



Comet Vale Sand Project

Conceptual Mine Closure Plan

October 2024



Revision Table

Version	Title	Task	Name	Company	Date
1	Comet Vale Sand Project Conceptual Mine Closure Plan	Prepared By	James Cumming	RPM Advisory Services Pty Ltd	23/03/2023
		Approved By	Murray Leahy	MLG Oz Limited	24/03/2023
2	Comet Vale Sand Project Conceptual Mine Closure Plan	Prepared By	Erin Lee	RPM Advisory Services Pty Ltd	4/10/2024
		Approved By	Murray Leahy	MLG Oz Limited	6/10/2024

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1 Project Summary

1.1 Purpose and Scope

This Conceptual Mine Closure Plan has been developed to provide supplementary information relating to mine closure to support the Preliminary Documentation, as requested by Department of Climate Change, Energy, the Environment and Water (DCCEEW) via a letter dated 25 May 2023, under s95A (2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Proponent

The proponent of the Proposed Action is MLG Oz Limited (MLG, the Proponent). All compliance and regulatory requirements regarding this assessment document should be forwarded by email, post, or courier to the following address:

Company: MLG Oz Limited
Address: PO Box 1484, Kalgoorlie, WA 6433
Contact: Murray Leahy, Managing Director
Telephone: (08) 9022 7746
Email: murray@mlgoz.com.au

1.3 Location and Tenure

The Proposed Action is located 96 km north of Kalgoorlie, Western Australia, on tenure granted under the WA *Mining Act 1972* (Mining Act). It is accessed from the Goldfields Highway onto internal access tracks. The location of the Proposed Action is shown in Figure 1-1.

The Proposed Action is located within the Nyalpa Pirniku Native Title Claim (WAD91/2019), as determined on 31 October 2023. The Proposed Action is also located on the Jeedamya Pastoral Lease within the Shire of Menzies. There are two reserves, located over the mining lease application area being:

- Explosives Reserve R13500 which is vested to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).
- Common Reserve R16153 which is the responsibility of the Department of Planning, Lands and Heritage (DPLH).

The proposed mining lease application area, reserves, and Native Title Claim areas are shown on Figure 1-2.

1.4 Operations and Infrastructure

The Proposed Action is a sand and gravel mining operation consisting of shallow sand and gravel excavation for use in the construction industry. The proposed site layout is provided in Figure 1-3.

The mining operation is carried out in a basic strip-mining style, comprising:

- Pre-stripping of vegetation and soil, which is stockpiled in low windrows perpendicular to the active mining area for later use in rehabilitation.
- Excavating sand and gravel to a typical depth of 1.5 m (maximum of 5 m) that is subsequently screened into different product sizes and loaded into road trains for transport offsite.
- Progressive rehabilitation of mined areas.



- Up to 70,000 tonnes of sand and gravel material per annum will be excavated from the Proposed Action area.

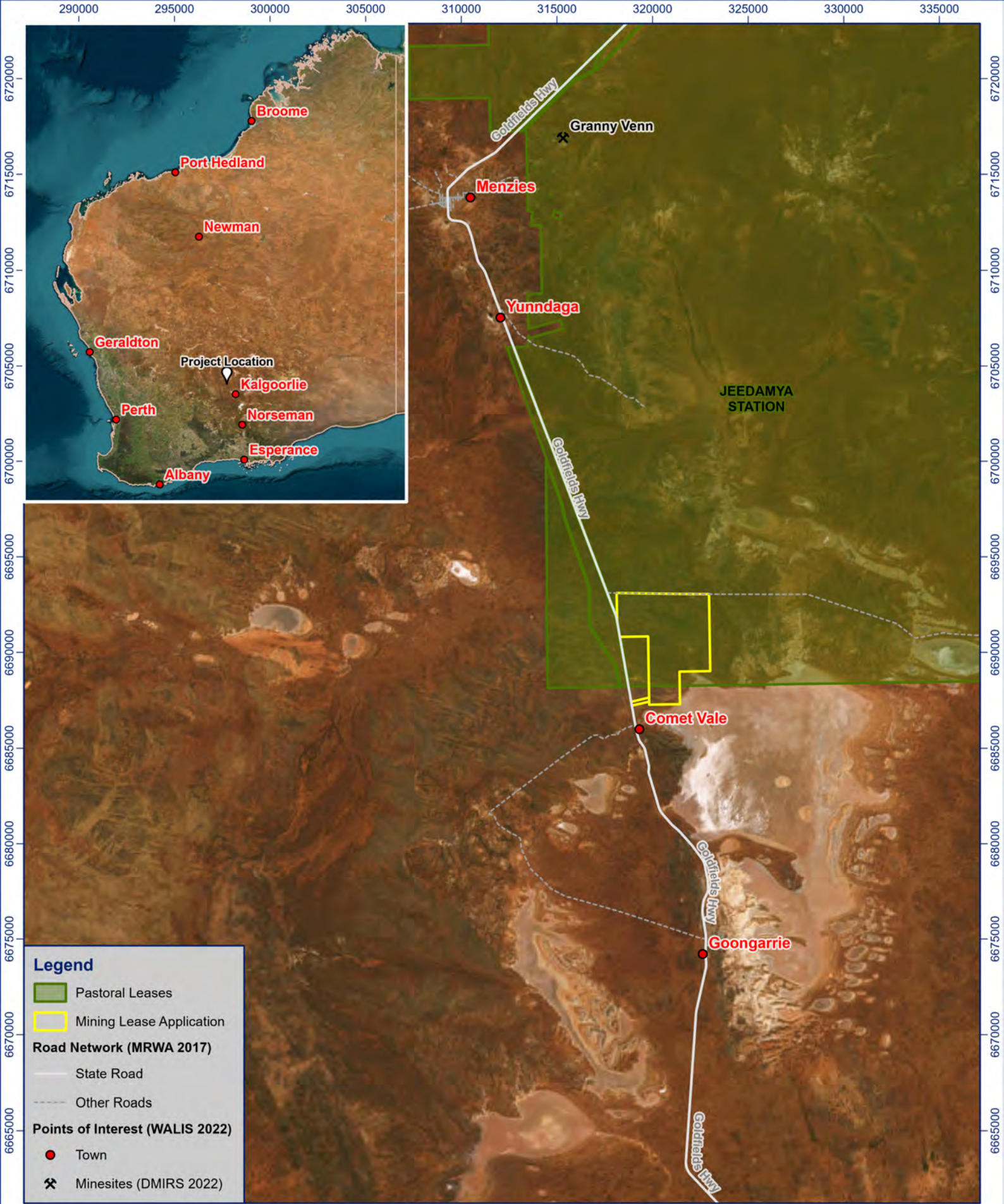
The operation is typically carried out by:

- 1 x Komatsu 155 bulldozer (pre-strip and rehabilitation activities).
- 1 x Caterpillar 966H front-end loader (road train loading of the material).
- 2 x Kenworth Road trains (transport of the mined sand and gravel to the end customer).
- 1 x Kenworth water truck (dust suppression).
- 1 x Caterpillar 140H grader for road maintenance.
- 1 x Mobile screening plant.

Explosives will not be utilised in strip-mining activities, and disturbed land will undergo progressive rehabilitation. This operation will not generate any waste rock. Sand and gravel will be collected by a front-end loader and loaded into the mobile screening plant. The plant will be situated within disturbed areas and move across the active working area as required. When required, the screened product will be stockpiled and loaded into road trains by a front-end loader. No further processing is proposed for this Proposed Action. The life of mine (LoM) for Comet Vale is approximately 20 years (2045). Disturbance areas for the Proposed Action are summarised in Table 1-1 with a total of 93 ha of proposed disturbance.

Table 1-1 Proposed Disturbance


Tenement	Activity	Proposed Disturbance (ha)
Mining Lease Tenure (pending)	Sand and gravel extraction	73.4
	Access Road	16.7
Miscellaneous Licence (pending)	Access Road	2.9
Total		93.0

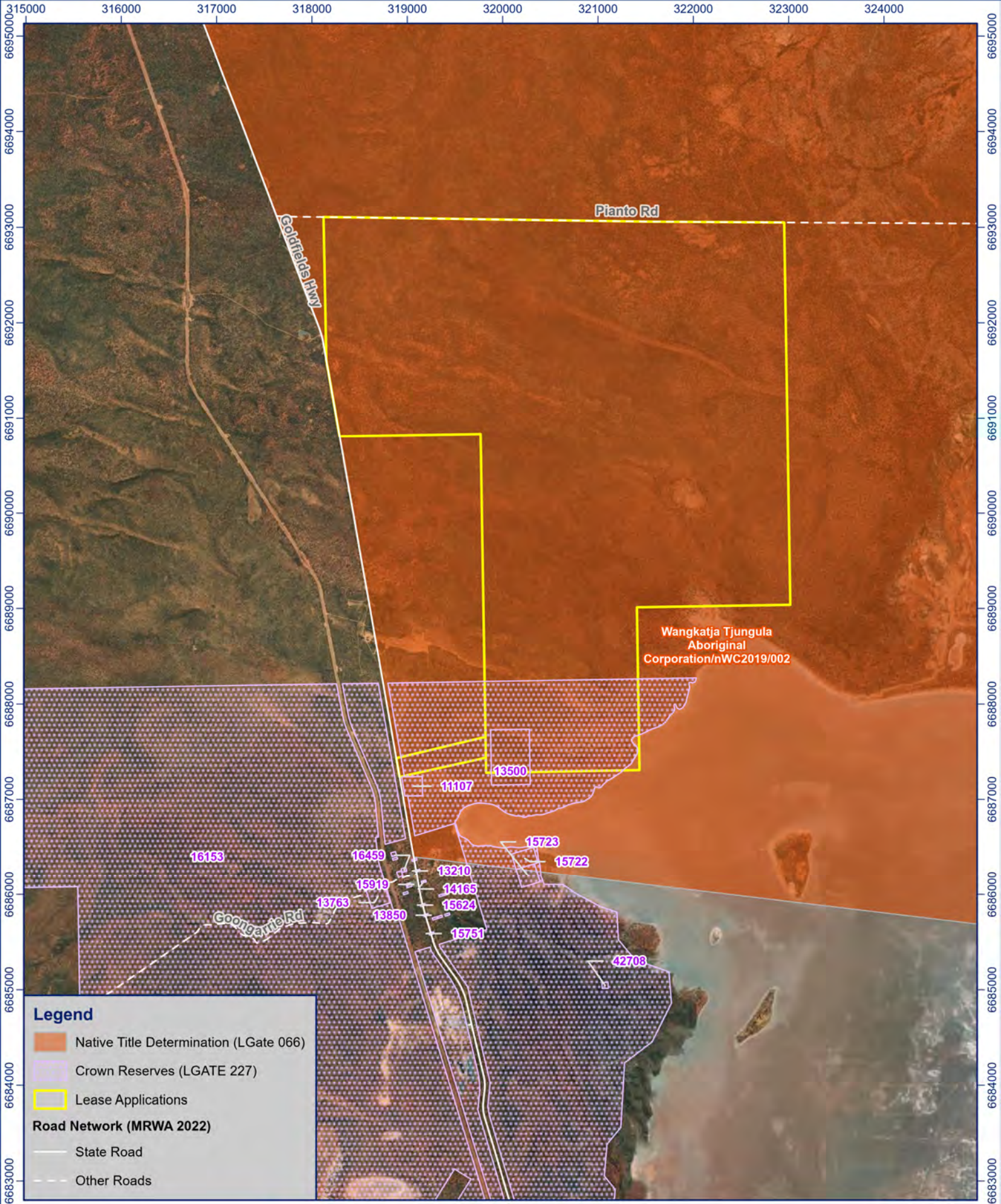


Scale: 1:250,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



RPMGLOBAL

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Location Plan		
Figure 1-1	ADV-AU-00382	



Legend

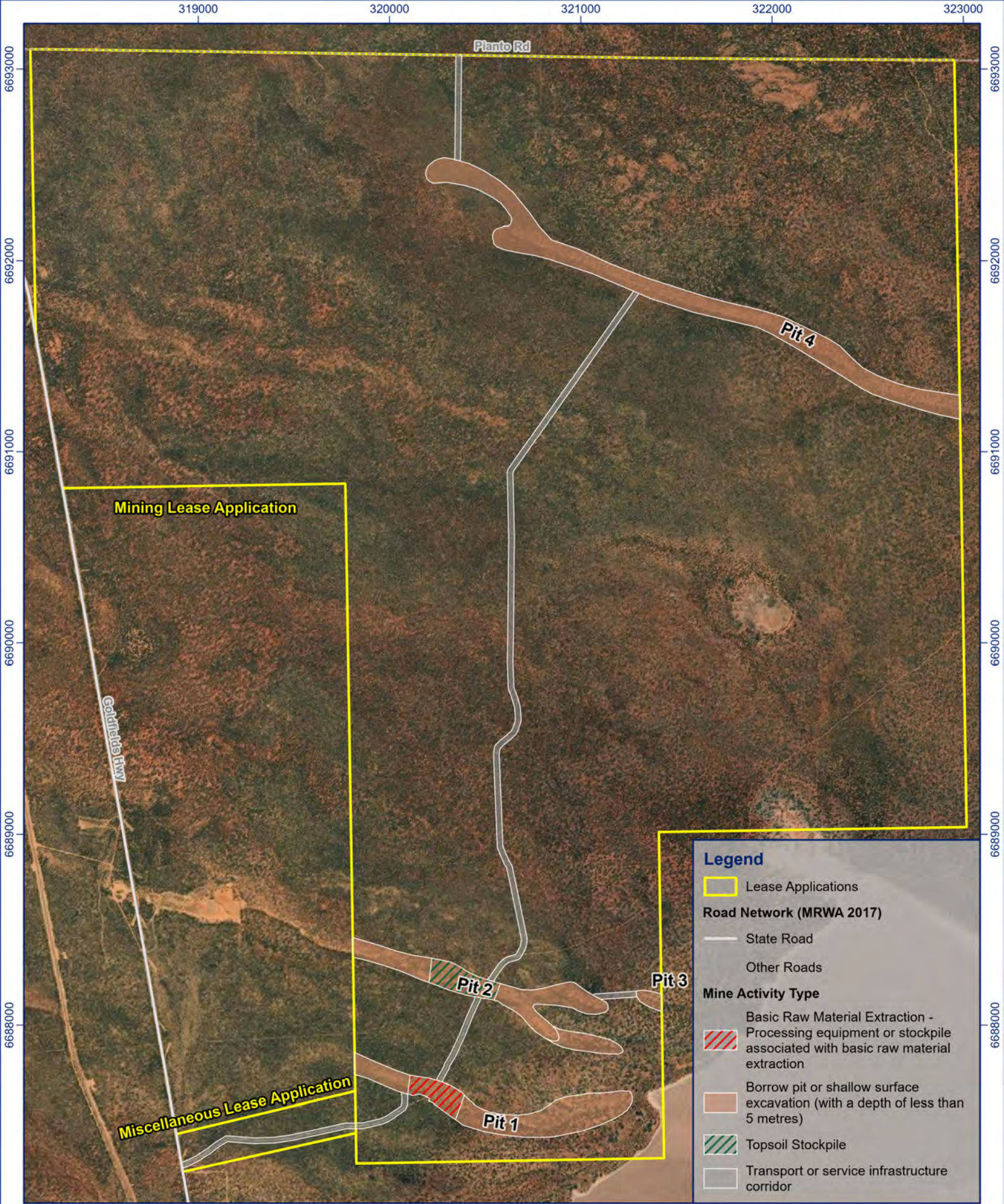
- Native Title Determination (LGate 066)
- Crown Reserves (LGATE 227)
- Lease Applications

Road Network (MRWA 2022)

- State Road
- Other Roads

Scale: 1:50,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Project Tenure		
Figure 1-2	ADV-AU-00382	October 2024



Scale: 1:25,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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RPMGLOBAL

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		MLG Comprehensive Mine Site Services
Proposed Site Layout		
Figure 1-3	ADV-AU-00382	October 2024

2 Identification of Closure Obligations

2.1 Legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Cth)

The EPBC Act has established a nationally consistent framework for environmental assessment of new projects and variations to existing projects. Mining projects that potentially impact Matters of National Environmental Significance (MNES) are assessed under this legislation.

The Proposed Action was referred to DCCEEW under the EPBC Act due to the presence of Malleefowl and is currently under assessment (EPBC Number 2023/09460). Closure obligations are currently not recognised under the EPBC Act.

2.1.2 Mining Act 1975 (WA) (Mining Act)

The Mining Act regulates mining leases, licences, and terms and conditions for mines on private and crown land. Relevant aspects relating to mine closure are summarised below.

Mining Proposals

Closure commitments from approval documents for the Proposed Action are contained within Mining Proposals and Mine Closure Plans approved under the Mining Act provision. Closure commitments from these documents will be followed as part of closure planning. This Conceptual MCP has been prepared to comply with relevant commitments made within approval documentation, with the various commitments incorporated into the Legal Obligations Register (Section 2.3).

Mine Closure Plan

The initial Mine Closure Plan will be submitted alongside the Mining Proposal to DEMIRS as required by the Mining Act. Subsequent updates to the Mine Closure Plans will be made in accordance with the conditions of the mining tenure.

Tenement Conditions

Once tenure is granted and the Mining Proposal and Mine Closure Plan are submitted, all conditions related to closure and rehabilitation activities will be outlined in the Legal Obligations Register.

2.1.3 Environmental Protection Act 1986 (WA)

Part IV – Environmental Impact Assessment

A Part IV assessment occurs when the Environment Protection Authority (EPA) determines that the proposal should be assessed due to the potential for a significant environmental impact. An explanation of 'significance' is provided in the document '*Statement of Environmental Principles, Factors and Objectives*' prepared by the EPA in June 2018. Using this guidance, the impact of the current MLG operations is not considered to trigger significance under Part IV of the EP Act requiring assessment by the EPA and thereby being bound by a Ministerial approval and associated conditions under Part IV.

Part V – Control of Emissions

Part V (Section 52) of the EP Act establishes a range of statutory instruments to permit the assessment and management of environmental outcomes arising from emissions from industry by the Department of Water and Environmental Regulation (DWER). Prescribed Premise categories are defined in Schedule 1 of the *Environmental Protection Regulations 1987*. A Works Approval and Registration of the mobile screening unit at the Project will be required, with an application to be

submitted once tenure is granted. Any closure-related obligations will be added to the Legal Obligations Register.

Part V – Clearing of Native Vegetation

Part V (Section 51) of the EP Act specifies that clearing of native vegetation in Western Australia requires a permit. The clearing provisions of this Act are described in *the Environmental Protection Amendment Act 2003* (Western Australia) and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

A Native Vegetation Clearing Permit (NVCP) for the proposed clearing of the Proposed Action will be submitted for the proposed disturbance area once tenure is granted. Closure and rehabilitation obligations associated with the permit will be added to the Legal Obligations Register.

2.1.4 Contaminated Sites Act 2003

The Contaminated Sites Act 2003 (CS Act) requires that known or suspected contamination is reported to DWER where the substance is present at above background concentrations in the land or waters of a site that presents or potentially presents a risk of harm to human health, the environment or any environmental value.

A search of the DWER Contaminated Sites Database indicated that no confirmed contaminated sites have been listed under the CS Act within the Proposed Action area. There are no suspected contaminated sites associated with the Proposed Action.

2.2 Guidelines

2.2.1 ANZMEC/MCA Strategic Framework for Mine Closure

The Australian and New Zealand Minerals and Energy Council (ANZMEC) and Minerals Council of Australia (MCA) developed 'The Strategic Framework for Mine Closure (Strategic Framework)(ANZMEC/MCA, 2000), which is intended to promote a nationally consistent approach to mine closure management in all Australian jurisdictions. The Strategic Framework has established principles for mine closure that are agreed between regulating authorities and the mining industry.

2.2.2 DEMIRS Guidelines for Preparation of MCPs

In March 2020, DEMIRS released revised, statutory guidelines for the development of MCPs. These guidelines adopted the objectives and principles of the Strategic Framework, whilst providing further description of how MCPs in Western Australia can meet these objectives and principles. This MCP has been developed in accordance with the 2020 statutory guidelines ((Department of Mines Industry Regulation and Safety (DMIRS), 2020)).

2.3 Legal Obligations Register

All closure obligations identified under the various acts and approval documentation, as discussed above, will be collated into a single Legal Obligations Register. The Legal Obligations Register is a comprehensive checklist for MLG to use during the closure process. It will be updated annually to reflect additional approvals and maintain its relevance.

3 Stakeholder Engagement

3.1 Stakeholder Strategy

MLG is committed to following the five principles of stakeholder engagement:

- **Communication:** Communication must be open, accessible, clearly defined, two-way and appropriate.
- **Transparency:** The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented.
- **Collaboration:** A cooperative and collaborative approach to seeking mutually beneficial outcomes is key to effective engagement.
- **Inclusiveness:** Inclusiveness involves identifying and involving communities and stakeholders early and throughout the process, in an appropriate manner.
- **Integrity:** Community and stakeholder engagement should establish and foster mutual trust and respect.

3.2 Key Stakeholders

The purpose of the existing stakeholder engagement strategy is to ensure that relevant stakeholders are actively kept informed and have the opportunity to provide input into aspects of the Proposed Action. It also aims to minimise the Proposed Action's potential impact on workers and the local community. The stakeholder engagement strategy is targeted at different stakeholder groups identified, which comprise:

- **Commonwealth Government:** DCCEEW
- **State Government:** DWER, DEMIRS, Department of Biodiversity, Conservation and Attractions (DBCA), DPLH and Main Roads Western Australia (MRWA).
- **Local Government:** Menzies Shire.
- **Aboriginal Parties/Representatives:** Nyalpa Pirniku (WC2019/002).
- **Local Community/Land Users:** Jeedamya Pastoral Lease (PL N050457).
- **MLG:** Shareholders, employees and their families, caretakers, Corporate/Senior management and consultants/contractors.

4 Baseline Environmental Data

4.1 Regional Setting

The Proposed Action is located on relatively flat land with undulating dune systems within the East Murchison (MUR01) subregion of the Murchison Region as described by the Interim Biogeographic Regionalisation for Australia (IBRA) Version 7 (DCCEEW, 2020). The East Murchison sub-region is situated in the Yilgarn Craton, covering an area of 7,847,996 ha (Cowan et al., 2001).

The East Murchison subregion is characterised by its internal drainage and elevated red desert sandplains with minimal dune development. The vegetation is dominated by Mulga woodlands with ephemerals, hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (Cowan et al., 2001).

4.1.1 Closure Considerations

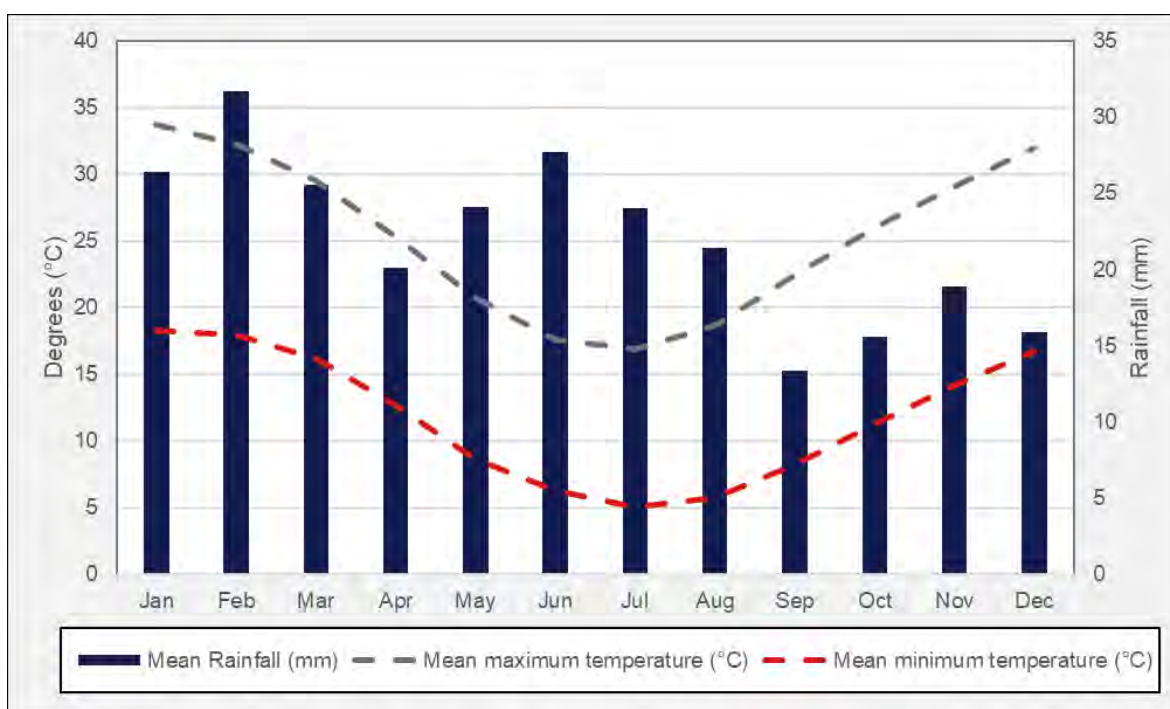
Landforms should be profiled and rehabilitated as far as practicable to be compatible with the surrounding landscape, with consideration to slope angles and elevations.

4.2 Climate

The nearest active Bureau of Meteorology (BOM) station for which meteorological data exists is Kalgoorlie-Boulder Airport (Site 012038), located approximately 105 km south of the site. Site 012038 readings commenced in 1898 with the latest available data from 2 October 2024.

Kalgoorlie-Boulder has a semi-arid climate with hot summers and mild winters. The annual average rainfall reported at the site is 264.9 mm (BOM, 2024). The highest rainfall typically occurs in February (31.7 mm) and the lowest rainfall occurs in September (13.4 mm). The annual average number of days of rain is 39.1 (Figure 4-1). Temperatures range from a mean maximum of 33.7°C in January to 16.9°C in July. Minimum mean temperatures at the Proposed Action site range from 18.4°C in January to 5.1°C in July (BOM, 2024). The Proposed Action area has experience three fires between 1975 and 1998. The most recent fire was within 6 km of Comet Vale in 2022.

Figure 4-1 Climate Chart – Kalgoorlie Boulder Airport Meteorological Station (Site 012038)



4.2.1 Closure Considerations

Climate modelling (CSIRO & BoM, 2014) generally points towards a hotter, drier climate for the region, which is currently described as hot and dry for most of the year. In regions where water is already limited, increased evapotranspiration rates and reduced rainfall will further strain available water resources. This indicates that both mining companies and the local community will need to adapt their practices to conserve water and cope in the hotter extremes. A greater incidence and severity of extreme weather events or storms is also predicted, including high winds (10% to 15% increase by 2030) and intense rainfall (20% to 30% increase by 2030). While closure designs include consideration to these conditions, climate change is unlikely to significantly affect closure of the Proposed Action given the subtle landforms and favourable soils properties.

4.3 Geology

The tenements are located within the Kalgoorlie Province as defined by Tille in 'Soil-landscapes of Western Australia's Rangelands and Arid Interior' (Tille, 2006). The Kalgoorlie Province is located on the central eastern portion of the Yilgarn Craton, predominantly over Archean rocks. The basement rocks consist mainly of granite, gneiss and greenstone. To the north, where the tenement area is located, even-grained porphyritic granite rocks with quartz vein and dolerite dyke intrusions are common (Tille, 2006).

Interdunal areas consist of flat undulating zones containing residual iron rich pisolithic gravels. The pisolites are up to 1.5 centimetres (cm) in diameter, consist mainly of goethite and are used for maintenance of gravel roads. There is a surficial quartz sand sheet and dune sand cover.

4.3.1 Closure Considerations

Based on the current geological information, it is not anticipated that the geology within the Proposed Action area will have any implications on closure, with all materials being geochemically benign.

4.4 Soils

MLG commissioned RPM Advisory Services Pty Ltd (RPM) to conduct an assessment of the chemical and physical characteristics of the soil at the location of the Proposed Action. The key findings from this survey (RPM, 2022) include:

- The materials are loose, pale red brown aeolian sands with very low plant available water capacity.
- Although the sands have a low risk of generating significant amounts of dust, they contain substantial amounts of fine to medium sand-sized particles that are easily mobilised by moderate to strong wind gusts.
- The sands are moderately acidic, with pH values ranging from 5.3 to 5.6. As the soils are comprised mainly of silica particles with very low concentrations of exchangeable aluminium, the acidity levels are unlikely to be a problem for common sand dune species (notably *Spinifex Triodia* sp.) in the arid regions of WA.
- The sands are non-saline and non-sodic.
- Nutrient contents and soil organic matter contents are extremely low. Low Phosphorous Buffer Index (PBI) and Cation Exchange Capacity (CEC) values indicate they have very little capacity to retain soluble nutrients applied as soluble fertilisers or mineralised organic materials.
- Heavy metal and metalloid concentrations are exceptionally low and comply with "clean fill" criteria in WA (DWER, 2019).

Overall, the soils property is described as stable, geochemically benign aeolian sands with limited nutritional value for plant growth. Since local and native plant species are adapted to these conditions, it is anticipated that revegetation of disturbed surfaces will naturally occur over time. This is reinforced by the positive performance of areas that have already been rehabilitated by MLG, as demonstrated by rehabilitation performance monitoring reports (Blueprint, 2021a, 2021b) and general site observations.

4.4.1 Closure Considerations

The soils in the Proposed Action area do not present any limitations that would reduce rehabilitation success. The use of local native species, which are well adapted to the local soil conditions, will be used to progressively rehabilitate the sites with the application of additional fertilisers unlikely to be required.

To ensure the successful rehabilitation of disturbed areas, solids from clearing activities will be properly stored and protected (e.g., from vehicle traffic, saline water, erosion). Topsoil stockpiles are to be utilised as soon as possible to benefit from the contained seed bank.

4.5 Hydrogeology

A review of several key studies undertaken on Goldfields's hydrogeology, including those undertaken by Commander et.al., (1992), K.H. Morgan & Associates (2000) and Parsons Brickerhoff (2004), has been used to develop a conceptual hydrogeological model of the regional hydrogeology.

The key findings include:

- The Proposed Action is located within the Goldfields Groundwater Area (Rebecca Sub-Area) and partially within the Lake Goongarrie catchment, where the bulk of the water resources are saline with a total dissolved solids content (TDS) of over 14,000 mg/L and dominated by Sodium (NA) and Chlorine (Cl) ions.
- Rainfall infiltration is the main source of aquifer recharge throughout the region with increasing salinities as Lake Goongarrie is approached.
- Groundwater depths within the area of the Proposed Action ranges from a minimum of 4 to a maximum of 27 metres.
- Drainage is uncoordinated and directed towards the palaeodrainages of Lake Goongarrie, Lake Ballard and Lake Marmion.
- Discharge from the groundwater systems takes place by evaporation from salt lakes.

Groundwater occurrence can be grouped as follows:

- Tertiary sediments - The Lake Rebecca system, which includes Lake Goongarrie, is the surface expression of an extensive ancient river system. Locally these palaeochannel sediments reach a thickness of up to 60 m, generally being low permeability silts and clays but with basal layers of moderate permeability sands.
- Regolith horizon - The Tertiary sediments are incised into a weathering profile, with a thickness of up to about 60 metres. Permeability can range from low to very high and is typically greatest in saprock and oxidised bedrock near the base of the oxidised profile. It is commonly higher in ultramafic and siliceous sedimentary rocks. Water quality in these unconfined aquifers can be fresh to brackish and this resource has been used for pastoral supplies.

- Bedrock - Below the base of oxidation, permeability is generally very low and decreases further with depth. Development in the footwall basalt produces very little water. Fresh rock mining in the region generally produces only small flows from fractured rock aquifers located in the ore environment. These waters are typically hypersaline.

Given the superficial depth of the target aeolian sands and the extraction of material from raised sand dunes, groundwater will not be encountered as part of the Proposed Action.

4.5.1 Closure Considerations

The groundwater levels are projected to remain significantly below the base of the excavation areas. Consequently, no adverse effects on groundwater resources are expected as a result of the ongoing mining operations and closure activities.

4.6 Hydrology

The Proposed Action is in the Raeside-Ponton catchment within the Salt Lake Basin of the Western Plateau Division, as delineated in the DWER Hydrographic Catchments Database (DWER, 2023).

There are no RAMSAR wetlands within or near the Development Envelope or tenement boundaries of the Proposed Action. The EPBC Protected Matters Report confirmed there are no wetlands of international importance with 50 km of the Proposed Action (DCCEEW, 2021) with the closest RAMSAR site is located approximately 430 km south at Lake Gore on the south coast of Western Australia. A draft proposed RAMSAR site at Lake Ballard is approximately 40 km north of the Development Envelope. No impacts from the Proposed Action are anticipated within the Development Envelope due to the low-impact clearing and surface mining operations.

The nearest surface water features to the Action comprise Lake Goongarrie to the immediate south. Lake Goongarrie is an ephemeral salt-lake that covers an area of 113 km² and forms part of the Rebecca Paleochannel (oriented north to south), covering an area of approximately 8,715 km². This drainage has a dominant flow towards the east to the Eucla Basin through Lake Yindarlgooda and Lake Marmion.

Locally, the Development Envelope is situated across five small catchments, with the indicative Disturbance Footprint located almost entirely within two of these (Figure 4-2):

- A central, internally draining catchment with all associated drainage terminating within a small, unnamed mud pan located in the southeast of the tenement. This catchment covers approximately 13 km² and contains the northern mining area and the majority of the haul roads.
- A southern catchment that drains into the northwest extremity of Lake Goongarrie. This catchment covers approximately 29 km², of which 13 km² is situated within the tenement. The southern mining area and associated haul roads are located within this catchment.

Local topography is generally subdued, comprising a series of low sand dunes, a broader topographic high area towards the northwest corner of the tenement and a topographic low area where the tenement adjoins Lake Goongarrie. Elevations in the topographic high area are in the order of 415 m RL (AHD) while Lake Goongarrie is situated at approximately 357 m RL (AHD). Gradients across the tenement are low, averaging between 1% and 2% and generally not exceeding 10%. The steepest gradients are associated with the sand dune areas, which have gradients varying between 2% and 10%.

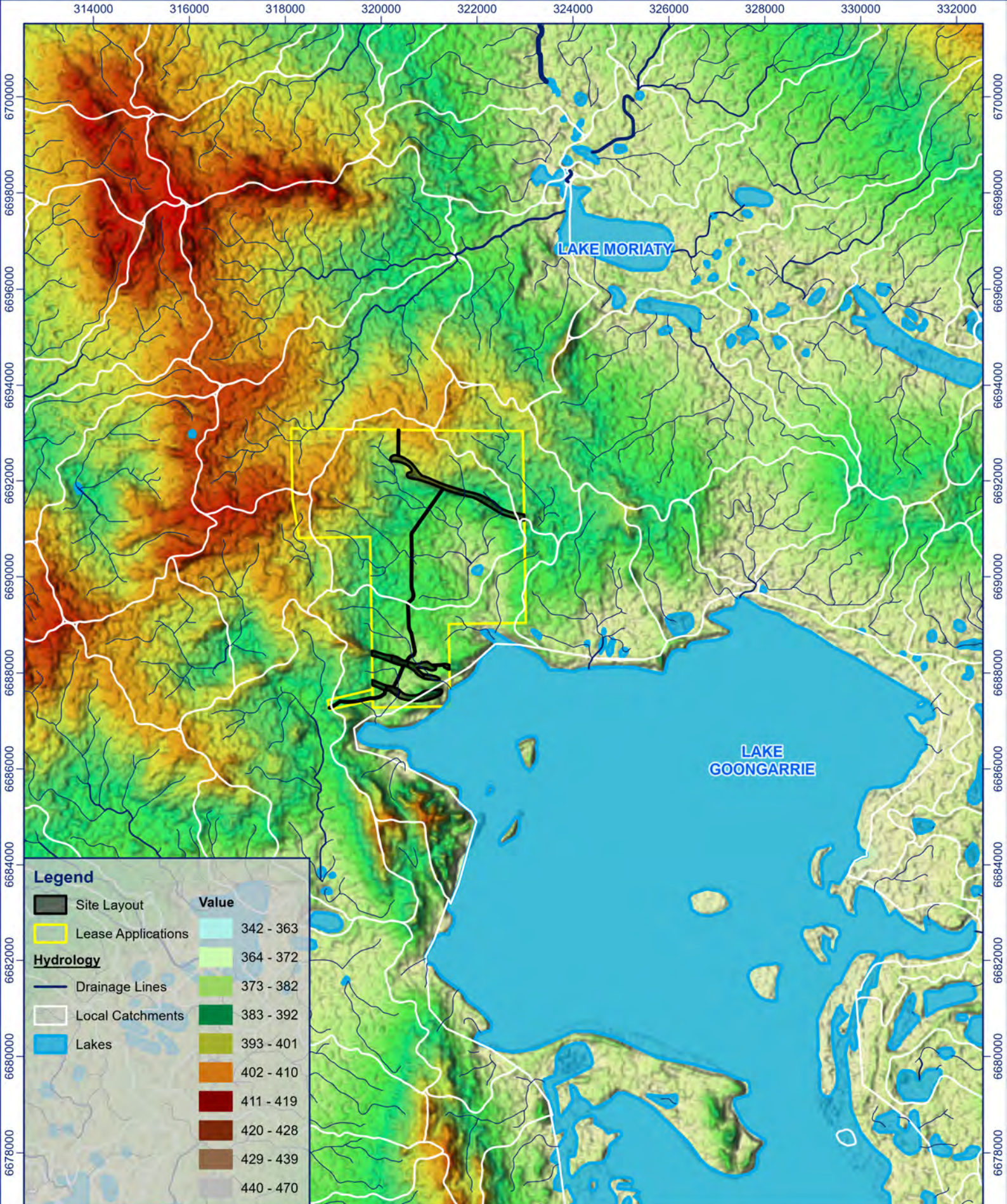
There are several minor drainage paths within the tenement, however stormwater flow typically occurs as sheetwash in a south-easterly direction. Under regular rainfall events, stormwater flows are expected to be limited across the Development Envelope due to the highly permeable aeolian sands.

More extreme storm events may produce sheetwash broadly following the drainage paths shown in Figure 4-2.

Flooding associated with these two surface water features is not expected to impact the Development Envelope, with a minimum 10 m elevation differential between the closest mine infrastructure and water body (Lake Goongarrie and/or mud pan).

4.6.1 Closure Considerations

The established rehabilitation regime involves covering the base of the excavation areas with approximately 300 mm of topsoil/growth medium. These measures help to reduce the risk of ponding in the base of the excavation areas.



Scale: 1:100,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		MLG Comprehensive Mine Site Services
Project Hydrology		
Figure 4-2	ADV-AU-00382	October 2024

4.7 Flora and Vegetation

4.7.1 Studies

A total of four flora and vegetation surveys have been conducted across the tenement and surrounding areas to characterise the vegetation and identify significant flora. These include:

- Reconnaissance Flora and Vegetation Survey of the Comet Vale Project (Goldfields Landcare Services (GLS), 2018).
- Detailed Flora and Vegetation Survey of the Comet Vale Project (GLS, 2022).
- Targeted Priority Flora Survey of the Comet Vale Project (NVS (Native Vegetation Solutions), 2023).
- Detailed Flora and Vegetation Survey (RPS AAP Consulting Pty Ltd (RPS), 2024).

The surveys across the site were completed in accordance with the following guidelines:

- Environmental Factor Guideline – Flora and Vegetation (EPA, 2016).
- Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016).

4.7.2 Vegetation Communities

The 2022 and 2024 detailed surveys identified six separate vegetation types across the total survey area. All vegetation types are widespread throughout the Goldfields region. A summary of the vegetation types is provided in Table 4-1 and presented in Figure 4-3.

Table 4-1 Vegetation Communities

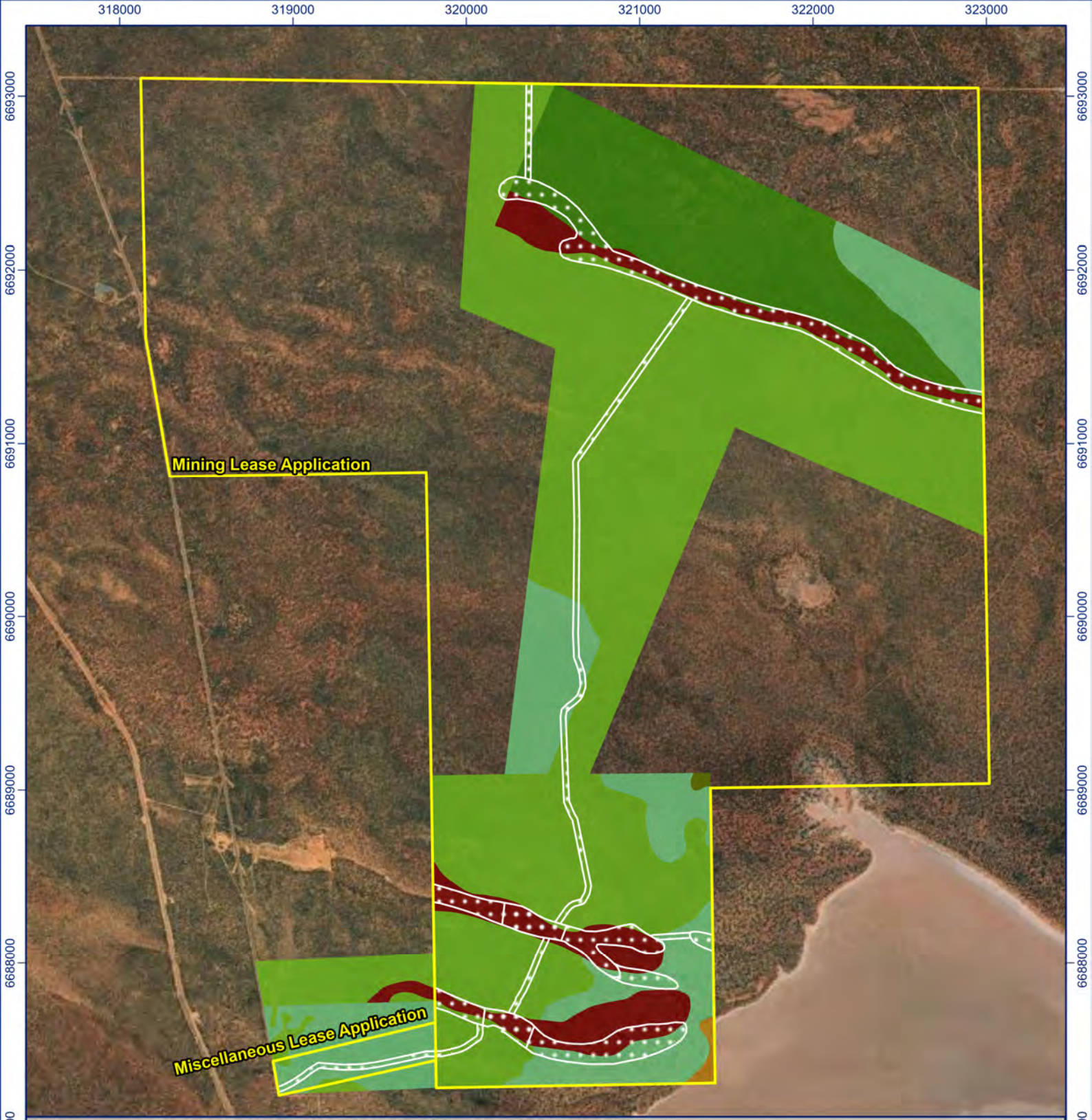
Code	Broad Floristic Formation	RPS (2023) Flora Classification	Vegetation Description	Area (ha)
SAGS (Variety A)	Sandplain – gum stratum (Variety A)	EcAePcEf, Eucalyptus Complex	<i>Eucalyptus rigidula</i> , <i>E. jutsonii</i> subsp <i>jutsonii</i> (P3) Low Woodland A (PFC 23%, 5-8m) with Scattered Low Trees A of <i>Callitris collumelaris</i> (PFC 1%, 5 m) and Scattered Tall Shrubs of <i>Hakea francisiana</i> (PFC 1%. 5 m) over mixed Low Scrub of <i>Rinzia carnosa</i> , <i>Phebalium laevigatum</i> , <i>P.canaliculatum</i> , <i>Acacia prainii</i> , <i>Bertya dimerostygma</i> , <i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i> , <i>Westringea cephalantha</i> , <i>Dodonaea ambylophylla</i> , <i>D. rigida</i> , <i>Alyxia tetanifolia</i> (P3), <i>A. buxifolia</i> , <i>Bursaria spinosa</i> and <i>Scaevola spinescens</i> (PFC 24%, 1-2 m) over Open Hummock Grass and Grass of <i>Triodia sp</i> and <i>Rytidosperma caespitosum</i> (PFC 13%) on red sand approximately 50 m from base of sand dune.	181.4
SDSH	Sand dune shrubland	Not recorded	Very Open Shrub Mallee of <i>Eucalyptus oldfieldii</i> (PFC 5%; 3m) over Open Scrub of <i>Leptospermum erubescens</i> , <i>Acacia effusifolia</i> and <i>Grevillea juncifolia</i> (PFC 9%, 2-2.5m) over Low Scrub of <i>Verticordia helmsii</i> , <i>Homalocalyx grandiflorus</i> (P3), with minor <i>Calytrix watsonii</i> , <i>Grevillea acacioides</i> , <i>Newcastelia insignis</i> (P2) and <i>Alyxia buxifolia</i> (PFC 18%, 1-2m) over Open Dwarf Scrub of <i>Leucopogon</i>	78.5

Code	Broad Floristic Formation	RPS (2023) Flora Classification	Vegetation Description	Area (ha)
			<i>sp Coolgardie</i> (PFC 3%), <1m) and Open Hummock Grass of <i>Triodia sp</i> (PFC 15%) on orange sand on a sand dune.	
SACS	Sandplain Acacia shrublands	AevPcEf, EcAievrPcEf, ElsAievEf	<i>Acacia effusifolia</i> Scrub (PFC 25%; 2-3m) with emergent Scattered Shrub Mallee of <i>Eucalyptus leptopoda</i> (PFC 2%;4m) and <i>Melaleuca uncinata</i> Open Scrub (PFC 4%; 3m) over Heath of <i>Phebalium canaliculatum</i> , <i>Grevillea acacioides</i> , <i>Aluta aspera</i> subsp <i>aspera</i> , <i>Rinzia carnosa</i> , <i>Leptospermum erubescens</i> and <i>Malleostemon roseus</i> (PFC 51%;1-2m) over Scattered Low Shrubs and Grasses of <i>Prostanthera campbellii</i> and <i>Rytidosperma caespitosum</i> (PFC 2%; <1m) on orange sandy silt with very minor Laterite on a sand plain.	567.8
MUWA	Mulga grassy wanderrie shrublands	Not recorded	<i>Eucalyptus rigidula</i> Open Low Woodland A (PFC 6%; 8m) over a Thicket of <i>Acacia effusifolia</i> , <i>A. caesaneura</i> and <i>A. ramulosa</i> var. <i>ramulosa</i> (PFC 44%;2.5-5m) over Low Scrub dominated by <i>Eremophila forrestii</i> subsp. <i>forrestii</i> with <i>Philotheca brucei</i> , <i>Scaevola spinescens</i> , <i>Eremophila latrobei</i> subsp. <i>latrobei</i> , <i>Dodonaea rigida</i> , <i>Senna artemisioides</i> subsp. <i>filifolia</i> and <i>Aluta aspera</i> subsp. <i>aspera</i> (PFC 22%;<1m) over Scattered Low Shrubs and Grasses of <i>Philotheca brucei</i> , <i>Prostanthera grylloana</i> , <i>Solanum lasiophyllum</i> and <i>Eragrostis eriopoda</i> on orange sandy silt with Laterite pebbles on an alluvial plain.	150.2
FRAN	Frankenia low shrublands	Not recorded	Low Heath, (PFC 37%, <1m) dominated by <i>Frankenia sesillis</i> (20%) and <i>Tecticornia peltata</i> (12%) with <i>Surreya diandra</i> , <i>Frankenia georgii</i> , <i>Maireana amoena</i> , <i>Tecticornia pergranulata</i> , <i>Gunniopsis rodwayii</i> and <i>Eragrostis falcata</i> (5%) on pale orange brown saline soil on a lake edge.	2.7
GNEW	Greenstone hill (non-halophytic) eucalypt woodlands	Not recorded	<i>Eucalyptus rigidula</i> Low Woodland A (PFC 10%, 8 m) over <i>Allocasuarina helmsii</i> , <i>Eremophila scoparia</i> and <i>Exocarpus aphylla</i> Open Scrub (PFC 9%, 3m) over <i>Westringea rigida</i> Open Dwarf Scrub (PFC 10%, <1 m) with Scattered Low Shrubs of <i>Senna artemisioides</i> subsp <i>filifolia</i> , <i>Olearia muelleri</i> , <i>Eremophila oppositifolia</i> and <i>Scaevola spinescens</i> (PFC 2%, <1m) over Very Open Hummock Grass of <i>Triodia basedowii</i> on orange sand with a mantle of Calcrete and Ironstone gravel.	1.0
Total				981.6

In addition, a desktop assessment completed in 2022 as part of the detailed survey identified the closest Threatened Ecological Community (TEC) as the 'Depot Springs Stygofauna Complex' located approximately 273 km northwest of the Comet Vale site. The nearest Priority Ecological Community (PEC) recorded is the 'Emu Land System' located approximately 23 km south of the Proposed Action with a total of 10 occurrences within 50 km. No TECs or PECs were identified during the field surveys.



The vegetation condition was mapped as Good to Excellent, though some areas were affected by grazing from pastoral activities. Additionally, the vegetation showed visible signs of impact from the low rainfall the region experienced preceding the surveys.



Legend

- Lease Applications
- Site Layout
- MUWA, Mulga Wanderrie Grassy Shrublands
- SACS, Sandplain Acacia Shrubland
- SAGS, Sandplain Gum Stratum
- SDSH, Sand Dune Shrubland
- FRAN, Frankenia Low Shrublands
- GNEW, Greenstone Hill Non-halophytic Eucalypt Woodlands

Vegetation Communities (GLS 2022, RPS 2024)

Scale: 1:30,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Vegetation Communities		
Figure 4-3	ADV-AU-00382	October 2024

4.7.3 Conservation Significant Flora Species

The RPS (2024) survey documented 47 taxa from 15 families and 29 genera across 208 hectares, and this contrasts with the GLS (2022) survey, which recorded 215 taxa from 40 families and 102 genera in a larger area with more diverse habitats.

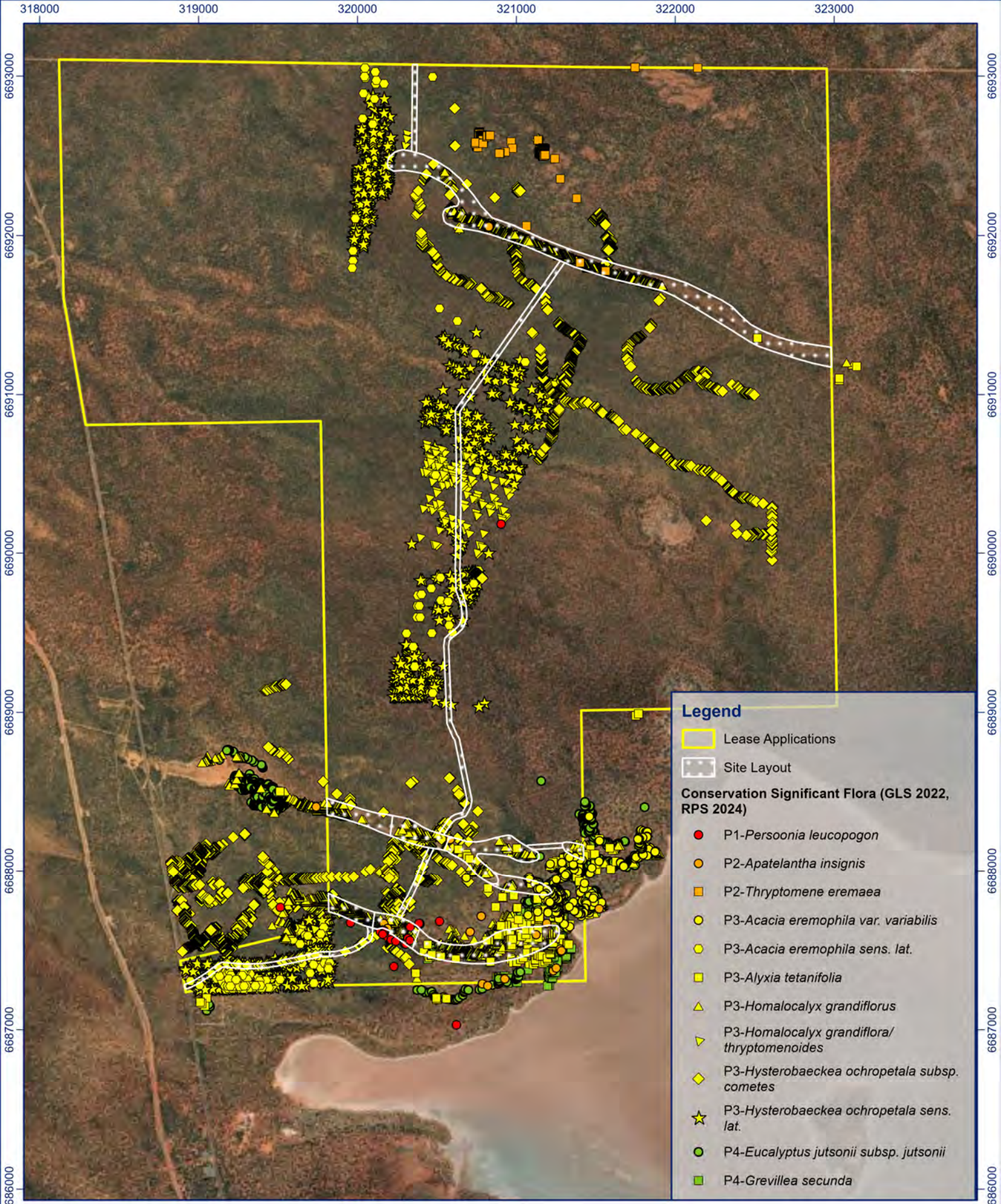
The reports found:

- No flora species listed under the EPBC Act or *Biodiversity Conservation Act 2016* (BC Act) (WA) were identified.
- A total of nine conservation significant species listed by DBCA were recorded during surveys.
- NVS (2023) assessed the tenement application area and found no *Acacia eremophila* var. *variabilis* (P3). They visited over 20 GLS (2022) recorded locations but only found *Acacia eremophila* var. *eremophila*. NVS concluded that the Priority Flora variant is unlikely to be present in significant numbers. RPS (2024) noted two varieties: var. *variabilis* (P3) and var. *eremophila* (non-threatened). Due to no available flowering material all occurrences are labelled as sens. lat.

Details of conservation significant flora species are provided in Table 4-2 with recorded sites shown in Figure 4-4.

Table 4-2 Conservation Significant Flora Species

Species	Conservation Status	Comment	Total Abundance Recorded
<i>Persoonia leucopogon</i>	P1	Grows on yellow sand or sandy clay.	30
<i>Apatelantha insignis</i>	P2	Recorded in vegetation types of SACS, SDSH and SAGS.	47
<i>Thryptomene eremaea</i>	P2	Grows in lower sandy areas between dunes and Lake Goongarrie.	472
<i>Acacia eremophila</i> sens. Lat.	P3	Was only found in 2017/18 reconnaissance survey	331
<i>Acacia eremophila</i> var. <i>variabilis</i> *	P3	Grows on red or yellow sand and on sandplains.	326
<i>Alyxia tetanifolia</i>	P3	Recorded in vegetation type MUWA.	359
<i>Homalocalyx grandifloras/thryptomenoides</i>	P3	Grows on sandy or sandy loam soils.	786
<i>Homalocalyx grandiflorus</i>	P3	Confined to the SAGS vegetation type.	6,833
<i>Hysterobaeckea ochropetala</i> sens. Lat.	P3	Grows on sandy or sandy loam soils.	12,092
<i>Hysterobaeckea ochropetala</i> subsp. <i>cometes</i>	P3	Confined to the SAGS vegetation type.	6,446
<i>Eucalyptus jutsonii</i> subsp. <i>jutsonii</i>	P4	Grows in sandy clay, loam or concretionary gravel soils.	902
<i>Grevillea secunda</i>	P4	Recorded in vegetation type SDSH.	451
Total			29,075



Legend

- Lease Applications
- Site Layout

Conservation Significant Flora (GLS 2022, RPS 2024)

- P1-*Persoonia leucopogon*
- P2-*Apatelantha insignis*
- P2-*Thryptomene eremaea*
- P3-*Acacia eremophila* var. *variabilis*
- P3-*Acacia eremophila* sens. lat.
- P3-*Alyxia tetanifolia*
- ▲ P3-*Homalocalyx grandiflorus*
- ▼ P3-*Homalocalyx grandiflora/thryptomenoides*
- ◆ P3-*Hysterobaeckea ochropetala* subsp. *cometes*
- ★ P3-*Hysterobaeckea ochropetala* sens. lat.
- P4-*Eucalyptus jutsonii* subsp. *jutsonii*
- P4-*Grevillea secunda*

Scale: 1:30,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 250 500 1,000 m

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Conservation Significant Flora		
Figure 4-4	ADV-AU-00382	October 2024



4.7.4 Introduced Flora

The surveys conducted did not record any non-native flora species in the study area.

4.7.5 Closure Considerations

It is not anticipated that closure would have any additional impact on the surrounding flora and vegetation. Closure activities are planned to minimise the impact on the surrounding environment with the intent to restore environmental biodiversity to an acceptable level, including safe, stable and non-polluting landforms. All rehabilitated areas will utilise seed stored in the stockpiled topsoil with additional seeding unlikely to be required. Monitoring will be conducted to determine if further seeding of local provenance species is needed.

The MLG weed management program will ensure that all vehicles and plant equipment are clean and free of soil and vegetative matter before entering the Comet Vale site. The proposed weed management and monitoring processes post closure will ensure that weed populations and diversity does not increase as a result of operations.

4.8 Fauna and Habitat

4.8.1 Studies

Fauna and habitat surveys completed over the Proposed Action area include:

- Basic vertebrate fauna survey and targeted Malleefowl survey (Western Wildlife, 2022).
- Light Detection and Ranging (LiDAR) Survey of a regional of 49km² (Anditi, 2022).
- Targeted survey and ground truthing of LiDAR mounds (Western Wildlife, 2024).
- Desktop assessment for potential short-range endemic species (Invertebrate Solutions Pty Ltd (Invertebrate Solutions), 2022).

The surveys across the site were completed in accordance with the following guidelines:

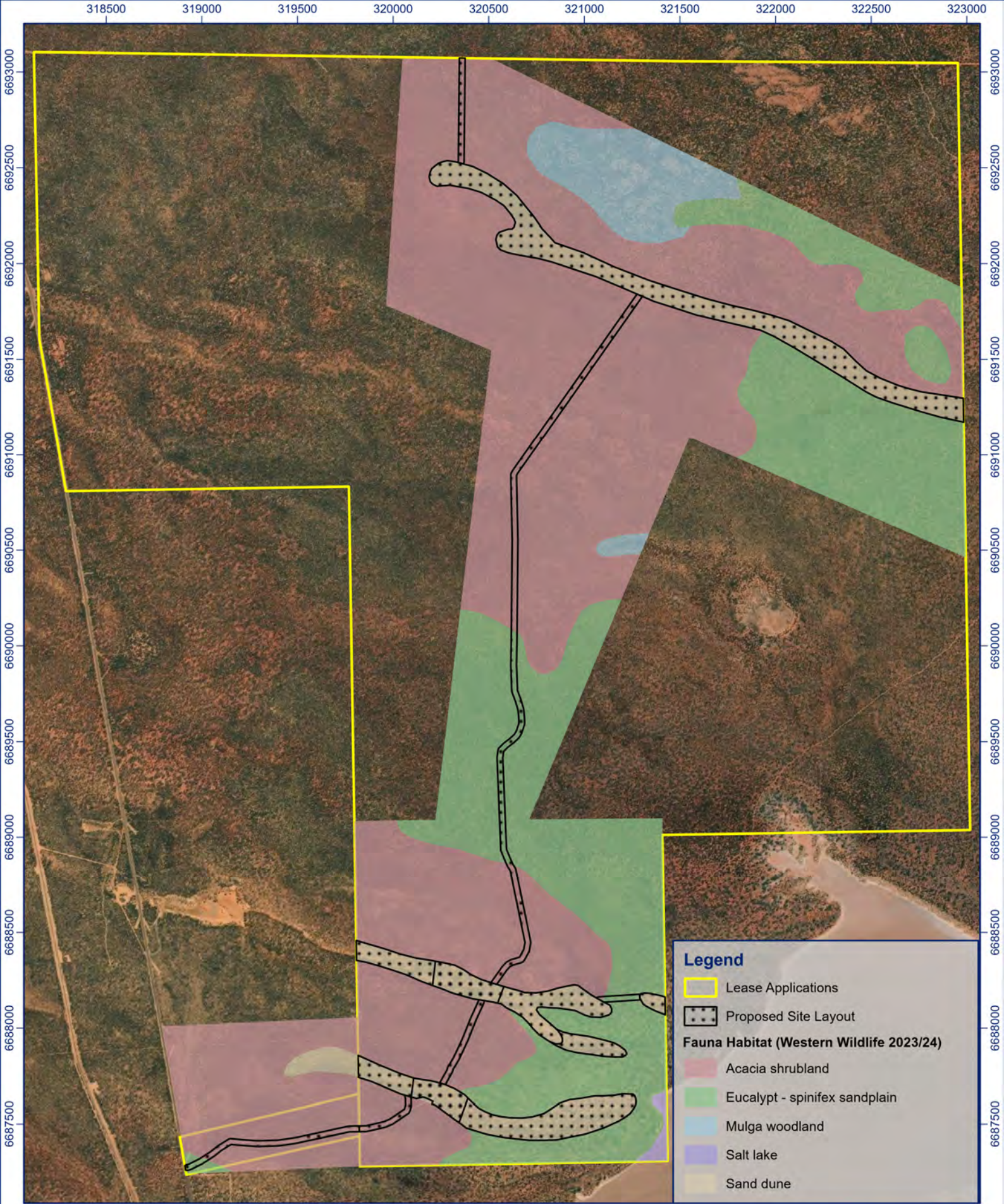
- EPA Technical Guideline – Terrestrial Fauna Surveys (EPA, 2020).
- EPA Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna (EPA, 2016).

4.8.2 Habitat

The Western Wildlife (Western Wildlife, 2022) studies recorded five broad fauna habitats across the study as described in Table 4-3. All habitats are described as relatively common in the IBRA subregion. Restricted habitat types, such as granite outcrops, salt lakes or freshwater wetlands, are largely absent from the study area, except for a small area of salt lake located outside the Development Envelope. A narrow track is present, and a small portion of the study area is recently burnt. The remainder of the study area consisting of undisturbed native vegetation. Fauna habitat types are shown in Figure 4-5.

Table 4-3 Fauna Habitats

Fauna Habitat	Key Habitat Elements	Total Area (ha)
Mulga Woodland	<ul style="list-style-type: none"> Tall, dense shrubland provides habitat for nesting birds. Larger mulga trees provide crevices and small hollows. Leaf litter and gravelly sands provide breeding habitat for Malleefowl. 	42.4
Acacia Shrubland	<ul style="list-style-type: none"> Tall, dense shrubland provides habitat for nesting birds. Leaf litter and gravelly sands provide breeding habitat for Malleefowl. Scattered mallee eucalypts provide crevices and small hollows. 	568.7
Sand Dune	<ul style="list-style-type: none"> Loose sands provide habitat for fossorial reptiles. Scattered mallee eucalypts provide crevices and small hollows. 	77.8
Eucalypt spinifex Sandplain	<ul style="list-style-type: none"> Scattered mallee eucalypts provide crevices and small hollows. Leaf litter and consolidated sands provide breeding habitat for Malleefowl. Consolidated sands provide habitat for burrowing fauna. Spinifex provides habitat for some reptiles. 	289.5
Salt Lake	<ul style="list-style-type: none"> May support waterbirds when inundated. 	2.3
Cleared	<ul style="list-style-type: none"> None. 	1.0
Total		981.7



Legend

- Lease Applications
- Proposed Site Layout

Fauna Habitat (Western Wildlife 2023/24)

- Acacia shrubland
- Eucalypt - spinifex sandplain
- Mulga woodland
- Salt lake
- Sand dune

Scale: 1:25,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 250 500 m

RPMGLOBAL

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Fauna Habitat		
Figure 4-5	ADV-AU-00382	October 2024

4.8.3 Conservation Significant Species

There are 18 vertebrate fauna of conservation significance that are known to occur within the region as described in Table 4-4 and shown in Figure 4-6.

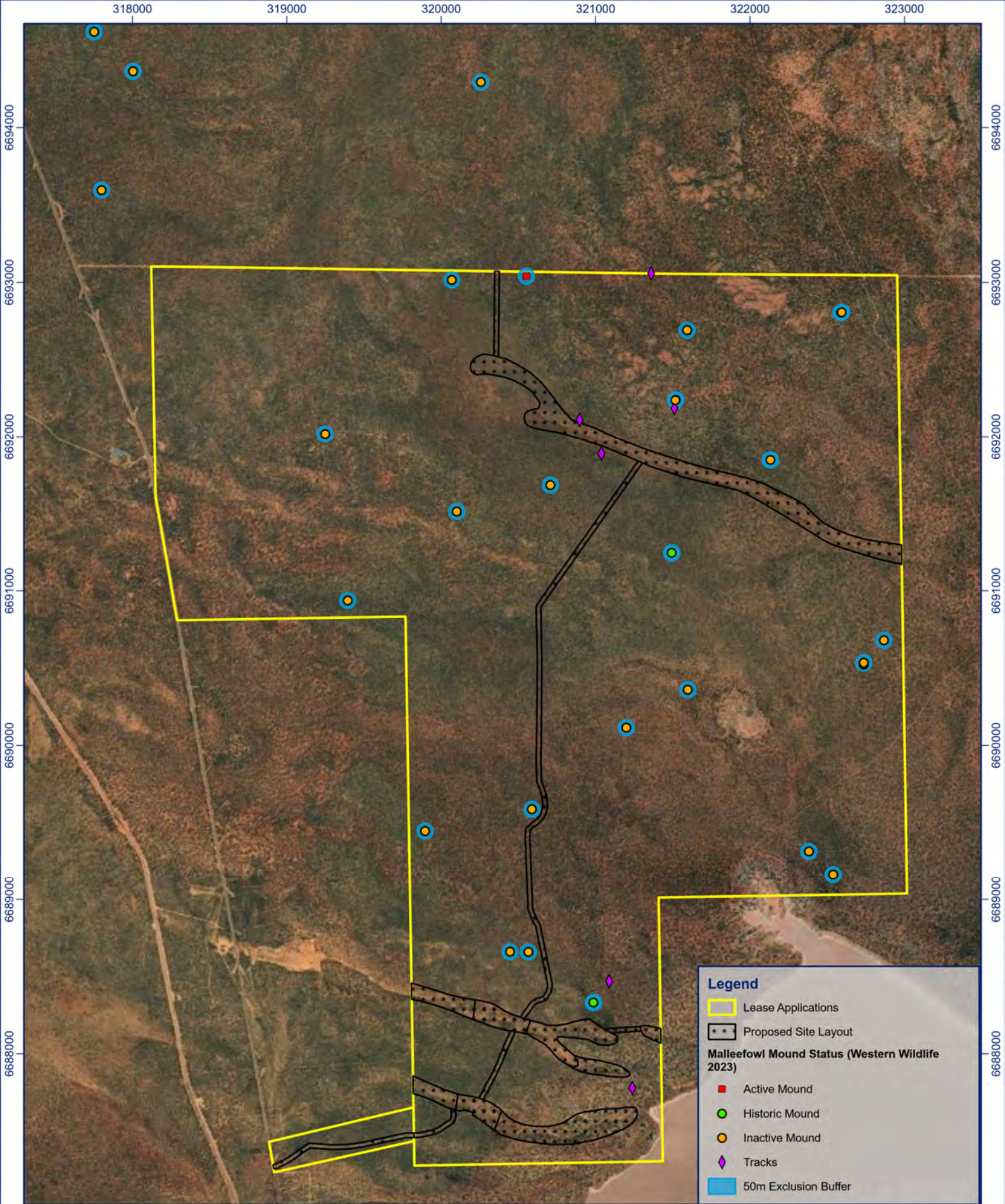
Table 4-4 Conservation Significant Fauna

Species	EPBC Status	Habitat Preference	Likelihood of Occurrence	Assessment
<i>Pezoporus occidentalis</i> Night Parrot	Endangered	Mature spinifex grasslands, chenopods and herblands.	Unlikely	The study area lacks the large mature spinifex required by this species for roosting and breeding.
<i>Calidris ferruginea</i> Curlew Sandpiper	Critically Endangered Migratory	Wetlands, salt lakes, beaches.	Potential	Potentially occurs as a non-breeding summer visitor to the salt lake but prefers coastal habitats.
<i>Calidris ferruginea</i> Curlew Sandpiper	Vulnerable Migratory	Wetlands, salt lakes, beaches.	Potential	Potentially occurs as a non-breeding summer visitor to the salt lake.
<i>Tringa nebularia</i> Common Greenshank	Endangered Migratory	Wetlands, salt lakes, beaches.	Potential	Potentially occurs as a non-breeding summer visitor to the salt lake.
<i>Leipoa ocellata</i> Malleefowl	Vulnerable	Acacia thickets, mallee woodlands and shrublands with leaf litter. Also forages in adjacent habitats.	Known to occur	Active and inactive mounds of this species were recorded during this survey, and suitable foraging and breeding habitat is present.
<i>Dasyurus geoffroii</i> Chuditch	Vulnerable	Forests, woodlands and shrublands, denning in hollow logs, babbler nests, burrows or rock crevices.	Possible	Although the habitats present are suitable, there are no recent records in the region with a single uncertain record from 2008 the only one reported within 70 km of the survey area.
<i>Aphelocephala leucopsis</i> Southern Whiteface	Vulnerable	Open woodlands and shrublands with a shrubby and/or grassy understory.	Potential	Some of the habitats present are potentially suitable and the study area is within the known range of the species.
<i>Actitis hypoleucos</i> Common Sandpiper	Migratory	Wetlands, salt lakes, beaches.	Potential	Potentially occurs as a non-breeding summer visitor to the salt lake.
<i>Calidris ruficollis</i> Red-necked Stint	Migratory	Wetlands, salt lakes, beaches.	Potential	Potentially occurs as a non-breeding summer visitor to the salt lake.
<i>Calidris melanotos</i> Pectoral Sandpiper	Migratory	Wetlands, salt lakes, beaches.	Possible	Possibly occurs as a non-breeding summer visitor to the salt lake but prefers freshwater wetlands.

Species	EPBC Status	Habitat Preference	Likelihood of Occurrence	Assessment
<i>Tringa glareola</i> Wood Sandpiper	Migratory	Freshwater wetlands, mudflats.	Possible	Possibly occurs as a non-breeding summer visitor to the salt lake but prefers freshwater wetlands.
<i>Gelochelidon nilotica</i> Gull-billed Tern	Migratory	Coasts, inland waters.	Possible	This species occurs at inland salt lakes but there are no nearby records.
<i>Apus pacificus</i> Fork-tailed Swift	Migratory	Overfly any habitat.	Potential	This species is largely aerial in Australia, and although it may overfly the area, the study area is not likely to be important for this species.

Additional species that were represented by records on the Protected Matters Search Tool are vagrant to the region and not likely to be reliant on any habitat in the study area include:

- Glossy Ibis (*Plegadis falcinellus*) – Migratory. This species occurs in freshwater wetlands, a habitat absent from the study area, and is a vagrant to the region.
- Ruddy Turnstone (*Arenaria interpres*) – Migratory. This shorebird occurs on the coast and is a vagrant to inland sites.
- Grey Wagtail (*Motacilla cinerea*) – Migratory. This species is a vagrant to the region.
- Grey Falcon (*Falco hypoleucos*) – Vulnerable. This species is a vagrant to the region.
- Princess Parrot (*Polytelis alexandrae*) – Vulnerable. This species is a vagrant to the region.



Scale: 1:31,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 250 500 1,000 m

RPMGLOBAL

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		MLG Comprehensive Mine Site Services
Conservation Significant Fauna		
Figure 4-6	ADV-AU-00382	October 2024

4.8.4 Short Range Endemics

Invertebrate Solution Pty Ltd (2022) was contracted to complete a Short Range Endemic desktop assessment of MLGs four proposed deposit sites, including Comet Vale (E297/42), Mt Keith (E53/1480), 16 Mile Well (E36/1003) and Jonah Bore (M36/657). This survey was undertaken in regard to the 'Technical Guidance – Sampling of short-range endemic invertebrate fauna' (EPA 2016).

The Proposed Action area hosts potential SRE habitats associated with the drainage lines, sand dunes and the denser vegetated areas in the northeastern and south western sections of the Proposed Action area. The desktop assessment identified:

- No known Confirmed SRE Species
- One likely SRE Species with a high likelihood of occurrence:
 - Anamid trapdoor spider (*Kwonkan goongarriensis*)
- One possible SRE Species with a moderate likelihood of occurrence:
 - Anamid trapdoor spider (Aname 'MYG347 -DNA')
- Three possible SRE Species with a low likelihood of occurrence:
 - Pseudoscorpions (*Sundochernes* 'PSE020', *Synsphyronus* 'PSE023' and *Beierolpium* 'sp. 8/2')
- One potentially occurring conservation significant invertebrate with a moderate likelihood of occurrence:
 - Mygalomorph spider – *Idiosoma clypeatum* - DBCA Priority 3

Any potential SRE taxa would not be restricted to the small amount of habitat present within the Proposed Action area as these habitats extend beyond the Proposed Action area and are continuous in the regional landscape. All identified species are considered Possible SREs due to data deficiencies and absence of taxonomic frameworks that prohibit a conclusive assignment of SRE status. The remaining species identified from desktop resources were found to be widespread.

4.8.5 Closure Considerations

It is not anticipated that closure would have any additional impacts on local fauna. The re-establishment of local plant communities post-mining will aid in the gradual return of fauna. Species of conservation significance and other present species are generally wide-ranging and not restricted to habitats within Comet Vale. Consequently, the proposed closure works should not negatively affect the conservation status of these species.

4.9 Subterranean Fauna

The investigation of subterranean fauna is not required due to the mining operations not intersecting groundwater and the low-impact activities undertaken on the tenement.

4.10 Waste Characterisation

No waste will be produced by the Proposed Action.

4.11 Heritage and Social Setting

4.11.1 Land Use and Community

Comet Vale is located 22.1 km south of Menzies within the Menzies Shire. Menzies is a small town with a population of 108, of which approximately 44 % are of indigenous decent (Australian Bureau of

Statistics (ABS, 2021) Kalgoorlie-Boulder is approximately 100 km south of the Comet Vale site, which has a population of approximately 29,306 people (ABS n.d.). Mining, prospecting, pastoralism and tourism are the principal economic activities in the area.

4.11.2 Aboriginal Heritage

The DPLH Aboriginal Heritage Inquiry System (AHIS) was searched on 17 March 2023. This search confirmed that no registered or lodged Aboriginal heritage sites are listed within E29/742 (DPLH, 2023). The nearest Aboriginal heritage sites are Menzies Field Site (Place ID: 17168; 15.4 km northwest of Comet Vale) and Coongarrie Ceremonial Site (Place ID: 19938; 15.5 km south of Comet Vale). The Mining Lease area and site layout is designed to avoid all Aboriginal heritage sites, with a minimum buffer of 10 m from the proposed disturbance and the Mining Lease area boundary. The results are represented in Figure 4-7.



Legend

- Lease Applications
- Site Layout

Aboriginal Heritage Places (DLPH 001)

- Lodged
- Registered Site

Scale: 1:200,000
 Projection: GDA2020 MGA Zone 51
 Created/Reviewed By: AW/EL
 Aerial: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 1 2 4 6 km

RPMGLOBAL

PROJECT		CLIENT
Comet Vale - Conceptual Mine Closure Plan		 Comprehensive Mine Site Services
Aboriginal Heritage		
Figure 4-7	ADV-AU-00382	October 2024



4.11.3 European Heritage

The Heritage Council State Heritage Office Inherit database was searched on 17 March 2023 (Heritage Council State Heritage Office, 2020). No places of European heritage value were recorded within the Proposed Action area.

4.11.4 Closure Considerations

Social and heritage-related impacts associated with closure activities are not anticipated. MLG will liaise with DPLH and Indigenous Groups to discuss relevant aspects of closure as required. MLG will notify relevant authorities should any artefacts or skeletal remains be uncovered during closure activities.

5 Other Closure Related Data

5.1 Progressive Rehabilitation

Progressive rehabilitation will be undertaken at Comet Vale and will include the following tasks:

- Battering the shallow excavation area walls to 12-15 degrees.
- Respreading topsoil on the disturbed areas to a typical depth of 300 mm.
- Respreading stockpiled vegetation to provide habitat and nutrients.
- Ripping surfaces to assist in capture of windblown seed, infiltration of water and reduced erosion potential.

This methodology has been used in progressive rehabilitation at other Projects MLG operate in the Coolgardie region. The methodology has proven effective with a return of native flora species and an overall absence of erosion features such as gullying and rilling.

5.2 Knowledge Gaps

There are no knowledge gaps that could impede the successful closure and rehabilitation of the Proposed Action.

6 Post Mining Land Use and Closure Objectives

6.1 Post Mining Land Use

The key land uses in the broader region are mining and pastoralism. Surrounding land is vegetated with native species; therefore, natural ecosystems are also considered key land uses. Post-mining land use will result in the re-establishment of native ecosystems that are compatible with pastoral grazing activities.

MLG Oz will ensure that the post-mining land use is further defined and agreed upon with key stakeholders as part of stakeholder engagement.

6.2 Closure Objectives

The objectives of this MCP aim to facilitate well-planned and effective mine rehabilitation and closure for Comet Vale by providing a process to (adapted from ANZMEC / MCA (2000)):

- Enable all stakeholders to have their interests considered during the mine closure process.
- Allow closure to occur in an orderly, cost-effective and timely manner.
- Enable the cost of closure to be adequately represented in MLG Oz accounts.
- Provide clear accountability and adequate resources for closure.
- Establish a set of indicators to demonstrate the closure process's success.
- Enable MLG Oz to meet agreed closure criteria to the satisfaction of the relevant authority.

The broad objectives for closure of the Proposed Action are (in line with the ANZMEC/MCA (2000) framework for mine closure and DEMIRS closure guidelines (2020) to leave the site to the extent required by the agreed post-mining land uses:

- Safe for future land uses with access to hazardous areas restricted.
- Stable, with post-mining landforms resistant to failure and erosion, and downstream deposition minimised or contained.
- Non-polluting, with adverse drainage from post-mining landforms prevented or contained and contaminated sites managed in accordance with current DWER guidelines.
- Rehabilitated such that soil profiles, drainage and other characteristics are reinstated as far as practicable, allowing a self-sustaining native vegetation cover to develop over time.

7 Closure Risk Assessment

7.1 Risk Assessment Methodology

To identify closure issues associated with the Proposed Action, a risk assessment was undertaken in accordance with Australian Standards (AS / NZS 31000:2009). Key environmental risks associated with the Proposed Action have been identified through:

- Technical assessment of key closure and environmental features.
- Site assessments to identify potential closure issues associated with existing, historic landforms and disturbance.
- Internal workshops.
- Stakeholder consultation.

7.2 Risk Treatment

Through this assessment and consultation process, a number of management and mitigation measures have been incorporated into the closure design to reduce the risk to environmental receptors.

7.3 Defining Risk Assessment Criteria

The Proposed Action has been developed using a risk assessment approach, identifying key risks and potential impacts. The risk assessment was completed based on the Likelihood and Consequence descriptions shown in Table 7-1 and Table 7-2 to determine the risk rating described in Table 7-3. The potential impacts identified are presented in Table 7-4 of the Proposed Action's risk assessment, including inherent risks, mitigation measures, and residual risks.

Table 7-1 Likelihood Criteria

Likelihood	Description
1. Rare	The event is extremely unlikely, only a slight chance of occurring. Frequency of once in >200 years.
2. Unlikely	The event could occur but it is very improbable. Frequency of once in 100 years.
3. Possible	The event could occur but there is a higher percentage chance that it will not occur. Frequency of once in 50 years.
4. Likely	The event should occur and there is a higher percentage chance that it will occur. Frequency of once per decade.
5. Almost Certain	The event is expected to occur in most circumstance. Frequency of one or more per year.

Table 7-2 Consequence Criteria

Aspect	Insignificant	Minor	Moderate	Major	Severe
Landscape	Closed/rehabilitated site is virtually indistinguishable from surrounding landscape and topography.	Closed/rehabilitated site integrates seamlessly with surrounding landscape and topography whereby it is not easily noticeable from a distance.	Closed/rehabilitated site integrates with surrounding landscape and topography, however mining-produced landforms or disturbances are distinguishable from a distance.	Closed/rehabilitated site has some features that do not integrate readily with the surrounding landscape and topography, however, only compromises local landscape values.	Closed/rehabilitated site has features that do not integrate readily with the surrounding landscape and topography, which compromises regional landscape values.
Physical safety (humans/fauna)	Rehabilitated areas are physically safe to humans and animals.	Site is safe and any safety issues are contained and require no residual management.	Site is safe and any safety issues require minor, ongoing maintenance by the operator	Site is unsafe and requires long-term management or intervention (i.e. <25 years).	Site is unsafe and will cause an ongoing residual effect (i.e. >25+ years).
Post mining land use	Post-mining land use can be easily achieved and sustained without any liability to the State. Post-mining land use is acceptable to stakeholders.	Post-mining land use can be achieved with minimal management required.	Post-mining land use cannot be sustained without some management.	Post-mining land use cannot be sustained without ongoing management	Post-mining land use cannot be sustained. Post-mining land use is not acceptable to key stakeholders
Physical and geotechnical stability	Site is stable. Post-mining landforms are demonstrated to be physically stable with only incidental erosion.	Post-mining landforms are stable, but may experience minor erosion, such as riling	Post-mining landforms are generally stable, but may experience moderate erosion, such as limited gullyng.	Post-mining landforms are unstable, with significant erosion, such as tunnelling and gullyng, and subsidence.	Post-mining landforms are likely to with extensive ongoing management issues.
Geochemical stability	Post-mining landforms are geochemically stable and are proven to be non-polluting.	Post-mining landforms are geochemically stable but may discharge minor amounts of pollutants to groundwater and surface water that does not result in contamination.	Post-mining landforms are generally stable but may discharge moderate levels of pollutants to groundwater and surface water that does not result in contamination.	Post-mining landforms discharge pollutants to groundwater and surface water causing short to medium-term (< 10 years) contamination.	Post-mining landforms discharge pollutants to groundwater and surface water causing long-term (> 10 years) to permanent contamination



Table 7-3 Risk Rating Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

Table 7-4 Risk Assessment

Phase	Event or Activity	Risk Pathway	Impact	Inherent			Mitigation Measures	Risk		
				Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
Closure	Unauthorised access to the shallow excavation areas.	<ul style="list-style-type: none"> Access to the excavation areas not adequately restricted allowing unauthorised entry. 	<ul style="list-style-type: none"> Unrestricted access to shallow excavation areas resulting in potential human, stock or fauna injury or death. 	Possible	Major	HIGH	<ul style="list-style-type: none"> Walls surroundings excavation areas battered down to 12° to 15°. Access is prohibited to rehabilitated areas. 	Rare	Minor	LOW
Operations / Post Closure	Failure of excavation area walls.	<ul style="list-style-type: none"> Poorly constructed excavation area walls. Poor drainage design 	<ul style="list-style-type: none"> Unrestricted access to shallow excavation area resulting in potential human, stock or fauna injury or death. 	Possible	Major	HIGH	<ul style="list-style-type: none"> Walls surroundings excavation areas battered down to 12° to 15°. Appropriate drainage design and construction. Geospatial assessment following closure. 	Unlikely	Minor	LOW
Operations / Post Closure	Rehabilitated areas have minimal vegetative growth.	<ul style="list-style-type: none"> Insufficient rainfall or heavy rainfall washing away seed and topsoil. Poor application of growth medium. 	<ul style="list-style-type: none"> Increased sedimentation and reduced downstream surface water quality. Visual impact (aesthetics). Increased surface runoff 	Possible	Minor	MEDIUM	<ul style="list-style-type: none"> Appropriate landform design and drainage management. Sufficient, viable growth medium respread over landforms. Supervision and quality control over rehabilitation earthworks. 	Unlikely	Minor	LOW



Phase	Event or Activity	Risk Pathway	Impact	Inherent			Mitigation Measures	Risk		
				Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
		<ul style="list-style-type: none"> Poor surface water management. 	<ul style="list-style-type: none"> and wind erosion. Erosion and sedimentation 							
Operations / Post Closure	Spread of weeds or introduction of new weed species limits establishment of native species.	<ul style="list-style-type: none"> Lack of weed hygiene on incoming equipment / machinery. Lack of weed management practices on site. 	<ul style="list-style-type: none"> Reduction in germination and growth of native species. Increased erosion and sedimentation. Reduction in fauna habitat 	Possible	Minor	MEDIUM	<ul style="list-style-type: none"> Follow vehicle equipment and plant hygiene guidelines to minimise potential for weed spread. Implement weed management and monitoring programs. 	Unlikely	Minor	LOW
Post Closure	Interruption of surface water drainage.	<ul style="list-style-type: none"> Poor rehabilitation landform design. 	<ul style="list-style-type: none"> Sedimentation. Reduced water quality downstream. Interruption of water courses. 	Unlikely	Minor	LOW	<ul style="list-style-type: none"> Appropriate drainage design and construction. Rehabilitation. Rehabilitation performance monitoring 	Rare	Minor	LOW
Post Closure	Excessive dust generation.	<ul style="list-style-type: none"> Wind erosion 	<ul style="list-style-type: none"> Reduced air quality. Loss of surrounding vegetation 	Possible	Minor	MEDIUM	<ul style="list-style-type: none"> Progressive rehabilitation. 	Possible	Minor	MEDIUM
Operations / Post Closure	Roads altering surface water flow patterns.	<ul style="list-style-type: none"> Haul and access roads not reshaped or ripped on 	<ul style="list-style-type: none"> Ponding and erosion cause reduced downstream 	Possible	Minor	MEDIUM	<ul style="list-style-type: none"> Roads that are not retained by the pastoralist, Shire or other 3rd party will be 	Rare	Minor	LOW



Phase	Event or Activity	Risk Pathway	Impact	Inherent			Mitigation Measures	Risk		
				Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
		contour to promote free surface water flow.	surface water quality.				reprofiled to reinstate drainage as far as practicable.			
Operations / Post Closure	Deep compaction of soils on haul and access roads.	<ul style="list-style-type: none"> • Compaction of soils during operational phase, compaction due to heavy machinery used during rehabilitation. 	<ul style="list-style-type: none"> • Prevent revegetation and increased erosion. • Increased runoff due to compaction 	Possible	Minor	MEDIUM	<ul style="list-style-type: none"> • Haul and access roads (not remaining) will be reshaped and deep ripped to contour to increase infiltration and facilitate surface water drainage. 	Rare	Minor	LOW
Closure	Changes to community expectations and post mining land use.	<ul style="list-style-type: none"> • Inadequate community consultation. • Conflict between stakeholders and MLG regarding closure and post mining land use. • Not responding to community concerns and complaints. 	<ul style="list-style-type: none"> • Changes to closure and rehabilitation expectations. • Inadequate provisioning available to meet expectations. 	Possible	Major	HIGH	<ul style="list-style-type: none"> • Ongoing consultation with the local community and pastoral owner. • Consultation with stakeholders on a regular basis to establish acceptable closure criteria prior to final closure. Any changes to closure criteria will be signed and documented. 	Rare	Moderate	MEDIUM



Phase	Event or Activity	Risk Pathway	Impact	Inherent			Mitigation Measures	Risk		
				Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
Operations / Post Closure	Inadequate understanding of the existing environment and the impacts of the operations.	<ul style="list-style-type: none"> Negative community and statutory attitudes to the Proposed Action. Monitoring data not collected and or reviewed. Existing environment not understood. 	<ul style="list-style-type: none"> Poor rehabilitation success. 	Unlikely	Minor	LOW	<ul style="list-style-type: none"> Adequate monitoring data is in place. Regular review and assessment of monitoring 	Rare	Minor	LOW

8 Closure Outcomes and Completion Criteria

8.1 Background

Completion criteria are agreed standards to be achieved on particular aspects of closure and rehabilitation. MLG has adopted guidelines published by ANZMEC/MCA (2000) and endorsed by DEMIRS, asserting that completion criteria should be:

- Specific enough to reflect a unique set of environmental, social and economic circumstances.
- Measurable to demonstrate that rehabilitation is trending towards analogue indices.
- Achievable or realistic so that the criteria being measured are attainable.
- Relevant to the objectives that are being measured and the risks being managed and flexible enough to adapt to changing circumstances without compromising objectives.
- Time-bound so that the criteria can be monitored over an appropriate time frame to ensure the results are robust for ultimate relinquishment.

8.2 Outcomes and Proposed Completion Criteria

Five closure outcomes have been identified for the Comet Vale Sand Project (Table 8-1). These outcomes are based on legislative obligations and commitments (Section 2), stakeholder consultation (Section 3), baseline data (Section 4), the proposed post-closure land use (Section 6), closure objectives (Section 6.2), and the risk assessment (Section 7).

For each closure outcome, one or more performance criteria have been set to assess the level of success in meeting the outcome, together with the measurement tools and performance indicators that will be used to inform the criteria. These outcomes and criteria represent MLG's position at this point in time and may change in future iterations of the MCP to accommodate changes to the Project, additional baseline and monitoring data, rehabilitation successes and failures and stakeholder input.

Table 8-1 Closure Objectives, Interim Completion Criteria and Assessment Tools

Closure Objective	Closure Outcomes	Completion Criteria Description	Measurement Tool
Public Safety All disturbed areas will be safe for future land uses with access restricted to the public.	All excavation areas will be made safe by constructing the slopes to have gradients between 12° and 15°.	All excavation areas will have slope gradients between 12° and 15°.	Geospatial assessment using a digital terrain model and/or survey.
	Access to excavation areas will be restricted by rehabilitating access roads.	All accessways that are not retained by a 3rd party will be rehabilitated to prevent vehicular access.	Audit by a competent person.
Stable Post-mining landforms will be resistant to failure and erosion, and downstream sediment deposition will be minimised or contained.	All excavation areas will be constructed, or remediated as far as practicable, to minimise erosion over the long term, including significant gulying or movement, with slope angles at designed gradients.	<ul style="list-style-type: none"> • Mine landforms constructed / remediated in accordance with the provisions detailed in the Closure Task Register (Section 8) (e.g., slope angles, soil cover). 	<ul style="list-style-type: none"> • Audit of construction parameters. • Site specific rehabilitation performance monitoring program that includes remote sensing and a ground-based assessment.



Closure Objective	Closure Outcomes	Completion Criteria Description	Measurement Tool
		<ul style="list-style-type: none"> Rehabilitation performance monitoring shows no significant changes to erosion features over a three-year period. 	
Non-Polluting Adverse drainage from post-mining landforms will be prevented or contained.	Landforms will be non-polluting with no measurable impacts to surface water quality or other receptors.	<ul style="list-style-type: none"> No residual or suspected contamination. No evidence of problematic mine drainage. 	<ul style="list-style-type: none"> Contaminated site investigation (if required). Site audits / observations.
Self-Sustaining Ecosystem Disturbed areas will be rehabilitated to form a self-sustaining ecosystem that is as close as practicable to surrounding areas.	Landforms will be rehabilitated to have a self-sustaining ecosystem that, in time, will be comparable to the surrounding area with respect to vegetation density and diversity	<ul style="list-style-type: none"> Vegetation cover comprises local native species and number of species is >70% of the target ecosystem. Nil establishment of new weeds and overall weed coverage of <5%. Nil establishment of 'declared' pests. 	Site specific rehabilitation performance monitoring program that incorporates a NDVI assessment in combination with a field component that employs aspects of Ecosystem Function Analysis (EFA).

9 Conceptual Closure Implementation

9.1 Closure Implementation Strategy

Closure planning is linked to the LoM Plan and reflects the infrastructure and mine landforms that are expected at the end of mine life. Mine closure can also occur earlier than planned due to a host of reasons that result in the mine either being closed (unplanned closure) or placed in care and maintenance. In all cases environmental and rehabilitation liabilities remain with the mine / project owner.

Mine closure planning that is proposed during operations includes:

- Selection of analogue sites to monitor and establish final landform criteria.
- Progressive rehabilitation of completed excavations.
- Remedial earthworks on existing rehabilitated areas, where it is concluded that the remediation is required and that such remediation would result in improved outcomes.

Strategies for planned and unplanned closure and care and maintenance are described in the following subsections.

9.2 Planned Closure

Planned closure will occur once all exploitable material has been exhausted within Comet Vale. Closure implementation will follow a project schedule outlined in a final Closure Implementation Plan that will be prepared at least six months before the Proposed Action's planned closure. A tenement relinquishment plan will be submitted to DEMIRS to obtain the final lease relinquishment once MLG can demonstrate the completion criteria.

The only mine landforms associated with the Proposed Action that will remain post-closure comprise the excavation areas, which will be battered down to form shallow depressions in the landscape.

All other disturbed areas will be re-profiled to match the surrounding environment. Where possible, drainage patterns will be returned to pre-mining flow patterns, provided that they do not compromise the stability of the excavation areas.

All landforms will be rehabilitated to provide long-term geochemical and geotechnical stability allowing the re-establishment of native vegetation over time.

9.3 Unplanned Closure

The unforeseen and premature cessation of mining may occur for a number of reasons, including market forces, company business reasons, and the overestimation of mineral resources.

Unplanned permanent closure of the Proposed Action will be undertaken in accordance with the measures established for planned closure, however, the excavation areas may not have been constructed to the planned extent.

9.4 Care and Maintenance

Should the entire Project be placed on care and maintenance, a site-specific Care and Maintenance Plan will be developed in accordance with Section 42 of the Mines Safety and Inspection Act 1994 and submitted to DEMIRS. Provisioning for care and maintenance includes basic ongoing caretaker and maintenance functions. In general, the care and maintenance period can range from months to years.

Should the Project be placed on care and maintenance, the following activities will be undertaken site wide:

- Environmental audit of the site to determine the status (environmental risk) of all components of the site.
- Removal of certain mobile machinery / plant / equipment.
- Construction of fencing or bunding to prevent unauthorised access to mine working or battering down slopes to final gradients.
- Removal of remaining product stockpiles.
- Maintenance of all roads and drainage systems.
- Continued monitoring and reporting to DEMIRS and other government agencies as required.

9.5 Progressive Rehabilitation

MLG recognises that the progressive rehabilitation of disturbed areas plays an important role in closure planning and is committed to progressive rehabilitation where practicable. Progressive rehabilitation offers a number of benefits in that it:

- May mitigate existing risk issues associated with the disturbed land (e.g., dust, sedimentation).
- Provides information, data, knowledge and experience that may assist in successfully rehabilitating land disturbed by mining activities in the future.
- Reduces the residual disturbance and therefore closure liability and Mine Rehabilitation Fund contribution.
- Provides evidence to stakeholders that MLG is committed to, and is capable of, successfully closing and rehabilitating the mining operation to achieve the stated post-closure land use.

The rehabilitation schedule will generally follow closely behind the mine schedule, with areas being rehabilitated once mining in those areas has ceased and as new areas are opened to mining.

9.6 Research, Investigation and Trials.

Gaps in environmental data that require additional research to contribute to effective mine closure and rehabilitation of the Project are listed in Table 9-1.

Table 9-1 Knowledge Gaps

Item	Description	Proposed Studies	Timing
Completion Criteria	Overarching completion criteria are provided in this MCP. Further refinement is required based on the results of rehabilitation monitoring and the establishment of analogue sites.	Further refine site specific rehabilitation monitoring program and refine completion criteria that can be quantitatively assessed, as far as achievable.	Prior to next iteration of MCP.

10 Closure Monitoring and Maintenance

Rehabilitation and closure monitoring and maintenance programs will be initiated with the objective of ensuring the success of rehabilitation works, demonstrating achievement of completion criteria and identifying the need for maintenance works. Monitoring works will be undertaken on a regular basis post-closure to assess the following:

- Compliance with closure design parameters.
- Physical stability of rehabilitated areas.
- Chemical stability of rehabilitated areas.
- Ecological function of rehabilitated areas.
- Impacts on final land use objectives.
- The requirement for maintenance or remedial work.

The specific components of the monitoring program are described in the following subsections.

10.1 Monitoring Procedures and Schedule

Closure and rehabilitation phases and monitoring components are summarised in Table 10-1. Specific outcomes are defined for each phase of monitoring.

Table 10-1 Monitoring Components and Outcomes

Timing	Monitoring Component	Proposed Frequency	Outcome
Operations	<ul style="list-style-type: none"> • Weed monitoring and control. 	<ul style="list-style-type: none"> • Ongoing (>annually) 	<ul style="list-style-type: none"> • Minimise the occurrence of weeds. • Improvement and refinement of closure data. • Refinement of completion criteria. • Refined rehabilitation designs
	<ul style="list-style-type: none"> • Detailed survey pick-up / remote sensing for disturbance areas. 	<ul style="list-style-type: none"> • Ongoing (>annually) 	
	<ul style="list-style-type: none"> • Assessment of completed rehabilitation 	<ul style="list-style-type: none"> • Annually for new rehabilitation (<5 years old). Tri-annually for established rehabilitation (>5 years old). 	
Rehabilitation	<ul style="list-style-type: none"> • Earthworks monitoring and supervision. 	<ul style="list-style-type: none"> • Ongoing until complete. 	<ul style="list-style-type: none"> • Design criteria achieved. • Confidence in constructed landforms and likely rehabilitation performance. • Landforms confirmed safe,
	<ul style="list-style-type: none"> • Audit of compliance with design parameters. 	<ul style="list-style-type: none"> • Once per landform. 	
	<ul style="list-style-type: none"> • Rehabilitation survey quality control. 	<ul style="list-style-type: none"> • Once per landform. 	

Timing	Monitoring Component	Proposed Frequency	Outcome
	<ul style="list-style-type: none"> Site specific rehabilitation monitoring program and refinement of completion criteria. 	<ul style="list-style-type: none"> Annually for new rehabilitation (<5 years old). Tri-annually for established rehabilitation (>5 years old). 	<ul style="list-style-type: none"> stable and non-polluting.
Post Closure	<ul style="list-style-type: none"> Site specific rehabilitation monitoring program using a combination of remote sensing and aspects of EFA. 	<ul style="list-style-type: none"> Annually for new rehabilitation (<5 years old). Tri-annually for established rehabilitation (>5 years old). 	<ul style="list-style-type: none"> Confidence in constructed landforms and confirmation that rehabilitated landforms are performing as expected. Landforms confirmed safe, stable, non-polluting and supportive of a self-sustaining native ecosystem. Demonstration of achieved completion criteria. Submission of completion report to DEMIRS.
	<ul style="list-style-type: none"> General site inspections and photo monitoring 	<ul style="list-style-type: none"> Annually 	

10.2 Rehabilitation Earthworks Monitoring and Supervision

Supervising all rehabilitation earthworks is integral to ensuring final landforms achieve their intended design criteria. Earthworks will be supervised by a qualified environmental scientist or engineer who will ensure the specifications, as detailed in rehabilitation procedures and Closure Task Register, are met. An audit will be undertaken following the completion of rehabilitation earthworks to ensure compliance with design parameters.

A quality assurance/quality control program will be developed and implemented during the rehabilitation phase to minimise the likelihood of construction errors.

The methodology allows for the assessment of a number of key rehabilitation parameters over time. These include:

- Qualitative data:
 - Vegetation community (key species and abundance).
 - Weed species and abundance.
 - Erosion features (general observations for the purpose of ground truthing remote sensing data).

- Cover material features (e.g. soil/cover types).
- Quantitative data:
 - Vegetation health and density (assessed via Normalised Difference Vegetation Index (NDVI)).
 - Erosion features (gully numbers and dimensions, if present).
 - Drainage (flow paths and catchments).

By comparing the progress of rehabilitated landforms over time, it is possible to assess whether the rehabilitated areas are progressing towards parameters identified at analogue sites. Monitoring over time will assist in ensuring that if progress towards indices of analogue sites is not occurring then the reason is identified and the need for remedial work recognised and carried out where necessary.

Other monitoring will include visual inspections across the Proposed Action area, undertaken with the rehabilitation monitoring program. Where possible, inspections and monitoring will be undertaken following periods of intense rainfall events. The purpose of the visual inspections will be to:

- Assess the overall integrity of rehabilitated areas.
- Identify any immediate remedial works required (including weed control).
- Identify potential safety issues as they arise, such as ensuring all warning signs and barriers are intact.

It is anticipated that rehabilitation monitoring and visual inspections will be undertaken annually until differences between years are negligible (likely three years post-closure), at this point, the monitoring frequency will be reviewed and reduced (likely every three years).

10.3 Maintenance

The rehabilitation performance will be the key factor in determining the need and scale of remedial actions at Comet Vale. Direct intervention may be required if the monitoring program indicated landscape dysfunction or loss of ecosystem health over time.

Corrective measures will be considered should the rehabilitated profile not be achieved or shown to be trending away from the completion criteria. Relevant stakeholders will be consulted to determine the most appropriate corrective measures to apply. Potential corrective measures are described in Table 10-2.

Table 10-2 Corrective Actions

Aspect	Measure
Weeds	Increase weed control until target criteria are met.
Rehabilitation	Investigation as to reason behind rehabilitation issue. This may include geochemical testing to determine soil properties that are hostile to plant growth (e.g. nutrient deficiencies). Undertake soil amelioration and supplementary seeding where required.
Stability	Should areas of instability be identified, an investigation will be undertaken to identify the cause with subsequent remedial earthworks.
Public Safety	Should it be determined that access to the site is insufficiently restricted, or should safety hazards be identified, remedial earthworks will be undertaken.



10.4 Reporting

Rehabilitation performance will be reported in the Annual Environmental Report and Mining Rehabilitation Fund (MRF) submission to DEMIRS.

11 Financial Provisioning For Closure

A closure cost estimate for the Proposed Action will be developed and updated annually as part of corporate accounting and financial provisioning. This includes changes detailed within this MCP based on the Closure Task Register. The closure cost estimate has been largely developed using first principles, with the bill of quantities derived from survey data, remote sensing data, aerial imagery and experience with other MLG projects. In summary, the following components were taken into consideration when developing the closure cost estimate:

- **Calculation of closure task areas:** A surface area measurement of each closure task area is determined from analysis of recent aerial photography, survey data and spatial data associated with future developments.
- **Calculation of closure task volumes:** Volumes of rehabilitation material for each closure task are estimated using recent aerial photography, survey data and experience with other, similar operations.
- **Application of closure task rates:** Earthmoving rates for each closure task were multiplied by the corresponding quantity. MLG undertakes rehabilitation utilising MLG-owned equipment, and earthmoving rates are derived from this.
- **Provisional cost estimates for monitoring, management and consultation:** Provision is made for the following items:
 - Closure monitoring.
 - Maintenance / remediation of rehabilitated areas.
 - Technical assistance, consultant advice during the closure and rehabilitation phase.
 - Consultation with stakeholders.

12 Management of Information and Data

The information collected during the site inspection and monitoring activities will be used to assess the progress of the rehabilitated areas towards the completion criteria set out within this MCP.

MLG will retain the following information relating to closure and rehabilitation:

- Monitoring databases and analytical reports.
- Regulatory reports (e.g. Annual Audit Compliance Reports and AERs).
- Information regarding areas of disturbance, including mapping data.
- Availability and volumes of materials required for rehabilitation.
- Life of mine plans and production scheduling information.
- Layout diagrams.
- Significant spills and regulatory reportable incident records.
- Contaminated site investigations and reports, if any.
- Correspondence with regulators and other stakeholders.
- Lessons learned from previous site rehabilitation activities or at similar mine sites.

All documents and data associated with the operation and closure of the Proposed Action will be stored on the corporate database.

13 References

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