

FINAL AND TEMPORARY REHABILITATION PRINCIPLES

2013 Reporting – Coal & Allied (Includes Hunter Valley Operations, Mt Thorley Warkworth and Bengalla)

Principle	Reporting
<p><i>Principle 1 – Include rehabilitation planning in mine planning</i></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 across the various sites. 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 helped HVO achieve their rehabilitation target of 197ha during 2013 was planning in the previous year to have additional dump areas released and bulk shaped for later-stage rehabilitation work to commence early in 2013. 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. The approach of planning for carryover areas was also incorporated in the HVO and MTW planning process for 2014.</p> <p>HVO and MTW engage the same principal contractor for rehabilitation works which, given their close proximity, allows rehabilitation equipment to move between the two sites as the workload fluctuates.</p> <p>Coal & Allied has engaged specialized agricultural and 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>

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<p>Principle 2 – Undertake progressive rehabilitation</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 2013, the combined amount of rehabilitation undertaken across the Coal & Allied sites exceeded the amount of disturbance by 59 hectares. This measure is a good indicator that progressive rehabilitation is being achieved.</p> <p>The layout of the Bengalla Mine is conducive to achieving progressive rehabilitation. Since the Run-of-Mine (ROM) coal hopper was moved to the highwall side of the mine (i.e. direction that the mine is moving towards) in 2009, there is now no requirement to maintain access for coal haulage back through the mine dumps. This combined with the design of dump roads in the advancing dump face means that the full width of the mine dumps are available for rehabilitation as the mine dumps progress.</p> <p>Although rehabilitation at the northern end of Warkworth Mine is tight behind the advancing mine area, rehabilitation in the southern part has not been able to take place due to reasons related to extended mining in the South Pit and associated infrastructure requirements. Coal & Allied will be undertaking investigations into mine design and scheduling options to fast-track rehabilitation in this area. An accelerated rehabilitation plan for South Pit will be developed in the first half of 2014 and submitted to Planning & Infrastructure.</p> <p>During the previous year there was a significant focus on rehabilitation progress in the Cheshunt Pit at HVO to tighten the gap between the active mine and rehabilitation areas. This resulted in 107ha of rehabilitation being completed in Cheshunt during 2013. The combination of good rehabilitation progress and only 9.5ha of disturbance ahead of this mining pit has produced a significant reduction in the disturbance footprint associated with Cheshunt.</p>

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<p>Principle 3 – Minimise time that disturbed areas are left without vegetation</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>Coal & Allied undertook aerial seeding across 822ha of disturbed land during 2013 to establish temporary vegetative cover on overburden dumps and tailings storage facilities that are not yet available for final rehabilitation.</p> <p>Since 2012, Coal & Allied has been sowing vigorous cover crops as the first stage of rehabilitation to provide quick stability and protection from wind and water erosion. The cover crop stubble is utilized as a mulch layer to stabilize the soil surface in readiness for sowing the long term seed mixes.</p>
<p>Principle 4 – Prioritise areas of rehabilitation and temporary cover to reduce impacts</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>Coal & Allied aims to rehabilitate disturbed areas as soon as practically possible to assist in improving the visual amenity and reduce dust impacts. Measures undertaken during 2013 to reduce impacts in priority areas included:</p> <p>HVO</p> <ul style="list-style-type: none"> - 107ha of rehabilitation completed on outer slopes of Cheshunt which are adjacent to Maison Dieu and visible from New England Highway, Golden Highway and Lemington Road (see Figure 1). - 43ha of rehabilitation completed on outer slopes of Carrington which are visible from Lemington Road (see Figure 2). <p>MTW</p> <ul style="list-style-type: none"> - 10ha of rehabilitation completed on outer slopes of South Pit North which are visible from the Golden Highway and residences to the east of Warkworth mine (see Figure 3). - 88ha of aerial seeding completed on South Pit South and Woodlands spoil dumps adjacent to Putty Road. - 39ha of aerial seeding completed on Tailings Dam 1 which is adjacent to Golden Highway. Capping of Tailings Dam 1 also commenced in preparation for rehabilitation. <p>Bengalla</p> <ul style="list-style-type: none"> - 40ha of rehabilitation completed on outer slopes of Bengalla dumps which are visible from Muswellbrook, various residences and surrounding roads (see Figure 4).

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.

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<p>Principle 5 – Meet target for rehabilitation progress identified in the Mining Operations Plan</p>	<p>2013 rehabilitation performance against MOP targets: HVO – Actual rehabilitation 199.5ha versus a MOP target of 184.1ha MTW - Actual rehabilitation 61.6ha versus a MOP target of 54.5ha Bengalla - Actual rehabilitation 40.2ha versus a MOP target of 40ha</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>All Coal & Allied sites exceeded their MOP rehabilitation targets during 2013.</p>
<p>Principle 6 – Set quality targets for rehabilitation in the Mining Operations Plan and implement a monitoring program to measure performance</p>	<p>The Mining Operations Plans for HVO, MTW and Bengalla all 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). A rehabilitation monitoring program has already been implemented at Bengalla to monitor performance of rehabilitation against the MOP criteria. Rehabilitation monitoring programs for both HVO and MTW will be implemented during 2014.</p>
<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>	



Figure 1. View of 2012 and 2013 rehabilitation in HVO Cheshunt. Topsoiled area shown on far left will be rehabilitated during 2014. Photos taken from Shearers Lane Maison, Dieu.

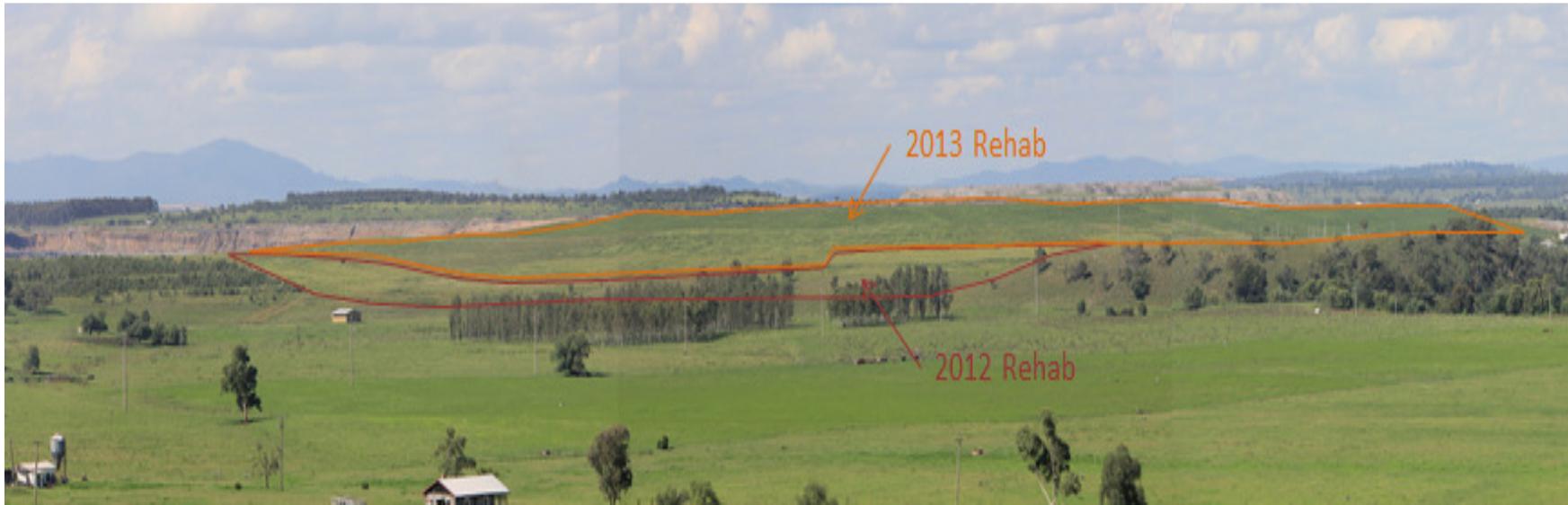


Figure 2. View of 2012 and 2013 rehabilitation in HVO Carrington. Photos taken from Lemington Road.



Figure 3. View of 2013 rehabilitation at MTW South Pit North. Rehab areas planned to be rehabilitated during 2014 are also shown. Vegetative cover will be established on a small area of temporary rehabilitation during 2014. Final rehabilitation cannot be completed in this area due to the location of maintenance infrastructure. Photo taken from Hambeldon Hill, Singleton.



Figure 4. View of rehabilitation at Bengalla Southern Out-of-Pit Emplacement. Photo taken from Skelletar Stock Route, Muswellbrook.