

Upper Hunter Mining Dialogue

Final and Temporary Rehabilitation Principles and Commitments

2021 Results and Commentary

REPORT BY YANCOAL
APRIL 2022



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>Planning for progressive rehabilitation is built into all phases of mine planning from Life of Mine Planning to Annual Operating Plans. The mine planning teams at each site are accountable for identifying sufficient areas of mine dumps that can be completed and released for rehabilitation each year to meet the rehabilitation commitments specified in the respective Mining Operations Plans (MOPs).</p> <p>Progress against the dump release schedule is tracked through the year by the site management teams to ensure that areas for rehabilitation are available early enough to allow rehabilitation to be completed before the end of the reporting period. Reporting of rehabilitation progress for each stage of rehabilitation i.e. dump released, bulk shaped, topsoil spread and sown is undertaken monthly to allow tracking against the schedule for each activity.</p> <p>Rehabilitation activities are undertaken by a combination of mine and contracted equipment. Equipment requirements for rehabilitation activities are scheduled as part of developing the annual operating plans and are budgeted for accordingly.</p> <p>An initiative which continues to help MTW achieve their rehabilitation targets is planning in to have additional dump areas released and bulk shaped for later-stage rehabilitation work to commence early in the following year. This carrying over of bulk shaped areas allows the rehabilitation workload to be spread throughout the year and means a relatively consistent equipment fleet can be utilized. At the end of 2021, 15.4ha of bulk shaped area was carried over at MTW.</p> <p>MTW have engaged specialised agricultural and ecological restoration contractors to perform work associated with the final stages of rehabilitation i.e. soil preparation, weed control, seed collecting/harvesting and sowing. The expertise and equipment provided by these contractors is helping to improve the quality of the rehabilitation.</p>

Principle	Reporting
<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>103.7ha of rehabilitation was completed at MTW during 2021. This included 59.1ha of Stage 2 rehabilitation which wasn't reported as rehabilitated land until it was seeded with the target vegetation community seed mixes in 2021.</p> <p>Progressive rehabilitation commitments are outlined in the Warkworth Continuation 2014 and Mt Thorley Operations 2014 Environmental Impact Statements. These documents modelled a total of 1,103 ha of rehabilitation to be completed by the end of 2017, and a further 505.8 ha to be completed by the end of 2023. At the end of 2021 there had been 1,324.4 ha of rehabilitation completed across MTW, 221.4ha ahead of the EIS forecast for the end of 2017. It is expected that MTW will be approximately 190ha behind the EIS rehabilitation commitments at the end of 2023. This is due to a large component of the spoil dumping being directed to the filling of the Loders Pit and South Pit voids which do not produce rehabilitation areas for a number of years. Hence the forecast rehabilitation areas at MTW are lower than originally planned during this period.</p> <p>Progressive rehabilitation has been undertaken on all land that is not required for current operations at Ashton.</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>
<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>Rehabilitation targets have been set such that rehabilitation is required to commence soon after the dump areas are completed in order to meet the annual rehabilitation targets. The delay between areas becoming available for rehabilitation and commencement of rehabilitation activities is typically less than 2 months.</p> <p>Since 2011, aerial seeding of disturbed land has been undertaken at MTW to establish temporary vegetative cover on overburden dumps that are inactive but not yet available for final rehabilitation.</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>Aerial seeding of 184ha of overburden dumps was undertaken at MTW during 2021 to reduce airborne dust.</p> <p>Progressive rehabilitation has been undertaken on all land that is not required for current operations at Ashton.</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>Yancoal aims to rehabilitate disturbed areas as soon as practically possible to assist in improving the visual amenity and reduce dust impacts. Measures undertaken at MTW during 2021 to reduce impacts in priority areas included:</p> <p>MTW</p> <ul style="list-style-type: none"> - Seeding of TD1/TD2 road batters which are visible from the Golden Highway. - . <p>1.5ha of rehabilitation was undertaken at Ashton in 2021 to maintain the goal for all operationally available disturbance to be rehabilitated at Ashton.</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>2021 rehabilitation performance against MOP target:</p> <p>MTW – A total of 44.6ha of new rehabilitation was completed during 2021 against a MOP target of 35.0ha. A further 59.1ha of Stage 2 rehabilitation was seeded with the target vegetation community seed mixes in 2021.</p> <p>Ashton – 1.5ha of rehabilitation was undertaken in 2021.</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>The Mining Operations Plans for MTW and Ashton include performance criteria which will serve as quality targets for rehabilitation. Performance criteria have been developed for each stage of rehabilitation (i.e. Decommissioning, Landform Establishment, Growth Medium Development, Ecosystem and Land Use Establishment and Ecosystem and Land Use Development); and for the various types of rehabilitation that are being undertaken (i.e. grazing land, cropping land, native woodland etc). Rehabilitation monitoring programs have been implemented at MTW and Ashton to monitor performance of rehabilitation against the MOP criteria.</p>

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> 	<p>Ashton is an underground mine, all opportunities to rehabilitate exposed areas have been maximised to date and further opportunities for progressive rehabilitation will be available upon completion of the operations. Ashton undertook subsidence rehabilitation, remedial treatment of previous subsidence rehabilitation, and rehabilitation of minor disturbance areas associated with infrastructure projects during 2021.</p>
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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>MTW - It is planned that 35ha of new rehabilitation will be undertaken at MTW during 2022.</p> <p>Ashton - Nil broadscale rehabilitation planned in 2022. Progressive rehabilitation has been undertaken on all land that is not required for current operations at Ashton.</p>
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