

CAMP GULLY CREEK CLEAN-UP PROTOCOL



**PREPARED FOR
Metropolitan Coal Pty Ltd**

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1.0 INTRODUCTION

1.1 Background

Metropolitan Collieries Pty Ltd (MCPL) is the holder of Environment Protection Licence No. 767 issued under the *Protection of the Environment Operations Act 1997*. The licence authorises wastewater and stormwater from the Metropolitan Coal premises to pass through treatment systems prior to being discharged to Camp Gully Creek. Camp Creek joins the Hacking River 1.2 km downstream (Figure 1).

Due in part to the heavy rainfall during late 2021 and the first half of 2022, the stormwater system at Metropolitan Coal had trouble at times in managing large volumes of rainfall. The New South Wales (NSW) Environment Protection Authority (EPA) issued a Penalty Notice for a blockage and stormwater system bypass in March 2022. Metropolitan Coal has recently commenced civil works to improve the stormwater management system, with final components expected to be completed by December 2022.

The NSW EPA inspected the Metropolitan Coal premises on 17 August 2022 and observed that fine coal material had deposited on the banks and the bed of Camp Creek. The EPA considers that all reasonable efforts should be made to remove the material, in a manner that will not damage the creek bed or banks or cause a deterioration in water quality.

The NSW EPA require an expert assessment on reasonable and feasible options for the removal of coal above the water line, in a way that minimises damage to the creek and water quality. BIO-ANALYSIS Pty Ltd (BioA) have been engaged by Metropolitan Coal to prepare a Clean-up Protocol before remediation works commence.



Figure 1. Project Area

1.2 Purpose & Objectives

The key objective of the Protocol is to describe the management measures that are to be implemented to minimise impacts while undertaking removal of coal material. The Protocol must:

- a scope and extent of works including the areas of waterways requiring clean up
- the resourcing of the clean-up works
- an indicative schedule of works including any staging of waterway sections
- the methodology for removal of coal above the water line
- measures to minimise removal and disturbance of natural material
- measures to minimise impacts to water quality and other pathogenic impacts
- a real time monitoring program (visual and/or instrumentation) to detect impacts from the works and proposed responses to these impacts
- water quality and creek disturbance criteria that if exceeded for an unacceptable period would temporarily stop the clean-up
- ecological supervision of the clean-up by the Approved Ecologists or other suitably qualified professional approved by the EPA
- stockpile or consolidation areas by means of a map
- collection, handling, prompt removal of material from the creek areas, and disposal of waste
- restorative works as needed
- weekly written progress reports to be submitted to the EPA listing quantities of materials removed and any proposed changes to clean up methodologies.

1.5 Guidelines

The guidelines considered in the development and implementation of the Protocol include:

- Fairfull, S (2013). Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (2013 Update). NSW Department of Primary Industries (DPI)
- Fairfull, S. and Witheridge, G. (2003). Why do Fish Need to Cross the Road? Fish Passage. Requirements for Waterway Crossings. NSW Fisheries, Cronulla.
- Australian and New Zealand Environment Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand [ANZECC & ARMCANZ] (2000). *National Water Quality Management Strategy: Australian and New Zealand Water Quality Guidelines for Fresh and Marine Water Quality*. Canberra, Australia.
- Hygiene Guidelines: Protocols to protect priority biodiversity areas in NSW from *Phytophthora cinnamomic* (Myrtle rust), amphibian chytrid fungus and invasive plants (2020). State of NSW and Department of Planning, Industry and Environment.

2.0 CLEAN-UP PROTOCOL

2.1 Extent of Works

The initial focus will be from the point of discharge on Camp Creek (i.e., the area most heavily impacted by coal material) and then extend to the confluence with the Hacking River (a further 1200 m downstream). Advice will then be sought from the Ecologist to determine whether minor fine coal deposits located below the confluence should also be removed from affected areas within the Hacking River.

2.1 Resourcing

Metropolitan will progressively scale up clean-up works as confidence in the clean-up methodology and mitigation measures are gained. On day 1, at least four personnel (not including supervision) will commence initial sediment control trials, with personnel numbers to scale up as mitigation continues to be implemented. By week 2 of clean-up works, Metropolitan will deploy at least 20 personnel until works are completed.

2.2 Schedule of works

The proposed schedule of works is outlined in Table 1. The aim of this schedule is to complete the works as quickly as possible while monitoring and controlling any potential impacts to natural systems.

Table 1. Schedule of Works

Day 1	Mobilise clean-up equipment to site, undertake initial trials of sediment control within stream bed, focusing on areas where flows can easily be redirected to isolate stream section to be cleaned while separated from the main water body flows. Initial trials will be undertaken immediately below the discharge point.
Day 2	Commence initial sweep of wider stream bed to collect deposited coal material at least 150 mm from water's edge. Complete sediment controls in initial 100m section of stream (or as otherwise advised by approved ecologist) and commence recovery of deposited material within 150 mm of waterbody.
Day 3 until works complete	Continue initial sweep of wider stream bed to collect deposited coal material at least 150 mm from water's edge. Implement sediment controls in next 100 m section of stream (or as otherwise advised by approved ecologist) and commence recovery of deposited material within 150 mm of the water's edge. A 'leapfrog' method of implementing sediment controls at the next identified clean-up section while clean-up works are undertaken upstream will ensure the next section of stream works can

	commence as soon as the previous upstream section is complete. It is expected that section progress will improve as the methodology is refined and lesser quantities of deposited coal are found further downstream. No works will be undertaken during periods of rainfall or unsuitable flow conditions as advised by the approved ecologist.
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2.3 Methodology for Removal of Coal Material

Metropolitan will utilise hand tools including shovels, hand trowels, brooms, brushes and dust pans to sweep and scoop up deposited coal material. No material within 150mm of the water's edge will be recovered without prior implementation of sediment controls and downstream water quality monitoring to the satisfaction of the approved ecologist.

2.4 Measures to Minimise Removal or Disturbance of Natural Material

Metropolitan will target collection and removal of concentrated coal deposits only. In the event of mixed coal and natural material (sand, stone etc) deposits, material will only be removed if coal constitutes greater than 30%.

2.5 Measures to Minimise Water Quality and Other Pathogenic Impacts

Metropolitan will implement sediment control in 100m sections (or as otherwise advised by the approved ecologist) using sediment fence and sandbags as a downstream control before material within 150mm of the water's edge is recovered. Metropolitan and the approved ecologist will identify specific points within the waterbody where additional sediment fencing and sandbags can be installed to redirect stream flows and isolate a stream section so that removal of coal material can be undertaken without downstream impacts. Sediment controls will be implemented in such a way as to ensure fish passage is maintained at all times.

Downstream water quality monitoring of turbidity and dissolved oxygen will be undertaken during clean-up works to confirm effective sediment control measures are in place.

Metropolitan has consulted the NSW Government Hygiene Guidelines and confirmed that as the clean-up area is frequented by the public without existing hygiene measures in place (bushwalkers, dirt bike riders etc), no hygiene measures are required on entry. The above notwithstanding, Metropolitan will instruct clean-up personnel to clean all tools at the end of each day and utilise bootwash bays available at the surface facilities area prior to mobilising to the clean-up zone each day.

2.6 Real Time Water Monitoring

Metropolitan will utilise real-time water quality monitoring equipment and visual inspections immediately downstream of each designated clean-up section to monitor turbidity. In the event that turbidity exceeds 50 NTU or appears visually concerning, works will be stopped immediately to identify any potential source, and additional controls put in place as required (e.g. additional sediment control, slower work pace, etc). This approach has been adopted to stop any creek disturbance or water quality impacts before they become unacceptable.

In the event that unacceptable water impacts as a result of the clean-up works are identified with a duration greater than 30 minutes, the EPA will be notified and an incident report prepared.

2.6 Approved Ecologist Supervision

An EPA approved ecologist will be onsite to supervise clean-up works constantly or multiple times a day (as decided by the approved ecologist) for the first ten days of clean-up works. After this period, if and when the approved ecologist is confident in the implemented controls outlined above, the approved ecologist will appoint a suitably qualified Metropolitan employee to supervise the works and undertake real time water quality monitoring with guidance from the approved ecologist. The approved ecologist or appointed employee will have the authority to stop works immediately where real time water quality parameters are exceeded or for any purposes related to safety of personnel or the environment.

The approved ecologist will continue to inspect the clean-up works on a weekly basis at minimum.

2.7 Material collection and disposal

Clean-up personnel will immediately bag up all coal material removed from the stream. Once a bag becomes full or is filled to a point where weight for the carrier becomes a consideration, bags will be consolidated at a nearby point (within 50 m). Bags will be periodically collected throughout the day and carried to an existing road which leads from Camp Creek to the coal stockpile area. Bags will be loaded into the bucket of a skidsteer to be transported to the coal stockpile area for unloading. Retrieved material will be rewashed through the CHPP. Metropolitan will also opportunistically collect any general waste such as plastic bottles and packaging within the work area and dispose of via existing site waste management.

In the event that material quantities exceed what can reasonably be carried out of the clean-up area, Metropolitan will consider use of a helicopter to lift materials back to the coal stockpile.

2.8 Restoration Works

At completion of clean-up works in each section of the creek, sediment controls will be removed when turbidity, within and downstream of the work area are below 50 NTU or within upstream values. At completion of all works, Metropolitan will consult with the approved ecologist to consider if any further restoration works are required. Restoration works may include planting of suitable native riparian species and monitoring to ensure revegetation is successful.

2.9 Progress Reports

A weekly progress report will be submitted to the EPA listing quantities of materials removed and any proposed changes to clean up methodologies outside of this protocol.

3.0 COMPLIANCE MANAGEMENT

3.1 Monitoring & Reporting

Monitoring programs will include:

- Real time surface water quality
- Aquatic ecology and habitat monitoring (pre and post clean-up works)

Where appropriate, the approved ecologist will assess whether there is a need to review the current works procedures. Any non-conformance identified will be highlighted and an environmental inspection report or an environmental incident report completed.

3.2 Training

All site personnel will undergo training relating to habitat protection management issues. The induction training will address elements related to aquatic management including:

- Existence and requirements of this Protocol
- Relevant legislation
- Roles and responsibilities for aquatic habitat management
- Aquatic habitat mitigation and management measures.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel.

Examples of training topics include:

- Safety
- Relevant legislation
- Clean-up procedures
- No-go zones

Camp Gully Creek – Clean-up Protocol

- Unexpected identification of threatened species within the Project area.

3.4 Incidents

In the event of the occurrence of an incident, the Project Supervisor and/or the Ecologist will stop work and notify the Environmental Manager and the Ecologists. The EPA is to be consulted regarding the management measures to be implemented.

3.5 Reporting

Monitoring reports will be prepared by the Project Ecologists and provided to Metropolitan Coal promptly following each monitoring survey. Reporting of monitoring activities will be included in the daily inspection sheet developed for the Project.