



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9836/1
Permit type:	Purpose Permit
Applicant name:	Ramelius Resources Limited
Application received:	5 August 2022
Application area:	45 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 36/34 Mining Lease 36/111
Location (LGA area/s):	Shire of Leonora
Colloquial name:	Vivien Project

1.2. Description of clearing activities

Ramelius Resources Limited proposes to clear up to 45 hectares of native vegetation within a boundary of approximately 95 hectares, for the purpose of mineral production and associated activities. The project is partially located within the Vivien town site, and approximately 11 kilometres southwest of Leinster, within the Shire of Leonora.

The proposed clearing is for an expansion of the existing Viven Gold Mine.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	8 September 2022
Decision area:	45 hectares of native vegetation

1.4. Reasons for decision

This permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 5 August 2022. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- potential impacts to an ephemeral drainage line, and consequently on surface water flow.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to have adverse impacts on the conservation of significant flora and fauna and the impacts of clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- avoid impacts to riparian vegetation and maintain surface water flow.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has provided the following avoidance measure to support this clearing permit application:

- The proposed mine activities have been planned to use existing cleared areas where possible to minimise the amount of clearing. In addition, rather than clearing large new footprints, the proposed clearing has been planned to occur adjacent to existing mining areas which have lower habitat value compared to undisturbed areas of native vegetation (Ramelius Resources Limited, 2022).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with an avoid and minimise, watercourse management, and hygiene management conditions.

3.2.1. Biological values - Clearing Principles (a) and (c)

Assessment

The following two Priority flora species were identified as potentially occurring within the application area based on a desktop assessment of suitable landscape features and soil types:

- *Lysiandra baeckeoides* (P3)
- *Sauropus* sp. Woolgorong (M. Officer s.n. 10/8/94) (P3)

None of these species have previously been recorded within the application area (DBCA, 2022; GIS Database). The majority of the application area has previously been disturbed for mining operations under the former clearing permit. The remaining sections to be cleared present large portions of open areas with scattered vegetation cover (GIS Database). In addition, Botanica Consulting (2022) did not identify these species during the field survey.

The Threatened species *Seringia exastia* has been recorded within 40 kilometres radius from the application area (Botanica Consulting, 2022). However, a taxonomic study concluded that *Seringia exastia* is the same species as *Seringia elliptica* (Binks et al., 2020). *Seringia elliptica* is common species and has a range that extends throughout the Pilbara region, central Western Australia, the Northern Territory and into South Australia (Western Australian Herbarium, 1998-). The taxonomy of the genus has been revised to synonymise *Seringia elliptica* under *Seringia exastia* as it is the oldest effectively published name (Binks et al., 2020). This has resulted in *Seringia exastia* now being a common and widespread species with no significant threats. The Western Australian Threatened Species Scientific Committee is currently delisting this species (DBCA, 2021). This species has also not been recorded during the field survey undertaken by Botanica Consulting (2022).

Conclusion

Based on the above assessment, the proposed clearing is unlikely to have impacts on these species. The proposal can be managed to be environmentally acceptable with avoid and minimise, and hygiene management conditions

Conditions

No flora management conditions required.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 16 August 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2011/007) over the area under application (DPLH, 2022). This claim has been determined by the Federal Court on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2022). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 11 kilometres southwest of Leinster, within the Shire of Leonora in the extensive land use zone. The predominant land use in the region is grazing of native pastures, conservation, mining activity and urban development.
Ecological linkage & Conservation areas	The nearest conservation area is the Wanjarri Nature Reserve which is located approximately 50 kilometres north of the application area (GIS Database). As the application area is located adjacent to an existing mine and is to allow for the expansion of mining activities, it is not considered to be an ecological linkage to other areas of vegetation.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <p>18: Wiluna - Low woodland, open low woodland or sparse woodland of Mulga (<i>Acacia aneura</i>) and associated species (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Botanica Consulting during June, 2022 (Botanica Consulting, 2022). The following vegetation associations were recorded within the application area (Botanica Consulting, 2022):</p> <ul style="list-style-type: none"> • Acacia Forest and Woodlands on rocky slope; and • Acacia Forest and Woodlands on plain areas.
Vegetation condition	<p>The vegetation survey (Botanica Consulting, 2022) indicate the vegetation within the proposed clearing area is in good (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> • Good – Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. <p>The majority of the proposed clearing area (approximately 43 hectares) has been previously cleared for mining production, and the remaining vegetation is sparse throughout the area (GIS Database; Botanica Consulting, 2022).</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 520 – 530 meters AHD (GIS Database). The climate of the region is arid, and the annual rainfall average of approximately 249.3 millimetres (BoM, 2022).
Soil description and land degradation risk	The application area is located within the Salinaland Plains Zone (DPIRD, 2022). This zone is characterised by sandplains (with hardpan wash plains and some mesas, stony plains and salt lakes) on granitic rocks of the Yilgarn Craton with red sandy earths, red deep sands, red shallow loams (sometimes with hardpans) and red loamy earths (DPIRD, 2022). A large part of the application area has been previously disturbed by mining and exploration activities.
Waterbodies and hydrogeography	There are no permanent waterbodies or watercourses within the application area, however, there is one minor non-perennial watercourse present (GIS Database). Some ephemeral salt lakes are located approximately 6 kilometres from the application area (GIS Database). The application area is located within the Goldfields Groundwater Area (RIWI Act); however, it is not within a Public Drinking Water Source Area (GIS Database).
Flora	There are records of 12 Priority flora species within 40 kilometres of the application area (Botanica Consulting, 2022). None of these records are within the application area (GIS Database). Flora survey undertaken by Botanica Consulting in 2022 did not record any Threatened or Priority flora species within the application area.
Ecological communities	There are no mapped Threatened or Priority Ecological Communities (TEC/PEC) within the application area or the 10 kilometres radius (GIS Database).
Fauna	No conservation significant fauna species have previously been recorded within the application area (GIS Database). Botanica Consulting (2022) conducted a desktop review and identified 13 conservation significant fauna species as previously being recorded within 40 kilometres of the survey area; however, none of them were identified as possibly occurring within the application area or were recorded during the fauna survey.

A.2. Flora analysis table

Flora analysis of records within 40 kilometres of the application area their likelihood of occurrence (Botanica Consulting, 2022).

Table 4-2: Significant flora potentially occurring within the survey area

Taxon	Rank			Habitat Description	Assessment	Likelihood
	EPBC	BC Act	DFCA			
<i>Baeckea</i> sp. Sandstone (C.A. Gardner s.n. 26 Oct. 1963)	-	-	P3	Orange sand. Flats.	No orange sand plains in the survey area.	Unlikely
<i>Eremophila pungens</i>	-	-	P4	Sandy loam, clayey sand over laterite. Plains, ridges, breakaways.	Recorded approximately 20 km northeast of the survey area. Suitable habitat unlikely to be present.	Unlikely
<i>Goodenia modesta</i>	-	-	P3	Playa formation in paleodrainage channel.	No paleodrainage channels known in the survey area.	Unlikely
<i>Grevillea inconspicua</i>	-	-	P4	Loam, gravel. Along drainage lines on rocky outcrops, creeklines.	Recorded approximately 20 km northeast of the survey area. Suitable habitat unlikely to be present.	Unlikely
<i>Hemigenia exilis</i>	-	-	P4	Laterite. Breakaways, slopes.	No breakaways in the survey area.	Unlikely
<i>Korthalsella leucothrix</i>	-	-	P1	Growing on <i>Acacia acuminata</i> and <i>A. craspedocarpa</i> on red sandy clay.	Recorded approximately 30 km east of the survey area. Little is known about habitat preferences.	Unlikely
<i>Lysiandra baeckeoides</i>	-	-	P3	Gentle slope, gravelly ironstone soils.	Recorded approximately 20 km northeast of the survey area. Suitable habitat unlikely to be present.	Unlikely
<i>Sauropus</i> sp. Woolgorong (M. Officer s.n. 10/8/94)	-	-	P3	Flat. Rocky, red-brown clay-loam hardpan plain over laterite.	Recorded approximately 20 km northeast of the survey area. Suitable habitat may be present.	Possible
<i>Seringia exastia</i>	CR	CR	-	Pindan (red soil) plain/ heathland.	Usually found on sand plains, unlikely to be any present in the survey area.	Unlikely
<i>Thryptomene nealensis</i>	-	-	P3	Growing on top of a duricrust breakaway, skeletal soils.	No breakaways in the survey area.	Unlikely
<i>Thryptomene</i> sp. Leinster (B.J. Lepschi & L.A. Craven 4362)	-	-	P3	Edge of low breakaway/ flat top of breakaway. Rocky brown sandy clay loam.	Recorded approximately 14 km east of the survey area. Suitable habitat unlikely to be present.	Unlikely
<i>Verticordia jamiesonii</i>	-	-	P3	Plateau of duricrust breakaway.	No breakaways in the survey area.	Unlikely

With consideration for the site characteristics set out above, and relevant datasets (see Appendix D.1), some conservation significant flora species identified on table 4.2 (section A.2.) required further consideration highlighted below.

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable soil type? [Y/N]	Radius of search (km)	Number of known records within 20 kilometres (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Baeckea</i> sp. Sandstone (C.A. Gardner s.n. 26 Oct. 1963)	P3	N	N	20	1	Y
<i>Eremophila pungens</i>	P4	Y	N	20	0	Y
<i>Grevillea inconspicua</i>	P4	N	Y	20	4	Y
<i>Korthalsella leucothrix</i>	P1	N	N	20	0	N/A
<i>Lysiandra baeckeoides</i>	P3	Y	Y	20	0	Y
<i>Seringia exastia</i>	T	N	N	20	0	N/A
<i>Thryptomene</i> sp. Leinster (B.J. Lepschi & L.A. Craven 4362)	P3	N	Y	20	4	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.3. Fauna analysis table

Fauna analysis of records within 40 kilometres of the application area their likelihood of occurrence (Botanica Consulting, 2022).

Table 4-3: Potentially occurring significant fauna

Species	Conservation Status			Habitat Description	Assessment	Likelihood
	EPBC Act	BC Act	DBCA Priority			
Chuditch <i>Dasyurus geoffroii</i>	VU	VU	-	Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian Jarrah Forest (DEC 2012).	No known records on the DBCA database within 130km of the survey area. Considered to be locally extinct. Suitable habitat unlikely to be present.	Unlikely to Occur
Grey Falcon <i>Falco hypoleucos</i>	VU	-	-	This species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. The species has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter (DAWE, 2022b).	No known records on the DBCA database within 130km of the survey area. Potential for individuals to occur aerially over the survey area however generally uncommon and suitable breeding habitat unlikely to be present.	Unlikely to Occur
Peregrine Falcon <i>Falco peregrinus</i>	-	OS	-	The Peregrine Falcon is found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings (Birdlife Australia, 2022).	Previously recorded approximately 30km south of the survey area (recorded in 1974). Potential for individuals to occur aerially over the survey area however suitable breeding habitat unlikely to be present.	Unlikely to Occur
Malleefowl <i>Leipoa ocellata</i>	VU	VU	-	Scrublands and woodlands dominated by mallee and wattle species (DAWE, 2022b).	Known to occur in low density within 100km of the survey area, however suitable habitat is unlikely to be present.	Unlikely to Occur
Night Parrot <i>Pezoporos occidentalis</i>	EN	CR	-	Broad habitat requirements include areas of old-growth spinifex (<i>Triodia</i>) for roosting and nesting, together with foraging habitats that are likely to include various native grasses and herbs, and may or may not contain shrubs or low trees. (DPaW, 2017).	No known records on the DBCA database within 130km of the survey area. Considered to be locally extinct. Suitable habitat unlikely to be present.	Unlikely to Occur
Princess Parrot <i>Polytelis alexandrae</i>	VU	-	P4	Inhabits sand dunes and sand flats in the arid zone of western and central Australia. It occurs in open savanna woodlands and shrublands that usually consist of scattered stands of <i>Eucalyptus</i> (including <i>E. gongylocarpa</i> , <i>E. chippendalei</i> and mallee species), <i>Casuarina</i> or <i>Allocasuarina</i> trees; an understorey of shrubs such as <i>Acacia</i> (especially <i>A. aneura</i>), <i>Cassia</i> , <i>Eremophila</i> , <i>Grevillea</i> , <i>Hakea</i> and <i>Senna</i> ; and a ground cover dominated by <i>Triodia</i> species (DAWE, 2020)	Unlikely that suitable habitat would be present in the survey area.	Unlikely to Occur
Yellow Wagtail <i>Motacilla flava</i>	MI	IA	-	Occurs in a variety of damp or wet habitats with low vegetation, from rushy pastures, meadows, hay fields and marshes to damp steppe and grassy tundra (Morecombe 2004).	No sightings from inland WA. Unlikely that suitable habitat would be present in the survey area.	Unlikely to Occur
Grey Wagtail <i>Motacilla cinerea</i>	MI	IA	-	Running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004).	No sightings from inland WA. Unlikely that suitable habitat would be present in the survey area.	Unlikely to Occur

Species	Conservation Status			Habitat Description	Assessment	Likelihood
	EPBC Act	BC Act	DBCA Priority			
Migratory Shorebirds (various species)	MI	MI	-	Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, salt pans and hypersaline salt lakes inland (DAWE, 2022b).	Suitable habitat (wetlands) is not present within the survey area.	Unlikely to Occur

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>Environmental value: biological values</p> <p>Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>A reconnaissance flora and vegetation survey of the application area recorded a total of 42 flora species belonging to 30 genera and 19 families, of which none were representative of any Threatened or Priority flora (Botanica Consulting, 2022).</p> <p>There are no known Threatened or Priority Ecological Communities within the permit area (Botanica Consulting, 2022; GIS Database).</p> <p>Two introduced species were recorded in the survey area, <i>Cucumis myriocarpus</i> and <i>Rumex vesicarius</i>, none of them are classified as Weeds of National Significance (WONS) (Botanica Consulting, 2022). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p> <p>No conservation significant fauna have been recorded within the application area (Botanica Consulting, 2022; GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>A desktop assessment conducted by Botanica Consulting (2022) identified 139 bird, 5 mammal, 31 reptile and 7 amphibian taxa as previously recorded in the local broader area. This assessment identified 13 fauna species of conservation significance within 40 kilometres of the application area (DBCA, 2022). However, the likelihood assessment of significant fauna occurrence did not identify any species as potentially occurring within the application area. A basic fauna survey undertaken in June 2022 by Botanica Consulting, also did not record any conservation significant fauna species within the application area (Botanica Consulting, 2022).</p> <p>The basic fauna survey identified one fauna habitat within the application area, classified as Mulga/ Acacia Woodland on rocky or clay loam plain. This habitat is common and widespread in the local and regional area, and it has low potential to serve as significant fauna habitat due to numerous reasons (Botanica Consulting, 2022):</p> <ul style="list-style-type: none"> - Ground has low suitability for burrowing species; - Vegetation with low diversity; - Low vegetation density and leaf litter; - Absence of large Eucalyptus trees with hollows for nesting birds; and - Low refuge potential (absence of hummock grasses) <p>In addition, the application area is surrounded by existing disturbance for mining related infrastructure (GIS Database).</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). A flora survey of the application area did not record any species of Threatened flora (Botanica Consulting, 2022), and the vegetation proposed to be cleared is not expected to support any species of Threatened flora (GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to section 3.2.1, above.</i>
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within the application area (GIS Database). The nearest TEC (Lake Miranda West Calcrete) is located approximately 20 kilometres north of the application area (GIS Database).</p> <p>A vegetation survey of the application area did not identify any TECs (Botanica Consulting, 2022).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99 % of the pre-European vegetation still exists in the Murchison Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation association 18 (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Wanjarri Nature Reserve which is located approximately 50 kilometres north of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The application area has one minor ephemeral drainage line (GIS Database). Drainage lines within the project area are poorly defined and are only likely to flow following major rainfall events. As the vegetation associated with this ephemeral drainage line may be cleared, it is recommended to maintain surface water flow or reinstate downstream into existing natural drainage lines.</p> <p>Potential impacts to an ephemeral drainage line can be managed through vegetation management condition, which includes avoiding clearing riparian vegetation and maintaining surface water flow.</p> <p>The proposed clearing is unlikely to significant impact vegetation growing in association with any watercourse or wetland.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The application area lies within the Bevon, Violet, and Jundee soil landscape systems (DPIRD, 2022), described as:</p> <ul style="list-style-type: none"> • Bevon - irregular low ironstone hills with stony lower slopes supporting mulga shrublands. • Violet - gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting grooved mulga and bowgada shrublands and patchy halophytic shrublands. • Jundee (minority portion of the application area) - hardpan plains with ironstone gravel mantles and occasional sandy banks supporting mulga shrublands. <p>Given the application area is mainly comprised of stony lower slopes, gravelly plains on hardpan, and that most of the application area has previously been disturbed by mining activities, it is unlikely that the proposed clearing have an appreciable impact on land degradation or will be susceptible to wind erosion.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water flows.</p> <p>The groundwater in the area is marginal with a Total Dissolved Solids (TDS) between 500 to 1,000 mg/L (GIS Database). The proposed clearing of 45 hectares for the expansion of existing mining is unlikely to cause any significant impact on the surface or groundwater quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u></p> <p>The climate of the region is semi-arid, with a low average rainfall of approximately 236 millimetres per year (BoM, 2022).</p> <p>There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as ‘parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)

- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

- Binks, R.M., Wilkins, C.F., Markey, A.S., Lyons, M.N. and Byrne, M. (2020) Genomic data and morphological re-assessment reveals synonymy and hybridisation among *Seringia* taxa (Lasiopetaleae, Malvaceae) in remote north-western Australia, TAXON, 69: 307-320. <https://doi.org/10.1002/tax.12233>
- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Learmonth Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 31 August 2022).
- Botanica Consulting (2022) Reconnaissance Flora/Vegetation and Basic Fauna Assessment. Report prepared for Ramelius Resources Limited by Botanica Consulting, July 2022.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2021) Western Australian Threatened Species Scientific Committee. Available from: [Threatened species nominations for public consultation \(dpaw.wa.gov.au\)](https://www.dpaw.wa.gov.au)
- Department of Biodiversity, Conservation and Attractions (DBCA) (2022) Threatened and Priority fauna database search (7123). Prepared for Botanica Consulting by the Species and Communities Program Department of Biodiversity Conservation and Attractions, Government of Western Australia, 2022.
- Department of Environment Regulation (DER) (2013) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
- Department of Planning, Lands and Heritage (DPLH) (2022) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 25 August 2022).
- Department of Primary Industries and Regional Development (DPIRD) (2022) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (Accessed 31 August 2022).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf
- Environmental Protection Authority (EPA) (2020) Technical Guidance – Terrestrial Fauna Surveys. Available from: [2020.09.17 - EPA Technical Guidance - Vertebrate Fauna Surveys - Final.pdf](https://www.epa.wa.gov.au/sites/default/files/2020-09-17_-_EPA_Technical_Guidance_-_Vertebrate_Fauna_Surveys_-_Final.pdf)
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of April 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Ramelius Resources Limited (2022) Ramelius Resources Limited application for clearing permit within Mining Lease M36/34 and M36/111. Ramelius Resources Limited, August 2022.

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)

GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia):-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI

Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD

Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS

Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P

Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1

Priority One - Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2

Priority Two - Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3

Priority Three - Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.