

**APPLICATION PURSUANT TO SECTION 75W  
OF THE ENVIRONMENTAL PLANNING  
AND ASSESSMENT ACT 1979**

**PROPOSED MODIFICATION IN RELATION TO  
THE DESIGN, FOOTPRINT AND ODOUR TREATMENT  
CONTROLS FOR THE DDGS PELLETISING PLANT**

**PROJECT APPROVAL MP 06\_0228  
SHOALHAVEN STARCHES EXPANSION PROJECT**

Prepared for

**Shoalhaven Starches Pty Ltd**

February 2015



Prepared by:

***COWMAN STODDART PTY LTD***

## ENVIRONMENTAL ASSESSMENT

### APPLICATION PURSUANT TO SECTION 75W OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

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### PROJECT APPROVAL MP 06\_0228 SHOALHAVEN STARCHES EXPANSION PROJECT

Ref. 15/08

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## COWMAN STODDART PTY LTD

**CERTIFICATION OF ENVIRONMENTAL ASSESSMENT**  
PREPARED PURSUANT TO PART 3A OF THE *ENVIRONMENTAL PLANNING*  
*AND ASSESSMENT ACT 1979*

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**ENVIRONMENTAL ASSESSMENT  
PREPARED BY**

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CPP, MPIA

Address: Cowman Stoddart Pty Ltd  
31 Kinghorne Street  
NOWRA NSW 2541

in respect of

---

**PROJECT TO WHICH PART 3A APPLIES**

Proponent Name: Shoalhaven Starches Pty Ltd

Proponent Address: Bolong Road, Bomaderry

Land to be developed: Address Bolong Road, Bomaderry

Lot No., DP/MPS, Vol/Fol etc. Lot 62 DP 1078788

Project Development: Shoalhaven Starches Expansion Project (MP 06\_0228)

Proposed Modification to Project: Proposed modifications to DDGS Pelletising Plant as approved under the Project Approval (MP 06\_0228) to modify the design and footprint and proposed method for odour treatment controls from that originally approved.

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**Environmental Assessment** An Environmental Assessment is attached

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**Certification**

I certify that I have prepared this environmental assessment and to the best of our knowledge

- It has been prepared in accordance with Section 75W of the *Environmental Planning and Assessment Act 1979*,
- The information contained in the Environmental Assessment is neither false nor misleading.

Signature: \_\_\_\_\_

Name: S. D. Richardson

Date: \_\_\_\_\_

# CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>(i)</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>2.0 THE SITE AND SURROUNDING LOCALITY .....</b>	<b>4</b>
<b>3.0 BACKGROUND.....</b>	<b>7</b>
3.1 PRODUCTION PROCESSES.....	7
3.2 OPERATING WORKFORCE .....	8
3.2.1 Operations .....	8
3.2.2 Workforce.....	8
3.3 RAW MATERIALS.....	8
3.4 HISTORY OF DEVELOPMENT ON THE SITE .....	9
3.5 PROJECT APPROVAL MP 06_0228.....	12
3.6 APPROVAL HISTORY FOLLOWING MP 06_0228.....	13
3.7 LOCAL PLANNING PROVISIONS.....	15
3.8 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT.....	29
<b>4.0 DESCRIPTION OF PROPOSAL .....</b>	<b>30</b>
4.1 WASTE WATER TREATMENT AND DISPOSAL – STILLAGE RECOVERY .....	30
4.2 SECTION 75W OF THE EP&A ACT .....	33
4.3 PROPOSED MODIFICATION.....	35
4.3.1 Modification to Treatment of Air Emissions .....	35
4.3.2 Modification to Design and Footprint of DDGS Pelletising Plant .....	35
<b>5.0 CONSULTATION.....</b>	<b>37</b>
<b>6.0 RISK ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS.....</b>	<b>38</b>
<b>7.0 KEY ISSUES.....</b>	<b>45</b>
7.1 AIR QUALITY (AND ODOUR IMPACTS) .....	45
7.2 VISUAL IMPACT .....	46
<b>8.0 CONCLUSION.....</b>	<b>56</b>

## **FIGURES**

<b>Figure 1</b>	Site Locality Plan
<b>Figure 2</b>	Plan of Existing Factory Site
<b>Figure 3</b>	Zoning provisions applying under Shoalhaven LEP 2014
<b>Figure 4</b>	Vantage Points for Plates
<b>Figure 5</b>	Photomontage of proposal from Bolong Road prepared by Edmiston Jones Architects
<b>Figure 6</b>	Photomontage of proposal from Nowra Bridge prepared by Edmiston Jones Architects
<b>Figure 7</b>	Photomontage of proposal from Riverview Road prepared by Edmiston Jones Architects
<b>Figure 8</b>	Photomontage of proposal from Terara prepared by Edmiston Jones Architects.

## **ANNEXURES**

<b>Annexure 1</b>	Plans of Proposed Modification to DDGS Pelletising Plant
<b>Annexure 2</b>	Requirements of the Department of Planning & Environment and Environmental Protection Authority
<b>Annexure 3</b>	Odour Dispersion Modelling Report prepared by GHD Pty Ltd
<b>Annexure 4</b>	Submission under Clause 4.6 of Shoalhaven LEP 2014

## **EXECUTIVE SUMMARY**

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for both local and international food and industrial markets.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including: starch; gluten; glucose; and ethanol.

The use of ethanol as a fuel (or fuel additive) has many benefits including:

- it is a renewable fuel and lessens reliance on fossil fuels;
- it reduces greenhouse gas emissions and other air pollutants such as carbon monoxide and particulates;
- it reduces imports of oil and stimulates regional and local economies if produced locally.

Given the above benefits, the Federal and State Governments introduced a range of initiatives to encourage the increased use of ethanol as a fuel additive.

Since 2007 the NSW Government progressively increased the mandated ethanol content by volume in petrol in NSW from 2% to 6% from 1<sup>st</sup> October 2011.

In 2009 the Minister for Planning issued Project Approval pursuant to the then Part 3A of the Environmental Planning & Assessment Act for an application made by Shoalhaven Starches for the “Shoalhaven Starches Expansion Project” (SSEP) which sought to increase its ethanol production capacity to meet the expected increase in demand for ethanol arising from the abovementioned ethanol mandate by upgrading the existing ethanol plant located at the Shoalhaven Starches Plant at Bomaderry. This Project Approval enabled Shoalhaven Starches to increase its ethanol production in a staged manner from 126 million litres per year to 300 million litres per year subject to certain conditions.

Following the Minister’s determination Shoalhaven Starches have been implementing and commissioning works in accordance with this approval.

The Project Approval included the installation of a Dried Distiller Grain Solids (DDGS) Pelletising Plant within the factory site. DDGS is essentially a residue product from the ethanol production process. DDGS are used and sold as a high protein cattle feed. The DDGS Pelletising Plant will consist of a series of bins and mills that process loose DDGS material into pellets. The Pelletising Plant provides Shoalhaven Starches with greater flexibility to meet market demand for this product.

This application seeks to modify:

- The method for the treatment of air emissions from the DDGS Pelletising Plant; and
- The approved design and footprint of the DDGS Pelletising Plant on the subject site.

### **1. Modification to Treatment of Air Emissions**

The installation of the DDGS Pelletising Plant as part of the Project Approval for the SSEP was also a recommendation of the Environmental Audit carried out by GHD Pty Ltd for the site on the basis that it would reduce fugitive emissions associated with the handling of granular DDGS product. Under the Project approval air emissions from the DDGS Pelletising Plant were to be diverted to the biofilters for treatment prior to discharge.

Condition 3C of the modified MP06\_0228 (MOD 4) Project Approval however stipulates that:

*3C. Prior to the commencement of construction of the DDG pelletising plant as described in the modification application MP 06\_0228 MOD 4, the Proponent shall engage a suitably qualified and experienced expert to demonstrate to the satisfaction of the Director General and the EPA that the existing bio-filters can accommodate the additional odour load of the DDG pelletising plant while maintaining acceptable treatment performance.*

*In the event that it is found that the bio-filters cannot maintain an acceptable odour treatment performance, the Proponent shall comply with any direction/s from the Director-General in consultation with the EPA to install additional odour treatment controls or modify the existing odour treatment controls at the facility.*

Shoalhaven Starches have now identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of air streams from the DDGS Pelletising Plant. Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of an exhaust stack.

In accordance with condition 3C as outlined above, Shoalhaven Starches have consulted with the NSW EPA in relation to this proposal. Essentially the NSW EPA indicate that they conditionally agree to the use of a stack to disperse odorous air streams from the approved DDGS Pelletising Plant.

The EPA will require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS Pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS Pelletising Plant.

These modifications to odour treatment controls for the DDGS Pelletising Plant do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modifications to the odour treatment controls for the DDGS Pelletising Plant will not result in any increase in the capacity of the plant or production capability. The modifications merely seek to impose odour treatment and management from this component of the site.

## ***2. Modification to Design and Footprint of DDGS Pelletising Plant***

In addition to a change in the method of treatment of air emissions from the DDGS Pelletising Plant, it is also proposed to modify the approved design and footprint of the DDGS Pelletising Plant on the site.

It is acknowledged that the Planning & Assessment Commission on the 25<sup>th</sup> March 2014 have previously issued a modification approval (MP 06\_0228 MOD 4) to accommodate a change in the design and location of the DDGS Pelletising Plant on the subject site.

Following further detailed engineering design investigations Shoalhaven Starches have however identified that the modified footprint and design of the approved DDGS Pelletising Plant is required to be further modified to that which was originally approved. The footprint of the proposed DDGS Pelletising Plant is required to be increased from that originally approved.

These modifications to the DDGS Pelletising Plant however do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modifications to the DDGS Pelletising Plant will not result in any increase in the capacity of the plant or production capability. The modifications merely reflect a more refined engineering design investigation that has occurred since the submission of the original Project.

The SSEP is a “Transitional Part 3A Project” pursuant to the provisions of the Environmental Planning & Assessment Act. This Modification Application is therefore made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979.

The preparation of this Environmental Assessment has been undertaken following consultation with:

- The Department of Planning and Environment;
- Environmental Protection Authority (EPA).

This Environmental Assessment has been prepared to provide background information in relation to the proposed modification and outline the proposed modification and its implications in relation to the original approved development.

The Minister’s approval is sought for the modification application.



## **1.0 INTRODUCTION**

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for food and industrial markets both locally and internationally.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including: starch, gluten, glucose and ethanol.

The use of ethanol as a fuel (or fuel additive) has many benefits including:

- it is a renewable fuel and lessens reliance on fossil fuels;
- it reduces greenhouse gas emissions and other air pollutants such as carbon monoxide and particulates;
- it reduces imports of oil and stimulates regional and local economies if produced locally.

Given the above benefits, the Federal and State Governments have introduced a range of initiatives to encourage the increased use of ethanol as a fuel additive.

Since 2007 the NSW Government has progressively increased the mandated ethanol content by volume in petrol in NSW from 2% to 6% from 1<sup>st</sup> October 2011.

In 2009 the Minister for Planning issued Project Approval for an application made by Shoalhaven Starches to undertake works to enable an increase its ethanol production capacity to meet the expected increase in demand for ethanol arising from the abovementioned initiatives by upgrading the existing ethanol plant, located at the Shoalhaven Starches Plant at Bomaderry. Subject to certain conditions this Project Approval enabled Shoalhaven Starches to increase ethanol production in a staged manner at its Bomaderry Plant from the originally approved 126 million litres per year to 300 million litres per year.

The increase in ethanol production associated with this Project Approval also required a range of upgrading works to be undertaken to the “Stillage Recovery Process”. The Stillage Recovery process is a system whereby suspended and soluble solids are removed from the waste water associated with the ethanol production process. Following processing these solids or Dried Distiller Grain Solids (DDGS) are marketed as a feed for livestock, thereby value adding to what would otherwise be a waste stream from the overall production process.

The SSEP included a proposal to install a DDGS Pelletising Plant, which consisted of a series of bins and mills which would process the loose granular DDGS into a pellet form.

Processing DDGS into a pellet form provides greater flexibility to meet market (and in particular export market) demand for this product.

The DDGS Pelletising Plant was also recognised by the Environmental Audit that was undertaken separately by GHD Pty Ltd (October 2007) and which supported the EA for this project as potentially reducing fugitive odours and dust emissions that were associated with the handling and storage of granular DDGS.

Until present however the DDGS Pelletising Plant has not yet been installed as market circumstances did not justify the expenditure required to install this plant.

The company has now successfully identified significant new international and domestic market opportunities for the DDGS Pellet product. It therefore wishes to proceed as expeditiously as possible to install the DDGS Pelletising Plant to secure these new value added business opportunities.

This modification application seeks to:

- modify the method for the treatment of air emissions; and
- modify the design and footprint of the approved DDGS Pelletising Plant on the subject site.

#### **1. *Modification to Treatment of Air Emissions***

Condition 3C of the modified MP06\_0228 (MOD 4) Project Approval stipulates that:

*3C. Prior to commencement of construction of the DDG pelletising plant as described in the modification application MP 06\_0228 MOD 4, the Proponent shall engage a suitably qualified and experienced expert to demonstrate to the satisfaction of the Director General and the EPA that the existing bio-filters can accommodate the additional odour load of the DDG pelletising plant while maintaining acceptable treatment performance.*

*In the event that it is found that the bio-filters cannot maintain an acceptable odour treatment performance, the Proponent shall comply with any direction/s from the Director-General in consultation with the EPA to install additional odour treatment controls or modify the existing odour treatment controls at the facility.*

Shoalhaven Starches have now identified that the existing biofilters at the premises that were to treat air emissions from the DDGS Pelletising Plant, do not have sufficient treatment capacity to deal with the expected volume of odorous air streams from the DDGS Pelletising Plant. Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of a stack.

In accordance with condition 3C as outlined above, Shoalhaven Starches have consulted with the NSW EPA in relation to this proposal. Essentially the NSW EPA indicate that they

conditionally agree to the use of a stack to disperse odorous air streams from the approved DDGS Pelletising Plant.

The EPA will require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS Pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS Pelletising Plant.

## **2. *Modification to Design and Footprint of DDGS Pelletising Plant***

In addition to a change in the method of treatment of odorous emissions from the Pelletising Plant, it is also proposed to modify the approved design and footprint of the DDGS Pelletising Plant.

The Planning & Assessment Commission on the 25<sup>th</sup> March 2014 have previously issued a modification approval (MP 06\_0228 MOD 4) to accommodate a change in the design and location of the DDGS Pelletising Plant on the subject site.

Following further detailed engineering design investigations Shoalhaven Starches have however identified that the modified footprint and design of the approved DDGS Pelletising Plant is required to be further modified to that which was originally approved. The footprint of the proposed DDGS Pelletising Plant is required to be increased from that originally approved.

These modifications to the DDGS Pelletising Plant however do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modified proposal however will not involve any intensification or increase in production from the site. Nor will it involve any increase in emissions from the site. In effect the modified proposal will be consistent with the existing approval for this project.

The application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979.

## 2.0 THE SITE AND SURROUNDING LOCALITY

The Shoalhaven Starches factory site is situated on various allotments of land on Bolong Road, Bomaderry within the City of Shoalhaven. The factory site, which is located on the south side of Bolong Road on the northern bank of the Shoalhaven River, has an area of approximately 12.5 hectares (refer **Plate 1**).



**Plate 1:** Aerial photograph of Shoalhaven Starches factory site.

The Project Approval issued by the Minister related to the following parcels of land (**Table 1**):

**Table 1**  
**Shoalhaven Starches Property**

<i>Lot</i>	<i>Deposited Plan (DP) / FP.</i>
<b>Factory</b>	
1	838753
A	334511
B	334511
B	376494
62	1078788
201	1062668
1	385145
241	1130535
<b>Packing Plant</b>	
16	1121337
2	538289

**Table 1 (continued)**

<b>Lot</b>	<b>Deposited Plan (DP) / FP.</b>
<b>Wastewater Treatment Plant &amp; Environmental Farm</b>	
4	610696
	131008
1	842231
2	842231
3	235705
1	235705
2	235705
Part 2	854837
4	1109510
22	811233
164	4469
2	854764
210	6131
211	6131
PT 212	6131
213	6131
214	6131
248	6131
2	955009
42	751268
63	751268
PT 2	854837
3	1109510
2	1109510
1	1109510
2	833181
<b>Overhead Bridge – Bolong Road Reserve</b>	
2	538289
<b>Fire Services</b>	
241	1130535

The DDGS Pelletising Plant is to be sited on Lot 62 DP 1078788, within the western part of the factory site.

The town of Bomaderry is located 0.5 km (approx.) to the west of the factory site, and the Nowra urban area is situated 2.0 km to the south west of the site. The “Riverview Road” area of the Nowra Township is situated approximately 600 metres immediately opposite the factory site across the Shoalhaven River.

The village of Terara is situated approximately 1.5 kilometres to the south east of the site, across the Shoalhaven River. Pig Island is situated between the factory site and the village of Terara and is currently used for dairy cattle grazing.

There are a number of industrial land uses, which have developed on the strip of land between Bolong Road and the Shoalhaven River. Industrial activities include a metal fabrication factory; the Shoalhaven Starches site; Shoalhaven Dairy Co-op (formerly Australian Co-operative Foods Ltd – now owned by the Manildra Group); and the Shoalhaven Paper Mill (Australian Papers). The industrial area is serviced by a privately owned railway spur line that runs from just north of the Nowra-Bomaderry station via the starch plant and the former Dairy Co-op site to the Paper Mill.

The state railway terminates at Bomaderry Railway Station with a separate, privately owned spur line to the factory site. Shoalhaven City Council sewerage treatment works is situated between the railway station and the factory.

The Company also has an Environmental Farm located over 1000 hectares on the northern side of Bolong Road. This area is cleared grazing land and contains spray irrigation lines and wet weather storage ponds (total capacity 925 Mega litres). There are at present 6 wet weather storage ponds on the farm that form part of the waste water management system for the factory. A seventh pond approved in 2002 was converted into the biological section of the new wastewater treatment plant has now been commissioned.

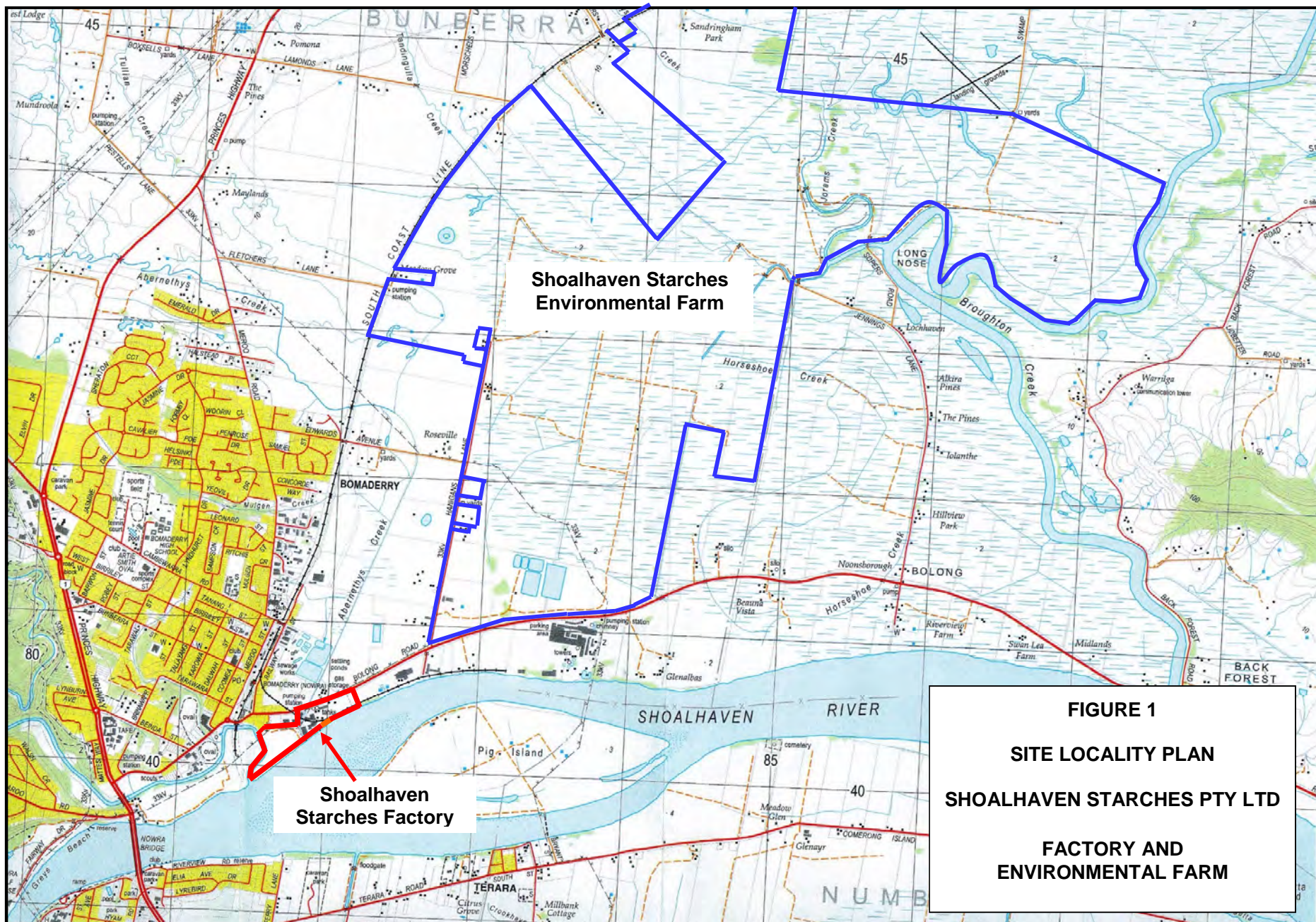
The Environmental Farm covers a broad area of the northern floodplain of the Shoalhaven River, stretching from Bolong Road in the south towards Jaspers Brush in the north. Apart from its use as the Environmental Farm, this broad floodplain area is mainly used for grazing (cattle). The area comprises mainly large rural properties with isolated dwellings, although there is a clustering of rural residential development along Jennings Lane (approximately 1 kilometre away) and Back Forest Road (approximately between 500 metres to 1.2 kilometres away) to the west of the Environmental Farm; and Jaspers Brush Road, approximately 1.2 kilometres to the north of the Environmental Farm.

**Figure 1** is a site locality plan depicting the location of the factory site and Environmental Farm as well as the surrounding locality.

**Figure 2** is a plan of the existing factory site depicting the layout of existing plant on the site as well as plant that has been previously approved as part of the Shoalhaven Starches Expansion Project (MP 06\_0228). This figure shows the location of the DDGS Storage area including the proposed DDGS Pelletising Plant.

**Plate 1** provides an aerial view over the factory site.







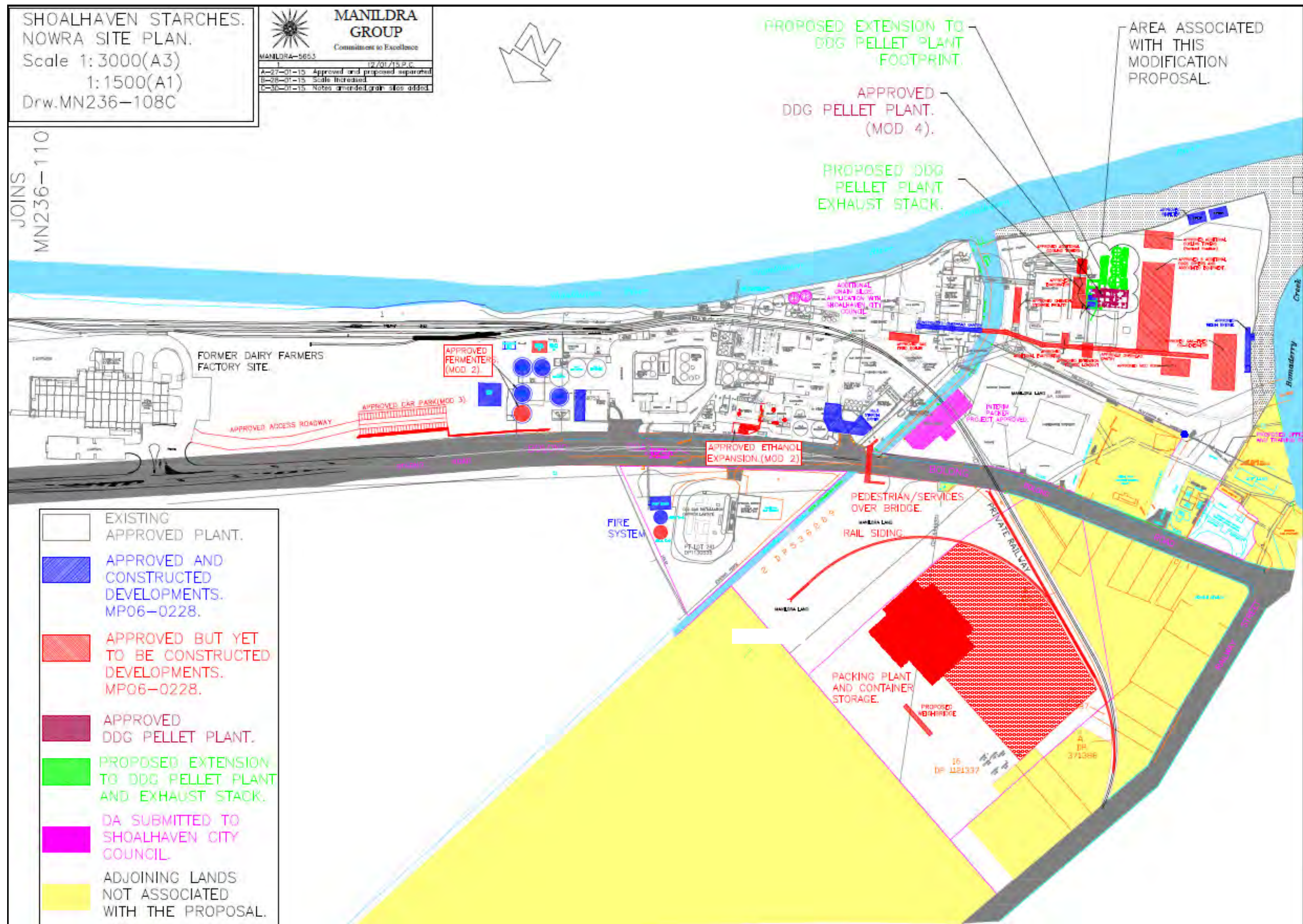


Figure 2: Site Plan Depicting Proposed Additions to Factory Site.



## **3.0 BACKGROUND**

### **3.1 PRODUCTION PROCESSES**

The production process at the Shoalhaven Starches plant has developed over a number of decades. Originally the plant was primarily concerned with the production of starch and gluten from flour. However the Company has pursued a number of technological innovations particularly with respect to reducing the environmental impacts of the Company's operations. As a result Shoalhaven Starches has been moving towards a "closed" system of production. Essentially this entails the efficient use of end products to ensure wastage is reduced to a minimum.

The first step in the production process is the delivery of flour and grain, by rail, from the Company's flour mills at Manildra, Gunnedah and Narrandera. The trainloads are brought into the plant via the switching yard at Bomaderry.

The Company received approval from the Minister for Planning for the erection of a flour mill on site which has now been constructed and which enables the milling of part of the Company's flour requirements to be processed directly on the site. The remainder of the Company's flour requirement will continue to be sourced from the Company's off-site flour mills.

Flour is transferred via storage to the "wet end" of the plant where fresh water is added. The subsequent mixing and separation process produces starch and gluten.

The gluten is dried to enable it to be packaged and distributed as a high protein food additive for human consumption. This product is then taken from the site after packaging for both local and export markets. The wastage from the starch process is used for fermentation and distillation to produce ethanol.

The starch that is separated from the flour is either dried or remains in liquid form. The dried and liquid starch is sold to the paper and food industries. The starch is used for food, cardboard, paper and other industrial purposes. The wastage from the liquid starch process is also used in the ethanol production process.

Starch is also used in the production of syrups on the site. The syrups plant products include glucose and brewer's syrup. These are used for foods, chocolates, confectionery, beer, soft drinks and fruit juice. The syrups plant also has some wastage that is also used in the ethanol process.

The wastage from the starch, gluten and syrup production processes are combined to feed the fermentation and distillation stage of ethanol production. The outputs are fuel and

industrial and food grade ethanol. Industrial grade ethanol is used in producing pharmaceuticals, printer's ink and methylated spirits.

Ethanol production results in some waste solids and water, which are processed through the Stillage Recovery Process Plant (which was approved as part of PRP No. 7 in 2005). The residue solids are recovered as DDGS (Dried Distillers Grains Syrup), dried and sold as a high protein cattle feed with the remaining water used for irrigation. The waste water resulting from the ethanol production is further treated before being re-circulated into the factory processes and/or irrigated onto Shoalhaven Starches Environmental Farm to the north of Bolong Road. This farm land is used for fodder crops, pasture and cattle grazing.

### **3.2 OPERATING WORKFORCE**

#### **3.2.1 Operations**

The existing factory operates 24 hours per day, 7 days a week, 365 days of the year.

#### **3.2.2 Workforce**

The plant employs a total of 280 staff, covering all components of production - operators, administrative personnel and maintenance staff. Employee breakdown and hours of shifts are as follows:

A total of around 280 employees	Management, Technical & Administration	60
	Day Workers	75
	Shift Production (spread over 4 shifts)	145

#### Hours of Shifts

Plant:	6:00 am to 6:00 pm	- 36 employees	
	6:00 pm to 6:00 am	- 36 employees	
	Day – 7:00 am to 3:00 pm	but variable	75 employees, 60 Management, Technical & Administration
Farm:	5:00 am to 5:00 pm	- 2 employees	
	5:00 pm to 5:00 am	- 1 employee	
	7:00 am to 3:00 pm	- 3 employees	

Shift work at both the factory and farm is undertaken on a 2 day, 2 night and 4 day off basis.

### **3.3 RAW MATERIALS**

There are six major raw material components used in the Shoalhaven Starches process. These are flour, grain; coal; natural gas; fresh water and salt water.

Flour is delivered to the site from the Company's mills at Manildra, Gunnedah and Narrandera each day of the week. The flour arrives into the plant by Company owned stainless steel rail wagons. The wagons have bottom dumping doors and are unloaded in a building. From the silos, the flour is moved into the plant by air as required. The current approved flour consumption of the plant is 20,000 tonnes per week.

Grain is delivered to the site by rail. At present up to approximately 552 tonnes of grain is delivered to the site per day. The grain is milled to produce flour for further processing in the starch and gluten plants. The grain is "dumped" from the train into an underground hopper and conveyed by screw conveyors and bucket elevator into a silo.

Coal is delivered by road from Wallerawang near Lithgow. At present 10 trucks of 30 tonnes per truck are delivered daily. The coal storage area is located between the Shoalhaven River and the existing boilers. The transfer of coal from the storage bins to the boilers is undertaken by front-end loader pushing the coal through a grate and into a pneumatic conveying system up to the boilers.

Natural Gas - The Shoalhaven Starches plant operates partly on natural gas. The site is connected to a natural gas reticulation main.

Fresh water and recycled water is utilised in the starch production process. At present on average a total of 6900 kilolitres of water is used on a daily basis. This comprises 2600 KI from the town water supply, and 4300 KI from a raw water supply provided by Shoalhaven City Council via a pipeline from the Shoalhaven Paper Mill.

Salt water from the Shoalhaven River is used to cool items of plant before the water is returned to the river.

In addition the factory operations utilise a range of enzymes, additives, fuels and other products in the overall operations. At present the plant utilises approximately 30 tonnes each of acid and caustic products per week.

### **3.4 HISTORY OF DEVELOPMENT ON THE SITE**

The Shoalhaven Starches wheat starch and gluten plant at Nowra was originally constructed in 1970. The Manildra flour mills, at Manildra, Narrandera and Gunnedah, supply the Shoalhaven Starches factory, which currently produces wheat starch, gluten, syrups and ethanol (industrial and fuel grades). The Shoalhaven Starches operation provides direct on-site employment for 250 employees. Through the use of contractors it also indirectly creates employment for many more people in the local and regional economies.

In order to address the issue of waste water disposal, in 1984 Shoalhaven Starches installed a spray irrigation system, using farmland it owned on the northern side of Bolong Road at Bomaderry.

In June 1991, two storage ponds were built (Ponds No. 1 and 2) resulting in the cessation of waste water discharge to the Shoalhaven River.

To further reduce product wastage, Shoalhaven Starches sought to use excess starch for the production of ethanol. Ethanol production began at the Shoalhaven site in June 1992.

In 1994, the NSW Government approved the installation of a larger ethanol distillery within the existing site. The new distillery and its associated facilities enabled production of ethanol to increase from 20 million litres per annum to a production capacity of 100 million litres per year.

Subsequent to this approval Shoalhaven City Council issued development consent for:

- a protein isolate plant and DDGS Dryer; and
- a sorghum grinding plant.

Shoalhaven City Council issued development approval for the construction of a wet weather storage pond (Pond No. 6) on the 27th April 2001. At present, with the completion of Pond No. 6, Shoalhaven Starches has a combined waste water storage capacity within the existing ponds of 925 ML. A further wet weather storage pond (Pond No. 7) was approved by the Minister for Planning on the 23 December 2002 and construction of the Pond has been completed.

On the 1st June, 2001 the Minister for Urban Affairs & Planning, Dr Andrew Refshauge MP, declared both the Shoalhaven Starches factory and Environmental Farm as being State Significant Development for the purposes of the then Section 76A(7) of the Environmental Planning & Assessment Act.

In 2003 the Minister for Planning issued development consent (D223) for Shoalhaven Starches Pollution Reduction Program (PRP) No. 7. This approval enabled the implementation of the Company's Waste Water Management Strategy, and essentially sought to remove solids (suspended and soluble) from the Company's waste water, prior to its irrigation on the Environmental Farm.

This process, known as Stillage Recovery (to be further discussed in Section 4.1 of this report), essentially involved the introduction of additional decanters, the installation of an evaporation plant and additional dryers, to remove solids from the waste water. It was these "solids" in the waste water that when sprayed onto the Environmental Farm, or

stored in the wet weather storage ponds, had the potential to result in the generation of odours.

The recovery of the suspended and soluble solids from the waste water could not be undertaken by the dryers in this process, without firstly providing additional coarse solids. Additional coarse solids (grain) were required to be imported to the site.

As a consequence of the additional grain, the starch contained in the grain resulted in a need to increase ethanol production to 126 million litres per year. This increase in ethanol production required the installation of additional fermenters, associated cooling towers and molecular sieves.

The increase in ethanol production also resulted in an increase in waste water, which was required to be disposed on the environmental farm. In this regard this previous proposal also included an increase in waste water disposal area on the Environmental Farm.

The plant associated with this previous approval has now been substantially installed and commissioned.

Shoalhaven Starches have subsequently received the following further development approvals:

- The establishment of a flour mill on the factory site. This proposal provides for the transportation of wheat grain directly to the site by train for processing into industrial grade flour for the use in the production of starch and gluten at the factory site.
- An application pursuant to Section 96 of the Environmental Planning & Assessment Act seeking to modify the development approval for the PRP No. 7 project to enable a DDGS Dryer to be installed in a slightly different location in the same building as previously approved; and the installation of an additional evaporator (a redundant piece of equipment located at the Company's Altona Plant in Victoria) to provide standby capacity for the existing evaporator plant when sections of the existing plant are out of service or cleaning.
- A Section 96 modification application for a standby fermenter tank to be installed on the site, to enable the existing fermenter tanks to be taken out of service for maintenance one at a time.

A full list of historic approvals that applied to the Shoalhaven Starches site were detailed within Section 2.4 of the EA prepared by our firm, in relation to the Shoalhaven Starches Expansion Project (MP 06\_0228).

### **3.5 PROJECT APPROVAL MP 06\_0228**

On the 28<sup>th</sup> January 2009 the then Minister for Planning issued Project Approval MP 06\_0228 for the “Shoalhaven Starches Expansion Project”.

The primary objective of the Shoalhaven Starches Expansion Project is to increase the Company’s ethanol production capacity to meet the expected increase in demand for ethanol arising from Federal and State Government initiatives by upgrading the existing ethanol plant.

The approval is subject to certain conditions enabling Shoalhaven Starches to increase ethanol production in a staged manner at its Bomaderry Plant from 126 million litres per year to 300 million litres per year.

To accomplish the increase in ethanol production, the Project Approval enables Shoalhaven Starches to upgrade plant and increase throughput of raw materials, principally flour and grain.

The following additions and alterations were approved as part of this Project Approval:

- the provision of an additional dryer for the starch/gluten plant;
- additional equipment and storage vessels for the ethanol plant including 3 additional fermenters, additional cooling towers and molecular sieves;
- upgrades to the Stillage Recovery Plant including 6 additional Dried Distillers Grains Syrup (DDGS) dryers; 10 decanters; chemical storage and two evaporators. This included the installation of a DDGS Pelletising Plant as part of these processes; and
- the establishment of a new packing plant, container loading area and a rail spur line. The establishment of this facility on the northern side of Bolong Road will require the provision of an overhead bridge structure to allow product and safe pedestrian movement across Bolong Road.

In addition, as part of the Project Approval Shoalhaven Starches are undertaking a comprehensive odour reduction measures for both the existing factory site and the works associated with the Expansion Project. In 2006, the Land and Environment Court required Shoalhaven Starches to engage a suitably qualified person to conduct a comprehensive environmental audit of the factory and Environmental Farm. This Environmental Audit was undertaken GHD Pty Ltd (October 2007). The audit report included a number of recommendations for the implementation of works to the existing site, some of which require development approval. These works were included within this Project Approval.

The Project Approval enables a staged implementation of the expansion project. This staged implementation has now largely been implemented and the factory is now permitted to produce the maximum approved 300 million litres of ethanol per year.

The Project Approval also enables the biological treatment of waste waters from the factory site and the re-use of over half the treated waste water within the factory processes, with the remainder irrigated onto the Company's Environmental Farm.

The Project Approval required that the DDGS Pelletising Plant comprise one of the mandatory odour controls referred to in Appendix 3 of the Project consent conditions. The Project Approval was however subsequently modified (MOD1 dated 30<sup>th</sup> September 2011) which removed the requirement to install the DDGS Pelletising Plant as one of the mandatory odour controls; rather the plant was added to a list of additional odour controls as part of the Project Approval.

### **3.6 APPROVAL HISTORY FOLLOWING MP 06\_0228**

#### ***DA 10/1843 – Upgrade Vehicle Entrance (Former Dairy Farmers Factory Site)***

On the 30<sup>th</sup> September, 2010 Shoalhaven City Council approved Development Application DA 10/1843 permitting the upgrade of the existing vehicle entrance at 220 Bolong Road, otherwise known as the “former Dairy Farmers” factory site. The need for these upgrading works arose following the Project Approval requirements for the “SSEP”, and which included requirements to undertake upgrading works along Bolong Road along the frontage of the site. These upgrading works prevent vehicles travelling east along Bolong Road to turn right into the central vehicle access to the Shoalhaven Starches site; as well as vehicles turning right out from this access point and travelling east along Bolong Road. These approved works also prevent vehicles turning right out of the BOC Carbon Dioxide Plant.

The works associated with this approval will allow vehicles wishing to travel west from the BOC CO<sub>2</sub> plant to leave this site to travel first east; by allowing vehicles to travel to the former Dairy Farmers factory complex and using the upgraded access to turn around before travelling west along Bolong Road.

#### ***RA11/1002 Interim Packing Plant***

Following the issue of Project Approval MP 06\_0228 Shoalhaven Starches also obtained a separate development approval to use an existing factory building located at 22 Bolong Road (Lot 21 DP 100265) as an Interim Packing Plant from Shoalhaven City Council (RA11/1002 dated 26<sup>th</sup> October 2011). This Interim Packing Plant operates in conjunction with the Companies existing Packing Plant which is located within the existing factory site.

As outlined in Section 3.5 above, Project Approval MO 06\_0228 made provision for a new Packing Plant to be located on land owned by the company on the northern side of Bolong Road.

Following the granting of MP 06\_0228 however the Manildra Group of Companies have acquired the former Dairy Farmers factory site located at 220 Bolong Road. The Company has therefore been reconsidering the best location for the future Packing Plant.

During the interim period however the now existing Flour Mill and a new starch dryer were commissioned resulting in a subsequent increase in production of dried product from these new plants. Interim Packing Plant facilities were therefore required until the final location for the new packing plant was determined. It is intended that the Interim Packing Plant would operate on a temporary basis until a final location for the new Packing Plant is identified.

Shoalhaven Starches have held initial consultation with the Department of Planning & Environment with respect to submitting a separate modification application which will seek approval to relocate the approved Packing Plant (and dryer) to the former Dairy Farmers factory site at 220 Bolong Road. This other application is being prepared simultaneously with this modification application. Once the modification application for the relocation of the Packing Plant has been approved, the new Packing Plant constructed and commissioned, the need for the Interim Packing Plant located at 22 Bolong Road will become superfluous to the requirements of the Company and this other development consent will be surrendered, and the use cease.

#### ***DA 11/1855 – Widening of Driveway***

A further development application (DA 11/1855) was submitted to Shoalhaven City Council on the 4<sup>th</sup> August 2011 seeking approval to widen the driveways serving 22 Bolong Road Bomaderry (ie. the site of the Interim Packing Plant) to accommodate semi-trailers. This development application was approved by Shoalhaven City Council on the 24<sup>th</sup> August 2011.

#### ***DA 13/1713 – Demolition of Dimethyl Ether Plant***

On the 5<sup>th</sup> July 2013 Shoalhaven Starches submitted a development application to Shoalhaven City Council seeking the demolition of a Dimethyl Ether Plant on the site. This development application was approved by Shoalhaven City Council on the 15<sup>th</sup> July 2013.



### ***DA 14/2161 – Additional Two (2) Grain Silos***

On the 19<sup>th</sup> September 2014 Shoalhaven Starches submitted a development application to Shoalhaven City Council seeking development consent to erect two additional grain silos on the factory site within the vicinity of the existing Flour Mill.

The purpose of these two additional grain silos will be to provide security of raw material storage and supply when there are closures of the Illawarra rail line serving the Shoalhaven Starches site enabling the factory operations to continue during rail line closures. Over recent years there have been occasions when there have been closures of the Illawarra rail line due to track construction work as well as a result of floods, storms and traffic accidents. During these closures the supply of grain and flour to the Shoalhaven Starches site has been interrupted. The additional grain silos associated with this application will provide a buffer for on-site storage and additional security of storage and supply should closures to the rail line occur in the future. At the time of preparing this EA Shoalhaven City Council has not determined this development application.

### ***Other Approvals***

There have been other approvals that have been issued by Shoalhaven City Council on lands associated with the Shoalhaven Starches operations, but which do not directly relate to the operations of Shoalhaven Starches including:

- DA 11/1936 - Algae Demonstration Plant for evaluation of algae production and processing for alternative fuel and CO2 sequestration. Proponent Algae Tec Pty Ltd at 220 Bolong Road (former Dairy Farmers factory site).
- DA 14/1327 - Alterations to existing building (former Dairy Farmers Factory Building) and re-use as a meat processing plant. Proponent – Candal Investments Pty Ltd at 220 Bolong Road (former Dairy Farmers factory site).

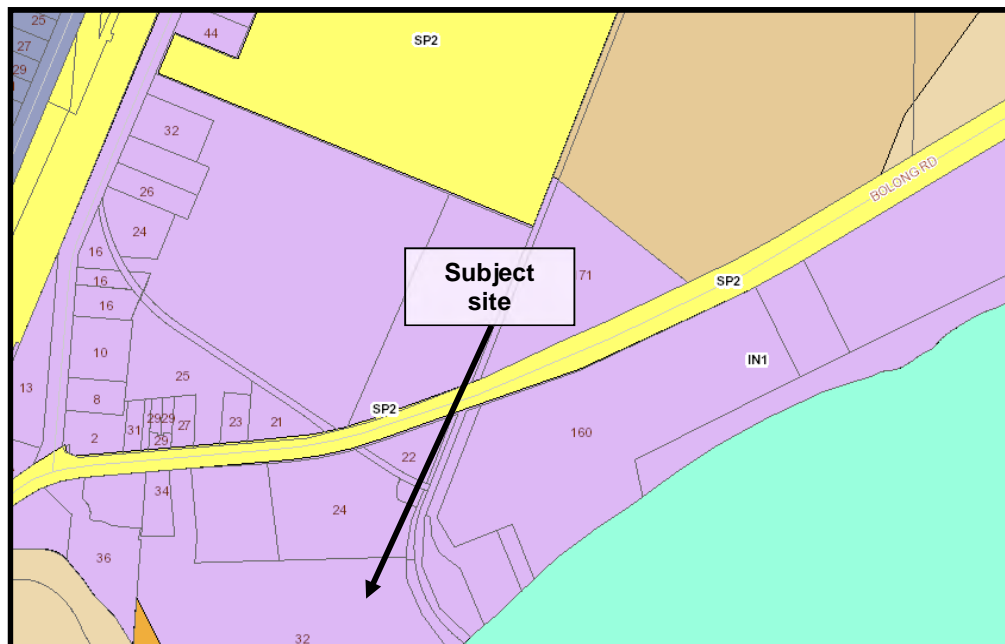
## **3.7 LOCAL PLANNING PROVISIONS**

### ***Shoalhaven Local Environmental Plan (SLEP) 2014***

The site is zoned IN1 (General Industrial) zone under the provisions of SLEP 2014 (refer **Figure 3**). The objectives of the IN1 zone are:

- *To provide a wide range of industrial and warehouse land uses.*
- *To encourage employment opportunities.*
- *To minimise any adverse effect of industry on other land uses.*
- *To support and protect industrial land for industrial uses.*

- To allow a diversity of activities that do not significantly conflict with the operation of existing or proposed development.
- To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.



**Figure 3: Zoning provisions applying under Shoalhaven LEP 2014.**

It is our view that the proposal is consistent with these objectives as the proposal involves alterations and additions to an existing industrial activity. Furthermore the proposal includes measures to minimise the effects of the proposal.

Industry is a permissible use within this zone. The proposal is permissible subject to Council's consent (see **Table 2** below).

**Table 2**  
**Land Use Permissibility – IN1 Zone (Shoalhaven LEP 2014)**

<b>Permitted without consent</b>	Nil.
<b>Permitted with consent</b>	Bulky goods premises; Depots; Freight transport facilities; <b>General industries</b> ; Industrial training facilities; Kiosks; Light industries; Markets; Neighbourhood shops; Roads; Take away food and drink premises; Timber yards; Warehouse or distribution centres
<b>Prohibited</b>	Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Environmental

**Table 2 (continued)**

<i>Prohibited</i>	<i>continued</i>	facilities; Exhibition villages; Extractive industries; Farm buildings; Forestry; Function centres; Health services facilities; Highway service centres; Home-based childcare; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Mooring pens; Moorings; Office premises; Open cut mining; Places of public worship; Registered clubs; Residential accommodation; Respite day care centres; Restricted premises; Retail premises; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities.
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The SLEP 2014 also has a number of specific provisions that apply to the land. The implications that these provisions have in relation to this proposal are discussed in **Table 3** below:

**Table 3**  
**Shoalhaven LEP 2014 Provisions**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
<b>4.3 Height of Buildings</b>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <p>(a) <i>to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,</i></p> <p>(b) <i>to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,</i></p> <p>(c) <i>to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.</i></p> <p>(2) <i>The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.</i></p> <p>(2A) <i>If the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres.</i></p>	<p>The proposed exhaust stack will have a height of 49.2 metres and the proposed extension of the DDG Pelletising Plant will have a height of 26.5 metres.</p> <p>Although there is no maximum height specified for the subject land part (2a) of Clause 4.3 of SLEP 2014 states no building is to be in excess of 11 metres.</p> <p>As such a submission for an exception to development standards under Clause 4.6 of the SLEP 2014 has been prepared and is attached under <b>Annexure 4</b>.</p>
<b>4.6 Exceptions to development standards</b>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <p>(a) <i>to provide an appropriate degree of flexibility in applying certain development standards to particular development,</i></p> <p>(b) <i>to achieve better outcomes for and from development by allowing flexibility in particular circumstances.</i></p> <p>(2) <i>Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument.</i></p> <p><i>However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.</i></p>	<p>The height of the proposed exhaust stack and extension to the DDG Pelletising Plant are in excess of the 11 metre maximum as specified in (2A) of Clause 4.3 Height of Buildings of the SLEP 2014.</p> <p>The proposed development will be erected within the surrounds of the Shoalhaven Starches factory site.</p> <p>As the proposed stack and DDG Pelletising Plant will be built within the existing industrial complex it is not expected that the new development will have an undue effect due to its height.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
4.6 continued	<p>(3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:</p> <ul style="list-style-type: none"> <li>(a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and</li> <li>(b) that there are sufficient environmental planning grounds to justify contravening the development standard.</li> </ul> <p>(4) Development consent must not be granted for development that contravenes a development standard unless:</p> <ul style="list-style-type: none"> <li>(a) the consent authority is satisfied that: <ul style="list-style-type: none"> <li>(i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and</li> <li>(ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and</li> </ul> </li> <li>(b) the concurrence of the Director-General has been obtained.</li> </ul> <p>(5) In deciding whether to grant concurrence, the Director-General must consider:</p> <ul style="list-style-type: none"> <li>(a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and</li> <li>(b) the public benefit of maintaining the development standard, and</li> <li>(c) any other matters required to be taken into consideration by the Director-General before granting concurrence.</li> </ul> <p>(6) Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:</p> <ul style="list-style-type: none"> <li>(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or</li> <li>(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.</li> </ul> <p><i>Note. When this Plan was made it did not include all of these zones.</i></p>	<p>A submission for an exception to development standards has been prepared and is attached to the SEE under <b>Annexure 4</b>.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
4.6 continued	<p>(7) After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).</p> <p>(8) This clause does not allow development consent to be granted for development that would contravene any of the following:</p> <p>(a) a development standard for complying development,</p> <p>(b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,</p> <p>(c) clause 5.4,</p> <p>(ca) clause 6.1 or 6.2</p>	
5.5 Development within the coastal zone	<p>(1) The objectives of this clause are as follows:</p> <p>(a) to provide for the protection of the coastal environment of the State for the benefit of both present and future generations through promoting the principles of ecologically sustainable development,</p> <p>(b) to implement the principles in the NSW Coastal Policy, and in particular to:</p> <p>(i) protect, enhance, maintain and restore the coastal environment, its associated ecosystems, ecological processes and biological diversity and its water quality, and</p> <p>(ii) protect and preserve the natural, cultural, recreational and economic attributes of the NSW coast, and</p> <p>(iii) provide opportunities for pedestrian public access to and along the coastal foreshore, and</p> <p>(iv) recognise and accommodate coastal processes and climate change, and</p> <p>(v) protect amenity and scenic quality, and</p> <p>(vi) protect and preserve rock platforms, beach environments and beach amenity, and</p> <p>(vii) protect and preserve native coastal vegetation, and</p> <p>(viii) protect and preserve the marine environment, and</p> <p>(ix) ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and</p>	<p>The subject land is located within the coastal zone.</p> <p>The proposal is not considered to adversely affect the coastal zone based on the following:</p> <ul style="list-style-type: none"> <li>• The proposal does not affect or impinge on public access to or along the coastal foreshore.</li> <li>• The proposed development is situated adjacent to existing industrial development and is considered to be suitable development given its type, location and design. The development is also consistent with the zoning objectives for the land.</li> <li>• The development will not lead to overshadowing of foreshore areas. The site is situated on the northern side of the Shoalhaven River.</li> <li>• The scenic qualities of the area will not diminish. Visual impact is further addressed in Section 7.2 of this EA.</li> <li>• The proposal will not lead to adverse impacts on threatened fauna and flora.</li> </ul>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
5.5 continued	<ul style="list-style-type: none"> <li>(x) ensure that decisions in relation to new development consider the broader and cumulative impacts on the catchment, and</li> <li>(xi) protect Aboriginal cultural places, values and customs, and</li> <li>(xii) protect and preserve items of heritage, archaeological or historical significance</li> </ul> <p>(2) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority has considered:</p> <ul style="list-style-type: none"> <li>(a) existing public access to and along the coastal foreshore for pedestrians (including persons with a disability) with a view to: <ul style="list-style-type: none"> <li>(i) maintaining existing public access and, where possible, improving that access, and</li> <li>(ii) identifying opportunities for new public access, and</li> </ul> </li> <li>(b) the suitability of the proposed development, its relationship with the surrounding area and its impact on the natural scenic quality, taking into account: <ul style="list-style-type: none"> <li>(i) the type of the proposed development and any associated land uses or activities (including compatibility of any land-based and water-based coastal activities), and</li> <li>(ii) the location, and</li> <li>(iii) the bulk, scale, size and overall built form design of any building or work involved, and</li> </ul> </li> <li>(c) the impact of the proposed development on the amenity of the coastal foreshore including: <ul style="list-style-type: none"> <li>(i) any significant overshadowing of the coastal foreshore, and</li> <li>(ii) any loss of views from a public place to the coastal foreshore, and</li> </ul> </li> <li>(d) how the visual amenity and scenic qualities of the coast, including coastal headlands, can be protected, and</li> <li>(e) how biodiversity and ecosystems, including: <ul style="list-style-type: none"> <li>(i) native coastal vegetation and existing wildlife corridors, and</li> <li>(ii) rock platforms, and</li> <li>(iii) water quality of coastal waterbodies, and</li> <li>(iv) native fauna and native flora, and their habitats, can be conserved, and</li> </ul> </li> <li>(f) the cumulative impacts of the proposed development and other development on the coastal catchment.</li> </ul>	

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
5.5 continued	<p>(3) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority is satisfied that:</p> <p>(a) the proposed development will not impede or diminish, where practicable, the physical, land-based right of access of the public to or along the coastal foreshore, and</p> <p>(b) if effluent from the development is disposed of by a non-reticulated system, it will not have a negative effect on the water quality of the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</p> <p>(c) the proposed development will not discharge untreated stormwater into the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</p> <p>(d) the proposed development will not:</p> <p>(i) be significantly affected by coastal hazards, or</p> <p>(ii) have a significant impact on coastal hazards, or</p> <p>(iii) increase the risk of coastal hazards in relation to any other land.</p>	
5.10 Heritage Conservation	<p>(1) The objectives of this clause are:</p> <p>(a) to conserve the environmental heritage of Shoalhaven; and</p> <p>(b) to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views; and</p> <p>(c) to conserve archaeological sites; and</p> <p>(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.</p> <p>(2) Development consent is required for any of the following:</p> <p>(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</p> <p>(i) a heritage item,</p> <p>(ii) an Aboriginal object</p> <p>(iii) a building, work, relic or tree within a heritage conservation area,</p> <p>(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,</p>	<p>There are no heritage items within the subject land. And the subject site is not located within a heritage conservation area. An aboriginal archaeological assessment previously undertaken on this site indicated that:</p> <p style="padding-left: 40px;"><i>the potential for any Aboriginal heritage evidence to survive is virtually negligible.</i></p> <p>In view of the minimal extent of the proposed impacts, and the register searches, field survey and consultation with the Aboriginal community conducted to date, along with the extensive impacts from current infrastructure further heritage assessment is not considered to be warranted</p>

**Table 3 (continued)**

SLEP 2014 Clause	Provisions	Comments												
5.10 continued	<p>(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,</p> <p>(d) disturbing or excavating an Aboriginal place of heritage significance,</p> <p>(e) erecting a building on land:</p> <p style="margin-left: 20px;">(i) on which a heritage item is located or that is within a heritage conservation area;</p> <p style="margin-left: 20px;">(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,</p> <p>(f) subdividing land:</p> <p style="margin-left: 20px;">(i) on which a heritage item is located or that is within a heritage conservation area, or</p> <p style="margin-left: 20px;">(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.</p>													
7.1 Acid sulfate soils	<p>(1) The objective of this clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.</p> <p>(2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulfate Soils Map as being of the class specified for those works, except as provided by this clause.</p> <table><tr><th>Class of Land</th><th>Works</th></tr><tr><td>1</td><td>Any works.</td></tr><tr><td>2</td><td>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</td></tr><tr><td>3</td><td>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</td></tr><tr><td>4</td><td>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</td></tr><tr><td>5</td><td>Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</td></tr></table>	Class of Land	Works	1	Any works.	2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.	3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.	4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.	<p>Mapping supporting the SLEP 2013 identifies the subject land as being affected by Class 3 and 4.</p> <p>Geotechnical reports undertaken by Coffey Geotechnics have been undertaken in the past for the subject site. This assessment included an assessment of ASS soils.</p> <p>Coffey advised that acid sulfate soils exist at depths greater than 3 m at the site. At shallower depths, there is a low risk that acid sulfate soils are present.</p> <p>Coffey have previously noted that if the proposed development involves excavation of soils from depths greater than 3 m at the site, an Acid Sulfate Soils Management Plan (ASSMP) should be developed beforehand.</p> <p>An ASSMP will present the approach and methodology of acid sulfate soil management at the site during the construction phase of the project which is to be followed by Manildra and/or their subcontractors. The ASSMP should be prepared in accordance with the relevant sections of the 1998 ASS Manual prepared by ASSMAC.</p>
Class of Land	Works													
1	Any works.													
2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.													
3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.													
4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.													
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.													



**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.1 continued	<p>(3) Development consent must not be granted under this clause for the carrying out of works unless an acid sulfate soils management plan has been prepared for the proposed works in accordance with the Acid Sulfate Soils Manual and has been provided to the consent authority.</p> <p>(4) Despite subclause (2), development consent is not required under this clause for the carrying out of works if:</p> <p>(a) a preliminary assessment of the proposed works prepared in accordance with the Acid Sulfate Soils Manual indicates that an acid sulfate soils management plan is not required for the works, and</p> <p>(b) the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works.</p> <p>(5) Despite subclause (2), development consent is not required under this clause for the carrying out of any of the following works by a public authority (including ancillary work such as excavation, construction of access ways or the supply of power):</p> <p>(a) emergency work, being the repair of the works of the public authority required to be carried out urgently because the works have been damaged, have ceased to function or pose a risk to the environment or to public health and safety,</p> <p>(b) routine management work, being the periodic inspection, cleaning, repair or replacement of the works of the public authority (other than work that involves the disturbance of more than 1 tonne of soil).</p> <p>(c) minor work, being work that costs less than \$20,000 (other than drainage work).</p> <p>(6) Despite subclause (2), development consent is not required under this clause to carry out any works if:</p> <p>(a) the works involve the disturbance of less than 1 tonne of soil, and</p> <p>(b) the works are not likely to lower the watertable.</p>	<p>The detail of the ASSMP can be refined based on the likely volumes to be extracted. For small volumes a simple work plan may be sufficient. If possible, avoidance of disturbing the ASS is preferred.</p> <p>This issue is further addressed in Section 6.0 of this EA.</p>
7.3 Flood Planning	<p>(1) The objectives of this clause are as follows:</p> <p>(a) to minimise the flood risk to life and property associated with the use of land,</p> <p>(b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,</p> <p>(c) to avoid significant adverse impacts on flood behaviour and the environment.</p> <p>(2) This clause applies to:</p> <p>(a) land identified as "Flood Planning Area" on the Flood Planning Area Map, and</p>	<p>The Flood Planning Area Map that accompanies the SLEP 2014 identifies the subject land as being flood prone land.</p> <p>This issue is discussed further in Section 6.0 of this EA.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.3 continued	<p>(b) other land at or below the flood planning level.</p> <p>(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</p> <p>(a) is compatible with the flood hazard of the land, and</p> <p>(b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and</p> <p>(c) incorporates appropriate measures to manage risk to life from flood, and</p> <p>(d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and</p> <p>(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and</p> <p>(f) will not affect the safe occupation or evacuation of the land.</p> <p>(4) A word or expression used in this clause has the same meaning as it has in the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005, unless it is otherwise defined in this clause.</p> <p>(5) In this clause:</p> <p><b>flood planning level</b> means the level of a 1:100 ARI (average recurrent interval) flood event plus 0.5 metre freeboard.</p>	
7.4 Coastal Risk Planning	<p>(1) The objectives of this clause are as follows:</p> <p>(a) to avoid significant adverse impacts from coastal hazards,</p> <p>(b) to ensure uses of land identified as coastal risk are compatible with the risks presented by coastal hazards,</p> <p>(c) to enable the evacuation of land identified as coastal risk in an emergency,</p> <p>(d) to avoid development that increases the severity of coastal hazards.</p> <p>(2) This clause applies to the land identified as “Coastal Risk Planning Area” on the Coastal Risk Planning Map.</p> <p>(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</p> <p>(a) will avoid, minimise or mitigate exposure to coastal processes, and</p> <p>(b) is not likely to cause detrimental increases in coastal risks to other development or properties, and</p>	<p>The Coastal Risk Planning Map that accompanies the SLEP 2014 does <u>not</u> identify the subject land as a “Coastal Risk Planning Area”.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.4 continued	<p>(c) is not likely to alter coastal processes and the impacts of coastal hazards to the detriment of the environment, and</p> <p>(d) incorporates appropriate measures to manage risk to life from coastal risks, and</p> <p>(e) is likely to avoid or minimise adverse effects from the impact of coastal processes and the exposure to coastal hazards, and</p> <p>(f) provides for the relocation, modification or removal of the development to adapt to the impact of coastal processes and coastal hazards, and</p> <p>(g) has regard to the impacts of sea level rise.</p> <p>(4) A word or expression used in this clause has the same meaning as it has in the NSW Coastal Planning Guideline: Adapting to Sea Level Rise (ISBN 978-1-74263-035-9) published by the NSW Government in August 2010, unless it is otherwise defined in this clause.</p> <p>(5) In this clause:  <b>coastal hazard</b> has the same meaning as in the Coastal Protection Act 1979.</p>	
7.5 Terrestrial Biodiversity	<p>(1) The objective of this clause is to maintain terrestrial biodiversity, by:</p> <p>(a) protecting native flora and fauna,</p> <p>(b) protecting the ecological processes necessary for their continued existence, and</p> <p>(c) encouraging the recovery of native flora and fauna, and their habitats.</p> <p>(2) This clause applies to land:</p> <p>(a) identified as “Biodiversity—habitat corridor” or “Biodiversity—significant vegetation” on the Terrestrial Biodiversity Map, and</p> <p>(b) situated within 40m of the bank (measured horizontally from the top of the bank) of a natural waterbody.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:</p> <p>(a) whether the development is likely to have:</p> <p>(i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and</p> <p>(ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and</p> <p>(iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and</p> <p>(iv) any adverse impact on the habitat elements providing connectivity on the land, and</p>	<p>The Terrestrial Biodiversity Map that accompanies the SLEP 2014 does <u>not</u> identify the subject land as including areas of Biodiversity - habitat corridor and/or Biodiversity - significant vegetation.</p> <p>Given the nature of the site the proposal will not have any adverse impacts on the ecological value of the land.</p> <p>There is no vegetation of importance located on the land.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.5 continued	<p>(b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</p> <p>(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p><b>bank</b> means the limit of the bed of a natural waterbody.</p> <p><b>bed</b>, of a natural waterbody, means the whole of the soil of the channel in which the waterbody flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the waterbody at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
7.6 Riparian land and watercourses	<p>(1) The objective of this clause is to protect and maintain the following:</p> <p>(a) water quality within watercourses,</p> <p>(b) the stability of the bed and banks of watercourses,</p> <p>(c) aquatic and riparian habitats,</p> <p>(d) ecological processes within watercourses and riparian areas.</p> <p>(2) This clause applies to all of the following:</p> <p>(a) land identified as “Riparian Land” on the Riparian Lands and Watercourses Map,</p> <p>(b) land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map,</p> <p>(c) all land that is within 50 metres of the top of the bank of each watercourse on land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:</p> <p>(a) whether or not the development is likely to have any adverse impact on the following:</p> <p>(i) the water quality and flows within the watercourse,</p> <p>(ii) aquatic and riparian species, habitats and ecosystems of the watercourse,</p>	<p>The Riparian Lands and Watercourses Map that accompanies the SLEP 2014 identify a class 1 watercourse, (Shoalhaven River) adjacent to the subject site.</p> <p>The site is industrial land with nil existing vegetation and is beyond the influence of normal fluvial geomorphic processes. The works will have no impact on water quality.</p> <p>As such the development will not have any adverse effect on water quality, flows within the watercourse, aquatic and riparian species or habitats and ecosystems of the watercourse.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.6 continued	<p>(iii) the stability of the bed and banks of the watercourse,</p> <p>(iv) the free passage of fish and other aquatic organisms within or along the watercourse,</p> <p>(v) any future rehabilitation of the watercourse and its riparian areas, and</p> <p>(b) whether or not the development is likely to increase water extraction from the watercourse, and</p> <p>(c) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</p> <p>(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p><b>bank</b> means the limit of the bed of a watercourse.</p> <p><b>bed</b>, of a watercourse, means the whole of the soil of the channel in which the watercourse flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the watercourse at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
7.7 Landslide risk and other land degradation	<p>(1) The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land:</p> <p>(a) comprising steep slopes, and</p> <p>(b) susceptible to other forms of land degradation.</p> <p>(2) This clause applies to the following land:</p> <p>(a) land with a slope in excess of 20% (1:5), as measured from the contours of a 1:25,000 topographical map, and</p> <p>(b) land identified as “Sensitive Area” on the Natural Resource Sensitivity—Land Map.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider any potential adverse impact, either from, or as a result of, the development in relation to:</p> <p>(a) the geotechnical stability of the site, and</p>	

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.7 continued	<p>(b) the probability of increased erosion or other land degradation processes.</p> <p>(4) Before granting consent to development on land to which this clause applies, the consent authority must be satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised – the development will be managed to mitigate that impact.</p> <p>(5) In this clause, topographical map means the most current edition of a topographical map, produced by Land and Property Information, a division of the Department of Finance and Services, that identifies the Council's local government area and boundary.</p>	
7.8 Scenic protection	<p>(1) The objective of this clause is to protect the natural environmental and scenic amenity of land that is of high scenic value.</p> <p>(2) This clause applies to land identified as "Scenic Protection" on the Scenic Protection Area Map.</p> <p>(3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must:</p> <p>(a) consider the visual impact of the development when viewed from a public place and be satisfied that the development will involve the taking of measures that will minimise any detrimental visual impact, and</p> <p>(b) consider the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site, and</p> <p>(c) consider the siting of the proposed buildings.</p>	<p>The subject land is <u>not</u> identified as being within a "Scenic Protection" area by Scenic Protection Area Mapping that accompanies the SLEP 2014.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p> <p>However the development site is adjacent to the northern bank of the Shoalhaven River which is identified as being within a Scenic Protection area. The visual impact associated with this proposal is discussed in Section 7.2 of this EA.</p>
7.15 Development in the vicinity of extractive industries and sewerage treatment plants	<p>(1) The objective of this clause is to protect the operational environment of certain industries operating on the land to which this clause applies.</p> <p>(2) This clause applies to land identified as "Extractive Industry" and "Sewage Treatment Plant" on the Buffers Map.</p> <p>(3) Development consent must not be granted to the carrying out of development on land to which this clause applies unless the consent authority has:</p> <p>(a) made an assessment of the impact of noise, odour and other emissions from any industry carried out on that land, and</p> <p>(b) considered the potential impact of noise, odour and other emissions associated with that industry on any activities that will be associated with the development, and</p>	<p>The Buffers Map that accompanies the SLEP 2014 identifies that part of the subject land is located within the vicinity of a sewerage treatment plant.</p> <p>The SEE is supported by an Air Quality Modelling (<b>Annexure 3</b>) and the original SSEP EA included a Noise Impact Assessment that made recommendations for the housing of the buildings associated with the DDGS Pelletising Plant. Noise impact Assessment. This is further discussed in Section 6.0 of this EA.</p>

**Table 3 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
	<p>(c) <i>considered any opportunities to relocate the development outside that land, and</i></p> <p>(d) <i>has considered whether the development would adversely affect the operational environment of that industry.</i></p>	

### **3.8 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT**

The existing Shoalhaven Starches factory site and Environmental Farm has an Environmental Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 (POEO Act) (EPL No. 883). The licence imposes requirements in terms of:

- discharges to air, water and land;
- irrigation controls;
- management of irrigation;
- maintenance of irrigation reticulation;
- odour control.

Following consultation with the EPA in relation to this modification proposal, the EPA have indicated conditional support for the proposal. However in doing so the EPA will require that Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS Pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS Pelletising Plant.

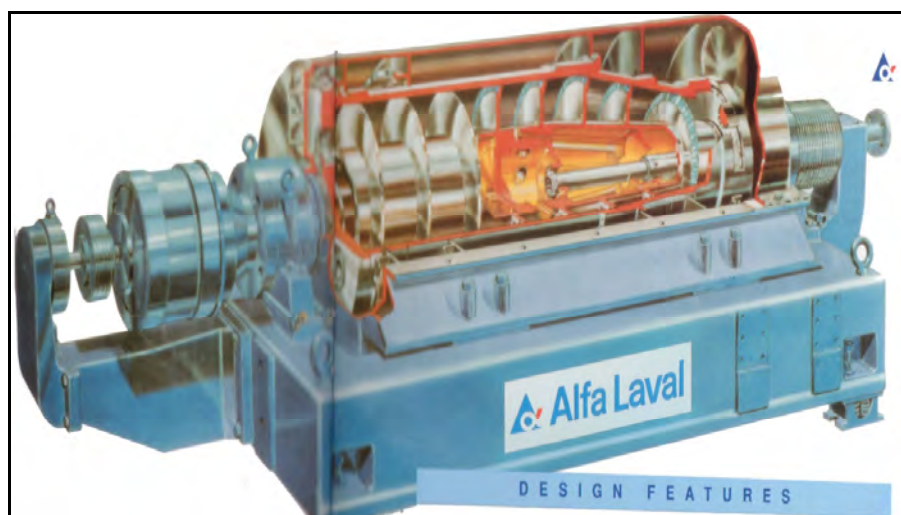
## 4.0 DESCRIPTION OF PROPOSAL

### 4.1 WASTE WATER TREATMENT AND DISPOSAL – STILLAGE RECOVERY

The 2003 approval by the Minister for Planning of the Company's *"Pollution Reduction Program No. 7"* introduced a Stillage Recovery process into the production process at the plant. Stillage recovery essentially seeks to remove suspended and soluble solids from the Company's ethanol production process.

This process includes the use of decanters, evaporators and DDGS dryers.

Decanters are essentially mechanical separation devices, which operate by centrifugal separation process that separates out the unfermented suspended solids in stillage, *ie.* the waste liquid left over from the distillation of ethanol (refer **Plate 2**). The increase in ethanol production associated with the SSEP requires the installation of an additional 10 decanters in a new purpose built building to the west of the site.



**Plate 2:** Decanter.

Evaporators (**Plate 3**) are designed to reduce the water content of "thin" stillage after it passes through the decanters and the coarse solids are removed. The evaporators operate by mechanical vapour recompression. The thin stillage from the decanters is fed into tubes within the evaporator and heated by recompressed steam. The water within the overflow is heated to a point where the water evaporates and is separated from the remaining solids, which remain as syrup. The liquid (*ie.* condensate) is captured and directed to the Environmental Farm Waste Water Treatment Plant.





**Plate 3:** Existing Evaporator.

The evaporation plant located at the factory has sufficient capacity to accommodate the increase in production of ethanol associated with the SSEP. Only one additional evaporator was required to be erected within the existing evaporation plant to accommodate the SSEP.

The syrup product is directed to DDGS dryers for further drying (refer **Plate 4**). The DDGS dryer is essentially a barrel in which a bundle of steam heated tubes are rotated at low speed. Evaporator concentrate (syrup) and decanter concentrate (wet insoluble solids) are fed into one end of the barrel and traversed through to the other end by shovels. Heat from the tubes removes moisture.

Dried DDGS is removed from the barrel and conveyed to the storage room for loading into trucks.

The increase in ethanol production as a result of the SSEP requires the installation of 6 additional DDGS dryers with the associated 10 new decanters to be installed within the western portion of the site. The new plant associated with the stillage recovery process will increase dry DDGS product from 2030 tonnes per week to 6400 tonnes per week.



**Plate 4:** Existing Dryer.

The six (6) new dryers and associated decanters will be fitted with the required equipment to meet statutory emission requirements for particulate and odour emissions.

The product from the drying process results in a dry product that is sold for use as stock feed.

The increase in DDGS product requires the existing DDGS load-out to be extended to enable the storage of the additional product.

The equipment is housed in a new building located to the west of the existing DDGS plant area. The building is maintained under slight negative pressure in order to minimise fugitive odour emissions from the building.

Discharges to air from the dryers, decanters and associated equipment are collected and ducted to a biofilter for treatment. The biofilter is situated adjacent the building housing the dryers and associated equipment.

The SSEP included approval to build a DDGS Pelletising Plant, which provides the Company with greater flexibility to meet market demand (particularly export) for this product.

As outlined earlier the installation of a DDGS Pelletising Plant was also one of the recommendations of the Environmental Audit on the basis that it would reduce fugitive

odour and dust emissions currently associated with the handling and storage of the granular DDGS product.

The DDGS Pelletising Plant will consist of:

- A pellet mill, housed in an extension to the existing DDGS storage area. The pellet mill machinery would include two discharges (through baghouses), each with a discharge rate of approximately 500 m<sup>3</sup>/min.
- An internal mill conveyor under negative pressure and vented through a baghouse at a discharge rate of approximately 12 m<sup>3</sup>/min.
- An enclosed product conveyor to transport the pelletised DDGS from the pellet mill to the existing DDGS storage facility; and
- A pellet out-load system, which would be aspirated through a baghouse with a nominal discharge rate of approximately 20 m<sup>3</sup>/min.

Essentially the DDGS Pelletising Plant would process granular DDGS material into pellets to better enable this product to meet export demand. The existing granular DDGS material is more suited to domestic markets. The processing of this granular material into pellets enables the Company to export this material overseas during periods when the local demand for DDGS is reduced. This proposal essentially seeks to provide greater flexibility for the processing of DDGS on the site to meet the demands of both the local and export markets.

The DDGS Pelletising Plant provides an alternative means of processing the DDGS material that is processed on the site into a modified form of the product for re-sale and re-use.

Essentially DDGS that would otherwise be directed to the DDGS load out as granular material will be able to be re-directed to the DDGS Pelletising Plant.

Given the potential for offensive odour emissions from the DDGS plant process, air emissions from the above discharge points were to be ducted to the approved biofilter under the original Project Approval.

## **4.2 SECTION 75W OF THE EP&A ACT**

Section 75W of the EP&A Act relates to modifications to Project Approvals issued by the Minister for Planning under the previous Part 3A of the EP&A Act (“Major Projects” provisions) and states:

### **75W Modification of Minister's approval**

- (1) *In this section:*

**Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.

**modification of approval** means changing the terms of a Minister's approval, including:

- (a) *revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
  - (b) *changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
- (2) *The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
- (3) *The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
- (4) *The Minister may modify the approval (with or without conditions) or disapprove of the modification.*
- (5) *The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made) may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal.*
- (6) *Subsection (5) does not apply to a request to modify:*
- (a) *an approval granted by or as directed by the Court on appeal, or*
  - (b) *a determination made by the Minister under Division 3 in connection with the approval of a concept plan.*
- (7) *This section does not limit the circumstances in which the Minister may modify a determination made by the Minister under Division 3 in connection with the approval of a concept plan.*

This modification application is made pursuant to Section 75W of the EPA Act.

In this regard the Department of Planning & Environment issued formal requirements for the preparation of this Environmental Assessment for this Modification Application. This Environmental Assessment has been prepared in accordance with those requirements.

## **4.3 PROPOSED MODIFICATION**

### **4.3.1 Modification to Treatment of Air Emissions**

It was originally proposed that air emissions from the proposed DDGS Pelletising Plant would be discharged through biofilters which are used on the site to control odours emanating from air emissions arising from various processes on the site.

Shoalhaven Starches have now identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of air streams arising from the DDGS Pelletising Plant.

Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of a stack.

This application seeks the Minister's approval to modify MP 06\_0228 to modify the proposed means of treating air emissions from the DDGS Pelletising Plant from the original approved biofilters to the use of an exhaust stack as the sole means of treating air emissions from this plant.

**Annexure 1** to this report are a set of plans of the proposed stack in terms of its location on the site as well as elevation details. These plans also provide elevation details providing a comparison between the original approved plant and the current modified proposal.

The proposed stack will have a height above ground level of 49.2 m and a diameter of 1.5 metres.

This modification proposal will not involve any intensification or increase in production from the site. Nor will it result in any changes to emissions from the site from that which was originally approved. In effect the modified proposal will be consistent with the existing approval for this project.

### **4.3.2 Modification to Design and Footprint of DDGS Pelletising Plant**

In addition to a change in the method of treatment of air emissions from the DDGS Pelletising Plant, it is also proposed to modify the approved design and footprint of the DDGS Pelletising Plant.

The Planning & Assessment Commission on the 25<sup>th</sup> March 2014 have previously issued a modification approval (MP 06\_0228 MOD 4) previously to accommodate a change in the design and location of the DDGS Pelletising Plant on the subject site.

Following further detailed engineering design investigations Shoalhaven Starches have however identified that the modified footprint and design of the approved DDGS Pelletising

Plant is required to be further modified to that which was originally approved. The footprint of the proposed DDGS Pelletising Plant is required to be increased from that originally approved.

These modifications to the DDGS Pelletising Plant however do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modified proposal however will not involve any intensification or increase in production from the site. Nor will it involve any increase in emissions from the site. In effect the modified proposal will be consistent with the existing approval for this project.

## **5.0 CONSULTATION**

During the preparation of this EA consultation has been undertaken with the following:

- Department of Planning and Environment;
- Environment Protection Authority (EPA)

The Department of Planning & Environment have provided requirements for the preparation of this EA in emails dated 7<sup>th</sup> and 13<sup>th</sup> of January 2015. A copy of these requirements forms **Annexure 2** to this EA. This EA has been prepared in accordance with those requirements.

Following consultation between Shoalhaven Starches and the EPA, the EPA have responded with correspondence dated 29<sup>th</sup> August 2014 addressed to the Department of Planning & Environment. A copy of the EPA's letter is also included in **Annexure 2** to this EA. The EPA conclude in this submission as follows:

*As such, the EPA is agreeable to the proposed use of a stack to disperse odorous airstreams from the approved DDG pelletising plant provided it is in accordance with the recommendations of the odour dispersion modelling report which specifies a:*

- *Stack height of 20 metres above the roof height of the DDG palletisation plant (overall height of 48 metres)*
- *Stack diameter of 1.5 metres*
- *Stack discharge air temperature of 60 degrees Celsius*
- *Stack exit velocity of 12 metres per second*

*Further, the EPA will also require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDG pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDG pelletising plant.*

## **6.0 RISK ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS**

The purpose of this section of the EA is to provide a risk assessment of the potential environmental impacts associated with this modification proposal compared to the proposal as originally approved. This section (**Table 2**) compares the potential impacts from the proposed modification against the approved project. The comparison uses the key environmental impacts assessed in the EA and summarises the relative change in environmental impacts associated with the proposed modification.



**Table 2**  
**Risk Assessment**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Air Quality (including Odour) Assessment	<p>One of the primary issues that was addressed in the original EA for the Shoalhaven Starches Expansion Project concerned the need for a comprehensive odour assessment and reduction of odours as part of the project.</p> <p>The original Environmental Audit undertaken by GHD Pty Ltd in relation to the site; and the subsequent EA for the Expansion Project both identified that the pelletising of DDG Product had the potential to reduce odours generated from the site. The original Project Approval required the implementation of the Pelletising Plant as a mandatory odour control.</p> <p>This requirement was subsequently modified as part of MOD1 approved by the Minister on the 30<sup>th</sup> September 2011 in which the need for the pelletising plant was removed from the mandatory odour controls and included with other odour controls provided a range of alternative odour controls were implemented including:</p> <ul style="list-style-type: none"> <li>• Installing Moduflex Bellow Feeders and dust extractors on the DDG load chute;</li> <li>• Extending and enclosing the load out shed with motorised doors;</li> <li>• Ducting the Palmer Cooler discharge stack and DDG Recovery Plant emissions to the boilers for odour destruction; and</li> <li>• Ducting air from the DDG Evaporator to the bio-filter.</li> </ul> <p>Shoalhaven Starches have now identified that the biofilters do not have sufficient capacity to deal with the expected volume of odorous air streams from the DDGS Pelletising Plant.</p>	<p>The modification to the footprint and design of the DDGS Pelletising Plant will have no impact on the amount of air emissions from this component of the plant and will therefore have no direct impact on air quality including odorous emissions from the site.</p> <p>Shoalhaven Starches have engaged GHD to undertake a modelling exercise to ascertain the odour dispersion effects of using a stack to disperse emissions from the DDGS Pelletising Plant.</p> <p>The installation of the proposed odour stack should be undertaken in accordance with the recommendations of the odour dispersion modelling report prepared by GHD which specifies a:</p> <ul style="list-style-type: none"> <li>• Stack height of 20 metres above the roof height of the DDGS pelletisation plant (overall height of 48 metres).</li> <li>• Stack diameter of 1.5 metres.</li> <li>• Stack discharge air temperature of 60 degrees Celsius.</li> </ul>	Key issue – addressed further in Section 7.1 of this EA.

**Table 2 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
<i>Air Quality continued</i>	Shoalhaven Starches therefore propose that air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of a stack. The odour impacts associated with the use of a stack to disperse air emissions compared to the use of the original approved biofilters is a key issue that need to be addressed. This issue is further discussed in Section 7.1 of this EA.	<ul style="list-style-type: none"> <li>Stack exit velocity of 12 metres per second.</li> </ul> <p>The design of the proposed stack has been undertaken in accordance with the above design parameters.</p> <p>Further, the EPA will also require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS pelletising plant.</p>	
Greenhouse Gas Emissions	<p>The proposed modification to the design, footprint and+ odour controls for the DDGS Pelletising Plant will have no impact in terms of greenhouse gas emissions emitted from the site. The original Greenhouse Gas Assessment prepared by GHD and which supported the original EA did not specifically identify the pelletising of DDGS as a significant contributor to greenhouse gas emissions.</p> <p>No change in environmental impacts from that originally identified in EA.</p>	No additional management or mitigation measures proposed.	Not a key issue.

**Table 2 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Wastewater Treatment	The proposed modification to the location, footprint and odour controls for the proposed DDGS Pelletising Plant will not result in any change to the amount of wastewater generated from the site nor that will require treatment. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Effluent Irrigation and Storage	The proposed modification to the design, footprint and odour controls for proposed DDGS Pelletising Plant will not result in any change to the amount of wastewater generated from the site and that will require to be irrigated onto the Company's Environmental Farm. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Water & Soils	The proposed modification to odour controls for the proposed DDGS Pelletising Plant will have no additional environmental impact in terms of: <ul style="list-style-type: none"> <li>• Water supply;</li> <li>• Stormwater management;</li> <li>• Acid sulphate soils;</li> <li>• Site contamination.</li> </ul> No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Noise	The original Noise Impact Assessment that accompanied the EA identified that the DDGS Pelletising Plant will be housed within a building constructed of Ultra Panels having an Rw of not less than 35. Furthermore any equipment that has a sound power level above 90 db(A) is required to be enclosed in a separate room with walls and ceiling / floor having an Rw of not less than 40. The proposed modification odour controls for the proposed DDGS Pelletising Plant will have no additional environmental impact in terms of noise generated from the site. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.

**Table 2 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Transport & Traffic	It is anticipated that the transportation of DDG product will generate the same number and type of heavy vehicles to the local traffic network whether in pellet or non-pellet form. As a result, the proposed modification to odour controls for the proposed DDGS Pelletising Plant would not alter the vehicle generation of the site, or by association result in any adverse impacts on the local road system.	No additional management or mitigation measures proposed	Not a key issue.
Hazards	The proposed DDGS Pelletising Plant was not identified by the Preliminary Hazard Analysis undertaken by GHD Pty Ltd. that supported the original EA document as comprising a source of major hazard associated with the Shoalhaven Starches Expansion Project and was therefore not considered in detail as part of this assessment. The proposed modification to odour controls for the proposed DDGS Pelletising Plant will not raise any additional issues with respect to hazards and risk associated with the site. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.
River bank stability and Riparian Management	The proposed modification does not propose any works within the vicinity of the Shoalhaven River or any other watercourse. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.
Flooding	The DDGS Product Storage Shed and DDGS Pelletising Plant were included in the original flood assessment for the site carried out by Webb McKeown & Associates. The proposed modification to odour controls for the proposed DDGS Pelletising Plant will not raise any specific additional issues in terms of flooding risk associated with the site. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.

**Table 2 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Waste Management	<p>The proposed modification to odour controls for the proposed DDGS Pelletising Plant will not alter the level of waste that is required to be managed on site. The Waste Management Assessment carried out by Stephenson Environmental Management Australia (SEMA) did not identify the DDGS Pelletising Plant as a significant contributor to the waste generation, nor did it specify any specific requirements for this component of the Expansion Project. The proposed modification to the location, footprint and height of the proposed DDGS Pelletising Plant will not alter the way waste is managed on the site.</p> <p>No change in environmental impacts from that originally identified in EA.</p>	No additional management or mitigation measures proposed	Not a key issue.
Visual Impact	<p>The proposed stack will have a height above ground level of 49.2 metres and is likely to be visible within the broader landscape. This must however be seen in context of the scale and size of other plant on the site, including the boiler house stack which has a height above ground level of 53.7 metres. This issue is further discussed in Section 7.2 of this EA.</p>	No additional management or mitigation measures proposed	Key issue – addressed further in Section 7.2 of this EA.
Flora and Fauna	<p>The DDG Product Storage Shed is located within the factory site which is devoid of vegetation. The original Flora and Fauna Assessment carried out by Kevin Mills &amp; Associates for the SSEP did not identify any specific ecological constraints with this part of the site. The proposed modification to the odour controls for the proposed DDGS Pelletising Plant will not require any additional vegetation to be disturbed.</p> <p>No change in environmental impacts from that originally identified in EA.</p>	No additional management or mitigation measures proposed	Not a key issue.

**Table 2 (continued)**

<b><i>Issue</i></b>	<b><i>Relative Change in Environmental Impact</i></b>	<b><i>Additional Management or Mitigation Measures Required</i></b>	<b><i>Significance of Issue with this Modification Proposal</i></b>
Heritage and Archaeological Issues	<p>The DDGS Product Storage Shed and proposed Pelletising Plant are located within the factory site which was not previously identified by the EA for the Shoalhaven Expansion Project as an area subject to either Aboriginal or European cultural heritage significance. The original Aboriginal Archaeological Assessment that supported the EA prepared by South East Archaeology did not identify any constraints with respect to this part of the site or this project. The proposed modification to the location, footprint and height of the proposed DDGS Pelletising Plant will have no additional impact in terms of indigenous or non-indigenous heritage.</p> <p>No change in environmental impacts from that originally identified in EA.</p>	No additional management or mitigation measures proposed	Not a key issue.

## 7.0 KEY ISSUES

### 7.1 AIR QUALITY (AND ODOUR IMPACTS)

Shoalhaven Starches have identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of air streams from the DDGS Pelletising Plant.

The existing biofilters that are located on the site have an airflow design rate of 15,000 m<sup>3</sup>/hr each. The current airflow that is treated by the biofilters is approximately 15,000 m<sup>3</sup>/hr, which allows a biofilter to be taken off-line for maintenance; while enabling the other biofilter to continue to treat 100% of air emissions.

The predicated air emissions from the DDGS Pelletising Plant however will be approximately 80,000 m<sup>3</sup>/hr. This level of air emissions would equate to another 5 – 6 biofilters of similar size to treat this expected volume of air.

Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of a stack.

Shoalhaven Starches engaged GHD Pty Ltd, the firm responsible for undertaking the original site Environmental Audit as well as the Air Quality Impact Assessment that supported the original Project Application for the Expansion Project to undertake odour dispersion modelling for the use of a stack as the sole odour treatment system for the approved DDGS Pelletising Plant. A copy of the Odour Dispersion Model report repeated by GHD forms **Annexure 3** to this EA.

The odour dispersion modelling was conducted using an odour concentration value that was derived from odour samples taken from an exhaust stack of a similar pelletising plant (AMBOS Stockfeeds at Young) to what is proposed to be constructed at the Shoalhaven Starches site.

The odour dispersion modelling data carried out by GHD addresses two stack heights of 10 metres and 20 metres respective above the roof height of the DDGS Pelletising Plant building. The odour dispersion modelling predicts that a 10 metre high stack height will result in an increased odour impact when compared to the findings of the most recent independent odour audit. A 20 metre high stack is predicted to result in a comparable impact (slight increase at one of the four modelled residential receptors) to the findings of the most recent independent odour audit. The modelled odour impact from a 20 metre high stack is predicted to result in ground level odour concentrations at all of the four nominated residential receptor locations (Bomaderry (R1), North Nowra (R2), Nowra (R3) and Terara (R4)) that remain lower than the predications made in the original

Environmental Assessment for the ethanol expansion project, which included DDGS Pelletising Plant as part of the stage 1 mandatory odour controls.

As outlined above in Section 5.0 of this EA, Shoalhaven Starches have consulted with the EPA with respect to this matter. The EPA have provided a written response to the Department of Planning & Environment and this is included in **Annexure 2** to this EA.

The EPA have reviewed the odour dispersion modelling prepared by GHD and state:

*“...the EPA is agreeable to the proposed use of a stack to disperse odorous airstreams from the approved DDG pelletising plant provided it is in accordance with the recommendations of the odour dispersion modelling report which specifies a:*

- *Stack height of 20 metres above the roof height of the DDG pelletisation plant (overall height of 48 metres)*
- *Stack diameter of 1.5 metres*
- *Stack discharge air temperature of 60 degrees Celsius*
- *Stack exit velocity of 12 metres per second*

*Further, the EPA will also require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDG pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDG pelletising plant.”*

## **7.2 VISUAL IMPACT**

The Shoalhaven Starches Factory Site is located on Bolong Road, one of the main gateway entrances to the Nowra/Bomaderry urban areas, and a significant tourist route along this section of the South Coast.

### ***The Scenic Character and Environment***

The Shoalhaven Starches factory site is situated on Bolong Road, the gateway to Bomaderry, within an area currently containing a mixture of rural and industrial land uses. These different land uses contrast with each other and result in a mixed visual character.

The rural areas, much of which comprises the Shoalhaven Starches Environmental Farm, are generally flat to gently undulating and planted with pasture grasses. These areas have a typical rural/agricultural character, common throughout the region. To the north and forming a background to the rural landscape are the timbered slopes of the Cambewarra escarpment.



The Shoalhaven City Council Heritage Study 1995 – 1998 prepared by Peter Freeman Pty Ltd in association with JRC Planning Services identified the rural landscapes north of the Shoalhaven River as the Berry-Bolong Pastoral Landscape. This Study described this area as:

*“North of the Shoalhaven River the area is dominated by the close relationship between the Princes Highway (formalised by Berry in 1857/1858) and the railway (1893) which were instrumental in determining the location of new homesteads on Berry estate lands which resulted from drainage schemes implemented by Sir John Hay. In the foothills to the north-west, and towards Cambewarra, settlement patterns were in the main determined by the impact of Free Selection after 1861. Sub-zones include the Cambewarra-Tapitallee area, Bellawongarah and the catchment areas of Broughton Creek north of Berry. The latter are focused around communities which developed outside the Berry Estate: Cambewarra, Tapitallee, Bundewallah, Woodhill and Broughton Vale. The scale and character are dependent on the distribution of small dairy farms, with internal and external boundaries created by modified and natural vegetation (River Oaks), roads, creeks and property boundaries.*

*Continuing dairy farms has contributed to the survival of the underlying late nineteenth and early twentieth century landscape patterns.”*

The Shoalhaven Starches factory complex is characterised by typical industrial structures with an overall bulk and scale that dominates the surrounding locality. The site, despite being partially screened by vegetation along Bolong Road, the Shoalhaven River and Abernethy's Creek visually dominates the locality. The development is particularly exposed to view along Bolong Road. This view reveals some of the internal structures within the site including recovery and storage tanks, car park, fermentation tanks and the Ethanol Plant. Overall the appearance of the site is typical of an industrial facility of this nature.

The most relevant vantage points from where the overall factory site is visible would include:

The Princes Highway – views of the existing factory site are possible from selected locations along the Princes Highway north of Bomaderry, travelling in both a northerly and southerly direction. Whilst the factory site is visible in the landscape, its overall visual impact is reduced by virtue of the distance between the plant; the intermittent nature of the views; a rise in topography which screens the site from view; and vegetation.

Burruga (Pig) Island – Burruga Island is situated in the middle of the Shoalhaven River and provides the closest vantage point to the southern boundary of the site. The island however is privately owned and not accessible to the public. Vegetation screening along the riverbank adjacent to the site also reduces the visibility of the existing buildings and structures.

Bolong Road – Bolong Road runs along the frontage of the site. Views of the factory are possible when travelling in both an easterly or westerly direction. Some attempts have been made to provide some tree planting along the boundaries to “soften” the appearance of the development. The existing building forms and structures are however clearly visible to motorists travelling along this stretch of Bolong Road.

Nowra Bridge – The Nowra Bridge crosses the Shoalhaven River and provides limited opportunities for views of the factory site. The dominant visual elements from the bridge are the river, vegetation along the riverbanks and the escarpment. The visual impact of the factory site is reduced by distance as well as the bridge structure which permits only glimpses of the site.

Bomaderry urban area – The existing plant is visible from a number of locations within the eastern outskirts of Bomaderry. Bomaderry is slightly elevated and some locations within the urban area do have extensive views of the site.

Terara – Distant views of the Plant are possible from a number of vantage points in and around the village of Terara on the southern bank of the River. The visual impact of the site however is reduced by distance, the intervening landform of Burraga (Pig) Island and the vegetated riverbanks.

Riverview Road – Views of the site are available from residential development on the southern bank of the Shoalhaven River. Vegetation along both the northern and southern banks of the river partially screen the site from view.

Cambewarra Lookout – Cambewarra lookout is a popular tourist lookout providing panoramic views over the Shoalhaven floodplain and estuary. Shoalhaven Starches, like the other significant industrial sites, is visible from the lookout.

### ***Visual Impact of Proposal***

The proposed modification to the design and footprint of the DDGS Pelletising Plant will involve a lateral extension of the footprint of the Pelletising Plant from that which was approved for a further 38 metres in a southerly direction; and will have a width of 35.1 metres. The extended part of the DDGS Pelletising Plant will have a height above ground level of 26.5 metres, which will sit slightly below the approved height of the DDGS Pelletising Plant.

The proposed stack associated with this modification application, will have a height above ground level of 49.2 metres; and will have a diameter of 1.5 metres. The stack will be situated adjacent to the approved DDGS Pelletising Plant. The approved DDGS Pelletising Plant will have a height above ground level of about 29.2 metres.

It is acknowledged that the proposed stack will have a height that is higher than many structures within the existing factory site however there are a range of structures which have or will have a height similar and even higher than the proposed stack associated with this modification proposal. For instance:

- The existing boiler house stack has a height of 53.7 metres;
- The No. 5 Starches Dryer stack was approved at 33 metres;
- The existing Flour Mill has a height above ground level of 34.78 metres.
- The constructed No. 6 Dryer (Wet End) has a height of 43.0 metres.

The proposed stack will therefore comprise a height that is generally consistent with the prevailing height of existing development within the site.

The building forms, shapes and characteristics are also similar to those that presently exist on the site, and will conform to the visual character of the site, ie. it is industrial development within an industrial setting.

Shoalhaven Starches have engaged the services of Edmiston Jones Architects to prepare photomontages depicting the proposed modifications to the DDGS Pelletising Plant when viewed from several vantage points within the broader landscape. These photomontages form **Figures 5 to 8**.

The visual impact of these works from the identified vantage points (refer **Figure 4**) is described as follows:

#### The Princes Highway

The Shoalhaven Starches factory is mainly visible from a section of the Princes Highway between Boxsells Lane and Devitts Lane, Jaspers Brush (refer **Plate 5**). Due to the configuration of the highway and the siting of the factory, only southbound vehicles view the site. Vantage points along this section of the highway are 4.5 to 5.0 km from the site. The site becomes less exposed and is eventually obscured by a rise in topography further south of Boxsells Lane.

Given the distance from these vantage points the factory site is only barely visible. The rising topography upon which Bomaderry is sited screens the western portion of the site, as does intervening vegetation.

Given the distance of these views, and the screening of the site attributed to terrain and vegetation it is considered the developments associated with this project will not adversely impact on views from these vantage points.



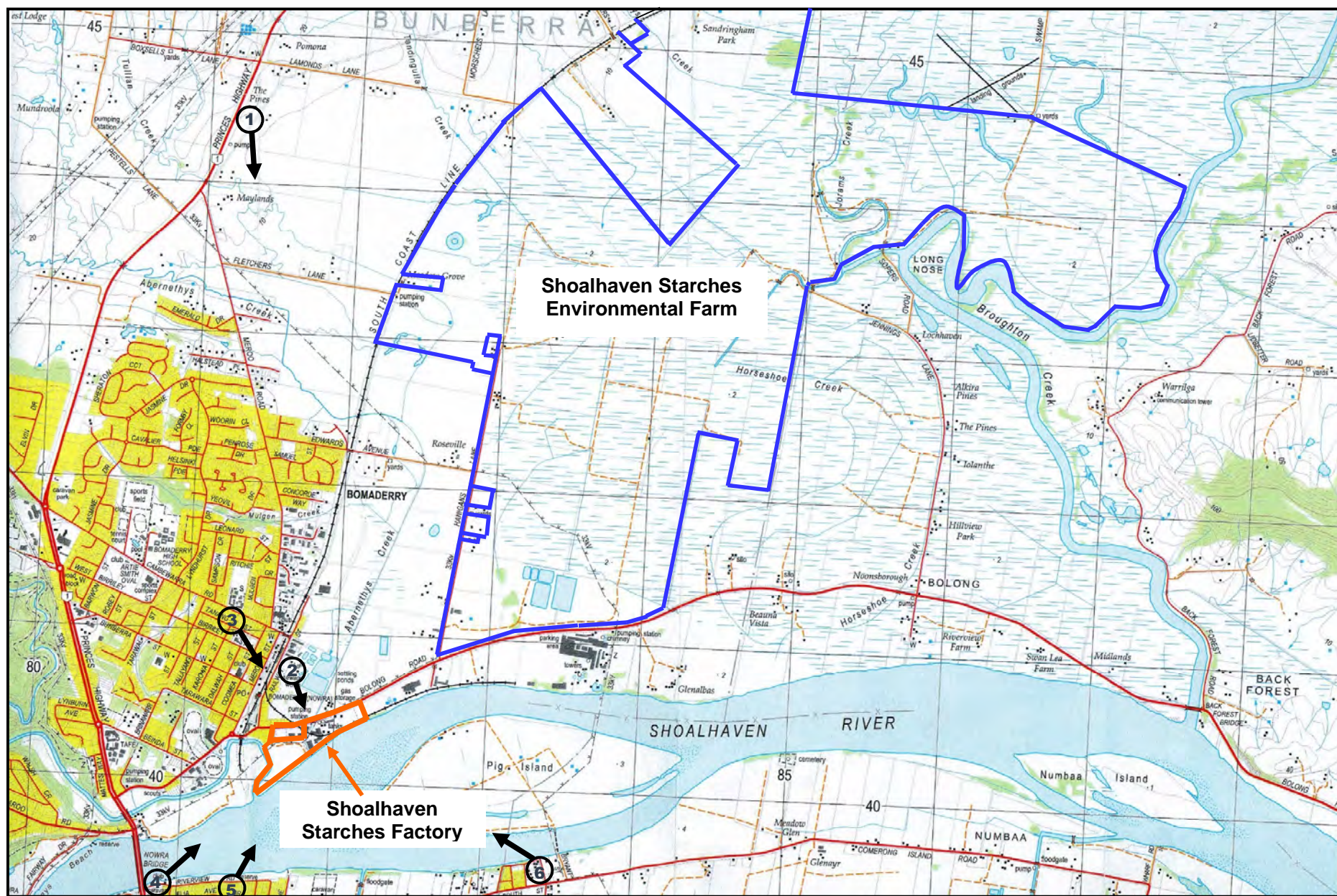


Figure 4: Vantage Points for Plates.





**Plate 5:** View of Shoalhaven Starches Factory from Princes Highway  
(within vicinity of Boxsells Lane).  
Factory stack barely visible from this vantage point.

#### Bolong Road

The existing factory site is clearly visible from Bolong Road by vehicles approaching from the east, and along the frontage of the site refer (**Plate 6**).

Works associated with the DDGS Plant sited to the west of Abernethy's Creek will mainly involve structures of a similar bulk and scale as existing structures within this part of the site. The proposed stack will be situated within proximity of these approved and established structures.

**Figure 5** is a photomontage depicting the proposed modified works associated with this application taken from the Bolong Road frontage of the site.

The works will be partially screened from view along Bolong Road by virtue of existing development sited along the Bolong Road frontage. The proposed stack will intrude above the skyline of existing buildings, as does other approved DDG Pelletising Plant and existing development within this part of the site. In these circumstances these structures create forms similar to existing industrial structures within the vicinity.



North view from Bolong Rd

**Proposed Pellet Plant  
For Manildra Group - Nowra**  
At Lot 1 DP 838753, 160 Bolong Road, Bomaderry

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Nominated Architect Steven Baytel Reg. No. 5980. Ilwaco Pty Ltd ABN 67 003 165 451.

REV	DESCRIPTION	DATE	PROJECT #
A	FINAL ISSUE	16/2/15	R15-0001
SCALE: NTS		A3	
DRAWING NO.		REVISION	
01		A	

**Figure 5: Photomontage of proposal from Bolong Road**



**Plate 6:** View of proposed DDGS Pelletising Plant and stack location within Shoalhaven Starches factory site from Bolong Road.

#### Bomaderry Urban Area

The township of Bomaderry is slightly elevated and some locations within this urban area have extensive views of the site (refer **Plate 7**).



**Plate 7:** View of Shoalhaven Starches factory site from corner of Meroo Road and Cambewarra Road, Bomaderry.



The proposed works will be visible from this vantage point as are other similar size and scale structures. In this way the vista from this vantage point will not be significantly altered.

#### Nowra Bridge

The view from Nowra Bridge to the east is mainly dominated by the river, riparian vegetation and the floodplain (refer **Plate 8**).

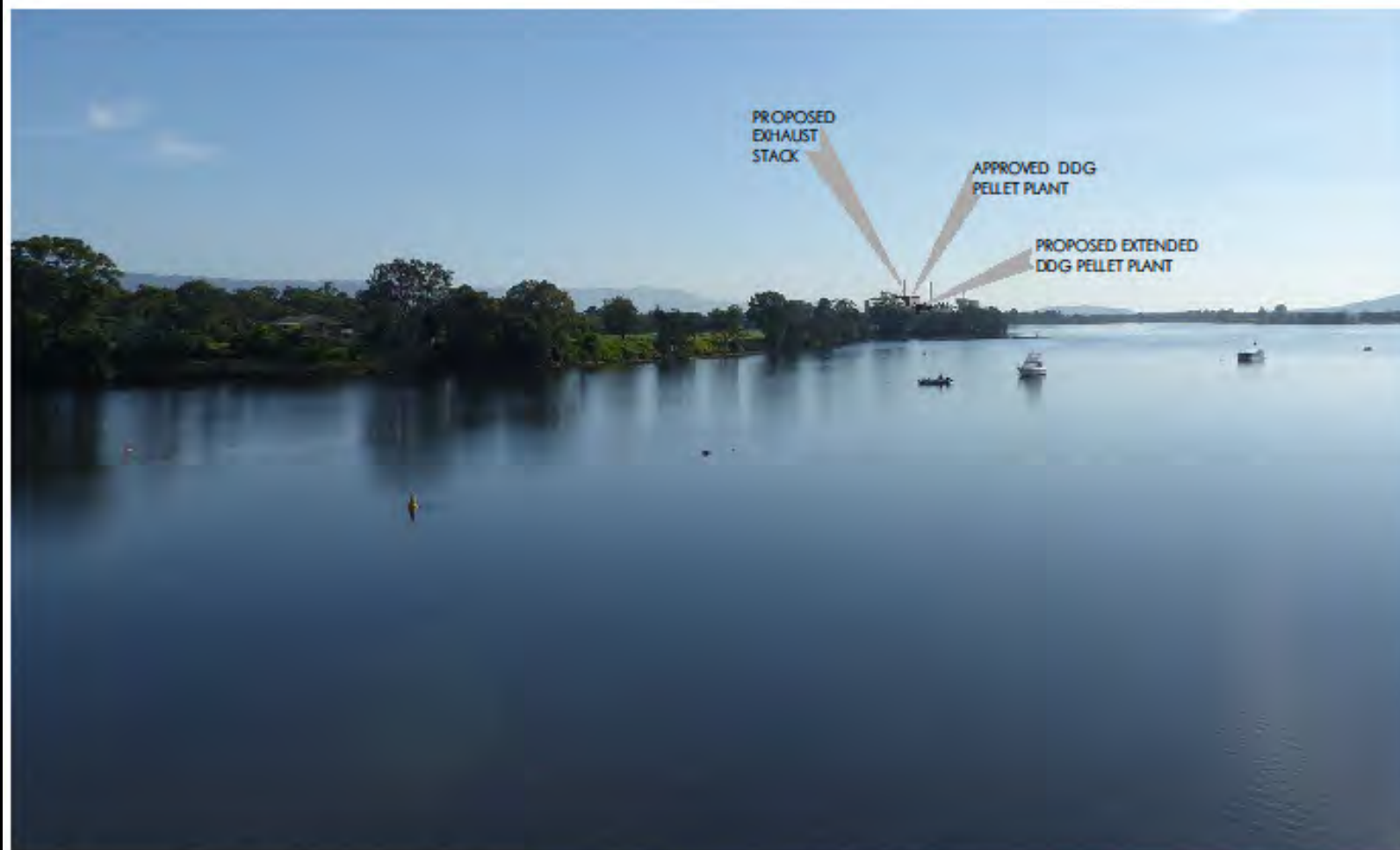


**Plate 8:** View of Shoalhaven Starches factory site from Nowra Bridge over the Shoalhaven River.

**Figure 6** is a photomontage depicting the proposed modified works associated with this application taken from this vantage point.

The site is largely obscured by riverside vegetation. The proposed stack will protrude above the canopy of the vegetation along the river, as will the approved DDG Pelletising Plant. The proposed extension to the Pelletising Plant will only be slightly visible above riverside vegetation. The proposed stack will be sited within the overall “silhouette” of the existing factory complex. Although it is likely to intrude into the existing skyline created by the existing factory, it will not be out of context in terms of the existing factory development when viewed from this vantage point.





South west view from Nowra Bridge

## Proposed Pellet Plant For Manildra Group - Nowra

At Lot 1 DP 838753, 160 Bolong Road, Bomaderry

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DESCRIPTION	DATE	PROJECT NO.	WOL-0001
1.0 PRELIMINARY	18/01/15	NO. 001	WOL-0001
2.0 DESIGN		NO. 002	WOL-0002
3.0 CONSTRUCTION		NO. 003	WOL-0003
4.0 OPERATION		NO. 004	WOL-0004
5.0 MAINTENANCE		NO. 005	WOL-0005
6.0 DECOMMISSIONING		NO. 006	WOL-0006
7.0 CLOSURE		NO. 007	WOL-0007
8.0 REHABILITATION		NO. 008	WOL-0008
9.0 MONITORING		NO. 009	WOL-0009
10.0 EVALUATION		NO. 010	WOL-0010
11.0 REPORTING		NO. 011	WOL-0011
12.0 ARCHIVING		NO. 012	WOL-0012
13.0 DISPOSAL		NO. 013	WOL-0013
14.0 REUSE		NO. 014	WOL-0014
15.0 RECYCLING		NO. 015	WOL-0015
16.0 REPAIR		NO. 016	WOL-0016
17.0 RESTORE		NO. 017	WOL-0017
18.0 REVEAL		NO. 018	WOL-0018
19.0 REVEAL		NO. 019	WOL-0019
20.0 REVEAL		NO. 020	WOL-0020
21.0 REVEAL		NO. 021	WOL-0021
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23.0 REVEAL		NO. 023	WOL-0023
24.0 REVEAL		NO. 024	WOL-0024
25.0 REVEAL		NO. 025	WOL-0025
26.0 REVEAL		NO. 026	WOL-0026
27.0 REVEAL		NO. 027	WOL-0027
28.0 REVEAL		NO. 028	WOL-0028
29.0 REVEAL		NO. 029	WOL-0029
30.0 REVEAL		NO. 030	WOL-0030
31.0 REVEAL		NO. 031	WOL-0031
32.0 REVEAL		NO. 032	WOL-0032
33.0 REVEAL		NO. 033	WOL-0033
34.0 REVEAL		NO. 034	WOL-0034
35.0 REVEAL		NO. 035	WOL-0035
36.0 REVEAL		NO. 036	WOL-0036
37.0 REVEAL		NO. 037	WOL-0037
38.0 REVEAL		NO. 038	WOL-0038
39.0 REVEAL		NO. 039	WOL-0039
40.0 REVEAL		NO. 040	WOL-0040
41.0 REVEAL		NO. 041	WOL-0041
42.0 REVEAL		NO. 042	WOL-0042
43.0 REVEAL		NO. 043	WOL-0043
44.0 REVEAL		NO. 044	WOL-0044
45.0 REVEAL		NO. 045	WOL-0045
46.0 REVEAL		NO. 046	WOL-0046
47.0 REVEAL		NO. 047	WOL-0047
48.0 REVEAL		NO. 048	WOL-0048
49.0 REVEAL		NO. 049	WOL-0049
50.0 REVEAL		NO. 050	WOL-0050
51.0 REVEAL		NO. 051	WOL-0051
52.0 REVEAL		NO. 052	WOL-0052
53.0 REVEAL		NO. 053	WOL-0053
54.0 REVEAL		NO. 054	WOL-0054
55.0 REVEAL		NO. 055	WOL-0055
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70.0 REVEAL		NO. 070	WOL-0070
71.0 REVEAL		NO. 071	WOL-0071
72.0 REVEAL		NO. 072	WOL-0072
73.0 REVEAL		NO. 073	WOL-0073
74.0 REVEAL		NO. 074	WOL-0074
75.0 REVEAL		NO. 075	WOL-0075
76.0 REVEAL		NO. 076	WOL-0076
77.0 REVEAL		NO. 077	WOL-0077
78.0 REVEAL		NO. 078	WOL-0078
79.0 REVEAL		NO. 079	WOL-0079
80.0 REVEAL		NO. 080	WOL-0080
81.0 REVEAL		NO. 081	WOL-0081
82.0 REVEAL		NO. 082	WOL-0082
83.0 REVEAL		NO. 083	WOL-0083
84.0 REVEAL		NO. 084	WOL-0084
85.0 REVEAL		NO. 085	WOL-0085
86.0 REVEAL		NO. 086	WOL-0086
87.0 REVEAL		NO. 087	WOL-0087
88.0 REVEAL		NO. 088	WOL-0088
89.0 REVEAL		NO. 089	WOL-0089
90.0 REVEAL		NO. 090	WOL-0090
91.0 REVEAL		NO. 091	WOL-0091
92.0 REVEAL		NO. 092	WOL-0092
93.0 REVEAL		NO. 093	WOL-0093
94.0 REVEAL		NO. 094	WOL-0094
95.0 REVEAL		NO. 095	WOL-0095
96.0 REVEAL		NO. 096	WOL-0096
97.0 REVEAL		NO. 097	WOL-0097
98.0 REVEAL		NO. 098	WOL-0098
99.0 REVEAL		NO. 099	WOL-0099
100.0 REVEAL		NO. 100	WOL-0100

Figure 6: Photomontage of proposal from Nowra Bridge

### Riverview Road

The main vantage point from where the proposed stack will be visible will be from residences along Riverview Road directly south of the site (refer **Plate 9**). This view is from a distance of about 750 metres. Riverside vegetation along both the northern and southern banks of the river softens much of the site from view.



**Plate 9:** View of Shoalhaven Starches factory site from Riverview Road area.

**Figure 7** is a photomontage depicting the proposed modified works associated with this application taken from this vantage point.

The approved DDG Pelletising Plant will be visible from this vantage point, as will the proposed stack and the proposed extension to the Pelletising Plant associated with this modification application. These works will intrude above the tree canopy. This is the case with the existing factory development. From this vantage point however, these works will be sited within close proximity of the existing factory complex, and will be viewed within this context.

It is noted there are 'gaps' in the vegetation along the riverbank to the south of the site, and the proposed development may be visible through these 'gaps'. There is, therefore, scope for supplementary landscaping and revegetation to take place along the riverbank adjoining the factory site to help soften or obscure views of the site, particularly from this vantage point. This was addressed as part of the Project Approval for the Expansion Project.



South view from Shoalhaven River bank across from 68 Riverview Rd

**Proposed Pellet Plant  
For Manildra Group - Nowra**  
At Lot 1 DP 838753, 160 Bolong Road, Bomaderry

WOLLONGONG	NOWRA	BATEMANS BAY
10 Belmore Street Wollongong NSW 2500	62 North Street Nowra NSW 2541	1 North Street Batemans Bay NSW 2506
T 02 42 261 333 F 02 42 266 455	T 02 44 216 622 F 02 44 221 943	T 02 44 727 388 F 02 44 221 943
W <a href="http://www.edmistonjones.com.au">www.edmistonjones.com.au</a>	E <a href="mailto:enquiries@edmistonjones.com.au">enquiries@edmistonjones.com.au</a>	

DATE	DESCRIPTION	DATE	PROJECT NO.	NSW 0001
10/01/2015	Final design	10/01/2015	NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001
			NSW 0001	NSW 0001

215-0001 Final planbook 10/01/2015

Figure 7: Photomontage of proposal from Riverview Road



### Terara

The village of Terara is approximately 1.5 kilometres from the factory. The view of the Shoalhaven Starches factory site as seen from the banks of the Shoalhaven River adjacent to the village of Terara is shown in **Plate 10**.



**Plate 10:** View of Shoalhaven Starches factory site from village of Terara.

**Figure 8** is a photomontage depicting the proposed modified works associated with this application taken from this vantage point.

The approved DDG Pelletising Plant, proposed stack and the extension to the DDG Pelletising Plant will rise above riverside vegetation and will be visible from this vantage point (refer **Figure 8**). Such should be seen in context however as other parts of the factory site such as the Flour Mill, associated grain silos, ethanol plant and boiler house stack are already visible from this vantage point. The proposed stack and extension to the DDG Pelletising Plant will not be out of character with the prevailing structures which are already visible from this vantage point.



South view from Shoalhaven River bank across from 2 West Berry St

## Proposed Pellet Plant For Manildra Group - Nowra

At Lot 1 DP 838753, 160 Bolong Road, Bomaderry

### WOLLONGONG

10 Balmain Street  
Wollongong  
NSW 2500  
T 02 42 261 333  
F 02 42 262 405  
W [www.wj.com.au](http://www.wj.com.au)  
E [info@wj.com.au](mailto:info@wj.com.au)

### NOWRA

127 North Street  
Nowra  
NSW 2541  
T 02 44 234 600  
F 02 44 221 942  
E [info@wj.com.au](mailto:info@wj.com.au)

### BATEMANS BAY

1 North Street  
Batemans Bay  
NSW 2506  
T 02 44 729 338  
F 02 44 221 942

REV	DESCRIPTION	DATE	PROJECT NO.	REV. NO.	REV. DATE
1	FINAL ISSUE	10/01/15	04	1	10/01/15
DRAWING NO.			DIVISION		
04			A		

815-10001 Pellet plant.wkx

10/01/15

Figure 7: Photomontage of proposal from Terara

### Cambewarra Lookout

Cambewarra Lookout is situated about 7 km to the northwest of the site. Views from the lookout are from an elevation over 620 m ASL, and encompass the Shoalhaven River floodplain and the coast including Jervis Bay. Whilst the factory site is visible from this vantage point, due to scale of the view, it would be extremely difficult to make out the works associated with the project from this vantage point.

Overall it is considered that the proposed works will not create a significant adverse visual impact due, principally, to the existing industrial development. There are however measures which Shoalhaven Starches could undertake to minimise the visual impact of the proposed stack. Where appropriate and possible, the stack should be constructed of similar materials as those previously used on the site and be of a non-reflective nature. Colours should blend with existing structures on the site to ensure visual harmony. Consideration should be given to incorporating a cladding colour if possible which will blend with the surrounding locality.

## 8.0 CONCLUSION

The SSEP was approved in January 2009 by the then Minister for Planning under Part 3A of the Environmental Planning & Assessment Act.

The Project Approval included the installation of a DDGS Pelletising Plant as one of the odour controls of the Project consent conditions. MOD1 of the Project Approval removed the requirement to install the DDGS Pelletising Plant as one of the mandatory odour controls and the plant was added to a list of additional odour controls. Under this Project Approval air emissions from the DDGS Pelletising Plant were to be treated by biofilters.

To date the DDGS Pelletising Plant has not been required to be installed as an additional odour control and accordingly the company had decided to defer the installation of the plant due to market and other commercial constraints.

Shoalhaven Starches have now been successful in identifying significant new international and domestic market opportunities for a pelletised DDGS product. It therefore wishes to proceed to install a DDGS Pelletising Plant to secure these new value added business opportunities.

Condition 3C of the modified MP06\_0228 (MOD 4) Project Approval stipulates that:

*3C. Prior to the commencement of construction of the DDG pelletising plant as described in the modification application MP 06\_0228 MOD 4, the Proponent shall engage a suitably qualified and experienced expert to demonstrate to the satisfaction of the Director General and the EPA that the existing bio-filters can accommodate the additional odour load of the DDG pelletising plant while maintaining acceptable treatment performance.*

*In the event that it is found that the bio-filters cannot maintain an acceptable odour treatment performance, the Proponent shall comply with any direction/s from the Director-General in consultation with the EPA to install additional odour treatment controls or modify the existing odour treatment controls at the facility.*

Shoalhaven Starches have identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of odorous air streams from the DDGS Pelletising Plant. Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of a stack.

This EA is supported by modelling prepared by GHD which demonstrates that a stack with a height of 20 m above the roof height of the DDGS Pelletising Plan will result in a comparable impact that will remain lower than predictions made in the original EA for the SEEP.

In accordance with condition 3C as outlined above, Shoalhaven Starches have consulted with the NSW EPA in relation to this proposal. Essentially the NSW EPA indicate that they

conditionally agree to the use of a stack to disperse odorous air streams from the approved DDGS Pelletising Plant.

The EPA will require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS Pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS Pelletising Plant.

In addition to a change in the method of treatment of air emissions from the DDGS Pelletising Plant, it is also proposed to modify the approved design and footprint of the DDGS Pelletising Plant.

The Planning & Assessment Commission on the 25<sup>th</sup> March 2014 previously issued a modification approval (MP 06\_0228 MOD 4) previously to accommodate a change in the design and location of the DDGS Pelletising Plant on the subject site.

Following further detailed engineering design investigations Shoalhaven Starches have however identified that the modified footprint and design of the approved DDGS Pelletising Plant is required to be further modified to that which was originally approved. The footprint of the proposed DDGS Pelletising Plant is required to be increased from that originally approved.

These modifications to the DDGS Pelletising Plant however do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

This application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979 and seeks to modify the location, footprint and design of the approved DDGS Pelletising Plant.

The modified proposal will not involve any intensification or increase in production from the site. Nor will it involve any increase in emissions from the site. In effect the modified proposal will be consistent with the existing approval for this project.

The application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979.

The preparation of this Environmental Assessment has been undertaken following consultation with staff from:

- The Department of Planning and Infrastructure;



- EPA.

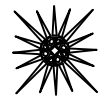
Following a comparison of the modified proposal to that originally approved having regard to the key issues originally identified associated with this Project, this Environmental Assessment concludes that the proposal is suitable for the site and this locality and consistent with the objects of the Environmental Planning & Assessment Act.

The Minister's approval of this proposed modification to Project Approval MP 06\_0228 is sought.

**ANNEXURE 1**

**Plans of Proposed**  
**DDGS Pelletising Plant Stack**

SHOALHAVEN STARCHES.  
NOWRA SITE PLAN.  
Scale 1:3000(A3)  
1:1500(A1)  
Drw.MN236-108C



MANILDRA  
GROUP

Commitment to Excellence

MANILDRA-5653

12/01/15 P.C.

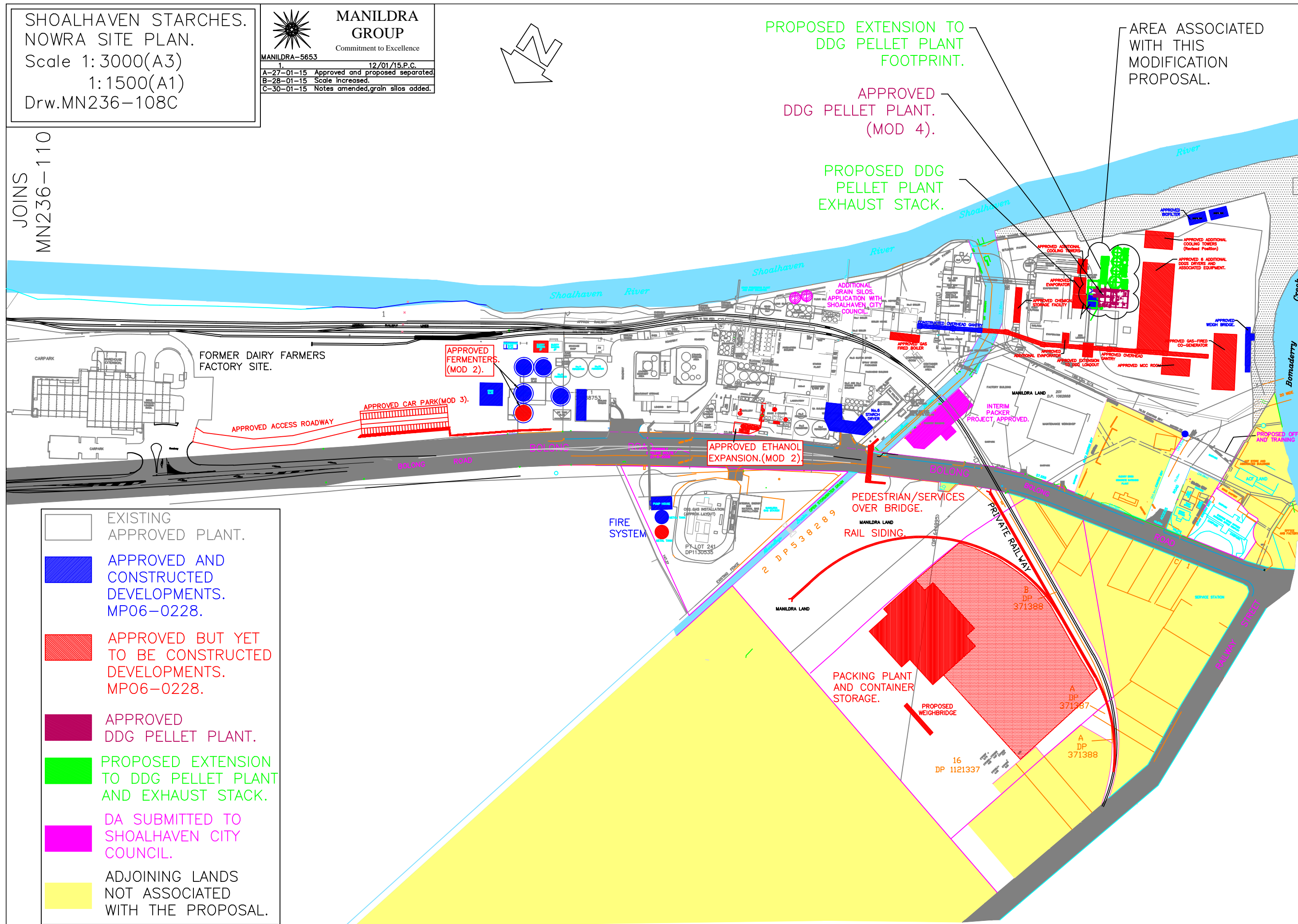
A-27-01-15 Approved and proposed separated

B-28-01-15 Scale increased.

C-30-01-15 Notes amended, grain silos added.



JOINS  
MN236-110

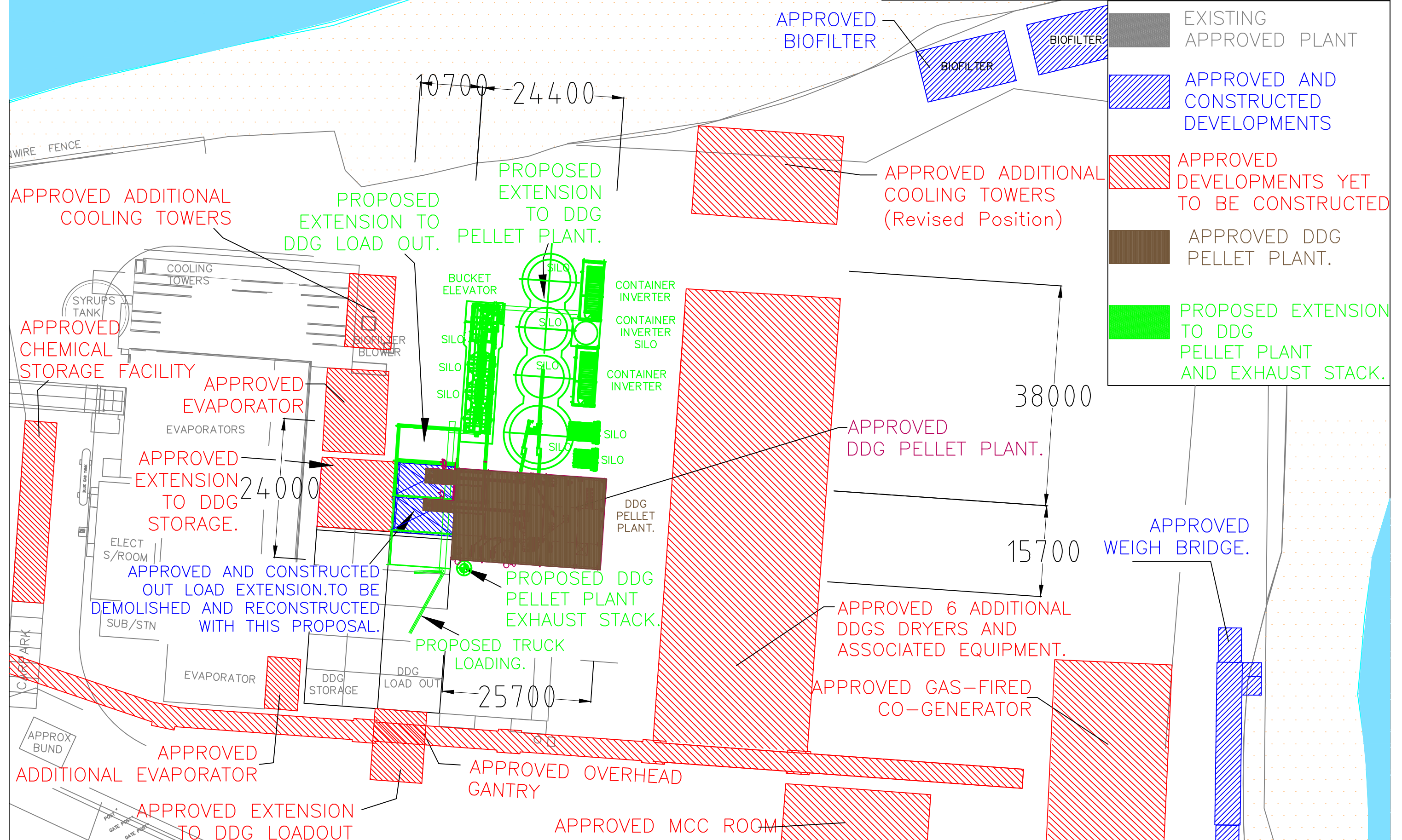




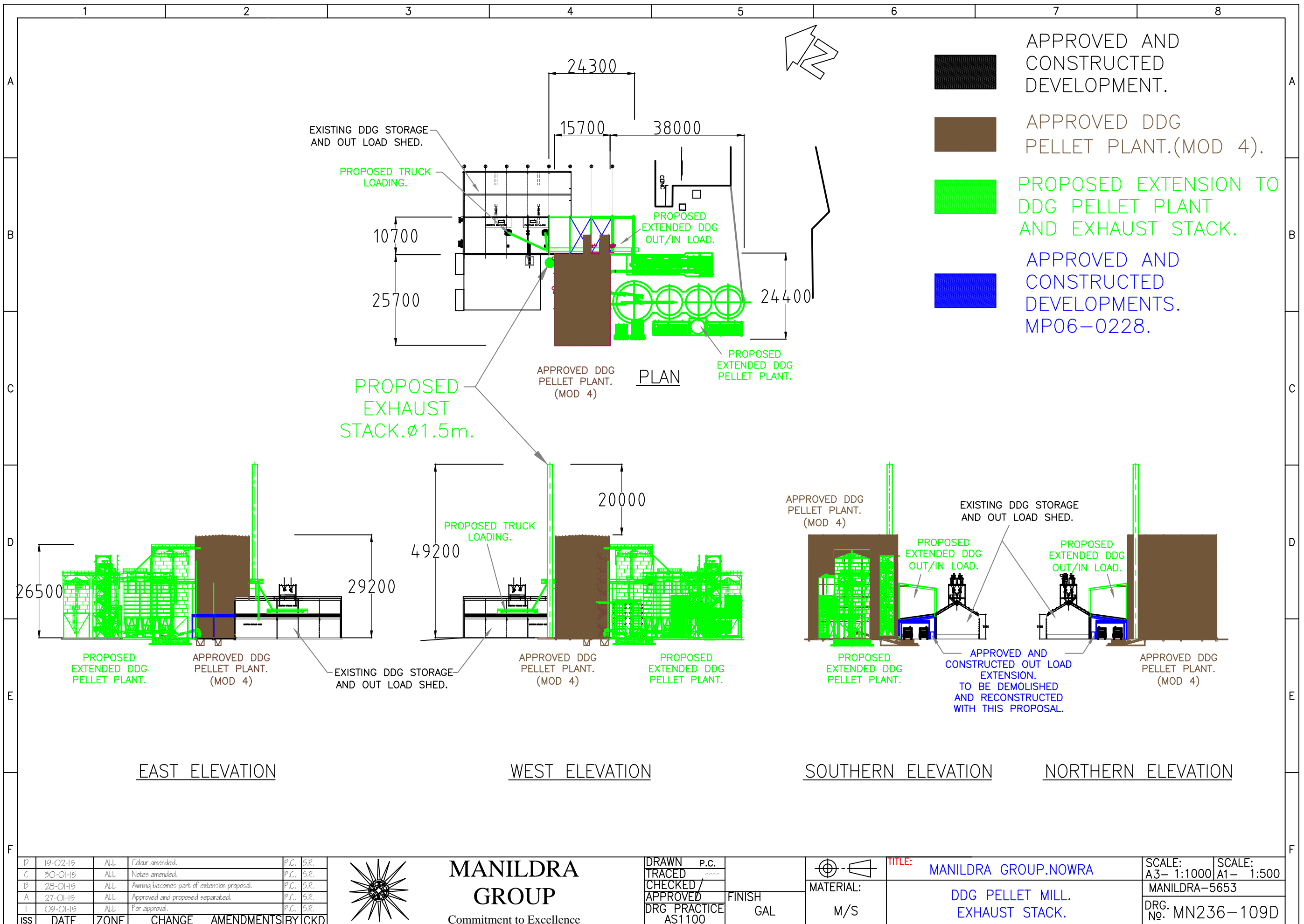
MANILDRA  
GROUP

MANILDRA-5653 Commitment to Excellence  
1. 12/01/15 P.C.  
A- 27-01-15 Approved and proposed separated.  
B- 28-01-15 Dims added.  
C- 30-01-15 Notes amended.  
D- 19-02-15 Notes amended.

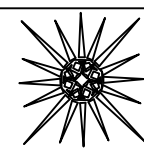
SHOALHAVEN STARCHES.  
PELLET MILL SITE PLAN.  
Scale 1:600(A3)  
1:300(A1)  
Drw.MN236-107D







D	19-02-15	ALL	Colour amended.	P.C.	S.R.
C	30-01-15	ALL	Notes amended.	P.C.	S.R.
B	28-01-15	ALL	Awning becomes part of extension proposal.	P.C.	S.R.
A	27-01-15	ALL	Approved and proposed separated.	P.C.	S.R.
I	09-01-15	ALL	For approval.	P.C.	S.R.
ISS	DATE	ZONE	CHANGE	AMENDMENTS	BY CKD



**MANILDRA  
GROUP**  
Commitment to Excellence

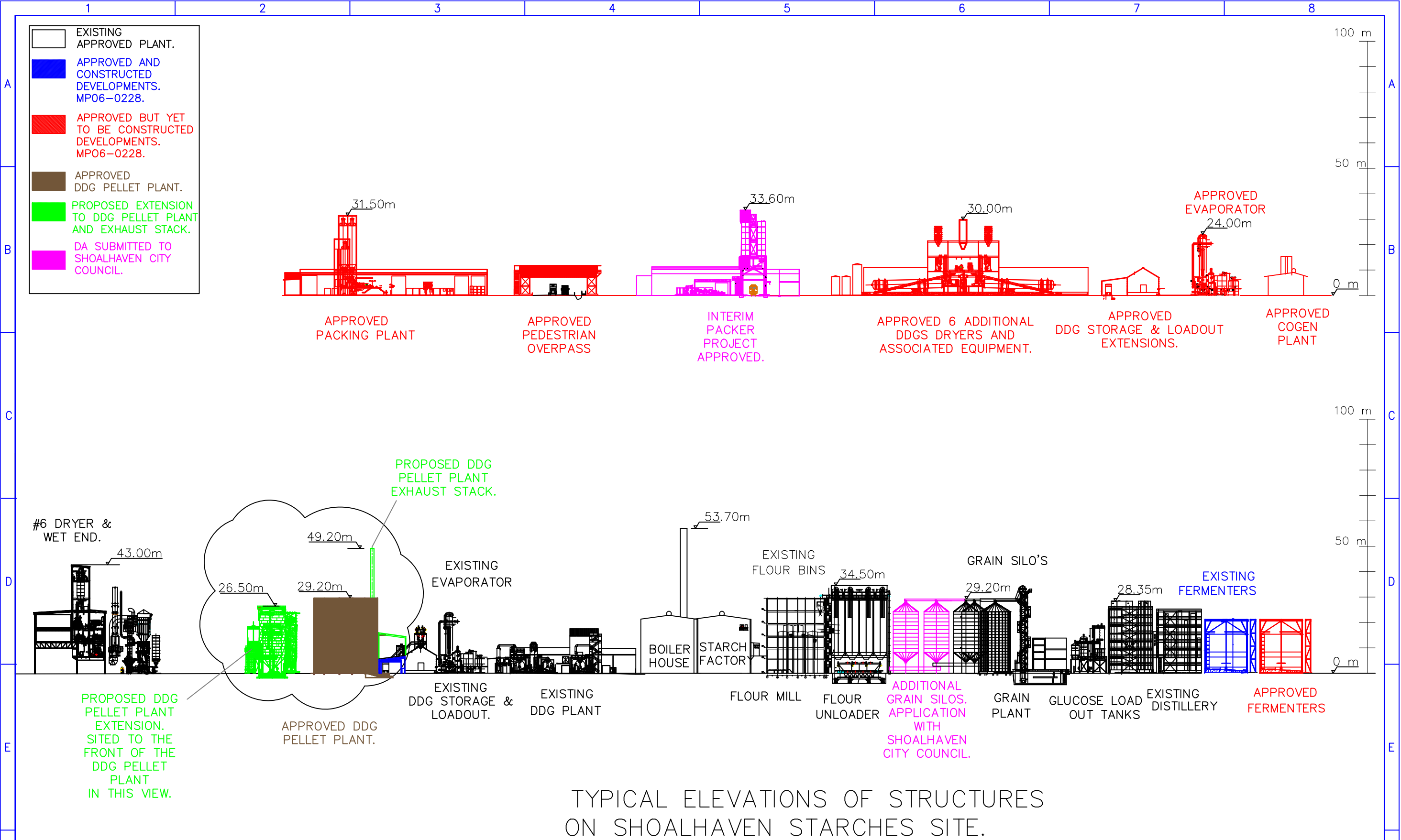
DRAWN P.C.  
TRACED  
CHECKED/  
APPROVED  
DRG PRACTICE  
AS1100

FINISH  
GAL

MATERIAL:  
M/S

TITLE: **MANILDRA GROUP.NOWRA**  
**DDG PELLET MILL.  
EXHAUST STACK.**

SCALE: A3- 1:1000  
SCALE: A1- 1:500  
MANILDRA-5653  
DRG. No. MN236-109D



TYPICAL ELEVATIONS OF STRUCTURES  
ON SHOALHAVEN STARCHES SITE.

I	9-02-15	D2	Colour amended.	Paul C. S.R./ J.S
H	9-02-15	D1	Dryer #6 added.	Paul C. S.R./ J.S
G	30-01-15	ALL	Notes amended, council applications added.	Paul C. S.R./ J.S
F	28-01-15	ALL	Original proposal removed.	Paul C. S.R./ J.S
E	27-01-15	ALL	Approved and proposed separated.	Paul C. S.R./ J.S
D	14-01-15	D2	Pellet plant silos added.	Paul C. S.R./ J.S
C	05-11-14	ALL	Pellet plant stack added.	Paul C. S.R./ J.S
B	24-01-14	ALL	Proposed now approved, new pellet plant added.	Paul C. B.H.
A	10-04-08	ALL	Pedestrian bridge added. Scale was 1:650	Paul C. B.H.
I	22-10-07	ALL	Draft.	Paul C. Greq M.
ISS	DATE	ZONE	CHANGE AMENDMENTS	BY CKD



**MANILDRA  
GROUP**  
100% AUSTRALIAN

DRAWN  
TRACED  
CHECKED  
APPROVED  
DRG PRACTICE  
AS1100

P.J.C.

TOLERANCES  
LINEAR  $\pm 2$   
ANGULAR  $\pm 5$   
FINISH  
NA

MATERIAL  
NA

MANILDRA GROUP.NOWRA.  
TITLE  
SITE DRAWING  
ELEVATIONS.

SIZE A1	SCALES 1:700	SHT
MR-5653		
DRG No MN88-001-1		

**ANNEXURE 2**

**Requirements  
of the  
Department of Planning & Environment  
and  
Environmental Protection Authority**

## Stephen Richardson

---

**From:** Deana Burn <Deana.Burn@planning.nsw.gov.au>  
**Sent:** Wednesday, 7 January 2015 1:24 PM  
**To:** Stephen Richardson; Christopher Ritchie  
**Cc:** tom.geczy@bigpond.com; 'Brian Hanley'; John Studdert  
**Subject:** RE: Proposed Modification - Assessment Requirements

Hi Stephen

Thanks for your email and the modelling info. I will discuss these matters with Chris on his return next Monday and then get back to you. In the meantime, I think we have enough information to process a modification for the stack reasonably quickly. I would just need some figures showing the location, elevation and a photomontage (from the main vantage points) of the stack. I will confirm on Monday whether a modification is required, but I have already had the discussion with Chris and we both agreed that a modification is required, so I think this is unlikely to change.

Regards,  
Deana.

---

**From:** Stephen Richardson <Steve@cowmanstoddart.com.au>  
**Sent:** Wednesday, 7 January 2015 10:11  
**To:** Deana Burn; Christopher Ritchie  
**Cc:** tom.geczy@bigpond.com; 'Brian Hanley'; John Studdert  
**Subject:** RE: Proposed Modification - Assessment Requirements

Dear Deana,

Thank you for your email dated 6<sup>th</sup> January 2015 in connection with the above.

Whilst I agree the stack was not included in the original project approval, as outlined in my email of the 2<sup>nd</sup> December 2014 condition 3C of the Project Approval would provide the Department with sufficient flexibility whereby if it were found that the bio filters could not maintain sufficient odour management performance for the DDG Pellet Plant that the Department (in consultation with the EPA) would be able to direct Shoalhaven Starches to install additional odour treatment controls or modify the existing controls at the factory. On this basis it would be open to the Department, following consultation with the EPA, to direct Shoalhaven Starches to install the odour stack without the need for the submission of a separate modification application. In this regard, as outlined in our submission dated 6<sup>th</sup> November 2014, this proposed odour treatment device has already been the subject of consultation between Shoalhaven Starches and the EPA, and the EPA have already supplied the Department with its conditional agreement to the stack in its letter dated 29<sup>th</sup> August 2014.

As for the height of the stack this should be seen in context of other structures on the Shoalhaven Starches site most notably the boiler house stack which has a height of 53.7 m.

Given these circumstances I would have thought that there was scope for the Department to direct Shoalhaven Starches to install the stack pursuant to the second paragraph of condition 3C. Such would provide a more timely approach to enabling the installation of the stack, compared with proceeding with a separate modification application.

As for the process by which Shoalhaven Starches wish to progress with the various modifications your assumptions below are correct, except for the order. At this stage, I am advised that Shoalhaven Starches current preferred order is:



1. Installation of stack on the DDG Pellet Plant
2. Extend the existing rail line eastwards
3. Additional flour mill
4. Relocation of Dryer, Packing Plant and staff car park onto former Dairy Farmers factory site.
5. Additional grain silos to be sited on the former Dairy Farmers site to provide additional buffer storage capacity.
6. Alternative fuel use for the co-generation plant.

The above order of projects will of course be subject to on-going review by Shoalhaven Starches dependent upon changes in market conditions overtime. The critical projects at this stage are projects numbered 1 – 4 above. Projects 5 and 6 are at this stage still under investigation.

I note that environmental assessment requirements have been issued (by email) dated 19<sup>th</sup> November and 17<sup>th</sup> December 2014. These requirements relate to; the relocation of the packing plant and container storage; relocation of the dryer; amended layout of the car park; the additional flour mill; and the stack to disperse odours for the DDG Pellet Plant.

If the proposed stack for the DDG Pellet Plant is to be treated as a separate modification application as indicated by the Department in the email below then a number of the issues raised in the emails dated 19<sup>th</sup> November and 17<sup>th</sup> December would not directly relate to this specific project. The primary issue associated with the stack would relate to air quality (and in particular odours), and in particular the odour impacts arising from the DDG Pellet Plant utilising a stack for odour dispersion. Secondly, the visual impact of the stack when viewed from vantage points from around the site could also be addressed. These two issues would be the main issues that I perceive would need to be addressed in a separate modification application. The other issues raised in the Department's email dated 19<sup>th</sup> November and 17<sup>th</sup> December would not relate to this specific project. Does the Department agree with this view?

Attached to our original submission dated 6<sup>th</sup> November 2014 was a submission from the EPA submitted to the Department (dated 29 August 2014) agreeing conditionally to the stack. This letter followed consultation between Shoalhaven Starches and the EPA, and including the submission of odour dispersion modelling data pertaining to the use of the stack as the sole odour treatment system for the approved DDG Pellet Plant. A copy of this odour dispersion modelling data is attached to this email for the Department's information. Given this information was sufficient for the EPA to conclude the stack was a suitable approach as outlined in their submission dated 29<sup>th</sup> August to the Department, would this information be sufficient for inclusion in any modification application, if such is required?

I would appreciate it if you could supply me with your responses to the above matters as soon as possible.

Regards

Stephen Richardson  
Cowman Stoddart Pty Ltd  
PO BOX 738 NOWRA NSW 2541  
T 02 4423 6198  
T 02 4423 6199  
F 02 4423 1569  
[www.cowmanstoddart.com.au](http://www.cowmanstoddart.com.au)  
[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

**From:** Deana Burn [mailto:Deana.Burn@planning.nsw.gov.au]  
**Sent:** Tuesday, 6 January 2015 4:07 PM  
**To:** Stephen Richardson; Christopher Ritchie  
**Cc:** 'Brian Hanley'; John Studdert  
**Subject:** RE: Proposed Modification - Assessment Requirements

Hi Stephen

As the proposed stack was not included in the original project approval, a modification to the project approval would be the most appropriate means of assessing and regulating the stack. Also, I understand that the stack would be 48m high and visually prominent to residents.

Can you please clarify if my understanding below is correct, regarding the process and order by which Starches wishes to progress with the various modifications. Starches proposes to submit separate modification applications for:

1. Installation of a stack on the DDG pellet plant;
2. Relocation of No. 5 Starch Dryer, the Packing Plant and modification to the approved staff carpark layout (on the former Dairy Farmers site);
3. Additional flour mill (Note, the two grain silos included on the plans are currently being assessed separately by Council);
4. Extend the existing rail line eastwards;
5. Additional grain silos for buffer storage capacity (former Dairy Farmers site);
6. Alternative fuel use in co-generation plant (wood chip, coal, engineered fuel).

I have issued environmental assessment requirements (via email on 19 Nov and 17 Dec) for No. 1, 2 and 3. I have reviewed No. 4 and will provide separate environmental assessment requirements next week. No's 5 and 6 are preliminary at this stage.

All modification applications can be lodged online, scroll to the bottom of the page on this link.  
[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=1519](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=1519)

Can you please advise when you intend to submit each application to assist me in progressing them in a timely manner. I understand that the timing for the stack is particularly critical.

Regards,  
Deana.

---

**From:** Stephen Richardson [mailto:Steve@cowmanstoddart.com.au]  
**Sent:** Monday, 22 December 2014 3:43 PM  
**To:** Deana Burn; Christopher Ritchie  
**Cc:** 'Brian Hanley'; John Studdert  
**Subject:** RE: Proposed Modification - Assessment Requirements

Dear Chris & Deanna,

I have tried to reach you by phone today without luck.

The purpose of my call was to review whether there is the need to include the construction of the stack for the approved DDGS pelletiser plant as part of the proposed modification application.

I refer to our letter dated 6<sup>th</sup> November 2014 relating to this matter. I have again reviewed condition 3C which is outlined in that letter and which I repeat below:

- 3C. *Prior to the commencement of construction of the DDG pelletising plant as described in the modification application MP 06\_0228 MOD 4, the Proponent shall engage a suitably qualified*

*and experienced expert to demonstrate to the satisfaction of the Director General and the EPA that the existing bio-filters can accommodate the additional odour load of the DDG pelletising plant while maintaining acceptable treatment performance.*

*In the event that it is found that the bio-filters cannot maintain an acceptable odour treatment performance, the Proponent shall comply with any direction/s from the Director-General in consultation with the EPA to install additional odour treatment controls or modify the existing odour treatment controls at the facility.*

On my reading of condition 3C again it would appear that it already identified that there was a possibility that a review would need to be undertaken of the odour treatment controls for the DDG Pellet plant. The condition appears to acknowledge the need to review the adequacy for the biofilters for the DDG Pellet Plant odour treatment and provides scope to explore alternative options should the biofilters be found wanting. The subsequent identification that the biofilters will not adequately accommodate the DDG Pellet Plant and the need for the stack would appear to be consistent with condition 3C of the consent. Under these circumstances, and on reflection, my thoughts are the Project Approval should not necessarily require to be modified to accommodate the stack – rather Starches will need to follow “any directions from the Director-General” in this regard. As you are aware Starches have already consulted with the EPA on this matter and the EPA’s correspondence is included in our submission to the Department. Could not the Department “simply” approve the stack in accordance with the terms of condition 3C without the need for a formal modification application?

I would appreciate your thoughts in this regard?

Regards

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F 02 4423 1569  
[www.cowmanstoddart.com.au](http://www.cowmanstoddart.com.au)  
[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

**From:** Deana Burn [<mailto:Deana.Burn@planning.nsw.gov.au>]  
**Sent:** Wednesday, 19 November 2014 5:40 PM  
**To:** Stephen Richardson; [John.Studdert@manildra.com.au](mailto:John.Studdert@manildra.com.au)  
**Cc:** Christopher Ritchie  
**Subject:** Proposed Modification - Assessment Requirements

Hi Stephen, John

Thank you for your letters dated 30 October 2014 and 6 November 2014 describing proposed modifications to the Shoalhaven Starches factory at Bomaderry.

I understand from your letters that the proposed modifications include:

- relocation of the approved packing plant and container storage area;
- relocation of a product dryer (referred to as No. 5 Product Dryer);
- amended layout and design of the approved staff carpark; and
- construction of a stack (48m high) to disperse odours from the approved DDGS pellet plant.

As outlined in your letter, the environmental assessment for the modification should include detailed assessments of:

- air quality and odour;

- noise;
- flooding;
- traffic;
- hazards;
- acid sulphate soils
- contamination; and
- riverbank stability.

The Department also requests that the environmental assessment clearly describes and assesses the following:

- a clear description of the proposed modifications, approved works, constructed and yet to be constructed components of the development. For example the figures submitted with your letters show four large storage silos and two product dryers. Please confirm that these are approved components to be relocated and show copies of the approved plans with different colours for approved components, new components, modified/relocated components and approved but not constructed components;
- justification for the modification;
- describe any other related approvals, for example, did Council grant approval for a smaller packing plant on the southern side of Bolong Road? Was this constructed? How will this approval be affected by the proposed modification, will it be surrendered?
- in relation to hazards, the Department requests that your application is supported by the following studies. The studies should also incorporate/respond to comments provided on these studies by the Department in October 2014:
  - a construction safety study for the modification;
  - an updated site-wide fire safety study;
  - a hazard and operability study for the modification;
  - an updated preliminary hazard analysis for the modification.

Should you have any questions regarding the above, please contact me on 9228 6453.

Regards,  
Deana.

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Our reference: DOC14/178857-1  
Contact: Stefan Press 02 6229 7002

Mr Chris Ritchie  
Manager - Industry, Key Sites and Social Projects  
NSW Department of Planning & Environment  
GPO Box 39  
Sydney NSW 2000

29 August 2014

Dear Mr Ritchie

**RE: Shoalhaven Starches Ethanol Expansion Project – Amended DDG Pelletising Plant  
(MP06\_0228 Mod 4) – Notice of Determination**

I refer to the approval by the Planning Assessment Commission on 25 March 2014 of the above modification application which permits the construction and operation of an amended Dried Distillers Grain (DDG) pelletising plant at Shoalhaven Starches Pty Ltd (Shoalhaven Starches) premises located at 160 Bolong Road, Bomaderry.

Shoalhaven Starches has recently written to the Environment Protection Authority (EPA) in relation to this approval and provided a report containing predicted odour dispersion modelling data pertaining to the use of a stack as the sole odour treatment system for the approved DDG pelletising plant. Representatives of the EPA and Shoalhaven Starches also met on 18 August 2014 to discuss this odour dispersion modelling and the proposed odour treatment option.

Shoalhaven Starches has advised the EPA that the odour dispersion modelling was conducted using an odour concentration value that was derived from odour samples taken from the exhaust stack of a similar pelletising plant (AMBOS Stockfeeds, Young) to what is proposed to be constructed at the Shoalhaven Starches premises. Shoalhaven Starches further advised the EPA that it has been identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of odorous airstreams from the approved DDG pelletising plant, with these airstreams now being proposed to be dispersed direct to atmosphere via the use of a stack. The EPA understands that consultation by Shoalhaven Starches on this matter is being undertaken to satisfy the requirements of the recently added condition 3C of the ethanol expansion project approval.

The EPA has reviewed the odour dispersion modelling data provided by Shoalhaven Starches which includes two proposed stack heights of 10 metres and 20 metres respective above the roof height of the DDG pelletising plant building. The EPA notes that the odour dispersion modelling predicts that a 10 metre high stack height will result in an increased odour impact when compared to the findings of the most recent independent odour audit. The EPA does note that a 20 metre high stack is however predicted to result in a comparable impact (slight increase at one of the four modelled residential receptors) to the findings of the

most recent independent odour audit. The EPA also notes that the modelled odour impact from a 20 metre high stack is predicted to result in ground level odour concentrations at all of the four nominated residential receptor locations (Bomaderry (R1), North Nowra (R2), Nowra (R3) and Terara (R4)) that remain lower than the predicated in the original Environmental Assessment for the ethanol expansion project, which included DDG pelletising as part of the stage 1 mandatory odour controls.

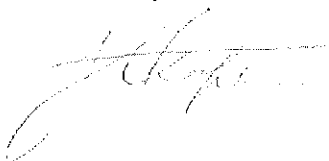
As such, the EPA is agreeable to the proposed use of a stack to disperse odorous airstreams from the approved DDG pelletising plant provided it is in accordance with the recommendations of the odour dispersion modelling report which specifies a:

- Stack height of 20 metres above the roof height of the DDG palletisation plant (overall height of 48 metres)
- Stack diameter of 1.5 metres
- Stack discharge air temperature of 60 degrees Celsius
- Stack exit velocity of 12 metres per second

Further, the EPA will also require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDG pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDG pelletising plant.

I trust this information is of assistance and should you have any queries or wish to discuss this matter further, please contact me or Stefan Press on 6229 7002.

Yours sincerely



**JULIAN THOMPSON**  
**Unit Head – South East Region**  
**NSW Environment Protection Authority**

Cc. Mr Ming Leung – Shoalhaven Starches Pty Ltd

## **ANNEXURE 3**

### **Odour Dispersion Modelling Report**

**prepared by**

**GHD Pty Ltd**

## Stephen Richardson

---

**From:** John Studdert <John.Studdert@manildra.com.au>  
**Sent:** Friday, 31 October 2014 9:40 AM  
**To:** Stephen Richardson  
**Cc:** Brian Hanley; mark@meeng.com.au  
**Subject:** FW: Manildra - pellet plant results  
**Attachments:** EPA\_Points\_May\_2014\_with\_Pellet\_Plant\_Stack - reduced size.pdf; Previous Odour Audits 12-1-2012.pdf; Ambos Stockfeeds Odour Report 8 July 2014.pdf

Stephen,

Please see below (& attached) background information sent to EPA.

Regards,

**John Studdert**  
*Quality Assurance & Environmental Coordinator*  
*Manildra Group*  
*Phone: +61 2 4423 8200*  
*Direct: +61 2 4423 8254*  
*Mobile: 0417 209 851*  
*Fax: +61 2 4423 8331*  
<mailto:john.studdert@manildra.com.au>

---

**From:** John Studdert  
**Sent:** Monday, 4 August 2014 12:47 PM  
**To:** 'Julian Thompson'; Stefan Press  
**Cc:** 'Ming Leung'; Scott Foggo; Greg Murphy; Faris Nasir  
**Subject:** FW: Manildra - pellet plant results - - IGNORE THE FIRST EMAIL ON FRIDAY I HAVE A QUESTION

Hi Julian & Stefan,

As discussed with Stefan this morning, please see below the predicted odour impacts for Shoalhaven Starches proposed pellet plant utilising a stack for odour dispersion compared to the current odour model (May 2014).

The odour concentration used in the modelling was derived from odour sampling taken from a commercial pellet plant production run of our DDG product (see attached AMBOS stockfeeds odour report).

Please let me know if you have any questions or require further information.

Please advise a suitable time to meet and discuss.

Regards,

**John Studdert**  
*Quality Assurance & Environmental Coordinator*  
*Manildra Group*  
*Phone: +61 2 4423 8200*  
*Direct: +61 2 4423 8254*  
*Mobile: 0417 209 851*  
*Fax: +61 2 4423 8331*  
<mailto:john.studdert@manildra.com.au>



---

**From:** Craig McVie [mailto:Craig.McVie@ghd.com]

**Sent:** Thursday, 31 July 2014 3:45 PM

**To:** John Studdert

**Cc:** David Featherston

**Subject:** FW: Manildra - pellet plant results - - IGNORE THE FIRST EMAIL ON FRIDAY I HAVE A QUESTION

Dear John,

Results are in.

**Discrete Receptors:**

The 99 percentile odour emissions (OU) at the four discrete receptors are provided in the table below:

Stack Height (m)	DR1 99%ile	DR2 99%ile	DR3 99%ile	DR4 99%ile
No Pellet Plant May 2014 EPA	4.2	2.2	4.9	4.6
Stack 10 m above roof height	4.2	3.0	4.9	4.6
Stack 20 m above roof height	4.2	2.4	4.9	4.6

A more detailed assessment of the individual percentiles at the 4 discrete receptors show that little difference is seen until you reach the 99.0th %ile – which is what the NSW EPA criterion is based on.

Of the 4 DR's, receptor DR2 (located to the WSW of the site) is the most impacted by the pellet plant emissions.

A detailed assessment of the impact at this receptor for the 3 conditions (stack height and EPA modelling) is shown below in the table.

Note that a 10 m stack will increase the GLC's by 40%. This is probably unacceptable. A 20 m stack increases it by 12%. This is probably OK in that the GLC has actually only increased by about 0.2 OU – basically unperceivable.

Stack Height (m)	Stack Height (m)	DR2 99%ile	% increase
No Pellet Plant May 2014 EPA	No Pellet Plant Stack May 2014 EPA	2.2	0.0%
Stack 10 m above roof height	10	3.0	40.1%
Stack 20 m above roof height	20	2.4	11.8%

**Stack Diameter Modelling**

To analyse the effect stack diameter/exit velocity has on the potential odour impact, three other stack diameters were modelled: 1.0, 1.2 and 1.8 m, with exit velocities of 28.3, 19.6 and 8.7 m/s respectively. Virtually no difference in odour impact was predicted to occur with the highest percentiles, as shown below.

As a check, the odour impact of the stack alone (without all other sources) was examined. At the 99<sup>th</sup> %ile, the odour impact at DR2 was estimated to be 0.5 OU (see, 'Stack Temperature Modelling' sections table).



It is believed that the primary reason for the insensitivity of the odour impact with stack diameter is that the times of peak impacts from the stack do not coincide with those from the low to ground sources. Many of the greatest impacts from the stack occur during daylight hours associated with convective conditions.

Stack Height above roof and diameter (m)	DR2 99%ile	% increase
20 m stack with a 1.0 m Diameter	2.43	12.0%
20 m stack with a 1.2 m Diameter	2.43	12.0%
20 m stack with a 1.5 m Diameter	2.42	11.8%
20 m stack with a 1.8 m Diameter	2.43	12.0%

Therefore, it is concluded that varying the stack diameter to increase efflux velocity will have a negligible effect due to other sources onsite.

### **Stack Temperature Modelling**

As a final sensitivity test, the stack temperature was reduced from 60 degC to 20 degC with a stack height of 20 m above roof level and 1.5 m diameter. It was found that the 99<sup>th</sup> %ile odour impact at DR2 when the pellet stack was assessed by itself would increase by about 40% (see table below, third row) due to the temperature reduction. When all sources were considered, the temperature reduction resulted in an increased GLC of approximately 25% instead of 11.8% compared to an emissions temperature of 60 degC.

Results from running the pellet Plant in isolation at 60degC for all diameter variations and 20degC for the 1.5 m diameter stack for DR2 are shown in the table below.

Diameter	DR2 99th %ile @ 60degC	with temp @ 20degC	
1	0.5014	-	
1.2	0.5022	-	
1.5	0.5014	0.6961	
1.8	0.5017	-	

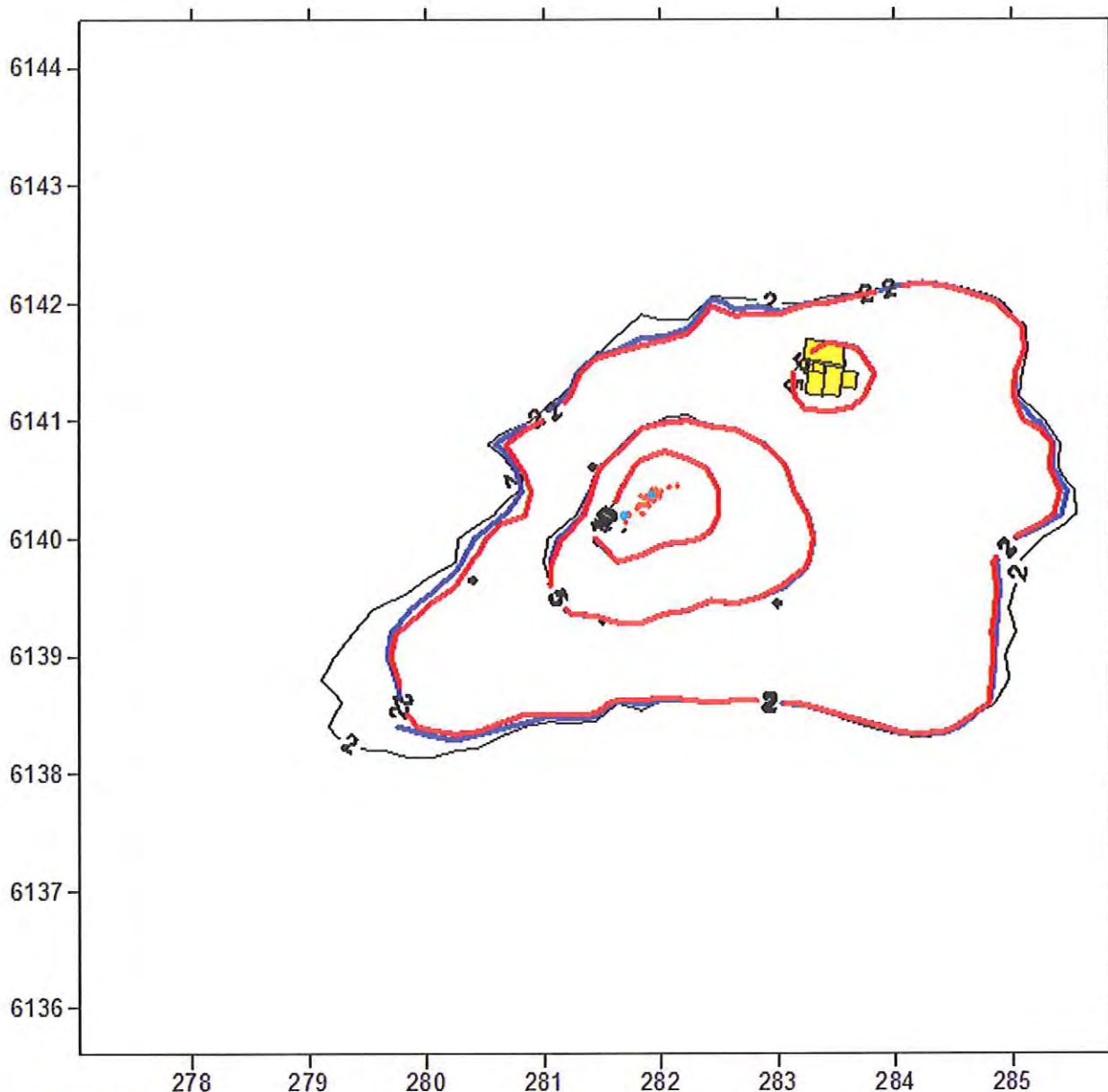
The stack adds no more than ~0.5 OU to DR2 by itself. When added to all other sources (May 2014 EPA model), this gets lower as it appears the highest GLC's for this source occur just after dawn due to fumigation events – not overnight stable atmospheres that the ground sources will impact.

Therefore, it is concluded that maintaining a high pellet stack emissions temperature aids in odour dispersion.

### **99.0th %ile Contours:**

A comparison of the May 2014 EPA modelled contour against the two (base) scenarios is shown below (GLC plots of 99.0th %ile)

The contour plot of GLC's clearly shows a 10 m stack increases the extent of the 2 OU line by a considerable amount to the SW of the site, where as a 20 m stack provides a negligible difference compared to the May 2014 EPA model.



#### LEGEND:

- **RED** – May 2014 EPA ONLY
- **Black** (thin) - May 2014 EPA + 10 m pellet plant stack (overall height of 38 m), 1.5m diameter
- **BLUE** - May 2014 EPA + 20 m pellet plant stack (overall height of 48 m), 1.5m diameter

#### Recommendations:

- Based on the given flow rate, temperature, OER, building shape/size and stack diameter, a minimum stack height of 20 m above roof level be used.
- We estimate that a 15 m stack height above roof level would result in a nominal 25% increase in GLC's at receptor ID 2.
- A nominal 12 m/s exit velocity is a good target value.
- Resultant peak odour levels from all combined sources were found to be relatively insensitive to stack diameter (exit velocity) for a stack height of 20 m above the roof height.
- Maintaining a relatively high pellet stack emissions temperature aids in odour dispersion.

#### Questions:

- How often will the stack flow rate be 80,000 m<sup>3</sup>/h



- Is the pellet plant going to be operating 24/7 or shut down overnight as this has been modelled as continuous emissions and we could alter for different hours of the day using a variable emission file if applicable.
- Do you want individual contour maps for each scenario provided or a single combined one as above, or is this email enough?

### Modelling Inputs:

#### **DDG Pelletising Plant - GHD Odour Modelling Inputs July 2014**

Parameter	Scenario 1	Scenario 2	Units	Comments
<b>Odour Concentration</b>	2718	2718	ou	Average derived from DDG 2014
<b>Flow Rate</b>	22.22	22.22	m <sup>3</sup> /s	Predicted flow rate 80,000 22.2222
<b>OER</b>	60,400	60,400	ou.m <sup>3</sup> /s	22.22 * 2718
<b>Peak-to-Mean ratio</b>	A, B, C: 3 D, E, F: 6	A, B, C: 3 D, E, F: 6	-	Tall Wake Free Stack (DE field)
<b>Stack Height (above building)</b>	10	20	m	
<b>Total Stack Height</b>	38	48	m	Stack plus build
<b>Fixed Parameters</b>				<b>Comments</b>
<b>Flow Rate</b>	80,000	m <sup>3</sup> /h		
<b>Stack Diameter</b>	Base: 1.5 Others: 1.0, 1.2, 1.8	m		
<b>Exit velocity</b>	Base: 12.6 Others: 28.3, 19.6, 8.7	m/s		Calculated using assumed stack diameter flow rate
<b>In-stack temperature</b>	Normal: 60 Other: 20	°C		
<b>Building Height</b>	28	m		
<b>Building Dimension</b>	25 x 15	m		

Kind regards

**Craig McVie – Team Leader**

**Environmental Scientist – Air, Noise, & Meteorological Assessments**

[Air & Noise Overview/Projects \(Click Here\)](#), [Air & Noise Services \(Click Here\)](#), [History \(Click Here\)](#),

### **GHD**

T: +61 3 8687 8582 | M: +61 447-108-209 | V: 318582 | [Craig.McVie@ghd.com](mailto:Craig.McVie@ghd.com)  
Level 8, 180 Lonsdale Street Melbourne VIC 3000 Australia | <http://www.ghd.com/>

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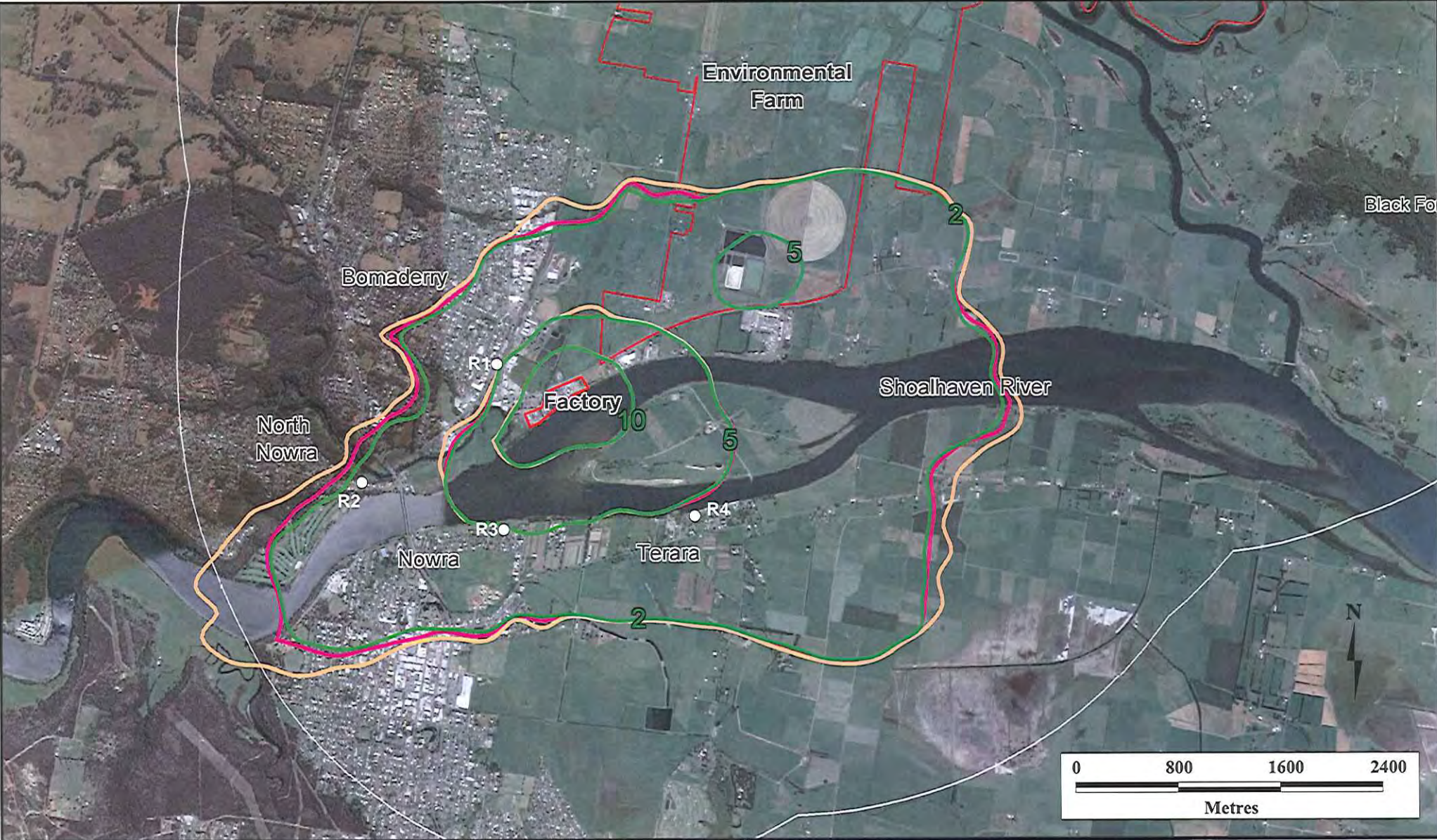
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**Beige:**  
 May 2014 EPA + 10 m pellet plant stack (overall height of 38 m), 1.5m diameter

**Purple:**  
 May 2014 EPA + 20 m pellet plant stack (overall height of 43 m), 1.5m diameter

**Green:**  
 May 2014 EPA ONLY



DATA SOURCE			 <div>           180 Lonsdale Street            Melbourne Vic 3000            Tel: 61 3 8687 8000            Fax: 61 3 8687 8111         </div>	Project: Shoalhaven Starches - Odour Assessment				
Prepared.	CMC	Workspace		EPA Points 2013-2014 including Pellet Plant				
Checked.	DF	Location		Predicted odour concentration OU, 99 percentile, 1-sec. avg.				
Approved.	DK	Map Grid		Project No:	31/30861	Date:	01/08/14	A4
GDA 94 (zone 56)			Scale:		1:40,000	Sh 1 of 1		Rev. 0



**Table 4.1: Predicted Odour Concentration (OU, 99<sup>th</sup> Percentile, 1 second Average)**

Scenario Description	Bomaderry (R1)	North Nowra (R2)	Nowra (R3)	Terara (R4)
<b>EA Modelling Predictions (2008) – Stage 1 Odour Controls</b>				
Factory Sources prior to Stage 1 Odour Controls	40	13	20	18
Factory Sources after Stage 1 Odour Controls	5	3	5	5
Factory Sources after Stage 1 Odour Controls plus ethanol upgrade	6	3	5	5
<b>August 2011 Modelling – @ 126 ML/annum</b>				
Factory Sources	4.6	2.3	4.7	5.1
Farm Sources	0.1	0.0	0.1	0.2
<b>October 2011 Modelling – @ &gt;200 ML/annum</b>				
Factory Sources	4.6	2.5	4.9	5.1
Farm Sources	0.1	0.1	0.2	0.3

Contour plots for the revised modelling results (current status) are shown in **Figure 4.1**, **Figure 4.2** and **Figure 4.3** and compared with the modelling results for 126 ML/annum production. The contour plots show the maximum extents of the predicted odour impact, expressed as a 99<sup>th</sup> percentile, nose response average concentration.

The contour plots indicate that the predicted odour impact has not changed significantly for the increase in ethanol production.

## **ANNEXURE 4**

**Submission under Clause 4.6**

**of**

**Shoalhaven LEP 2014**



**PROPOSED MODIFICATION IN RELATION  
TO DESIGN, FOOTPRINT AND ODOUR TREATMENT  
CONTROLS FOR DDGS PELLETISING PLANT  
STRUCTURES IN EXCESS OF ELEVEN METRE  
MAXIMUM BUILDING HEIGHT LIMIT  
(Clause 4.3(2A) Shoalhaven LEP 2014)**

**LOT 62 DP 1078788  
160 BOLONG ROAD  
BOMADERRY**

Prepared for

**Shoalhaven Starches Pty Ltd**

February 2015



Prepared by:

***COWMAN STODDART PTY LTD***

SUBMISSION UNDER  
CLAUSE 4.6 OF SHOALHAVEN LEP 2014

PROPOSED MODIFICATION IN RELATION TO DESIGN,  
FOOTPRINT AND ODOUR TREATMENT CONTROLS FOR  
DDGS PELLETISING PLANT STRUCTURES  
IN EXCESS OF ELEVEN METRE MAXIMUM BUILDING HEIGHT LIMIT  
(Clause 4.3(2A) Shoalhaven LEP 2014)

LOT 1 DP 838753  
NO. 160 BOLONG ROAD  
BOMADERRY

Ref. 15/08

Town Planning, Agricultural & Environmental Consultants

Stephen Richardson, M.App.Sc., B.T.P., Grad. Dip. Env. Mgt, C.P.P., MPIA

Stuart Dixon, B.Urb & Reg Plan, C.P.P., MPIA

Associate: Peter Cowman, B.Sc.Agr., M.A.I.A.S.T.

Angela Jones, BA Hons, MSc.

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COWMAN STODDART PTY LTD

# CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2.0</b>	<b>DESCRIPTION OF SITE AND SURROUNDS.....</b>	<b>2</b>
<b>3.0</b>	<b>THE PROPOSAL .....</b>	<b>4</b>
3.1	JUSTIFICATION FOR PROPOSAL .....	4
<b>4.0</b>	<b>CLAUSE 4.3 OF SHOALHAVEN LEP 2014 .....</b>	<b>6</b>
<b>5.0</b>	<b>CLAUSE 4.6 OF SHOALHAVEN LEP 2014 .....</b>	<b>7</b>
5.1	CLAUSE 4.6 AND ITS USE .....	8
5.2	DEPARTMENT OF PLANNING AND INFRASTRUCTURE GUIDELINES .....	10
<b>6.0</b>	<b>ASSUMED CONCURRENCE .....</b>	<b>12</b>
<b>7.0</b>	<b>THE REQUEST.....</b>	<b>13</b>
7.1	WRITTEN REQUEST JUSTIFYING CONTRAVENTION OF CLAUSE 4.3 SLEP 2014 .....	13
7.1.1	Objectives Underpinning Clause 4.3 are Achieved .....	13
7.1.2	Environmental Planning Grounds that Justify Contravening Development Standard.....	15
7.1.3	Public Interest .....	16
7.1.4	Clause 4.6(5) Matters for Consideration by Director-General .....	17

## FIGURES

- Figure 1**            Site Locality Plan  
                         (extract from Shoalhaven City Council)
- Figure 2**            Aerial Photograph of the Shoalhaven Starches  
                         Factory Site
- Figure 3**            Elevation of Proposed Works

## **1.0 INTRODUCTION**

This submission has been made in support of a modification application that seeks approval to erect an exhaust stack for the approved DDGS Pelletising Plant; and to modify the design and footprint of the DDGS Pelletising Plant within the existing Shoalhaven Starches factory site at Bolong Road Bomaderry.

The site is zoned IN1 General Industrial under the provisions of Shoalhaven LEP (SLEP) 2014. There are no specific maximum building height provisions specified for the subject site on mapping supporting the LEP. Clause 4.3(2A) of the Shoalhaven LEP stipulates that if no height limit is specified then a maximum height of any buildings is to be eleven (11) metres.

The proposal seeks Council's consent to erect an exhaust stack which will have a height of 49.2 metres. It is proposed to extend the footprint of the DDGS Pelletising Plant. This modified footprint of the DDGS Pelletising Plant will have a height of 26.5 m. The proposed structures will therefore exceed the 11 m building height limit set by Clause 4.3(2A) of SLEP 2014.

Clause 4.6 of Shoalhaven LEP 2014 deals with exceptions to development standards and provides that Council may consent to a development even though it contravenes a development standard. The provisions of Clause 4.6 require that a written request accompany a proposal that justifies the contravention of a development standard.

This submission has therefore been prepared pursuant to Clause 4.6 and provides justification that the proposal is appropriate and that strict compliance with the provisions of Clauses 4.3(2A) are unreasonable and unnecessary under the specific circumstances associated with the application.

## **2.0 DESCRIPTION OF SITE AND SURROUNDS**

The Shoalhaven Starches Factory site is situated on various allotments of land on Bolong Road, Bomaderry within the City of Shoalhaven. The factory site is located on the south side of Bolong Road on the northern bank of the Shoalhaven River. The factory site (excluding the former Dairy Farmers site) has an area of approximately 12.5 hectares.

This development application concerns land located at 160 Bolong Road Bomaderry (Lot 62 DP 1078708).

The town of Bomaderry is located 0.5 km (approx.) to the west of the factory site, and the Nowra urban area is situated 2.0 km to the south west of the site. The “Riverview Road” area of the Nowra Township is situated approximately 600 metres immediately opposite the factory site across the Shoalhaven River.

The village of Terara is situated approximately 1.5 kilometres to the south east of the site, across the Shoalhaven River. Burruga (Pig) Island is situated between the factory site and the village of Terara and is currently used for dairy cattle grazing.

There are a number of industrial land uses which have developed on the strip of land between Bolong Road and the Shoalhaven River. Industrial activities include a metal fabrication factory, the Shoalhaven Starches site and the Shoalhaven Paper Mill (Australian Papers). The industrial area is serviced by a privately owned spur railway line that runs from just north of the Nowra-Bomaderry station to the Starches plant.

The state railway terminates at Bomaderry with a separate, privately owned spur line to the factory site. Shoalhaven City Council sewerage treatment works is situated between the railway line and the factory.

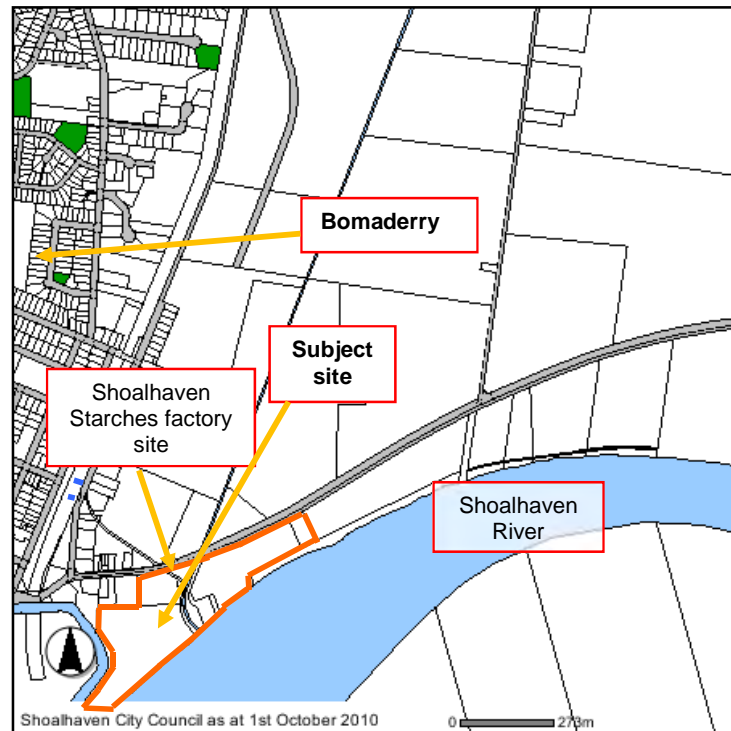
The Company also carries out irrigation activities on the Company's Environmental Farm located over 1000 hectares on the northern side of Bolong Road. This area is cleared grazing land and also contains spray irrigation lines and wet weather storage ponds). These wet weather storage ponds on the farm form part of the irrigation management system for the factory.

The subject proposal is to be situated entirely within the factory site located on the southern side of Bolong Road and the west of Abernethys Creek on Lot 62 DP 1078788, 160 Bolong Road, Bomaderry.

The land is zoned IN1 General Industrial pursuant to Shoalhaven Local Environmental Plan (SLEP) 2014. Mapping that supports the SLEP 2014 does not identify the subject site as having a specified building height limit. The provisions of Clause 4.3(2A) of the SLEP state that if no

height limit is specified for a parcel of land then a maximum building height of eleven (11) metres applies.

**Figure 1** is a site locality plan, whilst **Figure 2** is an aerial photo of the locality.



**Figure 1: Site locality plan.**



**Figure 2: Aerial photograph of Shoalhaven Starches factory site.**

### 3.0 THE PROPOSAL

This submission made pursuant to Clause 4.6 of the SLEP 2014 supports a modification application that seeks approval from the NSW Department of Planning & Environment to erect an exhaust stack to control air emissions from the approved DDGS Pelletising Plant.

The proposed exhaust stack will have a diameter of 1.5 m, and a height of 49.2 metres.

It is also proposed to extend the footprint of the DDGS Pelletising Plant by 38 x 24.4 m, and with a height of 26.5 m.

#### 3.1 JUSTIFICATION FOR PROPOSAL

##### 1. ***Modification to Treatment of Air Emissions***

The installation of the DDGS Pelletising Plant as part of the Project Approval for the SSEP was also a recommendation of the Environmental Audit carried out by GHD Pty Ltd for the site on the basis that it would reduce fugitive emissions associated with the handling of granular DDGS product. Under the Project approval air emissions from the DDGS Pelletising Plant were to be diverted to the biofilters for treatment prior to discharge.

Condition 3C of the modified MP06\_0228 (MOD 4) Project Approval however stipulates that:

*3C. Prior to the commencement of construction of the DDG pelletising plant as described in the modification application MP 06\_0228 MOD 4, the Proponent shall engage a suitably qualified and experienced expert to demonstrate to the satisfaction of the Director General and the EPA that the existing bio-filters can accommodate the additional odour load of the DDG pelletising plant while maintaining acceptable treatment performance.*

*In the event that it is found that the bio-filters cannot maintain an acceptable odour treatment performance, the Proponent shall comply with any direction/s from the Director-General in consultation with the EPA to install additional odour treatment controls or modify the existing odour treatment controls at the facility.*

Shoalhaven Starches have now identified that the existing biofilters at the premises do not have sufficient treatment capacity to deal with the expected volume of air streams from the DDGS Pelletising Plant. Shoalhaven Starches therefore propose that the air streams from the DDGS Pelletising Plant will now be dispersed to atmosphere by the use of an exhaust stack.

In accordance with condition 3C as outlined above, Shoalhaven Starches have consulted with the NSW EPA in relation to this proposal. Essentially the NSW EPA indicate that they conditionally agree to the use of a stack to disperse odorous air streams from the approved DDGS Pelletising Plant.

The EPA will require Shoalhaven Starches (via an amendment to the conditions of Environment Protection Licence No. 883) to undertake quarterly odour monitoring from any stack associated with the approved DDGS Pelletising plant and for the results to be included in the annual independent odour audit. Should monitoring results showing any odour impact greater than that predicated by the odour dispersion modelling provided by Shoalhaven Starches, the EPA will require Shoalhaven Starches to investigate further odour treatment options in relation to the approved DDGS Pelletising Plant.

These modifications to odour treatment controls for the DDGS Pelletising Plant do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modifications to the odour treatment controls for the DDGS Pelletising Plant will not result in any increase in the capacity of the plant or production capability. The modifications merely seek to impose odour treatment and management from this component of the site.

## **2.        *Modification to Design and Footprint of DDGS Pelletising Plant***

In addition to a change in the method of treatment of air emissions from the DDGS Pelletising Plant, it is also proposed to modify the approved design and footprint of the DDGS Pelletising Plant on the site.

It is acknowledged that the Planning & Assessment Commission on the 25<sup>th</sup> March 2014 have previously issued a modification approval (MP 06\_0228 MOD 4) to accommodate a change in the design and location of the DDGS Pelletising Plant on the subject site.

Following further detailed engineering design investigations Shoalhaven Starches have however identified that the modified footprint and design of the approved DDGS Pelletising Plant is required to be further modified to that which was originally approved. The footprint of the proposed DDGS Pelletising Plant is required to be increased from that originally approved.

These modifications to the DDGS Pelletising Plant however do not involve any increase in the overall amount of DDGS product that will be produced from the site; nor will it involve any change in the level of emissions from the site.

The modifications to the DDGS Pelletising Plant will not result in any increase in the capacity of the plant or production capability. The modifications merely reflect a more refined engineering design investigation that has occurred since the submission of the original Project.



## 4.0      **CLAUSE 4.3 OF SHOALHAVEN LEP 2014**

Clause 4.3 of Shoalhaven LEP 2014 stipulates the following:

### **4.3 Height of buildings**

- (1) *The objectives of this clause are as follows:*
  - (a) *to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,*
  - (b) *to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,*
  - (c) *to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.*
- (2) *The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.*
- (2A) *If the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres.*

Mapping supporting the SLEP 2014 does not identify a maximum building height that applies to this land. Under these circumstances, and having regard to Clause 4.3(2A) a maximum building height of 11 metres applies to the subject site.

The heights of the works associated with this modification application will be above the eleven metre maximum building height limit. The development therefore does not comply with the provisions of Clause 4.3(2A) of Shoalhaven LEP 2014.

## 5.0 CLAUSE 4.6 OF SHOALHAVEN LEP 2014

Clause 4.6 of Shoalhaven LEP 2014 stipulates:

### **4.6 Exceptions to development standards**

- (1) *The objectives of this clause are as follows:*
  - (a) *to provide an appropriate degree of flexibility in applying certain development standards to particular development,*
  - (b) *to achieve better outcomes for and from development by allowing flexibility in particular circumstances.*
- (2) *Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.*
- (3) *Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:*
  - (a) *that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
  - (b) *that there are sufficient environmental planning grounds to justify contravening the development standard.*
- (4) *Development consent must not be granted for development that contravenes a development standard unless:*
  - (a) *the consent authority is satisfied that:*
    - (i) *the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
    - (ii) *the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and*
  - (b) *the concurrence of the Director-General has been obtained.*
- (5) *In deciding whether to grant concurrence, the Director-General must consider:*
  - (a) *whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
  - (b) *the public benefit of maintaining the development standard, and*
  - (c) *any other matters required to be taken into consideration by the Director-General before granting concurrence.*
- (6) *Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6*

*Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:*

- (a) *the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or*
- (b) *the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.*

**Note.** *When this Plan was made it did not include all of these zones.*

- (7) *After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).*
- (8) *This clause does not allow development consent to be granted for development that would contravene any of the following:*
  - (a) *a development standard for complying development,*
  - (b) *a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,*
  - (c) *clause 5.4,*
  - (ca) *clause 6.1 or 6.2*

## 5.1 CLAUSE 4.6 AND ITS USE

Clause 4.6 of the SLEP 2014 sets out the general principle that a development standard may be varied where strict compliance can be shown to be unreasonable or unnecessary in the circumstances of the case; and that there are sufficient environmental planning grounds to justify contravening the development standard.

Before applying the discretionary power of Clause 4.6 the consent authority must be satisfied that the standard for which the departure is sought is a "development standard" and not a matter which would prohibit the proposal.

A development standard is defined within Section 4 of the EP&A Act.

*"Development standard" means provisions of an environmental planning instrument in relation to the carrying out of development, being provisions by or under which requirements are specified or standards are fixed in respect of any aspect of that development, including, but without limiting the generality of the foregoing, requirements or standards in respect of -*

- (a) *the area, shape or frontage of any land, the dimensions of any land, buildings or works, or the distance of any land, building or works, or the distance of any land, building or work from any specified point;*

- (b) *the proportion or percentage of the area of a site which a building or work may occupy;*
- (c) *the character, location, siting, bulk, scale, shape, size, height, density, design or external appearance of a building or work;*
- (d) *the cubic content or floor space of a building;*
- (e) *the intensity or density of the use of any land, building or work;*
- (f) *the provision of public access, open space, landscaped space, tree planting or other treatment for the conservation, protection or enhancement of the environment;*
- (g) *the provision of facilities for the standing, movement, parking, servicing manoeuvring, loading or unloading of vehicles;*
- (h) *the volume, nature and type of traffic generated by the development;*
- (i) *road patterns;*
- (j) *drainage;*
- (k) *the carrying out of earthworks;*
- (l) *the effects of the development on patterns of wind, sunlight, daylight or shadows;*
- (m) *the provision of services, facilities and amenities demanded by the development;*
- (n) *the emission of pollution and means for its prevention or control or mitigation; and*
- (o) *such other matters as may be prescribed.*

Having regard to the definition of “*development standard*”, particularly paragraph (c), it is considered that Clause 4.3 contains a development standard limiting the height of a building. Furthermore, Clause 4.3 is contained in Part 4 of the Shoalhaven LEP, which contains the primary development standards outlined in the LEP. This reinforces the contention that the provisions of Clause 4.3 are a development standard. Such a development standard is therefore open to a written request made pursuant to Clause 4.6.

A consent authority must also be satisfied of three matters (pursuant to the provisions of Clause 4.6) before it may agree with the written request and grant development consent to a development application for development that could, but for a development standard, be carried out with development consent.

First, the request is to be in writing (Clause 4.6(3)), demonstrate that the compliance with that development standard is unreasonable or unnecessary in the circumstances of the case (Clause 4.6(3)(a)) and that there are sufficient environmental planning grounds to justify contravening the development standard (Clause 4.6(3)(b)).

Secondly, the consent authority must also be satisfied that the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out (Clause 4.6(4)(a)(ii)).

Finally, the consent authority can only grant development consent for a development that contravenes a development standard if the concurrence of the Secretary (formerly Director General) of Planning and Infrastructure has been obtained (Clause 4.6(4)(b)).

The Secretary in deciding whether to grant concurrence must consider pursuant to Clause 4.6(5):

- (a) *whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
- (b) *the public benefit of maintaining the development standard, and*
- (c) *any other matters required to be taken into consideration by the Director-General before granting concurrence.*

As this matter does not concern the subdivision of land zoned *RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living* the provisions of Clause 4.6(6) are also not applicable to this proposal and are not further addressed in this written request.

This submission has been prepared having regard to the above relevant matters.

## **5.2 DEPARTMENT OF PLANNING AND INFRASTRUCTURE GUIDELINES**

The Department of Planning and Infrastructure has produced a document entitled “*Varying Development Standards – A Guide*” dated August 2011. This document updates the former Circular B1 which applied to *State Environmental Planning Policy No. 1 (SEPP No. 1) - Development Standards* to include the relevant matters applying under Clause 4.6 where the Standard Instrument LEP has been adopted.

The Guidelines build upon the matters outlined above and in Clause 4.6 itself, and also stipulates that the application should address the “five part test”. In this regard, the Land and Environment Court (*Wehbe v Pittwater Council [2007] NSWLEC827 (21 December 2007)*) has set out a “five part test” for consent authorities to consider when assessing a proposal that seeks to vary a development standard. The “five part test” is as follows:

1. *the objectives of the standard are achieved notwithstanding non-compliance with the standard;*

2. *the underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary;*
3. *the underlying object of purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable;*
4. *the development standard has been virtually abandoned or destroyed by the council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable;*
5. *the compliance with development standard is unreasonable or inappropriate due to existing use of land and current environmental character of the particular parcel of land. That is, the particular parcel of land should not have been included in the zone.*

Relevant matters are addressed in Section 7.0 below.

## **6.0 ASSUMED CONCURRENCE**

The Guidelines prepared by the Department deal with the concurrence requirements of proposals reliant upon an exception to development standards. Where a Standard Instrument LEP applies, as is the case with this proposal and the provisions of Shoalhaven LEP 2014, the Guidelines reference Planning Circular PS 08-003 issued in May 2008 and which advises that the concurrence can be assumed with respect to all environmental planning instruments that adopt Clause 4.6, or a similarly worded clause, providing for exception to development standards.

The concurrence of the Secretary of the Department of Planning and Infrastructure can therefore be assumed with respect to this proposal.

## **7.0 THE REQUEST**

### **7.1 WRITTEN REQUEST JUSTIFYING CONTRAVENTION OF CLAUSE 4.3 SLEP 2014**

This written request seeks to justify the departure to the provisions of Clause 4.3(2A) of the SLEP 2011 which imposes a maximum building height of eleven (11) metres. The proposal seeks to erect an exhaust stack for the approved DDGS Pelletising Plant; and to modify the design and footprint of the DDGS Pelletising Plant within the existing Shoalhaven Starches factory site.

This written request demonstrates that compliance with Clause 4.3(2A) of SLEP 2014 is unreasonable and unnecessary given the specific circumstances of this case; and that there are sufficient environmental planning grounds to justify contravention of the maximum height limit.

#### **7.1.1 Objectives Underpinning Clause 4.3 are Achieved**

Preston CJ in *Wehbe v Pittwater Council* [2007] NSWLEC827 (21 December 2007) provides commentary with respect to establishing whether compliance with a development standard is unreasonable or unnecessary under the specific circumstances of a particular matter. Whilst this case related to the use of SEPP 1, given the similarities between the objects of SEPP No. 1 and Clause 4.6 the findings of Preston CJ does provide guidance with respect to the implementation of this clause.

According to Preston CJ one of the most commonly invoked ways to establish that compliance with the development standard is unreasonable or unnecessary is because the objectives of the development standard are achieved notwithstanding non-compliance with the standard.

The rationale is that development standards are not ends in themselves but means of achieving ends. The ends are environmental or planning objectives. Compliance with a development standard is fixed as the usual means by which the relevant environmental or planning objective is able to be achieved. However, if the proposed development proffers an alternative means of achieving the objective, strict compliance with the standard would be unnecessary (it is achieved anyway) and unreasonable (no purpose would be served).

As outlined in Section 6.2 above, the objectives underpinning the development standard – in this instance the maximum Building Height of eleven metres is a relevant consideration in determining whether strict compliance with that standard under the specific circumstances of the case would be unreasonable or unnecessary.



The objectives of the height of buildings standard are expressly stated in Clause 4.3 as follows:

- (1) *The objectives of this clause are as follows:*
- (a) *to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,*
  - (b) *to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,*
  - (c) *to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.*

The above objectives in my view provide a clear understanding of the purposes underpinning the building height standard outlined in Clause 4.3(2A) and which applies to the subject site.

This written submission will demonstrate that this proposal will not prevent the above objectives from being achieved notwithstanding non-compliance with the eleven metre height restriction development standard in the specific circumstances of this case.

Having regard to the objectives of Clause 4.3, it is my view that the proposal is not inconsistent with these for the following reasons:

- the proposal seeks consent to erect an exhaust stack and enlarge the DDGS Pelletising Plant at the Shoalhaven Starches site. These proposed structures are not dissimilar to existing structures within the existing Shoalhaven Starches complex. The building forms, heights, shapes and characteristics as evident in **Figure 3** are also similar to those that presently exist on the site, and will conform to the visual character of the site, ie. it is industrial development within an industrial setting. **Figure 3** is the elevation plan for the proposed silos. This plan illustrates how the proposed new development, illustrated in red, fits within the silhouette of the current factory site and is consistent in scale with existing development on the site. Detailed plans of the proposed development are attached as **Annexure 1** to the EA.
- The subject site is zoned IN1 general industrial and the proposed development meets the current and desired future character of the locality in which it is sited.



- The proposed development will have a limited visual impact. The bulk and scale of the structures associated with this modification application will not be dissimilar to that of other industrial type development associated with the existing factory site. The main vantage points from where the development could potentially be visible would be from residences along Riverview Road directly south of the site (this view is from a distance of about 600 metres) and from Nowra Bridge to the South West of the site. The views from these sites are mainly dominated by the river, riparian vegetation and the floodplain. Whilst the proposed structures will protrude above the canopy of the vegetation along the river, it should be noted however, that this is the case with the existing factory development. The proposed structures will be sited within the overall “silhouette” of the existing factory complex and individual structures will not be visually prominent. These structures will not extend past the existing skyline created by the existing factory. The works will be sited in the midst of the existing factory complex, and will be viewed within this context. As such this development will not diminish the views of existing development. The visual impact of the modification proposal is discussed in Section 7.2 of the EA.
- The development will not lead to excessive overshadowing of foreshore areas given the existing shadows cast by existing development and the nature of the foreshore in this locality.
- The proposed development site is not subject to a heritage listing under the provisions of SLEP 2014 nor is it sited within the in the vicinity of a heritage item or within a heritage conservation area.
- The proposed development has been designed to comply with all relevant statutory planning provisions applying to this form of development.

Given these circumstances, it is our view that the proposed silos will not be inconsistent with the prevailing character of this locality; or the envisaged character of the area given the planning provisions applying to the land, and will therefore not be inconsistent with the objectives outlined in Clause 4.3(1) of SLEP 2014.

#### **7.1.2 Environmental Planning Grounds that Justify Contravening Development Standard**

The written request is also required to demonstrate that there are sufficient environmental planning grounds to justify contravening the eleven metre height restriction.

- The proposal is not inconsistent with state and regional planning provisions applying to this land.

- The proposal is consistent with the objectives and is permissible within the IN1 zone that applies to the land.
- Despite non-compliance with eleven metre height restriction, the proposal is consistent with the stated objectives of Clause 4.3 as they relate to the building height requirements as outlined above in Section 7.1.1 of this written request.
- The proposed development is representative of the prevailing character of the locality, ie industrial development within an industrial zone and is of a height consistent with buildings already existent on the development.
- The subject site is eminently suitable for the proposal development.

### **7.1.3 Public Interest**

The written request is also required to demonstrate that the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out.

Section 7.1.1 of this submission demonstrates that the proposal will be able to satisfy the objectives of the development standard as enunciated within Clause 4.3 notwithstanding contravention of the eleven metre height restriction.

The subject site is zoned IN1 General Industrial under the provisions of the Shoalhaven Local Environmental Plan 2014.

The objectives of the IN1 zone are:

- *To provide a wide range of industrial and warehouse land uses.*
- *To encourage employment opportunities.*
- *To minimise any adverse effect of industry on other land uses.*
- *To support and protect industrial land for industrial uses.*
- *To allow a diversity of activities that do not significantly conflict with the operation of existing or proposed development.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.*

It is our view that the proposal is not inconsistent with the above objectives:

- The site is an existing factory complex and the development will ensure that land that is zoned for industrial purposes is fully utilised for that purpose.

- The proposed exhaust stack treat air emissions from the approved DDGS Pelletising Plan ensuring the amenity of the locality is protected. As such the development will support and protect both the industrial use of the subject site and the employment opportunities provided by Shoalhaven Starches.
- Section 7.2 of the EA addresses the visual impact of the proposal and concludes that the proposal will not adversely impact the scenic amenity of this locality.

Given the proposal is consistent with the objectives that underpin Clause 4.3 and is consistent with the objectives of IN1 zone that apply to the land. It is our view that the proposal will be in the public interest having regard to clause 4.6(4)ii) of SLEP 2011.

#### **7.1.4 Clause 4.6(5) Matters for Consideration by Director-General**

As outlined the concurrence of the Director-General is to be assumed in this case.

- As identified in the original EA for the SSEP the overall proposal is consistent with state and regional planning provisions that apply to the site.
- As outlined in Section 7.1 of the submission it is our view that the proposal is in the public interest.

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Under these circumstances it is my view that this objection made pursuant to Clause 4.6 is well founded and strict compliance with Clause 4.3(2A) of Shoalhaven LEP 2014 would be unreasonable under the specific circumstances of this case as:

- The objectives that underpin the development standard outlined in Clause 4.3 of Shoalhaven LEP are achieved notwithstanding non-compliance with the development standard.
- This proposal is consistent with state and regional planning provisions applying to this land.
- The proposal is consistent with the objectives of the IN1 zone that applies to the land.
- Despite non-compliance with the eleven metre height restriction, the proposal is consistent with the stated objectives of Clause 4.3 as they relate to the height of building requirements as outlined above in this written request.
- The proposed development is representative of the prevailing character of the locality, ie. industrial development within an industrial zone.
- The modified proposal is of a form, bulk and height consistent with buildings already existent on the development.

- The underlying purpose of the exhaust stack would be defeated if compliance was required as restricted height would limit the ability of the stack to adequately treat air emissions from the DDGS Pelletising Plant and therefore compliance is unreasonable. Such would have an adverse impact on the ongoing operations on the site.
- The subject site is eminently suitable for the proposal development.

Although well considered, the eleven metre height restriction for the broader Shoalhaven encapsulated within Clause 4.3 should not be rigidly enforced as a development standard in all cases.

This submission demonstrates that the variation to the development standard sought by this proposal is consistent with the objectives of the state, regional and local planning provisions for this site. It is my opinion that strict compliance with this development standard under the specific circumstances of this case would be unreasonable and unnecessary.

For these reasons, this submission pursuant to Clause 4.6 requests that the Department exercise the discretionary power and support this proposal and the development application.



**Stephen Richardson**  
TOWN PLANNER CPP MPIA