Our reference: SF20/22173;
Contact Dr Sandie Jones (02) 6333 3801

Gen Lucas
Department of Planning, Industry and Environment
GPO Box 39
SYDNEY NSW

24 April 2020

Dear Sir/Madam,

Angus Place Extension Project – SSD 5602

I refer to the request for advice to the NSW Environment Protection Authority (EPA) from the Department of Planning, Industry and Environment dated 10 March 2020 on the Angus Place Colliery Extension Project, SSD 5602 (the project).

Angus Place Colliery holds an environment protection licence 467 (the licence) for the scheduled activities of coal works and mining for coal. If approved, the project will be regulated under the existing licence.

It is noted that the project seeks extend the life and increase the overall project footprint of the mine and expand the number of full time staff and extraction rate of coal. The EPA has reviewed the information provided and understands that the nature of the proposal remains similar to the existing operation at the premises.

It is pleasing to see that raw mine water generated as part of the mining activities proposed in the project will be transferred to the Springvale Water Treatment project for treatment and beneficial reuse at the Mount Piper Power Station.

In its review of the project, the EPA has identified further information requirements for the noise and air assessments. These are detailed in A**ttachment A**.

If you have any questions regarding this matter, please contact Sandie Jones of the EPA on (02) 6333 3800 or via e-mail at central.west@epa.nsw.gov.au.

Yours sincerely

Dr SANDIE JONES
Regional Manager Operations
Environment Protection Authority

Phone 131 555
Phone +61 2 6333 3800
(from outside NSW)
Fax +61 2 6333 3809
TTY 133 677
ABN 43 692 285 758
PO Box 1388
Bathurst NSW 2795
Australia
L102,346 Panorama Avenue
Bathurst NSW 2795
Australia
info@epa.nsw.gov.au
www.epa.nsw.gov.au

Attachment A: EPA comments

Surface water assessment

From 2020, there will be no discharge of mine water from the Angus Place Mine Extension Project (APMEP) and all mine water from existing workings, not used on site, will be transferred to the Springvale Water Treatment Plant (SWTP) for desalination and reuse at the Mount Piper Power Station. Under the proposed amended APMEP, discharge of treated stormwater at LDP002 remains unchanged, and discharge of mine water via LDP001 and the treated effluent discharge via LDP005 (once longwall extraction commences) will no longer be required.

Mine inflows will be managed underground as required to address short term spikes in inflow, or for routine or emergency maintenance when dewatering infrastructure. Bore 930 will continue to be used as a reinjection borehole for raw water from the SWTP Water Transfer Pipeline in the event that the SWTP is unable to operate. Overall with reuse of wastewater at the Mount Piper Power Station there will be up to 1.8 ML/day average discharge occurring from Springvale Mine's LDP001 and no mine water discharges from the APMEP.

Following mine closure there is potential for groundwater seepage in the vicinity of the sealed portals. There is also potential for some acid generation within the mine voids and contributing overlying unsaturated formations. The Amendment Report states that this potential will be assessed and managed at the mine closure planning stage.

Recommendation

If the project is approved, the EPA recommends that potential groundwater seepage and acid generation, including potential prevention and mitigation options, are investigated so that viable and effective management measures can be implemented.

On-site effluent disposal

The EPA notes that licence discharge point 5 (LDP05) is from the current utilisation area associated with on-site effluent disposal. With the increase in full time equivalent staff on the premises, it is appropriate to update the sewerage infrastructure at the premises by connecting to the sewer line for transfer and treatment at the Lithgow Sewerage Treatment Plant. The environmental assessment states that this will occur through a separate development application to Lithgow Council.

Recommendation

If the project is approved, the EPA recommends that all infrastructure for connection to the Lithgow Sewerage Treatment Plant be constructed and operational prior to commencement of the longwall extraction at the premises.

Noise

The following documents have been taken into consideration as part of the review of the modification application for the Angus Place Mining Extension Project (APMEP):

- 2014 assessment (*Centennial Angus Place Pty Ltd, Angus Place Colliery, Mine Extension Project, Noise Impact Assessment, dated 24 January 2014, SLR Consulting Pty Ltd, reference: 630.10123.01030-R1 Revision 3)*
- 2019 noise report (*Angus Place Mine Extension Project Noise and vibration impact assessment, dated 21 November 2019, EMM Consulting, reference J190316 RP1 Final*)

Based on the review of these documents, the EPA requests that additional information is provided before the recommendation of approval conditions are considered. The assessment of low frequency noise, predicted noise levels, noise mitigation and residual impacts was not been conducted in accordance with the Noise

Policy for Industry (NPfI). Additionally, there are inconsistencies between the 2014 assessment and the 2019 report which require further explanation. Detailed comments are as follows:

Low Frequency Noise

Chapter 4.2 of the 2019 noise report states that previous compliance noise monitoring did not identify any low frequency noise (LFN) issues. However, previous compliance noise monitoring reports do not include any consideration of LFN so it's not clear how the noise report can exclude consideration of LFN on this basis. An assessment of LFN in accordance with Fact Sheet C of the Noise Policy for Industry (NPfI) is required as follows.

Where LFN is or is likely to occur, and cannot be mitigated to below NPfI LFN triggers, the NPfI requires a modifying factor correction to be applied to the measured or predicted noise levels at the noise-sensitive receiver locations before comparison with the project noise trigger levels. Fact Sheet C has two requirements to determine the presence of LFN:

1. a 'screening' test to identify the potential for LFN by assessing whether there is a difference of 15 dB or more between C- and A-weighted measurements; and where this is the case,
2. a detailed evaluation of the 1/3 octave frequencies between 10Hz to 160Hz in Table C2 of Fact Sheet C.

The EPA (or other regulatory authorities) will consider the outcome of a noise assessment undertaken in accordance with the NPfI, including any modifying factor arising from the presence of LFN, when recommending noise limits in an environment protection licence or other approval. The EPA acknowledges that there are practical constraints to assessing low frequency noise when using standard assessment approaches including:

- limited availability of published sound power level data below 63Hz for plant and equipment that may generate LFN; and
- limitations in the ability of commercial noise modelling software to predict noise levels below 31.5Hz (and in some instances below 63Hz).

The following outlines how low frequency noise can be assessed in different circumstances to satisfy the requirements of Fact Sheet C of the NPfI. Alternative methods may be used where this is supported by sufficient evidence to demonstrate that LFN has been considered in accordance with the requirements set out in Fact Sheet C of the NPfI.

Determining LFN modifying factor corrections for existing developments

- Measure source contributions in the one-third octave band range of 10Hz to 160Hz at the existing development.
- Document the measurement methodology including: the prevailing meteorological conditions; the operating conditions of the existing development during measurements; the location of the measurements; and any adjustments applied to the measurements to assess LFN in accordance with Fact Sheet C of the NPfI.

Determining LFN modifying factor for a new development

- Predict the one-third octave band noise levels using proprietary noise modelling software down to the lowest one-third octave band that can be predicted by the noise model. The noise model used, the lowest one-third octave band noise level that can be predicted by that noise model, and the sound power level data used should be reported.
- Supplement the modelling results with measurements from comparable sources of noise to the proposed new development.
- Using this measurement data, develop a low frequency curve (or a "tail") in the one-third octave band frequency between the lowest one-third octave band noise levels that can be predicted by the modelling software and down to 10Hz.
- Apply an adjustment to the measured frequency curve based on the difference between the predicted and measured noise level at the lowest one-third octave band noise levels that can be

predicted by the modelling software. For example, if the lowest one-third octave band frequency that can be modelled is 63Hz, then the data measured below 63Hz should be adjusted in each one-third octave band between 10Hz to 63Hz based on the difference between the predicted and the measured one-third octave band noise levels at 63Hz.
- Once the frequency curve down to 10Hz has been established, this should be used to assess LFN in accordance with Fact Sheet C of the NPfI.

Note that all measurements should be undertaken using a Class 1 sound level meter conforming to AS IEC 61672.1-2013 with appropriate wind screen protection over the microphone (Refer NPfI, Fact Sheet C); and at measurement location(s) where LFN can be measured in the absence of extraneous noise to accurately capture LFN.

It is acknowledged that the premises is not currently operating, however there appear to be multiple historical data sets available from multiple monitoring campaigns.

Noise modelling and assessment

1) The proponent is requested to provide the calculation algorithm, method or standard applied by the noise modelling software to calculate predicted operational noise levels.

2) Chapter 6.2 of the report states that the predicted 2 dB exceedance at WR1 is negligible. However, the fifth step in the process of applying the NPfI to existing sites, described in Section 6.1.1 of the NPfI, requires reasonable and feasible mitigation strategies to be assessed where levels are above the Project Noise Trigger Level (PNTL). The noise report has not assessed reasonable and feasible mitigation measures for the predicted exceedance of the PNTL. The proponent should provide an assessment of reasonable and feasible mitigation prior to assessing residual impacts including, but not limited to the following information:
- Analysis of the sources contributing to the predicted exceedance
- Analysis of potential mitigation measures
- Assessment of measures against reasonable and feasible considerations.

3) There are inconsistencies between predicted noise levels in the 2014 assessment the current noise report as follows:
- Predicted noise levels are significantly higher (6 dB) during the day at WR1 than previous assessment
- Predicted noise levels are significantly lower during the night than previous assessments at WR1, WR2 and WR3.

In Chapter 2.1 of the noise report it states that there will be no change to surface infrastructure and that the sound power levels from the 2014 assessment have been used. Therefore, it is not clear what has changed between the two assessments to cause these inconsistencies. The proponent is requested to provide an explanation of the changes and noise sources contributing to the predicted differences in noise levels between the two assessments.

4) The 2014 noise assessment included a validation exercise for the noise model using historical monitoring data. The report states that changes to noise emissions are not expected as a result of the modification and that sound power levels from the 2014 assessment have been used. TANU expects the proponent to demonstrate that the revised noise model performs within acceptable tolerances. This could be done for example, by comparing predicted and measured noise levels.

Air

The amended AQIA was completed in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, apart from the treatment of background air quality data prior to dispersion modelling of particulate impacts. Detailed comments are as follows:

1. Wind erosion emissions

a) Emissions Inventory

Particulate emissions from wind erosion have been calculated using US EPA AP42 13.2.5 emission factors. TA-Air advises that this method is acceptable, however, all parameters and variables must be provided for the EPA to be able to confirm estimated emissions.
For the US EPA AP 42 13.2.5 methodology, this includes as a minimum: number of disturbances per year (N), erosion potential (P_i), friction velocity (u*), threshold fiction velocity (u_t) and number of hours of the year wind erosion was modelled.

Using NPI default emission factors as was used in the 2014 AQIA for wind erosion emissions, the estimated emissions for the proposed 1.61 ha stockpile are: TSP 5641 kg/yr, PM_{10} 2821 kg/yr and $PM_{2.5}$ 423 kg/yr. The 2019 AQIA estimates wind erosion emissions are: TSP 4158 kg/yr, PM_{10} 2079 kg/yr and $PM_{2.5}$ 312 kg/yr, which are approximately 25 % lower. Considering the increase in ROM stockpile proposed in the 2019 AQIA compared to the 2014 AQIA and the lower emissions estimated in the amended AQIA, additional information regarding the methodology of wind erosion emission estimates is required.

b) Emissions control

The 2014 AQIA stated that particulate emissions from wind erosion are and will continue to be controlled by water sprays, resulting in 50 % emissions reduction. The controls in the amended 2019 AQIA only include controls for conveyors and coal sizer, but not for wind erosion.

Recommendation

The EPA recommends the proponent provide the details of the variables used to estimate wind erosion particulate emissions, including: number of disturbances per year (N), erosion potential (P_i), friction velocity (u*), threshold fiction velocity (u_t) and number of hours of the year wind erosion was modelled.

The EPA recommends the proponent consider all reasonable and feasible emission control, mitigation and management measures to minimise particulate emissions.

2. Background air quality data

The AQIA uses background air quality data from Bathurst AQMS but has removed data points that are above 50 µg/m^3 and those that were measured during regional dust storms. The AQIA states this is consistent with the approach in the Approved Methods.

The use of air quality data from the Bathurst monitoring station might be conservative as stated in the AQIA with comparison to onsite PM_{10} data collected by HVAS 1 in 6 days, but the excessive data manipulation to remove the 11 highest values in 24-hour PM_{10} data, including three data points that are below the impact assessment criteria (50 µg/m^3) is not adequately justified and not an approach supported by the Approved Methods.

In particular, the three data points below that were removed due to widespread dust storms are likely to still reflect background air quality at the project location. The onsite HVAS shows a data point >100 µg/m^3 indicating that the removal of background data from Bathurst >48 µg/m^3 is not necessarily reflective nor conservative of local air quality at Angus Place. If the eleven data values in background air quality were not removed, the modelling would predict three additional exceedances in PM_{10} 24-hour concentrations.
The EPA advises that in the case of additional exceedances, the proponent must demonstrate that best management practices will be implemented to minimise emissions.

Recommendation

The EPA recommend the proponent revise the AQIA to incorporate background data consistent with the requirements with the Approved Methods. Where the revised assessment predicts exceedances of the impact assessment criteria, additional mitigation and control measures, including, but not limited to the ROM stockpile (issue 1b) should be applied to the project.