

16 February 2018

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Our ref: D2018/16218

Dear Mr Barry

### **WaterNSW Submission - Mine Rehabilitation Discussion Paper**

WaterNSW appreciates the opportunity to provide feedback on the Mine Rehabilitation Discussion Paper from the Department of Planning & Environment (DPE) on proposals to improve rehabilitation outcomes for State significant mining developments' in NSW.

The Discussion Paper identifies six Proposals for improvement during the assessment, operational and post closure phases of the State significant mining development proposal and has specified discussion questions for each proposal. WaterNSW comments and feedback on the proposals is provided below and these relate to the declared Sydney catchment area.

### **Mining in the declared Sydney catchment area**

In the declared Sydney catchment area, mining can be divided between the Special Areas (close to stored waters) and other areas within the broader catchment. There are currently three active mines in the Special Areas – Dendrobium, Metropolitan and Wongawilli and four active mines in the broader catchment (Springvale, Clarence, Bulli Seam and Tahmoor). There are a number of approved State significant quarry developments in the catchment particularly near Berrima and Marulan in the south and Lithgow in the west. The sites near Goulburn and Tarago including the Woodlawn Mine and Veolia operated Landfill and Bioreactor, and the Wollondilly Washery site within the Warragamba Special Areas close to Lake Burragorang are some other large sites where ongoing and proposed rehabilitation activities are of interest to WaterNSW.

An independent audit of the declared Sydney catchment area, completed in July 2016 and tabled in Parliament in August 2017 has identified 'Mining in the Special Areas' as a priority issue for the catchment.

### **WaterNSW Role and Responsibilities**

The *Water NSW Act 2014* sets out the objectives and functions of WaterNSW. A key objective for WaterNSW is to ensure that the declared Sydney catchment area and associated water management works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment.

Apart from the legislative functions identified above and the limited powers endowed by the *Water NSW Act 2014* to control access to Special Areas, WaterNSW has no regulatory powers to approve or direct how State significant mining within the declared Sydney catchment area is planned or conducted. Instead, WaterNSW provides advice to the regulatory bodies that assess and regulate mining developments within the catchment during the assessment, operational and closure phases of mining developments. With regards to rehabilitation, WaterNSW works cooperatively and provides advice to DPE and Division of Resources and Geoscience (DRG) on expected rehabilitation/rehabilitation outcomes in conditions of

approval, rehabilitation strategies, rehabilitation plans, mining operation plans, environmental monitoring reports and compliance and enforcement activities that are relevant within its area of operations.

### WaterNSW Mining Principles

To make its advice transparent and consistent, WaterNSW has developed a set of principles (accessible at <http://www.waternsw.com.au/water-quality/catchment/mining/principles>) that underpin its decision-making in relation to mining activities. The principles include the policy position that WaterNSW opposes any longwall mining located within the Dams Safety Committee notification areas surrounding WaterNSW's dams in the Sydney catchment area. The principles establish the outcomes that WaterNSW considers as essential to protect the drinking water supplies to the five million people of Sydney, Illawarra, Blue Mountains, Southern Highlands and the Shoalhaven. The principles relate to:

- Protection of water quantity;
- Protection of water quality;
- Protection of water supply infrastructure;
- Protection of human health;
- Protection of ecological integrity;
- Sound and robust evidence regarding environmental impacts.

WaterNSW expects mining companies to plan, construct, operate and rehabilitate all existing and future activities to maintain and protect ecological integrity. If impacts cannot be avoided, offsets may be necessary to ensure the overall ecological integrity of the Special Areas is not compromised.

### Discussion Paper - Purpose, Key Issues and Proposed Policy Principles

The discussion paper focuses on land disturbance by open cut mining and final void rehabilitation and reuse options including void lakes in existing and proposed State significant developments. The discussion paper also states that "The *Mining Act 1992* defines rehabilitation as the treatment or management of disturbed land or water for the purpose of establishing a safe and stable environment". **WaterNSW considers that the purpose and scope of the proposals to improve rehabilitation outcomes must include subsidence impacts and environmental consequences of underground longwall mining developments and operations on surface and groundwater resources and ecological integrity within Special Areas.** Key issues in addressing underground mining include consideration of the feasibility of rehabilitation and the rehabilitation objectives and completion/ success criteria.

### Policy framework for final voids

WaterNSW notes that the Discussion Paper only considers State significant developments. WaterNSW considers its scope should be extended to include sites such as the Wollondilly Washery that operate under a mining lease and MOP and have no planning consent. WaterNSW has specific concerns for this site within the Special Area in close proximity to Lake Burragorang, the extent of voids and void lakes, a large tailings dam and significant areas in varying stages of rehabilitation.

### Consideration of Rehabilitation in early stages of Mine Planning

WaterNSW considers that mitigation strategies hierarchy - avoidance, minimization and offsets should be considered from the early stages of mine planning. Rehabilitation of natural features like watercourses and upland swamps should not be a forward looking approach; e.g. mine planning at Springvale Colliery found that the only way to avoid impacts on upland swamps was by changing the mine dimensions. Adaptive management approaches may also be considered as demonstrated by Dendrobium Mine to meet the performance measure set for 'Sandy Creek waterfall'.

A key learning from rehabilitation works implemented to date on the Waratah Rivulet by Metropolitan Mine and those proposed by Illawarra Coal for Wongawilli tributary WC21 is that, it is critical that adequate fracture characterization studies and investigations of groundwater levels need to be completed to inform the viability and guide the design of the rehabilitation program prior to any rehabilitation attempts. WaterNSW therefore considers that more details should be provided at the assessment stage with regards to any proposed rehabilitation on necessary investigations, monitoring and development of Trigger Action Response Plans (TARPs) to support assessment of the feasibility of rehabilitation and consideration of an adaptive management approach. Currently these details are only provided in management plans which are prepared after a project approval is given. In case of underground longwall

mining projects, changes may be necessary requiring mining proponents to provide detailed information currently provided in management plans identified in project approvals (e.g. Extraction Plans) to be made available at the planning and assessment stage in order to understand potential cumulative impacts of a proposal and consider the need for rehabilitation for the project as a whole, and assess their effectiveness as a mitigation solution during the life cycle of the mine.

### **Rehabilitation Requirements and Outcomes**

The Society for Ecological Restoration Australasia (SERA) has published the National standards for the practice of ecological restoration in Australia:  
<http://www.seraustralasia.com/standards/National%20Restoration%20Standards%202nd%20Edition.pdf>

The report discusses appropriate standards for both restoration and rehabilitation in various management sectors in Australia including mining. The study recommends that: *"Where mining is undertaken in natural areas, the highest standard of ecological restoration is expected by society as exemplified in the regulatory process. This means that a five-star recovery should be the goal of any restoration project involving a natural area. In semi-natural sites with important or high biodiversity values, there is an expectation that post-mining repatriation achieves habitat recovery to the highest practicable extent, progressing the site to at least a three-star recovery condition. Where mining occurs on converted landscapes, there is an expectation that mine site rehabilitation achieves a safe, stable and ecologically sustainable utilitarian condition which provides ecosystem services and lowers rather than raises impacts on natural systems (i.e. rehabilitation as defined in this document)".*


WaterNSW recommends the adoption of these standards in the declared Sydney catchment area with the highest standard of ecological restoration as a binding outcome for land and water within Special Areas.

### **Operational and Closure Phase Improvements**

WaterNSW supports the improvements being implemented by the DRG Rehabilitation Reform Project. A key issue in the operation and closure phase of the mining cycle is the uncertainty in predicting the impacts of mine closure actions and managing the consequent adverse environmental impacts. This was highlighted by the recent water quality impacts due to mine water discharges in the Wingecarribee River resulting from Berrima colliery's commencement of underground mine closure processes. A key challenge in this regard has been the need to find solutions to mitigate and manage the adverse impacts in the River both in the short and long term.

Please contact me if you wish to discuss matters raised in this submission.

Yours sincerely

  
on behalf of

Malcolm Hughes  
Manager Catchment Protection

