



OUT21/1839

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NSW Department of Planning, Industry and Environment

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Dear Mr Nevill

**Maules Creek Coal Mine- Mod 7 (MP10_0138) -
Modification Report**

I refer to your email of 16 February 2021 to the Department of Planning, Industry and Environment (DPIE) – Water about the above matter. This advice has been provided by DPIE - Water and the NSW Natural Resources Access Regulator (NRAR).

A number of recommendations and comments regarding licencing and groundwater management (inflows, modelling, management plans, monitoring, etc.) are provided in **Attachment A**. Of particular importance are the requirements regarding:

- Water take – post-mining groundwater take in the final void from each water source due to the altered pit depth and void lake
- Groundwater management – the management of coal reject and potential acid forming material.

Any further referrals to DPIE – NRAR & Water regarding this matter can be sent by email to: landuse.enquiries@dpi.nsw.gov.au.

Yours sincerely

Liz Rogers
Manager, Assessments
Water – Knowledge Office
16 March 2021

ATTACHMENT A

Advice to DPIE Planning & Assessment regarding the Maules Creek Coal Mine – Mod 7 (MP10_0138) – Modification Report

DPIE – Water and NRAR provide the following recommendations.

Water Take and Licencing

1 Pre-approval Recommendation:

The proponent must:

- a. Clarify the post-mining groundwater take in the final void from each water source due to the altered pit depth and void lake.

Explanation

Clarification is requested on the potential for changes in groundwater take within the final void post-mining due to the altered void design. The modification report has indicated there will be an increase in surface area of the void and an associated increase in evaporative losses. However, the potential for changes in groundwater take to compensate for the increased evaporation has not been quantified.

The modification will result in a slightly increased final void depth and storage volume which is predicted to slow the rate of water level rise in the final void post-mining compared to the approved void. The slightly increased void surface area will increase the evaporative losses compared to previous and reduce the rate of water level rise. This is predicted to result in the long term equilibrium water level being slightly lower than the 220mAHD predicted for the approved void.

There is no quantification provided on the change in water take in the void due to the modification. If evaporation is increasing, there is a risk that the peak groundwater take may increase post-mining.

2 Post Approval Recommendations:

- a. The ability to accurately meter and monitor water take from surface and groundwater sources will need to be developed with ongoing review of actual versus modelled predictions. This will be a key component to confirm impact predictions, the adequacy of mitigating measures and compliance for water take.
- b. The proponent must report on water take at the site each year (direct and indirect) in the Annual Review. This is to include water take where a water licence is required and where an exemption applies. Where a water licence is required the water take needs to be reviewed against existing water licences.
- c. The proponent will need to ensure adequate entitlement is held in a Water Access Licence for the relevant water sources prior to all water take.

Groundwater Impacts, Management and Monitoring

3 Pre-approval Recommendations:

- a. Present a strategy for identification of potential acid forming (PAF) material, design and management of coal reject and acid forming material including location of encapsulation cells both existing (if any) and proposed to be used.
- b. Develop a monitoring program that will demonstrate the effectiveness of the coal reject and acid forming material mitigation strategy.

4 Post Approval Recommendation:

- a. Update the Water Management Plan (WMP) to reflect the altered water management infrastructure, and to update the defining objectives for monitoring bores that evaluate potential leachate impacts for the out-of-pit emplacement areas and the performance measures that will apply.

Explanation

The proposed extension area towards the western boundary will be located on fractured rock and will not encroach on the Namoi alluvial aquifer.

The Modification 7 Environmental Assessment does not report or present design objectives and performance criteria for the design and management of coal reject and PAF material emplacement. The Planning Assessment Commission identified this as a concern leading to the following conditions of consent.

Condition 39 states:

(c) ensure that coal reject or any potentially acid forming interburden materials are not emplaced at elevations within the pit shell or out of pit emplacement areas where they may promote acid or sulphate species generation and migration beyond the pit shell or out of pit emplacement areas;

and;

Condition 40 states:

(c) a Groundwater Management Plan, which includes:

- detailed plans, including design objectives and performance criteria, for the design and management of:

- the proposed final void; and
- coal reject and potential acid forming material emplacement;

A check of the Maules Creek Mine Operations Plan (August 2020) Section 3.2.1 states:

“PAF material will be placed (buried) in the out-of-pit overburden emplacement areas or within mined-out sections of the open cut. PAF material will be disposed of in a location (refer below) to minimise further oxidation and leaching into the surrounding environment.”

And

“burial of PAF coal reject materials from the selected coal seams ensuring at least 15m final coverage of inert material. Out-of-pit co-disposal of PAF rejects in encapsulation cells may need to be considered until sufficient capacity in the open pit becomes available”

DPIE Water’s assessment of the MCCM WMP (WAMS 6801) reported that the WMP did not present a strategy for the design and management of coal reject and acid forming material as per the conditional requirement to do so. Further, DPIE Water notes several water quality exceedances of the sulfate and TDS performance measures were observed in the 2019 Annual Report to which MCCM had difficulty reporting on the driver for these exceedances.

DPIE Water recommends that a strategy for the design and management of coal reject and acid forming material be prepared prior to modification determination. This should include planned locations for the out-of-pit co-disposal of PAF rejects in encapsulation cells to be used until sufficient capacity in the open pit becomes available.

Controlled Activities on Waterfront Land

5 Post Approval Recommendation:

Watercourse design and construction need to ensure stability and natural ecological functioning. Works are to be in accordance with the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).

Explanation

- The proposal to divert the current clean water diversion on the western side of the northern emplacement area to a tributary of Back Creek has been recognised in the modification report to increase the catchment area to this tributary with a potential erosion risk that is to be addressed through flow attenuation measures. As the specifics of these measures are yet to be confirmed the ability to adequately address downstream impacts with appropriate geomorphic design is not confirmed.
- The modification report proposed one option in how to manage the runoff from the northern emplacement extension, however reference was made to a number of options being considered. Further presentation of options and their associated impacts is recommended to provide confidence in the option selected. This is to minimise potential additional impacts to the western tributary of Back Creek and to maintain natural water drainage paths where possible.
- The general concepts proposed for the drainage of the final landform are supported with the key requirement being to ensure a stable landform is to be created with natural waterway design principles and downstream impacts mitigated. It is understood high erosion risk areas remain in the current design and that further work is required to address these. This is supported.

END ATTACHMENT A