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OFFSET STRATEGY

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1 INTRODUCTION

Audalia Resources Limited (Audalia) has applied for environmental approval under Section 38 of the *Environmental Protection Act 1986* (WA; EP Act) to construct and operate the Medcalf Project (the Proposal); a vanadium, titanium and iron mining operation with associated infrastructure. The Proposal is located in the Bremer Range, Lake Johnston region of Western Australia, approximately 470 kilometres (km) east south-east of Perth (Figure 1).

The proposed Development Envelopes (DEs) outline the boundaries for the Proposal (Figure 1), where all ground disturbance and indicative key Proposal elements listed below are proposed to occur. The Proposal consist of two distinct DEs; a Mine DE and a Haul Road DE. These DEs are located within a Mining Lease M63/656 and a Miscellaneous Licence L63/75 issued under the *Mining Act 1978* (WA; Mining Act; Figure 2).

The Mine DE will require clearing of no more than 300 ha within the 898 ha extent of the Mine DE in order to develop the mine pits and associated infrastructure (Figure 2). The Haul Road DE will require clearing of no more than 350 ha within the 1,633 ha extent of the Haul Road DE in order to develop the haul road and associated infrastructure (Figure 3 and Figure 4).

Access to the site is proposed to be via a 74 km unsealed private haul road from the mine site to an ore transfer hub adjacent to the Coolgardie-Esperance Highway (Figure 3 and Figure 4).





Figure 1: Regional setting of the Proposal



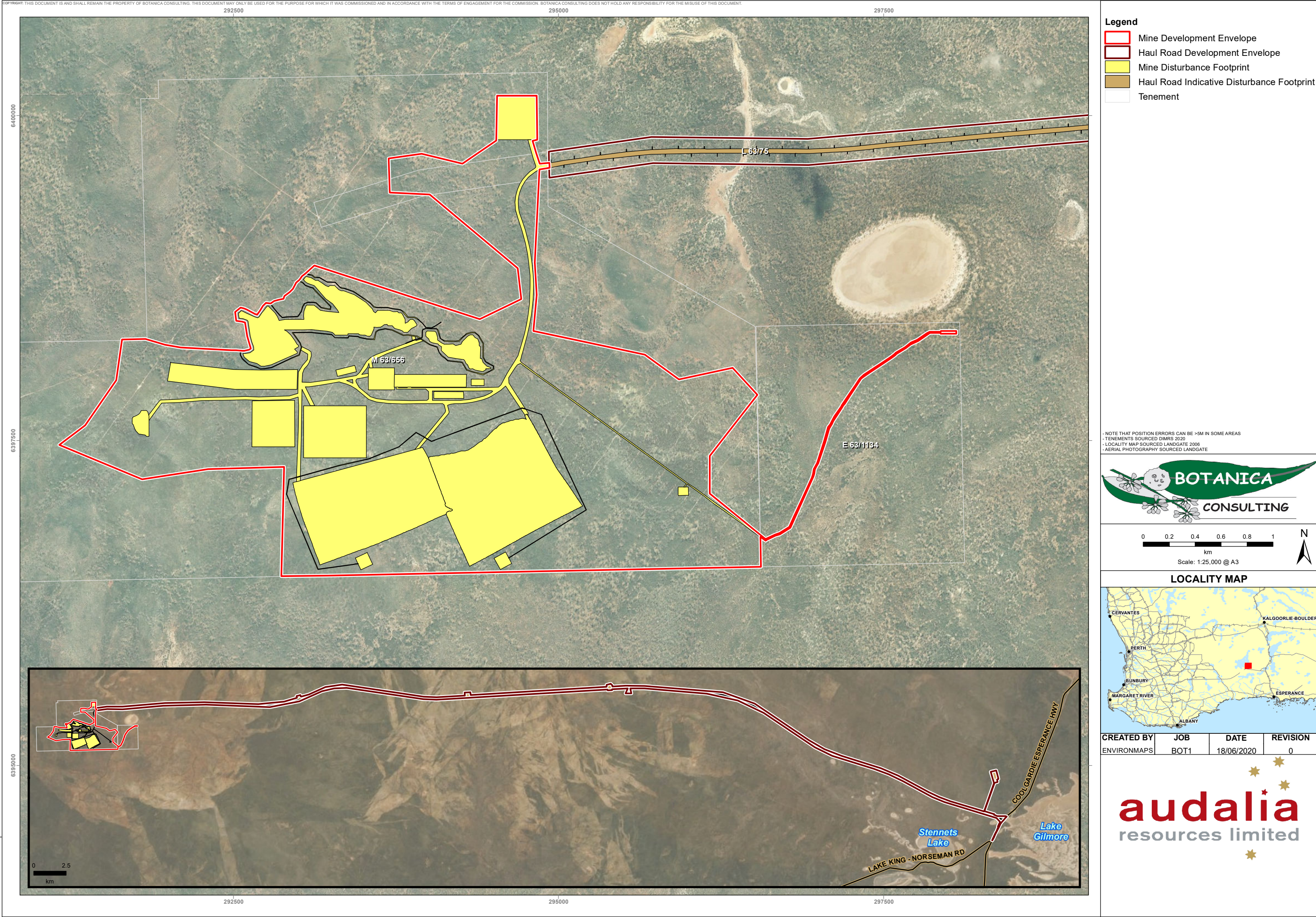
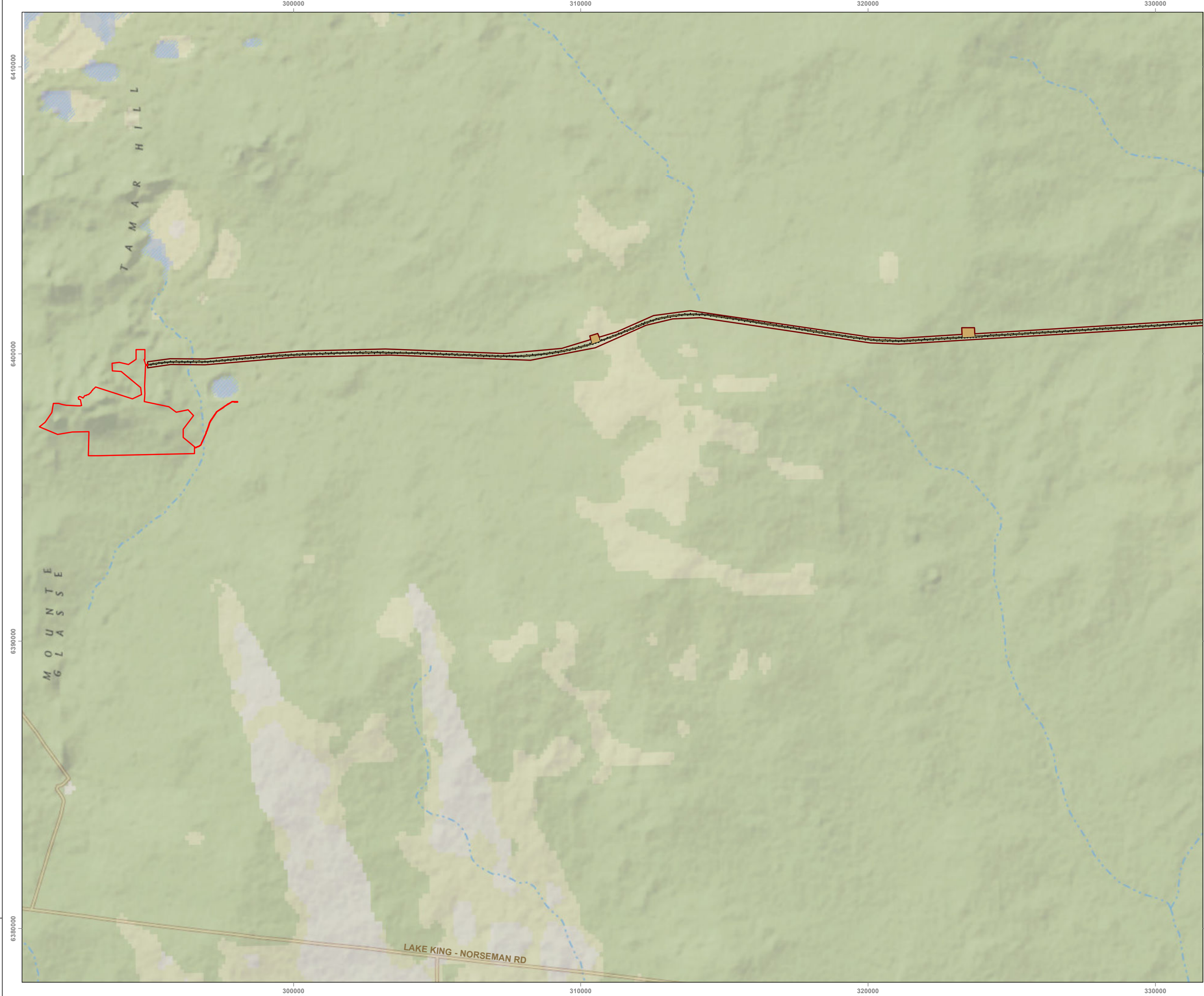
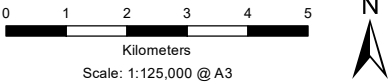


Figure 2: Mine DE and indicative disturbance footprint



- Legend**
- Mine Development Envelope
 - Haul Road Development Envelope
 - Haul Road Indicative Disturbance Footprint

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE
- BASE DATA OPEN SOURCE NATGEO WORLD MAP



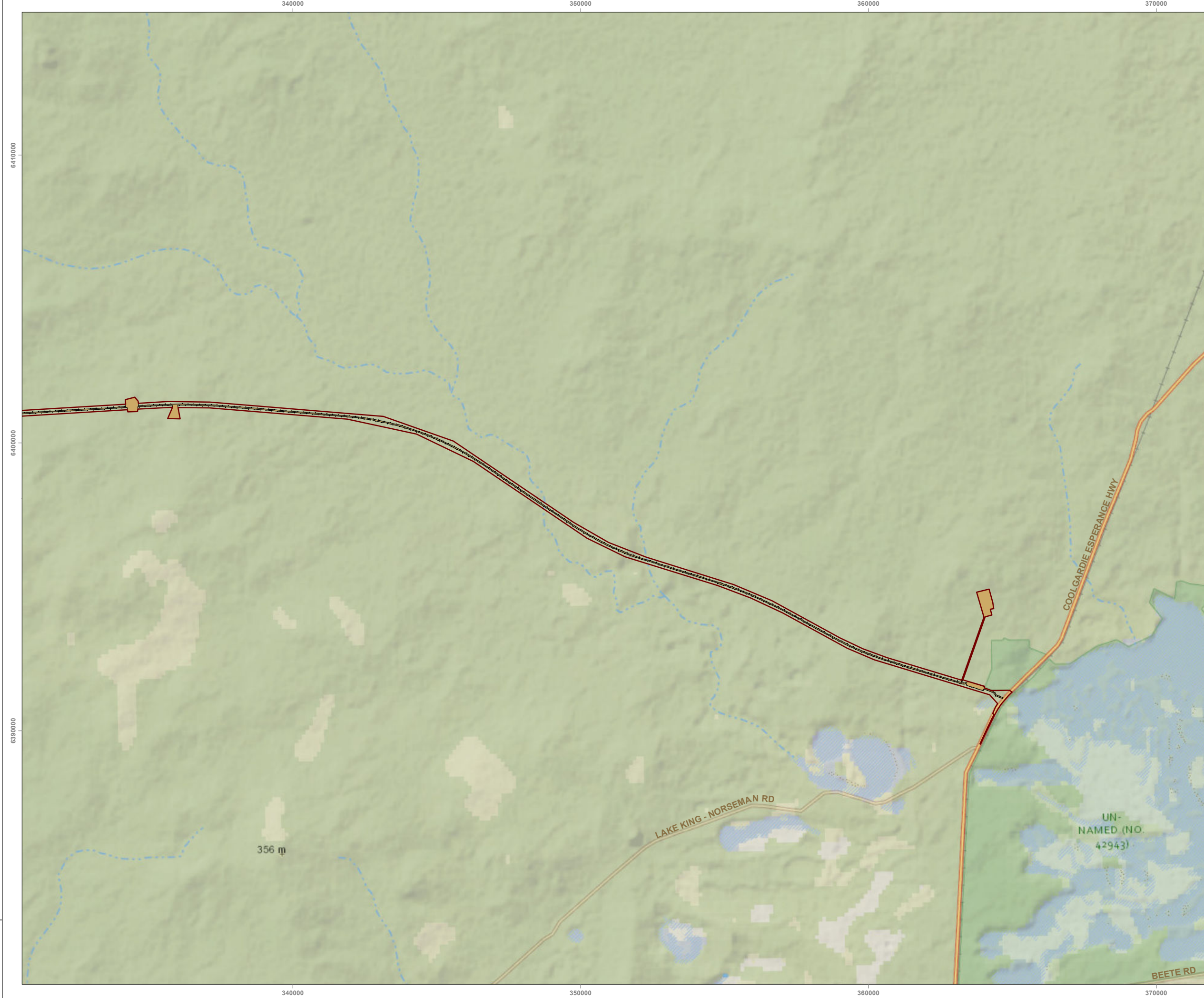
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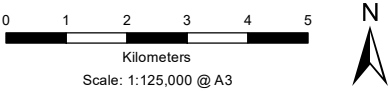


Figure 3: Haul Road DE and indicative layout (1 of 2)



- Legend**
- Mine Development Envelope
 - Haul Road Development Envelope
 - Haul Road Indicative Disturbance Footprint

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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Figure 4: Haul Road DE and indicative layout (2 of 2)

2 SCOPE AND PURPOSE

During their assessment of the Proposal, Audalia considered the Proposal would have a significant residual impact from the following actions:

- *M. aquilonaris* (T): disturbance of 1.51 ha of sub-optimal habitat and potential indirect impacts to 2.91 ha of critical habitat;
- *Eucalyptus rhomboidea* (P4): disturbance of 768 individuals and 0.4 ha of population extent. Potential indirect impacts to 430 individuals;
- *Stenanthemum bremerense* (P4): disturbance of 2,049 individuals and 21 ha of population extent. Potential indirect impacts to 1,379 individuals; and
- Up to 285 ha of disturbance of the Bremer Range Vegetation Complexes Priority Ecological Community (Bremer Range PEC).

If the Proposal is approved, Audalia predicts that an offset condition will be included in the Ministerial Statement (MS) to counterbalance the significant residual impacts of the Proposal listed above. This Offset Strategy has been prepared in anticipation of this offset condition, in order to detail potential suitable offset measures to counterbalance the significant residual impacts of the Proposal. This Offset Strategy will remain in draft form until accepted by Environmental Protection Authority (EPA) Services after further detailed discussions with EPA Services, Department of Biodiversity, Conservation and Attractions (DBCA), and Department of Mines, Industry Regulation and Safety (DMIRS).



3 STAKEHOLDER CONSULTATION

Audalia has consulted with a range of relevant external stakeholders throughout the planning and construction phases of the Proposal. The core principle of the stakeholder engagement strategy is to identify relevant external stakeholders, and consult with them to identify their concerns, appropriate mitigation strategies and likely environmental outcomes. The outcomes of this stakeholder consultation relevant to this Offset Strategy are summarised in Table 1.

Table 1: Summary of relevant stakeholder engagement

Stakeholder	Date/s	Issues / Topics Raised	Proponent Response / Outcome
Government Stakeholders			
Department of Water and Environmental Regulation (DWER) – EPA Services	<p>October 2015</p> <p>August (meeting), December 2017</p> <p>March (letter), June, July (meeting), October (email), November (email), December (email) 2018</p> <p>February (email, letter and meeting), March, July, August 2019</p> <p>February, April, July, August, September, October, November, December 2020 (emails and meetings)</p> <p>January, February, March, May, June, July 2021 (emails and meetings)</p>	<ul style="list-style-type: none"> Environmental survey effort requirements and findings Pre-referral discussions Exploration activities Priority and Threatened Flora populations Section 38 Referral Environmental Scoping Document (ESD) Impacts to proposed Bremer Range Nature Reserve Methodologies for <i>M. aquilonaris</i> studies Review <i>M. aquilonaris</i> study results <i>M. aquilonaris</i> critical habitat boundary Review of draft Environmental Review Document (ERD) Section 43A application Summary of Submissions Response to Submissions document 	<ul style="list-style-type: none"> Studies conducted as per the requirements of the ESD Concerns taken on board during draft ERD preparation Audalia to continue to liaise during Part IV approval process Audalia to liaise with DMIRS regarding the implementation of proposed offsets
DMIRS	<p>June (letter), July (letter and meeting), August, October (letter) 2014</p> <p>February (meeting), April (meeting), May (meeting), June (letter), July (meeting), December (meeting) 2015</p> <p>March (meeting) 2016</p> <p>September 2017</p> <p>July (email), November (meeting) 2018</p> <p>March (teleconference) and August (via DWER) 2020</p> <p>Comments on ERD (2021), September 2021 (meeting)</p>	<ul style="list-style-type: none"> Project overview and updates Mining tenure applications Priority and Threatened Flora populations Conservation Management Plan MP and MCP Pre-referral discussions Review of draft ERD Comments on ERD Potential Section 19 conservation (offset) area 	<ul style="list-style-type: none"> MCP to be submitted to allow parallel assessment with the Part IV EP Act process MP and MCP to be prepared in accordance with DMIRS guidelines Audalia to liaise with DMIRS regarding the implementation of proposed offsets



Stakeholder	Date/s	Issues / Topics Raised	Proponent Response / Outcome
DBCA	<p>July 2013 (letter)</p> <p>March (meeting), April (email), May (letter), August, October (letter) 2014</p> <p>April (meeting), May (meeting), July (meeting and letter), October 2015</p> <p>March (meeting), May (letter), June (letter) 2016</p> <p>January, March, June (email), September (site visit), October (email), November (meeting) 2018</p> <p>January (meeting), March, July, December 2019</p> <p>February, July (meetings), August (via DWER) 2020</p> <p>Comments on ERD (2021)</p>	<ul style="list-style-type: none"> Project overview and updates Priority and Threatened Flora populations Permit to take Threatened Flora Update on Mining Plan Environmental study and survey effort requirements and findings Pre-referral discussions Impacts to proposed Bremer Range Nature Reserve ESD Methodologies for <i>M. aquilonaris</i> studies Location of dust deposition gauges Scope of proposed modelling of <i>M. aquilonaris</i> locations Genetic study for <i>M. aquilonaris</i> Review <i>M. aquilonaris</i> study results <i>M. aquilonaris</i> critical habitat boundary Proposed offsets Review of draft ERD 	<ul style="list-style-type: none"> Studies conducted as per the requirements of the ESD Concerns taken on board during draft ERD preparation Audalia to continue to liaise during Part IV approval process Audalia to liaise with DBCA regarding the implementation of proposed offsets
Community and Corporate Stakeholders			
Conservation Council of WA	<p>Aug 2014 (meeting)</p> <p>May 2015 (meeting)</p> <p>July 2020 (email)</p>	<ul style="list-style-type: none"> Project introduction and environmental considerations / issues Information Pack provided Offer for meeting or further information Notification of preparation of draft ERD 	<p>Consideration of issues in Proposal design and the preparation of ERD</p> <p>Audalia to meet with stakeholder and / or provide additional information upon request</p>
Wildflower Society of WA	<p>May 2015 (meeting)</p> <p>July 2020 (email)</p>	<ul style="list-style-type: none"> Project introduction and environmental considerations / issues Information Pack provided Offer for meeting or further information Notification of preparation of draft ERD 	<p>Consideration of issues in Proposal design and the preparation of ERD</p> <p>Audalia to meet with stakeholder and / or provide additional information upon request</p>



4 PROPOSED OFFSETS

4.1 SIGNIFICANT RESIDUAL IMPACTS

After the implementation of mitigation measures described in the Proposal ERD, the Proposal is predicted to have a residual impact on the following environmental values:

- *M. aquilonaris* (T): disturbance of 1.51 Hectare (ha) of sub-optimal habitat and potential indirect impacts to 2.91 ha of critical habitat;
- *E. rhomboidea* (P4): disturbance of 768 individuals and 0.4 ha of population extent. Potential indirect impacts to 430 individuals;
- *S. bremerense* (P4): disturbance of 2,049 individuals and 21 ha of population extent. Potential indirect impacts to 1,379 individuals; and
- Up to 285 ha of disturbance of the Bremer Range PEC.

4.2 DETAILS OF PROPOSED OFFSETS

Table 2 describes the measures proposed to offset the residual impacts to these values. Noting the early stage of the assessment process these measures may be revised prior to the commencement of the EPA's assessment of the Proposal as a result of detailed discussions with DBCA and DWER.

Table 2: Proposed offsets

Offset	Type	Details	Relevant Values
<p>Provision of a 427 ha exclusion zone for areas within Audalia's <i>Mining Act 1978</i> tenure (Figure 5) to protect:</p> <ul style="list-style-type: none"> • <i>M. aquilonaris</i> sub-populations 1a and 1d • 3.37 ha of <i>M. aquilonaris</i> sub-population extent • 11.9 ha of <i>M. aquilonaris</i> optimal habitat • 31.4 ha of <i>M. aquilonaris</i> sub-optimal habitat • 38.7 ha of <i>M. aquilonaris</i> critical habitat • 1 <i>E. rhomboidea</i> sub-population (7.4 ha) • <i>S. bremerense</i> sub-populations (11.0 ha) • 427 ha of the Bremer Range PEC <p>The exclusion zone is to be excluded from all</p>	Direct – preservation of existing habitat	<p>The majority of the <i>M. aquilonaris</i> critical habitat lies on Audalia's Mining Act tenure and as such Audalia has a suitable understanding of the mineralisation of the proposed area and the economic implications of a protected area.</p> <p>It is Audalia's position that given the current lack of germination knowledge on the species, several <i>M. aquilonaris</i> sub-populations should be protected from mining activities and the development of an exclusion zone would reduce the likelihood of this occurring in the future. Audalia proposes an exclusion area over <i>M. aquilonaris</i> sub-populations 1a and 1d, and surrounding critical habitat extents, for a minimum of 20 years or when Audalia relinquishes the associated <i>Mining Act 1978</i> tenements, whichever is the latter.</p> <p>The offset would ensure protection of 71.9% of known individuals across two of the five current sub-populations. Audalia notes that sub-population 1b and 1c lie on top of known mineralised ore therefore these sub-populations have been excluded from the proposed exclusion zone. Sub-population 1e lies outside of Audalia's Mining Act tenements and therefore could not be included in the exclusion zone.</p> <p>The exclusion zone also would ensure protection for:</p> <ul style="list-style-type: none"> • 3.37 ha of <i>M. aquilonaris</i> sub-population extent (74.7% of total extent) 	<i>M. aquilonaris</i> , <i>E. rhomboidea</i> , <i>S. bremerense</i> , Bremer Range PEC



Offset	Type	Details	Relevant Values
<p>mining activity for 20 years or when Audalia relinquishes the associated <i>Mining Act 1978</i> tenements, whichever is the latter.</p> <p>The proposed exclusion zone is the combination of areas shown in red and blue in Figure 5).</p>		<ul style="list-style-type: none"> 11.9 ha of <i>M. aquilonaris</i> optimal habitat (70.7%) 31.4 ha of <i>M. aquilonaris</i> sub-optimal habitat (59.7%) 38.7 ha of <i>M. aquilonaris</i> critical habitat extent (60.0%) <p><i>E. rhomboidea</i> and <i>S. bremerense</i> sub-populations also lie within the proposed exclusion zone (Figure 5).</p> <p>The offset would ensure protection of only 164 (1.1%) of known local <i>E. rhomboidea</i> individuals however will include one of the six local sub-populations (16.7%) and 7.4 ha of the 12 ha of local population extent (61.7%).</p> <p>The offset would ensure protection of 12,200 (30.4%) of known local <i>Stenanthemum bremerense</i> individuals and will include 11.0 ha of the 56 ha of local population extent (19.6%).</p> <p>The exclusion zone will also include 427 ha of the Bremer Range PEC (0.5% of the total extent).</p>	
<p>Subject to acceptance by DMIRS, provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the areas shown in red in Figure 5).</p> <p>The protected area would overlap with the unmineralized portion of the exclusion zone detailed above and will provide additional protection for:</p> <ul style="list-style-type: none"> <i>E. rhomboidea</i> sub-population (7.4 ha) <i>S. bremerense</i> sub-populations (6.85 ha) 275 ha of the Bremer Range PEC 	Direct – preservation of existing habitat	<p><i>E. rhomboidea</i> and <i>S. bremerense</i> sub-populations lie within the proposed protected area (Figure 5).</p> <p>The offset would ensure additional protection of only 260 (1.7%) of known local <i>E. rhomboidea</i> individuals however will include one of the six local sub-populations (16.7%) and 7.4 ha of the 12 ha of local population extent (61.7%).</p> <p>The offset would ensure additional protection of 6,344 (15.8%) of known local <i>S. bremerense</i> individuals and will include 6.85 ha of the 56 ha of local population extent (12.2%).</p> <p>The protected area will also include 275 ha of the Bremer Range PEC (0.3% of the total extent).</p>	<i>E. rhomboidea</i> , <i>S. bremerense</i> , Bremer Range PEC
<p>Subject to acceptance by DMIRS and adjacent tenement holder, provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the area shown in yellow in Figure 5).</p> <p>The protected area is additional to the exclusion zone detailed above and will provide</p>	Direct – preservation of existing habitat	<p><i>E. rhomboidea</i> and <i>S. bremerense</i> sub-populations lie within the proposed protected area (Figure 5).</p> <p>The offset would ensure additional protection of 96 (0.6%) of known local <i>E. rhomboidea</i> individuals however will include an additional local sub-population (16.7%) and 0.6 ha of the 12 ha of local population extent (5%).</p> <p>The offset would ensure additional protection of 2,176 (5.4%) of known local <i>S. bremerense</i> individuals and will include 6.5 ha of the 56 ha of local population extent (11.6%).</p> <p>The protected area will also include 233 ha of the Bremer Range PEC (0.3% of the total extent).</p>	<i>E. rhomboidea</i> , <i>S. bremerense</i> , Bremer Range PEC



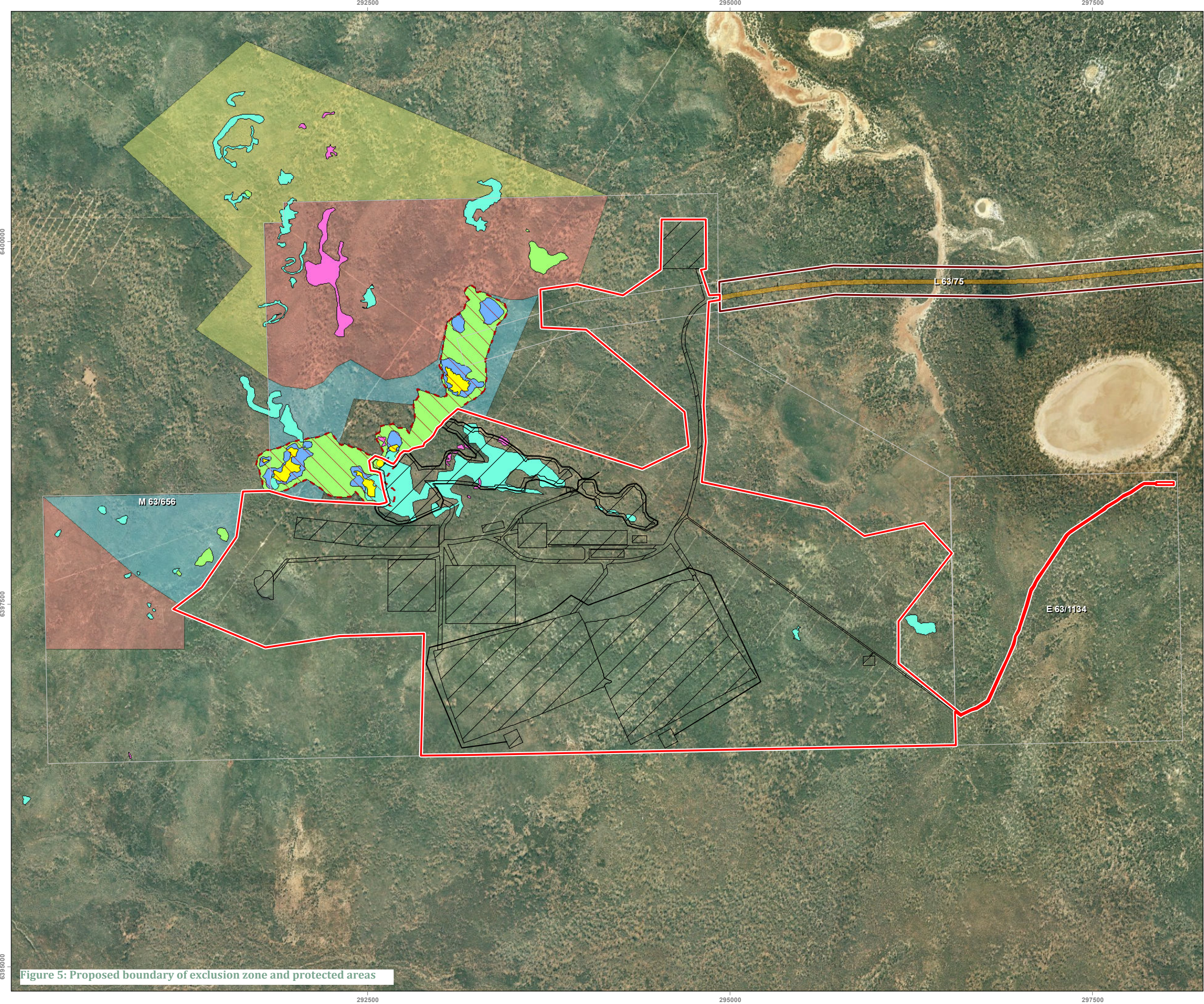
Offset	Type	Details	Relevant Values
<p>additional protection for:</p> <ul style="list-style-type: none"> <i>E. rhomboidea</i> sub-populations (0.6 ha) <i>S. bremerense</i> sub-populations (6.5 ha) 233 ha of the Bremer Range PEC 			
<p>Provision of \$500,000 (based on similar offset requirements per hectare for PEC impacts in WA) for ongoing conservation management within the Bremer Range PEC, including significant flora populations</p>	<p>Direct – management of conservation values</p>	<p>Audalia proposes to contribute \$100,000 per year for 5 years, with the first payment made within 12 months of the commencement of operations. The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups.</p> <p>The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations.</p>	<p><i>M. aquilonaris</i>, <i>E. rhomboidea</i>, <i>S. bremerense</i>, Bremer Range PEC</p>
<p>Revegetation of previously disturbed vegetation within the <i>M. aquilonaris</i> critical habitat boundary (access tracks)</p>	<p>Direct – revegetation of disturbed habitat</p>	<p>There are a number of historic tracks that currently run through the critical habitat boundary. If DBCA deems it suitable, Audalia proposes to cut off the current access to these tracks and either actively rehabilitate the tracks that lie within the critical habitat boundary or restrict access and monitor natural revegetation. Some rehabilitation areas that lie within optimal habitat but outside the sub-populations may be used for germination trials to determine if additional <i>M. aquilonaris</i> individuals can become established in these areas.</p> <p>Audalia intends to commission experienced consultants to complete the work with direction from DBCA.</p>	<p><i>M. aquilonaris</i></p>
<p>Ongoing <i>M. aquilonaris</i>, <i>E. rhomboidea</i> and <i>S. bremerense</i> research:</p> <ul style="list-style-type: none"> Ongoing germination trials Annual plant counts Regional searches after fire events Sub-population health monitoring Rehabilitation trials Genetic studies 	<p>Indirect – improvement of scientific knowledge of the species</p>	<p>Audalia has commissioned significant research work on these species to inform this ERD. It is proposed to continue the longer-term portions of this research such as germination, changes to plant numbers, health and rehabilitation trials. This information will inform the recovery and preservation planning for these species.</p>	<p><i>M. aquilonaris</i>, <i>E. rhomboidea</i>, <i>S. bremerense</i></p>
<p>Successful establishment in rehabilitation areas of at least the same number of <i>E. rhomboidea</i> and <i>S. bremerense</i> individuals impacted by the Proposal (numbers to be</p>	<p>Direct – replacement of existing population</p>	<p>Audalia is currently undertaking germination trials for <i>E. rhomboidea</i> and <i>S. bremerense</i> to allow the replacement of any individuals that are required to be disturbed for the Proposal. These germination trials will continue to inform the target regrowth and establishment of at least the same number of individuals impacted by the Proposal. Audalia notes that this offset carries</p>	<p><i>E. rhomboidea</i>, <i>S. bremerense</i></p>



Offset	Type	Details	Relevant Values
based on pre-clearance survey)		<p>some risk as germination success has not yet been confirmed for either species.</p> <p>Audalia commissioned Botanica to prepare a Rehabilitation Plan (Botanica, 2021). The Rehabilitation Plan provides additional detail about how this offset will be achieved.</p>	

An assessment of the adequacy of these offsets is provided in Section 5.

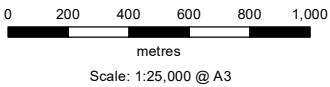




Legend

- Mine Development Envelope
- Haul Road Development Envelope
- Mine Disturbance Footprint
- Haul Road Indicative Disturbance Footprint
- Tenement
- Primary Offset Area
- Audalia Mineralised Offset Area
- Off-tenement Offset Area
- Marianthus Critical Habitat
- Marianthus aquilonaris Population - January 2019
- Marianthus Optimal Habitat
- Marianthus Sub-optimal Habitat
- Priority Flora
 - E. rhomboidea Population - June 2019
 - S. bremerense Population June 2019

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- TENEMENTS SOURCED DIMRS 2020
- LOCALITY MAP SOURCED LANDGATE
- AERIAL PHOTOGRAPHY OPEN SOURCE



LOCALITY MAP



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Figure 5: Proposed boundary of exclusion zone and protected areas

5 ASSESSMENT OF THE PROPOSED OFFSETS

Offsets are the last of the four steps in the mitigation hierarchy (Avoid, Minimise, Rehabilitate and Offset). They are only applied to counterbalance residual significant impacts when the other steps have already been applied to a Proposal.

Audalia commissioned numerous environmental surveys and studies for the Proposal. The surveys determined that there were key environmental values that required protection, including significant flora and the Bremer Range PEC.

Audalia assessed the findings of the surveys and studies and made significant changes to the Proposal design. Some of these changes carried a significant cost (such as reducing the size of the Vesuvius mine pit) – affecting the unit costs of the Proposal. Changes were also made to avoid and minimise construction and operational impacts, such as implementing strict clearing controls, dust mitigation and surface water drainage controls.

The application of these avoidance and minimisation mechanisms in Proposal design and operations has meant that impacts to many key environmental values have been avoided or significantly reduced. Audalia understands that this conclusion is in part based on studies and modelling, and as such monitoring has been committed to in order to verify the study and model outputs.

5.1 WA ENVIRONMENTAL OFFSETS GUIDELINES

The WA Environmental Offsets Guidelines (EPA, 2014) states:

“In general, significant residual impacts include those that affect rare and endangered plants and animals (such as declared rare flora and threatened species that are protected by statute), areas within the formal conservation reserve system, important environmental systems and species that are protected under international agreements (such as Ramsar listed wetlands) and areas that are already defined as being critically impacted in a cumulative context. Impacts may also be significant if, for example, they could cause plants or animals to become rare or endangered, or they affect vegetation which provides important ecological functions”.

Audalia has assessed the residual impacts of the Proposal against the residual impact significance model provided in the WA Environmental Offsets Guidelines (EPA, 2014). The findings of this assessment are provided in Table 3.



Relevant Part IV Environmental Factors	Vegetation and Flora						
				Terrestrial Fauna			
Part V Clearing Principles	c - Rare flora	d - TECs	e - Remnant vegetation	f - Wetlands and waterways	h - Conservation areas	a - High biological diversity	b - Habitat for fauna
Residual impact that is environmentally unacceptable and cannot be offset	No residual impacts are considered to meet this criteria						
Significant residual impacts that will require an offset – all significant residual impacts to species and ecosystems are protected by statute or where the cumulative impact is already at a critical level	It is considered likely that the residual impacts to <i>M. aquilonaris</i> would meet this criteria	No residual impacts are considered to meet this criteria - no TECs were recorded within the DEs	No residual impacts are considered to meet this criteria – all remaining vegetation will have 97% or more of their pre-European extent remaining	No residual impacts are considered to meet this criteria as no wetlands or waterways that are protected by statute lie within the DEs or would be indirectly impacted by the Proposal	No residual impacts are considered to meet this criteria as no conservation areas that are protected by statute lie within the DEs or would be indirectly impacted by the Proposal	The Bremer Range PEC is known to contain a high level of biological diversity and as such residual impacts to this PEC are considered to meet this criteria.	No residual impacts are considered to meet this criteria as no restricted habitats for Threatened Fauna will be impacted and suitable intact habitat will remain outside the DEs.
Significant residual impacts that may require an offset – any significant residual impacts to potentially threatened species and ecosystems, areas of high environmental value or where the cumulative impact may reach critical levels if not managed	It is considered likely that the residual impacts to <i>E. rhomboidea</i> and <i>S. bremerense</i> would meet this criteria.	It is considered likely that the residual impacts to the Bremer Range PEC would meet this criteria.	No residual impacts are considered to meet this criteria – refer above	No residual impacts are considered to meet this criteria – refer above	No residual impacts are considered to meet this criteria – refer above	No other residual impacts are considered to meet this criteria. While the broader Great Western Woodlands are known to have high ecological significance, the residual impacts are not considered significant given the relatively small footprint of the Proposal in the context of the large area of intact habitat outside the DEs.	No residual impacts are considered to meet this criteria – refer above



As described in Table 3, based on the findings of the Environmental Impact Assessment in the ERD, Audalia considers that the Proposal's residual impacts to *M. aquilonaris*, *E. rhomboidea*, *S. bremerense* and the Bremer Range PEC may be considered significant and require offsets.

During the assessment Audalia noted some uncertainty about whether the Proposal impacts on the Bremer Range PEC may be considered significant and require offsets. Constituted a significant residual impact that would require offsets. The WA Environmental Offsets Guidelines (EPA, 2014) notes that:

“There may be cases where there is some uncertainty about whether a significant residual impact will occur, and/or the extent of the impact. An offset may apply in some cases based on an assessment of the risk using a normal risk-based approach, that is considering the ‘likelihood’ of the impact occurring and the ‘consequences’ of the impact if it did occur, based on the evidence and information available. Offsets would normally only be applied in cases where there was a significant risk that the impact was likely to occur and there was likely to be a significant consequence”.

The indirect impacts described in the ERD are deliberately conservative (appropriately based on the precautionary principle) however it is unlikely that the full scale of indirect impacts would occur. Based on the above, Audalia has committed to ongoing monitoring that will inform and ultimately verify the scale of these residual indirect impacts. The key monitoring is considered to be the dust deposition monitoring and the ongoing Significant Flora Management Plan.

The dust deposition monitoring and Significant Flora Management Plan are committed to in the ERD in Section 5. These monitoring programmes are designed to monitor and compare dust deposition against model predictions, and monitor the health of significant flora populations over the life of the Proposal.

5.2 WA OFFSETS TEMPLATE

Audalia has completed a WA Offsets Template as per the requirements of the WA Environmental Offsets Guideline (EPA, 2014), provided in Table 4. Note that only the values that were deemed to require offsets are included (refer to the ERD for the complete list).



Table 4: WA offsets policy template

Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
<i>M. aquilonaris</i> (T) – Disturbance of 1.51 ha of sub-optimal habitat within the critical habitat boundary Reduction in flora and/or habitat health as a result of indirect impacts Disturbance and indirect impacts to pollinator habitat	Avoid: DEs were revised to avoid: <ul style="list-style-type: none"> All current individuals All current areas of occupancy (sub-populations) All optimal habitat All catchment areas upslope of current areas of occupancy Minimise: <ul style="list-style-type: none"> Implement industry best practice management measures for flora and vegetation Ensure ground disturbance does not exceed the 1.51 ha of sub-optimal habitat limit proposed in the Key Proposal Characteristics Implement additional ground disturbance measures for any ground disturbance within critical habitat Implement the Dust Management Plan Implement preventive measures to minimise the risk and impact of hydrocarbon spills Comply with Water Quality Protection Guidelines and guidance notes Implement additional controls upslope of <i>M. aquilonaris</i> critical habitat Implement Significant Flora Management Plan Implement Rehabilitation Plan 	Refer to Rehabilitation Plan (Botanica, 2021).	<u>Can the environmental values be rehabilitated/Evidence?</u> No - disturbance is limited to mine pit and abandonment bund which cannot be rehabilitated back to previous value <u>Operator experience in undertaking rehabilitation?</u> N/A <u>What is the type of vegetation being rehabilitated?</u> N/A <u>Time lag?</u> N/A <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> N/A	<u>Extent</u> 1.51 ha of sub-optimal habitat and potential indirect impacts to 2.91 ha of critical habitat <u>Quality</u> <ul style="list-style-type: none"> Vegetation is in good to very good condition Sub-optimal habitat <u>Conservation Significance</u> Threatened species <u>Land Tenure</u> Mining Act tenure <u>Time Scale</u> N/A According to the significance framework, residual impact is considered to be significant because a specially protected species under the <i>Biodiversity Conservation Act</i> (BC Act) is impacted.	Provision of a 427 ha exclusion zone for areas within Audalia's <i>Mining Act 1978</i> tenure (Figure 5) to protect: <ul style="list-style-type: none"> Sub-populations 1a and 1d 3.37 ha of sub-population extent 11.9 ha of optimal habitat 31.4 ha of sub-optimal habitat 38.7 ha of critical habitat The exclusion zone is to be excluded from all mining activity for 20 years or when Audalia relinquishes the associated <i>Mining Act 1978</i> tenements, whichever is the latter.	Low – exclusion zone would become a regulated boundary under the Ministerial Statement if the Proposal is approved	<u>Can the values be defined and measured?</u> Yes - value to <i>M. aquilonaris</i> can be measured <u>Operator experience/Evidence?</u> N/A – exclusion zone only <u>What is the type of vegetation being revegetated?</u> N/A	Secures critical habitat upon issue of MS – no time delay	Offset would ensure protection of 71.9% of known individuals across two of the five current sub-populations, as well as improve / maintain the quality of all current sub-populations and Bremer Range PEC, and expand current knowledge on the species. The offset meets all required criteria, with individuals, sub-population extent and optimal habitat being included in the offset package despite no direct impacts, and sub-optimal and critical habitat impacts are offset by areas 21 and 26 times larger than the impacted area.
					Revegetation of previously disturbed vegetation within the critical habitat boundary (access tracks).	Low - sites occur on Audalia Mining Act tenure and Unallocated Crown Land (UCL)	<u>Can the values be defined and measured?</u> Yes - value to <i>M. aquilonaris</i> can be measured <u>Operator experience/Evidence?</u> Audalia intends to commission experienced consultants to complete the work with direction from DBCA. <u>What is the type of vegetation being revegetated?</u> Previously disturbed vegetation within the critical habitat boundary (access tracks).	Expected to be several years before any new <i>M. aquilonaris</i> individuals become established (may be reliant on fire events)	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
	<ul style="list-style-type: none"> Conduct an additional <i>M. aquilonaris</i> pollinator survey during peak flowing season 				Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC, including significant flora populations	Low - an independent and transparent management authority is proposed to be developed in consultation with EPA, DBCA and local landcare groups.	<u>Can the values be defined and measured?</u> Yes - value to <i>M. aquilonaris</i> can be measured <u>Operator experience/Evidence?</u> The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups. The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations. <u>What is the type of vegetation being revegetated?</u> Bremer Range PEC	Approximately 2 years - the first payment is be made within 12 months of the commencement of operations	
					Ongoing research: <ul style="list-style-type: none"> Ongoing germination trials Annual plant counts Regional searches after fire events Sub-population health monitoring Rehabilitation trials 	Low - sites occur on Audalia Mining Act tenure and UCL	<u>Can the values be defined and measured?</u> No - value to <i>M. aquilonaris</i> cannot be measured in this case <u>Operator experience/Evidence?</u> Varied – DBCA may undertake some of the offset, Audalia consultants or local land care groups may also be engaged <u>What is the type of vegetation being revegetated?</u> N/A	Expected to be several years before the results provide data that is useful for the protection of the species.	
<i>E. rhomboidea</i> (P4) – Disturbance of 768 individuals and 0.4 ha of population extent Reduction in flora and/or habitat health as a result of indirect impacts	Avoid: DEs were revised to avoid more than 79% of records within the study areas Minimise: <ul style="list-style-type: none"> Implement industry best practice management measures for flora and vegetation Ensure ground disturbance does not exceed the limit proposed in the Key Proposal Characteristics: 0.4 ha of population extent Conduct additional significant flora searches of final proposed mine and 	Refer to Rehabilitation Plan (Botanica, 2021).	<u>Can the environmental values be rehabilitated/Evidence?</u> No - disturbance is limited to mine pit and abandonment bund which cannot be rehabilitated back to previous value <u>Operator experience in undertaking rehabilitation?</u> N/A <u>What is the type of vegetation being rehabilitated?</u> N/A <u>Time lag?</u> N/A <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> N/A	<u>Extent</u> 768 individuals (out of 15,606 or 4.9%) and 0.4 ha of population extent. Potential indirect impacts to 430 individuals (out of 15,606 or 2.8%) <u>Quality</u> Vegetation is in good to very good condition <u>Conservation Significance</u> Priority 4 species <u>Land Tenure</u> Mining Act tenure <u>Time Scale</u>	Successful establishment in rehabilitation areas of at least the same number of individuals impacted by the Proposal (numbers to be based on pre-clearance survey)	Medium – suitable germination trials not yet completed however this species is expected to be able to be germinated (Western Botanical, 2018)	<u>Can the values be defined and measured?</u> Yes - value can be measured <u>Operator experience/Evidence?</u> Varied – DBCA may undertake the offset if preferred, or Audalia consultants or local land care groups may be engaged <u>What is the type of vegetation being revegetated?</u> Woodland / shrubland	Expected to be ten years before any new individuals / populations become established	Exclusion zones and protected areas provide limited offset value for this species, therefore the primary offsets for this species are the re-establishment of impacted individuals and the provision of funds for the management of the Bremer Range PEC, which provides habitat for this species. These two offsets are predicted to meet offset requirements for this species, based on the EPBC offset calculator. The proposed research offset will also provide useful information about population extent, recovery from recent fires
					Provision of a 427 ha exclusion zone for areas within Audalia's <i>Mining Act 1978</i> tenure (combination of blue and red areas in Figure 5) to protect 7.4 ha of	Low – exclusion zone would become a regulated boundary under the Ministerial Statement if the Proposal was approved	<u>Can the values be defined and measured?</u> Yes - value to <i>E. rhomboidea</i> can be measured <u>Operator experience/Evidence?</u> N/A – exclusion zone only <u>What is the type of vegetation being revegetated?</u>	Secures habitat upon issue of MS – no time delay	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
<p>infrastructure disturbance footprints</p> <ul style="list-style-type: none"> • Prepare and implement a Mine and Infrastructure Plan • Implement Significant Flora Management Plan • Implement Rehabilitation Plan • Implement additional ground disturbance measures for any ground disturbance within population boundaries • Implement the Dust Management Plan • Implement preventive measures to minimise the risk and impact of hydrocarbon spills • Comply with Water Quality Protection Guidelines and guidance notes • Implement additional controls upslope of population boundaries 				<p>N/A</p> <p>According to the significance framework, residual impact is considered to be significant because a potential future specially protected species under the BC Act is impacted.</p>	sub-population extent		N/A		<p>and rehabilitation methods for this species. This information will be able to be used to guide the ongoing conservation of this species.</p>
					<p>Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the areas shown in red in Figure 5).</p> <p>The protected area would overlap with the unmineralized portion of the exclusion zone detailed above and will provide additional protection for 7.4 ha of sub-population extent.</p>	<p>Low – this offset is subject to acceptance by DMIRS, however consultation in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely.</p>	<p><u>Can the values be defined and measured?</u> Yes - value to <i>E. rhomboidea</i> can be measured</p> <p><u>Operator experience/Evidence?</u> N/A – protected area only, refer below for management</p> <p><u>What is the type of vegetation being revegetated?</u> N/A</p>	<p>Secures habitat upon agreement – no time delay</p>	
					<p>Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the area shown in yellow in Figure 5).</p> <p>The protected area is additional to the exclusion zone detailed above and will provide additional protection for 0.6 ha of sub-population extent.</p>	<p>Medium – this offset is subject to acceptance by DMIRS and adjacent tenement holder. Consultation with DMIRS in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely, however it will require further discussions with the underlying tenement holder.</p>	<p><u>Can the values be defined and measured?</u> Yes - value to <i>E. rhomboidea</i> can be measured</p> <p><u>Operator experience/Evidence?</u> N/A – protected area only, refer below for management</p> <p><u>What is the type of vegetation being revegetated?</u> N/A</p>	<p>Secures habitat upon agreement – no time delay</p>	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
					Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC, including significant flora populations	Low - an independent and transparent management authority is proposed to be developed in consultation with EPA, DBCA and local landcare groups.	<u>Can the values be defined and measured?</u> Yes - value to <i>E. rhomboidea</i> can be measured <u>Operator experience/Evidence?</u> The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups. The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations. <u>What is the type of vegetation being revegetated?</u> Bremer Range PEC	Approximately 2 years - the first payment is made within 12 months of the commencement of operations	
					Ongoing research: <ul style="list-style-type: none"> Ongoing germination trials Annual plant counts Regional searches after fire events Population health monitoring Rehabilitation trials Genetic studies 	Low – research sites would be located on Audalia Mining Act tenure and UCL	<u>Can the values be defined and measured?</u> Yes, there is limited information about population extent, recovery from recent fires and rehabilitation methods for this species therefore the research will provide value for ongoing conservation of this species. <u>Operator experience/Evidence?</u> Varied – DBCA may undertake some of the offset, Audalia consultants or local land care groups may also be engaged <u>What is the type of vegetation being revegetated?</u> N/A	Expected to be several years before the results provide data that is useful for the protection of the species.	
<i>S. bremerense</i> (P4) – Disturbance of 2,049 individuals and 21 ha of population extent Reduction in flora and/or habitat health as a result of indirect impacts	Avoid: DEs were revised to avoid more than 88% of records within the study areas Minimise: <ul style="list-style-type: none"> Implement industry best practice management measures for flora and vegetation Ensure ground disturbance does not exceed the limit proposed in the Key Proposal Characteristics: 21 ha of population extent Conduct additional significant flora 	Refer to Rehabilitation Plan (Botanica, 2021).	<u>Can the environmental values be rehabilitated/Evidence?</u> No - disturbance is limited to mine pit and abandonment bund which cannot be rehabilitated back to previous value <u>Operator experience in undertaking rehabilitation?</u> N/A <u>What is the type of vegetation being rehabilitated?</u> N/A <u>Time lag?</u> N/A	Extent 2,049 individuals (out of 35,823 or 5.7%) and 21 ha of population extent. Potential indirect impacts to 1,379 individuals (out of 35,823 or 3.8%) Quality Vegetation is in good to very good condition Conservation Significance Priority 4 species Land Tenure	Successful establishment in rehabilitation areas of at least the same number of individuals impacted by the Proposal (numbers to be based on pre-clearance survey)	Medium – suitable germination trials not yet completed however this species is expected to be able to be germinated (Western Botanical, 2018)	<u>Can the values be defined and measured?</u> Yes - value can be measured <u>Operator experience/Evidence?</u> Varied – DBCA may undertake the offset if preferred, or Audalia consultants or local land care groups may be engaged <u>What is the type of vegetation being revegetated?</u> Woodland / shrubland	Expected to be ten years before any new individuals / populations become established	The exclusion zone provides a predicted 40% offset value for this species based on the EPBC Offset Calculator. This value increases to 55% if both protected areas are able to be established. The other primary offsets for this species are the re-establishment of impacted individuals and the provision of funds for the management of the Bremer Range PEC, which provides habitat for this species. These two other offsets are predicted to
					Provision of a 427 ha exclusion zone for areas within Audalia's <i>Mining Act 1978</i> tenure (combined areas	Low – exclusion zone would become a regulated boundary under the Ministerial	<u>Can the values be defined and measured?</u> Yes - value to <i>S. bremerense</i> can be measured <u>Operator experience/Evidence?</u>	Secures habitat upon issue of MS – no time delay	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
<p>searches of final proposed mine and infrastructure disturbance footprints</p> <ul style="list-style-type: none"> • Prepare and implement a Mine and Infrastructure Plan • Implement additional ground disturbance measures for any ground disturbance within population boundaries • Implement the Dust Management Plan • Implement preventive measures to minimise the risk and impact of hydrocarbon spills • Comply with Water Quality Protection Guidelines and guidance notes • Implement additional controls upslope of population boundaries 			<p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u></p> <p>N/A</p>	<p>Mining Act tenure</p> <p><u>Time Scale</u></p> <p>N/A</p> <p>According to the significance framework, residual impact is considered to be significant because a potential future specially protected species under the BC Act is impacted.</p>	<p>shown in red and blue in Figure 5) to protect 7.4 ha of sub-population extent</p> <p>The exclusion zone is to be excluded from all mining activity for 20 years or when Audalia relinquishes the associated <i>Mining Act 1978</i> tenements, whichever is the latter.</p>	<p>Statement if the Proposal was approved</p>	<p>N/A – exclusion zone only</p> <p><u>What is the type of vegetation being revegetated?</u></p> <p>N/A</p>		<p>meet the remaining offset requirements for this species, based on the EPBC offset calculator.</p> <p>The proposed research offset will also provide useful information about population extent, recovery from recent fires and rehabilitation methods for this species. This information will be able to be used to guide the ongoing conservation of this species.</p>
					<p>Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the areas shown in red in Figure 5).</p> <p>The protected area would overlap with the unmineralized portion of the exclusion zone detailed above and will provide additional protection for 7.4 ha of sub-population extent.</p>	<p>Low – this offset is subject to acceptance by DMIRS, however consultation in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely.</p>	<p><u>Can the values be defined and measured?</u></p> <p>Yes - value to <i>S. bremerense</i> can be measured</p> <p><u>Operator experience/Evidence?</u></p> <p>N/A – protected area only, refer below for management</p> <p><u>What is the type of vegetation being revegetated?</u></p> <p>N/A</p>	<p>Secures habitat upon agreement – no time delay</p>	
					<p>Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the area shown in yellow in Figure 5).</p> <p>The protected area is additional to the exclusion zone detailed above and will provide additional protection for 0.6</p>	<p>Medium – this offset is subject to acceptance by DMIRS and adjacent tenement holder. Consultation with DMIRS in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely, however it will require further discussions with</p>	<p><u>Can the values be defined and measured?</u></p> <p>Yes - value to <i>S. bremerense</i> can be measured</p> <p><u>Operator experience/Evidence?</u></p> <p>N/A – protected area only, refer below for management</p> <p><u>What is the type of vegetation being revegetated?</u></p> <p>N/A</p>	<p>Secures habitat upon agreement – no time delay</p>	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
					ha of sub-population extent.	the underlying tenement holder.			
					Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC, including significant flora populations	Low - an independent and transparent management authority is proposed to be developed in consultation with EPA, DBCA and local landcare groups.	<u>Can the values be defined and measured?</u> Yes - value to <i>S. bremerense</i> can be measured <u>Operator experience/Evidence?</u> The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups. The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations. <u>What is the type of vegetation being revegetated?</u> Bremer Range PEC	Approximately 2 years - the first payment is made within 12 months of the commencement of operations	
					Ongoing research: <ul style="list-style-type: none"> Ongoing germination trials Annual plant counts Regional searches after fire events Population health monitoring Rehabilitation trials Genetic studies 	Low – research sites would be located on Audalia Mining Act tenure and UCL	<u>Can the values be defined and measured?</u> Yes, there is limited information about population extent, recovery from recent fires and rehabilitation methods for this species therefore the research will provide value for ongoing conservation of this species. <u>Operator experience/Evidence?</u> Varied – DBCA may undertake some of the offset, Audalia consultants or local land care groups may also be engaged <u>What is the type of vegetation being revegetated?</u> N/A	Expected to be several years before the results provide data that is useful for the protection of the species.	
Bremer Range PEC - 285 ha of disturbance Reduction in PEC health as a result of indirect impacts	Avoid: Not able to avoid impacts Minimise: <ul style="list-style-type: none"> Implement industry best practice management measures for flora and vegetation Conduct additional significant flora searches of final proposed mine and infrastructure disturbance footprints Prepare and implement a Mine and Infrastructure Plan 	<ul style="list-style-type: none"> Implement Rehabilitation Plan Implement MCP All disturbance areas apart from the mine pit and TSF slopes will be respread with topsoil (or ripped and seeded if topsoil is no longer viable) and rehabilitated Other Priority Flora will be included in the rehabilitation seed mix if seed is available and germination is likely to be successful 	<u>Can the environmental values be rehabilitated/Evidence?</u> Partially - disturbance of mine pit and abandonment bund cannot be rehabilitated back to previous value, however remaining disturbance (>235 ha) is expected to be able to be rehabilitated such that the values of the PEC is reinstated <u>Operator experience in undertaking rehabilitation?</u> Audalia will utilise experienced operators to conduct the rehabilitation works	<u>Extent</u> 285 ha (0.32% of extent) <u>Quality</u> Vegetation is in good to very good condition <u>Conservation Significance</u> PEC <u>Land Tenure</u> Mostly UCL <u>Time Scale</u> 13 – 23 years	Provision of a 427 ha exclusion zone for areas within Audalia's <i>Mining Act 1978</i> tenure (combined areas shown in red and blue in Figure 5) to protect 427 ha of the PEC The exclusion zone is to be excluded from all mining activity for 20 years or when Audalia relinquishes the	Low – exclusion zone would become a regulated boundary under the Ministerial Statement if the Proposal was approved	<u>Can the values be defined and measured?</u> Yes - value to PEC can be measured <u>Operator experience/Evidence?</u> N/A – exclusion zone only <u>What is the type of vegetation being revegetated?</u> N/A	Secures habitat upon issue of Ministerial Statement – no time delay	The exclusion zone provides a predicted 21% offset value for this PEC based on the EPBC Offset Calculator. This value increases to 33% if both protected areas are able to be established. The other primary offset for this species is the provision of funds for the management of the PEC. This offset is predicted to meet the remaining offset requirements for this PEC, based on similar funding requirements placed on



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
	<ul style="list-style-type: none"> Implement the Dust Management Plan Ensure all surface water crossings are designed to minimise the potential for erosion or sedimentation of downstream vegetation Implement preventive measures to minimise the risk and impact of hydrocarbon spills Comply with Water Quality Protection Guidelines and guidance notes 	<ul style="list-style-type: none"> Flowering plants will be included in seeding to ensure pollinator habitat is adequately reinstated All depressions will be shaped to prevent the formation of new semi-permanent water sources All surface water drainage diversions will be rehabilitated to a natural form All surface water crossings will be reinstated by removing drainage infrastructure and reshaping as required 	<p><u>What is the type of vegetation being rehabilitated?</u> Woodland and shrubland</p> <p><u>Time lag?</u> Expected to be up to ten years before any rehabilitation areas become established</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> There are very few rehabilitation sites in the area however mine site rehabilitation methods are well established</p>	According to the significance framework, residual impact is considered to be significant because a proposed nature reserve is impacted.	associated <i>Mining Act 1978</i> tenements, whichever is the latter.				PEC offsets in other parts of WA.
					Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the areas shown in red in Figure 5). The protected area would overlap with the unmineralized portion of the exclusion zone detailed above and will provide additional protection for 275 ha of the PEC.	Low – this offset is subject to acceptance by DMIRS, however consultation in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely.	<u>Can the values be defined and measured?</u> Yes - value to PEC can be measured <u>Operator experience/Evidence?</u> N/A – protected area only, refer below for management <u>What is the type of vegetation being revegetated?</u> N/A	Secures habitat upon agreement – no time delay	
					Provision of funding and support (to address any DMIRS concerns) for the development of a protected area (i.e. under Section 19 of the <i>Mining Act 1978</i>) for the area shown in yellow in Figure 5). The protected area is additional to the exclusion zone detailed above and will provide additional protection for 233 ha of the PEC.	Medium – this offset is subject to acceptance by DMIRS and adjacent tenement holder. Consultation with DMIRS in September 2021 indicated that this proposed area did not contain mineralisation and DMIRS acceptance was likely, however it will require further discussions with the underlying tenement holder.	<u>Can the values be defined and measured?</u> Yes - value to PEC can be measured <u>Operator experience/Evidence?</u> N/A – protected area only, refer below for management <u>What is the type of vegetation being revegetated?</u> N/A	Secures habitat upon agreement – no time delay	
					Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC	Low - an independent and transparent management authority is proposed to be developed in consultation with EPA, DBCA and local landcare groups.	<u>Can the values be defined and measured?</u> Yes - value to PEC can be measured <u>Operator experience/Evidence?</u> The funding is to be paid to an independent and transparent management authority which will be developed in	Approximately 2 years - the first payment is be made within 12 months of the commencement of operations	



Existing Environment / Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and Minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely Offset Success	Time Lag	Offset Quantification
							consultation with EPA, DBCA and local landcare groups. The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations. <u>What is the type of vegetation being revegetated?</u> Bremer Range PEC		



5.3 OFFSET PRINCIPLES

In WA, government decision making processes in relation to the use of environmental offsets are underpinned by six principles. These are set out in the Environmental Offsets Policy (Government of WA, 2011). The Proposal and proposed offset has been assessed against each of these principles, provided in Table 5.

Table 5: Assessment of the proposed offset against the six principles

No.	Principle	Assessment outcome
1	Environmental offsets will only be considered after avoidance and mitigation options have been pursued.	Audalia has applied the mitigation hierarchy by identifying measures to avoid, minimise and rehabilitate. Audalia's primary measure to meet this policy requirements was site selection and design, which avoided an minimised disturbance within several key flora habitat areas. The Development Envelope was reduced via a Section 43A accepted by the EPA on the 4 November 2020.
2	Environmental offsets are not appropriate for all projects.	It is acknowledged that offsets are not appropriate for all projects. As the Proposal may result in significant residual impacts on threatened and priority flora species, and the Bremer Range PEC, environmental offsets are considered to be required. The offsets proposed are considered to be appropriate to counterbalance the residual impacts on these environmental values.
3	Environmental offsets will be cost effective, as well as relevant and proportionate to the significance of the environmental value being impacted.	The proposed offsets have been designed to be cost-effective by targeting the retention, conservation and management of existing environmental values, and re-establishment of <i>E. rhomboidei</i> and <i>S. bremerense</i> . The offsets are cost-effective as Audalia will be active in the area during the duration of the offset implementation so logistical costs will be minimal. The required germination studies and implementation is an extension of germination work already commissioned by Audalia (through DBCA) therefore Audalia has reasonable knowledge of the associated costs. The use of the proposed offsets for the Proposal is considered to be relevant and proportionate to the significance of the environmental value being impacted.
4	Environmental offsets will be based on sound environmental information and knowledge.	The proposed offsets have been designed to be cost-effective by targeting the retention, conservation and management of existing environmental values, and re-establishment of <i>E. rhomboidei</i> and <i>S. bremerense</i> . The local and regional values of the areas to be retained for conservation are well known given the level of ecological surveys and studies that Audalia have completed in the area. Although initial advice from Western Botanical (2018) indicates that germination is likely to be achievable, Audalia has committed to additional germination trials to ensure the re-establishment of <i>E. rhomboidei</i> and <i>S. bremerense</i> is based on sound environmental knowledge..
5	Environmental offsets will be applied within a framework of adaptive management.	The offset combination of exclusion zone / protected areas, management funding, re-establishment of flora species and research will provide significant opportunities within the framework of adaptive management. The research will inform management and re-establishment planning and the implementation of an independent expert management authority will allow new, more effective management techniques to be incorporated as these become best practice.
6	Environmental offsets will be focused on longer term strategic outcomes.	The proposed offsets have been designed to utilise improved information as it becomes available during the first years of operation at the Proposal. This allows information and knowledge captured during operation (regarding germination and revegetation) to be used to inform strategies to achieve solid strategic outcomes. The proposed funding for the management of the Bremer Range PEC is intended to address both immediate and long-term protection concerns for the PEC.



6 OBJECTIVES, TARGETS AND COMPLETION CRITERIA

Table 6 sets out the objectives, targets and completion criteria for the proposed offsets.

Table 6: Objectives, targets and completion criteria

Objective	Target	Completion Criteria
Counterbalance the significant residual impact to <i>M. aquilonaris</i> as a result of implementation of the Proposal.	The proposed exclusion zone is established prior to implementation of the Proposal	Exclusion zone included in Ministerial Statement if the Proposal is approved
	Previously disturbed vegetation within the <i>M. aquilonaris</i> critical habitat boundary (access tracks) is revegetated	DBCA acceptance of revegetation area as suitably rehabilitated
	To maintain and / or improve <i>M. aquilonaris</i> critical habitat	<ul style="list-style-type: none"> • Approval of Offset Strategy • Independent management authority developed and accepted by EPA and DBCA • DBCA agreement on proposed management actions
	Improve the scientific knowledge of <i>M. aquilonaris</i>	<p>The following ongoing <i>M. aquilonaris</i> research is conducted over the life of the Proposal (unless completed earlier):</p> <ul style="list-style-type: none"> • Ongoing germination trials • Annual plant counts • Regional searches after fire events • Sub-population health monitoring • Rehabilitation trials • Genetic studies
Counterbalance the significant residual impacts to <i>E. rhomboidea</i> and <i>S. bremerense</i> as a result of implementation of the Proposal.	The proposed exclusion zone is established prior to implementation of the Proposal	Exclusion zone included in Ministerial Statement if the Proposal is approved
	The proposed protected areas are added to conservation estate or otherwise protected (i.e. under Section 19 of the Mining Act)	<ul style="list-style-type: none"> • Conservation and Parks Commission acceptance of the Offset Site into conservation estate or DMIRS protect site under Section 19 of the Mining Act • Approval of Offset Strategy
	To maintain and / or improve local <i>E. rhomboidea</i> and <i>S. bremerense</i> populations	<ul style="list-style-type: none"> • Approval of Offset Strategy • Independent management authority developed and accepted by EPA and DBCA • DBCA agreement on proposed management actions
	Improve the scientific knowledge of <i>E. rhomboidea</i> and <i>S. bremerense</i>	<p>The following ongoing <i>E. rhomboidea</i> and <i>S. bremerense</i> research is conducted over the life of the Proposal (unless completed earlier):</p> <ul style="list-style-type: none"> • Ongoing germination trials • Annual plant counts • Regional searches after fire events • Sub-population health monitoring • Rehabilitation trials • Genetic studies



Objective	Target	Completion Criteria
	All impacted <i>E. rhomboidea</i> and <i>S. bremerense</i> individuals to be replaced with established individuals	Successful establishment of all impacted <i>E. rhomboidea</i> and <i>S. bremerense</i> individuals (numbers to be based on pre-clearance survey) to rehabilitation areas
Counterbalance the significant residual impact to the Bremer Range PEC as a result of implementation of the Proposal.	To maintain and / or improve the values of the Bremer Range PEC	<ul style="list-style-type: none"> • Approval of Offset Strategy • Independent management authority developed and accepted by EPA and DBCA • DBCA agreement on proposed management actions



7 MONITORING

Routine monitoring is necessary to ensure the proposed offsets are effective in counterbalancing the significant residual impacts on the environmental values. Table 7 provides a framework for the monitoring required, however final monitoring requirements and timings will be determined during agreements with the Conservation and Parks Commission / DBCA or other relevant parties.

Table 7: Offset monitoring schedule

Offset	Monitoring	Timing
Development of exclusion zone and protected areas (i.e. under Section 19 of the Mining Act) (Figure 5)	Plant counts within each sub-population	Annually
	Searches throughout protected area for <i>E. rhomboidea</i> and <i>S. bremerense</i>	Approximately 12 months after a fire event
	Sub-population health monitoring	Annually
	Weed infestation, including: <ul style="list-style-type: none"> Area of impact Species list Location of weed infestation 	Annually
	Evidence of access by public or introduced fauna	Annually
	Evidence of unauthorised disturbance (access etc.)	Annually
Revegetation of previously disturbed vegetation within the <i>M. aquilonaris</i> critical habitat boundary (access tracks)	Revegetation area health monitoring	Every 6 months for the first 3 years following rehabilitation, then annually
	Weed infestation, including: <ul style="list-style-type: none"> Area of impact Species list Location of weed infestation 	Every 6 months for the first 3 years following rehabilitation, then annually
	Evidence of access by public or introduced fauna	Annually
	Evidence of unauthorised disturbance (access etc.)	Annually
Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC, including significant flora populations	To be developed by independent management authority on advice from DBCA	To be developed by independent management authority on advice from DBCA
Ongoing <i>M. aquilonaris</i> , <i>E. rhomboidea</i> and <i>S. bremerense</i> research	Germination trials – reporting results	At least annually
	Plant counts within each local sub-population	Annually
	Local searches of optimal habitat for <i>M. aquilonaris</i> , <i>E. rhomboidea</i> and <i>S. bremerense</i>	Approximately 12 months after a fire event
	Local sub-population health monitoring	Annually
	Rehabilitation trial area health monitoring	At least every 6 months for the duration of the trial



Offset	Monitoring	Timing
	Genetic studies – reporting results	At completion
Successful reestablishment of all impacted <i>E. rhomboidea</i> and <i>S. bremerense</i> individuals (numbers to be based on pre-clearance survey) to rehabilitation areas	Germination trials – reporting results	At least annually
	Rehabilitation trial area health monitoring	At least every 6 months for the duration of the trial
	Target plant counts within each re-established sub-population	Annually
	Species composition within each re-established sub-population	Annually
	Translocated sub-population health monitoring	At least every 6 months until established, then annually
	Weed infestation, including: <ul style="list-style-type: none"> • Area of impact • Species list • Location of weed infestation 	Every 6 months for the first 3 years following seeding, then annually
	Evidence of access by public or introduced fauna	Annually
	Evidence of unauthorised disturbance (access etc.)	Annually



8 FUNDING ARRANGEMENTS

Audalia will provide funding for the following:

- The development of an exclusion zone and or other protected area (i.e. under Section 19 of the Mining Act) shown in Figure 5;
- Revegetation of previously disturbed vegetation within the *M. aquilonaris* critical habitat boundary (access tracks);
- \$500,000 (based on similar offset requirements for PEC impacts in WA per hectare) for ongoing conservation management within the Bremer Range PEC, including significant flora populations. Audalia proposes to contribute \$100,000 per year for 5 years, with the first payment made within 12 months of the commencement of operations. The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups;
- Administration costs associated with establishment of the management authority described above;
- Ongoing *M. aquilonaris*, *E. rhomboidea* and *S. bremerense* research, including:
 - Ongoing germination trials;
 - Annual plant counts;
 - Regional searches after fire events;
 - Sub-population health monitoring;
 - Rehabilitation trials;
 - Genetic studies; and
- The re-establishment of at least the same number of impacted *E. rhomboidea* and *S. bremerense* individuals to rehabilitation areas.



9 MANAGEMENT, ROLES AND RESPONSIBILITIES

Table 8 details the management structure proposed for each offset.

Table 8: Management of proposed offsets

Offset	Management / Responsibility
Development of exclusion zone and protected areas (i.e. under Section 19 of the Mining Act) (Figure 5)	Audalia will be responsible for demarcating the exclusion zone as defined in the Ministerial Statement if the Proposal is approved. If deemed suitable, Audalia and DMIRS will be responsible for the establishment of a protected area under Section 19 of the Mining Act. The management of these areas is described in the management offset below.
Revegetation of previously disturbed vegetation within the <i>M. aquilonaris</i> critical habitat boundary (access tracks)	If DBCA deems it suitable, Audalia would be an appropriate management authority to cut off the current access to these tracks. If active rehabilitation works are required (i.e. natural revegetation is not sufficient) then DBCA or specialised rehabilitation consultants could manage the rehabilitation of the tracks that lie within the critical habitat boundary.
Provision of \$500,000 for ongoing conservation management within the Bremer Range PEC, including significant flora populations	The funding is to be paid to an independent and transparent management authority which will be developed in consultation with EPA, DBCA and local landcare groups. The management authority will be responsible for allocating the funds to manage conservation values within the Bremer Range PEC and associated values it contains, such as significant flora populations.
Ongoing <i>M. aquilonaris</i> , <i>E. rhomboidea</i> and <i>S. bremerense</i> research: <ul style="list-style-type: none"> • Ongoing germination trials • Annual plant counts • Regional searches after fire events • Sub-population health monitoring • Rehabilitation trials • Genetic studies 	Audalia has commissioned significant research work on these species to inform the EIA for the Proposal. It is proposed that Audalia continue to manage the longer-term portions of this research (under direction and with advice from DBCA) such as germination, changes to plant numbers, health and rehabilitation trials.
Successful establishment in rehabilitation areas of at least the same number of <i>E. rhomboidea</i> and <i>S. bremerense</i> individuals as were impacted by the Proposal (numbers to be based on pre-clearance survey)	Audalia and DBCA are currently undertaking germination trials for <i>E. rhomboidea</i> and <i>S. bremerense</i> to allow the replacement of any individuals that are required to be disturbed for the Proposal. These germination trials will continue to inform the target regrowth and establishment of these species. Once confirmed it is proposed that Audalia would manage the rehabilitation process on site in accordance with their Rehabilitation Plan and MCP (under direction and with advice from DBCA)



Table 9 identifies the key roles and responsibilities for the implementation of offsets.

Table 9: Roles and responsibilities

Role	Responsibility
Audalia (corporate)	Development of the Offset Strategy, funding of offset works and preserving the exclusion zone and any protected areas that are established
Independent management authority (to be developed)	Developing and implementing management and monitoring actions for the usage of the management fund
DBCA or suitable landcare group	Provision of advice and guidance on management and monitoring actions as required
Audalia Environment / Conservation Manager	Overseeing the monitoring, management and reporting on the status of the proposed offsets under Audalia's management
Audalia Site Manager	Onsite compliance with the Offset Strategy
Technical Officers	Carrying out routine monitoring and management



10 REVIEW AND REVISION

This Offset Strategy is to be reviewed at least every five years, or more frequently under the following circumstances:

- Following a significant environmental incident that threatens the success of the proposed offsets;
- When there is a need to improve performance in an area of environmental conservation;
- When there are changes to activities that are being managed under this Offset Strategy; or
- When there are new activities that should be managed under this Offset Strategy.

The review is to assess whether the Offset Strategy is achieving its objectives and the requirements of approval conditions. The review is to consider environmental monitoring records, response actions taken and the results of any internal and external audits. During the review process, the reasons for varying the Offset Strategy are to be documented. The review may be initiated by any party that has a management responsibility for the implementation of the offsets.



11 CONCLUSION

Audalia has assessed the impacts of the Proposal against the Residual Impact Significance Model (EPA, 2014a) and has determined that the Proposal is likely to result in a significant residual impact to several environmental values.

If approved, Audalia predicts that offset conditions will be included in the Ministerial Statement to counterbalance the significant residual impacts of the Proposal. This draft Offset Strategy provides additional detail regarding the offsets proposed by Audalia for the Proposal, however these offsets may change pending further discussions with EPA Services, DBCA, DMIRS and other relevant stakeholders. It is therefore anticipated that a final detailed version of this Offset Strategy will be a pre-implementation condition in the Ministerial Statement (upon approval).

The suitability of the proposed offsets have been assessed against the six offset principles set out in the Environmental Offsets Policy (Government of WA, 2011) and the WA Offsets Template. The Commonwealth offsets calculator was used where relevant to provide some context to the scale of the offsets. Based on this assessment the proposed offsets are considered to be relevant and proportionate to the significance of the environmental value being impacted.



12 ABBREVIATIONS

Term	Meaning
Audalia	Audalia Resources Limited
BC Act	<i>Biodiversity Conservation act 2016 (WA)</i>
DBCA	Department of Biodiversity, Conservation and Attractions
DE	Development Envelope
DMIRS	Department of Mines, Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPA	Environmental Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
ERD	Environmental Review Document
ESD	Environmental Scoping Document
ha	Hectare
km	Kilometre
MS	Ministerial Statement
PEC	Priority Ecological Community
UCL	Unallocated Crown Land
WA	Western Australia

