

ADVICE TO THE EPA FOLLOWING EXPERT CONFERENCING ON EDN AIR CONCENTRATION DISPERSION MODELLING

The joint witness statement (JWS) on air dispersion modelling covers a range of matters to do with the dispersion modelling methodology and the input parameters, and suggests a range of changes that should be made to any future modelling assessment.

It is not possible to use simple extrapolation to estimate how these changes might affect the modelling results reported previously by the Applicant because there are too many inter-related factors. As indicated in item 11 of the JWS: *additional modelling will be necessary if the Decision Making Committee wishes to consider the possible effects of changes to any of the input parameters discussed above.*

If additional modelling is to be carried out then it should be based on the following:

- a) The modelling should be based on the same AERMOD software as previously (JWS item 2).
- b) The WRF meteorological file produced for Tauranga should be used (JWS item 3).
- c) Both the 98th and 95th percentiles should be reported for the 1-hour results (JWS item 4).
- d) The modelling should include separate predictions for single log piles of both 1000m³ and 1500m³ (JWS item 5). The residual EDN concentration in each pile immediately prior to ventilation should be set at 700 ppm for both pile sizes (see (i) below).
- e) The modelling for multiple log piles should be based on all piles being 1000m³ (JWS item 6).
- f) The modelling should include separate predictions for single 1000m³ log piles with heights of 2.5 and 5 metres (JWS item 7). The other pile dimensions should be adjusted so that the same mass of EDN is released for both height options.
- g) A load factor of 50% should be used in calculating the mass of free EDN present immediately prior to ventilation (JWS item 8).
- h) The EDN releases during the fumigation should be included in the modelling but are not expected to have any significant effect on the potential effects (JWS item 9).
- i) The residual EDN concentration immediately prior to ventilation should be set at 700 ppm (JWS item 10).

The modelling results should be assessed against either the value of the appropriate TEL or 50% of that TEL, depending on the preferred level of conservatism (JWS item 1).

It should be noted that the recommendations in points d), g), and i) are based solely on my opinion as the Applicant did not put forward anybody with expertise and experience in these matters.

Finally, I should also note that if no additional modelling is undertaken my conclusions regarding separation distances would be unchanged from those given in my report to the EPA dated April 2018. The additional information provided by the Applicant in August 2018 contained nothing to suggest that I should modify my assessment.



Bruce W Graham

2 November 2018