Appendix I

Soil management plan

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Soil Management Plan
Jilalan Rail Yard Upgrade Project
Coal Stream Alliance - Jilalan

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Contents

1. Introduction

1.1 Background

This Soil Management Plan has been prepared in order to propose protection and mitigation measures for soils within the Jilalan Rail Yard Upgrade Project (JRYUP) area. The Soil Management Plan shall be incorporated into the Construction Environmental Management Plan and Sub Plans as required during the detailed design phase of the project.

The Soil Management Plan identifies and describes the environmental values and potential impacts that may be caused by the construction works and operational and maintenance activities. Environmental protection objectives, standards, measurable indicators and control strategies have been identified, which shall be implemented to achieve the objectives of the Plan.

The Soil Management Plan will be refined and expanded further during the detailed design phase of the project and through consultation with regulatory authorities.

1.2 Basis of the Plan

An important requirement of the JRYUP is the preparation of the Soil Management Plan to ensure the environmental safeguards proposed as a result of the project planning and environmental assessments are incorporated into the environmental management of the project and are enacted in an appropriate and timely fashion.

The potential exists for the degradation of the site soils and surrounding natural environmental values. This would be likely to occur during the construction and operational/maintenance stages of the project and the potential for soil degradation has been identified during the course of the environmental studies performed during the preparation of the Environmental Impact Statement (EIS).

Planning and design measures are therefore necessary to ensure that all reasonable measures are taken to protect the environmental values, which may be impacted during construction and operational activities for JRYUP.

1.3 Aim of the Plan

The purpose of implementing the Soil Management Plan during design, construction and operation is to minimise and mitigate identified potential environmental impacts through planned and programmed implementation of appropriate controls for any works in the soil environment.

Where the Coal Stream Alliance – Jilalan (CSAJ) work covers routine and non routine activities not stipulated in the Soil Management Plan, it is the responsibility of the CSAJ to identify the environmental aspects associated with these activities and develop and implement plans and procedures to address these activities.

The intent of this Soil Management Plan is to minimise the potential for environmental impacts to occur as a result of the of soil disturbance during the construction and operational/maintenance phases of the JRYUP. The Soil Management Plan is the key reference document that identifies actions and commitments to be followed by the designers, construction contractors and operators and incorporated into project documentation and procedures.

1.4 Statutory provisions

- *Environmental Protection Act 1994* (EP Act)
- Planning Guidelines: The Identification of Good Quality Agricultural Land (DPI/DHLGP 1993)
- State Planning Policy 1/92: Development and the Conservation of Agricultural Land

- State Planning Policy 2/02 Planning and Managing Development Involving Acid Sulfate Soils
- Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998

1.5 Objectives

- Minimise soil erosion
- Minimise loss of fertile topsoil material
- Avoid/minimise disturbance of Acid Sulfate Soils (ASS) (refer ASSMP)
- Avoid contaminating soil
- Aim to improve soil and geotechnical stability
- Mitigate visual impacts to topographical and landform features
- To manage ground disturbance activities during pre-construction, construction and operational activities to minimise environmental impacts and maximise the potential for successful land rehabilitation following construction

1.6 Performance criteria

- No impacts resulting from the disturbance of ASS and/or contaminated soil and/or uncontrolled release of affected runoff to receiving waterways
- No complaints relating to erosion, sedimentation, contamination and/or disturbance of ASS
- No failure due to geotechnical instability of landforms exacerbated by the JRYUP
- No incidents resulting in environmental nuisance and/or material or serious environmental harm due to disturbance of ASS, site contamination, erosion or sediment movement
- No significant loss of fertile topsoil material due to reduced fertility from prolonged storage and/or erosion

2. Impact management actions and responsibilities

Impact management actions for soils are summarised in Table 2.1 for design, construction and operation of the JRYUP.

Table 2.1 Soils – Impact management actions

Phases	Actions	Responsibilities	Monitoring and Reporting Compliance		
			Activity	Activity Timing	Activity Performed By
Design	Complete a detailed geotechnical investigation including subgrade, foundation and errodability assessments.	DD	As per detailed design drawings	Detailed Design Phase	S
	Complete a detailed ASS investigation in areas identified as potentially containing ASS affected material or where disturbance of soil and sediment will extend below 5 m AHD into Quarternary alluvium material identified during the geotechnical investigations.	DD	As per detailed design drawings	Detailed Design Phase	S
	Design to mitigate soil and geotechnical instability and avoid the need for remedial works.	DD	As per detailed design drawings	Detailed Design Phase	S
	Adopt recommendations of the detailed geotechnical investigations for design of batter slopes, embankments, foundations and piers.	DD	As per detailed design drawings	Detailed Design Phase	S
	Develop an Acid Sulfate Soils Management Plan (ASSMP) in consultation with Department of Natural Resources and Water (DNRW) and in accordance with relevant standards and guidelines for construction.	DD	As per detailed design drawings	Detailed Design Phase	S
	Incorporate the topographical character and major landform features in the project design.	DD	As per detailed design drawings	Detailed Design Phase	S
	Develop a sediment and erosion control plan including design of drainage and sediment control devices in accordance with relevant standards and guidelines.	CEO	As per detailed design drawings	Detailed Design Phase	CPM
	Develop topsoil and spoil management plan for earthworks and construction schedules in accordance with relevant specifications.	CEO	As per detailed design drawings	PreC	CPM
Construction	Implement and communicate sediment and erosion control plans for scheduled construction works.	CEO	VI and CL	PreC and PD	CPM
	Implement and communicate topsoil and spoil management and revegetation/rehabilitation plans.	CEO	VI and CL	PD	CPM
	Soil, mulch and material stockpiles and storage areas should be located a minimum distance of 30 m from waterways within stable areas of landscape.	DD	As per detailed design drawings	PreC	CEO

Phases	Actions	Responsibilities	Monitoring and Reporting Compliance		
			Activity	Activity Timing	Activity Performed By
	Stormwater protection and/or diversion measures shall be installed to direct clean stormwater away from disturbed and/or contaminated areas and capture and contain contaminated and sediment laden surface runoff.	CPM	VI	PreC	CEO
	Obtain sign off for founding conditions and bearing capacities from a suitably experienced geotechnical engineer.	CPM	VI and CL	PD	S
	Implement progressive revegetation and/or rehabilitation of areas of disturbance.	CPM	VI	PD	CEO
	Utilise temporary screening for construction compounds.	CPM	VI	PD	CEO
	Ensure disturbed embankments (temporary and permanent) are topsoiled, grassed and prepared in such a way that promotes natural regeneration and reduces the risk of soil erosion.	CPM	VI	Weekly	CEO
	All runoff from disturbed areas including tracks and stockpile areas shall pass through sedimentation control devices.	CPM	VI and CL	PD	CEO
	Implement and communicate the ASSMP.	CPM	VI that the plan is implemented	PD	CEO
	Fill material to be imported from offsite sources should be procured from a licensed quarrying facility and be accompanied by relevant certificates/documentation.	CPM	VI and CL	PD	S
	Install drainage and sediment control structures consistent with design specifications and drawings.	CPM	VI and CL	PD	S
Operation	Maintain rehabilitated/revegetated areas during the post construction and operation stages to ensure areas are appropriately stabilised and established.	O	VI and CL	Post C	O
	Ensure permanent soil and water control devices are installed during and/or after construction and maintained on an ongoing basis.	O	VI	Post C	O

Table Notes

AS	All Staff	MER	Monthly Environmental Report	PstC	Post Construction
CEO	Contractor Environmental Officer	NA	Not Applicable	S	Superintendent
CL	Checklist is to be completed	O	Operator	VI	Visual Inspection
CPM	Contractor Project Manager	PD	Project Duration (Construction)	WR	When Required
DD	Detailed Designer	PreC	Pre Construction		

2.1 Corrective actions

- Incorporate and adopt design principles and concepts aimed at reducing soil erosion and loss of soil material both *in situ* and in storage
- Adopt periodic review of scheduling/staging of JRYUP development for the purpose of reducing soil erosion and loss of soil
- Prompt clean up of spills
- Remediation as required for instances of site contamination, soil erosion and impacts associated with disturbance of ASS

2.2 Monitoring and reporting requirements

- Report the implementation of design measures through design documentation
- Report all spills, incidents and complaints relating to soil, spoil and sediment in accordance with site spill management and/or reporting procedures
- Notification to EPA of any instances of material or serious environmental harm
- Report all soil and sediment sampling and analysis results in monthly report