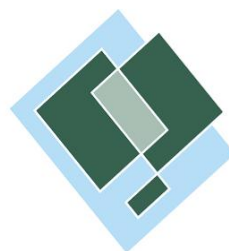


CYPRIMUM
METALS LIMITED



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NIFTY COPPER OPERATION

**NATIVE VEGETATION CLEARING PERMIT APPLICATION
SUPPORTING INFORMATION**

12 November 2021

PREPARED FOR CYPRIMUM METALS LIMITED

PREPARED BY PRESTON CONSULTING PTY LTD

Document prepared for:

CYPRIMUM METALS LIMITED

Contact Person: Barry Cahill – Executive Director
Email: Barry.Cahill@cypriummetals.com
Phone: +61 8 6374 1550
Address: Unit 1, 437 Roberts Road, Subiaco, WA, 6008

Document developed by:

PRESTON CONSULTING

Contact Person: Phil Scott - Director
Email: pscott@prestonconsulting.com.au
Website: www.prestonconsulting.com.au
Phone: 0488 737 273
Street Address: Level 3, 201 Adelaide Terrace, East Perth, Western Australia, 6004
Postal Address: PO Box 3093, East Perth, Western Australia, 6892

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The following Appendices are provided:

Appendix 1: *Detailed Flora and Vegetation Assessment of the Nifty Copper Mine*

Appendix 2: *Addendum to Detailed Flora and Vegetation Assessment of the Nifty Copper Mine*

Appendix 3: *Nifty Copper Mine Targeted Fauna Assessment*



1 INTRODUCTION

1.1 PROJECT BACKGROUND

Cyprium Metals Limited (Cyprium), an Australian owned copper company who owns a portfolio of Copper Assets in the Paterson and Murchison Provinces of Western Australia, is proposing to recommence and extend operations at the Nifty Copper Mine (the Project). The Project is located 350 kilometres (km) south-east of Port Hedland on the Western fringe of the Great Sandy Desert in the East Pilbara region of Western Australia (WA). Cyprium proposes to extend the area of existing open pit and heap leach operations and requiring an increase mine disturbance footprint.

The Project was placed into Care and Maintenance by the previous owner (Metals X Limited), in November 2019 due to declining grades from the underground operations and difficult operating conditions. Cyprium completed the purchase of the Project from Metals X Limited in March 2021 and has commenced detailed planning and investigations for the expansion of the footprint. Cyprium plans to commence implementation of the expanded footprint in 2022.

The Project is subject to a State Agreement Act (SAA), being the *Western Mining Corporation Limited (Throssell Range) Agreement Act 1985*.

1.2 PURPOSE

The purpose of these two Native Vegetation Clearing Permit (NVCP) applications are to authorise the clearing of up to an additional 300 ha of native vegetation under a new NVCP and amend the purpose and boundary of an existing NVCP (being CPS6225/2) to enable Cyprium to expand operations at the Project. All clearing will be undertaken within the Special Agreement Mining Lease M271SA.

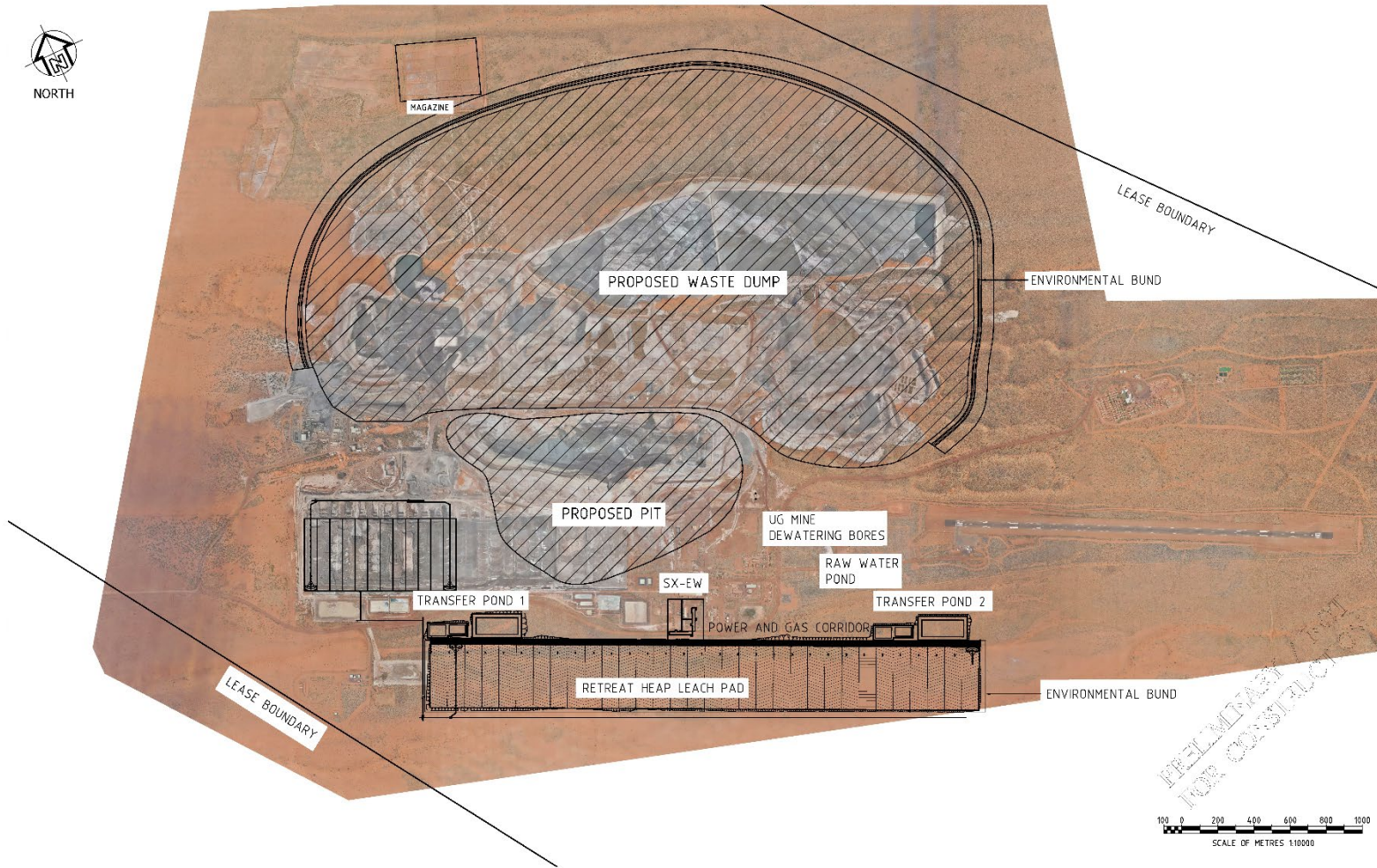


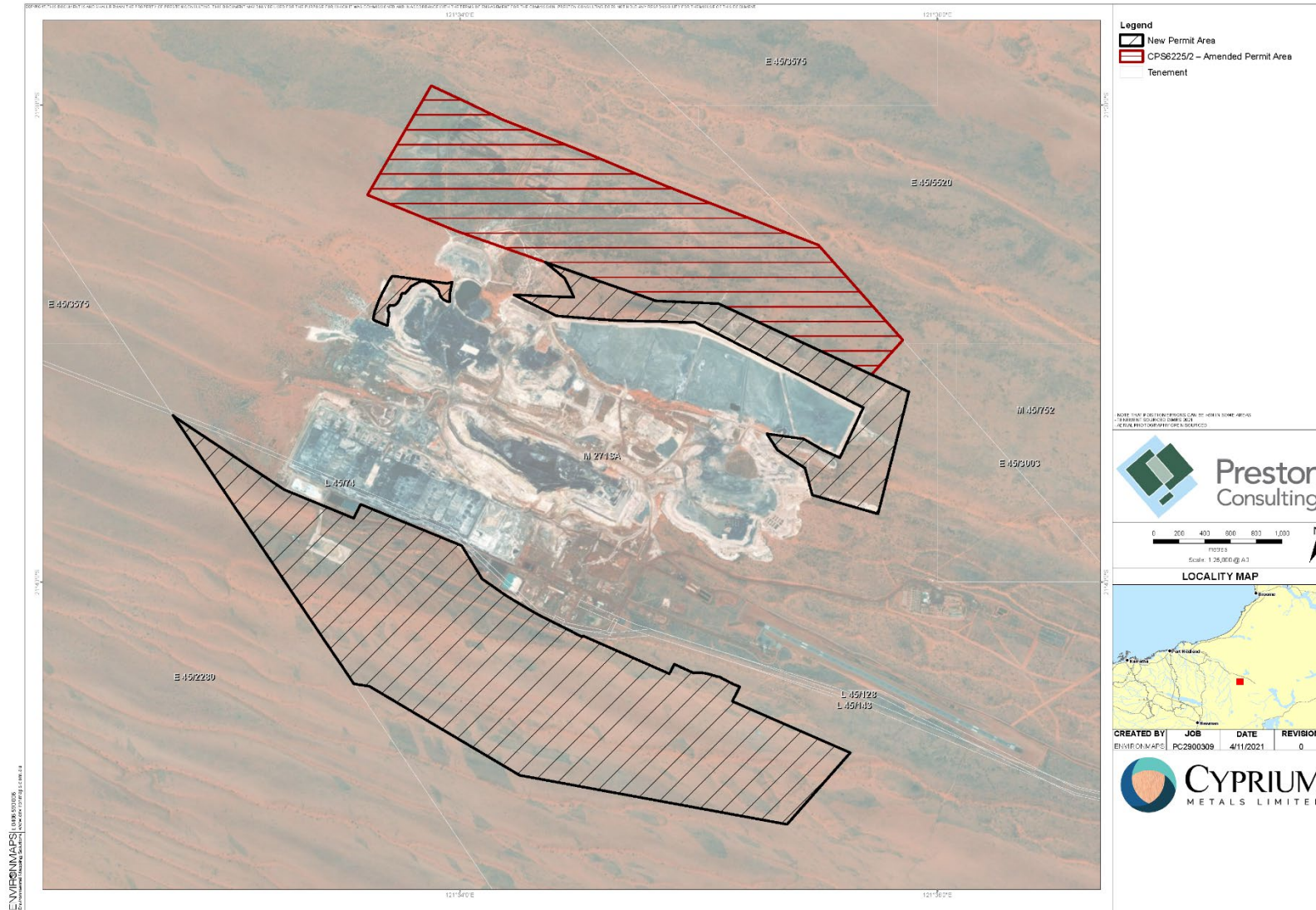
2 PERMIT AREA

2.1 BOUNDARY

The expanded operations are limited to the indicative footprint areas within the Mining Lease M271SA (Figure 1). Some areas are already approved and disturbed, others are approved but not yet disturbed. The approved areas of disturbance have been taken into account so that the new Permit Area and the change in purpose CPS6225/2 covers the areas of disturbance now required for the new infrastructure necessary for the Nifty Project. The Permit Area proposed for the new NVCP is 578 ha, with 300 ha of clearing within to provide some flexibility in implementation (Figure 2). The Permit Area for CPS6225/2 is also proposed to be amended so as not to overlap with the new Permit Area.







2.2 TENURE AND LAND ACCESS

All vegetation disturbance will occur within the boundary of the Special Agreement Mining Lease (M271SA) granted under the *Western Mining Corporation Limited (Throssell Range) Agreement Act 1985*.

2.3 NATIVE TITLE

On 6 September 2002 a land claim by the Martu People surrounding Nifty received consent from the Federal Court of Australia. The court determined that for mining leases granted before 1 January 1994 (which includes Special Mining Lease 271SA) within the Martu claim no determination is made (Crown Solicitor for the State of Western Australia, 2002).

Cyprium is in regular communication with the Martu People who have been briefed on the expanded footprint proposal.



3 PROPOSED ACTIVITIES

The additional clearing is required to allow for a number of ground disturbing activities. The proposed works requiring an expanded footprint include:

- Extension of the open pit - restart and extend pit to the south;
- Extension of the waste rock landform area (including encapsulation of existing Tailings Storage Facility (TSF));
- Extension of heap leach pad;
- Extension of transfer ponds;
- Construction of perimeter environmental containment bund;
- New explosive magazine located away from the Project; and
- Storage of topsoil and other materials required for rehabilitation of the mine footprint (except the pit).

All clearing activities are proposed to occur within the Special Agreement Mining Lease (M271SA).

CPS6225/2 currently covers an area of the Nifty Project that has only been partially cleared. Cyprium is applying to amend CPS6225/2 from its current purpose of mine water discharge so that method of clearing and purpose of this NVCP is consistent with the proposed future activities for the re-start of the Nifty Project within an amended area covered by CPS6225/2.



4 ENVIRONMENTAL CHARACTERISTICS

Information regarding the environmental characteristics of the Project Area that may be relevant to this NVCP is contained within this section. Western Botanical conducted both desktop assessments and field surveys for flora and vegetation (Western Botanical, 2021a,b) and Biota Environmental Sciences (2021) (Biota) conducted both desktop assessment and field surveys for fauna. The flora and fauna surveys share the same field survey area shown in Figure 3. In addition, a 5000 ha Study Area was utilised for the desktop assessments to provide regional context for flora, vegetation and fauna recorded during the field surveys. Western Botanical also undertook an additional desktop analysis of three areas adjacent to the Survey Area to determine likely flora and vegetation in these three areas given lack of previous on-ground surveys of these three specific areas (Western Botanical 2021b).

The Survey Area also partially intersects the area covered by CPS6225/2, with previous targeted surveys for flora (Botanic Gardens and Parks Authority 2014) and fauna (Rapallo 2014) also carried out to support the previous application for grant of CPS6225/2. The Clearing Permit Decision reports for CPS6225/1 (Department of Mines and Petroleum 2014) and CPS6225/2 (Department of Mines, Industry Regulation and Safety 2019) also summarise the environmental characteristics of this NVCP Permit Area.





4.1 BIOGEOGRAPHIC REGIONS

The Project lies entirely within the Great Sandy Desert Bioregion, specifically located on the Mackay Interim Biographical Regionalisation for Australia (IBRA) Subregion, bordered by the Trainer and Rudall IBRA subregions. This subregion is described in the *Biodiversity Audit of Western Australia's 53 Biogeographical Subregions* (Kendrick & Stanley 2001). The Mackay subregion covers 18,636,695 ha, and is described as follows:

“The Mackay subregion comprises the “tropical inland 'red-centre' desert, and includes the 'Percival' and 'Auld' palaeoriver systems”. Mainly tree steppe grading to shrub steppe in south; comprising open hummock grassland of *Triodia pungens* and *Triodia schinzii* with scattered trees of *Owenia reticulata* and bloodwood (*Corymbia* spp.), and shrubs of *Acacia* spp., *Grevillea wickhamii* and *G. refracta*, on Quaternary red longitudinal sand dune fields. The climate is arid tropical with summer rainfall, and monsoonal influences are apparent in the northwestern sector of this region” (Kendrick 2003).

4.2 LAND SYSTEMS AND SOILS

The Project is situated within the Little Sandy Land System (Figure 4). This land system is characterised by sandplains with linear and reticulate dunes supporting shrubby hard and soft spinifex grasslands (van Vreeswyk et al. 2004). There is 85,725 ha of this land system within the 40 km Study Area considered by Biota (2021). The Survey Area is noted to be all Little Sandy Land System and represents 0.67% of the 85,725 ha. The Little Sandy Land System is noted to extend well beyond the 40 km Study Area mapped by Biota (Figure 5).

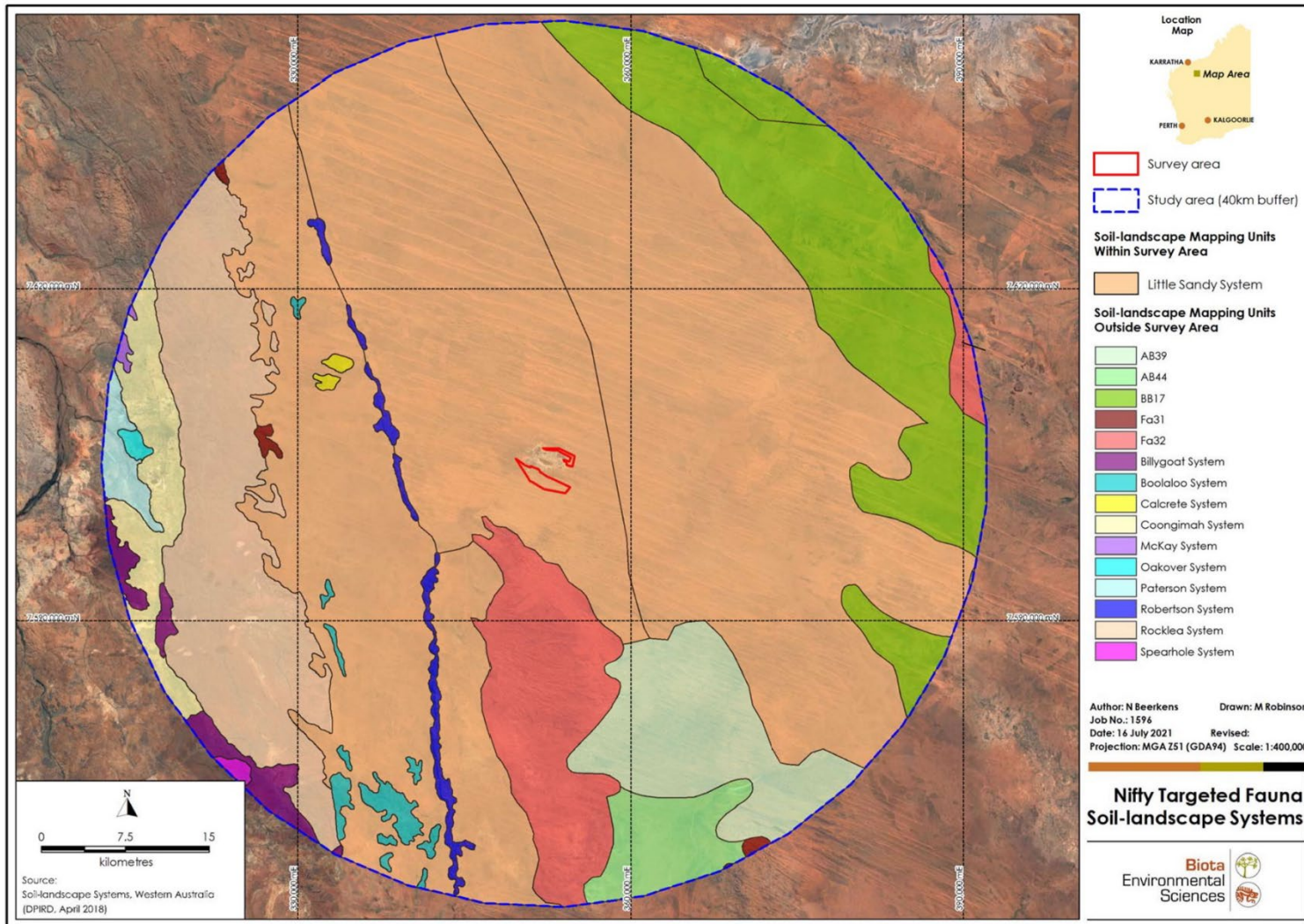
Within the area covered by CPS 6225/2 it was noted that soils were expected to have short term increases in soil salinity because of the evaporative concentration of salts from the proposed mine water discharge (Department of Mines and Petroleum 2014). The sandy nature of these soils is likely to result in rapid leaching of precipitated salts following rainfall.

4.3 PRE-EUROPEAN VEGETATION

Broad-scale vegetation mapping for the locality has been prepared at the 1:1,000,000 scale based on the work of J.S. Beard in the Pilbara (Beard 1975) and the Great Sandy Desert (Beard 1968). The Survey Area includes one of Beard's vegetation associations; Great Sandy Desert 134 (Biota 2021). The Survey Area represents 0.7 % of the 76,806 ha covered by Great Sandy Desert 134 vegetation association within 40 km as mapped by Beard (Biota 2021).







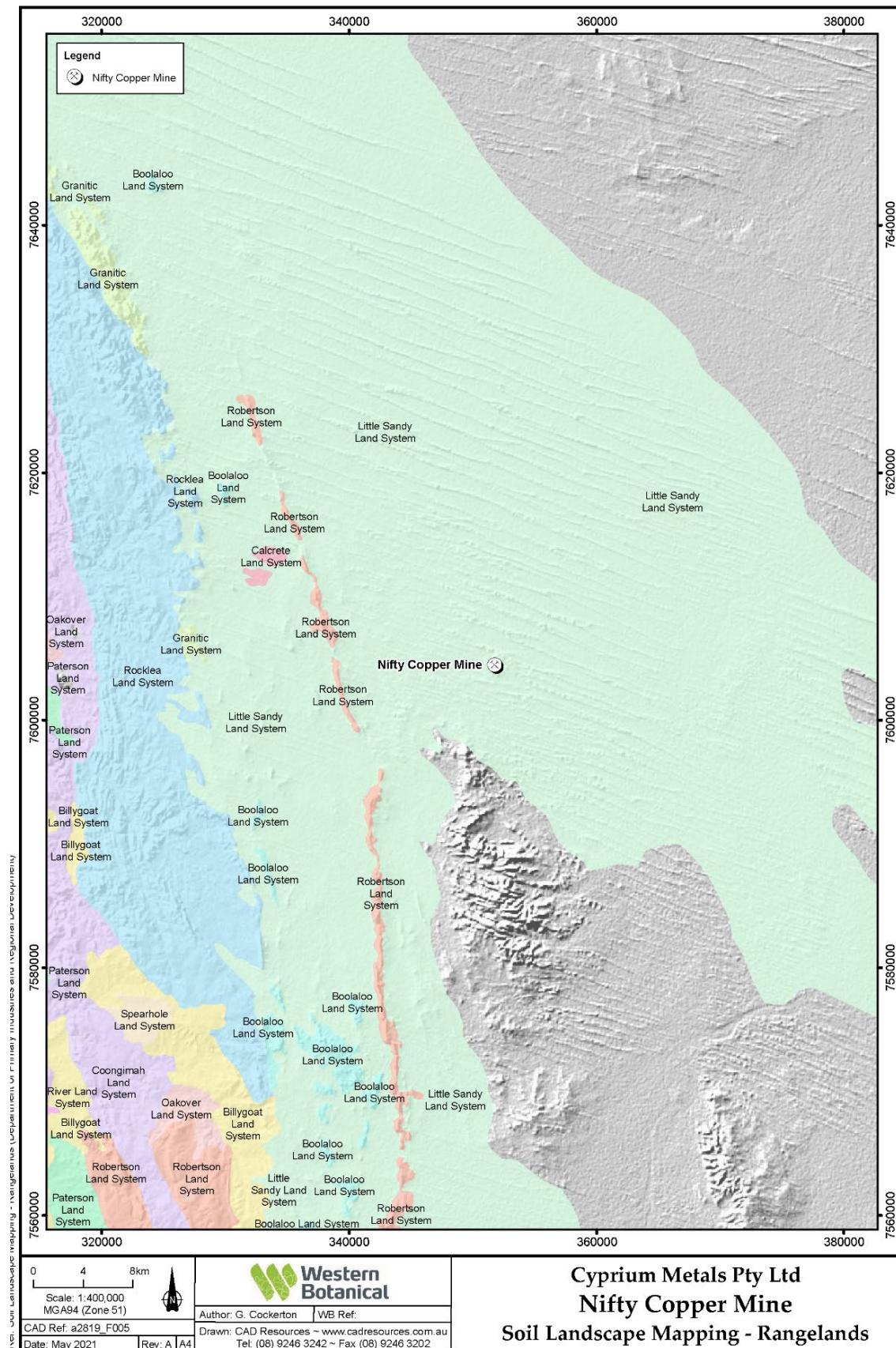


Figure 5: Soil Landscape map showing Little Sandy Land System extent



4.4 FLORA AND VEGETATION

4.4.1 SURVEY EFFORT

Western Botanical undertook a detailed Flora and Vegetation assessment of the Survey Area in 2021 (Western Botanical, 2021a,b). The study included a comprehensive desktop reconnaissance assessment followed by field surveys and targeted searches for conservation significant flora. Western Botanical's report provided mapping and descriptions of vegetation types and the condition of flora within the Study Area.

The Survey Area comprises three survey polygons, each roughly 1 km wide and 3.5 km long, positioned to the north-east, south-western and south-eastern edges of the existing development, within mining tenement M271SA. The survey polygons encompass 94.6 ha, 256 ha and 214 ha, respectively (Figure 3). The south-eastern polygon was added to the proposal at a later stage to provide flexibility for the planning and final positioning of potential infrastructure in the future. All mapping images depict the two southern polygons as one. The field surveys, conducted in May and July 2021, identified 174 flora species from 94 genera and 41 families within the Study Area.

4.4.2 CONSERVATION SIGNIFICANT FLORA

Initial desktop studies conducted by Western Botanical (2021a) identified 26 conservation significant flora species occurring within 110 kilometres of the Study Area. This comprised one Threatened Flora, ten Priority 1, three Priority 2, eleven Priority 3 and one Priority 4 species. A further assessment of the likelihood of each of these 26 species occurring in the Survey Area was also undertaken. Two species were considered as Probably occurring within the Survey Area while an additional nine considered Possibly occurring. The eleven species identified as Probable and Possible and their conservation status are:

- *Seringia exastia* (T);
- *Goodenia hartiana* (P2);
- *Lepidium amelum* (P1);
- *Eremophila sp. Rudall River* (P2);
- *Thysanotus sp. Desert East of Newman* (P2);
- *Comesperma sabulosum* (P3);
- *Dampiera atriplicina* (P3);
- *Eragrostis lanicaulis* (P3);
- *Indigofera ammobia* (P3);
- *Pterocaulon xenicum* (P3); and
- *Sauropus arenosus* (P3).

Western Botanical have advised that *Seringia exastia* (which is one of the species that is considered as Probably occurring in the Study Area) is listed as Threatened due to a technicality and does not warrant Conservation Listing and will be removed from the Threatened Flora List following the next census (Western Botanical, 2021a).



4.4.3 RECORDED CONSERVATION SIGNIFICANT FLORA

Flora studies identified six Priority Flora within the Study Area as shown in Table 1 below. A review of these species was also undertaken to provide local context of their extent outside the field survey area and within a 5,000 ha buffer area from the Nifty Project (also shown in Table 1).

Table 1: Summary of Priority Flora recorded within and outside of the Nifty Study Area

Species	Numbers of Populations within Survey Area	Number of Individuals within Survey Area	Number of Individuals outside Survey Area	Total Individuals (Study Area)
<i>Goodenia hartiana</i> (P2)	11	615	1896	2484
<i>Thysanotus</i> sp. Desert East of Newman (R.P. Hart 964) (P2)	1	3	0	3
<i>Dasymalla chorisepala</i> (P3)	1	0	20+	20+
<i>Corynotheca asperata</i> (P3)	9	118	19	137
<i>Indigofera ammobia</i> (P3)	23	5177	6928	12,105
<i>Sauropus arenosus</i> (P3)	1	0	8	8

Western Botanical (2021a) have stated that considering the uniformity of the landforms present within the Study Area (i.e., repetitious linear sand dunes and sandplain swales), and across the Great Sandy Desert bioregion, these taxa are expected to occur in significant numbers outside of the Survey Area.



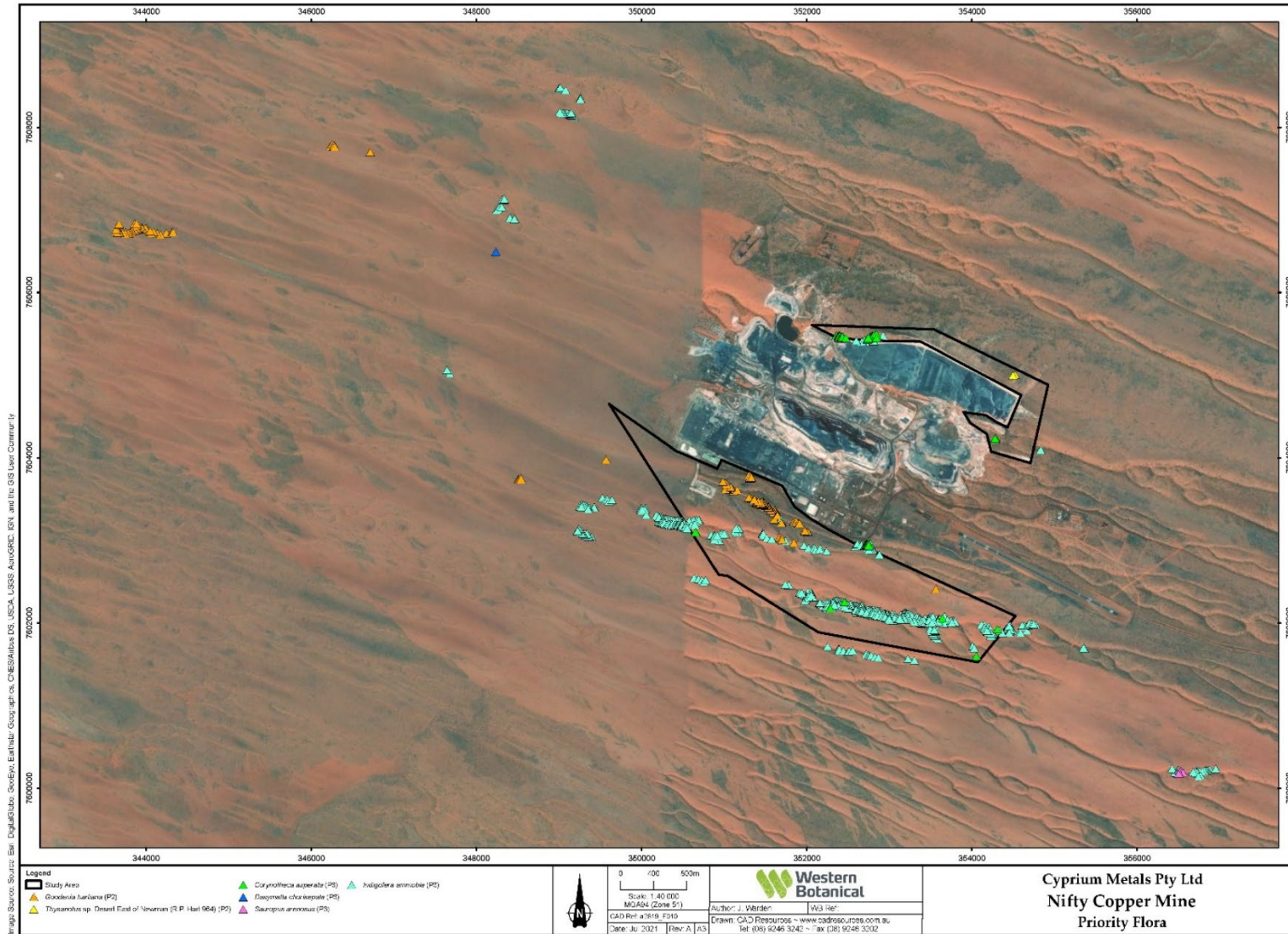


Figure 6: Locations of Priority Species Recorded Within the Nifty Study Area.



***Goodenia hartiana* (Priority 2)**

Goodenia hartiana (P2) is an erect to spreading, multi-stemmed perennial herb or shrub to sub-shrub with blue/purple flowers, growing to a height of 0.5-0.8 m (WA Herbarium 1998- 2021). It commonly occurs on red sand of sand dunes and swales, distributed from Newman to Eighty Mile Beach. There are currently 25 records of *Goodenia hartiana* (P2) recognised by the Western Australian Herbarium (WA Herbarium 1998-2021), and a further nine recognised by the Australasian Virtual Herbarium (2021). Associated species include, *Triodia basedowii*, *Triodia schinzii*, *Jacksonia aculeata*, *Gompholobium polyzygum*, *Eucalyptus kingsmillii*, *Acacia ancistrocarpa* and *Acacia stellaticeps*.

Occurrences primarily occurred within the interdunal swales within the lower part of the landscape in the moisture gathering sites.

***Thysanotus* sp. Desert East of Newman (R.P Hart 964) (Priority 2)**

Thysanotus sp. Desert East of Newman (R.P. Hart 964) (P2) is a member of the Asparagaceae family. It is described as a self-supporting perennial herb with tuberous roots, and commonly occurs on red to red-brown loamy/silty sand in sandplains and pisolitic buckshot plains in central Western Australia (WA Herbarium 1998-2021). Three plants were recorded within the *Acacia ancistrocarpa* Association during the survey, these plants were concealed within *Triodia basedowii* hummocks making them very challenging to locate when not in flower. The three plants are within the indicative disturbance area

The Western Australian Herbarium currently recognises seven records of *Thysanotus* sp. Desert East of Newman (R.P. Hart 964) (P2), with one of these collected in 1997 from the Nifty Mine Site (PERTH 05342368). This record was from within the same interdunal swale some 10 km south east of the current record. The seven records are widespread with individual records located in the Gascoyne, Gibson Desert, Great Sandy Desert, Little Sandy Desert IBRA regions (Florabase 2021). The number of records for this species has increased since 2017 when only two records were reported (Ecologia 2017). All were all recorded in flower from late August to mid-October, demonstrating the most appropriate time to survey for this species.

***Dasymalla chorisepala* (Priority 3)**

Dasymalla chorisepala (P3) was recorded opportunistically during the regional search outside the Survey Area. It was located 2.5 km north-west of the Nifty Copper Mine within a swale that was burnt between 3-5 years ago. The recording of this population represents a 100 km southerly range extension for this species and is currently the most southerly record for this species within Western Australia. There are currently eight records of *Dasymalla chorisepala* recognised by the Western Australian Herbarium, all from the Great Sandy Desert IBRA region. The Australian Virtual herbarium has 11 records including the 8 within Western Australia and a further 3 from the Northern Territory Tanami and Great Sandy Desert bioregions.

As this species was not recognised during the field survey and was subsequently identified the population counts and boundaries were not assessed. From field notes the population was estimated conservatively to be greater than 20 plants. This population will not be disturbed as a result of the clearing proposed to occur under this application as it is outside the Permit Area.

***Corynotheca asperata* (Priority 3)**

A total of 137 individuals from nine subpopulations were encountered (118 within the Survey Area and 19 outside). Five of these subpopulations consisted of only one or two plants. They



primarily occurred on the Mid to lower foot slopes of the Sand Dune Vegetation Association with associated species including *Triodia schinzii*, *Dicrastylis doranii*, *Gompholobium simplicifolium*, *Eriachne aristidea*, *Aristida holathera* and *Dicrastylis cinerea*.

The collection of *Corynotheca asperata* at Nifty represents a fifth record for this taxon in Western Australia and represents the fourth known location for this taxon. This collection represents a 100 km range infill for this species which is likely to be more wide spread than the current understanding implies. The population recorded by Western Botanical at Mt Cecelia (WA Herbarium record 08643520) reports frequencies of 10,000 individuals across a 60 ha area.

***Indigofera ammobia* (Priority 3)**

The Western Australian Herbarium currently recognises 15 records of *Indigofera ammobia* (P3) within Western Australia, while it is known from 47 records across Australia (Australasian Virtual Herbarium 2021). Associated species include *Grevillea wickhamii*, *Thinicola incana*, *Sida* sp. Western sand dunes (P.K. Latz 11980) and *Triodia* spp.

Records of *Indigofera ammobia* primarily occurred within the Cc-SLT Vegetation Association, with large numbers present where the vegetation had been recently burnt in the last five years (Western Botanical 2021a).

***Sauropus arenosus* (Priority 3)**

The Western Australian Herbarium currently has seven records from the Great Sandy Desert, Little Sandy Desert and Gibson Desert IBRA regions in Western Australia, with a further four records stretching into the Northern Territory northwest of Alice Springs (Australasian Virtual Herbarium 2021).

A total of eight individuals were identified outside of the Nifty Survey Area, during the regional search. These records were from a Sand Dune located 5.5 km Southeast of the Nifty mine and therefore outside the indicative disturbance area.

4.4.4 INTRODUCED FLORA SPECIES

Three weed species were recorded during the field survey:

- *Cenchrus ciliaris* (Buffel grass)
- *Rumex vesicarius* (Ruby Dock), and
- *Aerva javanica* (Kapok)

Of the identified weed species identified, none are declared or listed as Weeds of National Significance (DPIRD, 2021).

4.4.5 VEGETATION ASSOCIATIONS

Twelve Vegetation Associations were recognised within the Nifty Survey Area (Figure 5). These Vegetation Associations fell into four broad groups strongly reflective of the landforms occupying the Survey Area. These landforms include:

- Sand Dunes;
- Sandplains & Swales;
- Stony Pains & Low Hills; and



- Claypan Playas.

Vegetation Associations and their relative extents across the Survey Area are presented in Table 2 below:

Table 2: Vegetation Associations recorded within the Survey Area

Land Form	Vegetation Code	Vegetation Association	Within Survey Area (ha)
Sand Dune	Cc-SLT	<i>Corymbia chippendalei</i> Scattered Low Trees	145.5
	Am-LS	<i>Aluta maisonneuvei</i> subsp. <i>maisonneuvei</i> Low Shrubland	1.4
Sandplain Swale	Aa-S	<i>Acacia ancistrocarpa</i> Shrubland	58.6
	As-LS	<i>Acacia stellaticeps</i> Low Shrubland	9.7
	Gs-S	<i>Grevillea stenobotrya</i> Shrubland	4.3
	Mg-S	<i>Melaleuca glomerata</i> Shrubland	14.7
	MI-OS	<i>Melaleuca lasiandra</i> Open Shrubland	51.9
	Tb-HG	<i>Triodia basedowii</i> Hummock Grassland	69.4
	TI-HG	<i>Triodia</i> aff. <i>lanigera</i> Hummock Grassland	131.8
Stony Plain & Low Hill	Ah-LS	<i>Acacia hilliana</i> Low Shrubland	39.4
Clay Pan Playa	Ef-G	<i>Eragrostis falcata</i> Grassland	1.4
	Ta-LS	<i>Tecticornia auriculata</i> Low Shrubland	1.5
Disturbed		Disturbed	29.3

A minimum of three representative quadrat sites was anticipated for each Vegetation Association, however due to the limited extent of several Associations within the Survey Area, this was not achieved. Both the *Eragrostis falcata* Grassland (Ef-G) and the *Tecticornia auriculata* Low Shrubland (Ta-LS) on Clay Pan Playas were encountered once each during the field assessment; while the *Aluta maisonneuvei* subsp. *maisonneuvei* Low Shrubland is a small distinctive association that was only encountered twice within the Survey Area.

The Botanic Garden and Parks Authority (2014) undertook a targeted survey of the proposed discharge area for CPS6225/2 and identified two broad vegetation types, that align with vegetation types identified by Western Botanical (2021a,b). These are:

- Sand Dunes: Vegetation gradient from the lower slope to the crest with *Triodia schinzii* on the crest, grading to *Triodia basedowii* on the lower slopes, with a variety of shrubs, herbs and grasses. Common species found include *Corymbia chippendalei*, *Acacia dictyophleba*, *Dicrastylis doranii*, *Aluta maisonneuvei* and *Grevillea stenobotrya*.
- Sand Plains: *Triodia basedowii* hummock grasslands with scattered shrubs grading to shrublands of Acacia species, most commonly *Acacia stellaticeps*



4.4.6 THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

No Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) were found or are known to occur within the Survey Area or the wider Study Area (Western Botanical 2021a,b).

4.5 FAUNA

4.5.1 SURVEY EFFORT

Fauna studies by Biota Environmental Sciences (2021) comprised initial desktop studies, field surveys, and targeted searches for several species regarded as conservation significant. The ‘study area’ of the targeted fauna assessment encompassed a 40 km buffer around the Survey Area depicted in Figure 3. Field survey methodology employed was in accordance with relevant Environmental Protection Authority and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) guidance.

4.5.2 FAUNA HABITAT

The fauna habitats defined for the survey area aligned broadly with the landforms present, with further delineation of some isolated habitats that may support distinct fauna assemblages. Five habitat types were identified (including cleared areas) with sandplains and sand dunes dominating the Survey Area, together accounting for 92.1 per cent of the mapped habitat. Identified habitats include:

- Sand dune;
 - Open *Eucalyptus/Corymbia* sp. occur across the tall longitudinal sand dunes with scattered *Acacia* spp., *Eremophila* sp. Shrubs and *Triodia* sp. open hummock grassland and very open tussock grassland characterising the understorey. Sand Dune comprises 66.7 ha of the Survey Area.
- Sandplain;
 - Open sandplains of scattered *Acacia* spp. occur on sandy flat soils. The understorey includes *Eremophila* sp. shrubs over *Triodia* sp. open hummock grasslands. Sandplain comprises 448.2 ha of the Survey Area.
- Low rocky rises;
 - Dispersed *Acacia* sp. occur over low rocky rises of exposed shale. The understorey is comprised of open shrubland over *Triodia* sp. Open hummock grassland and *Ptilotus* sp. Scattered low shrubs. Low rocky rises comprise of 7.9 ha of the Survey Area.
- Cleared/disturbed area; and
 - Patches of cleared/degraded areas resulting from historical land clearing are characterised by sparse low-lying vegetation with few species utilising these habitats. Borrow pits may be occasionally inundated by rains and water pooling during winter may be visited by many nomadic and migratory birds. Cleared/degraded areas comprises 28.9 ha of the Survey Area.
- Revegetation;



- Revegetation land occurs on sandplain habitat consisting of compact soils subject to historical clearing and revegetation. The heavily compacted soils feature minimum ground cover with predominantly *Acacia sp.* characterising the tall open shrubland. Revegetated land comprises 7.1 ha of the Survey Area.

4.5.3 SIGNIFICANT FAUNA

Potential Conservation Significant Fauna

The desktop study identified that two reptiles, seven mammals and twenty-two birds of conservation significance have the potential to occur within the Survey Area. Fauna habitats identified during the survey were found to be common and widespread, with none of the fauna habitats being confined to the Survey Area (Biota, 2021). These species are listed in Table 3.



Table 3: Significant fauna species potentially occurring within the Survey Area

Species	Listing under BC Act	Listing under EPBC Act	Likelihood of occurrence in the survey area	Habitat Preference
<i>Liopholis kintorei</i> (Great Desert Skink)	Vulnerable	Vulnerable	Unlikely to occur	Sandy, clay and loamy soils, sandplains, paleodrainage lines and undulating gravelly downs
<i>Liasis olivaceus barroni</i> (Pilbara Olive Python)	Vulnerable	Vulnerable	Unlikely to occur	Rocky areas within the Pilbara, showing a preference for rocky gorges containing water in streams and rock pools
<i>Dasyercus blythi</i> (Brush-tailed Mulgara)	Priority 4		Likely to occur	Spinifex grasslands on sandplains and sandy swale between low dunes from southwestern Queensland across the Simpson, Tanami, and Great Sandy Deserts of southern and central Northern Territory and central Western Australia.
<i>Dasyurus hallucatus</i> (Northern Quoll)	Endangered	Endangered	May occur	Rocky areas and tall open coastal eucalypt forests, sandstone escarpment
<i>Macrotis lagotis</i> (Bilby)	Vulnerable	Vulnerable	Known to occur	Acacia shrubland, open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas
<i>Notoryctes caurinus</i> (Northern Marsupial Mole)	Priority 4		Known to occur	Vast sandy deserts of central Australia
<i>Pseudomys chapmani</i> (Western Pebble-mound Mouse)	Priority 4		Unlikely to occur	Stony hillsides with hummock grasslands in the central and eastern parts of the Pilbara
<i>Rhinonicteris aurantia</i> (Pilbara Leaf-nosed Bat)	Vulnerable	Vulnerable	Unlikely to occur	Across northern Australia the Orange Leaf-nosed bat is reliant on roost sites in caves or mine adits with stable, very hot (28 – 32°C) and very humid (96 – 100 %) microclimates. Forages over wide range of habitats.
<i>Macroderma gigas</i> (Ghost Bat)	Vulnerable	Vulnerable	May occur (foraging)	Occurs in a broad range of habitats, with their distribution being influenced by the availability of suitable caves and mines for roost sites
<i>Apus pacificus</i> (Pacific Swift)	Migratory	Migratory	Likely to occur (foraging)	Entirely aerial when in Australia.
<i>Charadrius veredus</i> (Oriental Plover)	Migratory	Migratory	May occur	Estuarine mudflats, sandbanks, beaches or reefs, and grasslands immediately after migration. thereafter- flat, open, semi-arid or arid grasslands interspersed with hard, bare ground (claypans, paddocks, lawns, recently burnt areas), lightly wooded grasslands.
<i>Rostratula australis</i> (Australian Painted Snipe)	Endangered	Endangered	May occur	Shallow, terrestrial freshwater wetlands (temporary and permanent lakes, swamps, claypans), inundated grassland or saltmarsh and dams. Often include tussocks of grass, sedges, rushes or reeds, or samphire. Breeding: shallow wetlands with areas of bare wet mud and both upper and canopy cover.



Species	Listing under BC Act	Listing under EPBC Act	Likelihood of occurrence in the survey area	Habitat Preference
<i>Calidris canutus</i> (Red Knot)	Migratory	Migratory	Would not occur	Coastal sandy estuaries, muddy tidal flats.
<i>Calidris acuminata</i> (Sharp-tailed Sandpiper)	Migratory	Migratory/Marine	Unlikely to occur	Muddy edges of shallow fresh or brackish wetlands with inundated or emergent low vegetation including sedges, saltmarsh or grass. Includes swamps, lakes, dams, saltpans, hypersaline saltlakes, saltworks, sewage dams, and flooded paddocks.
<i>Calidris ferruginea</i> (Curlew Sandpiper)	Critically Endangered; Migratory	Critically Endangered/Migratory	Unlikely to occur	Intertidal mudflats in sheltered coastal areas (estuaries, bays, inlets and lagoons), non-tidal swamps, lakes and lagoons near the coast, Inland around ephemeral and permanent lakes, dams, waterholes and bore drains with bare edges of mud or sand. Fresh or brackish waters.
<i>Calidris melanotos</i> (Pectoral Sandpiper)	Migratory	Migratory	Unlikely to occur	Shallow fresh to saline wetlands. Coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. When found inland, generally in wetlands that have open fringing mudflats and low, emergent or fringing vegetation.
<i>Actitis hypoleucos</i> (Common Sandpiper)	Migratory	Migratory	Unlikely to occur	Wide range of coastal and inland wetlands mostly found around muddy margins (narrow, steep) or rocky shores (rarely mudflats). Often associated with mangroves.
<i>Tringa stagnatilis</i> (Marsh Sandpiper)	Migratory	Migratory	Unlikely to occur	Permanent or ephemeral wetlands, intertidal mudflats, shallow freshwater lakes.
<i>Tringa glareola</i> (Wood Sandpiper)	Migratory	Migratory	Unlikely to occur	Well-vegetated, shallow, freshwater wetlands such as swamps, dominated by taller fringing vegetation, especially Melaleuca and Red River Gums. Inundated grasslands and wooded floodplains where floodwaters are temporary or receding, drying wetlands.
<i>Tringa nebularia</i> (Common Greenshank)	Migratory	Migratory	Unlikely to occur	Edges of wetlands, mudflats, channels, shallow edges around water, shallow pools, puddles, slightly elevated rocks, sandbanks and muddy islets.
<i>Glareola maldivarum</i> (Oriental Pratincole)	Migratory	Migratory	May occur	Open plains, floodplains, short grassland. Often near terrestrial wetlands or along the coast.
<i>Gelochelido nilotica macrotarsa</i> (Gull-billed Tern)	Migratory	Migratory	Likely to occur	Tidal creeks, estuaries, mudflats, coastal salt lakes, freshwater swamps, river pools, dams, clay pans and water courses in interior.
<i>Gelochelido n nilotica affinis</i> (Gull-billed Tern)	Migratory	Migratory	Unlikely to occur	Estuaries, mudflats, tidal creeks and near-coastal wetlands.
<i>Chlidonias leucopterus</i> (White-winged Tern)	Migratory	Migratory	May occur	Coastal, subcoastal, or Terrestrial wetlands.



Species	Listing under BC Act	Listing under EPBC Act	Likelihood of occurrence in the survey area	Habitat Preference
<i>Falco hypoleucos</i> (Grey Falcon)	Vulnerable	Vulnerable	May occur (foraging)	Lightly wooded plains, major watercourses with taller trees or isolated man-made structures such as communications towers.
<i>Falco peregrinus</i> (Peregrine Falcon)	Other specifically protected fauna		Likely to occur (foraging)	Forest, woodlands, wetlands and open country, ledges in cliffs, granite outcrops and quarries.
<i>Polytelis alexandrae</i> (Princess Parrot)	Priority 4	Vulnerable	Unlikely to occur	Highly nomadic, occupies eastern deserts of Western Australia, forages on spinifex.
<i>Pezoporus occidentalis</i> (Night Parrot)	Critically Endangered	Endangered	Unlikely to occur	Remote arid and semi-arid areas. Roosting and nesting in clumps of dense vegetation (primarily old and large spinifex clumps) that is naturally fragmented and therefore protected from fire. Grasslands, shrublands, scattered trees and shrubs, Mulga woodland.
<i>Hirundo rustica</i> (Barn Swallow)	Migratory	Migratory	Unlikely to occur	Open country in coastal lowlands, often near water, towns and cities. Seen on overhead wires, freshwater wetlands, Melaleuca wetlands, mesophyll shrub thickets and tussock grassland.
<i>Motacilla tschutschensis</i> (Eastern Yellow Wagtail)	Migratory	Migratory	Unlikely to occur	Wet meadows, marshland, grassy and muddy lakeshores, fields, often near livestock, shrubland, grassland, and wetlands.
<i>Motacilla cinerea</i> (Grey Wagtail)	Migratory	Migratory	Unlikely to occur	Flowing water, rocky or surrogate rocky habitat, mountain streams, weirs, inland wetlands, grassland, forested areas, and lowland water courses.



Recorded Conservation Significant Fauna

Biota (2021) shows evidence of two fauna species of significance from the survey area, one Bilby observation through identification of tracks and two Northern Marsupial Mole observations through identification of digging and burrowing.

Macrotis lagotis (Bilby)

The Bilby is listed as Vulnerable under both the EPBC Act and the BC Act. The species has declined to now occupy less than 20% of its former range (Department of the Environment, 2014). Extant populations occur in a variety of habitats, usually on landforms of low topographic relief and light to medium soils. It prefers areas suitable for burrowing where the substrate comprises sand, sandy clay or sandy gravel (DBCA 2018), though they are also known from atypical stony gravelly areas (M. Dziminski, pers. comm. 2019). Additionally, the Bilby demonstrates a strong association with particular species of Acacia that host root-dwelling larvae, which form a major food resource for the species (DBCA 2018).

The sand dune and sandplain habitats present with the Survey Area represent suitable Bilby habitat and the species has previously been recorded at Nifty. Despite thorough searches, no burrows were located. The presence of suitable habitat, historical records and Bilby tracks all indicate that Bilbies will utilise the Survey Area, at least for foraging on occasion.

Notoryctes caurinus (Northern Marsupial Mole)

The Northern Marsupial Mole was delisted under the EPBC Act in 2015 as it was no longer considered Threatened. This species is listed on the Department of Biodiversity, Conservation and Attraction's (DBCA) priority list as a Priority 4 (Threatened Species Scientific Committee 2015).

Evidence of Northern Marsupial Mole was recorded from two trenches dug on sand dunes within the Survey Area (Biota, 2021). Trenching effort in the July survey did not reveal any evidence of marsupial mole burrows. However, this is likely due to significant localised rainfall which fell between surveys and may have removed old evidence of marsupial mole burrows. Given the continuity of sand dune habitat within the Study Area, Northern Marsupial Mole are likely to be present across all sand dunes in the Survey Area.

4.6 WATER AND DRAINAGE

The sandy soils of the region, paired with the lack of larger vegetation, leads surface water in the area to infiltrate, or drain by sheet flow over the swale areas between parallel dunes during extreme rainfall events. No watercourses or wetlands are present within M271SA.

No surface expressions of groundwater occur within the Survey Area with pre-mine groundwater generally about 25-50 m below surface (MBS 2003). Groundwater extraction for the Nifty Project is permitted under Groundwater Licences GWL102247(5) and GWL66212(7) and located in the Canning-Kimberley Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act).



The Nifty Mine is approximately six kilometres to the east and outside of Pilbara Surface Water Area proclaimed under the RIWI Act.

4.7 CURRENT LAND USE

The Project is situated to the east of the pastoral grazing region on Unallocated Crown Land (UCL). The major land use in the area is mining and mineral exploration, with nearby mines at Telfer and Woodie. The land surrounding M271SA is subject to Native Title rights and the general area may be used from time to time by Traditional Owners carrying out cultural activities.

5 STAKEHOLDER CONSULTATION

Since taking ownership of Nifty, Cyprium has consulted with the following key stakeholders:

- Department of Jobs, Tourism, Science and Innovation ;
- Department of Mines, Industry Regulation and Safety;
- Martu People;
- Western Desert Lands Aboriginal Corporation
- Department of Water and Environmental Regulation;
- Neighbouring mines; and
- Department of Biodiversity, Conservation and Attractions.

Cyprium will continue to consult with key stakeholders throughout the life of mine.

6 ASSESSMENT OF CLEARING AGAINST THE TEN CLEARING PRINCIPLES

The proposed vegetation disturbance has been assessed against the ten clearing principles described within *A Guide to the Assessment of Applications to Clear Native Vegetation* (DER 2014; Table 4)



Table 4: Assessment of proposed vegetation disturbance against the ten clearing principles

Relevant Information	Assessment of potential impacts	Proposed control measures	Outcome – Assessment of variance with clearing principle
1. Native Vegetation should not be cleared if it comprises a high level of biological diversity			
<p>Detailed surveys of the Survey Area were undertaken (Western Botanical, 2021a,b)</p> <p>No Threatened Flora, TEC or PEC were identified during surveys</p> <p>Six Priority Flora species were identified within the Survey Area, being <i>Goodenia hartiana</i> (P2), <i>Thysanotus</i> sp. Desert East of Newman (R.P. Hart 964) (P2), <i>Corynotheca asperata</i> (P3), <i>Indigofera ammobia</i> (P3).</p> <p>No Priority Flora have previously been identified within the area covered by CPS 6225/2, outside of the Survey Area.</p> <p>Conditions were excellent at the time of the survey, resulting in observations of more species than previous surveys.</p>	<p>While the Survey Area comprises a moderate number of Vegetation Associations (at NVIS level 5 'Association' level); the diversity of flora within each community was consistent with levels expected in like communities across the Great Sandy Desert Bioregion. A total of 174 species were encountered during the field assessment, majority of which were recorded within the Survey Area. Favourable conditions (i.e., above average summer rainfall) also preceded the survey, so this number is not expected to rise to any significant degree.</p> <p>As no Threatened Flora, TEC or PEC will be disturbed by the clearing, and disturbance of priority flora is limited to individual plants located within widespread habitat, no impact is expected to biodiversity.</p>	<p>To minimise the impact of the clearing on the environment, Cyprium proposes the following control measures:</p> <ul style="list-style-type: none"> • All clearing to be managed under Cyprium's Ground Disturbance Permit system; • The total extent of vegetation clearance is limited to an additional 300 ha for new clearing and 180 ha within CPS6225/2 Permit Area; • The clearing areas will be identified using GPS coordinates; • Mapped boundaries will be provided to the operator to restrict clearing to within the limits of the NVCP; • Cleared areas are to be rehabilitated if not required during operations, and will be rehabilitated progressively as operations permit, and completely at mine closure; • All clearing kept to a minimum within the proposed Permit Area and completed only when required; and • All vehicles, equipment and personnel will be inspected and cleaned as required to prevent the incidental spread of weeds. 	<p>The proposed clearing is not at variance with this principle.</p>
2. 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 WA			
<p>Five habitat types were identified in the Survey Area in a Targeted Fauna Assessment (Biota 2021), including:</p> <ul style="list-style-type: none"> • Sand dunes, habitat associated with species with preference for deep soils; • Sandplain, habitat associated with species with preference for sandy, flat soils and spinifex; 	<p>While flora and vegetation are utilised by fauna for food and habitat, there are no known obligate fauna-flora correlations within the Survey Area.</p> <p>Given the extent of fauna habitat types in the region, the clearing of an additional 300 ha within the 558.9 ha survey area will not remove whole areas of habitat that are necessary for the</p>	<p>Implement measures described above to minimise amount of fauna habitat to be cleared.</p>	<p>The proposed clearing is not at variance with this principle.</p>



Relevant Information	Assessment of potential impacts	Proposed control measures	Outcome – Assessment of variance with clearing principle
<ul style="list-style-type: none"> Low rocky rise, suited to species with preference for shale substrate without caves or large boulders; Revegetation, where compacted soil and lack of understory renders this habitat less suitable to significant species (such as Bush-tailed Mulgara or Bilby); and Cleared/degraded areas, in which few species utilise this area as habitat. 	<p>maintenance of conservation significant fauna species.</p>		
3. Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora			
<p>The Survey Area did not contain any Threatened Flora.</p> <p><i>Seringia exastia</i> is known from the area and is listed as Threatened Flora. It is considered that this species does not warrant Conservation Listing and will be removed from the Threatened Flora List following the next census.</p>	<p>No Threatened Flora will be impacted by the clearing.</p> <p>Considering the uniformity of the landforms present within the Survey Area (i.e., repetitious linear sand dunes and sandplain swales), and across the Great Sandy Desert bioregion, the priority flora taxa noted from within the Survey Area are expected to occur in significant numbers outside of the Survey Area.</p>	<p>Implement measures described above.</p>	<p>The proposed clearing is not likely to be at variance with this principle.</p>
4. 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			
<p>Detailed surveys of the Survey Area were undertaken (Western Botanical, 2021a,b). None of the vegetation recorded within the Survey Area was considered to represent a Threatened Ecological Communities.</p>	<p>No Threatened Ecological Communities will be impacted by the proposed clearing.</p>	<p>Not Applicable</p>	<p>The proposed clearing is not at variance with this principle.</p>
5. Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared			
<p>The Project lies entirely within the Great Sandy Desert Bioregion, specifically located on the Mackay IBRA Subregion. The Mackay subregion covers 18,636,695 ha.</p>	<p>The Survey Area does not represent a significant remnant of native vegetation in an extensively cleared area. The Great Sandy Desert bioregion has not been subject to extensive clearing - it remains at approximately 99% of its pre-European extent.</p>	<p>Implement control measures described above.</p>	<p>The proposed clearing is not at variance with this principle.</p>
6. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland			
<p>The sandy soils of the region, paired with the lack of larger vegetation, leads surface water in the area to drain by sheet flow over the surface.</p>	<p>No watercourses or permanent wetlands are present within the Survey Area.</p>	<p>Not Applicable</p>	<p>The proposed clearing is not at variance with this principle.</p>



Relevant Information	Assessment of potential impacts	Proposed control measures	Outcome – Assessment of variance with clearing principle
No streams are present within the Project's M271SA, limiting substantial surface flows to occur during high rainfall events.			
7. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation			
<p>The area surrounding the Project remains mostly uncleared with disturbance limited to that caused by the Project.</p> <p>No declared pests or Weeds of National Significance were recorded within the Survey Area (Western Botanical, 2021a.b).</p> <p>The initial application and decision report for CPS 6225/2 noted that there would short term impacts associated with increased soil salinity from the mine water discharge as a result of evaporative concentration of salts.</p>	<p>The proposed development is not likely to cause significant land degradation beyond that caused by the mining and development of infrastructure, itself.</p> <p>The change in purpose from dewatering discharge will avoid the previously predicted short term increase in soil salinity in CPS 6225/2 Permit Area.</p>	Implement control measures described above.	The proposed clearing is not at variance with this principle.
8. 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 the Karlamilyi National Park, 80 km south of the Project.	Given the distance, the development does not present a risk to the National Park.	Not Applicable	The proposed clearing is not at variance with this principle.
9. Native vegetation should not be cleared if the clearing is likely to cause deterioration in the quality of surface or underground water			
<p>The Project is not within a proclaimed surface water area. It is within the Canning-Kimberley Groundwater Area.</p> <p>No significant water users (groundwater or surface water) are in close proximity (30 km) of the proposed works.</p>	The proposed clearing represents incremental clearing to an existing disturbed area. In the context of the land systems, vegetation associations, surface and groundwater systems it represents isolated small areas. Activities associated with mining that could cause the deterioration of surface water or groundwater will be managed under the SAA.	Implement the control measures listed above.	The proposed clearing is not at variance with this principle.
10. Native vegetation should not be cleared if the clearing is likely to cause, or exacerbate, the incidence or intensity of flooding			
The region is generally dry, with occasional significant rainfall events often associated with cyclones. Drainage in the area is therefore sporadic and ephemeral.	The proposed clearing will not involve activities that could cause, or exacerbate, the incidence or intensity of flooding.	Ensure works do not dam or significantly alter the hydrology of ephemeral flows.	The proposed clearing is not at variance with this principle.



7 SUMMARY AND CONCLUSIONS

The purpose of these NVCP Applications are to allow the clearing of up to 300 ha of native vegetation within a 578 ha envelope and amend the purpose and boundary of existing NVCP CPS 6225/2 for the Nifty Project as described in Section 3.

The following key points are noted:

- The area has been extensively surveyed for the Nifty Project, and the results of these surveys have been used to assess the impacts clearing;
- The proposed clearing will not result in significant impacts to the following:
 - Threatened and Priority Flora;
 - Threatened or Priority Ecological Communities;
 - Wetlands / surface water;
 - Remnant vegetation;
 - Groundwater;
 - Surface Water or
 - Conservation areas.

Cyprium has also identified a number of control measures to minimise the impacts to native vegetation. These measures include the following:

- All clearing to be managed under Cyprium’s Ground Disturbance Permit (GPD) system;
- The total extent of vegetation clearing is limited to up to 300 ha of additional disturbance above existing approved disturbance;
- The clearing areas will be identified using GPS coordinates;
- Mapped boundaries will be provided to the operator to restrict clearing to within the limits of the NVCP;
- Cleared areas are to be rehabilitated if not required during operations, and will be rehabilitated progressively as operations permit, and completely at mine closure;
- All clearing kept to a minimum within the proposed Permit Area and completed only when required; and
- All vehicles, equipment and personnel will be inspected and cleaned as required to prevent the incidental spread of weeds.

This NVCP application assessed the proposed vegetation clearing against the ten clearing principles described in A Guide to the Assessment of Applications to Clear Native Vegetation (DER, 2014). The clearing may be at variance with two of the principles and is not at variance with eight of the principles.



8 GLOSSARY

Term	Meaning
BC Act	<i>Biodiversity Conservation Act 2016</i>
Cyprium	Cyprium Metals Limited
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
GPD	Ground Disturbance Permit
ha	Hectares
km	Kilometres
IBRA	Interim Biographical Regionalisation for Australia
Mining Act	<i>Mining Act 1978</i>
NVCP	Native Vegetation Clearing Permit
P	Priority - flora and fauna species listed as being possibly threatened under priorities of 1, 2, 3 or 4 under the Biodiversity Conservation Act 2016
PEC	Priority Ecological Communities – plant communities listed as being potentially threatened under the <i>Wildlife Conservation Act 1950</i>
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i>
SX-EW	Solvent Extraction and electrowinning
T	Threatened
The Project	Nifty Copper Mine
TEC	Threatened Ecological Communities – plant communities listed as being threatened and legally protected under the <i>Biodiversity Conservation Act 2016</i> and / or the <i>Environment Protection and Biodiversity Conservation Act 1999</i>
TSF	Tailings Storage Facility
WA	Western Australia



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10 APPENDICES

The following Appendices are provided:

Appendix 1: *Detailed Flora and Vegetation Assessment of the Nifty Copper Mine*

Appendix 2: *Nifty Copper Mine Targeted Fauna Assessment*

Appendix 3: *Addendum to Cyprium Metals Ltd, Detailed Flora and Vegetation of the Nifty Copper Mine*

