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23 November 2022

Department of Mines, Industry Regulation and Safety
Mineral House 100 Plain Street
East Perth Western Australia 6004

Attention: Richard Smetana

Dear Richard

Re: Application for a Native Vegetation Clearing Permit (within approved boundary of CPS 9418/2)

Agnew Gold Mining Company Pty Ltd (AGMC), currently holds Native Vegetation Clearing Permit (NVCP), CPS 9418/2 to allow for the clearing of no more than 45 ha of native vegetation within a Purpose Permit Area (PPA) of approximately 463.37 ha. The Clearing Permit is valid from 27 November 2021 to 31 August 2026 and allows for the development of the Barren Lands Project Area at the Agnew Gold Mine, located in the Northern Goldfields Region of Western Australia.

AGMC now propose to expand mining activities in the Barren Lands Project Area and require up to 40 ha of additional clearing of native vegetation within the approved boundary of CPS9418/2 for project development.

To accommodate the proposed additional clearing, AGMC are seeking approval for a new application to clear up to 40 ha of vegetation within the existing boundary of CPS 9418/2. This will result in an overall proposed clearing area of up to 85 ha within the PPA. Information to support the application for increased clearing within the approved PPA boundary of CPS 9418/2 and an assessment of potential environmental impacts proposed by the additional clearing is provided in Attachment 1 .

Should you have any questions or would like to discuss further the information provided within this application to amend the authorised clearing extent within CPS 9841/2, please do not hesitate to contact me on 9226 3166 or via email mjennings@mbsenvironmental.com.au

Yours sincerely
MBS Environmental

Michelle Jennings
Senior Environmental Scientist

cc: Gold Fields Australia – Attention: Andre Marais
Enc.

**ATTACHMENT 1: INFORMATION TO SUPPORT APPLICATION OF
NATIVE VEGETATION CLEARING PERMIT
(WITHIN THE APPROVED CPS 9418/2 PURPOSE PERMIT AREA)**

1. BACKGROUND

Agnew Gold Mining Company Pty Ltd (AGMC), a wholly owned subsidiary of Gold Fields Australia Pty Ltd (GFA), own and operate the Agnew Gold Mine (AGM) within the Northern Goldfields Region of Western Australia (WA). AGM is located 630 km northeast of Perth within the Shire of Leonora in Western Australia. AGM comprises the Barren Lands Project Area, which is approximately 19 km southwest of Leinster (Figure 1).

A Native Vegetation Clearing Permit (NVCP) application was submitted by AGMC to support development of mining operations in the Barren Lands Project Area (located within the Redeemer/Crusader Precinct at AGM). CPS 9418/1 was granted on 4 November 2021 and includes approval to clear up to 40 ha of native vegetation within a Purpose Permit Area (PPA) of approximately 463.37 ha, for mineral production and associated activities between 27 November 2021 to 31 August 2026. A further 5 ha was approved for clearing of native vegetation within the same PPA boundary on 17 November 2022 as CPS 9418/2.

The PPA is located on tenements M36/27, M36/55, M36/150, M36/313 and M36/695 (Figure 2). Previous applications for 45 ha of clearing were assessed against the 10 Clearing Principles as defined in the Department of Water and Environmental Regulation's (DWER) *Guide to Assessment: Clearing of Native Vegetation (2014)*, under the *Environmental Protection Act 1986* (EP Act). The assessment concluded that the proposed clearing was not at variance with nine of the Clearing Principles and is likely to be at variance with Principle (f) – *Native vegetation should not be cleared if it is growing in or in association with an environment associated with a watercourse or wetland*. As such CPS 9418/1 was granted with conditions relating to the clearing of riparian vegetation and maintaining existing surface water flows.

AGMC proposes to continue expanding mining activities in the Barren Lands Project Area to accommodate underground mining operations and associated expansion of the Waste Rock Dump (WRD). This proposed expansion will require additional clearing of native vegetation up to 40 ha within the approved boundary of CPS 9418/2, resulting in a total proposed clearing area up to 85 ha within the PPA (Figure 2). Further assessments for CPS9418/2 found that the additional proposed clearing within the approved boundary of the PPA was not at variance with any of the 10 Clearing Principles.

The purpose of this document is to support the application of a NVCP for clearing within the PPA of CPS 9418/2 under Part IV of the EP Act to allow an additional 40 ha of clearing of native vegetation. This document provides supporting information on the environmental values within the PPA and assessment of the additional 40 ha of clearing against the 10 Clearing Principles.



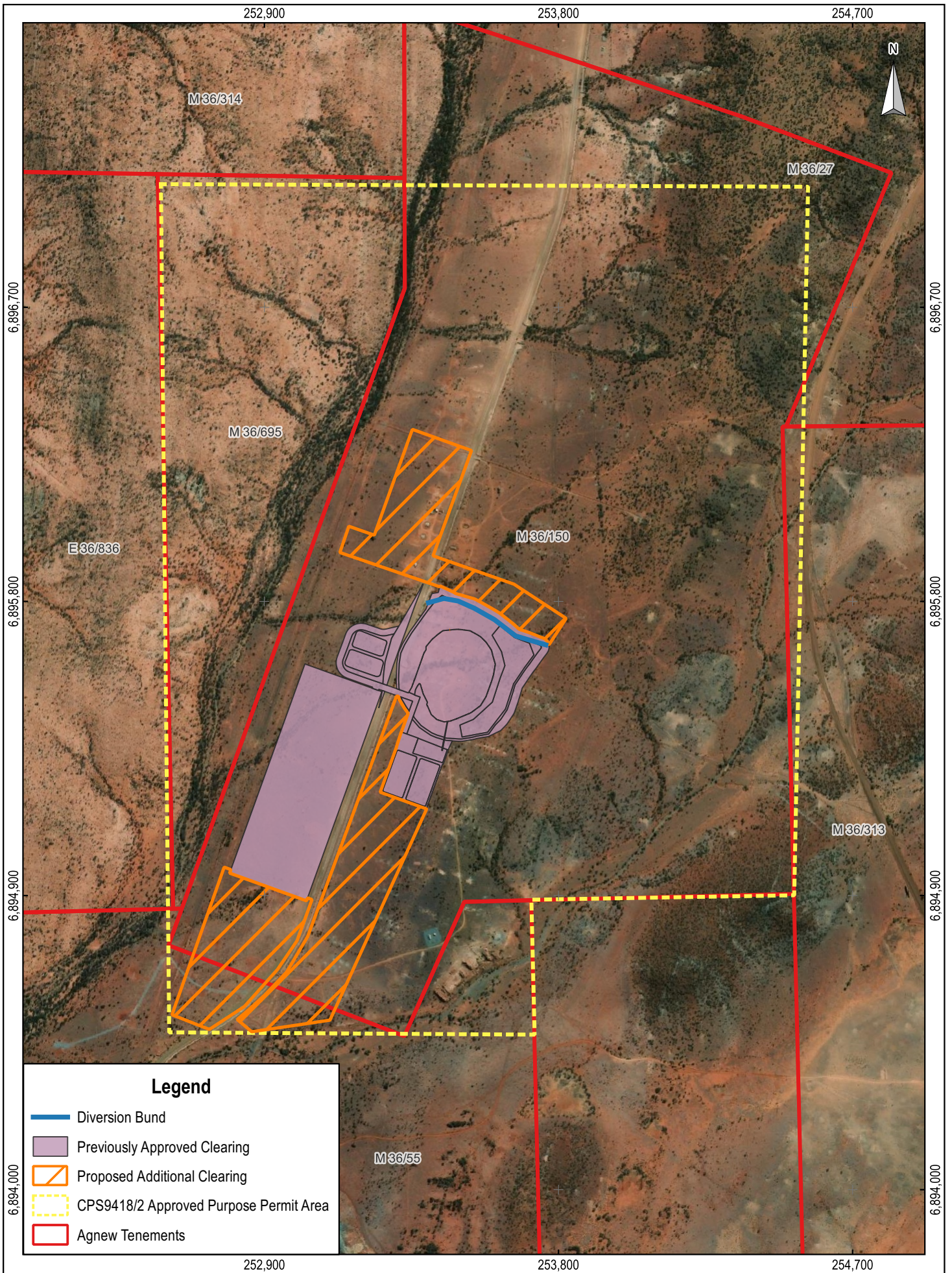
Scale: 1:500000
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 Image: Copernicus Sentinel Data 2020
 Grid: GDA94
 0 10 20 km

Agnew Gold Mine -
 Redeemer Crusader Precinct:
 Barren lands Project Area

Figure 1
Project Location

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Scale: 1: 15,000
Original Size: A4

Grid: GDA94 / MGA zone 51

0 250 500 m

Agnew Gold Mine - Redeemer Crusader Precinct: Barren Lands Project Area

Figure 2

Purpose Permit Area and Indicative Clearing

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2. ENVIRONMENTAL VALUES

Desktop assessments and field surveys were completed by 360 Environmental in 2019 to support the original NVCP application approved in November 2021 (CPS 9418/1). The surveys were focussed within the approved PPA and formed the basis for assessment for the NVCP application. Results were outlined in the 'Vegetation, Flora, Fauna and Soil Survey – Barren Lands Survey Area' (Appendix 1, 360 Environmental 2019). The survey and assessment identified potential constraints that were considered in the impact assessment and mitigation process. A further assessment was completed for proposed expansion of mining activities at the Barren Lands Project Area and identified that additional clearing within the PPA does not result in any changes to the impact assessment outcome initially determined for CPS 9418/1. Therefore CPS 9418/2 was approved for additional clearing of 5 ha within the PPA. As the proposed expansion activities fall within the PPA, there were no changes to the impact assessment that was completed for CPS 9418/2.

2.1 FLORA AND VEGETATION

The Desktop Assessment completed by 360 Environmental (2019) identified no Threatened species listed under the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) or *Biodiversity Conservation Act 2016*, (BC Act) and no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) listed under the EPBC Act as having potential to occur within the PPA. Thirteen conservation-significant flora species were identified in the Desktop Assessment as having the potential to occur within 50 km of the PPA: none were recorded within the survey area during the Reconnaissance Flora and Vegetation Survey (360 Environmental).

The PPA occurs within the Murchison and East Murchison bioregions and is dominated by two broad vegetation types; Laverton 39 (Scrub, open scrub or sparse scrub of Wattle (*Acacia* spp.), tea tree (*Melaleuca* spp.) and other species.) and Laverton 18 (Low woodland, open low woodland or sparse woodland of Mulga, *Acacia aneura* and associated species). These broad vegetation types have a regional representation above 95%.

Five vegetation types were mapped in the survey area by 360 Environmental (2019): the vegetation type Asp.Essp.Saxs covers over 80% (a total of 372.72 ha) and comprises mixed *Acacia* spp. open shrubland over mixed *Eremophila* spp. and *Senna artemisioides-sturtii* shrubland.

Vegetation condition in the PPA was mostly 'Degraded' to 'Completely Degraded' (140.45 ha Degraded: 154.2 ha Completely Degraded) as a result of historic disturbance from exploration works; existing mining infrastructure to the north, east and south of the survey area; and grazing by cattle. Six introduced (weed) species were recorded within the survey area, however no declared pests *Biosecurity and Agriculture Management Act 2007* (BAM Act) or Weeds of National Significance were observed (360 Environmental 2019).

The proposed additional clearing within the PPA is unlikely to result in any changes to the assessment outcome for flora and vegetation (Table 1).

2.2 VERTEBRATE FAUNA

The Vertebrate Fauna Desktop Assessment identified 19 conservation significant vertebrate fauna species (including 13 bird species, five mammal species and one reptile species) as having the potential to occur within the PPA (360 Environmental 2019). During the Fauna Vertebrate Survey, no fauna species of conservation significance (Threatened or Priority), nor evidence such as tracks, scats, nest or direct sightings were observed within the survey area; however four introduced fauna species were recorded (360 Environmental 2019).

The Vertebrate Fauna Survey identified four habitat types occurring within the survey area, with *Acacia* shrubland/rocky plain being the dominant habitat type, covering 76.6% (360 Environmental 2019).

The proposed additional clearing within the PPA is unlikely to result in any changes to the assessment outcome for vertebrate fauna (Table 1).

2.3 WATER AND LAND SYSTEMS

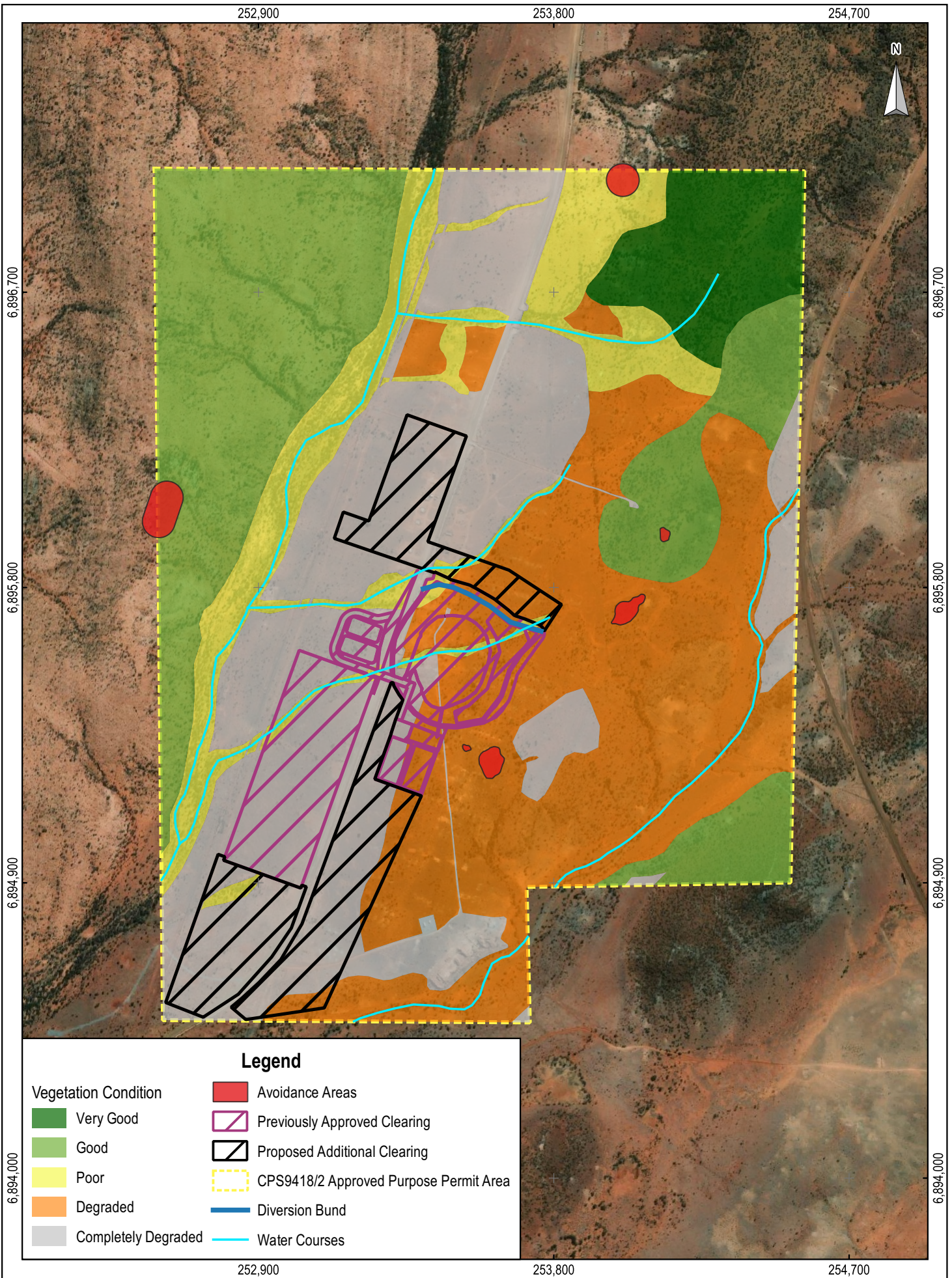
The PPA is located 30 km from the nearest weather station (Leinster Aero: #12314), which recorded approximately 253 mm annual mean rainfall for the area (BoM 2021). The 100 Year ARI floodplain and flood fringe mapping did not identify the PPA as being within a flood risk area (360 Environmental 2019), and the PPA was assessed as having an extremely low risk/ very low probability of Acid Sulphate Soils (ASS) being present. Stormwater would likely be able to infiltrate without waterlogging or causing excessive runoff and is unlikely to significantly alter the current characteristics of the survey area.

Five unnamed ephemeral, minor surface water features intersect the survey area, with no conservation significant wetlands or geomorphic wetland systems located within the Area or within 50 km of the Survey Area. The vegetation type along the water courses (Aspp.SaxsEspp) is distinct from other vegetation types on site comprising open shrubland of *Acacia papyrocarpa* or *Acacia mulganeura* over *Senna artemisioides-sturtii* shrubland and covers approximately 11% (49.3 ha) of the Survey Area. This vegetation type does not represent any locally or regionally significant vegetation, TECs, PECs or Environmentally Sensitive Areas (ESAs). Vegetation along the watercourses was identified as being in 'Poor' condition and is surrounded by vegetation that was mapped as 'Completely Degraded' (Figure 3), (360 Environmental 2019).

Mining infrastructure will intersect a minor creek line that drains towards the west into the main streamline, which has the potential to disrupt natural drainage. This will be managed by diverting surface water via a diversion bund into an adjacent tributary to the Scotty Creek (Figure 2), (PSM 2021).

There are no Registered Aboriginal Sites of Significance within the PPA (DPLH 2022).

The proposed additional clearing within the PPA is unlikely to result in any changes to the assessment outcome of impacts to water and soil values (Table 1).



Legend

- | | |
|-----------------------------|--|
| Vegetation Condition | Avoidance Areas |
| Very Good | Previously Approved Clearing |
| Good | Proposed Additional Clearing |
| Poor | CPS9418/2 Approved Purpose Permit Area |
| Degraded | Diversion Bund |
| Completely Degraded | Water Courses |

Scale: 1: 15,000
Original Size: A4

Grid: GDA94 / MGA zone 51
0 250 500 m

Agnew Gold Mine -
Redeemer Crusader Precinct:
Barren Lands Project Area.

Figure 3

**Vegetation Condition and
Avoidance Sites**

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3. ASSESSMENT OF CLEARING PRINCIPLES

Clearing applications and amendments are assessed against the 10 Clearing Principles outlined in Schedule 5 of the EP Act. These principles aim to ensure that potential impacts resulting from removal of native vegetation are assessed in an integrated method and consistently apply to all lands throughout Western Australia. The principles address the four environmental areas of biodiversity significance, land degradation, conservation estate and ground and surface water quality.

Assessment of the potential impacts associated with proposed additional clearing within the approved PPA was undertaken and is summarised in Table 1. Table 1 also states any change in the status of an assessed outcome from the assessment for CPS 9418/2.

Table 1: Assessment Against the 10 Clearing Principles

Evidence	Assessment Outcome	Status after additional clearing
Principle (a) Biodiversity – <i>Native vegetation should not be cleared if it compromises a high level of biological diversity</i>		
<p>A desktop assessment and Reconnaissance Flora and Vegetation Survey were completed by 360 Environmental in 2019 for the Survey Area which identified:</p> <ul style="list-style-type: none"> • No Threatened species. • No Threatened or Priority Ecological Communities. • No conservation significant species. • A total of five vegetation types • Vegetation condition was mainly (58.4%) 'Degraded' to 'Completely Degraded'. 	<p>Based on the outcomes of the desktop and field surveys, additional clearing within the approved PPA should not propose additional impacts to biodiversity of the PPA.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	No change
Principle (b) Significant Fauna Habitat – <i>Native vegetation should not be cleared if it compromises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia.</i>		
<p>An assessment of significant fauna habitat within the Survey Area was completed by 360 Environmental in 2019 (Appendix 1) that found:</p> <ul style="list-style-type: none"> • No fauna species of conservation significance were recorded during the basic field survey. • Four habitat types were identified. <i>Acacia</i> shrubland/rocky plain was the most dominant, covering 76.59% of the PPA and is well represented regionally. 	<p>Additional clearing of native vegetation within the PPA should not impact any significant fauna habitats as over 50% of the vegetation was assessed as being in a 'Degraded' or 'Completely Degraded' condition due to historical and active mining and exploration operations.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	No change
Principle (c) Rare Flora and Priority Flora – <i>Native vegetation should not be cleared if it includes or is necessary for the continued existence of rare flora.</i>		
<p>A desktop and field survey assessment of the Survey Area identified:</p> <ul style="list-style-type: none"> • No conservation significant species. • No Threatened species. • No TECs or PECs. 	<p>The additional clearing will have no impact on Threatened and/or Priority flora species listed under the EPBC Act or BC Act.</p> <p>The proposed additional clearing of up to 40 ha will not be at variance with this principle.</p>	No change

Evidence	Assessment Outcome	Status after additional clearing
Principle (d) Threatened Ecological Communities – <i>Native vegetation should not be cleared if it comprises the whole or a part of or is necessary for the maintenance of a Threatened Ecological Community (TEC).</i>		
No TECs were identified in the desktop assessment or recorded within the Survey Area (Appendix 1, 360 Environmental 2019).	The additional clearing will have no impact on any TECs. The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.	No change
Principle (e) Remnant Vegetation – <i>Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.</i>		
Two broad vegetation types were mapped over the Survey Area (Appendix 1, 360 Environmental 2019): <ul style="list-style-type: none">• Scrub, open scrub or sparse scrub of Wattle (<i>Acacia</i> spp.), tea tree (<i>Melaleuca</i> spp.) and other species (regional representation 97.53%).• Low woodland, open low woodland or sparse woodland of Mulga <i>Acacia aneura</i> and associated species (regional representation 99.55%).	The identified native vegetation types found within the Survey Area have a regional representation above 95%. The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.	No change
Principle (f) Watercourse or Wetland Environments – <i>Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.</i>		
<ul style="list-style-type: none"> • There are no wetlands within 50 km of the PPA. • Five unnamed ephemeral, minor surface water features intersect the PPA, which represent a small portion of the total catchment. • The vegetation association along the watercourse is in 'Poor' condition and is surrounded by vegetation mapped as 'Completely Degraded' (Figure 3). • The vegetation type <i>Aspp.SaxsEspp</i> associated with the water course does not represent any locally or regionally significant vegetation. 	Clearing of vegetation associated with the ephemeral watercourses will occur, which may be at variance with this principle. However, the significance is limited as vegetation along the watercourse is considered to be in Poor condition and clearing is unlikely to have any significant residual effects on the associated vegetation types regionally. Additionally, surface water flow will be managed through a diversion bund to minimise disturbance to vegetation. Management measure to reduce potential impacts from additional clearing along the water course have been discussed in Section 3. The proposed additional clearing of up to 40 ha may be at variance with this principle, but only if clearing occurs across these water courses.	No change

Evidence	Assessment Outcome	Status after additional clearing
	<p><i>Note that the clearing of riparian vegetation on a Mining Lease is exempt from requiring a Bed and Banks Permit under the Rights in Water and Irrigation Act 1918 (RIWI Act) and will be managed and assessed in the subsequent Mining Proposal and Mine Closure Plan.</i></p>	
<p>Principle (g) Land Degradation – <i>Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</i></p>		
<ul style="list-style-type: none"> The flora and vegetation survey assessed over 50% of the vegetation within the Survey Area as being in a 'Degraded' (27.8%) and 'Completely Degraded' (30.6%) condition. The PPA is not within a flood risk area. 	<p>Most of the vegetation (58.4%) is in a 'Degraded' to 'Completely Degraded' condition, minimising the potential for significant land degradation as a result of the additional clearing. The area is previously disturbed due to historical and current mining and exploration activities.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	No change
<p>Principle (h) Conservation Estate – <i>Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.</i></p>		
<ul style="list-style-type: none"> The PPA is not within or immediately adjacent to any conservation areas, including regional reserves or Department of Biodiversity, Conservation and Attractions (DBCA) Managed Lands. No ESAs were identified in proximity of the PPA, with the closest being 37 km and 60 km away. 	<p>Additional clearing of native vegetation within the PPA does not intersect with any conservation estates. No ESAs are situated within or near the PPA.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	No change
<p>Principle (i) Surface and Groundwater Quality – <i>Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.</i></p>		

Evidence	Assessment Outcome	Status after additional clearing
<ul style="list-style-type: none"> • 253 mm annual mean rainfall for the region (BoM 2021). • Non-perennial watercourses intersect the PPA • The PPA is not within a Public Drinking Water Source Area (PDWSA). • Extremely low/ very low probability Acid Sulphate Soil (ASS) risk within the PPA (CSIRO 2021). 	<p>Previously approved clearing for infrastructure across a minor drainage line will be managed in accordance with MP (Reg ID 101889) to minimise the impacts on the quality of surface and underground water.</p> <p>Section 3 outlines management measures AGMC will implement to minimise potential impacts on surface and groundwater.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	<p>No change</p>
<p>Principle (j) Flooding Potential – <i>Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.</i></p>		
<ul style="list-style-type: none"> • 253 mm annual mean rainfall for the region (BoM 2021). • Non-perennial watercourses intersect the PPA • The PPA is not within a flood risk area. • Topography ranges from 516 m to 482 m AHD and slopes from the north east to the south west. • Stormwater is unlikely to significantly alter the characteristics of the PPA 	<p>Seasonal flow of surface water features may be altered if native vegetation is cleared close to or near the non-perennial drainage lines, however no additional clearing will occur in areas intersected by non-perennial watercourses.</p> <p>Considering the small amount of clearing in the context of the region, the surface geology, soil systems and the current surface water watercourses within the PPA, the proposed clearing is not likely to cause or exacerbate, the incidence of flooding.</p> <p>The proposed additional clearing of up to 40 ha is unlikely to be at variance with this principle.</p>	<p>No change</p>

4. MANAGEMENT MEASURES

AGMC will apply management measures to clearing activities within the PPA to minimise the risk of impacts to environmental values. The management conditions outlined in Part II of CPS 9418/2 will be implemented, including:

Avoid, minimise and reduce the impacts and extent of clearing:

- Prior to clearing and earthworks commencing, the area will be clearly demarcated to ensure that no excess clearing occurs, and all personnel will be made aware of the requirement to protect vegetation beyond permitted areas (where possible).
- Existing cleared access tracks will be used where practicable and weed hygiene measures will be in place to minimise the risk of spread or introduction of new weed species.
- AGMC will comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.
- A buffer will be maintained between clearing and infrastructure and any water courses.
- Where a watercourse is to be impacted by clearing, AGMC will construct a diversion bund to ensure the existing surface flow is maintained and diverted into an existing natural drainage line.

Weed control:

- Weed hygiene measures will be in place to minimise the risk of spread or introduction of new weed species in accordance with AGM-ENV-PR001 Weed Management Procedure.
- Off-road vehicle use will be strictly controlled, with no driving permitted off designated routes.
- Disturbed areas will be minimised, and any areas of disturbance will be rehabilitated to avoid colonisation by weed species.
- All personnel will complete a site induction to reinforce awareness of the AGMC Weed Management Procedure to prevent the spread of weeds.

Vegetation management:

- Natural drainage contours will be maintained as much as possible.
- Where natural drainage is altered, surface water will be diverted via the abandonment bund into an adjacent tributary to the Scotty Creek.

5. CONCLUSION

Assessment of the proposed additional clearing against the 10 Clearing Principles determined the proposed additional clearing is not at variance with nine of the Clearing Principles and is likely to be at variance with Principle (f) – *Native vegetation should not be cleared if it is growing in or in association with an environment associated with a watercourse or wetland*. Potential impacts to Principle (f) are not considered significant. This aligns with the assessment outcomes determined for the assessment of CPS 9418/2.

6. REFERENCES

360 Environmental, 2019. Native Vegetation Clearing Permit Supporting Document. Prepared for Gold Fields Limited, 2 August 2019.

Bureau of Meteorology (BoM). 2021. *Monthly climate data statistics: Leinster Aero #12314*. Available at: www.bom.gov.au/climate/data. Accessed August 2019.

PSM, 2021. *Barren Lands Surface Water Assessment*. (GPSM) 2021c Gold Fields Australia Pty Limited. Diversion Bund – Method Specification. PSM3912-033L. 24 September 2021.

Department of Planning, Lands and Heritage (DPLH). 2022. *Aboriginal Heritage Inquiry Systems*. Available from <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS>. Accessed September 2022.