RioTinto

Statement addressing the 10 Clearing Principles

West Angelas NVCP 1

11 April 2024

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Assessment against the 10 Clearing Principles – West Angelas NVCP 1

1. Statement addressing the 10 Clearing Principles

Rio Tinto on behalf of Robe River Mining proposes a replacement NVCP for CPS 6545 to support mineral exploration, hydrogeological and geotechnical investigations, and associated activities at Greater West Angelas. The scope of works includes resource and hydrogeological drilling, test pitting, infrastructure corridor maintenance and associated activities across the Application Area (6,692.05 ha) and will require the clearing of up to 180.0 ha of native vegetation representing approximately 2.67 % of the Application Area.

Exploration and associated works are conducted in accordance with *Rio Tinto's Iron Ore (WA) Mineral Evaluation and Drilling Environmental Management Plan* (EMP, Attachment 1). This EMP includes commitments with respect to minimising clearing, avoiding high conservation value flora, fauna, vegetation and habitats and progressive rehabilitation. Exploration works are managed under Rio Tinto's Approvals Request Co-ordination System (ARCS). Significant biological and environmental features are spatially identified in ARCS with appropriate buffers. Any works that may impact on those identified significant values are avoided or referred to a subject matter expert who may authorise works with appropriate conditions, if the relevant regulatory environmental approvals are otherwise met.

A desktop assessment comprising of several detailed and reconnaissance flora, vegetation, fauna and fauna habitat assessments was undertaken in April 2024 (SLR, 2024). The Application Area comprises 5,569.38 ha (83.22%) of native vegetation and 1,122.67 ha (16.78%) of previous disturbance from active mining and exploration, for a total of 6,692.05 ha.

Based on specialist assessment of the study area and discussion below, it is deemed that:

- Principles (c), (d), (e), (g) and (h) are not at variance; and
- Principles (a), (b), (f), (i), and (j) are unlikely to be at variance.

1.1 Principle a. Comprises high level of biological diversity

Native vegetation should not be cleared if it comprises a high level of biological diversity.

The Pilbara is one of Australia's 15 National Biodiversity Hotspots (DBCA, 2023) and is a secondary centre of endemism and species richness for Acacia, Triodia, Corymbia and Sida in Western Australia (Kendrick, 2001; Maslin & Van Leeuwen, 2008). The Hamersley sub-region of the Pilbara has been identified by the Threatened Species Scientific Committee for the Australian Government as a Biodiversity Hotspots as it provides habitat for a number of threatened, endemic and fire-sensitive species and communities.

The study area occurs within the Hamersley sub-region of the Pilbara bioregion. The Hamersley sub-region is described as: 'Mountainous area of Proterozoic sedimentary ranges and plateaux, supporting Mulga (*Acacia aneura*) low woodland over bunch grasses on fine textured soils, and *Eucalyptus leucophloia* woodlands over *Triodia brizoides* hummock grasslands on skeletal sandy soils' (Kendrick, 2001). Special features of the Hamersley sub-region include rare features such as

gorges, centres of endemism including calcrete deposits, refugia and the Themeda grasslands TEC (Kendrick, 2001).

Vegetation

Thirty-nine natural vegetation types were described and mapped within the Application Area. Nine units from drainages, two from gorges and gullies, 13 from hills and 15 vegetation units described from plains.

The condition of the mapped vegetation ranged from Excellent to Completely Degraded. Approximately 1122.67 ha (16.78 %) is in Completely Degraded condition, 293.30 ha (4.38%) is in Good condition, 2212.42.5 (33.06%) is in Very Good condition and 3063.67 (45.78%) is in Excellent condition.

The desktop assessment identified that no State or Commonwealth listed TECs were identified within the Application Area. Four State listed PECs occur within 50 km of the Application Area, including the West Angelas Cracking-Clays (Priority 1), of which the buffer and representation PEC-2015-4 intersect a portion of the Application Area (0.58ha). The P15 vegetation type was considered to have affinities to this PEC, and -represented 7.19 ha (0.11%) of the Application Area. All Department of Biodiversity, Conservation and Attractions (DBCA) mapped occurrences of this PEC are protected through Rio Tinto Exclusion avoidance layers in ARCS, and disturbance cannot occur within these areas without internal approval.

No new exploration or associated works will be conducted within the potentially conservation significant vegetation unit P15 as identified in SLR (2024). An additional 50 m buffer will be applied to this vegetation unit in ARCS to further reduce the risk of potential indirect and inadvertent impacts to this vegetation unit with affinities to the PEC. However, areas of existing disturbance, such as existing tracks and service corridors, will continue to be accessed and maintained where necessary. Unless significant indirect impacts are occurring, the environmental impact of maintaining an existing track through a significant vegetation unit is usually lower than the impact of clearing a new track through intact vegetation around a significant vegetation unit.

At a local level, 27 of the 39 mapped vegetation types of the Application area were found to support Priority listed flora across four landforms. These vegetation units are considered to have an elevated local significance and do not reflect vegetation types of conservation significance EPA (2016). All of these vegetation types support either Priority 2 populations and/or large numbers or Priority 3 or Priority 4 flora and have been listed in Table 1.

Table 1: Mapped vegetation units within Application Area with elevated local significance.

Vegetation Unit	Mapped unit (% within Application Area)
Drainage	D3 (0.49%), D6 (0.69%), D7 (0.48%), D8 (0.07%), D9 (0.40%), D11 (0.40%) and D14 (2.62%)
Gorges and Gullies	G2 (0.01%) and G2 (0.04%)
Hills	H1 (1.11%), H3 (0.15%), H4 (9.2%), H5 (2.78%), H7 (3.86%), H8 (1.35%), H9 (4.21%), H10 (14.62%), H14 (0.85%), H15 (2.52%), H16 (3.16%),
Plains	M1 (6.13%), P1 (0.78%), P2 (0.58%), P3 (2.75%), P4 (1.47%), P7 (3.74%), P12 (4.12%), P14 (7.8%)

All vegetation types and priority flora supported by these vegetation types are widely distributed locally outside the Application Area.

The remaining ten vegetation units are widely distributed both locally and throughout the Hamersley sub-region, and as such are considered of low conservation value.

Flora

A total of 517 taxa from 177 genera across 52 families were recorded from within the Application Area. The dominant families were Poaceae (95 taxa), Fabaceae (86 taxa), and Malvaceae (57 taxa). The most dominant genus was Acacia (40 taxa).

Database and literature searches identified 62 significant flora species occurring within 50 km of the Application Area comprising:

- Two Federally listed species, one of which is also listed as Threatened by DBCA;
- Six Priority 1 species;
- Fifteen Priority 2 species;
- Thirty-four Priority 3 species; and
- Five Priority 4 species.

Of the 62 significant flora species identified, 16 are considered to have a low likelihood of occurrence, 22 are considered to have a medium likelihood of occurrence and two are considered to have a high likelihood of occurrence (*Oxalis* sp. Pilbara (M.E. Trudgen 12725) and *Euphorbia clementii*). However, these species are annuals and are not always detectable every season, and several biological surveys have been undertaken across the Application Area and these species have not been recorded. Clearing within vegetation units likely to support these species is unlikely to have a significant impact on the species.

Seringia exastia, which has been delisted from State legislation but remains listed under Commonwealth legislation, was recorded within the Application Area. This species has recently been incorporated into the common and widespread species, *Seringia elliptica*, and is no longer considered to be of conservation significance, despite retaining Critically Endangered status under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) List of Threatened Flora.

No other Threatened flora taxa pursuant to the EPBC Act and/or gazetted as Threatened pursuant to the Biodiversity and Conservation Act 2016 (BC Act) were recorded within the Application Area, however *Thryptomene wittweri* has a ‘medium’ likelihood of occurring.

Twenty-one Priority Flora, typical to the area, are known to occur in the Application Area and are presented in Table 2 with population numbers within the Application area and number or individuals within the Rio Tinto Database.

Table 2: Priority flora recorded within the Application area and number of individuals.

Taxa	Number within Application Area	Number in RTIO regional database (% within Application Area)
Priority 2		
Aristida lazaridis	231	23,159 (1.00)

Eremophila pusilliflora	9	11,897 (0.08)
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	145	9,541 (1.52)
Priority 3		
Acacia effusa	13	12,959 (0.10)
Acacia subtiliformis	101	223,170 (0.05)
Aristida jerichoensis var. *subspinulifera*	67	16,248 (0.41)
Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)	1	11,674 (0.00)
Eremophila naaykensii	1	29,506 (0.00)
Indigofera gilesii	1,029	12,216 (8.42)
Isotropis parviflora	37	6,648 (0.56)
Rhagodia sp. Hamersley (M. Trudgen 17794)	53	107,318 (0.05)
Rostellularia adscendens var. *latifolia*	7	5,467 (0.13)
Sida sp. Hamersley Range (K. Newbey 10692)	2	5,658 (0.04)
Solanum kentrocaule	37	4,405 (0.84)
Themeda sp. Hamersley Station (M.E. Trudgen 11431)	440	165,661 (0.27)
Triodia sp. Mt Ella (M.E. Trudgen 12739)	24,095	295,176 (8.16)
Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684) *	0	13,321 (0.00)
Priority 4		
Acacia bromilowiana	135	4,548 (2.97)
Eremophila magnifica subsp. *magnifica*	7	11,536 (0.06)
Lepidium catapycnon	104	33,364 (0.31)
Sida sp. Barlee Range (S. van Leeuwen 1642)	238	12,160 (1.96)

* Previously recorded in the Application Area, but has since been lawfully cleared.

All known populations of Priority 2 listed flora taxa within the Application Area will be avoided. A 30 m buffer will be applied to Priority 2 flora in ARCS to further reduce the risk of potential indirect and inadvertent impacts from new exploration works on these Priority 2 flora taxa. Priority flora is often recorded alongside roads or tracks due to increased visibility in these areas. Altering existing tracks to provide buffers in such cases would result in additional clearing and higher environmental impacts. Areas of existing disturbance within the buffers, such as existing tracks and service corridors, will continue to be accessed and maintained where necessary.

One species, *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684) had previously been recorded within the Application Area, however have since been lawfully cleared under existing mechanisms. Although records of these species no longer exist within the Application Area, records are still present within 50 km of the Application Area and currently the RTIO database has records of 13,321 individuals of *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684).

The majority of the Priority 3 and 4 flora taxa recorded within the Application Area have broad local, regional and/or National distributions. The proportion of known individuals that occur within the Application Area relative to the regional population is low in most cases.

The Application Area is considered to have a typical to high level of floristic diversity, based on comparisons of floristic diversity captured in other flora and vegetation surveys conducted in the locality.

Fauna

Six broad habitats extending across the Application Area were identified from the desktop assessment – Mulga Woodland, Rocky Hill, Gorge/Gully, Low Hills and Slopes, Major Drainage, and Clay Plain. These habitat types extend beyond the Application Area, are common throughout the Pilbara region and are therefore unlikely to support a greater localised level of faunal diversity than that of the surrounding areas.

The desktop assessment identified 364 terrestrial vertebrate fauna species potentially occurring within the Application Area, comprising 172 birds, 48 mammals, 137 reptiles, and seven amphibian species.

Five species of conservation significant were previously recorded within the Application Area:

- Ghost Bat (*Macroderma gigas*), listed as Vulnerable under the BC Act and EPBC Act;
- Pilbara Olive Python (*Liasis olivaceus barroni*), listed as Vulnerable under the BC Act and EPBC Act;
- Pilbara Barking Gecko (*Underwoodisaurus seorsus*), listed as P2 by DBCA;
- Gane's Blind Snake (*Anilios ganei*), listed as P1 by DBCA; and
- Western Pebble-mound Mouse (*Pseudomys chapmani*), listed as P4 by DBCA.

An additional three conservation significant species had a high likelihood of occurrence within the Application Area:

- Northern Quoll (*Dasyurus hallucatus*), listed as Endangered under the BC Act and EPBC Act.
- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*), listed as Vulnerable under the BC Act and EPBC Act; and
- Fork-tailed Swift (*Apus pacificus*) listed as Migratory and Marine under the BC Act and EPBC Act.

Four conservation significant species had a medium likelihood of occurrence within the Application Area:

- Grey Falcon (*Falco hypoleucos*), listed as Vulnerable under the BC Act and EPBC Act;
- Peregrine Falcon (*Falco peregrinus*), listed as Other Specially Protected under the BC Act;
- Unpatterned Robust Slider (*Lerista macropisthopus remota*), listed a P2 by DBCA; and
- Pilbara Grasswren (*Amytornis whitei whitei*), listed as P4 by DBCA.

The MNES fauna species Ghost Bat (VU;VU) and Pilbara Olive Python (VU; VU) have previously been recorded within the Application Area. A total of seven Ghost Bat caves have been recorded within the Application Area, two of which are category 3 and five are category 4.

The Pilbara Olive Python has been recorded from one location within the Application area, within a semi-permanent pool. One semi-permanent pool was located within the Application Area. This pool is currently protected by Heritage exclusion areas in the ARCS system, however an additional exclusion area of 50m around the pool will be included to ensure no disturbance to the significant habitat.

Three priority fauna species have been previously recorded within the Application Area: the Pilbara Barking Gecko (P2), the Gane's Blind Snake and the Western Pebble-mound Mouse (P4). One record of the Gane's Blind snake was recorded from the drainage habitat in the south of the Application Area. One record of the Pilbara Barking Gecko was found within the Hillslope Hilltop habitat within the north-eastern part of the Application Area.

The Western Pebble-mound Mouse has been recorded 98 times from active and inactive mounds across the Application Area. The Low Hill and Slopes, Rocky Hill, Stony Plain and Mulga Woodland habitats of the application area are likely to support this species. These habitats are widespread and common within the vicinity of the Application Area and the wider Pilbara region. Mounds have been identified through multiple surveys across the Application Area and these are identified as restriction areas with a 25 m buffer in ARCS. Activities that may impact on these restriction areas would be identified and referred to a specialist zoologist for advice. Potential impacts to active mounds will be managed in accordance with Rio Tinto's EMP. The EMP states that such features of elevated conservation significance will be avoided (where practicable). In cases where avoidance is not practicable, fauna management advice is included on the internal approval by the specialist zoologist. The following commitments are made to avoid impacts to higher quality habitat for conservation significant fauna, including category 3 and 4 caves and the semi permanent pool. It is considered that conservation species are not likely to be dependent on the habitats present in the Application Area outside of those areas identified as exclusion areas. Most of the bird species are only likely to use the Application Area as part of a larger foraging area. None of these species are likely to be impacted by the Proposal.

Commitment 1: *No new exploration or associated works will be conducted within vegetation unit P15 as identified in SLR (2024). An additional 50 m exclusion area will be applied to this vegetation unit in ARCS to avoid potential indirect and inadvertent impacts to these vegetation units. Existing cleared areas may be accessed and maintained, as necessary.*

Commitment 2: *All known populations of Priority 2 listed flora taxa will be avoided. A 25 m exclusion area will be applied to Priority 2 flora in ARCS to further reduce the risk of potential indirect and inadvertent impacts from new exploration works on these Priority 2 flora taxa. Existing cleared areas may be accessed and maintained, as necessary.*

Commitment 3: *All seven known Category 3 and 4 caves will be avoided. A minimum 25 m exclusion area will be applied to these known caves in ARCS to avoid potential indirect and inadvertent impacts from exploration works on the Ghost Bat. Existing cleared areas may be accessed and maintained, as necessary, where the activity type would not cause any significant disturbance to Ghost Bat.*

Commitment 4: *The semi-permanent pool habitat will be avoided by applying a minimum 50 m exclusion area in ARCS to avoid impacts to this potential habitat for State and Federally listed Threatened fauna. Existing cleared areas will be accessed and maintained, as necessary, where the activity type would not cause significant disturbance to fauna.*

Commitment 5: *Western Pebble-mound Mouse (P4) mounds will be identified as a minimum 25 m restriction area in ARCS and mounds will be avoided where practicable. Where avoidance is not practicable, activities will be referred to a specialist zoologist for internal advice and approval with appropriate management conditions. Existing cleared areas may be accessed and maintained, as necessary.*

Based on Rio Tinto's commitments to avoid, minimise and manage impacts on Threatened fauna, Priority listed flora and fauna, Priority Ecological Communities and vegetation units of conservation significance, the proposed explorations and associated works are unlikely to impact the biological diversity within the Application Area and unlikely to be at variance to this principle.

1.2 Principle b. Potential impact to any significant habitat for fauna indigenous to Western Australia

Native vegetation should not be cleared if it comprises the whole, or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Six broad habitats extending across the Application Area were identified from the desktop assessment – Mulga Woodland, Rocky Hill, Gorge/Gully, Low Hills and Slopes, Major Drainage, and Clay Plain. These habitat types extend beyond the Application Area, are common throughout the Pilbara region and are therefore unlikely to support a greater localised level of faunal diversity than that of the surrounding areas. Rio Tinto has committed to ensuring the protection of potentially significant habitats within the Application Area, being significant caves, adits and the semi-permanent pool, as detailed above.

Two fauna habitats were found to contain microhabitats that were of importance to significant fauna species – Gorge/Gully and Major Drainage.

Gorges and gullies are rugged, steep-sided valleys incised into the surrounding landscape. Gorges tend to be deeply incised, with vertical cliff faces, while gullies are more open (but not as open as Drainage Area or Valleys). The desktop assessment identified the 'Gorge/Gully' habitats contain cave systems which are deep and humid enough to support Ghost Bats and potentially Pilbara Leaf-nosed Bat, as well as suitable cave habitat for Northern Quoll dens and Pilbara Olive Python hunting areas. The Gorge/Gully habitats also have areas which would be suitable for Gane's Blind Snake, and the airspace will also be utilised by birds of prey (e.g. Peregrine Falcon) while hunting. These birds of prey will typically nest on cliff faces and rock ledges which may also be found in the Gorge/Gully habitats.

Major drainage habitat comprises densely vegetated plains occurring on low-lying deeply alluvial plains, with a moderate-high amount of leaf litter and woody debris. Vegetation often consists of *Eucalyptus victrix* woodland over *Acacia citrinoviridis* shrublands and various sedges and grasses fringing the channel. This habitat becomes seasonally inundated with water after heavy rain events, which flows through the channels from higher altitude areas into nearby rivers, streams, and occasional ephemeral pools. The desktop assessment also found that the 'Drainage Line' habitats contain suitable creek systems and wetland areas to support Pilbara Olive Pythons, and are suitable hunting areas for Northern Quolls, Ghost Bats, and Pilbara Leaf-nosed Bats.

Mulga woodland habitat comprises areas where vegetation is a dense mix of Acacia, with a mixture of mulga (*Acacia aneura*), *A. maitlandii* and *A. pruninocarpa* over a mixture of sparse small shrubs and grasses, such a *Triodia* and *Senna* sp. This habitat may be suitable for Short-tailed Mouse, Bilby, Pilbara Barking Gecko, and woodland birds such as the Rufous Grasswren. These fauna species are

not considered to have a critical reliance on this habitat, rather using it for foraging. This habitat is widely distributed both locally and throughout the Hamersley sub-region.

Rocky Hill habitat comprises hills and undulating stony plains of higher elevation, often supporting hard spinifex with a mantle of gravel and larger rocks. Scattered areas of minor outcropping and breakaway, particularly atop hillcrests. The Western Pebble-Mound Mouse has previously been recorded within this habitat. This habitat may also support foraging for Brush-tailed Mulgara, Short-tailed Mouse, Western Pebble-mound Mouse, and Pilbara Olive-Python. This habitat is widely distributed both locally and throughout the Hamersley sub-region and clearing within this habitat is unlikely to cause a detrimental impact to any of the listed species potentially occurring within it.

Clay plain habitat is characterised by open and sparse low vegetation with approximately half of its area being bare ground. Isolated shrubs of *Salsola australis*, *Boerhavia paludosa* and *Ptilotus nobilis* subsp. *nobilis* occur over open tussock grass. This habitat is of little value to most significant fauna, but the tussocks may be utilised when animals are moving through the area to different landscapes. This area may also be seasonally inundated with water which will be utilised by all fauna species.

Low hills and slopes habitat comprises low-lying open plains and the rolling hills below upland areas. Vegetation consists of isolated trees (*Corymbia hamersleyana, Eucalyptus leucophloia* subsp. *leucophloia*, and *C. deserticola*) and moderate to densely vegetated plains of spinifex grassland. The Western Pebble-Mound Mouse has previously been recorded within this habitat. This habitat may also support foraging for Brush-tailed Mulgara, Short-tailed Mouse, Western Pebble-mound Mouse, Pilbara Olive-Python, Pilbara barking Gecko, and many grassland bird species such as the Pilbara Grasswren. This habitat is widely distributed both locally and throughout the Hamersley sub-region and clearing within this habitat is unlikely to cause a detrimental impact to any of the listed species potentially occurring within it.

The Application Area is not within a conservation estate, is not part of a critical fauna habitat corridor and does not contain fauna habitat that is limited locally or within the Pilbara region. Rio Tinto has committed to ensure the protection of potentially significant habitats within the Application Area, being the known Category 3 and 4 caves and the semi-permanent pool, as detailed above. Western Pebble-mound Mouse (P4) mounds will be avoided where practicable and, where avoidance is not practicable, fauna management advice is included on the internal approval by the specialist zoologist. As such, the proposed clearing is unlikely to be at variance to this Principle.

1.3 Principle c. Potential impact to any rare flora

Native vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora.

One species recorded in the Application Area *Seringia exastia* is listed as Critically Endangered under the EPBC Act 1999, however, it has been delisted at the State level due to taxonomic incorporation with *Seringia elliptica*, a widespread and common species of no conservation significance (Binks et al., 2020). It is expected that *Seringia exastia* will eventually be delisted from the EPBC Act List of Threatened Flora.

No other Threatened flora species pursuant to the EPBC Act and/or gazetted as Threatened Flora pursuant to the BC Act were recorded or are likely to occur within the Application Area.

Based on specialist assessment, the proposal is considered not at variance to this principle.

1.4 Principle d. Presence of any threatened ecological communities

Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of a threatened ecological community (TEC).

No TECs pursuant to the Commonwealth EPBC Act or TECs listed for under the BC Act were recorded within the Application Area and none are likely to occur.

Based on specialist assessment, the proposal is considered not at variance to this principle.

1.5 Principle e. Significance as a remnant of native vegetation in the area that has been extensively cleared

Native vegetation should not be cleared if it is significant as remnant vegetation in an area that has been extensively cleared.

The majority of the Pilbara region has not been extensively cleared. However grazing, inappropriate fire regimes and weed invasion have greatly altered the vegetation in some areas. The national target and objective for biodiversity conservation of ecological communities is to retain at least 30% of their pre-European extent (DEH, 2001).

The Application Area is mapped over two broad vegetation associations:

- Hamersley 18 which is characterised as low woodland, open low woodland, or sparse woodland: Mulga (*Acacia aneura*) and associated species; and
- Hamersley 82 which is characterised as low tree-steppe: Hummock grassland with scattered bloodwoods and snappy gum. *Triodia* spp., *Corymbia dichromophloia*, *Eucalyptus leucophloia*.

The Hamersley 18 vegetation type has 99.3% of its pre-European representation across the Pilbara Bioregion and 99.75% across Western Australia.

The Hamersley 82 vegetation type has 99.43% of its pre-European representation across the Pilbara Bioregion and 99.51% across Western Australia.

Vegetation types within the study area would not represent remnant stands of extensively cleared vegetation.

Based on specialist assessment, the proposal is considered not at variance to this principle.

1.6 Principle f. Impact on any watercourse and / or wetlands

Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

There were no wetlands or permanent sources of water identified within the Application Area. However, the Application Area intersects with minor watercourse Turee Creek, which is mapped by State Government GIS databases (DWER, 2018). This minor watercourse intersects the following vegetation types: D2 (36.45 ha), D14 (175.48 ha), M1 (430.11 ha) and P12 (275.57 ha).

One semi-permanent pool was located within the Application Area. This pool is currently protected by Heritage exclusion areas in the ARCS system, however an additional exclusion area of 50m around the pool will be included to ensure no disturbance to the significant habitat.

One vegetation unit, D2, is a potential Groundwater Dependent Ecosystem. The unit occurred in a minor drainage system (a section of Turee Creek East Branch) and was dominated by the tree species *Eucalyptus victrix* and the low tree / tall shrub species *Acacia citrinoviridis*. This vegetation unit comprises 36.45ha within the application area, of which 18.93ha is currently protected by a RTIO exclusion area within ARCS.

Potential impacts to natural water flow and vegetation growing in association with non-perennial watercourses will be minimised through implementation of the EMP that requires avoidance of surface drainage and a requirement to maintain surface drainage patterns.

Commitment 4: *The semi-permanent pool habitat will be avoided by applying a minimum 50 m exclusion area in ARCS to avoid impacts to this potential habitat for State and Federally listed Threatened fauna. Existing cleared areas will be accessed and maintained, as necessary, where the activity type would not cause significant disturbance to fauna.*

Based on Rio Tinto's commitment to avoid the semi-permanent pool habitat, the proposed clearing is unlikely to be at variance to this Principle.

1.7 Principle g. Potential to cause appreciable land degradation

Native vegetation should not be cleared if the clearing of vegetation is likely to cause appreciable land degradation.

Thirteen weed species: **Bidens bipinnata* (bipinnate beggartick), **Cenchrus ciliaris* (buffel grass), **Chloris virgata* (feathertop Rhodes grass), * *Erigeron bonariensis* (Flaxleaf Fleabane), **Flaveria trinervia* (speedy weed), **Lactuca serriola* (Prickly Lettuce), **Malvastrum americanum* (spiked malvastrum),**Oxalis corniculata* (Yellow Wood Sorrel), **Rumex vesicarius* (Ruby Dock), **Setaria verticillata* (whorled pigeon grass), **Sigesbeckia orientalis* (Indian Weed), **Sonchus oleraceus* (Common Sowthistle), and **Vachellia farnesiana (*mimosa bush) were identified within the Application Area. none of which represent Declared Pests under the BAM Act (DPIRD, 2024), or listed as Weeds of National Environmental Significance by DAWE (2021).

The Application Area contains six land systems, as mapped and described by van Vreeswyk (2004). The land systems and susceptibility to erosion are listed below:

- Boolgeeda System: Vegetation is generally not prone to degradation and the system is not susceptible to erosion;
- Egerton System: Not susceptible to erosion;
- Newman System: Some erosional surfaces, however 99% of this land system has nil erosion;
- Platform System: Not susceptible to erosion;
- Rocklea System: Very low erosion hazard; and
- Wannamunna System: Generally, the system has low susceptibility to erosion.

Disturbances to overland flow processes by inappropriate positioning or construction of infrastructure such as roads can have adverse effects on vegetation (van Vreeswyk, 2004).

Of the six mapped land systems, the majority (four) were not susceptible to erosion, and two were identified as having a low potential for erosion. All six systems were generally non-saline, with either a moderate risk of inundation in low lying areas or other nil risk of inundation or flooding (van Vreeswyk, 2004).The Proposal is not expected to result in soil erosion, nutrient export, water-logging/flooding, acidification, salinization or deep subsoil compaction. Potential impacts to land degradation in the longer term as a result of the proposed clearing may be minimised by the implementation of rehabilitation.

Based on specialist assessment, the proposal is unlikely to be at variance to this principle.

1.8 Principle h. Potential to impact on the environmental values of adjacent or nearby conservation areas

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.

The closest conservation area is Karijini National Park, located immediately adjacent to the west of the study area.

As Karijini National Park does not extend within the Application Area it is unlikely that the proposal would have an impact on this ESA. A 50m buffer exclusion zone is applied around the perimeter of the National Park, therefore clearing of the ESA will be avoided.

Commitment 6*: A 50m buffer will be applied to the boundary of Karijini National Park to ensure no clearing in conducted within the National Park nor indirect impacts.*

Based on specialist assessment, the proposal is not at variance to this principle.

1.9 Principle i. Potential deterioration in the quality of surface or underground water

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.

There are no wetlands, permanent sources of surface water, or areas of public drinking water identified within the Application Area. Turee Creek flows through the Application Area and represents a significant area of surface drainage (DWER, 2018). Major drainage lines within the Application Area are identified as Rio Tinto Exclusion avoidance areas in which clearing is prohibited and given the small scale of Proposal, there is no reason to expect that the Proposal would affect groundwater or surface water quality in the region.

Based on specialist assessment, the proposal is unlikely to be at variance to this principle.

1.10 Principle j. Potential of clearing to cause, or exacerbate, the incidence or intensity of flooding

Native vegetation should not be cleared if the clearing of vegetation is likely to cause, or exacerbate, the incidence of flooding.

Local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity.

Turee Creek East Branch intersecting the Survey Area, and the nearby significant stream, would naturally be subject to seasonal flooding.

When considering broad land systems mapped for the area, all six land systems had either a moderate risk in inundation in low lying areas or other nil risk of inundation or flooding (van Vreeswyk, 2004).

It is therefore not anticipated that clearing within the Application Area would influence this process, under the provision that surface drainage flow is maintained. The small scale of clearing proposed is not expected to exacerbate the incidence or intensity of flooding in the area.

Based on specialist assessment, the proposal is unlikely to be at variance to this principle.

1.11 Conclusion

Rio Tinto on behalf of Robe River Mining proposes a replacement NVCP for CPS 6545 to support mineral exploration, hydrogeological and geotechnical investigations and associated activities at Greater West Angelas. The scope of works includes resource and hydrogeological drilling, test pitting, infrastructure corridor maintenance and associated activities across the Application Area (6,692.05 ha) and will require the clearing of up to 180.0 ha of native vegetation representing approximately 2.67 % of the Application Area.

Karijini National Park is located directly adjacent to the Application Area, however a 50m buffer zone has been added to the boundary to ensure no disturbance occurs within this ESA. No TECs were recorded within the study area. The buffer boundary and a small portion of representation PEC-2015-4 (0.58ha) of the West Angelas Cracking Clay PEC (Priority 1) overlaps with the Application Area. Karijini National Park, the West Angelas Cracking Clay PEC and vegetation unit P15 which is analogous with the PEC are all protected by an internal exclusion avoidance layer in GIS and no disturbance will be authorised within these areas.

Thirty-nine vegetation units were described from the study area, none of which correspond to ecosystems listed as Threatened under the EPBC Act or TECs listed by DBCA. The buffer zones of one State listed PEC, West Angelas Cracking-Clays (Priority 1), were found to intersect the Application Area (Department of Biodiversity Conservation and Attractions, 2023). Twenty-seven of the 39 vegetation units are considered to have elevated local significance due to supporting Priority flora populations.

A total of 517 taxa from 177 genera across 52 families were recorded from within the Application Area. The number of taxa recorded by the current survey appears typical to high when compared against previous surveys completed nearby and the database search results. One species recorded in the Application Area *Seringia exastia* is listed as Critically Endangered under the EPBC Act 1999, however, it has been delisted at the State level due to taxonomic incorporation with *Seringia elliptica*, a widespread and common species of no conservation significance (Binks et al., 2020). It is expected that *Seringia exastia* will eventually be delisted from the EPBC Act List of Threatened Flora.

No other Threatened flora species pursuant to the EPBC Act and/or gazetted as Threatened Flora pursuant to the BC Act were recorded or are likely to occur within the Application Area.

Twenty-one Priority flora species have been previously identified within the Application Area, three P2 species, 14 P3 species and four P4 species. These Priority flora taxa are not restricted to the study area. Seven introduced flora species have been previously recorded within the Application Area, none of which represent Declared Pests under the BAM Act (DPIRD, 2024), or listed as Weeds of National Environmental Significance by DAWE (2021).

Six broad habitats extending across the Application Area were identified from the desktop assessment – Mulga Woodland, Rocky Hill, Gorge/Gully, Low Hills and Slopes, Major Drainage, and Clay Plain. These fauna habitats are not considered to be restricted at a local or regional level.

Five conservation significant fauna species have previously been recorded within the Application Area.

The desktop assessment identified the ‘Gorge/Gully’ habitats contain cave systems which are deep and humid enough to support Pilbara Leaf-nosed Bat and Ghost Bat roosts, as well as suitable cave habitat for Northern Quoll dens and Pilbara Olive Python hunting areas. The Gorge/Gully habitats also

have areas which would be suitable for Gane's Blind Snake, and the airspace will also be utilised by birds of prey (e.g. Peregrine Falcon) while hunting. These birds of prey will typically nest on cliff faces and rock ledges which may also be found in the Gorge/Gully habitats.

The desktop assessment also found that the 'Drainage Line' habitats contain suitable creek systems and wetland areas to support Pilbara Olive Pythons, and are suitable hunting areas for Northern Quolls, Ghost Bats, and Pilbara Leaf-nosed Bats. One semi-permanent pool located within the application area. This pool is currently protected by Heritage exclusion areas in the ARCS system, however an additional exclusion area of 50m around the pool will be included to ensure no disturbance to the significant habitat.

An assessment against the 10 Clearing Principles determined that:

- Principles (c), (d), (e), (g) and (h) are not at variance; and
- Principles (a), (b), (f), (i), and (j) are unlikely to be at variance.

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