

Ashton Coal
Eastern Overburden Dump
Drainage Design Report

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Ashton Coal Operations Limited



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1. Drainage Concept

The review of the drainage concept of the Eastern Overburden Dump was undertaken by Parsons Brinckerhoff Australia Pty Limited (PB). The drainage review was required due to a revision in the rehabilitated slope of the dump changing from 10° as specified in the Ashton Coal EIS to a slope of 14° as currently proposed.

The drainage concept was based on an overburden dump design supplied by Henry Walker Eltin and designed to minimise long term erosion of the rehabilitated landform.

The drainage design of the eastern dump is separated into two separate catchments as follows:

Catchment No.1

Contour drains along the southern face of the dump and 1/3 of the contour drains on the northern face of the dump report to a common rock-lined channel graded at 18% on the southern side of the dump. The rock-lined channel is eventually discharged into the sedimentation dam located immediately to the east of the dump.

Catchment No.2

The western contour drains on the northern face of the dump report to a rock-lined channel to be constructed down the proposed access ramp. This rock-lined channel will not be constructed until the dump is complete and no further use of the access ramp is required.

Run-off from Catchment No.2 will be directed into the existing open cut and utilised in mining operations.

2. Contour Drains

The eastern overburden dump contour drains have been designed to fully capture the peak flows produced by a 1 in 100 year ARI storm event. The spacing of the drains will be kept to a maximum of 50 metres (slope distance) and the drains be graded at 1% to minimise any potential erosion due to run-off. The length of the drains has been kept to a maximum of 800 metres.

The typical section of the proposed contour drains is attached.

3. Rock-Lined Channels

The southern and the ramp rock-lined channels have been designed to fully capture the peak flows produced by a 1 in 100 year ARI storm event. The maximum slope of the southern rock lined channel has been designed at 18% and the slope of the ramp channel designed at 10% to match the slope of the access ramp.

Both rock-lined channels will be lined with 750mm thick hard rock rip-rap underlain with Bidim A44 geotextile. In order to provide long term stability of the channels, the rock lining should be of igneous origin.

Connections between the rock-lined channels and contour drains have been detailed and attached, together with typical sections of the rock-lined channels.

4. Sedimentation Dam

The sedimentation dam immediately east of the eastern overburden dump has a total reporting catchment of approximately 53 hectares. In accordance with the client's requirements, the required capacity of the dam has been determined using a number of differing design guidelines, as follows:

1. In accordance with the Ashton Coal Project Erosion and Sediment Control Plan (based on Table 3.6, Urban Erosion and Sediment Control, Department of Conservation and Land Management):

Free Capacity	=	19.5ML
Sediment Capacity	=	9.8ML
Total Capacity	=	29.3ML

2. Volume required to fully capture 1 in 10 year, 24 hour duration ARI storm event:

Free Capacity	=	40.0ML
Sediment Capacity (as above)	=	9.8ML
Total Capacity	=	49.8ML

3. Volume required to fully capture 1 in 20 year, 24 hour duration ARI storm event:

Free Capacity	=	55.8ML
Sediment Capacity (as above)	=	9.8ML
Total Capacity	=	65.6ML