

## **Attachment A – TA-Air detailed comments on Air Quality Impact Assessment**

TA-Air has reviewed the AQIA *Air Quality Impact Assessment, 57 Tattersall Road, Kings Park, Todoroski Air Sciences Pty Ltd., November 2019*. The AQIA was generally prepared in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (Approved Methods)*. However, the following should be addressed before conditions of approval can be recommended:

1. **Unknown impacts at adjacent receptors:**

Modelling results presented in the assessment show predicted impacts of the project operations at 15 different receptors outside the industrial park. However, no receptors in the vicinity of the premises have been included as part of the assessment. Considering, there is a temple located less than 100m south of the project boundary and there is an ongoing history of complaints regarding odour, smoke and dust emissions primarily from adjacent industrial receptors, the inclusion of these receptors will help to better understand the potential impacts of the proposed operations. Further, the Approved Methods defines a sensitive receptor as a location where people are likely to work or reside.

***TA-Air recommends:***

- a) The AQIA is revised to assess the potential impacts of the proposed operations at various locations in the vicinity of the premises. This includes but is not limited to the temple located south of the project boundary and adjacent industrial receptors.***
- b) The AQIA is revised to include isopleth figures for all assessed pollutants that show predicted contour level concentrations at the adjacent industrial receptors. In addition, where possible these contour levels must include the contour level representing the appropriate criteria (e.g. odour).***

2. **The assessment does not include a worst-case scenario:**

The AQIA predicted impacts are based on annual average operations. A worst-case scenario based on peak daily material handling is likely to result in larger predicted increments. It is noted that the EIS presents a range of operational hours, as well as, average daily operational hours. For instance, estimated emissions from copper shredding are based on an activity rate equivalent to 300 h/year (approximately 1.2 hours a day without including weekends and public holidays). Based on the information presented in the EIS, this activity rate could be as high as 492 h/year.

Given that there is no detailed discussion or commitment to an expected operational regime for the proposed activities, the inclusion of a modelling scenario to present predicted increments based on peak daily material handling is required to better understand the potential impacts of the proposed activities.

***TA-Air recommends:***

- a) The AQIA is revised to include a worst-case modelling scenario to assess potential impacts based on peak daily material handling activities.***
- b) The AQIA is revised to transparently present a table that shows all the operational assumptions included in the emissions inventory and the model. This should include but be not limited to number of hours a day, number of days a year, and operational hours and days.***
- c) The proponent nominates and commits to a specific operational regime for each of the proposed activities.***

3. **Assessment does not include all potential sources:**

Based on the information that has been provided, TA-Air considers that it is not clear if all potential sources have been assessed. Whilst the assessment includes emissions for most of the proposed operations, it does not address potential emissions from:

- Diesel combustion from the different sections of the processing plant
- Hauling operations related to the refuelling of the processing plant
- Any outlet ventilation emissions (e.g. wet scrubber vent of the hammermill shredder)

It is also noted that the assessment has not included potential emissions from oxy-cutting, which is usually expected from similar operations.

**TA-Air recommends:**

- a) **The AQIA be revised to include detailed information and the assessment of all potential point and fugitive emission sources for the appropriate pollutants.**
- b) **The proponent clarifies if oxy-cutting processes will be undertaken as part of the operations.**

4. Unclear assumptions for the estimation of the emissions inventory:

The AQIA does not adequately justify some of the estimated emissions for the modelled scenario. Some assumptions and input data used in the emission estimation calculations have not been adequately justified, including:

a. Shredder emission rate and assumed ratios

Whilst the AQIA states that data provided by the hammermill shredder manufacturer indicates that under typical operating conditions the hammermill shredder emits 1kg of TSP per hour, there is uncertainty in:

- whether this includes the in-built pollution controls and,
- whether this rate refers to expected fugitive emissions or emissions from wet scrubber vent.

In addition, no justification has been provided to explain the adopted ratios for the PM<sub>10</sub> and PM<sub>2.5</sub> rates, which were assumed to be 50% and 25% of the TSP rate, respectively. Underestimating these rates would mean that predicted PM<sub>10</sub> and PM<sub>2.5</sub> impacts are underestimated. Further, given that predicted metal concentrations are derived from estimated PM<sub>2.5</sub> concentrations, there is uncertainty regarding the conclusions and results presented in the AQIA for metals.

**TA-Air recommends:**

- a) **The AQIA be revised to transparently justify assumed and adopted input variables used to calculate the assessed emissions. This is to include but not be limited to the:**
  - **Clarification of the applicability of the 1 kg of TSP per hour emission factor**
  - **Robust justification for the adopted TSP, PM<sub>10</sub> and PM<sub>2.5</sub> ratios.**

b. Screening emissions

It is TA-Air's understanding that previous complaints regarding dust emissions could be related to screening activities (i.e. floc screening). Consequently, it is important to understand where and how these activities fit in the proposed activities. Whilst the AQIA has included estimated emissions for screening activities, it is unclear where these activities are expected to be undertaken, their proximity to adjacent receptors and what controls could be adopted to minimise potential emissions.

**TA-Air recommends:**

- a) **The AQIA be revised to include detailed information regarding screening activities, including methods, locations, type of materials and controls that are consistent with best practice control of fugitive emissions.**

c. Emission controls:

Despite the ongoing history of complaints regarding dust emissions from wind erosion from stockpiles, screening activities and hauling on unpaved roads, the emissions inventory presented in Table A-2 does not include emission controls for any activities except for the hammermill shredder operation. In accordance with the POEO Act, the occupier of any premises must carry on any activity, or operate any plant, in or on the premises by such practicable means as may be necessary to prevent or minimise air pollution.

**TA-Air recommends the proponent:**

- a) **Nominates and commits to implement controls for all activities that are consistent with best practice control of fugitive emissions.**
- b) **Updates the emission inventory and AQIA to include the adopted best practice controls.**

5. Odour impacts have been underestimated

Whilst the AQIA includes potential impacts from fugitive odour emissions, it does not include emissions from the wet scrubber vent of the hammermill shredder. In addition, the emission rates used in the model are calculated based on previous monitoring results undertaken at the facility next door, the opening inlet and outlet areas of both the shredder and pre-shredder and a wind speed of 0.5 m/s. However, the following has not been considered:

- The odour concentration (1,600 OU) used to estimate fugitive emissions from the pre-shredder and the shredder was measured at the wet scrubber vent stack of the hammermill shredder. Given that this concentration was measured after going through a control system, it is unclear how representative this concentration is of potential fugitive emissions.
- The calculated emission rates for fugitive odour emissions are a function of the inlet and outlet areas, as well as, the air throughput velocity (0.5 m/s). In this sense, the higher this velocity is the higher the emission rate will be. It is noted, however, that no detailed discussion has been provided to justify the adequacy of the adopted velocity.
- The selected odour criteria for the assessment of odour concentrations is 2 OU. Although, there are not predicted exceedances at the selected receptors, the AQIA has not assessed potential impacts in the vicinity of the premises. It is noted, that the odour contour plot included in section 6.2 does not show the contour level representing the adopted criteria.

**TA-Air recommends the AQIA be revised to:**

- a) **Assess all potential point and fugitive odour emission sources.**
- b) **Transparently justify assumed and adopted input variables used to calculate assessed emissions, including the applicability of the assumed odour concentrations to fugitive emissions and the velocity of 0.5 m/s.**
- c) **Include the 2 OU criteria contour in the odour contour plot in section 6.2.**