

Mineral Resources Limited

1 Sleat Road

Applecross WA 6153

24 February 2020

Dear Mr Neil Smith

Senior Environmental Advisor

RE: Memo report of environmental values of areas subject to S45C application for the Parker Range Iron Ore Project

Introduction and scope

Mineral Resources Limited (MRL) are proceeding to implement the Parker Range Iron Ore Project (the Project; Figure 1). The Project was approved under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC 2010/5435) on 3 November 2011 via the bilateral agreement between the Commonwealth and Western Australia (WA). The Project was approved under Part IV of the *Environmental Protection Act 1986* (EP Act) on 12 April 2012, subject to conditions and procedures outlined in Ministerial Statement MS 892 (Minister for Environment; Water 2012).

Current planned operations at the Project have resulted in some changes to the approved project area, with several small areas of the new development envelope (new DE) lying outside of the approved project area (Figure 1). In total 44.8 ha of the new DE lies outside of the approved project area (referred to here as 'gap areas').

Phoenix Environmental Sciences Pty Ltd (Phoenix) have been engaged by MRL in undertaking the following, which is currently underway:

- a desktop review of significant environmental values for the Project (Phoenix 2020d)
- phase one of flora and fauna surveys for environmental impact assessment for a proposed haul road
- baseline surveys of monitoring quadrats assessing vegetation health and weed infestations
- baseline surveys of monitoring quadrats assessing health of Threatened (*Isopogon robustus*) and Priority (*Lepidosperma* sp. Mt Caudan) flora
- targeted searches of *Chamelaucium* sp. Parker Range (P1), *Westringia acifolia* and *Microcorys* sp. nov populations
- baseline surveys for Malleefowl mounds, comprising ground truthing of all known mounds and any additional mounds identified through LiDAR.

At the request of MRL this memo has been prepared to identify significant environmental values, i.e. significant flora, vegetation and fauna, present in the gap areas of the new DE that fall outside of the approved project area and will be subject to a S45C application. This report considers the results of

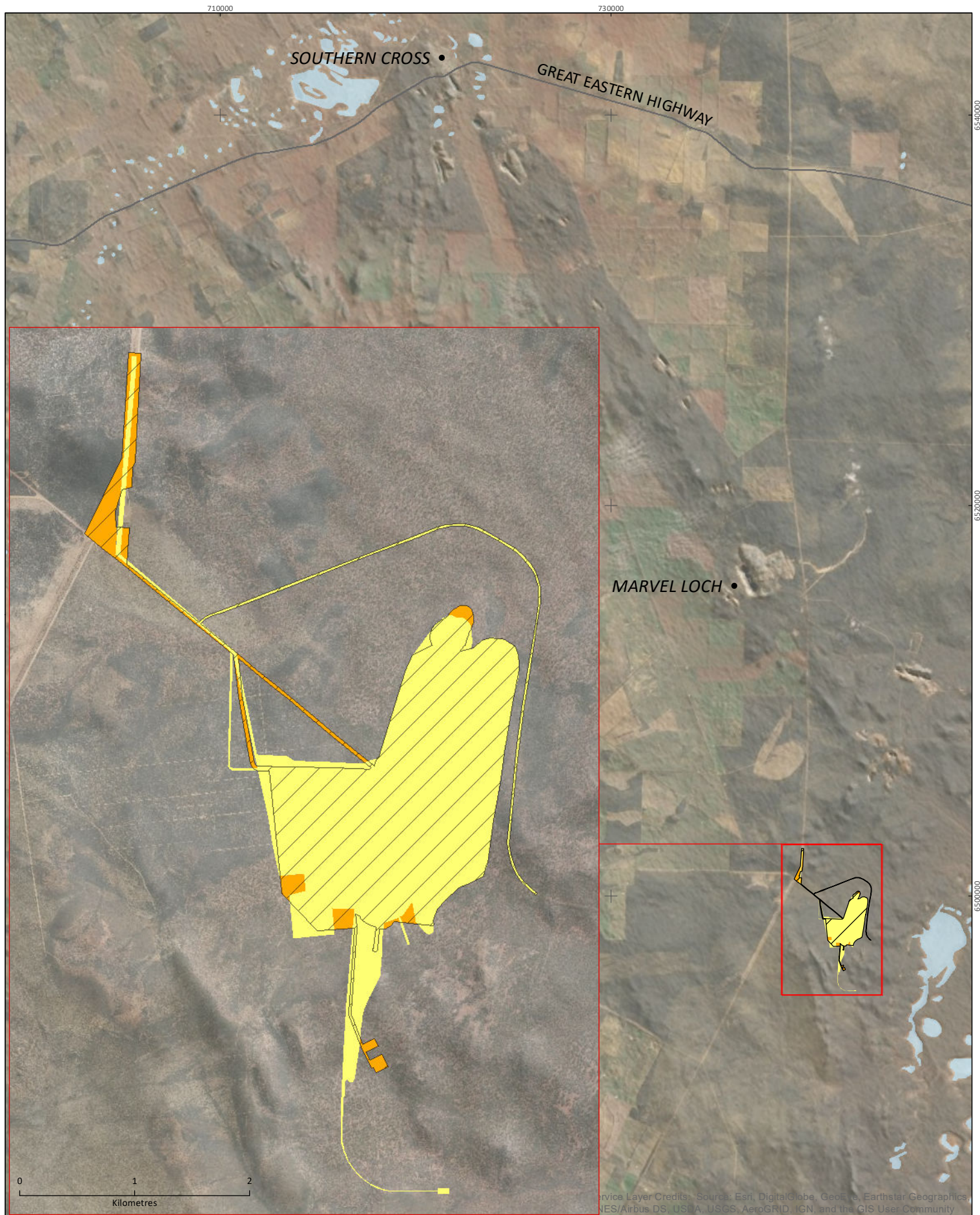
the desktop review (Phoenix 2020d) and recently identified significant values from the current field surveys (Phoenix 2020a, b, c).

Methods

The scope of work for the desktop review undertaken for the approved project area (Phoenix 2020d) included:

- searches of the DBCA Threatened and Priority Flora, Fauna and Ecological Community databases
- review of the Public Environmental Review (KLA 2010c) for the approved project area and associated technical reports:
 - Flora and vegetation of the Parker Range region, Western Australia (Botanica Consulting 2010)
 - Targeted search of the Priority 1 Flora species *Chamelaucium* sp. Parker Range (Botanica Consulting 2012)
 - Parker Range Iron Ore project Mt Caudan deposit: Public environmental review (KLA 2010c)
 - Bat call identification from near Southern Cross, WA (Specialised Zoological 2008)
 - St Barbara Southern Cross: Nevorio area. A fauna assessment (Wilcox & Davis 2008)
 - Mt Caudan-Parker Range Iron Ore Project: spring fauna survey (KLA 2008)
 - Mt Caudan-Parker Range Iron Ore Project: fauna assessment (KLA 2009a)
 - Parker Range Iron Ore Project - Rainmaker: fauna assessment addendum (KLA 2009b)
 - Parker Range Iron Ore Project. Fauna assessment (KLA 2010d)
 - Parker Range Iron Ore Project Malleefowl Management Plan (KLA 2010a)
 - Parker Range Iron Ore Project Malleefowl Surveys (KLA 2010b)
 - Targeted survey for Western Rosella at Mt Caudan within the Parker Range region (KLA 2011)
 - Report on the status of 50 Malleefowl sites at Parker Range for Cazaly Resources on November 7 and 8, 2011 (Malleefowl Preservation Group 2011a)
 - A search for Malleefowl at Parker Range, 5th - 9th September, 2011 (Malleefowl Preservation Group 2011b).
- review and update where necessary to the conservation status of significant species and vegetation identified for the approved project area from previous assessments for the Project
- identification of all records of significant species and vegetation within or in close proximity to the approved project area from the database searches not identified in previous assessments for the Project.

For this memo, the updated desktop data was spatially mapped against the gap areas of the new DE to determine whether any records of significant species or vegetation occurred within these areas. In addition, the results of significant flora and fauna records from additional baseline monitoring surveys conducted between November 2019 and January 2020 were checked for any overlap with the gap areas (Phoenix 2020a, b, c).



Results

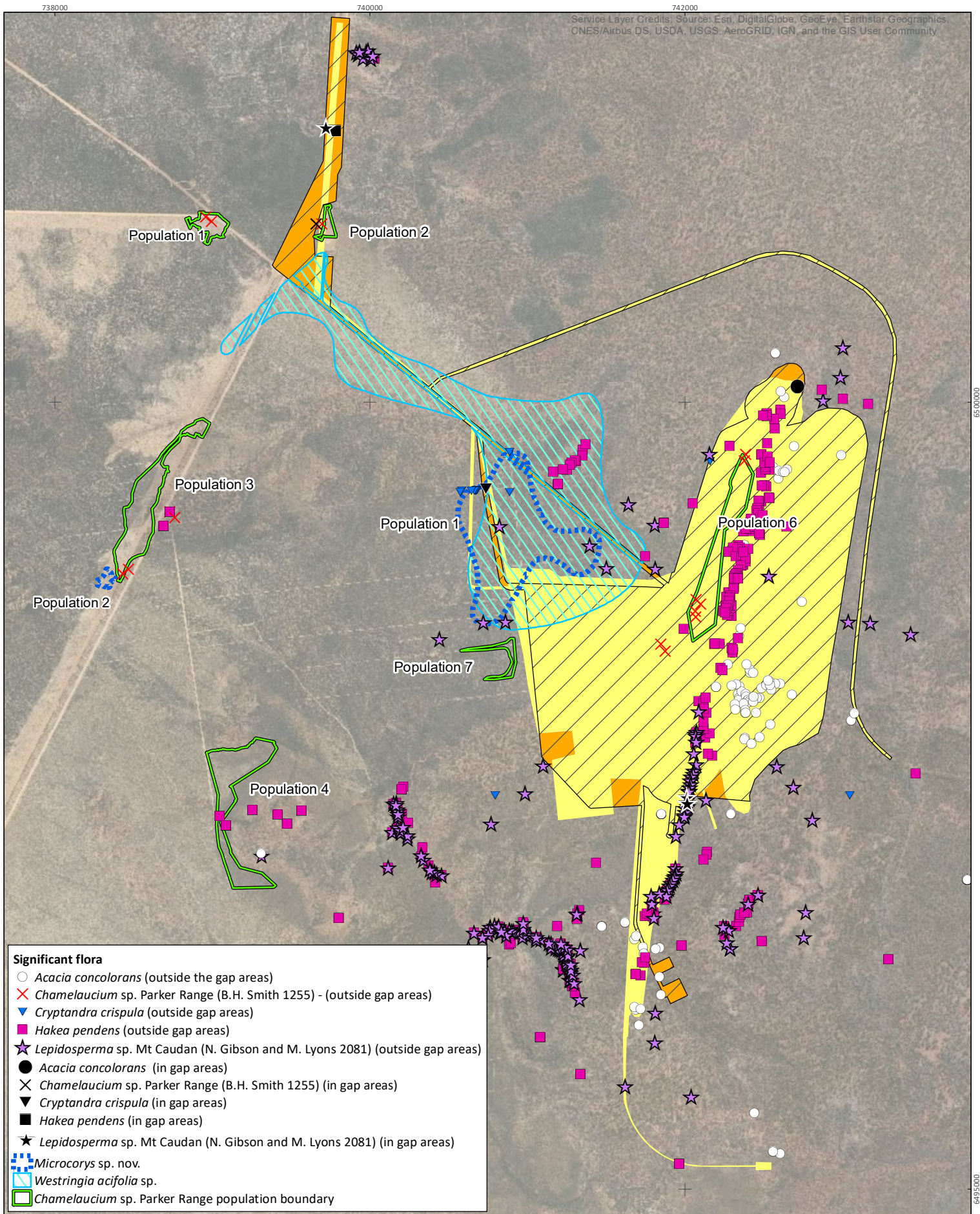
Desktop records of seven significant flora species were identified within the gap areas of the new DE (Table 1; Figure 2). It is also worth noting that desktop records of significant flora occur within the part of the approved project area that is now outside the new DE (Table 1; Figure 2). The overall outcome for the Project is that the number of records of significant flora within the new DE has decreased with respect to the approved project area.

Table 1 Records of significant flora in gap areas of new DE and records in the approved project area but outside the new DE

Taxon	Status	Records present in gap areas of the new DE	Records present in the approved project area but outside the new DE (i.e. will no longer be impacted)
<i>Lepidosperma</i> sp. Mt Caudan	P1	3	69
<i>Hakea pendens</i>	P3	1	2
<i>Cryptandra crispula</i>	P3	1	0
<i>Acacia concolorans</i>	P2	1	1
<i>Chamelaucium</i> sp. Parker Range	P1	1	1
<i>Westringia acifolia</i>	P1	154	286
<i>Microcorys</i> sp. nov.	locally significant, potentially new species	114	178

The gap areas of the new DE all occur within the “Plant assemblages of the Parker Range System” Priority Ecological Community (PEC; P3). One Threatened Ecological Community, “Eucalypt Woodlands of the Western Australian Wheatbelt” was identified in the desktop review; this community is not present in the gap areas or any part of the new DE.

Based on the current baseline Malleefowl Mound Register for the Project (Phoenix 2020b), no active or inactive Malleefowl mound sites are present in the gap areas of the new DE, although tracks and bird sightings have been recorded (Figure 3). One mound site classified as ‘long unused’ is present in the gap areas (Figure 3), where ‘long unused’ means evidence of an extended period of inactivity such as dense shrubs or trees growing from hollow or mound very degraded/poorly formed; highly unlikely to become active in the future.



Mineral Resources Ltd
Parker Range Iron Ore Project

Project No 1299
Date 03-Mar-20
Drawn by AJ
Map author GW

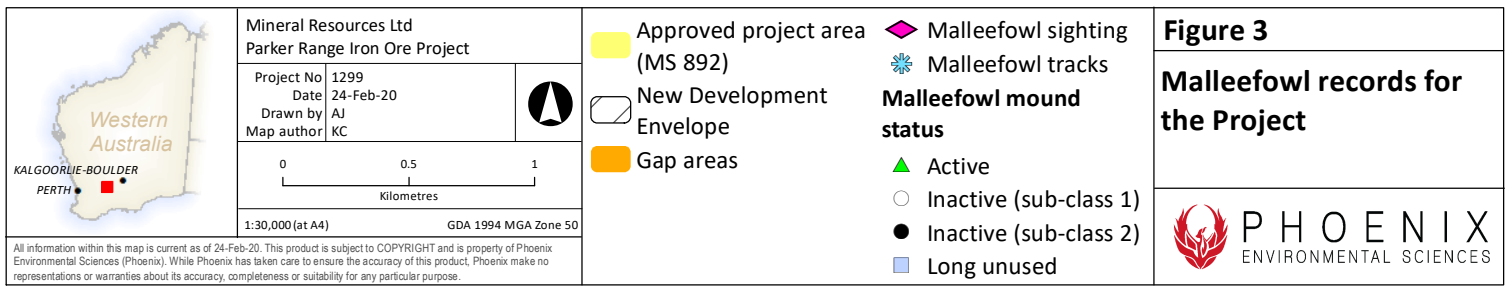
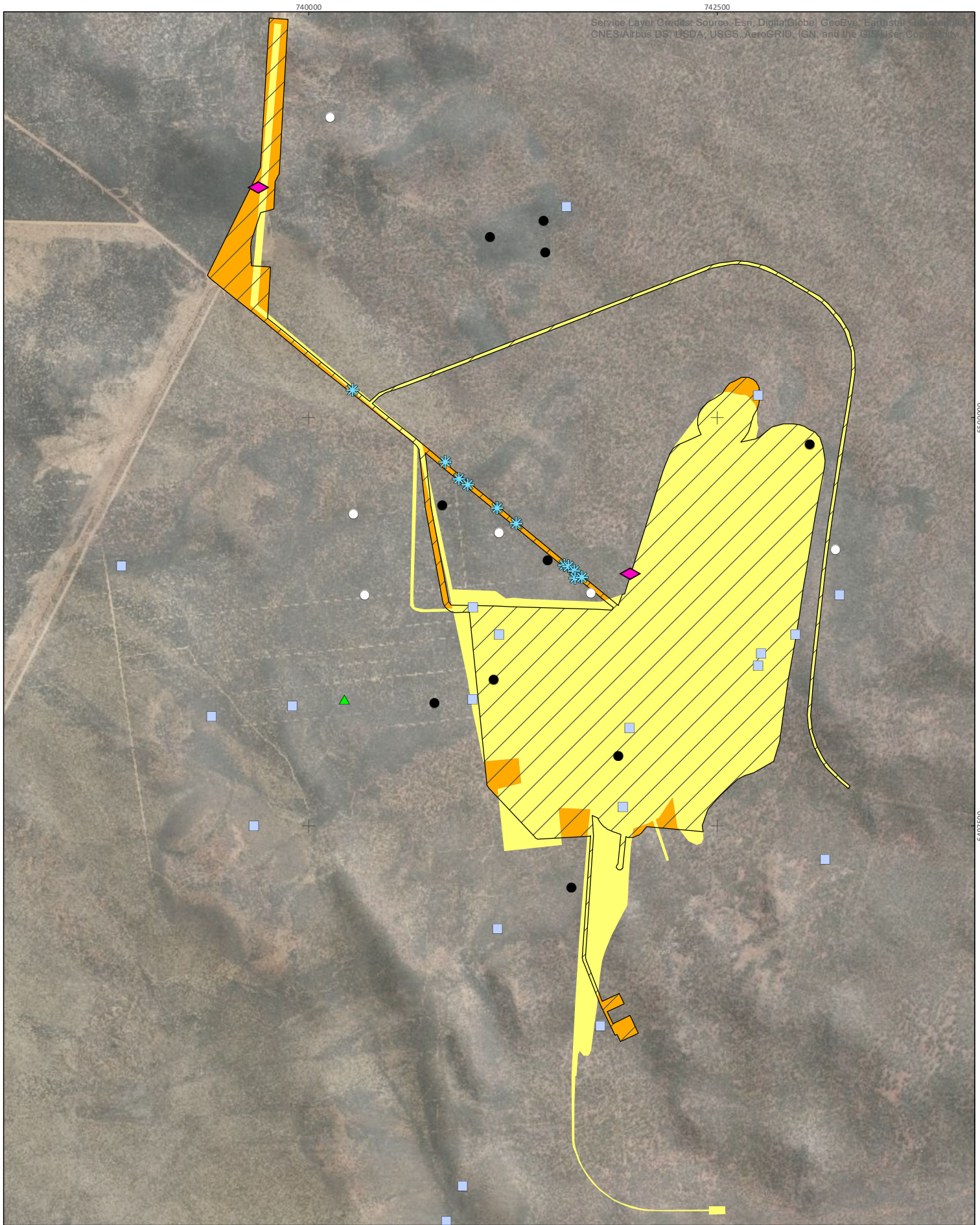


0 0.5 1
Kilometres
1:31,000 (at A4) GDA 1994 MGA Zone 50

- New Development Envelope
- Approved project area (MS 892)
- Gap areas

Figure 2

**Location of significant
flora and vegetation in
gap areas**



Discussion and conclusion

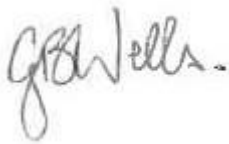
The change to the DE has not resulted in the occurrence of any significant flora species within the new DE that was not previously present in the approved project area. There has been a decrease in the number of significant flora records in the new DE with respect to the approved project area, including a reduction in the records for the Priority 1 species *Lepidosperma* sp. Mt Caudan, *Westringia acifolia* and *Chamelaucium* sp. Parker Range and the potentially new species *Microcorys* sp. nov.

In addition, previously unrecorded populations of *Lepidosperma* sp. Mt Caudan (P1), *Westringia acifolia* (P1), *Chamelaucium* sp. Parker Range (P1) and *Microcorys* sp. nov. are also located outside the new DE. The subsequent higher number of records and plants for each species lowers the proportion of impact to the total known records and population for both species.

The gap areas represent a very small proportion (0.1%) of the ca. 55,960 ha (KLA 2010c) of the Parker Range PEC.

No active or inactive Malleefowl mounds occur in the gap areas of the new DE.

Yours Sincerely,

A handwritten signature in dark ink, appearing to read 'Grant Wells'.

Dr Grant Wells

Director/Principal Botanist

Phoenix Environmental Sciences

References

- Botanica Consulting. 2010. *Flora and vegetation of the Parker Range region, Western Australia*. Botanica Consulting, Boulder, WA. Unpublished report prepared for Cazaly Resources Ltd.
- Botanica Consulting. 2012. *Targeted search of the Priority 1 Flora species Chamelaucium sp. Parker Range (B.H. Smith 1255)*. Botanica Consulting, Boulder, WA. Letter report to the Environmental Protection Authority for Cazaly Resources Ltd.
- KLA. 2008. *Mt Caudan-Parker Range Iron Ore Project: Spring fauna survey*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2009a. *Mt Caudan-Parker Range Iron Ore Project: fauna assessment*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2009b. *Parker Range Iron Ore Project - Rainmaker: fauna assessment addendum*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2010a. *Parker Range Iron Ore Project Malleefowl Management Plan*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2010b. *Parker Range Iron Ore Project Malleefowl Surveys*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2010c. *Parker Range Iron Ore project Mt Caudan deposit: Public environmental review*. Keith Lindbeck & Associates Environmental Management Consultants, Winthrop, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2010d. *Parker Range Iron Ore Project. Fauna assessment*. Keith Lindbeck and Associates Environmental Management Consultants, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- KLA. 2011. *Targeted survey for Western Rosella at Mt Caudan within the Parker Range region*. Keith Lindbeck and Associates, Bullcreek, WA. Unpublished report prepared for Cazaly Resources Ltd.
- Malleefowl Preservation Group. 2011a. *Report on the status of 50 Malleefowl sites at Parker Range for Cazaly Resources on November 7 and 8, 2011*. Malleefowl Preservation Group, Ongerup, WA. Memo to Cazaly Resources Ltd.
- Malleefowl Preservation Group. 2011b. *A search for Malleefowl at Parker Range, 5th - 9th September, 2011*. Malleefowl Preservation Group. Unpublished report prepared for Cazaly Resources Ltd.
- Minister for Environment; Water. 2012. *Ministerial Statement No. 892: Parker Range (Mt Caudan) Iron Ore Project*. Government of Western Australia, Perth, WA.
- Phoenix. 2020a. *Baseline health assessment of vegetation and weed monitoring for the Parker Range Iron Ore Project*. Phoenix Environmental Sciences Pty Ltd, Balcatta, WA. Unpublished report prepared for Mineral Resources Ltd.
- Phoenix. 2020b. *Baseline Malleefowl monitoring survey for the Parker Range Iron Ore Project*. Phoenix Environmental Sciences Pty Ltd, Balcatta. Unpublished report prepared for Mineral Resources Ltd.
- Phoenix. 2020c. *Baseline significant flora plant health monitoring for the Parker Range Iron Ore Project*. Phoenix Environmental Sciences Pty Ltd, Balcatta, WA. Unpublished report prepared for Mineral Resources Ltd.
- Phoenix. 2020d. *Desktop Review – Biological values update work for Parker Range Iron Ore Project*. Phoenix Environmental Sciences Pty Ltd, Balcatta, WA. Memo report to Mineral Resources Ltd.
- Specialised Zoological. 2008. *Bat call identification from near Southern Cross, WA*. Unpublished report prepared for Keith Lindbeck and Associates.
- Wilcox, J. A. & Davis, R. A. 2008. *St Barbara Southern Cross: Nevoria area. A fauna assessment*.