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Development Application: 10.2024.45.1

PAN: 398428

Our Reference: J323.0

24th July 2024

To the Assessing Officer,

RE: Hazardous Development – Response to referral assessment

Thank you for the provision of the response and questions relating to the Department of Planning, Housing and Infrastructure – Technical Specialist Mr Nicholas Hon. We understand that the request seeks further information on the following items:

1. ProFume (Sulfuryl fluoride) fumigant volumes, and
2. Dust explosions from shelling, hulling, storage, bunkering and handling of almond related dust confirming verification of the ability for almond process to produce combustible material.

Profume (Sulfuryl Fluoride)

Following the submission and significant time since the completion of councils' assessment, the Applicant and Operator of the site has entered into an agreement with an external contractor to undertake fumigation activities relating to the site's operation. In forming this agreement, the volumes previously estimated in Table 2.8 of the submitted EIS (not 2.1) as being required to be stored on site, are no longer required. In place, a single small canister (56.7kg) will be held on site for incidental occasional use outside of the contract (small pallet etc).

The engaged contractor has the ability to store ProFume off site, transporting required volumes to site for treatment activities. The total volume transported remains within the screening volumes identified within SEPP 33 being consistent with the submitted Environmental Impact Statement.

To summarize the volumes and screening information relating to ProFume the following would apply:

Table number (SEPP 33)	Class	Nominated Method to use	Screening Threshold	Estimated/ proposed volume	Above or below threshold volume
1	2.3	Table 3	Refer following section		
3	2.3	'Other poisonous gasses'	100kg	56.7kg	Below
2	2.3	Vehicle Movements			
		Cumulative Annual	>100	96	Below
		Peak Weekly	>6	4	Below
		Minimum quantity per load			
		Bulk	1t	680kg (max)	Below
		Packages	2t	226.8kg (4 cylinders)	Below

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Based on the alteration in management of fumigants on site and use of the external contractor, it is our interpretation that the utilisation, storage and transport of ProFume does not meet the trigger screening levels identified within the 'Applying SEPP 33', January 2011.

Dust explosion and fire risk

The request nominated that the development is considered potentially hazardous due to the potential for dust explosion risks as referenced in Appendix 3 of SEPP 33. It further identified that the shelling, hulling, storage, bunkering and handling of almond related dust could generate combustible dusts under specific conditions, and sited:

- a fire incident relating to an almond processing plant in America where a small fire in a dust collector system had occurred, and
- a hull (not dust) fire had occurred in Victoria.

Neither incident was from an explosion, and one did not relate to dust.

Appendix 3 of the SEPP 33 nominates that the industry of 'grain handling' induces the hazard of grain dust and nominates the possible impact of dust explosion. This is consistent with recorded incidents worldwide where Agricultural Dust Explosions have been recorded in grain processing areas such as corn, soyabeans, wheat, barley, oats, sugar and rice. The world almond processing volume exceeds 7.5million tonnes annually, with no recorded incidents of almond processing plant explosions anywhere in the world. The provided study undertaken by the American Society of Agricultural Engineers supports the industry experience with evidence from combustibility testing indicating that almond dust should not be considered combustible. The Applicant has requested a site test of the dust to confirm on-site conditions and will supply these results as they are available.

Consideration of other risks was completed as part of the Environmental Impact Statement which included reviewing the potential for fires within hull storage areas. Fires generally occur where there are high moisture levels within bunkers which leads to fermentation and heat. Where heat within the hull storage is unable to dissipate, this may lead to combustion of hulls within the storage bunkers.

Extensive planning for and consideration of hull fire management have been incorporated into the development design. These measures are detailed in the submitted application documents and include the following aspects of the site's design and operation

- North south hull bunker alignment that allows the sun to transition across the entire face of all bunks without shading, thus reducing moisture level.
- Drying of field produce prior to shelling and hulling activities on site, thus ensuring that moisture level of all material stored within the bunkers is low on arrival to bunkers.
- Separation distances between hull bankers to delineate each area and allow access for ongoing monitoring and control.
- Hull temperature monitoring systems within bunkers to ensure temperatures remain within optimum levels.
- Maintenance of significant volumes of water on site for fire control.
- Significant separation distances are maintained surrounding the site to reduce the risk of external fires connecting with on site activities.

The above management measures represent first class and world leading design and management of hulls and have been specifically designed and constructed to reduce the potential for hull fires.

On the basis that the ProFume volume and activities are re-proposed below the screening levels and that there is no evidence to support the explosive nature of Almond dust, and that significant consideration was undertaken as part of the sites design and operation reducing the chance of hull fires has been undertaken, a Preliminary Hazard Analysis has not been provided.

We appreciate your time and consideration of this response and look forward to the progression of this application.

Yours faithfully,

Clare Fitzpatrick

Director

Progressive Rural Solutions