

Ulan Coal

VISUAL AND LANDSCAPE MANAGEMENT PLAN

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1.0 INTRODUCTION

Ulan Coal Mines Limited (UCML) operates both underground and open cut mining operation near the village of Ulan, approximately 45 kilometres north east of the township of Mudgee. The current operations include a dragline, stockpiles, a coal handling and processing plant (CHPP) conveyors administration buildings, train loading facilities, mine workings with underground access point and associated remote infrastructure. Operation of the open cut mine, coal preparation plant and rail loading facility is contracted and is currently operated by a contract miner.

UCML has implemented a number of Visual Amenity & Landscape control initiatives around the operation to mitigate potential impacts on company owned and surrounding lands. The purpose of this Management Plan is to ensure the effectiveness of these initiatives, and that the regulatory obligations are being met.

This Visual Amenity & Landscape Management Plan fulfils the requirements of conditions 3.2(d) and 3.7 of Development Consent 113-12-98 issued by the Department of Natural Resources and Infrastructure (DIPNR). It applies specifically to all UCML works / activities associated with ML1468. Notwithstanding this, the general principals embodied in the Management Plan are to be applied to all activities at the Ulan Coal Mine and UCML managed lands. **Table 1** over the page summarises the relevant conditions of the consent highlighting where the various elements of the plan have been addressed.



Table 1: Checklist taken from Consent Conditions (DA No. 113-12-98) (December 2003) which relates to the specific requirements for the preparation of a Visual Amenity & Landscape Management Plan.

Consent Condition	Management Plan Condition	Section
3.7 (a)	(a) The Applicant shall, prior to the commencement of construction works in the relevant area, submit for the approval of MeSC and MuSC a detailed Landscape and Revegetation Management Plan for all (delete "the") surface facility sites prepared by a suitably qualified person.	This Entire Mgmt Plan
3.7 (a) (i)	The plan shall include, but not be limited to: 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 provision;	Section 5.1.1 and 5.1.9
3.7 (a) (ii)	The plan shall include, but not be limited to: Consideration of revegetation works along creek lines;	Section 5.1.1 & 5.1.9
3.7 (a) (ii)	The plan shall include, but not be limited to: Use of indigenous species;	Section 5.1.9
3.7 (a) (iv)	The plan shall include, but not be limited to: Details of the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications). Buildings and structures shall be designed and constructed so as to blend as far as possible with the surrounding landscape; and	Section 5.1.2, 5.1.3, 5.1.4, 5.1.5, 5.1.6, 5.1.7, 5.1.8 & 5.1.10
3.7 (a) (v)	The plan shall include, but not be limited to: Details, specifications and staged work programs to be undertaken, including a maintenance program of all landscape works, building materials and cladding.	Section 6



2.0 OBJECTIVES

A key element of the Visual Amenity & Landscape Management Plan will be the utilisation and management of remnant native vegetation together with additional tree planting to achieve landscape objectives. Much of the lease is in areas remote from public viewing. Many areas are covered by remnant stands of native forest. The later in conjunction with strategic plantings is utilised to achieve screening objectives.

The purpose of this Management Plan is to ensure the effective implementation of visual amenity and landscaping programs consistent with regulatory obligations. This review of the Visual Management and Landscaping Plan fulfils the requirements of condition 3.7(a) of the Development consent. It applies specifically to surface facilities established on this lease. The contents of this report are also consistent with information contained in the relevant Environmental Impact Statement (EIS) (Kinhill, 1998).

The objectives of this Plan are to:

- Meet the requirements of development consent relevant to the operation of Ulan Coal Mines Limited (UCML);
- Provide details on the establishment of vegetation and construction of mounding or bunding for the purposes of maintaining satisfactory visual amenity, ecological functioning and habitat provision;
- Consider revegetation works along creek lines;
- Use of indigenous species;
- Detail the visual appearance of surface structures;
- Provide specifications for staged works programs to be undertaken, including a maintenance program of all landscape works, building materials and cladding; and
- Detail the Review and Reporting protocols; and
- Establishing Responsibilities for the management of Visual Amenity and Landscaping issues at UCML.

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3.0 BACKGROUND

The landscapes in and around Ulan Coal Mine vary from the broad valley floors of the Goulburn River and Ulan Creek immediately to the south through to the undulating land, steep slopes and rocky escarpments in the north, east, west and more distantly to the south. While the steeper areas are largely undisturbed bushland, flatter areas have generally been cleared for grazing, pasture and the UCML open cut mine and operation areas. The visual character of the region is therefore strongly influenced by rural grazing and agricultural activities, set against a background of natural bushland on the steeper and higher lands.

UCML has implemented a range of landscape and revegetation programs on other sections of the mine and has an ongoing rehabilitation program involving the re-establishment of native forest on re-contoured spoil material.

4.0 POTENTIAL IMPACTS

The most likely visual impact of surface facilities and disturbance associated with this mine relate to their effect on visual amenity from public viewing points. Generally the surrounding topography and associated vegetation communities screen the mine. The exception is on the eastern side of the operation where the mine is visible from the main road.

As part of the EMS, UCML has completed a detailed Environmental Risk Assessment in order to identify all “aspects and impacts” associated with the open cut and underground mines. During this process all activities that were identified as having the potential to impact on Visual Amenity & Landscape were considered. Each activity was then ranked in order of priority (highest risk first) using the UCML environmental risk matrix. Table 2 below details the aspects of the mine that are most visible from the road.

Table 2: Activities visible from the road on the eastern side of the Ulan Mine

- | |
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| <ul style="list-style-type: none"> • The open cut administration office and workshops; • Current Open Cut Mining Area; • The coal handling and preparation plant; • The stacker reclaimer and coal stockpile areas; • Old pits and voids; • Rehabilitated areas of the mine; • Water storage dams and infrastructure; and • Cuttings into the hillside adjacent to the open cut pit. |
|--|



5.0 MITIGATION MEASURES

The impact of the proposed development on visual amenity will be limited and localised. The expected visual impacts are summarised in the following sections for the different elements of the proposed development.

The following section outlines the control measures adopted by UCML as part of their commitment to managing the visual impacts of the operation.

5.1 Control Measures

Detailed control measures for the prevention of Visual Amenity & Landscape related issues are presented in the HSEC-PRO-011 Visual & Landscape Management Procedure.

5.1.1 Rehabilitation

Site rehabilitation is an important component in any mining operation. Ongoing rehabilitation forms an important part of visual amelioration. A significant proportion of the areas disturbed by mining have been rehabilitated.

Areas needing rehabilitation include the current out of pit dumps as well as narrow accesses and corridors used for utility services such as power and water, exploration and drilling roads, and areas where facilities once existed. In all cases rehabilitation of the affected areas occurs as soon as practicable. Where these disturbances occur adjacent to creek lines, these sites would be rehabilitated as a high priority.

Specifically, the land in ML1468 includes logged Crown land along with land previously used for agriculture. Where bushland exists, only a minimal amount will be cleared for exploration and drilling, roads and utility provision. Once these roads are no longer needed they will be ripped to alleviate compaction and increase infiltration. Earth works to control drainage and provide sediment and erosion control will be constructed where necessary. Any pre-stripped topsoil will be re-spread and fallen timber and leaf litter will be placed along roads to aid in rehabilitation and provide habitat for local fauna.

Rehabilitation will involve reshaping the land and revegetating where required as soon as practicable. The area would be returned to its original use, so that it is compatible with its surroundings and the capability of the land before disturbance. Effective rehabilitation would be guided by the Department of Primary Industries (DPI) and the Department of Natural Resources (DNR).

All rehabilitation works are to be undertaken in accordance with the requirements of the Mining Operations Plan (MOP).

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5.1.2 Surface Facilities contained within ML 1468

The design and landscaping of the surface facility has been completed to be sympathetic to the local environment, consistent with existing mine facilities in the area and result in negligible visual impact.

5.1.3 Ventilation Shafts

The proposed additional up-cast and downcast ventilation shafts have large air vents and fans located at the surface. To minimize the visual impact of these structures, their exact location and design is sympathetic with the surrounding landscape. Conceptual designs and possible location of the ventilation facilities are outlined in **Figure 4.3** and **Figure 4.4** of the EIS (Kinhill, 1998).

5.1.4 Mine Service Shafts

Permanent surface facilities associated with the proposed services shafts include electrical power supply lines and substation, fan housing and associated controls, air compressor stations and mine monitoring equipment facilities. The design and landscaping of these facilities is sympathetic to the local environment, consistent with existing mine facilities in the area and will result in negligible visual impact.

5.1.5 Drop Holes for Ballast and Stone

The visual impact of the proposed drop holes include access trails and the surface infrastructure required for unloading and placement of ballast and stone. The appearances of these facilities are to be similar to existing facilities in the area.

5.1.6 Ongoing Exploration

Access trails, boreholes and survey markers associated with the ongoing exploration and monitoring of geological formations, flora, fauna, archaeology and subsidence effects are required. The visual impacts associated with these activities are to be similar to those currently experienced, and as a result visual impact is considered minimal.

5.1.7 Lighting

UCML operate a twenty-four (24) hour operation. The facilities are lit at night; however, since operations in this area are limited to mine access and hygiene activities the level of lighting required and its impacts are minimal. UCML have significant buffer lands between the operations and adjacent receptors which mitigate against lighting impacts. Lighting is directed away from the points along Ulan Road where the mine is visible.

On site rehabilitation and screen planting, along with the fact that mining activities in the open cut are typically under the pre-existing surface level of the ground, reduces the visual impact of lighting from open cut operations.

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5.1.8 Water Supply, Storage and Irrigation

The construction of water supply pipelines and/or water storage facilities as well as power lines and dewatering pumps may be required if the volumes of groundwater inflow increase beyond that anticipated which could be managed by the preferred water management strategy. These facilities will be used to supply water to future mine service sites or future access point to the mine.

Water storage ponds have been constructed on UCML owned land to facilitate the disposal of excess mine waters associated with the underground mining operation. These ponds will be located in the cleared, undulating land in the north of ML1468 and would be similar to others constructed by farmers in the district. They would therefore be consistent with other regional land uses and the visual character of the area.

An area of centre - pivot irrigated pasture, crops and tree plantations have been established on UCML owned land to facilitate the disposal of excess mine waters. Irrigation areas have been located in cleared, undulating land in the north of the current lease area. This land was previously unimproved pasture adjacent to natural bushland and the development of irrigation is consistent with other land uses in the region.

5.1.9 Bunding & Revegetation Specifications

Where surface facilities are visual from a public viewing point and where the facilities are over 3m high, generally earth bunding has been established to assist visual screening of the facilities. Tree planting or seeding is also generally undertaken on these bunds. Where possible the colours used in buildings and other structures should be consistent with the natural colours occurring in the environment (ie. greens, etc).

Where surface facilities are less than 3m in height and visible from a public viewing point, tree screen planting will generally be undertaken. Revegetation details will be the same for both bunds and other planted areas.

The following includes a general description of the site preparation, tree spacing and other details that are to be considered when establishing tree screen plantings:

A. Site Preparation

Tree lines will be deep ripped to a minimum depth of approximately 400mm prior to planting.

B. Spacing Layout

Taller trees will be alternated with shrubs. Trees will be planted approximately three (3) metres apart in rows. Rows will be approximately three (3) metres apart.

C. Other Details

UCML will conduct tree screening and seeding in accordance with **HSEC-MGP-032 Rehabilitation Management Plan**.

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5.1.10 Visual Appearance of Structures

Where it is possible to dictate a colour preference, all infrastructure will be painted a colour similar to Dulux™ colour bond “Rivergum Green”. The condition of painted structures will be assessed periodically and repainted as required.

5.2 Proposed Works Plan / Review Form

Prior to any disturbance or clearing of land within the mining lease area, UCML completes a **Proposed Works Application / Review**. This process incorporates a review of all environmental factors, including but not limited to, the following key areas:

- Environmental Risks;
- Land Ownership and Title;
- Land Zoning;
- Relevant development consent conditions;
- Lease and Colliery Boundaries
- Protected lands
- Aboriginal and Cultural heritage issues;
- Flora & Fauna
- Erosion & Sediment Control;
- Noise
- Air & Water Quality; and
- Visual Amenity.

The application for a Proposed Works Application / Review is made to the Environmental Officer for approval. Where an activity is determined likely to have an impact on a visual amenity or landscaping related issue, it is identified prior to it being undertaken and an appropriate management control is implemented.

5.3 Complaints Management

Community complaints management includes receipt of complaints, investigation, and implementation of appropriate remedial action, feedback to the complainant, communication to site management or personnel and notification to the external bodies where necessary. This includes all complaints related to Visual Amenity & Landscape issues.

A register of complaints is retained by the Environmental and Community Manager (ECM) within the XstraSafe Document control system. Both Open Cut and Underground Operations respond and act on complaints in accordance with HSEC-PRO-001 Complaints Management Procedure.

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5.4 Community Consultation

UCML actively encourages engagement with the wider community by holding regular Community Consultative Committee (CCC) meetings and ensuring that adequate consultation is undertaken in regards to issues relating to Visual Amenity & Landscaping. All complaints that are related to Visual Amenity & Landscaping are discussed at the CCC and with relevant stakeholders.

Any significant changes to the Visual & Landscape Management Plan will also be presented to the CCC for their consideration and input. Copies of the minutes from all CCC meetings are available from the site Environmental Officer.

5.5 Training and Awareness

UCML recognises that training and awareness is an integral part of the Environmental Management System (EMS). This is the means by which personnel are informed about the components of the Visual Amenity & Landscape Management Plan and how it is implemented on the sites. The training also includes detail on people’s specific responsibilities with respect to the Visual Amenity & Landscape Management Plan.

UCML’s environmental training and awareness program consists of induction training for new starters and contractors along with refresher and ongoing “toolbox” training for all permanent employees as required.

All environmental training and awareness completed at UCML is undertaken in accordance with **Section 5.2 (Training & Awareness)** of the Environmental Management System.

6.0 MONITORING and MEASUREMENT

There is limited need for ongoing monitoring and measurement of visual impacts related to the operations of UCML. Notwithstanding this the following section outlines all monitoring and measurement requirements.

6.1 Tree Screens and Bunds

The Environmental Officer is responsible for ensuring that all tree screens and bunds are maintained to ensure that they meet their intended purpose. This includes, but is not limited to, the following:

- Controlling weeds that can compete with the “screening” species;
- Replacing tube-stock that are not successfully established; and
- Controlling pests and disease that may result in the screening capacity of the vegetation to be reduced.

6.2 Infrastructure

The condition of painted structures will be assessed annually and repainted as required. The Environmental Officer is also involved in the planning phase of any new infrastructure to ensure that consideration is given to its location in order to

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minimise the potential for a visual impact and that it blends in so far as possible with the surrounding landscape. This includes the location and direction of lighting associated with any new infrastructure.

7.0 REPORTING and REVIEWING

The following section of the Management Plan includes the Reporting and Reviewing requirements relating to the management of visual impact related issues at the Ulan Coal Mine.

7.1 Reporting

All external and internal reporting is undertaken in accordance with the reporting requirements of the UCML Environmental Management System (section 7.0 Implementation and Operation).

A summary of any Visual Amenity or Landscaping management issues and actions arising throughout the year will generally be presented in the Annual Environmental Management Report (AEMR). This also includes a summary of the monitoring and measurement outcomes. A copy of the report will be distributed to both local government and other regulatory agencies.

7.2 Inspections

UCML will conduct regular inspections in accordance with the UCML Environmental Management System (EMS). Any improvements made as a result of the inspections process will be reported in that AEMR reporting period.

UCML's Environmental Department co-ordinates regular environmental inspections of all mine activities in accordance with **HSEC-PRO-011 Environmental Procedure – Visual Amenity & Landscape Management**. Any findings from these inspections shall be documented and addressed as per UCML EMS.

Where non-conformances are observed the person responsible for the area is notified immediately and the issue is rectified. Any non-conformances resulting from these inspections are recorded by the Environmental and Community Officer ECO follow-up actions tracked using the XstraSafe Database System.

Additional audits are undertaken by Xstrata Coal NSW at a corporate level (i.e. EMS, Compliance, etc). The various regulatory agencies (e.g. DPI, DIPNR and DEC) also undertake statutory inspections when required.

7.3 Review

The Plan will be reviewed and updated at least 2 yearly in accordance with Xstrata Standards. The review will include an assessment of the effectiveness of the established controls and their performance against the Plan's objectives. Progressive amendments will be made to the Plan as a result of UCML's continuous improvement process. Any amendments the Plan will be undertaken in consultation with the appropriate regulatory authorities.

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Notwithstanding the above, in accordance with the Development Consent, the Plan is to be revised / updated at least every seven (7) years or as otherwise directed by the Director General in consultation with the relevant government agencies. The changes will reflect changing environmental requirements or changes in technology/operational practices.

8.0 RESPONSIBILITIES

The Environmental and Community Manager (ECM) is responsible for the implementation of the Visual Amenity & Landscape Management Plan, while the Operations Managers of the Ulan Underground Operations and the Ulan Open Cut Operations are responsible for ensuring that adequate resources are available for the implementation of the Visual Amenity & Landscape Management Plan. Notwithstanding this, specific individual responsibilities are provided in the HSEC-PRO-011 Visual Amenity & Landscape Management Procedure. The Manager(s) will allocate responsibility for specific tasks where necessary.

The Environmental and Community Manager (ECM) and the Environmental and Community Officer (ECO) are to provide technical support to the Manager(s) for all Visual Amenity & Landscape Management related issues where required.

9.0 RELEVANT DOCUMENTS and LEGISLATION

The following section lists the relevant documentation as applicable to the Visual Amenity & Landscape Management Plan for the Ulan Coal Mine. Some of the relevant legislation has been noted; however more comprehensive list is included in the register of legal and other requirement (section 2.4) of the UCML EMS.

Relevant Documents:

- Kinhill Pty Ltd (1998) Mining Lease Application No. 80 – Development Application and Environmental Impact Statement, Ulan Coal Mines Limited
- Environmental Protection Licence No. 394 – EPA
- GSS Environmental (2003) Environmental Risk Assessment (ERA) & Establishment of a Risk Register for the Ulan Open Cut and Underground Coal Mines, October 2003
- Pelican Environment and Business Solutions (2003) Ulan Coal Mines Limited – Environmental Management System
- Erosion & Sediment Control Management Plan
- Mining Operation Plan (MOP)

Relevant Legislation:

- Coal Mines Regulations Act (2000)
- Environmental Planning and Assessment Act (1979)
- Protection of the Environment Operations Act (1997)

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