



Centennial Newstan

Landscape Management Plan

April 2011

FUTURE POWER



Centennial Coal

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1. INTRODUCTION

This Landscape Management Plan forms part of Centennial Newstan's (Newstan) Environmental Management System (EMS) and is a requirement of Newstan's Development Consent (DA73-11-98 MOD3).

1.1 Background

Underground coal mining has been undertaken at Newstan Colliery on the western side of Lake Macquarie since 1887. Surface facilities are located adjacent to Miller Road, northwest of Fassifern.

The Newstan Colliery holding comprises two mines and is predominately covered with bushland. The surface facilities include offices (including the Fassifern office), workshops, coal handling plant, washery, rail loop and emplacement areas.

The Newstan Colliery has been placed on care and maintenance following the cessation of all coal extraction in May 2009. Newstan is currently planning the recommencement of first workings development, with a continuous miner in areas currently approved for mining under the existing Newstan Development Consent. Re-commencement of mining operations is scheduled to occur in mid 2011.

1.2 Scope

The Landscape Management Plan applies to Newstan Colliery premises and all work sites associated with the Life Extension Area (LEA) and has been developed accordance with development consent (DA-73-11-98 MOD 3) condition 3.7.

The Newstan Colliery Life Extension Project is an extension to existing surface and underground operations. Works are to be developed within three broad areas referred to as the Life Extension Area, Newstan Colliery Surface Facilities and Awaba Colliery Surface Facilities.

1.3 Objectives

The objectives of the Landscape Management Plan are to provide a framework for Newstan to:

- Maintain a satisfactory visual amenity through the establishment of vegetation, mounding or bunding.
- Provide a baseline for the visual appearance of any buildings, structure, or facilities which may be constructed so as to blend as far as possible with the surrounding landscape.
- Provide a maintenance program for landscape works, building materials and cladding.

1.4 Development Consent Conditions

The Landscape Management Plan has been prepared to satisfy the approval conditions of the Director General of the Department of Planning included in the Newstan Development Consent (DA73-11-98 MOD3). The conditions within this consent that relate to this management plan are listed in the table below.

Consent Conditions		Section of Plan
3.2 (d)	The Applicant shall also prepare the following environmental management plans... Landscape Management plan (refer condition 3.7)	All Sections
3.2 (e)	The Management plans are to be revised / updated at least every 5 years or as otherwise directed by the Director – General in consultation with the relevant government agencies. They will reflect changing environmental requirements or changes in technology / operational practices. Changes shall be made and approved in the same manner as the initial environmental management plan. The plans shall also be made publicly available at LMCC within two weeks of approval of the relevant government authority.	All Sections
3.7	Visual Amenity and Landscaping	
a)	The Applicant shall, prior to the commencement of construction works in the relevant area, submit for the approval of LMCC a detailed landscape and revegetation management plan for the surface facility sites prepared by a suitably qualified person. The plan shall include, but not be limited to:	Sections 5 & 12
i)	Details of the establishment of vegetation and the construction of mounding or bunding, for the purposes of maintaining satisfactory visual amenity, ecological functioning and habitat provisions;	Sections 5 & 12
ii)	Consideration of revegetation works along creek lines	Section 5.2
iii)	Use of indigenous species;	Section 5.3
iv)	Details of the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications). Building and structures shall be designed and constructed so as to blend as far as possible with the surrounding landscape;	Section 5.4
v)	Details, specifications and staged work programs to be undertaken, including a maintenance program of all landscape works, building material and cladding.	Section 5.5
b)	The Applicant shall ensure that an undisturbed barrier of 50 metres be maintained between the eastern boundary of the property at 1 Fassifern Road, Wakefield, and the toe of the proposed Northern Reject Emplacement Area.	Section 5.5
9.2	Access to Information	
(a)	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans /strategies /programs)... the Applicant shall: Provide a copy of the relevant document/s to the relevant agencies; Ensure that a copy of the relevant document/s is made publicly available at the mine; and Put a copy of the relevant document/s on its website.	Section 11

2. CONSULTATION

Consultation regarding this Landscape Management Plan will occur as per Newstan's development consent requirements.

2.1 Regulatory Authorities

The Landscape Management Plan is to be developed in consultation and to the satisfaction of the Lake Macquarie City Council (LMCC).

This plan is to be made publicly available at the LMCC, within two weeks of approval by LMCC as required by Newstan's Development condition 3.2(e).

2.2 Employees and Contractors

Newstan Colliery will consult with relevant employees and contractors with the regards to the requirements of the Landscape Management Plan.

3. HAZARD IDENTIFICATION

Centennial Newstan recognises that visual impacts will be experienced from the mine from surrounding areas during the mine life. In particular these impacts are viewed when travelling along Miller Road which intersects the Northern and Southern side of Newstan Colliery.

The Newstan EIS found that visual impacts from Newstan Colliery would be experienced from landform alterations caused by subsidence, water logging / ponding due to drainage and sediment control works and surface ancillary works such as exploration drilling, subsidence monitoring lines and temporary ventilation shafts.

The Newstan Statement of Environmental Effects (SEE) completed in 2007 for a modification to the existing Newstan development consent concluded that the works associated with the installation of the proposed Ventilation Shaft at Awaba would have minimal visual impacts.

4. RISK ASSESSMENT

Newstan Colliery will conduct an annual operational risk assessment to assess the environmental aspects and impacts of the Mine and to meet requirements of Centennial Coal's Environmental Policy.

This assessment considers the operational activities of the Mine, identifies the potential environmental hazards associated with the activity and assesses the potential risk posed by that hazard. As part of Industry & Investment NSW requirements and the Mine's due diligence, commitments are made for reducing unacceptable risks. The reporting process then allows for these commitments to be reviewed for action at the next reporting period.

This annual environmental risk assessment considers visual amenity and landscaping impacts as a result of operational activities.

5. RISK MANAGEMENT / OPERATIONAL CONTROL

5.1 Vegetation, Mounding and Bunding

Newstan Colliery will utilise the methods of vegetation screening, mounding and bunding to improve the visual amenity of the facilities, and ecological functions where available.

Measures to minimise visual impacts associated with reject emplacement, surface water management upgrades and the upgrades to the rail loading facilities at Newstan Colliery include:

- progressively clearing vegetation from the minimum area required as proposed works proceed;
- progressively revegetating the Northern and Southern Reject Emplacement Area's and any areas disturbed as part of rail loop upgrading, as soon as practicable following final landform shaping;
- maintaining a vegetated rim to screen the Southern Rejects Emplacement Area and Northern Rejects Emplacement Area adjacent to Fassifern / Miller Road to screen the view of those travelling along Fassifern / Miller Road.
- maintaining the flora and fauna corridor established by Newstan in 2006 to the north-west of the Northern Rejects Emplacement Area.

5.2 Revegetation along Creek Lines

Newstan will continue to undertake weed management along creek lines onsite in accordance with the Newstan weed management action plan. The majority of creek lines on site are well vegetated, however works will be undertaken when required to establish revegetation where necessary.

Newstan will continue to support remediation works down stream of the site with Landcare when opportunities are presented.

5.3 Use of Indigenous Species

Indigenous species will be used in all rehabilitation works, and also in vegetation screening. Flora surveys were undertaken during the environmental impact assessment for the Project. The survey results and listing of species may be found in the Newstan Colliery Life Extension Project Environmental Impact Statement Volume 1.

Endemic species will be used based on the findings of these surveys. The table below lists the preferred species for revegetation.

Species Name
<i>Acacia suaveolens</i>
<i>Acacia falcate</i>
<i>Acacia longifolia</i>
<i>Lomandra longifolia</i>
<i>Banksia spinulosa</i>
<i>Allocasuarina torulosa</i>
<i>Melaleuca nodosa</i>
<i>Eucalyptus saligna</i>
<i>E. crebra</i>

<i>E. microyorys</i>
<i>E. maculata</i>
<i>Angophora costata</i>

A cover crop and pasture grass species will be utilised where appropriate to protect the soil surface from erosion impacts.

5.4 Building and Structure Design

Newstan Colliery buildings will be maintained paying attention to:

- Maintenance of building colours, using muted greens over bright colours, unless the bright colours are necessary for safety purposes, and
- The use and maintenance of non-reflective and textured buildings to avoid glare.

All infrastructure will be maintained in good order, and in a tidy condition. Storage areas will be maintained in a tidy condition and located, as much as practicable, in areas not visible to the public.

5.5 Maintenance Program

Ongoing maintenance of all buildings and rehabilitated / revegetated areas will continue. Additional seeding and direct planting of tube stock was undertaken in 2011 along the southern side of Miller Road to provide a visual barrier for the Southern Reject Emplacement Area.

Quarterly Southern Reject Emplacement Area (SREA) and Northern Reject Emplacement Area (NREA) inspections are undertaken to monitor rehabilitation and erosion on site.

5.6 Barriers

It is a requirement under Newstan's Development consent (condition 3.7b) that an undisturbed barrier of 50 metres be maintained between the eastern boundary of the property at 1 Fassifern Road, Wakefield, and the toe of the NREA. Currently a barrier of approximately 120m stands between the NREA toe, and the closest residential property. The only works currently being undertaken in the NREA are for rehabilitation, weed and pest control and general maintenance. As a result, this barrier will remain in place between the eastern boundary of the property at 1 Fassifern Road, Wakefield, and the toe of the NREA.

6. INFORMATION

6.1 Documentation

Where there is a risk to health, safety and the environment when undertaking a task, management plans / systems, procedures, standards and inspections have been developed to identify hazards and the steps to control those hazards.

6.1.1 Permit to Clear (EWP032)

No clearing is to occur onsite without a permit to clear. Any clearing must have appropriate approvals, and a Flora and Fauna inspection prior to the permit being issued. The permit to clear includes information regarding soil stripping, and the installation of sediment controls.

6.1.2 Surface General Work Permit – Excavation Permit (N009100)

No excavation for Newstan is permitted unless an Excavation Permit has been completed and approved by the site supervisor.

6.2 Communication

6.2.1 Supervisors

Supervisors of tasks involving removal of vegetation are to be aware of the requirements within this plan. Supervisors are to obtain a 'Permit to Clear' form from the Environmental Coordinator if any disturbance of vegetation screens, bunds or mounds is required.

7. TRAINING & INSTRUCTION

Newstan Colliery will ensure only trained personnel under strict instruction undertake rehabilitation onsite.

8. SUPERVISION

All works will be supervised by the site Environment Coordinator to ensure works are conforming to this management plan.

9. MONITORING

Quarterly Southern Reject Emplacement Area (SREA) and Northern Reject Emplacement Area (NREA) inspections are undertaken to monitor rehabilitation success and aspects such as and erosion and drainage.

Further monitoring inspections will be undertaken as needed when works are being undertaken to ensure compliance with this management plan.

10. AUDIT

Internal audits of the Newstan Colliery Landscape Management Plan will be conducted as specified in the corporate guideline (ECMG06) Audit and Inspection. The Plan audits will investigate compliance with the EMS, Standards, and Procedures. Any non-conformance with the management plan generated from an audit shall be recorded and reported to the administrator.

11. REVIEW

Revisions are to be coordinated by the site Environmental Coordinator / Plan administrator or as directed by the Mine Manager. The revision status is contained in the controlled document within Lotus Notes and updated as per the Newstan Change Management System.

Once this plan has been reviewed, changes made shall be submitted to the LMCC for comment. Once comments have been incorporated, the plan will be re-submitted to LMCC for approval.

Once approval has been granted, Centennial will request LMCC make this plan publicly available within two weeks. The plan will also be posted on the intranet, and the Centennial Coal website.

11.1 Time Based

The Newstan Colliery Landscape Management Plan is required to be reviewed every 5 years by the Environmental Coordinator in accordance with development consent condition 3.2(e).

11.2 Event Based

Events which may trigger the review of the Landscape Management Plan include:

- As directed by the Director-General (in consultation with other governmental agencies),
- Modification / improvement to the system.

12. CONTROL MEASURES

12.1 Timing of work

Work shall be completed within the following time frames:

- Where earthworks requiring vegetation clearance have been completed over an area exceeding one hectare, re-vegetation shall be carried out within fourteen days; and
- Open drains shall be vegetated within seven days of excavation.

12.2 Materials for Vegetation

12.2.1 Topsoil for site

Topsoil from site will be reused for revegetation works where possible. Topsoil will only be imported if site conditions prevent the successful establishment and maintenance of vegetation.

12.2.2 Herbicide

If necessary herbicide will be utilised to control any undesirable plant species that may impact on successful plant establishment. The only herbicide to be used on site will be glyphosate based non residual herbicide such as "Roundup". The application rates will be that nominated by the manufacturer for the target species.

12.2.3 Seed

All seed used shall be certified or approved prior to use at site.

12.2.4 Fertiliser

The type and rate of fertiliser application will be dependent on the result of soil testing for the area to be rehabilitated.

12.2.5 Mulch

Mulch used shall be chopped cereal straw or chipped in-situ vegetation.

12.3 Vegetation of Batter Slopes to be 3 to 1 or Flatter

12.3.1 Preparation of Surface

Slopes will be sprayed with the glyphosate based herbicide "Roundup" or equivalent in accordance with the manufacturer's instructions where weed infestation occurs. Sprayed areas shall remain undisturbed for at least two weeks.

The surface shall then be tined generally parallel to the surface contours to a depth of 150mm to produce a loose surface, and all stones larger than 100mm in size, rubbish and other materials that may hinder germination will be removed before topsoiling.

12.3.2 Topsoiling

Topsoil will be uniformly spread to achieve a minimum thickness of 50mm. The topsoiled area will then be contour scarified to provide a suitable seed bed.

12.3.3 Mixing and Treatment of Seed

Seed and fertiliser will be evenly distributed over the areas to be sown at the rates specified. Fertiliser will be applied concurrently with the seeding operation. Sowing shall be performed across slopes (ie. perpendicular to the direction of any fall).

12.4 Slopes Steeper than 1 to 3 or concentrated flow areas

Jute mesh and tacked with bitumen emulsion shall be used on steep flows and in concentrated flow situations where normal grass protection is inadequate. Steep areas and channels will be protected with jute-mesh. The area will be shaped seeded and fertilised prior to the application of the jute mesh.

Hydro-mulching may also be utilised to stabilise steep slopes.

12.5 Riparian Zones

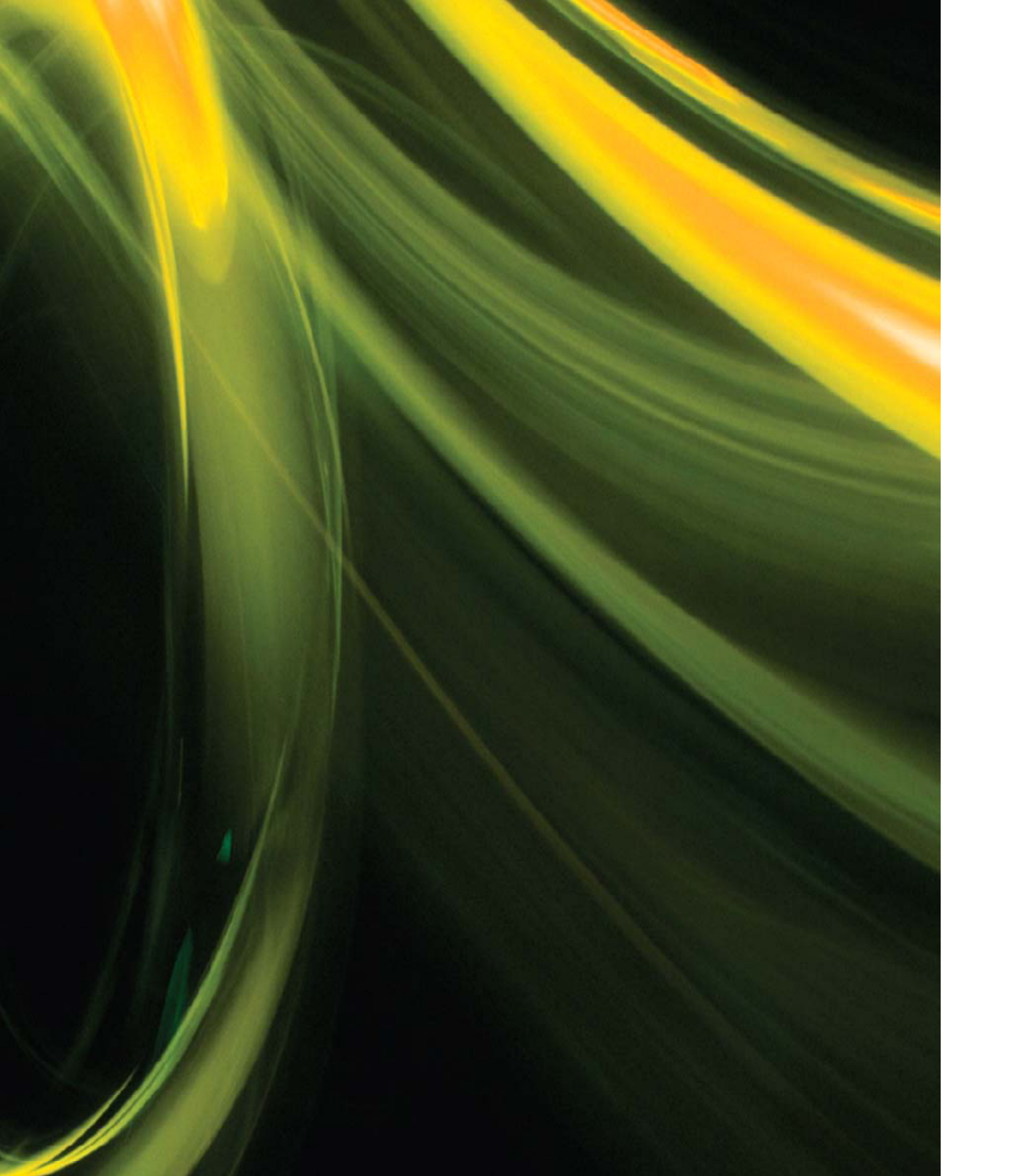
Riparian zones will be protected where possible. Diversion of creeks and fauna habitat will be in consultation with LMCC, DECCW and NOW.

12.6 Buildings and Structures

No new buildings are planned at this stage of the development.

12.7 Maintenance Program

Ongoing maintenance of all buildings and rehabilitated / revegetated areas will continue. Maintenance is provided as necessary to maintain a standard acceptable to Centennial Newstan. Monthly inspections are undertaken to ensure maintenance programs are adequate.



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