

Shoalhaven Starches

Fact Sheet

Odour Management

History of the issue

The impact of odour on the local community is an important issue. Odour from both the factory and the environmental farm has been a source of complaints.

In this fact sheet we outline a comprehensive proposal to beat the odour problems as part of our proposal to upgrade our ethanol production capacity.

The Environmental Audit

In 2006 the Land and Environment Court required Shoalhaven Starches to commission a comprehensive environmental audit of the factory and environmental farm. The purpose of the audit was to identify and quantify all odours generated by the operations and to provide recommendations for improved odour management. Consultants GHD Pty Ltd. were engaged in 2007 to undertake this audit, which is now complete.

The GHD report can be found on Manildra's website at www.manildra.com.au. It provides a number of recommendations for improved management of processes in the factory and on the Environmental Farm.

Shoalhaven Starches has started implementing those recommendations that do not require development approval. Other recommendations are being included in the proposal to upgrade the ethanol production capacity of the plant.

Identified Sources of Odour

The GHD report identified a number of sources of odour both within the factory site and the farm site. Actual and potential factory sources include:



Improvements to the plant will significantly reduce odorous emissions

- The starch plant
- The glucose plant
- Ethanol plant
- Distillation plant
- Dried distillers grains plant
- Actual and potential sources of odour on the Environmental Farm include;
- Mixer tanks and ponds
- Irrigators
- Land recently irrigated



The proposed project will see odours significantly reduced and up to 4.5 million litres of water reused every day

What is being done now

Recommendations that are being implemented now include things such as sealing tanks and cleaning flues. While these minor improvements are important the major impact will be achieved through works associated with the upgrade to the ethanol production capacity. Broadly speaking, odour reduction works will involve:

1. Improvements to the dried distillers grains syrup (DDGS) plant. The DDGS Plant removes solids from the stillage ethanol production process. These solids are then dried and converted into high protein stock feed. To remove odours from this process the following measures proposed are:
 - Capturing the air and vapour within the plant and sending it to the existing boilers where odorous particles will be burnt out.
 - Installing biological treatment to remove odorous particles.
2. Constructing a new wastewater treatment plant which uses biological digestion and filtration to remove odorous material from the wastewater before it is sprayed on the farm.

The end result of these activities is that both the factory and the environmental farm will produce far less odour.

Odour Control Strategies for the Environmental Farm

The environmental farm has been a source of odorous emissions since it began operations. As part of the

upgrade to the ethanol production capacity this problem will be largely resolved by the installation of a sophisticated multi-stage wastewater treatment facility on the farm. The result will be that 4.5 million of the 8.1 million litres of wastewater produced every day by the factory will be treated to a high quality and re-used in the production process. What isn't reused will be sprayed onto the farm. The overall impact will be very greatly reduced odorous emissions from the farm.

The components of the wastewater treatments system designed to control odour include:

- Anaerobic digester: This large pond will be completely sealed to prevent odours escaping into the atmosphere. Inside, micro-organisms in a low-oxygen atmosphere will digest the organic compounds responsible for causing odours. The byproduct will be methane that will be captured and piped back to the factory as fuel for the boilers.
- Aerobic digester: this process supplies air to micro-organisms that will further remove organic matter from the water.

The resulting purified water will be sprayed on the farm.

