



Shoalhaven Starches

*State Significant
Development
Modification Assessment
(06_0228 MOD 16)*



March 2019

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Cover photo

Aerial image of Shoalhaven Starches factory, Bomaderry (Source: Shoalhaven Starches Pty Ltd)

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Glossary

Abbreviation	Definition
Commission	Independent Planning Commission
Consent	Development Consent
Council	Shoalhaven City Council
Department	Department of Planning and Environment
DILW	Department of Industry – Lands and Water
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection Licence
FRNSW	Fire and Rescue NSW
Minister	Minister for Planning
MOD	Modification to development consent
OEH	Office of Environment and Heritage
Planning Secretary	Secretary of the Department of Planning and Environment
Project Approval	Project Approval issued under Part 3A of the EP&A Act
RMS	Roads and Maritime Services
RtS	Response to Submissions
SEE	Statement of Environmental Effects
SSD	State Significant Development
SSEEP	Shoalhaven Starches Ethanol Expansion Project



Executive Summary

Shoalhaven Starches Pty Ltd (the Applicant) operates a factory at Bomaderry on the south coast of NSW. The factory processes wheat to produce flour, gluten, glucose, starch and ethanol for food, beverage, paper and fuel products. The factory has operated since 1979 and has around 300 employees.

In 2009, the then Minister for Planning approved an expansion to fuel-grade ethanol production at the factory and required the Applicant to implement a range of odour controls, including a wastewater treatment plant. These controls have substantially reduced odour from the factory and its irrigation areas. Since 2009, the Applicant has installed additional infrastructure at the factory, through modifications to the project approval. These modifications have allowed the Applicant to optimise production of flour and beverage-grade ethanol, to offset a reduced demand for fuel-grade ethanol in NSW.

The original project approval (06_0228) was modified 15 times under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act). In September 2018, the project was transitioned to State Significant Development and the Applicant lodged a modification application (MOD 16) under Section 4.55(2) of the EP&A Act.

The modification (MOD 16) proposes additional infrastructure to increase flour, starch and gluten production and increase on-site energy generation. The modification involves several items of additional plant including a third flour mill, a new gluten dryer, conversion of two gluten dryers to starch dryers, a specialty products building, a new boiler and a coal-fired cogeneration plant.

The modification would enable the Applicant to supply modified gluten and starches to new markets in the food and paper industries and increase the amount of flour produced on the site, reducing imports from its flour mills in Western NSW. The modification would also enable the Applicant to revert to using coal for the majority of its on-site power generation, reducing its reliance on natural gas, and substantially reducing energy costs. Historically the Applicant has used coal in the on-site boilers, although some were converted and ran on natural gas for several years. In recent years, rising gas prices have had an on-going impact on the Applicant's cost of production and they have sought ways to reduce these costs by reverting the existing boilers back to using coal (MOD 13 approved a conversion of three boilers back to coal). This modification (MOD 16) seeks to install one additional coal fired boiler.

The modification application must be determined by the Independent Planning Commission (the Commission), as the Applicant made reportable political donations. The Commission has determined all previous modifications of the project approval.

The Department has assessed the modification application in accordance with the EP&A Act. The Department publicly exhibited the application from 24 September 2018 to 8 October 2018 and received six submissions from Government agencies. No submissions were received from the public and there were no objections to the modification. Government agencies requested additional information on the capacity of the wastewater treatment plant and irrigation areas to absorb increased volumes and further air quality assessment information. The key air quality issues related to the emissions reductions that could be achieved on the new boiler using best practice management measures. The Applicant revised the air quality assessment to address these issues, providing a final assessment in February 2019. In March 2019, the Environment Protection Authority confirmed the issues had been satisfactorily addressed.

The Department's assessment identified two key issues, air quality and hazards and risk. The Department consulted with the EPA's Air Technical Branch and developed conditions to ensure emissions from the coal fired boiler meet stringent emission limits. The Department's internal hazards specialists visited the site and reviewed the Preliminary Hazard Analysis, concluding the cumulative risk from the modified factory would comply with NSW land use safety risk criteria. Other aspects including traffic, noise, wastewater, flooding and visual amenity would be appropriately managed through existing and modified conditions.

The Department's assessment has concluded the modification should be approved, subject to modifying the conditions.



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1. Introduction

This report provides an assessment of an application to modify the State significant development (SSD) consent for the Shoalhaven Starches Factory in Bomaderry.

The modification application seeks approval to install additional infrastructure to increase flour, starch and gluten production and on-site energy generation. The application was lodged by Shoalhaven Starches Pty Ltd (the Applicant) pursuant to section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Background

The Applicant has operated a factory at Bomaderry in the Shoalhaven local government area since 1979 (see **Figure 1**). The factory receives wheat grain from mills in western NSW which is processed to produce flour, gluten, glucose, starch and ethanol for food, beverage, paper and fuel products. The factory is a 24/7 operation and has around 300 employees.

Wastewater generated from processing activities is treated in a wastewater treatment plant located on the Applicant's environmental farm on the northern side of Bolong Road. A large proportion of treated wastewater is reused within the factory, and excess wastewater is irrigated on the environmental farm, which covers over 1,000 hectares (ha) of rural land owned by the Applicant. The environmental farm contains the wastewater treatment plant, storage ponds and an extensive irrigation system (see **Figure 1**).

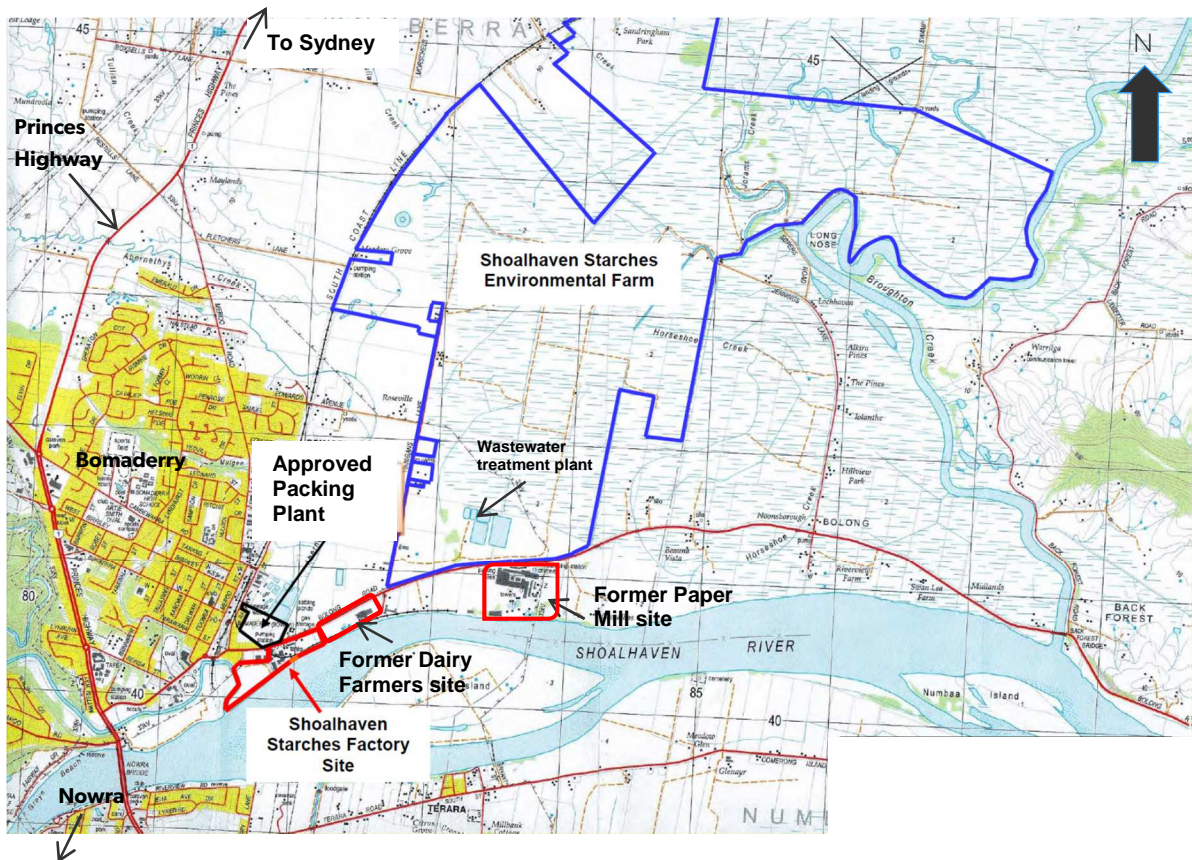


Figure 1 | Site Location

In recent years, the Shoalhaven Starches factory has expanded to incorporate adjacent industrial premises that have closed, including the former Dairy Farmers complex and the former Shoalhaven Paper Mill.

In 2009, the then Minister for Planning approved a major expansion to fuel-grade ethanol production at the factory. The approval required the Applicant to implement significant odour controls, including the wastewater treatment plant. The odour controls were implemented in 2011-12 and have been successful in substantially reducing odour complaints from the nearby residential areas.

1.2 Subject Site

The factory and environmental farm are located on the eastern fringe of Bomaderry and 2 kilometres (km) to the north-east of the township of Nowra. The factory is surrounded by other industrial premises, including a metal fabrication factory, meat packaging works and industrial and agricultural suppliers. The nearest residences are in Bomaderry, 300 metres (m) to the west of the approved packing plant and 500 m north-west of the factory.

Shoalhaven City Council's sewage treatment works is located 180 m to the north of the factory and Bomaderry railway station is located 500 m to the north-west. Shoalhaven Starches has a private rail spur line, which extends from the railway station across Railway Street and Bolong Road into the factory site, extending for approximately 750 m along the northern bank of the Shoalhaven River.

The Shoalhaven Starches factory encompasses the former Dairy Farmers complex and the former Shoalhaven Paper Mill, located east of the main factory on Bolong Road.

The Applicant has approval to construct a packing plant on the northern side of Bolong Road. Preliminary earthworks commenced on the packing plant site in 2018.

1.3 Approval History

Prior to 2009, the Applicant operated its factory and environmental farm under multiple, separate planning approvals issued by Shoalhaven City Council (Council) and the Minister for Planning.

Shoalhaven Starches Ethanol Expansion Project (06_0228)

In January 2009, the then Minister for Planning approved the Shoalhaven Starches Ethanol Expansion Project (SSEEP) under the now repealed Part 3A of the EP&A Act. The SSEEP approval consolidated all previous planning approvals for the site with the aim of simplifying regulation and compliance.

The SSEEP is shown on **Figure 2** and involved:

- staged increases of ethanol production from 126 megalitres a year (ML/yr) to 300 ML/yr following successful implementation of mandatory odour controls
- implementation of mandatory odour controls including a wastewater treatment plant and biofilter
- installation of additional infrastructure at the dried distillers grain (DDG) plant, ethanol and starch plants, a new packing plant, rail siding and product and wastewater pipelines.

By June 2012, the Applicant had installed the mandatory odour controls and the Department approved the increase in ethanol production (as prescribed in the conditions) to the maximum volume permitted being 300 ML/yr, subject to conditions, including quarterly odour monitoring and annual odour audits. However, demand for ethanol in fuels has not increased as predicted and ethanol production levels at the factory in 2017 were around 237 ML/yr.

Given the reduced market demand for ethanol, the Applicant has progressively installed infrastructure over the last few years, to allow optimisation of flour products and increased production of beverage grade ethanol for alcohol

products. This has required several modifications to the SSEEP approval, including a new starch dryer, flour mill and a beverage grade ethanol distillery at the factory.

Modifications to 06_0228

The Minister for Planning has approved 15 modifications to the SSEEP approval since 2009. All modifications were approved by the former Planning Assessment Commission, and more recently by the Independent Planning Commission (the Commission) under the Minister’s delegation. **Table 1** summarises the modifications.

Table 1: *Modifications to the SSEEP*

Mod No.	Approval Date	Summary of Modifications
1	30 Sept 2011	<u>Remove DDG Pellet Plant</u> <ul style="list-style-type: none"> remove the requirement for the dried distillers grain (DDG) pelletising plant from the list of mandatory odour controls implement alternate odour controls including a new loading chute with dust extractor and extension of the load-out shed to fully enclose truck loading.
2	14 Sept 2012	<u>Fermenter and Distillery</u> <ul style="list-style-type: none"> install additional infrastructure to improve operational and energy efficiency, including two additional fermenter tanks, an evaporator, beer column, heat exchangers, substation and compressors.
3	9 Oct 2012	<u>Relocate Car Park</u> <ul style="list-style-type: none"> relocate approved 60 space staff car park to the former Dairy Farmers site and include the site in the project approval, following acquisition by the Applicant.
4	24 Mar 2014	<u>Relocate DDG Pellet Plant</u> <ul style="list-style-type: none"> relocate the approved DDG pelletising plant within the factory site, increase its footprint and approved height, from 21 m to 28 m.
5	16 Sept 2015	<u>DDG Pellet Plant Stack</u> <ul style="list-style-type: none"> modify the design, footprint and odour controls on the DDG pelletising plant including a 49 m high air discharge stack and eight storage silos.
6	25 Nov 2015	<u>Demolition</u> <ul style="list-style-type: none"> demolish a disused industrial building “Moorehouse” purchased by the Applicant construct a temporary car park on the northern side of Bolong Road.
7	18 Jan 2016	<u>Starch Dryer No. 5</u> <ul style="list-style-type: none"> relocate the approved Starch Dryer No. 5 to the former “Moorehouse” site, increase the footprint and construct a substation, pipework and pipe gantry.
8	1 Mar 2016	<u>Extend Existing Flour Mill</u> <ul style="list-style-type: none"> extend the existing flour mill to increase flour production from 265,000 to 400,000 tonnes per annum (tpa) and offset imports of flour to the factory from mills in western NSW.
9	8 Mar 2017	<u>Packing Plant Relocation</u> <ul style="list-style-type: none"> increase the size of the approved packing plant to increase the type and volume of packaged dried products construct a container storage and truck loading area with noise barriers extend and duplicate the approved rail spur line install product pipes under Bolong Road, a small bag packer at the DDG pellet plant and a new stormwater detention tank.
10	18 April 2017	<u>Flour Mill B</u> <ul style="list-style-type: none"> construct a new flour mill B and increase flour production on site from 400,000 842,400 tpa. Relocate storage silos and construct a mill feed structure.
11	1 Sept 2017	<u>Dryers, Cooling Towers, Maintenance Building and Biofilters</u> <ul style="list-style-type: none"> reduce the number of approved dryers and relocate approved footprint, relocate cooling towers, construct a forklift maintenance building, install two biofilters, construct hardstand for container storage, store coal and woodchips on the factory site and environmental farm.

Mod No.	Approval Date	Summary of Modifications
12	1 Sept 2017	<u>Beverage Grade Ethanol</u> <ul style="list-style-type: none"> • increase production of beverage grade ethanol and reduce production of fuel grade ethanol • install ethanol distillery infrastructure including rectification columns, cooling towers, a substation, storage tanks and pipes • extend two rail sidings and provide additional car parking.
13	18 Jan 2018	<u>Conversion of Boilers</u> <ul style="list-style-type: none"> • increase steam production from three existing boilers by converting to coal fired boilers and installing baghouses.
14	27 Apr 2018	<u>Use of Former Paper Mill Site</u> <ul style="list-style-type: none"> • incorporate the former Shoalhaven Paper mill into the project approval and use the site for buffer storage for products, plant, construction materials and shipping containers.
15	7 Aug 2018	<u>Carbon Dioxide Plant</u> <ul style="list-style-type: none"> • construct a carbon dioxide plant at the former Dairy Farmers complex to capture and treat waste gas to a food grade standard for sale to food and hospitality markets.

Council Issued Consents

Separate to the SSEEP approval, the Applicant sought and obtained development consents from Council for works associated with the factory. This has included:

- construction and operation of an interim packing plant at the factory (RA 11/1002)
- demolition of the dimethyl ether plant (DA 13/1713)
- construction of two additional grain silos for buffer storage (DA 14/2161).

Council also granted consent to the Applicant for road and site access upgrades, consistent with the SSEEP approval. These included:

- upgrades to site access points on Bolong Road, including the Dairy Farmers site access (DA 10/1843)
- widening the access point to the interim packing plant (DA 11/1855).

Two other Council issued consents apply to land adjacent to the factory and owned by the Applicant. These include the Algae Demonstration Facility and the Meat Processing Plant, both located at the former Dairy Farmers site.



2. Proposed Modification

The Applicant lodged an application under section 4.55(2) of the EP&A Act to modify 06_0228 to install additional infrastructure to increase flour, starch and gluten production and on-site energy generation. The Applicant has also requested modifications to approved infrastructure and existing consent conditions.

The modification is described in full in the Statement of Environmental Effects (SEE) included in **Appendix A** and is summarised in **Table 2**. **Figure 3** shows the location of all aspects of the modification and **Figure 4** shows the elevations of proposed and existing structures. **Figures 5 to 7** show further details of the key components.

Table 2: Proposed Modification

Modification Aspects	Description
New flour mill C (Figure 5)	<ul style="list-style-type: none">• install a third flour mill (C) to increase flour production from 20,000 tonnes per week (tpw) to 25,400 tpw, located in the existing flour mill B building• import an additional 200 tpw of flour to the site from other mills• divert some of the grain used for ethanol production into flour production
Vent changes to flour mills A and B (Figure 5)	<ul style="list-style-type: none">• modify the existing ventilation systems on flour mills A and B from a vacuum to a pressurisation system including fan enclosures on the roof of flour mills A and B
New gluten dryer 8 (Figure 6)	<ul style="list-style-type: none">• install a new gluten dryer within a new building between the existing maintenance building and starch dryer 5. The building would be 26.3 metres (m) high
Convert gluten dryers 1 and 2 to starch dryers	<ul style="list-style-type: none">• convert the existing gluten dryers to starch dryers and change pipework and connections
Specialty products building and storage silos (Figure 6)	<ul style="list-style-type: none">• construct a new building (26 m high) to house equipment to produce specialty products from gluten and starch, located adjacent to starch dryer 5 and the new gluten dryer building• construct 15 storage silos on the northern and southern sides of the new specialty products building at 33 m high• construct 10 bunded tanks to store liquid starch on the southern side of the specialty products building
New sifter	<ul style="list-style-type: none">• install a new sifter inside the interim packing plant, extending 15 m above the roof
Other output increases	<ul style="list-style-type: none">• increased flour production will result in a corresponding increase in:<ul style="list-style-type: none">○ dried distillers grain syrup (DDGS) of 1,100 tpw○ wastewater of 13.3 megalitres per week (ML/wk)
Cogeneration plant and new boiler 8 (Figure 7)	<ul style="list-style-type: none">• construct a new coal-fired cogeneration plant (13 m high) to generate an additional 15 megawatts (MW) of power on site, located south of the existing boiler house complex• construct a new coal-fired boiler no. 8 within a building 13 m high, with a stack at 54 m high• relocate existing coal-fired boiler 7 within an extension to the existing boiler house. Relocate the existing boiler 7 stack, at 26.8 m high• install two new silos to store lime for use in the boilers to reduce emissions of sulphur oxides (SO_x)
Electrical	<ul style="list-style-type: none">• construct an indoor sub-station adjacent to the BOC gas plant on the northern side of Bolong Road• install a second high-voltage switchboard in a second storey extension to the existing switchroom at the factory, increasing the height by 12.5 m

Modification Aspects	Description
Grain intake pit	<ul style="list-style-type: none"> construct a second grain intake pit, 3.95 m below ground level, adjacent to the existing pit, to enable a whole rail wagon to be unloaded at once construct a new bucket elevator 43 m high to transfer grain from the pit to the existing storage silos
Carparking	<ul style="list-style-type: none"> relocate 26 car parking spaces on the BOC gas site further east of the existing location, to accommodate the new indoor substation
Landscaping	<ul style="list-style-type: none"> planting on the BOC gas site on the frontage to Bolong Road, to screen the new indoor substation
Modifications to approved infrastructure	<ul style="list-style-type: none"> install a new baghouse on starch dryer 5, on the northern side of the building at 36 m high minor relocation of infrastructure approved under MOD 12, including the substation, cooling towers and emergency ISO tank container storage minor relocation of carparking approved under MOD 3 to accommodate location changes to MOD 12 infrastructure
Modifications to existing conditions	<ul style="list-style-type: none"> remove the requirement to enclose the fermenter tank transfer pumps and molecular sieve pumps and compressors for noise attenuation remove condition 6B that includes specifications for construction of the DDG exhaust stack for odour control
Modification to include additional lots	<ul style="list-style-type: none"> include additional land parcels that are not currently included in the land schedule in the development consent. These land parcels are used as part of the factory and environmental farm operations
Construction period	<ul style="list-style-type: none"> 12 months
Employment	<ul style="list-style-type: none"> 5 operational staff up to 80 construction staff at one time
Justification	<p>The Applicant proposes to increase production of flour, starch and gluten to offset a reduced market demand for fuel-grade ethanol. The modification would enable the Applicant to supply modified gluten and starches to new markets in the food and paper industries. The modification would also enable the Applicant to generate more power on-site using coal, reducing its reliance on natural gas, and subsequently reducing energy costs.</p>

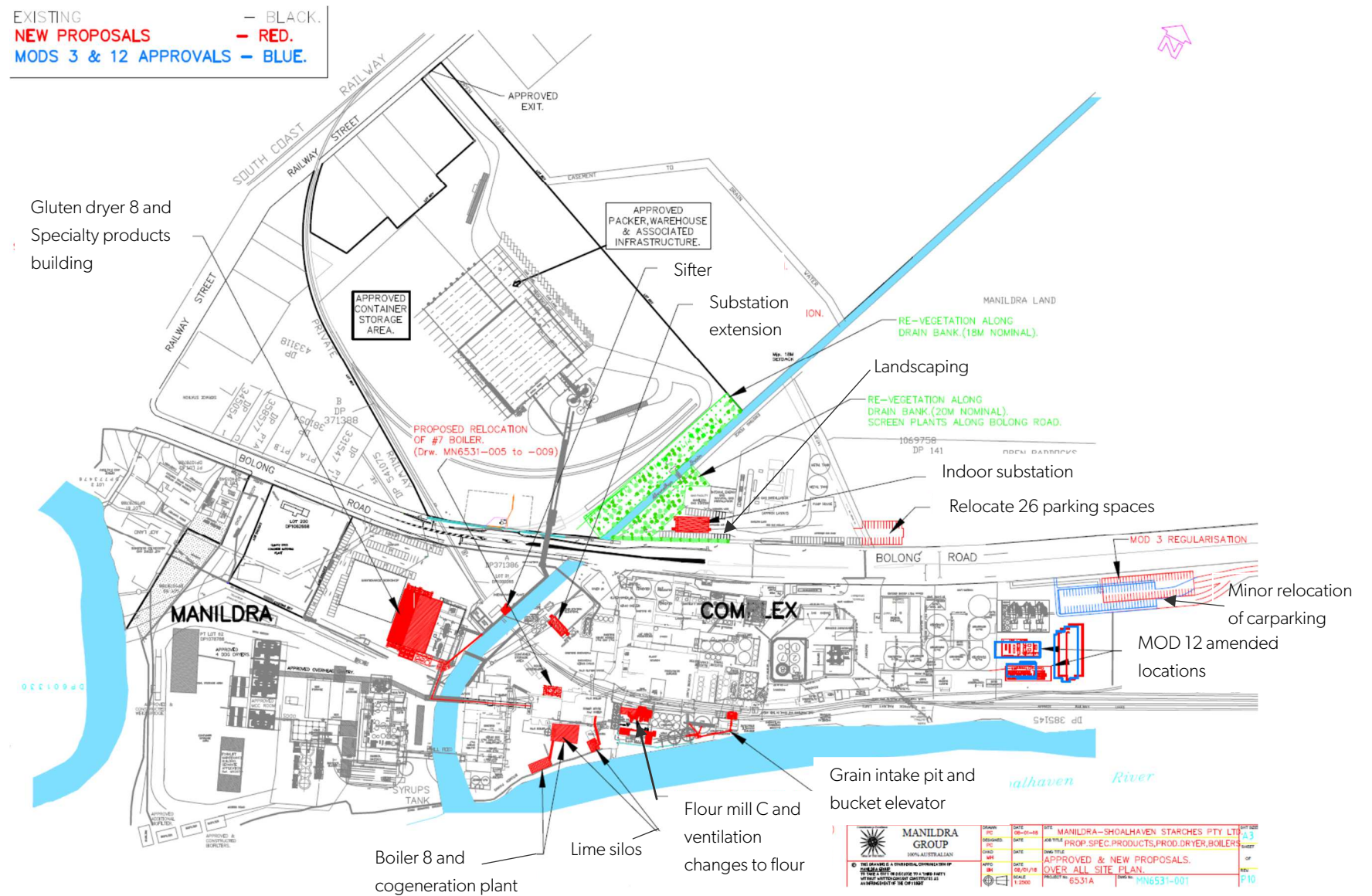


Figure 3: Location of Modification Aspects

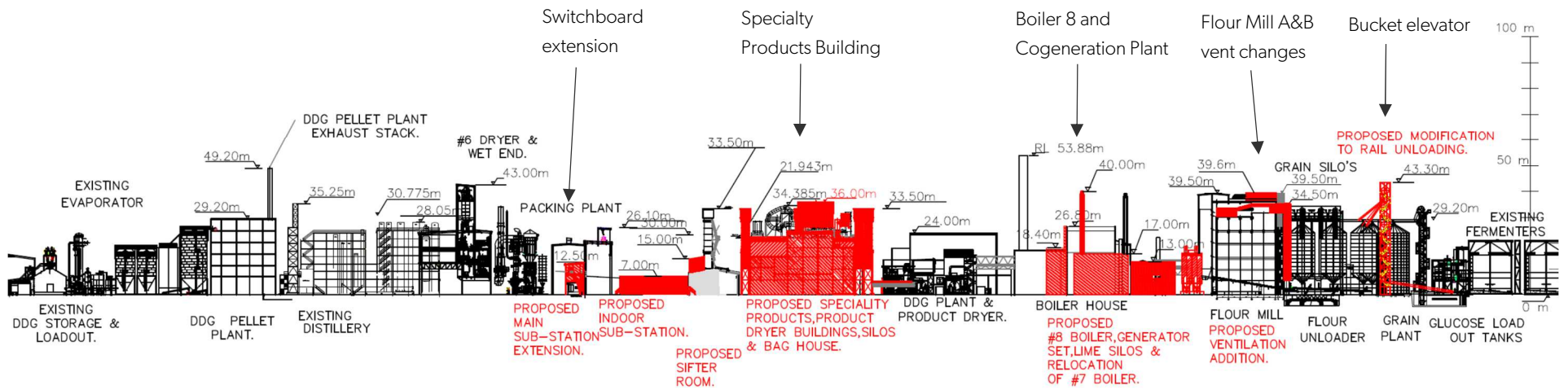


Figure 4: Elevations of Existing (black) and Proposed Structures (red)

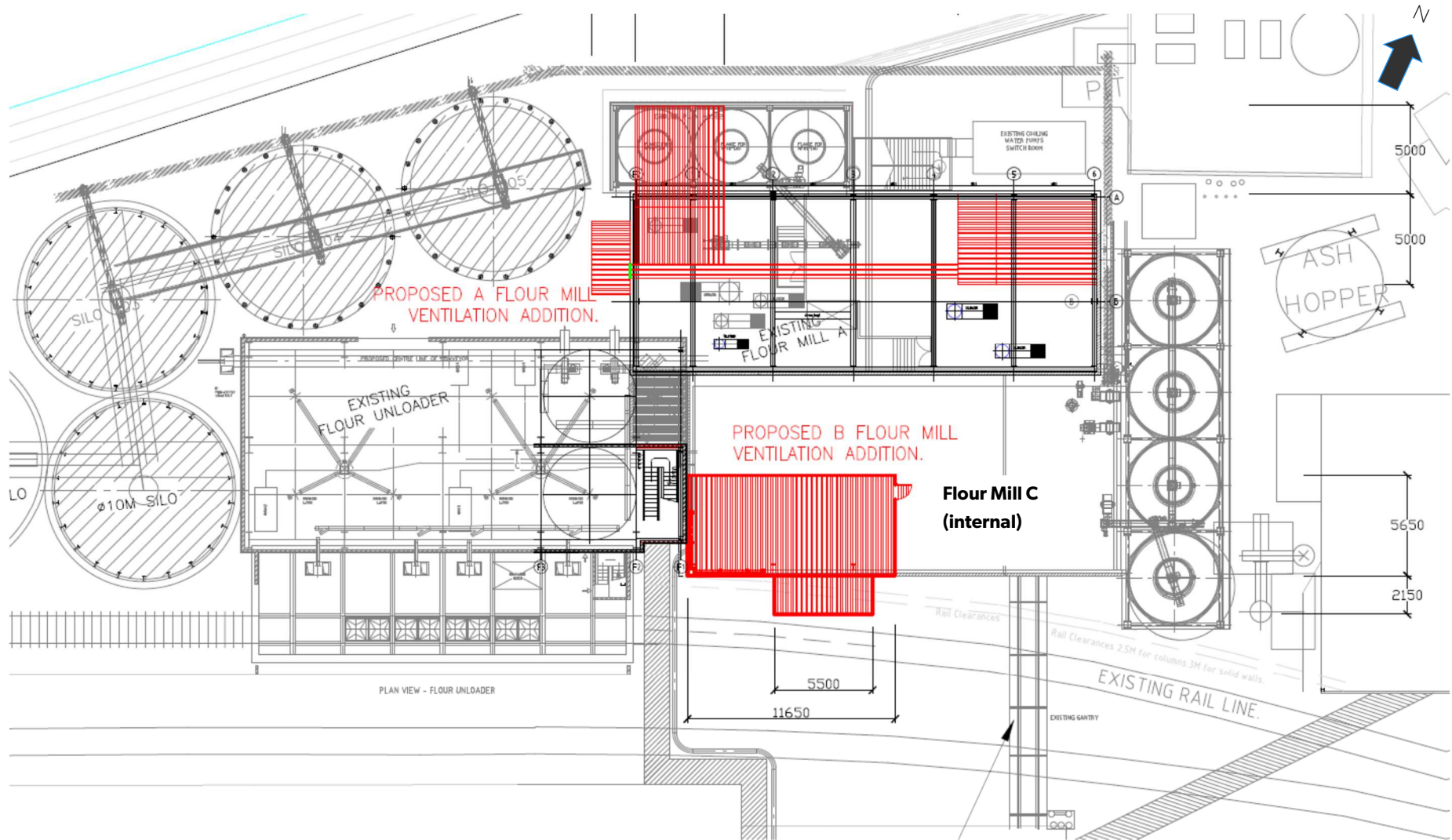


Figure 5: Proposed Flour Mill C and Ventilation Changes on Flour Mills A and B

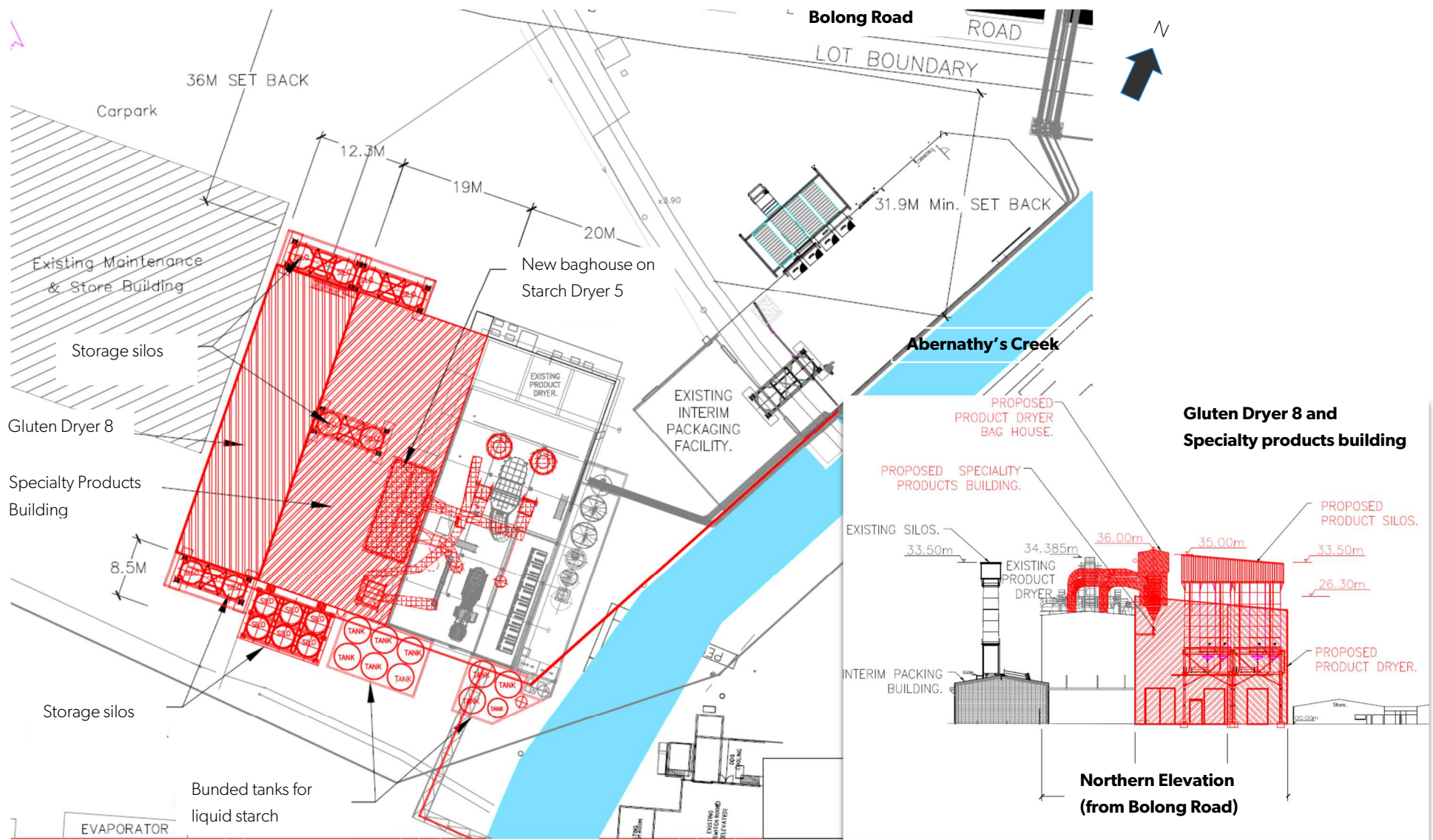


Figure 6: Proposed Gluten Dryer 8, Specialty Products Building and Storage Silos

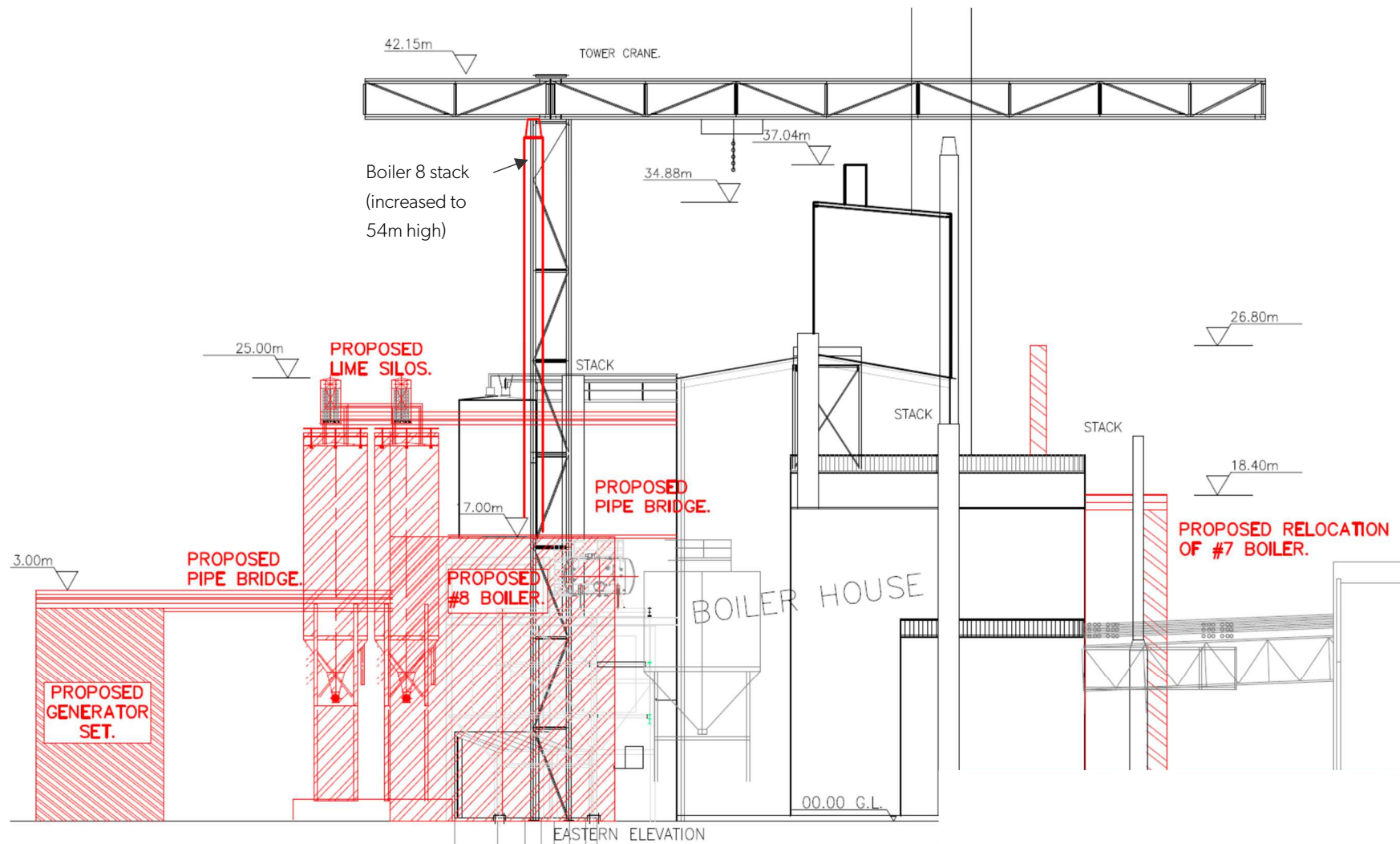


Figure 7: Proposed Boiler 8, Cogeneration Plan, Lime Silos and Relocation of Boiler 7



3. Strategic Context

The Department has considered the strategic context of the site and is satisfied the proposed modification is consistent with relevant strategic planning documents including the *Illawarra Shoalhaven Regional Plan* (ISRP) 2015.

The ISRP sets a vision and goals for the region covering housing, jobs, environment and transport. The proposed modification would contribute to the goal of driving regional employment and business growth, by providing 5 operational jobs and up to 80 construction jobs. The modification would also contribute to the on-going employment of over 300 staff at the Shoalhaven Starches factory. The modification would enable Shoalhaven Starches to maintain an efficient and competitive manufacturing business that contributes to the local and regional economy.



4. Statutory Context

4.1 Scope of Modification

The Department has reviewed the scope of the modification application and is satisfied it would result in minimal environmental impacts, and relates to substantially the same development as the original development on the basis that:

- the primary function and purpose of the approved development would not change
- the modification is of a scale that warrants the use of section 4.55(2) of the EP&A Act. While the modification would involve numerous items of additional plant, the changes are substantially the same as the existing operation of the Shoalhaven Starches factory
- there would be only minor increases in production volumes, as wheat grain used for ethanol would be diverted to flour, starch and gluten production
- the modification would not involve any works outside already approved development areas
- any potential environmental impacts would be minimal and appropriately managed through the existing or modified conditions of consent.

The Department is satisfied the proposed modification is within the scope of section 4.55(2) of the EP&A Act and does not constitute a new development application. Accordingly, the Department considers that the application should be assessed and determined under section 4.55(2) of the EP&A Act rather than requiring a new development application to be lodged.

4.2 Consent Authority

The SSEEP was originally approved under Part 3A of the EP&A Act. The project was a transitional Part 3A project under Schedule 2 to the EP&A (Savings, Transitional and Other Provisions) Regulation 2017. On 7 September 2018 an order made by the Minister's delegate was published in the Gazette declaring the development that was a Part 3A project to be State significant development under clause 6 to Schedule 2 of the EP&A (Savings, Transitional and Other Provisions) Regulation 2017. As a result, the project approval is taken to be a State significant development consent under Part 4 of the EP&A Act and may be modified under section 4.55 of the EP&A Act.

The Minister for Planning is the consent authority for the application under section 4.5(a) of the Act. However, as the Applicant made reportable political donations, the application will be determined by the Independent Planning Commission (the Commission) in accordance with the Minister's Instrument of Delegation, dated 14 September 2011.



5. Engagement

5.1 Department's Engagement

In accordance with clause 10 of Schedule 1 to the EP&A Act and clause 118 of the *Environmental Planning and Assessment Regulation* 2000 (EP&A Regulation), the Department exhibited the application from 24 September 2018 to 8 October 2018:

- on the Department's website and at NSW Service Centres
- at Shoalhaven City Council offices in Bridge Street, Nowra

The modification application was advertised in the Nowra South Coast Register and the Shoalhaven and Nowra News on 21 September 2018. Nearby landowners were notified of the modification application and invited to make a submission. The modification application was also referred to Shoalhaven City Council (Council), Environment Protection Authority (EPA), Department of Industry – Lands and Water (DILW), Office of Environment and Heritage (OEH), Fire and Rescue NSW (FRNSW) and Roads and Maritime Services (RMS).

The Department visited the site in July 2018 with representatives from Council and the EPA. The Department also met with the Applicant and the EPA's Air Technical Branch in November 2018 to discuss some technical air issues associated with the modification.

5.2 Summary of Submissions

The Department received six submissions from Government agencies. There were no submissions from the public or special interest groups. There were no objections to the modification.

Council requested further details of the proposed parking areas and recommended conditions for parking, management of Bolong Road during construction, an updated flood management plan and provision of a final safety certificate for the proposed fire safety measures. Council also provided details of the requirements of Shoalhaven Water for protection of their infrastructure.

The **EPA** requested further information on air quality, including additional information on the proposed new boiler and conversion of the gluten dryers to starch dryers. The EPA also requested further information on the capacity of the environmental farm to absorb additional irrigated wastewater. The EPA was satisfied with the noise assessment and additional information provided on wastewater irrigation and recommended conditions for these aspects. The Applicant met with the EPA's Air Technical Unit in November 2018 and provided further air quality assessment in December 2018 to respond to the air quality issues raised. The issues related primarily to the modelling of emissions from the new coal fired boiler. The air quality assessment was revised twice following this meeting, with the EPA's final advice in March 2019 confirming its issues had been satisfactorily addressed or could be addressed through recommended conditions.

The **DILW** requested further information regarding the capacity of the Environmental Farm to adequately absorb additional effluent by irrigation and of potential changes to the quantity or quality of run-off entering the Shoalhaven River. DILW recommended conditions requesting an updated erosion and sediment control plan, vegetation management plan and water access licences. Following a review of the RtS, DILW advised the RtS had adequately addressed the issues raised.

The **OEH** noted the modification may have some influence on flood behaviour and advised the Department to consult with Council regarding the floodplain risk management aspects of the modification.

FRNSW reviewed the Preliminary Hazard Analysis and recommended a Fire Safety Study be prepared prior to construction.

RMS advised that Bolong Road is a regional classified road and Council is best placed to comment on any safety or capacity issues on Bolong Road regarding the modification.

5.3 Response to Submissions

The Applicant provided a Response to Submissions (RtS) to address the issues raised during consultation, as well as additional assessment information on air quality and wastewater irrigation. The Applicant also met with the EPA's Air Technical Unit on 26 November 2018 to discuss the air quality assessment. All additional information forms the Applicant's RtS and are publicly available on the Department's website.

All information relied on by the Department in its assessment of the modification are available on the Department's website, with links provided in Appendix A.



6. Assessment

The Department has assessed the merits of the proposed modification. During this assessment, the Department has considered the:

- SEE and RtS (see **Appendix A**)
- assessment report for the original project and subsequent modifications
- submissions from State government agencies and Council (**Appendix A**)
- relevant environmental planning instruments, policies and guidelines
- requirements of the EP&A Act, including the objects of the EP&A Act.

The Department considers the key issues for the modification are air quality and hazards and risks. **Table 3** provides the Department's assessment of other issues, including traffic, noise, wastewater management, flooding, visual amenity, riverbank stability, contamination and acid sulfate soils.

6.1 Air Quality and Odour

Background

A key objective for the Shoalhaven Starches factory is to ensure air quality and odour impacts do not increase with subsequent modifications to the factory. The SSEEP approval required the Applicant to implement significant odour controls, including the wastewater treatment plant, biofilters and cleaning of ductwork throughout the factory. These measures were implemented throughout 2011-12 and have been successful in substantially reducing odour impacts on nearby residential areas.

Historically the Applicant used coal in the on-site boilers to produce energy and steam for production processes. Some boilers were converted to run on natural gas and were operated using gas for several years. In recent years, rising gas prices have had an on-going impact on the Applicant's cost of production and they have sought ways to reduce these costs and their reliance on natural gas.

The recent MOD 13, approved in January 2018, involved converting existing boilers from natural gas back to coal, requiring installation of baghouses to treat emissions. This modification involved an extensive evaluation of all existing and proposed emission sources at the factory, to assess the cumulative air quality and odour impacts for comparison with relevant limits. To ensure emissions from the coal fired boilers meet prescribed limits, the EPA and the Department recommended emission limits for the boilers and quarterly monitoring for particulates, sulfur dioxide (SO₂), oxides of nitrogen (NO_x), volatile organic compounds (VOC) and heavy metals.

The Applicant proposes further changes to on-site power generation as part of MOD 16, including construction of a new coal fired boiler and cogeneration plant. These changes have the potential to alter air quality and odour emissions. New plant for processing flour, gluten and starch also contribute to overall emissions from the factory. The key elements of MOD 16 include:

- a new coal-fired cogeneration plant to generate an additional 15 megawatts (MW) of power on site
- a new coal-fired boiler no. 8, with a 40m high emissions stack
- relocate existing coal-fired boiler no. 7 and its existing 26.8 m high stack
- install two new silos to store lime for use in the boilers to reduce emissions of sulphur oxides (SO_x)
- new gluten dryer and conversion of existing gluten dryers to starch dryers
- additional flour mill and changes to existing flour mill exhausts

Air Quality Impact Assessment

The SEE included an air quality impact assessment (AQIA) prepared by GHD. The EPA reviewed the AQIA and requested further information on the boiler emissions, the sulphur content of the coal to be used, emissions from the conversion of the gluten dryers to starch dryers and details of all mitigation measures. GHD provided supplementary information on 25 September 2018 and a revised AQIA on 13 December 2018.

The revised AQIA considered all existing and proposed air emission sources to assess the cumulative emissions from the factory for comparison with relevant limits. The assessment considered odour, dust (particulate matter) and products of combustion, such as carbon monoxide (CO), SO₂, NO_x, heavy metals and VOCs. GHD updated the baseline odour and air dispersion model that was prepared for MOD 13, to add the new emission sources from MOD 16. Note, MODs 14 and 15 did not alter air emissions from the factory.

The EPA reviewed the revised AQIA and requested further clarifications. The EPA noted the revised AQIA predicted slight exceedances of the criteria for SO₂ and NO₂ at the nearest commercial receiver and requested the Applicant demonstrate the modification can be designed to comply with the criteria. The Applicant provided a further revision of the AQIA in February 2019 demonstrating the modification would comply with the criteria at all receivers. Correspondence from the EPA in March 2019 confirmed it was satisfied these issues had been adequately addressed or could be addressed through recommended conditions.

Predicted Emissions

The AQIA predicted odour from the modified factory would comply with the EPA's odour criteria of 6 odour units (OU) at all residential receptor locations. There would be an exceedance of this criteria at receptor C1, the BOC gas site, located immediately adjacent to the factory on the northern side of Bolong Road. This exceedance was considered minor and consistent with the approved SSEEP and subsequent modifications. MOD 16 would not substantially change already approved odour impacts from the factory. **Figure 8** shows the predicted odour contours from the factory with MOD 16, compared with the odour contours from MOD 13. Labels R1 to R4 are residential receivers and C1 to C7 are commercial and industrial receivers.

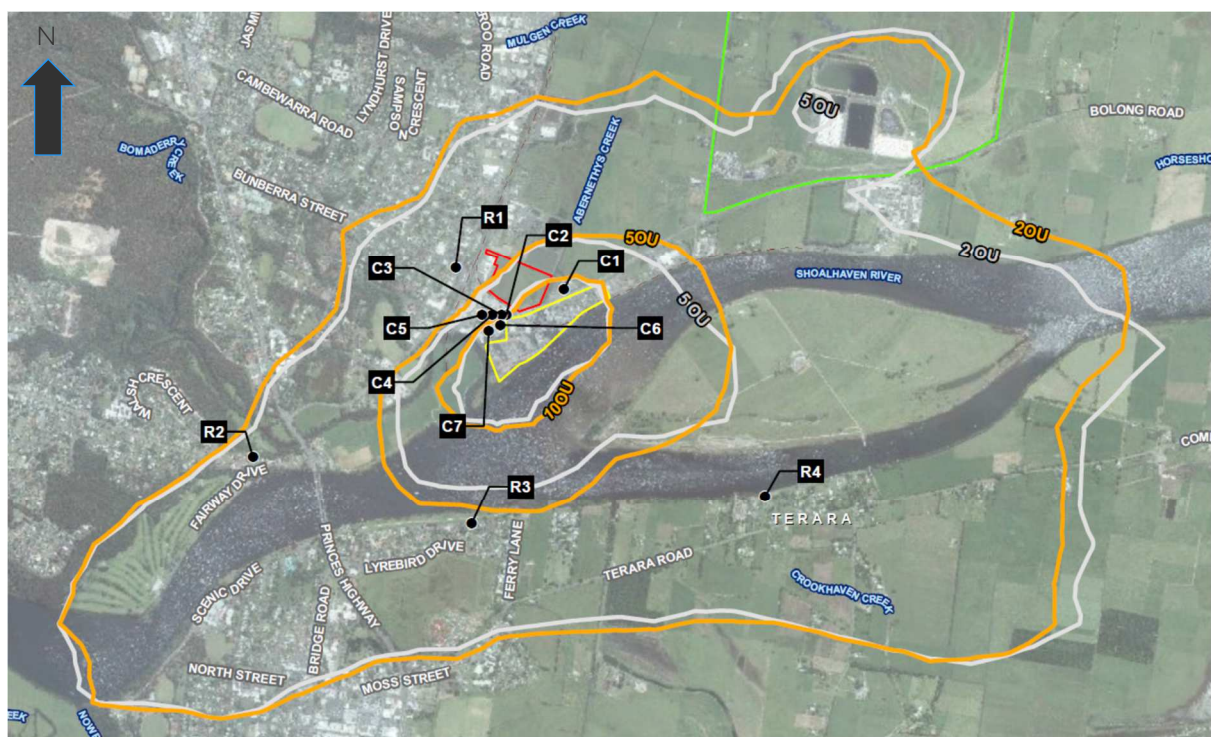


Figure 8: Comparison of Predicted Odour Contours from MOD 16 (orange) and MOD 13 (white)

Emissions of particulates, including fine particles (PM₁₀ and PM_{2.5}) from MOD 16 were predicted to comply with relevant criteria, when considered cumulatively with background levels at all residential receivers. A contemporaneous assessment (analysis of 1 year of background data plus predicted particulate emissions from the modified factory) showed one exceedance of the PM₁₀ 24 hour criteria (62.5ug/m³ compared to criteria of 50ug/m³) at the nearest commercial receptor (C1) for one 24 hour period over the year. Further analysis showed the background concentrations account for 80% of the concentration, with boiler 8 contributing less than 1% of total emissions. EPA acknowledged the highest particulate contributions are from existing sources not associated with the modified factory.

The AQIA also predicted emissions from the combustion of coal and gas in the boilers, referred to as the products of combustion. The air dispersion model predicted emissions of CO, hydrogen fluoride, hydrogen chloride, polycyclic aromatic hydrocarbons (PAHs), VOCs and heavy metals would be below relevant criteria at all residential receivers. The AQIA initially predicted exceedances of the criteria for SO₂ and NO₂ at the nearest commercial receiver. These predictions included the proposed dry sorbent injection (lime dosing system) on boiler 8, designed to reduce SO₂ emissions. To address the concerns raised by the EPA about compliance with the criteria, the Applicant reviewed the AQIA making two key changes. These included a revision to the stack heights on boilers 2 and 4 (noting the stack heights were increased by 18m and 10m respectively as part of MOD 13) and increasing the stack height on the proposed boiler 8 from 39m to 54m. These changes were modelled, showing predicted compliance for SO₂ and NO₂ at all receiver locations. **Figure 9** shows the cumulative maximum predicted SO₂ concentrations.

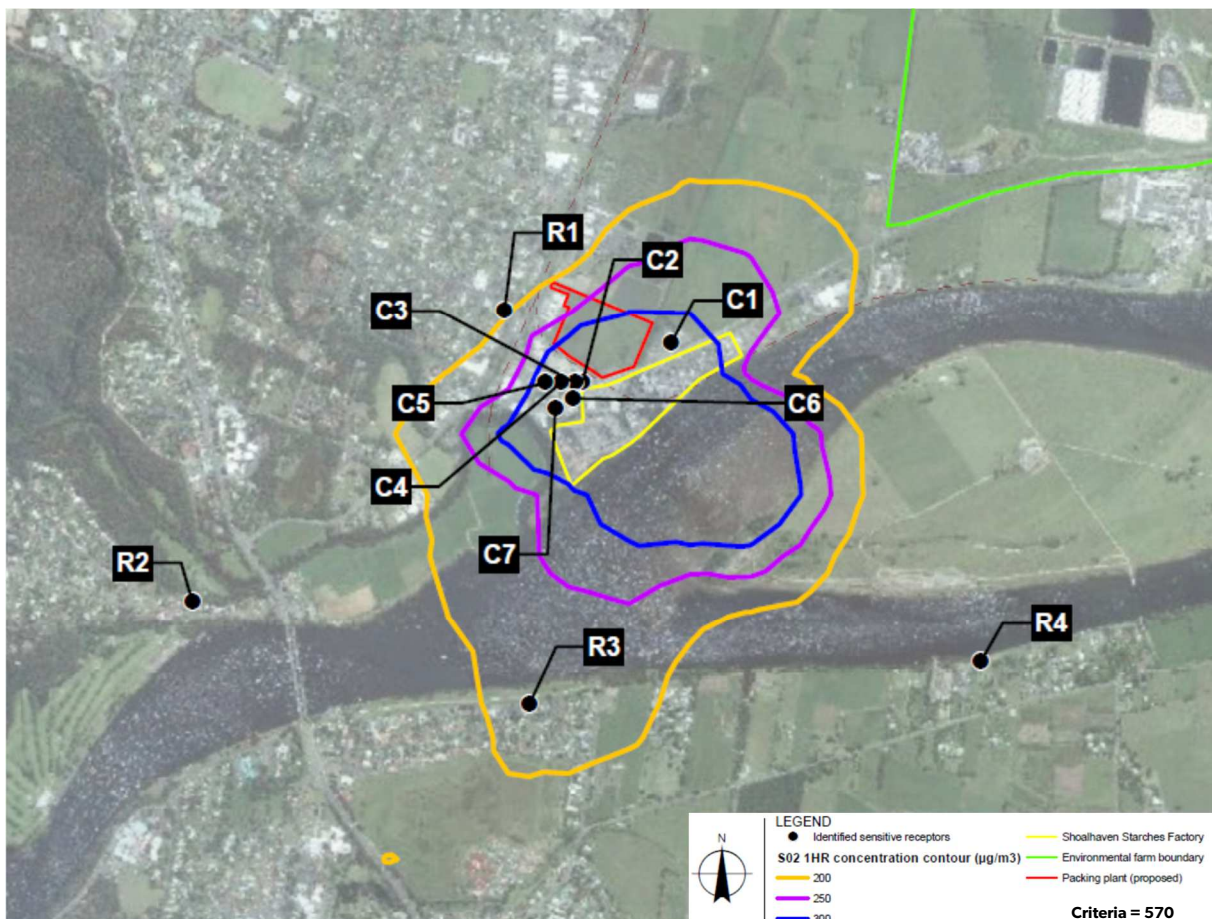


Figure 9: Maximum Predicted Cumulative SO₂ (1 hour average) Ground Level Concentrations (ug/m³)

The EPA's air technical team reviewed the revised AQIA, along with the additional benchmarking study provided by GHD to support the proposed boiler design. EPA noted that raising stack heights to improve dispersion and

meet the criteria should not be used in place of reasonable and feasible measures to reduce emissions at the source, before discharge to atmosphere. EPA also noted the Applicant's commitments to emissions reductions using dry sorbent injection (lime dosing) to reduce SO₂ and use of flue gas recirculation to reduce NO_x. The revised AQIA conservatively modelled the emissions reductions that could be achieved by these measures but noted SO₂ could be reduced by as much as 90% and NO_x by 60%. The EPA cited literature from the European Union, confirming the substantial emissions reductions that can be achieved on new boilers, and recommended more stringent limits for SO₂ and NO_x, consistent with the estimated reductions that can be achieved with lime dosing and flue gas recirculation. The EPA recommended the Applicant provide a best management practice report, prior to constructing boiler 8 to benchmark the final design against best practice and demonstrate all reasonable and feasible mitigation measures are included in the final design. The EPA also recommended operational monitoring of NO_x from all gluten and starch dryers on the site for comparison with predictions. EPA's final advice confirmed its issues had been adequately addressed or can be addressed through the recommended conditions.

Department's Consideration

The Department has reviewed all revisions of the AQIA, met with the EPA and the Applicant to discuss the technical aspects of the air quality assessment and considered the latest advice from the EPA, including the recommended conditions. The Department's assessment concludes the modification can be designed to achieve lower emissions than existing regulatory limits and would not result in off-site air quality or odour impacts at residential or commercial receivers. The Department agrees with the recommendations of the EPA and considers it imperative the new boiler is designed to achieve best management practice for air emissions reductions. The recommended conditions for lower emission limits and best practice management, would ensure the modification maintains the improved air quality outcomes that have been achieved through implementation of the SSEEP.

Amendment of Existing Conditions

The Applicant requested removal of an existing condition (6B) that specifies stack height and diameter, discharge temperature and velocity for the DDG exhaust stack, included as part of MOD 2. The Applicant provided justification from the 2018 Independent Odour Audit, which noted non-compliance with this condition, but stated that effective odour control from the DDG exhaust stack and factory are being achieved overall. The Department discussed this request with the EPA and agreed to remove the condition. Existing conditions remain in place that require quarterly odour monitoring from the DDG exhaust stack and continued reporting via the annual independent odour audits. The Department is satisfied removal of condition 6B would not change odour control and management at the factory.

6.2 Hazards and Risks

Modifications to factory processes and equipment have the potential to increase hazards and risks at the factory. Pinnacle Risk Management (Pinnacle) prepared a Preliminary Hazard Analysis (PHA) to assess the potential hazardous events and corresponding risks associated with the modification. The PHA was prepared in accordance with the Department's Hazardous Industry Planning and Advisory Paper (HIPAP) No.6 – Hazard Analysis. The PHA evaluated the level of risk to off-site land uses and compared this with the Department's land use safety risk criteria (detailed in HIPAP No. 4).

The PHA identified potential off-site risks from the production, handling and storage of hazardous materials, including:

- grain dust from wheat including flour, gluten and starch
- natural gas feed to the burners for heating purposes
- coal (a combustible solid)

- corrosive substances, sodium hydroxide (caustic), hydrochloric acid (HCl), and HCl vapour (toxic if inhaled).

The potential accidents involving these materials are fires, explosions (including dust explosion) and release of corrosive substances to the environment. Scenarios that can cause fire propagation risk are:

- a dust explosion within one flour mill building can propagate to the other
- dust explosions in the new gluten dryer 8 building have the potential to cause damage to the starch dryer 5 building and vice versa
- natural gas releases with ignition (coal boilers, cogeneration plant, boiler 7 relocation) have the potential for propagation
- boiler ruptures and steam turbine catastrophic failures (from overspeed and blades being ejected) can result in propagation
- the rail intake pit process involves the use of bucket elevators, that have a relatively high likelihood of internal dust explosions and potential propagation to upstream and downstream equipment at the rail intake pit.

The PHA noted the proposed equipment would be designed to meet relevant Australian and European standards to prevent and mitigate risks, consequence escalation and fire propagation.

The PHA concluded the risks from the modification would comply with the Department's risk criteria for fatality risk, injury risk, toxic exposure and propagation due to fire and explosion. The PHA concluded societal risk, area cumulative risk and environmental risk would be acceptable. The primary reason for the low risk levels is that any significant level of impact would be contained on site. The PHA concluded the proposed modification will have negligible impact on the cumulative risk results for the local area, as the significant radiant heat levels and or explosion overpressures are local to the equipment and do not reach other sensitive land uses located off site. The PHA included recommendations for the explosion vents, the bucket elevator and the new switch room.

The Department reviewed the PHA and noted it demonstrates the risk from the site complies with the criteria adopted in NSW for new developments. The study also provides sufficient information on the safeguards to be implemented to ensure the low levels of risk are maintained. Based on the information provided, and assuming all safeguards are in place and maintained, the Department is satisfied the development does not impose an unacceptable risk to surrounding land uses.

The PHA qualitatively estimates the risks from dust explosion and release of corrosive materials to the environment and concludes these materials will not pose significant risk to surrounding land uses, assuming all listed control measures are implemented and maintained. The Department recommends the specific control measures are detailed in a Final Hazard Analysis (FHA) for the entire site, approved by the Planning Secretary prior to construction. The FHA shall address cumulative and knock-on effects in potential high risk areas of the site.

The Department also recommends the Applicant undertake a design review process through a Hazard and Operability Study (HAZOP) for relevant components of the modification, such as the cationic starch process, starch dryer and cooler, gluten dryer, boiler 8 and cogeneration processes.

The Department recommends the Applicant update the existing hazard studies and plans for the factory to include the modification. This includes the Site-Wide Fire Safety Study, Emergency Plan and Safety Management System. The modifications must also be included in subsequent hazard audits of the factory. FRNSW reviewed the modification and recommended a Fire Safety Study be prepared considering the modification in the context of the entire site. With these conditions in place, the Department's assessment concludes the hazards and risks of the modification would be appropriately managed.

6.3 Other Issues

The Department's assessment is provided in **Table 3**.

Table 3 | Assessment of Issues

Findings	Recommended Condition
Traffic, Access and Parking	
<ul style="list-style-type: none"> • The modification has the potential to increase traffic movements on Bolong Road through increased truck movements and would also change on-site parking areas. • The SEE included a traffic impact assessment (TIA) which noted: <ul style="list-style-type: none"> - there would be no change to existing site accesses and 26 car parking spaces would be relocated within the site - the modification would increase operational staff by 5 and require a maximum of 80 construction staff at any one time - when operational, the modification would generate an additional 26 heavy vehicle trips per day (tpd) and 10 light vehicle tpd, equating to a maximum of 8 additional vehicle trips in peak periods. This includes coal and lime transport to site, removal of fly ash from the boilers to the environmental farm and transfer of starch to on-site storage areas - during construction, the modification would generate an additional 24 light vehicle trips in peak hour periods, and a small number of additional heavy vehicle trips associated with concrete pours and deliveries - the small volume of additional flour imported via rail would be accommodated within existing rail wagons - parking demand for permanent and construction staff would be accommodated within the existing parking areas on site • The TIA concluded the modification would not have adverse impacts on the road network, intersections or site accesses during construction and operation. The TIA noted construction traffic would not coincide with commuter peak periods and would be limited to 12 months, within minimal impact on the road network. • Council, as the relevant roads authority, requested the relocated car park be sealed with an all-weather aggregate surface and spaces clearly delineated. Council recommended the Applicant maintain the condition of Bolong Road across the site frontage for the duration of construction works. • The Department agrees with the conclusions of the TIA and the recommendations of Council and has included these in the modified conditions. The Department's assessment concludes the modification would have minor impacts on Bolong Road and the broader road network. 	<p>Require the Applicant to:</p> <ul style="list-style-type: none"> • include measures to maintain Bolong Road during construction in a Construction Traffic Management Plan • provide an all-weather aggregate surface for the relocated carpark on the BOC gas site. <p>Manage via existing conditions requiring:</p> <ul style="list-style-type: none"> • delineation of parking spaces with paint or plastic disc markers.
Noise	
<p><i>New Plant and Equipment</i></p> <ul style="list-style-type: none"> • The main noise sources from the modification include fans, baghouses, pumps, compressors, turbines, dryers, hammer mill, sifter and truck filling. • The consent and Environment Protection Licence (EPL) require new plant to meet a design noise goal of 10 dB(A) less than the noise limits, to ensure cumulative noise from the factory does not exceed the limits at receivers. • The SEE included a noise impact assessment (NIA) which predicted operation of the new equipment would comply with the design noise goals, and the noise limits at all receivers. The predictions were based on concept design criteria for the specialty products building, sifter room, fans, boiler 8 and the cogeneration plant. The NIA indicated a design noise verification 	<p>Require the Applicant to:</p> <ul style="list-style-type: none"> • prepare a construction noise management plan, including scheduled respite periods for piling works. <p>Manage via existing conditions requiring:</p> <ul style="list-style-type: none"> • a design noise verification report prior to construction

Findings	Recommended Condition
<p>would be required prior to construction, to identify if other mitigation controls are needed.</p> <ul style="list-style-type: none"> Noise from construction was predicted to comply with relevant noise goals except for short-term impact piling works for building foundations. The EPA reviewed the NIA and recommended the proposed design specifications be implemented and noise validation monitoring be undertaken within 12 months of operation. The EPA recommended noise management measures for construction, including respite periods for piling. The Department reviewed the NIA, EPA's comments and the Applicant's Annual Report, concluding the modification would meet existing noise limits, provided design criteria are met. The Department notes six-monthly monitoring indicates the existing factory is complying with the noise limits. The existing conditions require design verification prior to construction and noise validation monitoring after operation, consistent with the EPA's recommendation. The Department's assessment concludes the modification would not increase noise levels from the factory above existing limits. The Department recommends the construction noise management plan be updated to include scheduled respite periods for impact piling works. 	<ul style="list-style-type: none"> noise validation monitoring 12 months after operation implement additional noise controls if non-compliance occurs. <p>Update existing conditions as follows:</p> <ul style="list-style-type: none"> change the noise descriptor on the noise limits from L_{10,15 minute} to L_{eq,15 minute} include an updated Statement of Commitments.

Existing Conditions

- Independent audits of the factory identified a non-compliance relating to the enclosure of pumps for noise reduction, identified in the Applicant's Statement of Commitments for the original development. This modification seeks to remove the requirement to enclose the fermenter tank transfer pumps and molecular sieve pumps and compressors, as it is not required to achieve the existing noise limits.
- The Applicant provided an acoustic assessment which measured noise levels from the pumps and demonstrated they are well below the existing noise limits. Six-monthly noise monitoring also shows the factory is complying with the noise limits.
- The Department is satisfied the requirement to enclose these noise sources is no longer required and has included an updated Statement of Commitments in the consent.
- The Department recommends updating the existing noise limit conditions to change the noise descriptor from L_{10,15 minute} to L_{eq,15 minute} consistent with the Noise Policy for Industry 2017 and the EPL.

Wastewater Management

- The Applicant's environmental farm contains a wastewater treatment plant which enables reuse of up to 75% of wastewater within factory processes. The remaining 25% is irrigated onto over 1,000 ha of land that is managed with various crops to take up nutrients and salts.
- The modification would increase the volume of wastewater by 15-18% due to increased flour production on site. The SEE included an assessment of the capacity of the treatment plant to accommodate the additional loads. The assessment concluded the wastewater treatment plant will accommodate the increase in volume and recommended some additional measures to manage peak loads. The Applicant has committed to implement these measures.
- The EPA and DILW requested further information on the capacity of the irrigation areas to accommodate the additional wastewater volumes.
- The Applicant noted the increased wastewater irrigation from the modification is less than the volumes irrigated prior to operation of the wastewater treatment plant in 2012. This is due to the significant reuse of

Require the Applicant to:

- update the existing Wastewater Management Plan to include the management measures identified in the capacity assessment for MOD 16.

Findings

Recommended Condition

wastewater (75%) within the factory. The quality of wastewater irrigated has also improved considerably with implementation of the treatment plant.

- Following a review of the additional information, the EPA advised it was satisfied the existing conditions in the EPL are adequate to regulate any environmental impacts associated with wastewater irrigation. DILW advised the additional information had adequately addressed the matters raised.
- The Department considers the additional wastewater can be effectively managed within the existing wastewater treatment plant and irrigation areas. The Department recommends the Applicant update the existing Wastewater Management Plan to incorporate the measures to manage peak loads.

Flooding

- The Applicant provided a flood compliance report (FCR) to assess potential impacts on flood levels, flows and velocities, given the site's location in an area of high hazard and floodway.
- The FCR concluded the modification would slightly increase peak flood levels in the 1% Annual Exceedance Probability (AEP) upstream, on land largely owned by Shoalhaven Starches. The modification would slightly decrease flood levels downstream, as the works would reduce the amount of flood waters crossing through the site. There would be no impact during smaller more frequent flood events.
- In considering Council's Development on Flood Prone Land DCP 2014 (DCP), the assessment noted the Applicant would need to update its flood management plan to account for 5 additional workers who may be subject to flood risk. The FCR also noted that structural reports would be provided to demonstrate the new buildings and plant are built to withstand flooding.
- Council reviewed the FCR and reiterated the need to update the Flood Management Plan. Council requested the plan also demonstrate the modification would not unduly increase the dependency on emergency services. Council requested structural engineer's reports for new buildings and plant, in accordance with the DCP.
- OEH's submission noted the need for consultation between Council and the Department to ensure modifications meet Council's responsibilities for floodplain risk management.
- The Department notes OEH's comments and routinely consults with Council on each modification. Council has reviewed the FCR and provided recommended conditions for flood risk management.
- The Department considers the modification would have minimal impact on flooding and would be adequately managed by existing conditions. The Department will update these conditions to include the additional recommendation from Council regarding emergency services.

Require the Applicant to:

- update the flood management plan for the modification and demonstrate no additional demand on emergency services.

Manage via existing conditions requiring:

- provision of a structural engineer's report for buildings and structures to certify they are built from flood compatible materials and to withstand the forces of flood waters.

Visual Amenity & Landscaping

- The modification includes new tall structures, including:
 - boiler no. 8 – stack height of 54 m
 - ventilation on the roof of the flour mills, up to 39.6 m high
 - bucket elevator – 43.3 m high
 - specialty products building 26.3 m high and silos at 33.5 m high
 - extension of Starch Dryer 5 building for a baghouse – 36 m high
 - indoor electrical substation – 7 m high at the BOC gas site on the northern side of Bolong Road.
- The SEE included a visual assessment, considering the visibility of the new structures from the key vantage points. The assessment noted the proposed structures are consistent in scale and height to existing structures on the site including the boiler stack at 53 m and flour mill at 34 m.

Require the Applicant to:

- update the landscape plan to include planting along the frontage of the BOC gas site and ensure consistency with current DILW guidelines
- plant the screening vegetation prior to operation of the indoor substation.

Findings

Recommended Condition

- The assessment noted some structures would be visible to passing motorists on Bolong Road and the tallest structures (stacks and bucket elevator) would be visible from the urban area of Bomaderry. Views from North Nowra and Terara are more distant and partially screened by vegetation, however the stacks would be visible above the vegetation.
- The assessment concluded the modification would not have significant adverse visual impacts given the scale and character is consistent with existing structures.
- The Applicant has committed to use non-reflective building materials, cladding colours like other structures on the site and plant vegetation along the frontage of the BOC gas site to screen the indoor substation.
- Council did not raise any concerns regarding visual amenity. DILW requested the Applicant update its vegetation management plan, consistent with current guidelines.
- The Department concludes the proposed structures would blend with the existing industrial character of the site and adjacent industrial areas of Bomaderry and would have minimal visual impact.
- The consent includes conditions for the control of lighting and use of non-reflective building materials which applies to the modification. The Applicant is also required to provide as-constructed details to Airservices Australia for structures above 30 m, as HMAS Albatross is located 10 km from the factory. The Department recommends the Applicant update the landscape plan to include planting along the frontage of the BOC gas site in front of the proposed substation.

Manage via existing conditions requiring the Applicant to:

- control lighting and use non-reflective building materials
- provide as-constructed details to Airservices Australia following construction of structures above 30m.

Riverbank Stability, Contamination and Acid Sulphate Soils (ASS)

- GHD assessed the proximity of proposed structures to the banks of the Shoalhaven River and Abernathy's Creek in relation to riverbank stability and considered potential sources of contamination and ASS in the locations of the proposed new plant.
- The assessment noted the proposed boiler 8, cogeneration plant and lime silos are close to the Shoalhaven River bank and should be supported by non-displacement piles (CFA) to rock. The assessment also recommended weekly observations during construction to assess riverbank condition in this location. All other structures were considered unlikely to influence the stability of the river and creek banks due to their location.
- GHD identified potential for localised contamination of soils with petroleum hydrocarbons from an abandoned underground storage tank (UST) near the proposed specialty products building. The assessment recommended an unexpected finds protocol for excavations and consideration of removal of the UST. The Applicant has committed to undertake further investigations prior to construction, to locate the UST and develop a plan to remove it or manage in place.
- GHD identified the potential for ASS to occur at depths of 3 m or greater and noted the grain intake pit at 3.95 m deep is likely to encounter ASS. Also, where CFA piles are required, ASS may be encountered. The assessment recommended an ASS management plan to cover these works.
- Council and EPA did not comment on these aspects of the modification.
- The Department has evaluated riverbank stability, contamination and acid sulphate soils for several previous modifications at the factory and is satisfied the Applicant's assessment is consistent with findings and recommendations of earlier studies. The Department recommends conditions to avoid additional loads on the riverbank and manage ASS. The Department also recommends the Applicant undertake further investigations into the UST and implement the findings for long-term management of this contamination source, prior to construction of the specialty products building.

Require the Applicant to:

- undertake further investigation to locate the UST and develop measures to remove, or manage the UST, prior to construction of the specialty products building
- implement an ASS management plan, including specific measures for excavation of the grain intake pit and piling
- construct boiler 8, cogeneration plant and lime silos using non-displacement piles to rock and visually monitor the Shoalhaven River bank during construction.

Manage via existing conditions requiring the Applicant to:

- implement an unexpected finds protocol to manage any contamination on site.



7. Evaluation

The Department has assessed the proposed modification in accordance with the relevant requirements of the EP&A Act. On balance, the Department considers the proposed modification is appropriate on the basis that the:

- modification is consistent with relevant strategic plans for the Illawarra-Shoalhaven region
- modification would result in minimal environmental impact beyond the approved development
- air quality would be maintained through implementation of mitigation measures and best management practice for the new boiler, to ensure compliance with more stringent air emission limits
- cumulative risk from the additional infrastructure would be acceptable and the overall factory would continue to comply with the NSW land use safety risk criteria
- modification would not have adverse impacts on the road network during construction and operation, with intersections and site accesses continuing to operate within acceptable limits
- operation of the overall factory, with the new equipment, would meet existing noise limits at residential receivers
- additional wastewater generated by the modification can be effectively managed within the existing wastewater treatment plant and irrigation areas
- modification would have minimal impact on flooding, visual amenity, riverbank stability, contamination and acid sulphate soils.

The Department concludes the proposal is in the public interest and the application is approvable, subject to conditions (outlined in **Appendix B**). This report is hereby presented to the Commission for determination.



8. Recommendation

It is recommended that the Independent Planning Commission:

- **considers** the findings and recommendations of this report; and
- **determines** that the application 06_0228 MOD 16 falls within the scope of section 4.55(2) of the EP&A Act
- **accepts and adopts** all findings and recommendations in this report as the reasons for making the decision to grant consent to the application
- **modify** the consent 06_0228
- **signs** the attached approval of the modification (**Appendix B**)

Recommended by:


Chris Ritchie 25/3/19.
Director, Industry Assessments

Recommended by:


Anthea Sargeant 26/3/19
Executive Director
Key Sites & Industry Assessments



9. *Determination*

The recommendation is: **Adopted by:**

Member of the Commission



Appendices

Appendix A – List of Documents

- Statement of Environmental Effects
http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9611
- Submissions
http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9611
- Response to Submissions
http://www.majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9611

Appendix B – Notice of Modification



Appendix C – Consolidated Consent