Office of Environment & Heritage

NSW GOVERNMENT

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Our reference: DOC19/66112
Contact: Calvin Houlison
4224 4179

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Dear Ms Hollis

RE: Russell Vale Colliery Modification 4 (MP 10_0046 MOD 4) Response To Submissions

Thank you for referring the abovementioned Response To Submissions to us for comment. Our comments are summarised below and detailed at Attachment A.

As the site is subject to flooding, and with consideration of the significant flood and water quality impacts from the site during the August 1998 event, the Project Approval (2011) included conditions to ensure adverse impacts to water quality and flows to Bellambi Creek and surrounding residents are prevented or minimised. This is in recognition of the need to ensure that the downstream community, public roads and other assets including the environment is protected from adverse flood impacts and contaminated water discharging from the site.

It is understood that to date, none of the major elements from the prior approaches outlined in BECA (2010) or Cardno (2015) to achieve these outcomes have been implemented. The current proposal from Engeny (2018) seeks to provide another alternative for site water management, using more detailed modelling techniques and updated survey. However, of fundamental consideration is whether the current proposal achieves the required outcomes as per the approval conditions.

To this end, the following recommendations are provided for consideration in the Department's assessment:

- Flow paths upstream of the hydraulic modelling extent be confirmed through simulation of a direct rainfall model for the catchment.
- Council's revised 2016 blockage policy and best available flood information is obtained from council and incorporated into the assessment.
- The assessment address consideration of the water quality measures over the full range of flows.
- There is a clear strategy to manage downstream flood and water quality impacts from the site.
- Adequate assessment of previous elements proposed by BECA (2010) and Cardno (2015) be undertaken (or a refinement of them considering revised modelling, survey and blockage assumptions) to ensure an optimal approach is identified for offsetting adverse impacts to Bellambi Creek, public roads and surrounding residents.

Please do not hesitate to contact Calvin Houlison, Senior Conservation Planning Officer on 4224 4179 or via e-mail calvin.houlison@environment.nsw.gov.au should you have any further queries.

Yours sincerely

CHRIS PAGE
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Attachment A: OEH Detailed Comments on Russell Vale Colliery Modification 4 (MP 10_0046 MOD 4)

OEH DETAILED COMMENTS ON RUSSELL VALE COLLIERY MODIFICATION 4 (MP 10_0046 MOD 4)

As the site is subject to flooding, and with consideration of the significant flood and water quality impacts from the site during the August 1998 event, we suggest that DPE be satisfied that the following matters have been adequately addressed with relation to floodplain risk management:

- the impact of flooding and stream erosion from the proposed works (up to and including the PMF);
- the impact of the proposed works on flood behaviour including any management measures to mitigate adverse flood impacts;
- downstream impacts (flood risk and water quality) from the mobilisation of materials and sediments due to run-off from the site;
- the impact of flooding on the safety of people/users for the full range of floods including issues linked with isolation and accessibility for emergency services;
- the implications of climate change (particularly increased rainfall intensity) on flooding;
- the development control plans and policies of Wollongong City Council in relation to the management of flood risk; and
- utilisation of the best available flood information held by Wollongong City Council for the area including but not limited to council's Collins Creek Floodplain Risk Management Study and Plan (2014) and the Review of Collins Creek Flood Study (ongoing).

As a condition of the Project Approval (2011), a range of commitments were required to ensure adverse impacts to water quality and flows to Bellambi Creek and surrounding residents are prevented or minimised. A number of designs have been previously proposed to achieve this outcome which primarily require controlled management of flows into Bellambi Creek.

Initially, BECA (2010) provided flood mitigation and water quality approaches, which were considered adequate and subsequently approved. The flood mitigation elements were then amended by Cardno (2015), which were also approved subject to review of adequacy of the BECA water quality measures with the approach (noted as being beyond the scope of that assessment). To date, none of the major elements from the BECA or Cardno approaches have been implemented.

The current proposal from Engeny (2018) seeks to provide another alternative for site water management, using more detailed modelling techniques and updated survey. However, of fundamental consideration is whether the proposal achieves the required outcomes as per the approval conditions. To this end, a number of concerns previously raised (March 2018) for consideration by the DPE in their assessment do not appear to have been addressed:

- Flow paths upstream of the hydraulic modelling extent be confirmed through simulation of a direct rainfall model for the catchment.
- Relevant local flood related development controls and best available flood information held by council be incorporated into the assessment.
- Off-site flood impacts including those associated with any flow diversions be assessed and strategies to off-set these impacts be identified and incorporated into any future approval.
- Mitigation measures be reviewed with consideration of updated survey, modelling and blockage assumptions.
- The report scope be extended to include consideration of the water quality measures proposed in the BECA 2009 report.

- There is a clear strategy to manage downstream flood and water quality impacts from the site.

The following additional comments are provided regarding the revised assessment and alternative approach proposed by Engeny (2018) as contained in the Response to Submissions (RtS) report:

- Water quality measures proposed in the BECA (2010) report have not been reviewed to confirm suitability with the proposed approach. The Cardno (2015) assessment explicitly excluded water quality considerations, and recommended that the BECA (2010) water quality approach be reviewed to confirm suitability with the revised flood mitigation measures proposed (including sediment basin design). This recommendation was reinforced in OEH comments provided in March 2018, and does not appear to have been addressed.
- It is noted that a 6ML sediment basin appears to have been replaced by a 2.1ML detention basin as part of the proposal. Implications to water quality outcomes from this change do not appear to have been assessed.
- A “Cardno (2015) dry detention basin” is referenced throughout the report, whereas no basins were proposed by Cardno. It appears the consultant is actually referring to the BECA (2010) dry sediment basin. The assessment also states that Cardno (2015) proposed road drainage upgrades along Bellambi Lane, which is incorrect. It is unclear whether the consultant has gained a full understanding of the current approach from BECA and Cardno.
- Council’s 2009 blockage policy has been applied, with the assessment incorrectly referring to this as “currently in place”. The 2009 blockage was superseded by a revised policy in 2016.
- Updated flooding information available in the Review of Collins Creek Flood Study (ongoing) does not appear to have been considered.
- It is unclear whether the Cardno (2015) approach has been adequately modelled in the assessment. A refinement of the BECA (2010) sediment basin was undertaken to ensure suitability with the Cardno (2015) approach, as per recommendation in the Cardno report. However, this refinement does not appear to be included when assessing the scheme, resulting in bypass of flows and potential underestimation of performance. Furthermore, elements of the Cardno (2015) approach have been modelled in isolation rather than together in a scheme.
- The report contends that the Cardno (2015) approach is unsuitable due to increases in peak flows at the Princes Highway. This is contrary to results provided which included a refined sediment basin (as per Cardno (2015) recommendation) to prevent bypass of dirty water flows. The flood impact map of the Cardno (2015) approach with refined basin shows flood level reductions at downstream locations.
- The report identifies significant reductions in peak flow through the stockpile areas as a result of the proposed levee. It is unclear what blockage assumption was adopted for the 600 mm and 1800 mm diversion pipes to achieve this result.
- The assessment concludes that the culvert, swale and access road upgrades proposed by Cardno (2015) are not required. However, it is understood these measures were put in place to off-set the impact of uncontrolled and untreated flows from the site. It is therefore unclear whether incorporation of these elements (or a refinement of them considering revised modelling, survey and blockage assumptions) into the proposed approach would be more effective in minimising or preventing overflows from the site.
- It is unclear how the proposed approach compares with the Cardno (2015) approach in terms of mitigating overflows down Bellambi Lane. A comparison should be provided which incorporates all

elements of the scheme proposed by Cardno (2015), including a reconfigured basin suitable for the scheme to enable comparison.

- Outcomes of the peer review undertaken have not been provided.

Given the nature of the site and associated potential to discharge highly polluted surface runoff into downstream receiving waters, it is considered that the current proposal does not address this. It is possible that previous water quality approaches such as that provided in the BECA 2009 report provide a solution to this issue and should be thoroughly reviewed in conjunction with the flood assessment.

OEH also recommends that further advice be sought from the EPA with regard to the assessment and management of point source water quality impacts. Given the potential for off-site contamination of flood flows and the need to off-set prior landform modifications on flood flows, it is essential that any proposed water quality measures are reviewed in conjunction with flood and stormwater with consideration to current and future site conditions. It would also be prudent for DPE to consult with Wollongong City Council regarding flood and stormwater related issues.

Should the Department require any further advice in its assessment of flood risk management issues please do not hesitate to contact us**.**