

Rehabilitation

Rehabilitation Strategy – Surface Facilities Area

A Metropolitan Coal Rehabilitation Strategy has been prepared for the surface facilities. The Rehabilitation Strategy has been developed to be a concise framework document which describes the development of rehabilitation objectives and completion criteria for the preferred future land use for the surface facilities area following the completion of mining activities.

Detailed rehabilitation plans for the surface facilities area will be developed over the life of the Project and will be presented in the Mine Closure Plan and future revisions of the Rehabilitation Strategy.

Disturbance areas at the Metropolitan Coal surface facilities area are minimal and have remained relatively unchanged for many years. The surface facilities area includes roads, facilities (e.g. the Coal Handling and Preparation Plant, administration buildings and workshops), stockpiles (coal and reject stockpiles), railroads and water storages and infrastructure. The surface facilities area is an active operational area, which will be required for the entire mine life. As a result of the site being an active operational area, progressive rehabilitation is not possible at this stage.

No rehabilitation activities were conducted at the surface facilities during the reporting period. As the surface facilities area is an active operational area, rehabilitation activities to date have included active planting of native vegetation, primarily around the boundary of the site, and the removal or control of introduced species and weed species.

Rehabilitation Management – Underground Mining Area

The implementation of rehabilitation and remediation measures in the underground mining area and surrounds is monitored by Metropolitan Coal.

Surface Disturbance Areas

A Rehabilitation Management Plan – Surface Disturbance Register is used to manage the rehabilitation of surface disturbance areas. Some surface disturbance areas will be able to be rehabilitated during the life of the Project (e.g. monitoring sites no longer required), while other surface disturbance areas will likely remain until after the completion of mining operations.

Once a surface disturbance area is no longer being utilised, monitoring will be conducted to assess:

- where appropriate, whether equipment/infrastructure items have been removed;
- whether the area is tidy or rubbish removal is required;
- whether erosion and sediment controls are required and if so, the effectiveness of those installed;
- the presence of weeds and the need for the implementation of weed control measures;
- where appropriate, whether vegetation is re-establishing naturally or whether active revegetation is required; and
- if active revegetation is conducted, whether vegetation is establishing.

No surface disturbance areas were rehabilitated during the reporting period as the majority of disturbance pertained to the installation of environmental monitoring sites which are a life of mine asset. These sites will be rehabilitated to appropriate standards following the cessation of mining.

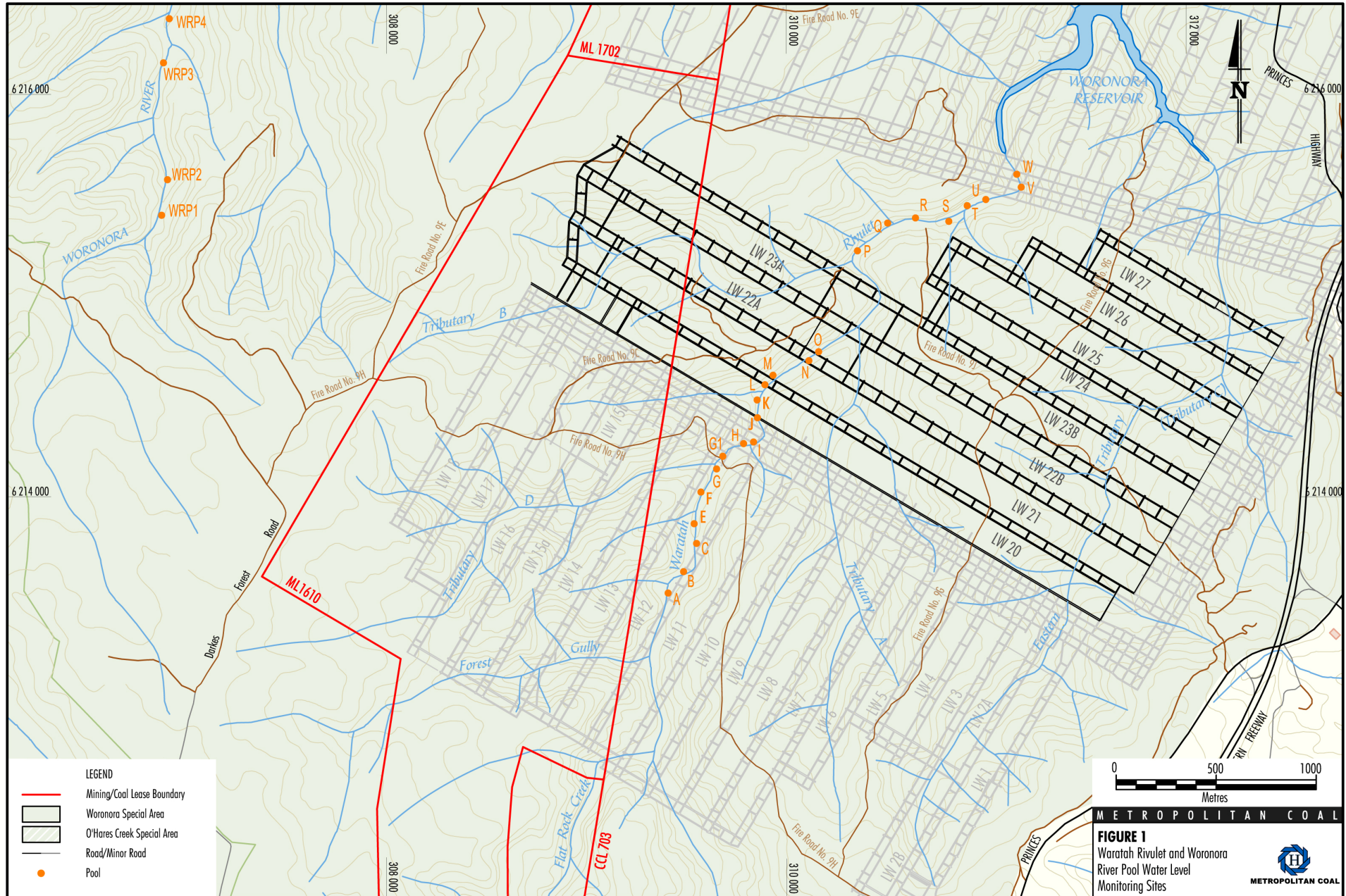
Stream Pool Monitoring and Rock Bar Remediation

Water levels in pools on the Waratah Rivulet (Pools A, B, C, E, F, G, G1, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V and W, Figure 1) are manually monitored on a daily basis or monitored using a continuous water level sensor and logger to determine whether stream remediation is required to be initiated.

Stream remediation is initiated at pools/rock bars on Waratah Rivulet between the downstream edge of Flat Rock Swamp and the full supply level of the Woronora Reservoir if the water level in a pool falls below its cease to overflow level (i.e. stops overflowing), except as a result of climatic conditions.

An assessment of the monitored pool water levels on Waratah Rivulet between Flat Rock Swamp and the full supply level of the Woronora Reservoir has been conducted for the reporting period (1 January to 31 December 2014).

METROPOLITAN COAL - ENVIRONMENTAL MONITORING SUMMARY



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Pools A, B, C, E, F, G, G1, H and I on the Waratah Rivulet are situated in the completed mining area (i.e. overlying Longwalls 1 to 13) between Flat Rock Swamp and the tailgate of Longwall 20 (Figure 1). As a result of previous mining, the water levels in pools upstream of Flat Rock Crossing (i.e. Pools A to F) and immediately downstream of Flat Rock Crossing (Pools G and G1) have previously been impacted by mine subsidence.

The water levels in Pools A, B, C, E, F, G1, H, I, J, K, L, M, P, Q, R, S and V have remained above their cease to flow levels throughout the reporting period. Water levels in Pools G and N regularly fell below their cease to flow level during the reporting period.

Pools O, T, U and W do not have established surveyed cease to flow levels because these pools do not have 'solid' rock bar controls, however the shape of the recorded pool water level hydrographs in all pools suggest that these pools exhibited natural behaviour during the reporting period.

Stream remediation activities have previously been conducted at Pools A and F on the Waratah Rivulet in accordance with approvals obtained from the Sydney Catchment Authority (SCA) under Part 5 of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act). Stream remediation activities at these pools have included the drilling of holes and the injection of grout (polyurethane resin) into sub-surface fractures. Associated activities have included the mobilisation, placement and operation of equipment and the implementation of a variety of environmental management measures.

During the reporting period Metropolitan Coal revised the Metropolitan Coal Rehabilitation Management Plan (Version E) to include an improved stream remediation methodology. The revised Metropolitan Coal Rehabilitation Management Plan was approved by the Division of Resources and Energy in May 2014 and stream remediation activities commenced at Pool F in June 2014. Stream remediation activities at Pool F have included verification of the fracture network by test drilling and calliper testing to establish ground conditions; hydraulic pressure testing and down hole calliper survey to inform and verify the grouting works; and drilling and injection of grout (polyurethane resin) to create a grout curtain. Associated activities have included the mobilisation, placement and operation of equipment and the implementation of a variety of environmental management measures.

Following the conduct of stream remediation activities at Pool F, stream remediation activities will be conducted at Flat Rock Crossing (Pools G and G1), anticipated to commence in May 2015.

Catchment Improvement Works

Two Rehabilitation Projects have been conducted in accordance with Condition 5(b), Schedule 6 of the Project Approval which requires Metropolitan Coal to carry out catchment improvement works in the Woronora catchment area.

The catchment improvement works include:

- the rehabilitation of a former quarry on Fire Road 9H; and
- the rehabilitation of a disused access track to the Darkes Forest Mine (a historic mine located to the south of Metropolitan Coal).

The rehabilitation site on Fire Road 9H is a former ironstone quarry. Rehabilitation activities during the reporting period continued to focus on re-introducing organic matter and seeds into the site and creating conditions that are conducive to natural regeneration along Fire Road 9H. This included further distribution of native mulch and brush matting over the site. Weed control measures were also undertaken to minimise the spread of windblown seed from species such as Whisky Grass (*Andropogon virginicus*) and Pampas Grass (*Cortaderia selloana*).

A disused track to the former Darkes Forest Mine, which has been closed since 1991, has also been subject to rehabilitation activities. The track provides a vector for feral animal movement (e.g. deer, foxes, cats), dispersal of weed species and unauthorised access (e.g. dirt bikes and horses) to the catchment. Rehabilitation activities during the reporting period have focused on weed control and brush matting using native species. Weed management activities have been undertaken monthly, and more frequently in spring when weeds were actively growing. Brush matting has been undertaken opportunistically using native species found adjacent to each section of the track.