rehabilitation thus reducing current land degradation. It is intended that at closure, the areas will be revegetated using only locally occurring native species to achieve a sustaining ecosystem similar to that occurring in the surrounding environs. The aim is to reinstate biological diversity into the areas. This will be achieved by regrowing a healthy vegetation community on the rehabilitated areas using natural regrowth. If required, seeding will be undertaken using locally collected seed to increase the species diversity.
Waterlogging:	No wetlands occur within the clearing areas. No well-defined creek lines intersect the proposed clearing areas. To avoid potential impedance of sheet flow and the upstream ponding of water during times of flooding, the road to the airstrip will remain on grade to allow water to pass over the road surface. While the work around the Karli West mining area doesn't intersect any well-defined creeklines and adjoins the existing waste rock dump and abandonment bund that reduces the onflow of water. From a sub-surface perspective, the roads, clearing and sediment capture structures at Area A and B are surficial features that will not intersect groundwater as the water table is 50 – 65 metres below the natural ground level.
Acidification:	The MDGP is in a semi-arid environment that is devoid of soils that have undergone long term water logging leading to the formation of soils prone to soil acidification.
Salinisation	Due to the depth to groundwater (typically 50 – 65 metres) there is a low risk of salinisation.

Category	***Information***
Deep subsoil compaction:	Deep soil compaction will occur in areas of heavy vehicle traffic and mobile plant operations during development works. For the access roads, tracks and cleared areas compaction will be broken up during rehabilitation activities through deep ripping with a bulldozer.
Erosion:	Erosion will be contained within the clearing footprint and controlled as part of operations with the use of bunds and placement of material. Also, where practicable the area will progressively cleared. The cleared areas will be designed to be erosion-resistant with stable and rehabilitated surfaces at closure, based on the nature of material disturbed.
AN OUTLINE OF ENVIRONMENTAL MANAGEMENT MEASURES AND REHABILITATION PRACTICES THAT WILL BE UNDERTAKEN DURING AND SUBSEQUENT TO THE COMPLETION OF THE PROJECT. EXISTING MANAGEMENT PLANS AND MINING PROPOSALS SHOULD BE SUBMITTED, IF THEY ARE RELEVANT TO THE CLEARING PROPOSAL.	
Rehabilitation:	AMDR is committed to the rehabilitation of the area in which it operates in, either at the end of mine life or progressively where practicable. Currently, besides the airstrip, access roads, ROM and other small laydown areas, and capping of the historic Tailings Storage Facility, the disturbed areas from past Mt Dimer mining operations are generally considered to be rehabilitated. For the proposed sediment capture structures, tracks and access road. The sediment capture structures will be retained for the capture of sediment during closure. The road and tracks if no longer required for monitoring will be contoured back to grade to re-instate natural hydrology as far as practicable, ensuring surface water flow is not impeded. Once contoured topsoil previously recovered during clearing will be applied and ripping to improve water infiltration will be completed. This will result in the final surfaces developing a resistance to erosive forces. Regular monitoring will involve assessment of rehabilitation progress, such as the cover and assemblage of vegetation, degree of erosion, and presence of weed species. Rehabilitation will continue to be monitored until completion criteria are met so that the mining tenements can be relinquished, to ensure the ecosystem is resilient, self-sustaining and does not require further management intervention.
Rehabilitation end point:	Achievement of a stable natural ecosystem approximate or similar to that occurring locally is the proposed rehabilitation endpoint.
Post-mining land use:	The MDGP is located within the Unallocated Crown Land (ex-Jaurdi pastoral lease) proposed to be a 5(1)(H) Reserve managed for the purposes of Conservation and Mining. As the entirety of the MDGP tenements are located on lands managed for conservation by the Department of Biodiversity, Conservation and Attractions (DBCA), the DBCA is a key stakeholder The proposed post-mining land use, is to reinstate the pre-

Category	*Information*
	mining land use. This involves the return of all disturbed areas (except the open pit voids) to native bushland being: • physically and geochemically safe to humans and animals (i.e. safe, stable and non-polluting), • hydrological patterns/flows not being adversely affected, and • the vegetation in rehabilitated areas having self-sustaining and resilient revegetation that is representative of the surrounding vegetation types.
Regional infrastructure:	AMDR will utilise existing regional roads for the transport of personnel and materials to site.
COPIES OF ANY CORRESPONDENCE WITH DBCA OR OTHER GOVERNMENT AGENCIES REGARDING THE PROPOSAL	
DWER (Licencing):	The clearing is not associated with activities that fall under the categories outlined in Schedule 1 of the Environmental Protection Regulations 1987 as such a Works Approval and a Prescribed Premise Licence are not required.
DMIRS:	DMIRS was contacted via telephone (with follow up email) to discuss whether a purpose permit could have two spatially separate areas that clearing could occur in. It was confirmed the purpose permit area could be composed to two separate areas.
DWER (water):	Water required for the project will be sourced from an existing water allocation for the groundwater licence GWL 201297.
A STATEMENT AGAINST EACH OF THE 10 CLEARING PRINCIPLES	
An assessment of the likely impact of the proposed clearing activities associated with the development of the airstrip access road and clearing around the Karli West Waste Rock Dump area have been made against the 10 Clearing Principles. The assessment is provided in Section 9. The proposed clearing was assessed as being in accordance with all 10 Clearing Principles. In addition, further details of environmental management measures are contained in this Section.	

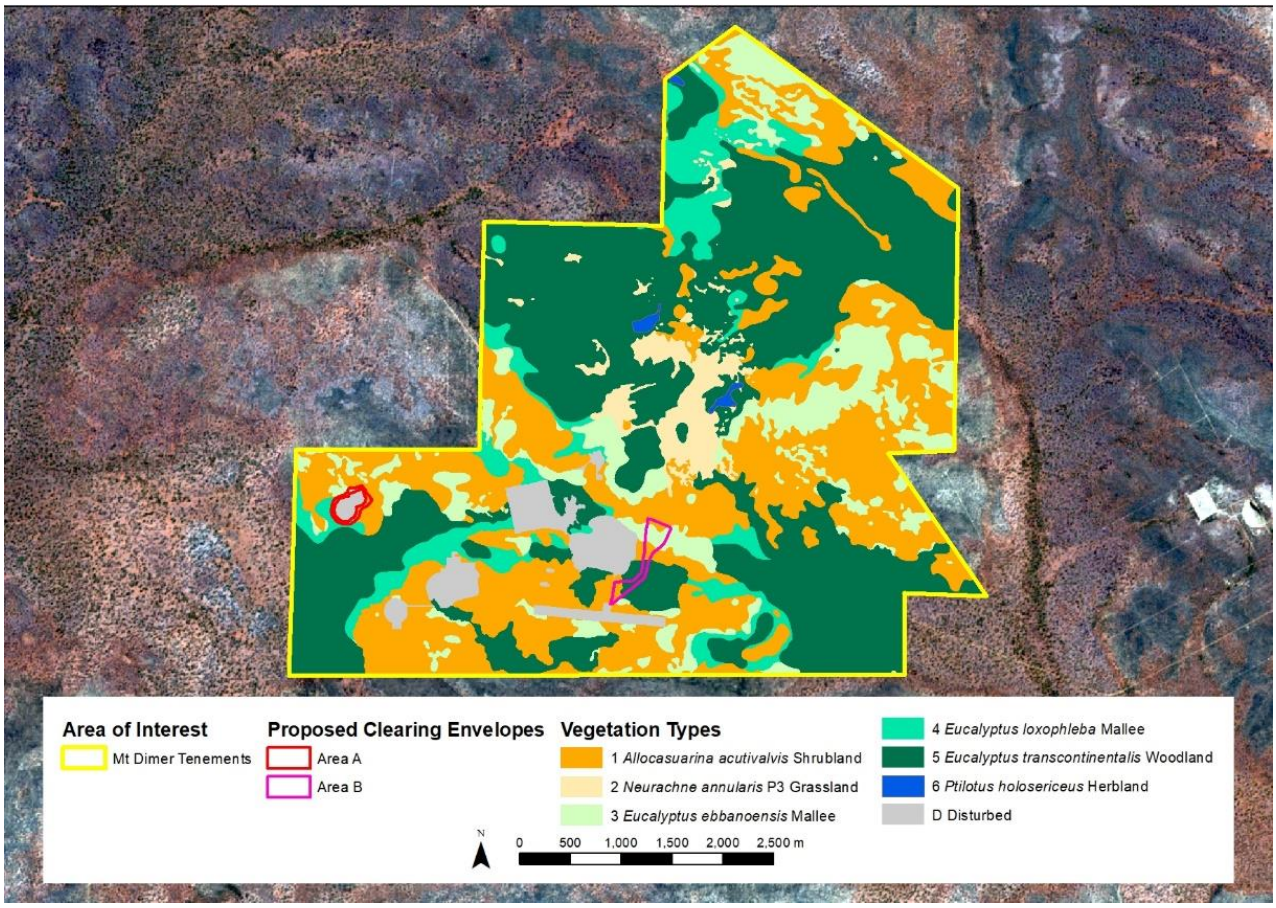

Figure 2: Proposed Purpose Permit Envelopes within Larger Mt Dimer Surveyed Project Area

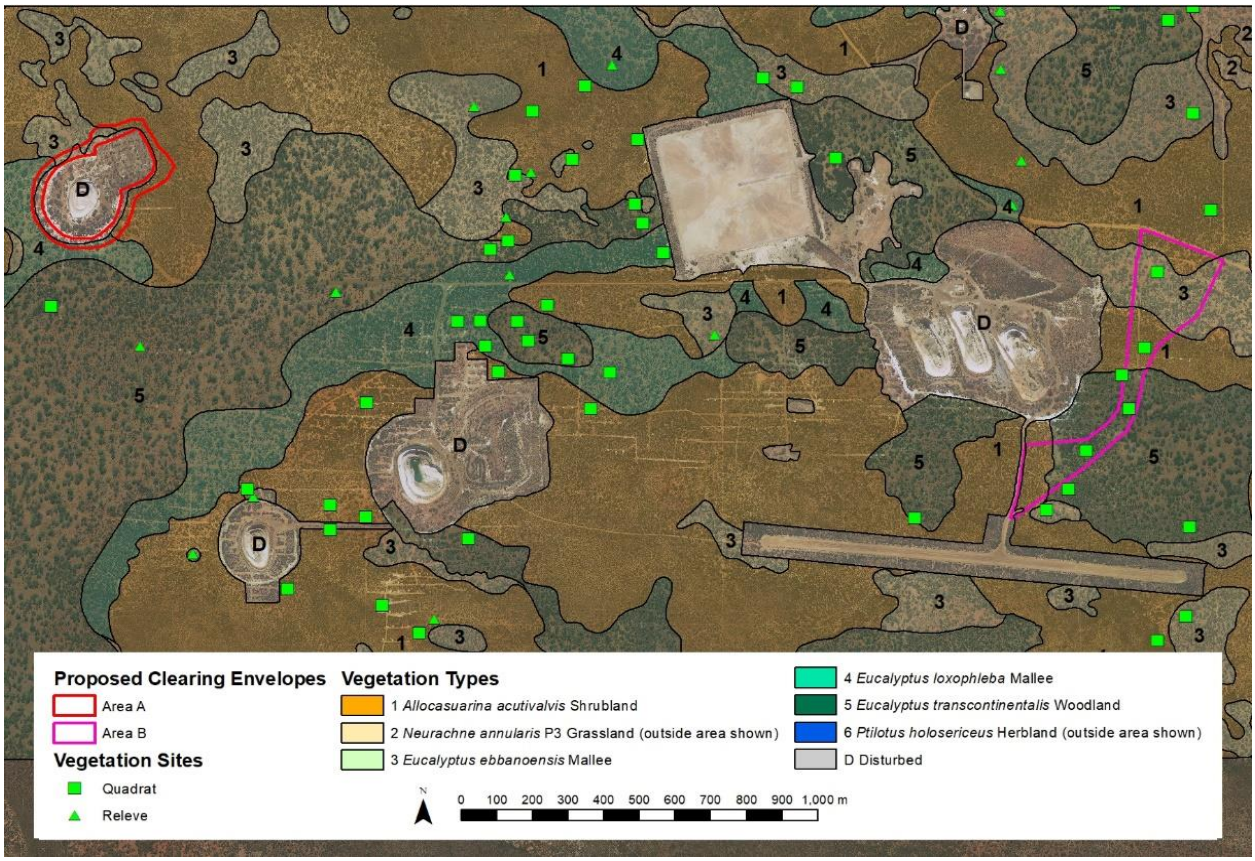

Figure 3: Distribution of Vegetation Types in the Purpose Permit Envelopes.

2.1 Area Required for Clearing

The MDGP NVCP application is for a purpose permit. The NVCP application seeks approval to clear a total area 3.5 ha from a total purpose permit area of 13.84 ha across mining lease 77/427 and 77/428. Excluding the very minor drainage lines, the disturbance will not intersect any defined drainage lines.

Under the total purpose permit areas, there are two disturbance zones, these being the:

- Area for Karli West Rock Dump Rehabilitation (Area A) – this area is around the perimeter of the Karli West open pit abandonment bund and the Karli West Waste Rock Dump landform. Activities in the area will include access tracks, sediment capture sumps, sediment bunds, rock armouring and topsoil storage. The area of clearing is 2.28 ha.
- Access Road to the Airstrip (Area B) – a 12 metre wide road corridor from the main Mt Dimer access road to the existing Mt Dimer Airstrip. Aside from the road there will be drainage structures (i.e. spoon drains) and topsoil stockpiles within the 12 metre wide corridor The total area of clearing will be 1.22 ha.

The proposed activities are presented in Figure 1 and 3. The proposed areas of clearing under this NVCP application are provided in Table 2.

Table 2: Indicative Areas of Clearing Associated with this NVCP Application

PROPOSED AREAS OF CLEARING	M77/427 (hectares)	M77/428 (hectares)
Airstrip Access Road (Area B)	0	1.22
West Karli West Waste Rock Dump Remediation (Area A). Including: • Access tracks, • Sediment capture and bunding structures, and • Topsoil stockpiles.	2.28	0
Total per tenement (Hectares)	2.28	1.22

3 Site Photographs

Six vegetation types have been identified within the broader Mt Dimer area, however only four of these vegetation types occur in the application areas (A and B) (Woodgis 2022b). The four vegetation types (i.e. Vegetation Type 1, 3, 4 and 5) are displayed in Plates 1 to 4 with the vegetation species compositions provided after the image. Also provided in Figure 3 is the extent of these vegetation types within the application area

Vegetation Type 1 – Acacia *acutivalvis* shrublands over *Amphipogon* tussock grasses.

Plate 1: *Acacia acutivalvis* shrublands over *Amphipogon* tussock grasses.

Indicator Species for Vegetation Type 1 (≥95% probability)
Acacia resinimarginea
Acacia sibina
Allocasuarina acutivalvis subsp. acutivalvis
Amphipogon caricinus
Baeckea elderiana
Cheiranthera filifolia
Euryomyrtus maidenii
Grevillea paradoxa
Hibbertia eatoniae
Leptospermum fastigiatum
Leucopogon sp. Clyde Hill (M.A. Burgman 1207)
Persoonia coriacea
Phebalium canaliculatum
Thryptomene urceolaris

Typical Species for Vegetation Type 1 (≥75% of quadrats, indicators in bold)
Amphipogon caricinus

Common Species for Vegetation Type 1 (≥50% of quadrats, indicators in bold)
Acacia acuminata
Acacia sibina
Allocasuarina acutivalvis subsp. acutivalvis
Baeckea elderiana
Grevillea zygoloba
Hibbertia eatoniae
Leucopogon sp. Clyde Hill (M.A. Burgman 1207)
Phebalium canaliculatum

Indicator Species for Vegetation Type 1 Variants

1A *Acacia sibina - Baeckea elderiana*
Acacia sibina
Amphipogon caricinus
Baeckea elderiana
Goodenia havilandii
Hibbertia eatoniae
Persoonia coriacea

1B *Melaleuca leiocarpa*
Austrostipa eremophila
Comesperma integerrimum
Leucopogon sp. Clyde Hill (M.A. Burgman 1207)
Melaleuca leiocarpa
Philotheca brucei subsp. brucei

1C *Eucalyptus formanii* P4 - *Phebalium canaliculatum*
Callitris columellaris
Calocephalus multiflorus
Cheiranthera filifolia
Eucalyptus formanii P4
Euryomyrtus maidenii
Grevillea erectiloba P4
Homalocalyx thryptomenoides
Phebalium canaliculatum
Thryptomene urceolaris

Vegetation Type 3 – *Eucalyptus ebbanoensis* mallees over *Triodia scariosa/tomentosa* hummock grasses.

Plate 2: *Eucalyptus ebbanoensis* mallees over *Triodia scariosa/tomentosa* hummock grasses.

Indicator Species for Vegetation Type 3
(≥95% probability)
Eremophila caperata
Eucalyptus ebbanoensis subsp. ebbanoensis
Olearia exiguifolia
Phebalium filifolium
Phebalium tuberculosum
Triodia scariosa/tomentosa
Westringia cephalantha var. cephalantha

Indicator Species for Vegetation Type 3 Variants
3A Variant
Olearia exiguifolia
Triodia scariosa

3B Variant
Eucalyptus ebbanoensis subsp. *ebbanoensis*
Phebalium filifolium

Typical Species for Vegetation Type
(≥75% of quadrats, indicators in bold)
Alyxia buxifolia
Olearia muelleri
Triodia scariosa/tomentosa
Westringia cephalantha var. cephalantha

Common Species for Vegetation Type
(≥50% of quadrats, indicators in bold)
Acacia acuminata
Acacia hemiteles
Eremophila caperata
Olearia exiguifolia
Phebalium tuberculosum
Scaevola spinescens

Vegetation Type 4 - *Eucalyptus loxophleba* mallees over *Austrostipa elegantissima* tussock grasses.

No Ground Photo

Plate 3: *Eucalyptus loxophleba* mallees over *Austrostipa elegantissima* tussock grasses.

Indicator Species for Vegetation Type 4 (≥95% probability)
Acacia acuminata
Acacia tetragonophylla
Eremophila decipiens subsp. decipiens
Eremophila granitica
Eucalyptus loxophleba subsp. lissophloia
Goodenia havilandii
Olearia pimeleoides
Prostanthera grylloana
Pterostylis tryphera
Solanum nummularium

Indicator Species for Vegetation Type 4 Variants
4A *Eremophila granitica*
Eremophila granitica
Olearia pimeleoides
Austrostipa platychaeta
Pterostylis tryphera

4B *Acacia tetragonophylla-Allocasuarina acutivalvis*
Austrostipa elegantissima
Acacia tetragonophylla

Vegetation Type 5 - *Eucalyptus transcontinentalis* woodlands over *Austrostipa elegantissima* tussock grasses.

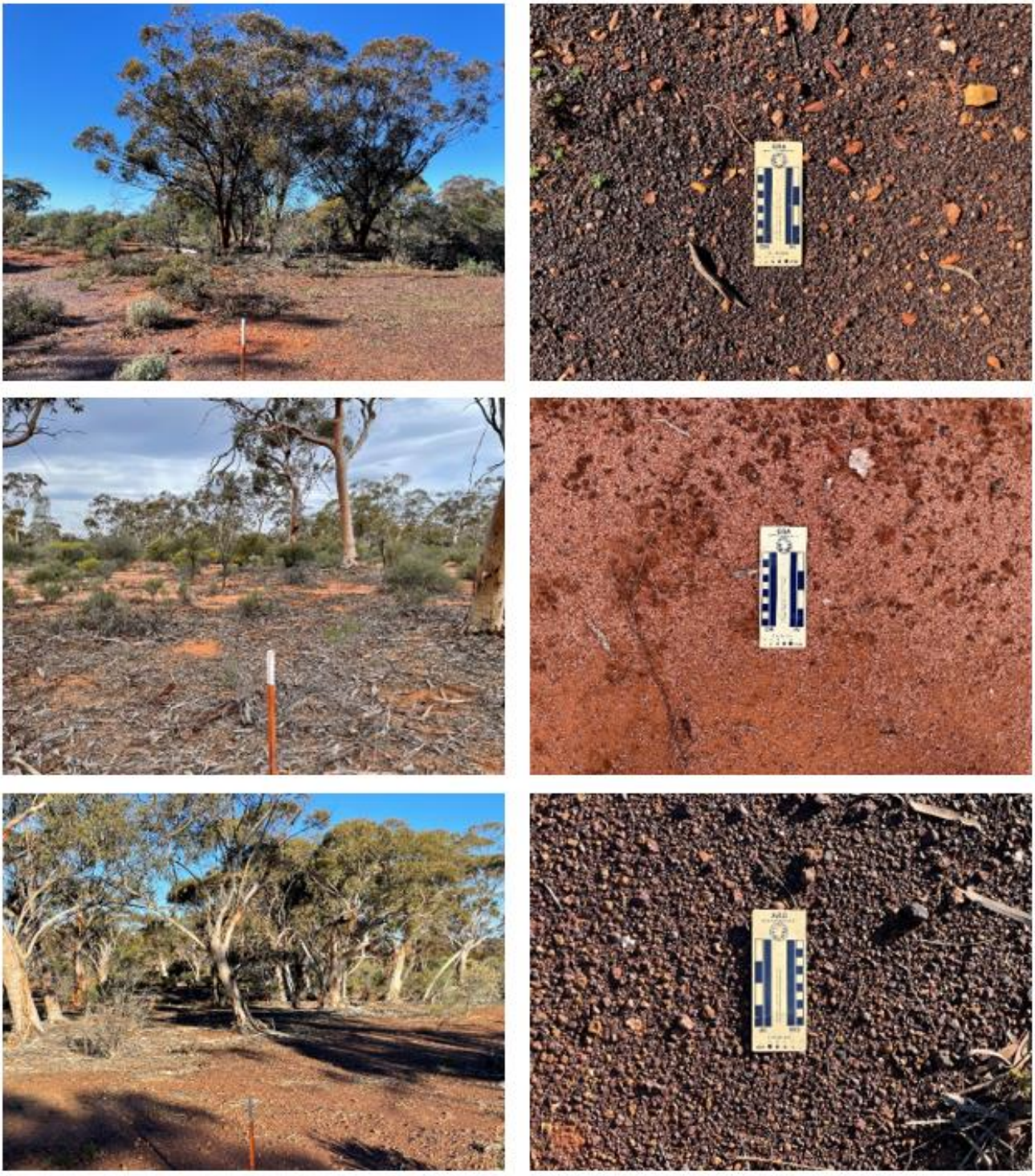

Plate 4: *Eucalyptus transcontinentalis* woodlands over *Austrostipa elegantissima* tussock grasses.

Indicator Species for Vegetation Type 5 (≥95% probability)
Acacia erinacea
Atriplex bunburyana
Eremophila ionantha
Eremophila scoparia
Eucalyptus salmonophloia
Eucalyptus transcontinentalis
Exocarpos aphyllus
Maireana georgei
Maireana pentagona
Rhagodia drummondii
Santalum acuminatum
Sclerolaena diacantha
Templetonia ceracea

Typical Species for Vegetation Type 5 (≥75% of quadrats, indicators in bold)
Olearia muelleri
Scaevola spinescens

Common Species for Vegetation Type 5 (≥50% of quadrats, indicators in bold)
Austrostipa elegantissima
Eremophila scoparia
Exocarpos aphyllus
Maireana georgei
Santalum acuminatum
Senna artemisioides subsp. filifolia
Templetonia ceracea

Indicator Species for Vegetation Type 5 Variants
5A *Eucalyptus ravida*
Eucalyptus ravida
Sclerolaena diacantha
Templetonia ceracea
Atriplex nummularia subsp. spathulata
Eremophila hamulata P1

5B *Eucalyptus salmonophloia*
Atriplex bunburyana
Eremophila ionantha
Eucalyptus salmonophloia
Eucalyptus transcontinentalis
Exocarpos aphyllus
Olearia muelleri

5C *Eucalyptus vittata*
Acacia erinacea
Dodonaea lobulata
Eremophila oldfieldii subsp. angustifolia

4 Land Information and Tenure for the NVCP Area

A spatial search was conducted for the general locality of the NVCP application area for land tenure types of relevance to the clearing of native vegetation.

The search was conducted using the following GIS/database information:

- DWER Clearing Permit System (DWER 2021);
- DBCA Naturemap (DBCA 2021); and
- Tengraph (DMIRS 2021).

A summary of the spatial and database searches is provided below.

- The NVCP application area occurs within the Proposed 5(1)(H) Reserve Conservation and Mining (P5H34) "ex Jaurdi Pastoral Lease" managed by Department of Biodiversity, Conservation and Mining (DBCA)
- Within a defined "Schedule 1 Area" under Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
- The proposal occurs in the regional "Groundwater Area 21" under the *Rights in Water and Irrigation Act 1914*.

There are no areas located over the NVCP application area, that are:

- ESAs
- National Parks or Nature Reserves; and
- TECs or PECs.

4.1 Eastern Goldfields Area COO 02 IBRA Subregion

The NVCP application area is situated within the Coolgardie (COO) IBRA region. The Coolgardie bioregion covers 12,912,204 ha, of which 97.96% remains uncleared and is divided into three subregions; Mardabilla (COO 01), Southern Cross (COO 02) and Eastern Goldfields (COO 03) (Thackway and Cresswell 1995). At a subregion level the NVCP is located in the Southern Cross subregion that covers 6,010,833 ha, of which 96.06% remains uncleared (Government of Western Australia, 2019).

The biogeographic region is in an arid to semi-arid climate and was characterised by DPaW (2002 cited Woodgis 2022a) as comprising granite strata of the Yilgarn Craton with Archaean Greenstone intrusions in parallel belts, with occluded drainage.

The Southern Cross subregion was characterised by DPaW (2002 cited Woodgis 2022a) as having subdued relief of gently undulating uplands dissected by broad valleys with bands of low greenstone hills, and consisting of:

- valleys of duplex and gradational soils that contain chains of saline playa-lakes;
- granite basement outcrops at mid-levels in the landscape;
- upper levels in the landscape are the eroded remnants of a lateritic duricrust yielding yellow
- sandplains, gravelly sandplains and laterite breakaways;
- scrubs rich in endemic Acacia and Myrtaceae species on uplands, as well as on sand lunettes associated with playas along the broad valley floors, and sand sheets around the granite outcrops; and
- diverse eucalypt woodlands rich in endemic Eucalyptus species around salt lakes, on the low greenstone hills, valley alluvials and broad plains of calcareous earths.

The vegetation is described as mallee, Acacia thickets and shrub-heaths on sandplain, with dwarf shrublands of samphire adjacent to salt lakes, and surrounded by Eucalyptus woodlands. These woodlands are included in the Great Western Woodlands.

4.2 Beard's Vegetation Associations

The type, status and pre-European area are based on Beard 2013 and remaining extent of native vegetation for the entire state has been assessed by DBCA and DWER by remote sensing analysis to produce a statistical compendium called the "Comprehensive, Adequate and Representative" (CAR) Reserves System (Government of Western Australia 2019). Data has been updated on a regular basis with the information from the latest update being in 2018. Information on the extent of Vegetation Association 141 and 538 within the Jackson Vegetation System that underlay the proposed purpose permit areas are provided in Table 3.

Table 3: Extent of pre-European Vegetation Association 141 and 538 Remaining in the IRBA Subregion.

IBRA Subregion	Vegetation Association	Pre-European area (Hectares)	Current extent (Hectares)	Remaining %	Pre-European% in IUCN Class I-IV Reserves*
COO2 - Southern Cross	141 (Code 141.3)	644,280.01	643,140.36	99.82	15.59

COO2 - Southern Cross	538 (Code 538.1)	100,911.51	100,140.21	99.26	14.27
Total		**745,191.52**	**743,280.57**		

**The International Union of Conservation ('IUCN') Reserve Classes 1 to 4 are used as an indicator of areas protected under conservation estate.*

According to the estimations, Vegetation Association 141 and 538 have 99.82% and 99.26% respectively of the pre-European vegetation remaining (Government of Western Australia 2019). 15.59% of Vegetation Association 141 has representation within internationally recognised conservation estates (IUCN Reserve Classes 1 to 4) and Vegetation Association 538 has 14.27%. There are significant areas (643,140.36 ha for Vegetation Association 141 and 100,140.21 ha for Vegetation Association 538) of these vegetation association remaining (Table 3). The clearing of 3.5 ha required for the proposed activities is thus considered as being unlikely to impact the overall conservation status of these vegetation associations.

5 Environment Protection and Biodiversity Conservation Act

As part of both the flora and fauna surveys a search was conducted using the Department of Agriculture, Water and the Environment (DAWE) "Protected Matters Search Tool" for listings under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC 1999). The search was centred between Area A and B. The EPBCA search results are presented in Table 4.

Table 4: *Environment Protection and Biodiversity Conservation Act 1999* listings for the Mt Dimer Area with 25km Buffer.

Search Type:	Point	**Centroid:**	Mt Dimer Area (between Area A and B).
Buffer:	25km		
Matters of National Environmental Significance			
World Heritage Properties:			None
National Heritage Places:			None
Wetlands of International Significance (Ramsar Sites):			None
Commonwealth Marine Area:			None
Threatened Ecological Communities:			None
Threatened Species:			10
Migratory Species:			6
Other Matters Protected by the EPBC Act			
Commonwealth Lands:			None
Commonwealth Heritage Places:			None
Listed Marine Species:			9
Whales and Other Cetaceans:			None
Critical Habitats:			None
Commonwealth Reserves Terrestrial:			None
Australian Marine Parks:			None
Habitat Critical to the Survival of Marine Turtles			None
Extra Information			
State and Territory Reserves:			2
Regional Forest Agreements:			None
Nationally Important Wetlands:			None
EPBC Act Referrals			6
Key Ecological Features (Marine):			None
Biological Important Areas:			None
Bioregional Assessments:			None
Geological and Bioregional Assessments			None

As detailed above there are no World or National Heritage Places, Critical Habitats, Commonwealth Reserves, Other Commonwealth Reserves and Regional Forest Agreements. In addition, there were no listings for:

- EPBCA listed Threatened Ecological Communities;
- Wetlands of International Significance (Ramsar Sites).

There were EPBCA listings for:

- Two State and Territory Reserves (are within the 25km buffer but are not within the proposal)
- Ten Threatened Species (five fauna and five flora species).
- Six Migratory Species.
- Nine Marine Species.

Each listed category is discussed below:

State and Territory Reserves

The two State Reserves identified are known as the Mount Manning – Helena and Aurora Ranges Conservation Park and the Mount Manning Range Nature Reserve, and both have been set aside for conservation. The Helena and Aurora Ranges contain the Helena and Aurora Range vegetation complexes (banded ironstone formation) and the Mount Manning Range contains the Mount Manning Range vegetation complex (banded ironstone formation). Neither of these reserves intersect Area A and B of the NCVP. Both vegetation complexes are characterised by very significant biodiversity value based on their unique geology, soils and relative isolation. Area A and B are in proximity to the Mount Manning - Helena and Aurora Ranges, however both areas are characterised by sand plains and are not underlain by banded ironstone formation, as such vegetation across the two areas represents vegetation that is widespread in the region.

Threatened Species

The five Threatened Fauna Species were:

- *Leipoa ocellata* (Malleefowl) - EPBCA Vulnerable.
- *Pezoporous occidentalis* (Night Parrot) - EPBCA Endangered.
- *Falco hypoleucos* (Grey Falcon) - EPBCA Vulnerable.
- *Dasyurus geoffroii* (Chuditch, Western Quoll) - EPBCA Vulnerable.
- *Calidris ferruginea* (Curlew Sandpiper) - EPBCA Vulnerable.

These five Threatened Species were assessed in Section 7 (fauna) in relation to likely occurrence in the NVCP application area and potential impacts from the proposed clearing. The overall assessment was that the proposed clearing was considered unlikely to impact the conservation status of these five Threatened Species.

The five Threatened Flora Species were:

- *Leucopogon spectabilis* (Ironstone Beard-health) - EPBCA Critical Endangered.
- *Myriophyllum lapidicola* (Chiddarcooping Myriophyllum) - EPBCA Endangered.
- *Ricinocarpos brevis* (82879) - EPBCA Endangered.
- *Tetratheca aphylla* (Bungalbin Tetratheca) - EPBCA Vulnerable.
- *Tetratheca paynterae* (Paynter's Tetratheca) - EPBCA Endangered.

These five Threatened Species were assessed in Section 6 (flora) in relation to likely occurrence in the NVCP application area and potential impacts from the proposed clearing. The overall assessment was that the proposed clearing would not directly impact the conservation status of these five Threatened Species due to the ecological conditions and habitat suitable for these species not occurring in Area A and B.

Migratory Species

The six listed Migratory Species are listed below:

- *Actitis hypoleucos* (Common Sandpiper) - EPBCA Migratory and Marine, Bonn, CAMBA, JAMBA, ROKAMBA.
- *Apus pacificus* (Fork-tailed Swift) - EPBCA Migratory and Marine, CAMBA, JAMBA, ROKAMBA.
- *Calidris acuminata* (Sharp-tailed Sandpiper) - EPBCA Migratory and Marine, Bonn, CAMBA, JAMBA, ROKAMBA.
- *Calidris melanotos* (Pectoral Sandpiper) - Migratory and Marine, Bonn, JAMBA, ROKAMBA.
- *Calidris ferruginea* (Curlew Sandpiper) discussed above as part of Threatened Species.
- *Motacilla cinerea* (Grey Wagtail) - EPBCA Migratory and Marine, CAMBA, JAMBA, ROKAMBA.

These six Migratory Species were assessed in Section 7 in relation to likely occurrence in the NVCP application area and potential impacts from the proposed clearing. Five of the six were Wetland Migratory Species or Marine Migratory Species, with no permanent standing water in the area to is likely the species would only be in transit across the area. Additionally, the single Terrestrial Migratory Species was deemed to only transit through the area. The overall assessment was that the proposed clearing was considered unlikely to impact on the conservation status of these six Migratory Species

Marine Species

The seven migratory listed above are also defined as marine species. In addition, the remaining three marine species are listed below.

- *Bubulcus ibis* as *Ardea ibis* (Cattle Egret) - EPBCA Marine.
- *Chalcites osculans* as *Chrysococcyx osculans* (Black-eared Cuckoo) EPBCA Marine.
- *Merops ornatus* (Rainbow Bee-eater) - EPBCA Marine.

The Marine Species above were assessed in relation to likely occurrence in the NVCP application area and potential impacts from the proposed clearing. The overall assessment was that the proposed clearing was considered unlikely to impact on the conservation status of these Marine Species.

6 Flora and Vegetation Survey

Woodgis (WG) was commissioned by Aurumin to undertake flora and vegetation surveys of the Mt Dimer project area covering 2773 hectares. The proposed purpose permit envelope of 13.84 hectares is contained within this surveyed area. The Mt Dimer survey area containing the proposed purpose permit envelope is displayed in Figure 2 and 3. To support this application two flora reports are provided in Appendix B and C. The first document titled "Mount Dimer Vegetation and Priority Flora Update February 2022" compiles all of the flora and vegetation surveying across the Mt Dimer Project area. The second document titled "Mount Dimer Application of Selected Land Clearing Principles to Proposed Clearing February 2022" specifically details the flora and vegetation information applicable to the clearing of native vegetation in the two proposed purpose permit areas

The surveys were pursuant to the Environmental Protection Authority's Environmental Factor Guideline – Flora and Vegetation and Technical Guidance – Flora and Vegetation Surveys for

Environmental Impact Assessment, 2016. The desktop component of the work included the findings/data of previous surveys over the area and adjacent to the area. In addition, lidar and aerial imagery acquired in 2021 over the Mt Dimer area was used to assist in the demarcation of vegetation type boundaries based on field survey information.

Field work consisted of selected quadrats and relevé with the dimensions of 20 x 20m established in appropriate locations, considering representativeness of vegetation groups.

Each quadrat and relevé site's coordinates were recorded and data collected included:

- Photograph of representative vegetation group (northwest corner);
- GPS Location (northwest corner);
- Species Present;
- Population Count/Estimate of Priority Flora (if present);
- Vegetation Structure;
- Disturbance Level; and
- Vegetation Condition.

Additionally, 459 ha (16.6% of the Mt Dimer area) had targeted priority flora searches using 20 to 25 metre traverses. This method was used to count priority flora within a given area to better understand priority flora distributions across various vegetation types.

A summary from the reports is provided below:

Six vegetation types were identified within the Mt Dimer area (Figure 2 and 3). Within the purpose permit application areas only four of the six vegetation types identified in the broader Mt Dimer Area are represented. The types can be summarized as follows:

- Vegetation Type 1 – Acacia acutivalvis shrublands over *Amphipogon* tussock grasses.
- Vegetation Type 3 – *Eucalyptus ebbanoensis* mallees over *Triodia scariosa/tomentosa* hummock grasses.
- Vegetation Type 4 – *Eucalyptus loxophleba* mallees over *Austrostipa elegantissima* tussock grasses.
- Vegetation Type 5 – *Eucalyptus transcontinentalis* woodlands over *Austrostipa elegantissima* tussock grasses.

Photographs and flora taxa compositions within the vegetation types are contained in Section 4

A total of 281 plant taxa were recorded in the larger Mt Dimer area.

Seventy-one (71) annual species were recorded (55 species in quadrats and 16 additional species in relevés or opportunistically) that represented approximately 74% of the species present; and 210 perennial species were recorded (151 species in quadrats and 59 additional species in relevés or opportunistically) that represented approximately 100% of the species present.

Within the purpose permit envelopes:

- No vegetation types that were considered as being unique or highly restricted were identified.

- All vegetation types/communities are common, widespread and well represented in the Southern Cross subregion.
- There were no PECs or TECs identified in the vegetation survey area.
- Overall, the condition of the vegetation was determined to be "Very Good" to "Excellent" outside of areas affected by mining or exploration disturbances.
- No Threatened Flora were recorded within the areas.

In purpose permit Area A, three Priority Flora were identified in the area, the species are:

- *Neurachne annularis* (P3) the number of individuals in this area represents 0.0005% of the know population in the Mt Dimer area;
- *Eucalyptus formanii* (P4) the number of individuals in this area represents 0.2% of the know population in the Mt Dimer area; and
- *Grevillea erectiloba* (P4) the number of individuals in this area 0.3% of the know population in the Mt Dimer area.

In purpose permit Area B, ten Priority Flora may occur in the area, the species are:

- *Acacia sp. Southern Cross* (P1), the vegetation type within the area represents 0.2% of its potential habitat in the Mt Dimer area and the closest known occurrence of this species is 2.9km to the northeast of Area B;
- *Eremophila hamulata* (P1), the vegetation type within the area represents 0.2% of its potential habitat in the Mt Dimer area;
- *Hysterobaeckea ochropetala ssp. ochropetala* (P1), the vegetation type within the area represents 0.5% of its potential habitat in the Mt Dimer area and the closest known occurrence of this species is 1.9km to the west of Area B;
- *Cryptandra crispula* (P3), the vegetation type within the area represents 1.1% of its potential habitat in the Mt Dimer area.
- *Neurachne annularis* (P3), the vegetation types within the area represent 0.7% of its potential habitat in the Mt Dimer area.
- *Notisia intonsa* (P3), the vegetation type within the area represents 0.2% of its potential habitat in the Mt Dimer area.
- *Philotheca coateana* (P3), the vegetation types within the area represents 1.1% of its potential habitat in the Mt Dimer area.
- *Eremophila caerulea subsp. merrallii* (P4), the vegetation type within the area represents 0.3% of its potential habitat in the Mt Dimer area.
- *Eucalyptus formanii* (P4), the vegetation types within the area represent 0.6% of its potential habitat in the Mt Dimer area.
- *Grevillea erectiloba* (P4), the vegetation types within the area represent 0.4% of its potential habitat in the Mt Dimer area.

It needs to be noted, the actual area of vegetation or number of individual plants disturbed are likely to be less than the percentages quoted above for Area A and B, as only 3.5 hectares of vegetation will be cleared compared to the 13.84 hectares of the purpose permit clearing envelopes for which the percentages are quoted against.

Six introduced species were recorded within the Mt Dimer area being *Brassica aff.* juncea (Indian Mustard), *Carrichtera annua* (Wards Weed), *Cynodon dactylon* (Couch), *Erodium cicutarium* (Storksbill), *Rumex vesicarius* (Ruby Dock) and *Sonchus oleraceus* (Common Sowthistle); No Declared Pests (weeds), as listed pursuant to the *Biosecurity and Agriculture Management Act 2007* were identified.

7 Fauna Assessment

Bamford Consulting (BC) was commissioned by Aurumin to undertake an assessment of fauna values in the proposed areas. This assessment incorporated a desktop assessment, field investigations and impact assessment of the two purpose permit areas. Two zoologists completed the survey over a two-day period from 20 to 21 February. The fauna assessment survey was undertaken pursuant to the Environmental Protection Authority's Technical Guidance Terrestrial Fauna Surveys (EPA 2016) and Technical Guidance Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020). The fauna assessment is presented in Appendix D.

Conservation significant fauna and their habitats are protected by the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999) and State *Biodiversity Conservation Act 2016* (BC Act 2016). To assess the presence of conservation significant fauna a combined list was compiled from the EPBC Act 1999 and BC Act 2016 database searches of conservation significant fauna that could potentially occur at in the area.

Species lists generated from the databases and literature searches include records drawn from a large regional area thus from environments not represented in the survey area. Therefore, some species that were returned by one or more of the database and literature searches have been excluded because their ecology or the environment within the project area would be unlikely for these species to be present. Such species can include wetland bird species and migratory bird species for which the site is of no importance. Species returned from the databases and not excluded on the basis of ecology or environment were therefore considered potentially present. An assessment was conducted against this list of potentially present species to assign each a predicted status and expected occurrence.

A total of 255 vertebrate have the potential to occur in the area. Of the 255 vertebrate species expected to occur in the vicinity of the survey areas, 27 are of conservation significance. In addition, at least two species of conservation significant invertebrate may also occur in the vicinity. Out of the 29 conservation significant species, 17 are expected to occur regularly within the survey areas, with the Malleefowl and the Tree-stem Trapdoor Spider expected to be of most concern. The remaining species, if or when present, are likely to occur in very low numbers or density within the survey areas or may only use the areas inconsistently/unpredictably. All regularly expected conservation significant species use habitat that is extensive in the region and well-represented outside of the survey areas.

Previous surveys over the broader area include a Level 1 survey and targeted Malleefowl investigations. The more recent fauna survey incorporated the above survey data and undertook an

on-ground investigation across Area A and B. Based on the combined surveys, a summary of findings is provided below:

- Four Vegetation and Substrate Associations were identified being Acacia shrublands, Mallee woodlands on sands, Eucalypt woodlands on loams and Disturbed or cleared areas.
- No Malleefowl signs (tracks) and mounds were noted across the survey areas.
- Signs of five introduced mammals were observed (including red fox, cat, rabbit and camel).
- No Threatened Fauna were recorded within the survey area.
- One Priority 4 invertebrate Tree-Stem Trapdoor Spider *Idiosoma castellum* was recorded in the survey area.

In addition, the assessment of the impact to Malleefowl and Tree-stem Trapdoor Spiders included:

Targeted on-ground Malleefowl survey across Area A and B that did not identify any nest mounds (active or inactive). Then the potential impacts to the Malleefowl were assessed against federal significant impact guidelines with the conclusion that no significant impacts are likely to occur. (Bamford 2022).

An on-ground survey for Tree-stem Trapdoor Spiders located a number of active and inactive burrows within the survey areas. Potential impacts to the Tree-stem Trapdoor Spider were assessed against federal significant impact guidelines with the conclusion that no significant impacts are likely to occur (Bamford 2022).

A copy of the Bamford (2022) fauna survey report is presented in Appendix D.

Based on the assessment the proposal is highly unlikely to remove critical habitat or ecosystem functioning thus effecting the survival of conservation significant fauna. Further information on the conservation significant fauna assessment is provided in Appendix D.

8 Heritage

8.1 Aboriginal Heritage

The two areas of proposed clearing are proximal to previous mining activities and have been partially disturbed by previous mining and exploration. No aboriginal heritage sites will be impacted by the proposed road and rehabilitation remediation, with no aboriginal sites or other heritage sites identified during a desktop search of the Department Planning Lands and Heritage (DPLH) online database. In March 2019, anthropologist R. O'Connor of R & E O'Connor Pty Ltd carried out a professional review of Aboriginal Heritage Due Diligence Assessment of the Project area. The following is a summary of the report outcomes by R. O'Connor (O'Connor 2019):

- There are no known sacred, ritual or ceremonial Aboriginal sites in the Project area, nor are there any known former camping places or burial sites.
- As the type of country in which the Project is located is not suitable for long-term camping, it is highly unlikely that there are any large scatters of Aboriginal cultural material there. Nonetheless, that possibility cannot be totally dismissed.

- The company understands that this provided information informs the heritage risk of the proposed clearing and provides confidence that the provisions of the *Environmental Protection Act 1986* related to social surroundings will be met and demonstrates compliance with DMIRS published policy document "The consideration of Aboriginal Heritage Matters in Assessments Under the *Mining Act 1978*".

8.2 European Heritage

A search was conducted using the Heritage Council of WA's, Department of Planning, Lands and Heritage Places Database for the Shire of Yilgarn. A total of one hundred and sixteen heritage locations exist across the Shire. The closest heritage site is 55km to the south-west of the MDGP area and represents the location of the former Koolyanobbing Fire Station (DPLH 2021). The proposal will not affect any of the listed European heritage sites in the Shire of Yilgarn.

9 Statement Against Each of the 10 Clearing Principles

9.1 Principle A

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT COMPRISES A HIGH LEVEL OF BIOLOGICAL DIVERSITY

The proposed clearing areas do not comprise a high level of biodiversity. The areas of clearing are located within vegetation which is representative of widespread communities. Therefore, the level of biodiversity in the application area is no higher than that of the remaining native vegetation in the wider ecological communities. Additionally, proposed clearing is not likely to be at variance to Principle A as this was the conclusion in Department of Mines, Industry Regulation and Safety (DMIRS) Clearing Permit Decision Report 8291/1 for the clearing of 20.8 hectares for an airstrip expansion and associated upgrades at Mt Dimer in 2019. Area B is contiguous with this clearing that occurred in 2019.

The clearing of 3.5 hectares is proposed to occur within two envelopes Area A and B (totalling 13.84 hectares) within the 2,773 hectares Mt Dimer project which has been subject to comprehensive flora and vegetation surveys. This comprehensive work is documented in the "Mount Dimer Vegetation and Priority Flora Update February 2022" (Woodgis 2022a). Surveys within the Mt Dimer project included:

- A total of 99 quadrats and 24 relevés were established, sampling all landform and geology units at a density of one quadrat/relevé per 22.5 ha;
- Targeted flora searches were undertaken over two areas totalling 459 hectares with traverses at 20-25 metre spacing; and
- An estimated 100% of the perennial plant taxa and 74% of the annual plant taxa present were recorded.

The clearing envelopes do not appear to represent an area of higher biodiversity than surrounding areas (i.e. the 2,773 hectare Mt Dimer area), in either a local or regional context for the following reasons:

- The state-wide system-associations are extensive and have been subject to low levels of clearing.
- No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were recorded in the Mt Dimer Area either in the DBCA database (search reference number Ref: 48-1020EC) or field surveys.
- All the TECs/PECs within 50 km of the Mt Dimer Area are associated with Banded Iron Formations (BIF). BIF does not occur in the purpose permit area envelopes.
- No landforms occur in the Mt Dimer project that have an elevated likelihood of supporting restricted vegetation or flora (Banded Ironstone Formations, granite outcrops, riparian vegetation or permanent surface water).
- The six identified vegetation types in the Mt Dimer area are not expected to be restricted regionally and the two vegetation types most restricted in the Mt Dimer project do not occur in the clearing envelopes A and B (i.e. *Ptilotus holosericeus* herblands associated with damplands, and *Neurachne annularis* grasslands).
- The datasets compiled for the Mt Dimer area indicate there are 48 threatened and priority flora species within 20 km of the Mt Dimer area. The small area of proposed clearing (i.e. 3.5 hectares) is unlikely to affect the conservation status of any of the 10 priority flora taxa identified in the purpose permit areas within the Mt Dimer area.

Any proposed disturbance/clearing of vegetation will result in a loss of species. However, given the small sizes of the areas and the extent of the vegetation associations elsewhere, the impact on the fauna and vegetation with its component flora will not affect the conservation values of either or create fragmentation or patches of remnant vegetation.

Clearing of native vegetation within the proposed area therefore does not comprise a high level of biological diversity.

Assessed Outcome: Based on the above, the proposed clearing is unlikely to be at variance with this Principle.

9.2 Principle B

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT COMPRISES THE WHOLE OR A PART OF, OR IS NECESSARY FOR THE MAINTENANCE OF, A SIGNIFICANT HABITAT FOR FAUNA INDIGENOUS TO WESTERN AUSTRALIA

Clearing the vegetation will not result in the loss of significant habitat for indigenous fauna. The fauna assessment indicated a total of 255 species of vertebrate fauna could potentially be present. Four broad vegetation and substrate associations (VSA) were recorded in the NVCP. Excluding the VSA defined as Disturbed all other VSAs were in good condition. The survey also concluded that:

- No Threatened Fauna as listed under State or Commonwealth legislation were recorded in the survey area, and
- Within the NVCP application area, fauna are widespread and recorded across the bioregion.
- The vegetation and substrate associations identified in the proposal are also abundant in adjacent areas, indicating that any localised impacts are therefore unlikely to have a significant impact on the fauna when considered in a bioregional context.

Of the 255 vertebrate species expected to occur in the vicinity of the survey only Malleefowl and the Tree-stem Trapdoor Spider were expected to be of most concern. The remaining species, if or when present, are likely to occur in very low numbers or density within the survey areas or may only use the areas inconsistently/unpredictably. All regularly expected conservation significant species use habitat that is extensive in the region and well-represented outside of the survey areas.

An assessment of the impacts to Malleefowl and Tree-stem Trapdoor Spiders were assessed against federal significant impact guidelines with the conclusion that no significant impacts are likely to occur. Full details of the assessment are presented in Appendix D.

The small scale of the clearing means that the clearing of native vegetation will not significantly impact habitat for fauna of conservation significance and/or significant habitat for fauna more broadly, as such the impacts to significant fauna are expected to be minimal. In addition, the area does not represent remnant vegetation or provide an important ecological linkage or fauna movement corridor as vegetation is continuous in the region.

Given the availability of similar fauna habitat in surrounding areas, it is unlikely that the proposed clearing will significantly impact these two species.

Therefore, the clearing of vegetation within the two survey areas at Mount Dimer is not likely to impact a significant habitat for fauna indigenous to Western Australia.

Assessed Outcome: Based on the above, the proposed clearing is unlikely to be at variance with this Principle.

9.3 Principle C

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT INCLUDES, OR IS NECESSARY FOR THE CONTINUED EXISTENCE OF, RARE FLORA

Woodgis was commissioned to conduct flora and vegetation surveys over and adjacent to the proposed disturbance associated with the waste rock dump remediation (Area A) and road (Area B). The survey area covered 2773 hectares. It was estimated that 100% of the perennial plant taxa and 74% of the annual plant taxa present were recorded in the in the larger survey area (Woodgis 2022b). Based on the survey:

- No Threaten Flora and/or specially protected species, pursuant to Section 13(1) and 19(1) of the *Biodiversity Conservation Act 2016*, were recorded in the vegetation survey (Woodgis 2022a).
- No Threatened Flora, pursuant to Schedule 1 of the *Environment Protection and Biodiversity Conservation Act 1999*, were recorded in the vegetation survey.

The five threatened flora taxa recorded within 20 km of the Mt Dimer area are all associated with Banded Ironstone Formations (BIF), a landform that does not occur in the proposed purpose permit areas.

The vegetation types in the clearing envelopes are not of elevated likelihood of supporting rare flora as the vegetation types are not expected to be restricted given none were associated with either BIF, granite outcrops, riparian vegetation or permanent surface water features.

The priority flora likely or known to occur in the proposed purpose permit areas have very low numbers compared to the known populations or the areas to be cleared are a very small part of the known flora habitat in comparison to that identified in the larger Mt Dimer Area of 2773 hectares. As such the clearing will have a minor impact on populations across the broader area. Further information on the estimated numbers or habitat in the proposed purpose permit areas are presented in Section 6 and Appendix C.

Assessed Outcome: Based on the above, the proposed clearing is not at variance with this Principle.

9.4 Principle D

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT COMPRISES THE WHOLE OR A PART OF, OR IS NECESSARY FOR THE MAINTENANCE OF A THREATENED ECOLOGICAL COMMUNITY

No Threaten Ecological Communities (TEC) or Priority Ecological Communities (PEC) listed by BC Act 2016 or Threatened under the EPBC Act 1999 were identified occurring at, or in the NVCP proposal (Woodgis 2022a and b). The closest PEC known as the "Finnerty Range/Mt Dimer/Yendilberin Hills Banded Ironstone Formation" is located approximately 3.3km from Area B. The geology and geomorphology of this PEC is due to the presence of Banded Ironstone Formation. In comparison, the proposed clearing areas will occur on sand plains that have completely different geology, geomorphology and vegetation associations. The vegetation associations within the clearing areas are more widespread (Section 6) than the isolated Band Ironstone Formation vegetation associations within the PEC adjacent to the MDGP.

Assessed Outcome: Based on the above, the proposed clearing is not at variance with this Principle

9.5 Principle E

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT IS SIGNIFICANT AS A REMNANT OF NATIVE VEGETATION IN AN AREA THAT HAS BEEN EXTENSIVELY CLEARED

The area is not in an area of remnant vegetation. Proposed clearing of native vegetation will occur in Beard's vegetation association of 141 and 538 within the Jackson Vegetation System, these associations are well represented in Western Australia, with over 99% of the pre-European extent remaining (refer to Section 4.2). There is minimal fragmentation in the area, with vegetation associations continuous within the landscape.

The proposed clearing of 3.5 ha does not involve the clearing of remnant vegetation and is considered as being unlikely to impact on or fragment the overall conservation status of the Vegetation Association 141 and 538 within the Jackson Vegetation System.

Assessed Outcome: Based on the above, the proposed clearing is not at variance with this Principle.

9.6 Principle F

NATIVE VEGETATION SHOULD NOT BE CLEARED IF IT IS GROWING IN, OR IN ASSOCIATION WITH, AN ENVIRONMENT ASSOCIATED WITH A WATERCOURSE OR WETLAND

There are no permanent water features, wetlands or major creek lines within the NVCP disturbance envelopes. All minor drainage lines are ephemeral, run intermittently and are unlikely to hold water for any period of time. The drainage lines within the NVCP disturbance envelopes are very small and are not considered regionally prominent. Additionally, the upstream catchments have been truncated by previous mining activities thus greatly reducing upstream catchments

The minor drainage line habitat does not contain vegetation communities or species that are confined to watercourses or wetlands, nor are they groundwater dependent (Woodgis 2022b).

Due to the absence of defined creeks, the small area to be impacted and the widespread nature of the vegetation, no vegetation associated within a defined/prominent watercourse or wetland is proposed to be cleared.

Assessed Outcome: Based on the above, the proposed clearing is unlikely to be at variance with this Principle.

9.7 Principle G

NATIVE VEGETATION SHOULD NOT BE CLEARED IF THE CLEARING OF THE VEGETATION IS LIKELY TO CAUSE APPRECIABLE LAND DEGRADATION

The clearing for this proposal associated with rehabilitation remediation works (Karli West) and infrastructure development (access road) have the potential to exacerbate land degradation, although only minorly and over a relatively small area (i.e. 3.5 ha). The surface gradient of this area is gentle, which will be managed with progressive clearing, surface water management and conservation earthworks, to prevent further degradation of vegetation condition outside of the area of disturbance. A progressive approach to land clearing and rehabilitation will be adopted where practicable to stabilise surfaces during operations and closure. This approach is unlikely to cause appreciable land degradation on a localised scale. In addition, once the topsoil is removed the high levels of gravel in the subsurface of the two areas will provide self-armouring of the surface overtime reducing soil particle detachment during rain drop impact.

Ground conditions are also suitable for proposed activities including road, track and sediment capture structures. Although these soils are prone to erosion when in an initially disturbed state, implementation of the following management measures will reduce the risk of erosion due to clearing:

- where possible clearing will be undertaken in dry periods to prevent local sheet flow from being compromised;
- avoid topsoil stripping prior to or following heavy rainfall;

- where practicable progressive land clearing as required is proposed to ensure that minimal land is exposed to prevent possible sources of water and wind erosion;
- topsoil or appropriate growth medium will be retained for use in rehabilitation;
- machinery operators will minimise the frequency and intensity of disturbance, so they do not compromise the structural integrity of the material (i.e. minimise double handling and relocation of materials);
- correct placement of sediment containment bunds and topsoil stockpiles to ensure sediment runoff from these areas does not significantly increase for the duration of operations, and that any topsoil eroded during rainfall events is not lost in runoff; and
- surface runoff from disturbed areas will typically contain some sediment. If required, install temporary surface water bunds to ensure that surface water flows are maintained and erosion from water is minimized and captured.

A potential risk exists from uncontrolled runoff and the channelisation of sheet flow from the development during heavy rainfall events causing overland gullying and rilling. This risk will be low due to the small areas of clearing. However, to further mitigated the risk all runoff and drainage within the impact zone will be managed as detailed above. To avoid potential impedance of flow and upstream ponding of water during times of flooding, the access road to the airstrip will be constructed at grade with water management structures on either side of the road to allow water to overflow the road.

From a sub-surface perspective, the proposed activities will be surficial so will not intersect the water table that underlies the project at depths greater than 50 metres. The risk of soil acidification is low as MDGP is in a semi-arid environment that is devoid of soils that have undergone long term water logging that would lead to the formation of soils prone to acidification. Due to the depth to groundwater there is a low risk of salinisation.

It is considered that the clearing of vegetation for the proposed project is unlikely to cause appreciable land degradation as all runoff within the proposed area will be appropriately managed with the use of surface water management and soil conservation measures. Furthermore, waterlogging, acidification and salinisation are unlikely due to the natural environmental conditions, however monitoring will be conducted to detect any potential variation and initiate implementation of controls as required.

Assessed Outcome: Based on the above, the proposed clearing is unlikely to be at variance with this Principle.

9.8 Principle H

NATIVE VEGETATION SHOULD NOT BE CLEARED IF THE CLEARING OF THE VEGETATION IS LIKELY TO HAVE AN IMPACT ON THE ENVIRONMENTAL VALUES OF ANY ADJACENT OR NEARBY CONSERVATION AREA

No National Parks or Nature Reserves intersect the proposed permit areas. The closest conservation area boundary to the NVCP area is located approximately 480 metres to the west of Karli West mining area (Area A). The conservation area is known as the Mt Manning Conservation Park a Class C Reserve

which is not classified as an ESA declared by the Minister for Environment under Section 51B of the EP Act.

The clearing envelopes are located on Unallocated Crown Land (former Jaurdi station which is proposed to be a 5(1)(H) Reserve managed for the purposes of Conservation and Mining). The 290,285 hectare former Jaurdi Pastoral Lease is part of 1,186,892 hectares of contiguous conservation estate (that includes Mount Manning - Helena and Aurora Ranges Conservation Park, Mount Manning Nature Reserve, other Nature Reserves and the proposed 5(1)(H) Reserve).

Clearing within the Karli West mining area (Area A) will involve the clearing of 2.28 hectares and clearing for the access road (Area B) will cover 1.22 hectares. As discussed in Section 10.7, 10.9 and 10.10 the clearing of these small areas will have minimal localised changes in surface water quality, flooding and land degradation, thus it will be highly unlikely clearing would impact environmental values of the Mt Manning Conservation Reserve. Additionally, due to the continuous nature of vegetation across MDGP (i.e. land use is currently mining and conservation) and the Mt Manning Conservation Reserve the clearing will not disrupt the interconnective between the areas or fragment ecosystem functioning within the Mt Manning Conservation Reserve.

The clearing in Area A is to facilitate works to improve conservation values as it comprises clearing around the perimeter of the Karli West open pit abandonment bund and the Karli West Waste Rock Dump, to provide access, locations to stockpile topsoil, working zones to complete remedial actions to prevent erosion, and allow for the installation of sediment capture structures.

The 1 km of track to be constructed in Area B does not add significantly to the total length of unsealed tracks in the former Jaurdi station, with 575 km of the more substantial tracks being present, as mapped by Geoscience Australia in 2006. Clearing for the track will be partially offset by closing and revegetating old tracks across the Mt Dimer Project.

Clearing of vegetation for this proposal is therefore considered as being unlikely to impact on the environmental values of the Mt Manning Conservation Park.

Assessed Outcome: Based on the above, the proposed clearing is not at variance with this Principle.

9.9 Principle I

NATIVE VEGETATION SHOULD NOT BE CLEARED IF THE CLEARING OF THE VEGETATION IS LIKELY TO CAUSE DETERIORATION IN THE QUALITY OF SURFACE OR UNDERGROUND WATER

The application area is not within a Public Drinking Water Source Area. There are no surface water bodies, the small drainage lines are ephemeral and only flow intermittently.

The underlying area has been disturbed by previous mining/exploration activities. Further clearing may cause minor erosion and sedimentation resulting in deterioration in surface water quality. The following measures will be taken to manage erosion and sediment:

- The access road route was selected to minimize the intersection of minor creek lines; and
- Design the access road to be at grade (i.e. at ground level) to prevent water pooling.

Additionally, the risk from water management issues is mitigated as runoff and drainage will be controlled through:

- The use of surface water bunds and diversion structures if required;
- Where practicable progressively clearing vegetation; and
- Use appropriate competent and inert material that is erosion resistant.

Hydrocarbon spills may occur as a result of leaks from hydraulic systems on earthmoving equipment or vehicles. Fuel is not proposed to be stored in large quantities in the area during the clearing activities. Any spills will be contained and cleaned up, using spill kits that will be available for the duration of the clearing activities.

The risk of clearing causing surface water quality issues is thus considered minimal.

Aquifers in the vicinity of MDGP are localised fractured rock aquifers and generally do not represent groundwater resources of note. Proposed clearing and infrastructure will occur at surface and will not intersect groundwater that is present at depths between 50 to 65 metres below ground level. (Rockwater 1996) Water quality recorded across the site has a neutral pH of 7.0 with salinity of 31,000mg/L total dissolved solids (TDS). Due to the:

- Small amount of clearing,
- nature of activities,
- characteristics of groundwater aquifers, and
- potential pollutants only being small amounts of hydrocarbons (i.e. diesel and hydraulic fluids);

It is considered minimal impact to the local aquifer recharge and quality will occur. Given the factors above, the risk of clearing causing groundwater quality issues is thus considered minimal.

Assessed Outcome: Based on the above, the proposed clearing is unlikely to be at variance with this Principle.

9.10 Principle J

NATIVE VEGETATION SHOULD NOT BE CLEARED IF CLEARING THE VEGETATION IS LIKELY TO CAUSE, OR EXACERBATE, THE INCIDENCE OR INTENSITY OF FLOODING

There are no water bodies or permanently flowing drainage lines in the area. MDGP is located in a semi-desert Mediterranean climate with 400 mm of rain per annum (BOM 2021). As the general topography around MDGP is gently sloping flooding is characterised by broad shallow flow depths and low velocities with limited areas of concentrated surface water flow (i.e. minor creek lines).

During rain events, surface water forms sheet flows across the landscape. Clearing will occur in the upper parts of two catchments, thus upstream catchments are small. In addition, the catchment areas have been truncated by mining landforms including waste rock dumps, and open pits from previous mining activities which further reduces upstream catchment sizes. These small catchment areas of between 17 hectares for Area B and 39 hectares for Area A have limited flooding potential.

In Area A the clearing and activity will occur on the margin of the catchment. As such the clearing around Karli West is unlikely to intersect minor drainage lines as the clearing sits on a localised topographic high.

The proposed road to the airstrip (Area B) has the potential to cross minor creek lines. As the road will be on grade and have water management structures along either side of the road edge, water will pass over the road surface thus minimising the potential for upstream water ponding.

All topsoil stockpiles are to be located away from any areas that are identified as potential concentrated flow areas.

Deep soil compaction will occur in areas of heavy vehicle traffic and mobile plant operation during activities. Compaction will be broken up during rehabilitation activities through deep ripping with a bulldozer to maintain infiltration at closure.

Due to the topographic location, small nature of the catchments, the small area of clearing, the nature of surface water flow and with the controls implemented to mitigate waterlogging or water ponding, it is considered unlikely the activities proposed within this NVCP will exacerbate the potential incidence or intensity of future flooding.

Assessed Outcome: Based on the above, the proposed clearing is not at variance with this Principle.

10 References

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11 Appendices

11.1 Appendix A: Proof of Ownership Mining Lease 77/427 and 77/428

Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

eMITS MINERAL TITLES ONLINE

MINING TENEMENT SUMMARY REPORT

MINING LEASE 77/427 **Status: Live**

TENEMENT SUMMARY

Area: 664.60000 HA **Death Reason :**
Mark Out : 01/11/1989 12:45:00 **Death Date :**
Received : 01/11/1989 16:27:00 **Commence :** 30/03/1990
Term Granted : 21 Years (Renewed)

CURRENT HOLDER DETAILS

Name and Address
AURUMIN MT DIMER PTY LTD
MCMAHON MINING TITLE SERVICES PTY LTD, C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931, xxxx@mmts.net.au, xxxxxxxxxx997

DESCRIPTION

Locality: MT DIMER
Datum: DATUM SITUATE AT THE INTERSECTION OF AMG CO-ORDINATES 6634800 NORTH AND 771700 EAST AND ALSO BEING SITUATE 18 760.70 METRES (AMG) BEARING 89 DEGREES 55 MINUTES 06 SECONDS (AMG) FROM NMF 397 TRIGONOMETRIC STATION.
Boundary: Thence 2200 metres (AMG) bearing 180 degrees (AMG)
Thence 3000 metres (AMG) bearing 270 degrees (AMG)
Thence 2200 metres (AMG) bearing 360 degrees (AMG)
Thence 3000 metres (AMG) bearing 090 degrees (AMG)
BACK TO DATUM.

Area :

Type	Dealing No	Start Date	Area
Surveyed		21/03/1994	664.60000 HA
Granted		30/03/1990	660.00000 HA
Applied For		01/11/1989	660.00000 HA

SHIRE DETAILS

Shire	Shire No	Start	End	Area
YILGARN SHIRE	9660	01/11/1989		664.60000 HA

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Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

eMiTS MINERAL TITLES ONLINE

MINING TENEMENT SUMMARY REPORT

MINING LEASE 77/428

Status: Live

TENEMENT SUMMARY

Area: 624.65000 HA
Mark Out : 01/11/1989 12:30:00
Received : 01/11/1989 16:27:00
Term Granted : 21 Years (Renewed)
Death Reason :
Death Date :
Commence : 30/03/1990

CURRENT HOLDER DETAILS

Name and Address
AURUMIN MT DIMER PTY LTD
MCMAHON MINING TITLE SERVICES PTY LTD, C/- MCMAHON MINING TITLE SERVICES PTY LTD, PO BOX 592, MAYLANDS, WA, 6931, xxxx@mmts.net.au, xxxxxxxxxx997

DESCRIPTION

Locality: MT DIMER

Datum: DATUM SITUATE AT THE INTERSECTION OF AMG CO-ORDINATES 6634800 NORTH AND 771700 EAST AND ALSO BEING SITUATE 18760.70 METRES (AMG) BEARING 89 DEGREES 55 MINUTES 6 SECONDS (AMG) FROM NMF 397 TRIGONOMETRIC STATION.

Boundary: Thence 2353.56 metres (AMG) bearing 90 degrees (AMG) to intersecting boundary E 77/160 Thence 1108.63 metres (AMG) bearing 144 degrees 19 minutes 52 seconds (AMG) along boundary E 77/160 and E 77/286 Thence 1299.35 metres (AMG) bearing 180 degrees (AMG) Thence 3000.00 metres (AMG) bearing 270 degrees (AMG) Thence 2200 metres (AMG) bearing 360 degrees (AMG) BACK TO DATUM.

Area :

Type	Dealing No	Start Date	Area
Surveyed		19/04/1994	624.65000 HA
Granted		30/03/1990	630.89510 HA
Applied For		01/11/1989	630.89510 HA

SHIRE DETAILS

Shire	Shire No	Start	End	Area
YILGARN SHIRE	9660	01/11/1989		624.65000 HA

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11.2 Appendix B: Mount Dimer Vegetation and Priority Flora Update February 2022.

11.3 Appendix C: Mount Dimer Application of Selected Land Clearing Principles to Proposed Clearing February 2022 Final.

11.4 Appendix C: Mount Dimer Project Assessment of Fauna Values.