Sinosteel Midwest Corporation Limited

Blue Hills Mungada East Expansion Project

Acacia woodmaniorum

Conservation Management Plan Outline

April 2016

DRAFT

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Abbreviations

Abbreviation	Description
BIF	Banded Iron Formation
CMP	Conservation Management Plan
CMSR	Centre for Mine Site Restoration
DPaW	Department of Parks and Wildlife
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
OEPA	Office of the Environmental Protection Authority
PEC	Priority Ecological Community

1 Introduction

A Public Environmental Review has been prepared to assess the potential environmental impacts of the proposed Blue Hills Mungada East Expansion Project (the Proposal). As part of this assessment, an offset is proposed to provide environmental benefits to address the residual significant environmental impacts of the Proposal. SMC has concluded that a residual significant environmental impact to the Declared Rare Flora species *Acacia woodmaniorum* will occur if the Proposal is implemented. The primary component of the offset is the development and implementation of a Conservation Management Plan (CMP) for *Acacia woodmaniorum*. The CMP will include actions which are specifically targeted at the rehabilitation of *Acacia woodmaniorum*.

This document provides an outline of the management actions that constitute and will be further detailed in the proposed *Acacia woodmaniorum* CMP. The CMP will be implemented over the life of the mining project, currently estimated at two to three years, until *Acacia woodmaniorum* has been re-established successfully.

2 Offset requirements

Banded Iron Formation ranges are recognised by the Environmental Protection Authority (EPA) as areas of high environmental value, supporting species and ecological communities that often have highly restricted distributions. In the case of SMC's tenements, one threatened and a number of priority flora occur in association with Mungada Ridge. Many of these will not be impacted, however in the case of one species, *Acacia woodmaniorum*, the residual impact has been identified as significant and will require an offset.

3 Objective of the Conservation Management Plan

The objective of the CMP is to re-establish a self-sustaining population total of no less than 1,739 *Acacia woodmaniorum* plants.

4 Proposed Offsets

Direct Offset

In order to offset the direct impacts to *Acacia woodmaniorum*, SMC is proposing the re-establishment of 1,739 self-sustaining plants (100% of the total number that will be taken). Re-establishment of *Acacia woodmaniorum* is proposed by the following methods:

1. Translocation of whole plants;
2. Broadcasting of seed; and
3. Planting of green-stock (propagated in a nursery from cuttings and seed collected in the proposed mine clearing area and or on Mungada Ridge).

The area of impact to *Acacia woodmaniorum* is approximately 2.4 ha. SMC will re-establish at least 1,739 plants in a similar size area on the rehabilitated Mungada East waste dump. The small size of the proposed re-establishment area allows for more intensive management. For example, irrigation of transplanted plants, feral animals and weeds can be more easily managed in such a small area.

Indirect Offset

SMC will also commit to five years of scientific research through the Australian Research Council, Centre for Mine Site Restoration (CMSR), as an indirect offset for the Proposal. SMC is a partner in the CMSR research project and this will allow SMC to focus studies on restoring *Acacia woodmaniorum*, and other flora species requiring restoration. The CMSR project will provide scientific resources that can be directly used to target research to underpin the successful re-establishment of *Acacia woodmaniorum*.

The CMSR project will commence in May 2017. SMC envisages that rehabilitation will take five years from the implementation of mine closure. If the Proposal was to be implemented in late 2017, approximately three years of research would have been completed under the CMSR project by the time mine closure / rehabilitation commences. A further two years of the CMSR project will run in parallel with the initial stages of rehabilitation. The remaining three years of rehabilitation will involve monitoring of

vegetation to assess restoration success and if required, the implementation of actions to ensure completion criteria are met.

5 Management of Threats to *Acacia woodmaniorum*

In order to ensure that the re-establishment of *Acacia woodmaniorum* has the best possible chance of success, SMC is proposing to manage a number of threatening processes. Threatening processes that could affect *Acacia woodmaniorum* within the proposed management area, apart from mining activities, include the introduction of new weed species and an increase in weed numbers, changes to fire regimes and feral animals. Management actions are proposed during the mining and rehabilitation phases to reduce the risk from these threats.

Targets

- Decrease the abundance and distribution of weeds in the proposed management area;
- Minimise the risk of bushfire; and
- Reduce grazing and trampling pressure from feral animals on *Acacia woodmaniorum*.

Weed species and treatment

One weed of National Environmental Significance, which is also a Declared Pest in WA has been recorded in SMC's Blue Hills tenements, *Echium plantagineum* (Paterson's Curse). This species is targeted for biological control in Australia and is also listed as a Declared Pest in WA, but not specifically in the Shire of Perenjori. Two other species that are listed as Declared Pests in WA have been recorded in the management area and surrounds; *Galium aparine* (Cleavers) and *Galium spurium* (False Cleavers).

These three species have been recorded around the existing Blue Hills mine, but not within the area proposed to be managed. However, if these species are found to occur in the proposed management area during the duration of the Proposal, actions will be undertaken to treat the plants for removal. This will involve appropriate herbicide application where necessary, or other forms of weed removal.

Another eighteen environmental weed species have been recorded within the in SMC's Blue Hills tenements:

- *Arctotheca calendula*
- *Cleretum papulosum* subsp. *papulosum*
- *Cuscuta epithymum*
- *Cuscuta planiflora*
- *Ehrharta longiflora*
- *Erodium botrys*
- *Erodium cicutarium*
- *Hypochaeris radicata*
- *Lamarckia aurea*
- *Mesembryanthemum nodiflorum*
- *Mesembryanthemum* sp.
- *Pentameris airoides subsp. airoides*
- *Rostraria pumila*
- *Sisymbrium irio*
- *Sonchus oleraceus*

- *Spergula pentandra*
- *Stellaria media*
- *Urospermum picroides*

DPaW has assigned ten of these species a low (L) weed species ranking which indicates they are to be eradicated, controlled or contained. The remainder are assigned to be either negligible (N) requiring no action to be taken, or they require further assessment before they can be ranked. Those species ranked as low (L) will be prioritised for treatment and removal. This will involve appropriate herbicide application where necessary or other forms of weed removal to be determined in consultation with Parks and Wildlife.

Actions have also been identified in the Environmental Management Plan which will serve to minimise the risk of weed invasion and weed spread from the development envelope to the proposed management area.

Fire

Management actions detailed in the EMP will be critical for ensuring that the risk of fire from mining related activities affecting conservation areas is minimised. These include:

- site personnel training;
- hot work isolation and permit requirements;
- designated fire breaks; and
- installation of fire suppression equipment.

In addition, weed management identified above will contribute to a reduced fire risk to environmental values.

In the case of fire, the proposed management area will subsequently become a high priority for weed monitoring and management. Post-fire weed germination and establishment monitoring will be conducted to inform weed control activities.

Feral animals

There is currently little evidence of a problem with feral animals within SMC's Blue Hills tenements. In protecting *Acacia woodmaniorum*, it is unlikely that rabbits would be of concern given that they do not generally inhabit rocky areas such as Mungada Ridge. It is possible that, in the future, goat numbers could increase to the point that they are affecting the vegetation of the range, including conservation significant flora.

Control of any feral animal populations will be undertaken in response to regular monitoring. Trapping and removal of goats will occur if numbers are increasing and/or are deemed to be having a detrimental impact on *Acacia woodmaniorum*.

Table 1: Indicative management measures for the proposed management area

Action	Timing
Prioritise weed species based on existing weed data and develop a strategy for treatment.	Prior to commencement of mining and closure period.
Targeted management of high priority weed species.	On-going over the life of the mine and closure period.
Weed monitoring.	Annual over the life of the mine and closure period.
In the case of fire within the proposed management area, undertake post-fire weed monitoring and management.	Post-fire
Monitor feral animal populations to enable adaptive management response.	On-going over the life of the mine and closure period.
Goat shooting on an as needs basis.	On-going over the life of the mine and closure period.
Establish and maintain feral goat traps where goat presence increases to a level that may cause a decrease in the condition of *Acacia woodmaniorum*.	On-going over the life of the mine and closure period.

It should be noted that there are many actions proposed to be undertaken within the development envelope that will also serve to mitigate and manage the environmental impacts of mining activities as detailed in the Blue Hills Environmental Management Plan (EMP) and Conservation Significant Flora and Ecological Communities Management Plan.

Implementation and cost

Sinosteel will consult with Parks and Wildlife prior to implementing the management actions identified with a view to developing a site specific management plan. The estimated cost for SMC to implement the above will be $300,000 over the life of the mine.

6 Monitoring

In order to assess progress against the targets identified in Section 4, annual vegetation condition assessments using quadrats, including weed surveys, will be undertaken. This aligns with existing requirements to undertake a vegetation monitoring program, which could be expanded if required to incorporate this monitoring.

This, along with the monitoring of weeds and feral animals will help to inform the implementation of management actions using an adaptive approach.

7 Contingencies

Should monitoring indicate there is increase in impacts of threatening processes, the following actions would be implemented:

Weeds

- review location and abundance;
- undertake weed control as appropriate;
- investigate potential causes/vectors; and
- establish quarantine areas(s) for weeds and implement additional controls as and if appropriate.

Fire

- report fire;
- immediately extinguish the fire, prioritising protection of Threatened flora occurrences;
- investigate cause;
- map burnt areas; and
- develop rehabilitation approach for burnt area if required.

Feral animals

- investigate cause of increase in occurrence;
- prepare strategy for addressing cause where appropriate; and
- undertake feral animal control program as required.

8 Reporting

SMC would provide a regular report to the OEPA of the effectiveness of its translocation in the annual report.