



DOC21/805693-4

Mr Shaun Williams
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Dear Mr Williams

Shoalhaven Starches – Mod 21 – Modification to Approved Packing Plant – EPA Comments

Thank you for the request for advice, requesting the review by the NSW Environment Protection Authority (EPA) of the Statement of Environmental Effects (SEE) for the proposed Modification to the Approved Packing Plant (MP06_0228-Mod-21) at Shoalhaven Starches, located at 160 Bolong Road, Bomaderry.

The EPA has reviewed the following documents:

- *Statement of Environmental Effects – Proposed Modification to Approved Packing Plant and Other Works – Cowman Stoddart Pty Ltd – August 2021*
- *Shoalhaven Starches Modification 21 – Proposed Modification to Packing Plant and other works – Air Quality Assessment – GHD – 10 August 2021*
- *Environmental Noise Impact Assessment Shoalhaven Starches Proposed Modification to Shoalhaven Starches Expansion Project 06_0228 – Packing Plant Alterations and Other Works – Harwood Acoustics Acoustical Consulting – 17 June 2021*

The EPA understand the proposal is primarily to modify the approved but not yet constructed Packing Plant, to allow the ability to package an increased amount of specialty products at the premises, through the following modifications:

- Installation of an additional 16 product storage silos and relocation of the already approved 7 product storage silos;
- Installation of an additional 8 packer feed bins;
- Reconfiguration of the Packing Plant footprint and layout of the carpark;
- Addition of a third rail spur; and
- Addition of a train tunnel.

The proposal also includes the following modifications to the premises that are not related to the Packing Plant:

- Installation of an additional wastewater buffer tank at the Wastewater Treatment Plant;
- Installation of an Ethanol Nitrogen Generator and associated storage vessels;
- Installation of an additional Indirect Cooking Plant; and
- Installation of two additional fermentation tanks.

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The premises are subject to Environment Protection Licence No. 883 under section 43 of the *Protection of the Environment Operations Act 1997* (POEO Act) for Agricultural Processing, Chemical Production, and Chemical Storage under clauses 2, 8 and 9 respectively of Schedule 1 of the POEO Act.

In 2009, the applicant received planning approval under MP06_0228 to expand its ethanol production from 126 ML/p.a. to 300 ML/p.a. Since this approval, the licensed premises have undergone significant infrastructure and operational changes by way of multiple planning modifications.

In consideration of this, on receipt of MP06_0228-Mod-21, the EPA undertook a high-level comparison of predicated odour concentrations for MOD 21 against results exhibited in previous modifications since 2009 and the initial odour assessment.

The EPA noted from this assessment that predicted odour concentrations have increased at several receptors since the production expansion granted in 2009, and that predicted odour concentration contours keep extending further from the project boundary.

While the EPA notes that the Air Quality Impact Assessment for Modification 21 predicts a slight increase in odour impacts, there is significant uncertainty regarding the modelling approach used to predict impacts from the proposal.

In this regard, the EPA is seeking additional information from the applicant to inform the level of odour impacts from the premises and allow for a robust and transparent review of the results and conclusions exhibited in the MOD 21 air quality impact assessment. The additional information requires that odour emission rates are representative of the expected operating range, consider the multiple infrastructure and operational changes in the last decade, and be put in context of an evaluation of the existing controls and the history of complaints.

Additionally, the EPA has reviewed the Noise Impact Assessment and requests additional information to be able to assess the proposal.

Attachment A provides the EPA's comments and recommendations.

If you have any questions about this request, please contact myself or Amanda Fletcher on (02) 6229 7002 or via email at queanbeyan@epa.nsw.gov.au.

Yours sincerely



27/10/2021

JANINE GOODWIN
Unit Head
Regulatory Operations Regional

Attachment A

Noise

1. Matters to be addressed prior to determination

a. Modifying Factor Assessment

Section 4.2.3 presents the "Modifying Factor Assessment". The assessment states 'no modifying factor adjustments are applicable' however it only appears to consider tonality and low frequency noise.

The EPA requests that the proponent provide information on whether intermittency has been considered (for example are any of the mechanical plant likely to cycle on and off).

The EPA also requests the proponent provide more information to support the claim that 'the noise levels are not expected to contain tonal characteristics at any receptor location'.

b. Recommended Noise Controls

Section 6 to the NIA includes recommended noise controls. The EPA recommends that Section 6 be expanded to include: "Any ventilation fans, blowers and pumps should be designed to not exhibit tonal or low frequency noise, with an appropriate one third octave assessment undertaken in accordance with the *Noise Policy for Industry*".

2. Matters to be addressed with conditions

a. Design and Specifications of Equipment

Due to the limited oversight over the design and construction of the modified plant, the EPA recommends that DPIE include suitable conditions be included in any modified consent to ensure that the performance of the modified plant meets the performance requirements outlined in the NIA. Suitable conditions could be framed along the following lines:

- Plans and specifications submitted to support an application for a Construction Certificate pursuant to the Environmental Planning and Assessment Act 1979 shall detail the design measures and construction materials required to satisfy the noise performance requirements outlined in acoustic report *Proposed Modification to Shoalhaven Starches Expansion Project 06_0228 – Packing Plant Alterations and Other Works – Modification 21. Environmental Noise Impact Assessment* (by Harwood Acoustics ref: 2103003E-R, dated 17 June 2021). The plans and specifications shall be endorsed by a suitable qualified and experienced acoustical professional confirming that the performance objectives of the noise assessment will be achieved by the works outlined in the submitted plans and specifications.
- An Occupation Certificate for the works shall not be issued without confirmation from a suitable qualified and experienced acoustical professional that the works have been designed and constructed, and capable of being operated in a manner that satisfies the design objectives outlined in the *Proposed Modification to Shoalhaven Starches Expansion Project 06_0228 – Packing Plant Alterations and Other Works – Modification 21. Environmental Noise Impact Assessment* (by Harwood Acoustics ref: 2103003E-R, dated 17 June 2021).

Air Quality and Odour

3. Matters to be addressed prior to determination

a. Odour emissions rates must be representative of the expected operating range

Table 7-1 in the AQIA presents a comparison between the previously and the most recently adopted odour emissions rates for modelling. The EPA notes the following:

- The AQIA indicates that it is assumed that monitoring results used to estimate emission rates for the dispersion modelling are representative of normal operations. It is also indicated that the increases in monitoring results are attributed to “*natural variances in the sampling methodology*”. However, since no detailed information is provided to describe the operating range nor to demonstrate that the air emission testing was undertaken during conditions representative of the expected operating range, this assumption cannot be verified.
- Whilst some of the emissions rates are based on results from the on-going monitoring requirement under the Environment Protection License, there is no detailed information to account for the adopted emission rates for the remaining sources. For instance, there is no detailed information to justify that some of the emission rates have not been updated since Modification 13.
- The AQIA does not provide detailed information regarding the assumptions made to estimate variable emissions rates for the boilers, biofilters, effluent storage dams and membrane bio-reactor.
- The AQIA indicates that the measured odour emission rates have been scaled to account for a 300 ML per year ethanol production. However, no detailed justification or analysis has been provided to robustly demonstrate the appropriateness of this approach.

The EPA recommends:

- a) The proponent provides a summary and detailed analysis of the odour monitoring results (i.e. measured concentrations and estimated emission rates) collected over the last ten years of monitoring for all the identified odour sources in Table 7-1. This analysis must be supplemented by presenting:
 - Figure/s showing the change in the emissions profile for each of the identified odour sources.
 - Figure/s comparing the measured concentrations / estimated emission rates against the operating range (e.g. operating rates) during the period of time the odour emission monitoring was undertaken.
- b) The proponent provides a precise definition of ‘normal’ operating ranges.
- c) The proponent provides a detailed list of process parameters (i.e. metrics) which were monitored and recorded for the purposes of ensuring air emission testing was undertaken at representative operating conditions and ranges.
- d) The AQIA be revised to include detailed information regarding the assumptions made to estimate variable emissions rates for the boilers, biofilters, effluent storage dams and membrane bio-reactor.
- e) The AQIA be revised to include a detailed discussion and data analysis that supports the assumptions made to scale odour emission rates for a 300 ML per year ethanol production.

b. The CALMET generated data underestimates low speed conditions

Section 5.2.1 in the AQIA includes a comparison between the CALMET generated data used in the dispersion modelling (year 2004) against on-site monitoring data (29/04/2019 - 26/05/2020). The comparison concludes that the “*General wind pattern alignment between observations and modelled*

meteorological conditions is considered acceptable” and that “the modelling data may be over predicting impacts to the south”.

However, it is noted that the comparison shows that CALMET data underpredicts low speed conditions (e.g. winds between 0.5 - 3 m/s), which are linked to poor dispersion conditions. Therefore, it is likely that the use of this meteorological data underpredicts odour impacts at the identified receptors, especially, at those near the premises.

The EPA recommends the meteorological modelling (and therefore dispersion modelling) must be revised to incorporate site-specific data.

c. Predicted odour impacts must be representative of Shoalhaven Starches’ operating hours

The AQIA specifies that the predicted odour impacts have been based on the hours of operation of these receptors (i.e. predicted odour impacts when the sites are not operational have been excluded from the assessment). This approach likely underpredicts impacts at these locations. Noting that the days and hours of operations at these receptors could change at any given time, predicted odour concentrations should be based on Shoalhaven Starches’ operating hours.

The EPA recommends the dispersion modelling approach is revised to include predicted odour impacts at all the identified receptors representative of Shoalhaven Starches’ operating hours.

d. Odour impacts must also be put in the context of the evaluation of the existing odour controls and the history of complaints

Section 7.4 of the AQIA compares modelling results against the “2009 EA approved base case Odour criterion” to demonstrate compliance. However, a revision of the information provided in the AQIA prepared in 2008 in support of the Ethanol expansion shows that the odour concentrations nominated in Table 7-2 refer to the predicted concentrations of the then proposed modification (i.e. ethanol expansion from 126 to 300 ML per year) with Stage 1 controls being implemented.

Although it is not clearly stated in the AQIA, it is EPA’s understanding that the proponent has previously demonstrated that controls equivalent to Stage 3 have been implemented. This means that the predicted odour concentrations for the proposed modification should be compared against predicted odour concentrations representative of the implementation of Stage 3 controls. It should be noted that the then predicted odour concentrations for said scenario are close to the 2 OU for locations R1 – R4.

Notwithstanding the above, the EPA considers that comparing the predicted odour impacts against previous modelling results to demonstrate compliance is not in accordance with the requirements under the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. Further, it should be noted that once operational, and regardless of what modelling results may predict, should odour impacts be experienced, the proponent needs to address these odour impacts and, if necessary, modify the facility based on actual operational outcomes. As such, odour complaints are an important indicator to understand the level impacts from the premises.

The EPA recommends that the proponent provides:

- a) A status update of odour mitigation measures that have been implemented at the premises. Consideration must be given but not limited to:
 - I. The status of the odour emission controls implemented at the premises (i.e. stage 1, stage 2, stage 3 or alternative odour controls).
 - II. A summary table showing the odour controls used to minimise emissions for each of the identified/assessed odour sources.
 - III. Identification of the odour sources that contribute most significantly to predicted offsite ground level concentrations.

- IV. Odour reduction efficiency for each odour control for the major odour sources.
 - V. Identify if additional controls or upgrades to existing control systems are required to minimise odour emissions from the site.
 - VI. The use of surrogate monitoring (i.e. operating parameters or key performance indicators) to inform on-going operations and corrective actions to be implemented once offensive odour is detected beyond the premises.
- b) A consolidated summary of the odour complaints received by the proponent and the EPA in the last 5 years (2021 inclusive). The summary must also include detailed discussion regarding:
- I. The nature of the complaint (odour character and perceived offensiveness of the odour).
 - II. A summary of the subsequent investigative works undertaken (i.e. status of controls, production levels, identified peaks in the emissions).
 - III. The corresponding corrective actions/measurements implemented when offensive odour is detected off-site.
- c) A summary of any community consultation/engagement investigations that may have been proactively undertaken by the Licensee in the last 5 years to understand potential odour impacts at community receptors and neighbouring industrial facilities.