

Upper Hunter Mining Dialogue

Final and Temporary Rehabilitation Principles and Commitments

2020 Results and Commentary

REPORT BY MALABAR RESOURCES (Maxwell
Infrastructure)
APRIL 2021



Final and Temporary Rehabilitation Principles and Commitments

Introduction

The nine coal producing companies of the Upper Hunter, through the Upper Hunter Mining Dialogue (the Dialogue), have agreed to this set of principles and commitments regarding final and temporary rehabilitation. The Rehabilitation Principles and Commitments have been developed with advice and guidance from the Dialogue's Joint Environment Working Group, which comprises industry, local and state government, interest groups, and community stakeholders.

The Upper Hunter Mining Dialogue has two goals regarding land management:

- *Goal 1 - To decrease the time that disturbed areas are left without final or temporary cover, recognising that different mining operations are at different points in rehabilitation.*
- *Goal 2 - To achieve a consistent level of best practice, quality, integrated rehabilitation – both within the industry and with future land uses - across the Upper Hunter and to be a responsible steward of the land.*

The primary focus of the Rehabilitation Principles and Commitments is to contribute to Goal 1. Several other projects are underway to progress Goal 1. The industry participants in the UHMD acknowledge the importance of clear goals for rehabilitation developed through consultation with community and regulators, continuing to improve rehabilitation techniques and sharing innovative and successful rehabilitation techniques within the industry. Projects under Goal 2 focus on continuous improvement of rehabilitation practices.

Principles and Commitments

The Upper Hunter coal producers will publicly report against the Principles and Commitments on an annual basis. The reporting will be aggregated by the NSW Minerals Council and shared with the community. Table 1 sets out the six principles and provides a description of how each will be reported against. Contextual information is also sought from industry regarding variations in their annual reporting, as well as an opportunity to provide commentary on their future rehabilitation targets for the years ahead.

Table 1 – Principles and Commitments

Principle	Reporting
<p>Principle 1 – Include rehabilitation planning in mine planning</p>	<p><i>Narrative</i> – how has this been done in the last period</p>
<p><i>Planning for rehabilitation should be integrated into the mine planning process and should include allocating adequate and dedicated resources to achieve the planned rehabilitation outcomes.</i></p>	<p>Maxwell Ventures (Management) Pty Ltd, a wholly owned subsidiary of Malabar Resources (Malabar), owns and operates the Maxwell Infrastructure site (formerly Drayton Mine) located on Thomas Mitchell Drive, Muswellbrook. Malabar purchased 100 per cent of the site from Anglo American and Anglo American's joint venture partners and took control on 26 February 2018.</p> <p>The Maxwell Infrastructure site is currently in the closure phase of the mine operations with rehabilitation activities along with ancillary activities including upkeep of roads and maintenance of equipment progressing.</p> <p>Rehabilitation at the Maxwell Infrastructure site is managed in accordance with the Mining Operations Plan (MOP) and Rehabilitation and Offset Management Plan.</p> <p>The key objectives for post rehabilitation land use are:</p> <ul style="list-style-type: none"> • To progressively rehabilitate disturbed areas with the aim of establishing as much of original floristic diversity as possible. • To create a stable, free-draining post mining landform which is compatible with the surrounding landscape and which is capable of a productive land use that achieves a land capability to equal that of pre mining conditions. • To create a post-mining landform which enhances the local and regional habitat corridor.
<p>Principle 2 – Undertake progressive rehabilitation</p>	<p><i>Narrative</i> – how has this been implemented in the last twelve months</p>
<p><i>Companies should undertake rehabilitation progressively, with the objective of ensuring that rehabilitation is as close as possible to active mining.</i></p>	<p>During the reporting period, final landform development, growth medium development and remedial works were the focus of operations at the Maxwell Infrastructure site.</p>
<p>Principle 3 – Minimise time that disturbed areas are left without vegetation</p>	<p><i>Narrative</i> – how has this been implemented in the last twelve months</p>

Principle	Reporting
<p><i>Companies should actively seek to minimise the time that land is left without cover during mining. This should include:</i></p> <ul style="list-style-type: none"> ▪ <i>Taking steps to ensure that rehabilitation is commenced within 12 months of land becoming available for rehabilitation</i> ▪ <i>Utilising methods of temporary rehabilitation¹, such as aerial seeding of overburden and other disturbed areas where permanent rehabilitation has not commenced.</i> 	<p>During the reporting period, reshaping activities of overburden, redundant roads and exposed areas were undertaken by D11 dozers. Where possible, landform designs were modified to more natural landscapes, incorporating dams and natural drainage lines.</p> <p>At least two metres of inert material was then placed on the reshaped areas that were assessed as being prone to spontaneous combustion. Inert material has been stockpiled around the site for use in the management of spontaneous combustion. Approximately 11 hectares of land was capped with inert material prior to the application of soil ameliorants and seeding.</p> <p>Biosolids, which are a by-product of the wastewater treatment process, were used as a soil ameliorant in pasture areas. Compost made up of garden organics and biosolids was used as a soil ameliorant in some woodland areas where topsoil was limited. Gypsum was applied to all areas at a rate of 5 tonnes per hectare using a mix of fine and coarse grade recycled gypsum product.</p> <p>Both woodland and pasture seed mixes and rates were continually reviewed during the reporting period.</p> <p>The pasture seed mix was consistent with that used during the previous reporting period. Cover crop rates were reduced to allow the establishment of perennial species. The pasture seed was blended with 200 kilograms per hectare of fertiliser and applied with a tractor and seeder combination.</p> <p>The woodland seed mix was based on a Spotted Gum-Ironbark-Grey Box Woodland. The seed mix targeted species that were more likely to germinate and successfully grow using the methods and equipment available.</p> <p>Two tree planting programs were undertaken during the reporting period. The programs targeted a total of 49 hectares of existing mine rehabilitation within the conceptual woodland corridor</p> <p>The culling of kangaroos was undertaken during the reporting period to reduce grazing pressure and</p>

¹ Temporary rehabilitation describes reshaping, revegetation and other rehabilitation techniques that are used for purposes other than final rehabilitation. This includes such initiatives as seeding overburden emplacement areas to reduce erosion, which are only temporary.

Principle	Reporting
	<p>minimise the impact to native groundcover species from the digging of day beds under trees and shrubs in rehabilitation areas.</p> <p>A weed control program targeted Galenia, Prickly Pear, Creeping Pear and Golden Wreath Wattle was implemented during the reporting period.</p>
<p>Principle 4 – Prioritise areas of rehabilitation and temporary cover to reduce impacts</p>	<p><i>Narrative</i> – how has this been implemented in the last twelve months</p>
<p><i>Companies should prioritise rehabilitation and temporary cover in those areas where leaving land exposed will have the most impact. The following areas should be considered to have priority:</i></p> <ul style="list-style-type: none"> ▪ <i>Areas that have the greatest impact on visual amenity, such as areas that face townships, residences, or the highway</i> ▪ <i>Areas that have the potential to generate dust leaving the site</i> ▪ <i>Areas that are important for biodiversity, such as rehabilitation adjoining or providing connectivity to remnant vegetation.</i> 	<p>As Above</p>
<p>Principle 5 – Meet target for rehabilitation progress identified in the Mining Operations Plan</p>	<p><i>Quantitative</i> – report MOP target and actual rehabilitation</p> <p><i>Narrative</i> – explanation of performance</p>
<p><i>Each company should meet the annual target for rehabilitation quantity (area) set in the Mining Operations Plans for each of its mines.</i></p>	<p>Although there were no new areas of rehabilitation identified in the approved MOP for completion in 2020, Maxwell Infrastructure completed 34 hectares of new rehabilitation across seven areas of the site.</p> <p>Of the 34 hectares, 12 hectares were seeded to woodland rehabilitation and 22 hectares were seeded to pasture rehabilitation.</p>
<p>Principle 6 – Set quality targets for rehabilitation in the Mining Operations Plan and implement a monitoring program to measure performance</p>	<p><i>Narrative</i> – summary of quality targets for the various rehabilitation types; and summary of monitoring program scope and status.</p>

Principle	Reporting
<p><i>Each company should include quality targets for the various types of rehabilitation in the Mining Operations Plan for each of its mines. A monitoring program to measure the performance of rehabilitation areas against the quality targets should be implemented at each of its mines.</i></p>	<p>Biodiversity at the Maxwell Infrastructure site and its offset areas is managed in accordance with the Flora and Fauna Management Plan and the Rehabilitation and Offset Management Plan.</p> <p>Routine ecological monitoring is conducted across Maxwell Infrastructure’s offset areas and rehabilitated lands.</p> <p>Ecological monitoring was undertaken in October 2020. Monitoring consisted of biometric vegetation sampling, assessment of pest animals and comparison against closure criteria.</p> <p>The regeneration of species from all structural layers was recorded at all reference sites monitored during the reporting period and species composition was generally similar to previous years. The total cover of invasive weeds remained below the closure criteria in the Northern Offset, with a reduction in weed coverage in the Wildlife Refuge area, predominately due to weed control implemented during the reporting period. Invasive weeds remain moderate to high in the Southern Offset Area and North and South rehabilitation areas, including woodland and pasture rehabilitation. An intensive weed control program was established in the offset areas and mine rehabilitation areas during the reporting period.</p> <p>Woodland rehabilitation sites monitoring results indicate that the ground cover was generally trending towards the reference sites, however, the shrub and canopy layers require further management to assist with establishment. The diversity of canopy and mid-storey species, particularly at the Southern Offset area were moderately representative of the reference sites, however foliage cover was low. Low foliage cover provides open areas for invasive groundcover species to establish.</p> <p>Pasture rehabilitation sites monitored during the reporting period show the overall groundcover has reduced significantly from the 2018 results, this is due to the long-term drought affects over previous years, attributing to loss of species richness. However, ecological monitoring identified a good cover of perennial grass species in the Southern rehabilitation areas, an improvement in previous years which may be due to the grazing trial being undertaken in these areas.</p>

Principle	Reporting
	Cattle were strategically rotated between three paddocks of which two were located on mine rehabilitation. The cattle will be sold to market during the next reporting period and the paddocks will be rested and monitored for new vegetation growth and diversity. Results so far are demonstrating that Maxwell can create a post mining landscape that is compatible with the surrounding landscape and capable of sustaining a productive land use.

Contextual information

<p><i>This section provides an opportunity for each company to provide some commentary or contextual information regarding their reported results. Such information could include advice on:</i></p> <ul style="list-style-type: none"> - <i>Any material changes to the site (i.e., expansions, acquisitions, or divested assets); or</i> - <i>Why any figures may have changed since the last reporting period?</i> 	
---	--

Future rehabilitation priorities

<p><i>This section provides an opportunity for each company to provide details on rehabilitation activities at their site/s for the upcoming year.</i></p>	<p>As outlines in the 2020 AEMR, the following activities will occur during the next reporting period:</p> <ul style="list-style-type: none"> • Two tree planting programs covering approximately 40 hectares of existing mine rehabilitation within the conceptual woodland corridor; • A weed control program focussing on Galenia, and • Installation of nest boxes in appropriately sized canopy trees within the woodland corridor.
--	---