



**Shoalhaven Starches Pty Ltd
Expansion Development Consent 06_0228
Annual Environmental Management Report 2025**

Document Control

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1. STATEMENT OF COMPLIANCE

During the reporting period Shoalhaven Starches (SS) has demonstrated a high level of compliance with its Consolidated Development Consent 06_0228 (the 'Consent'). Of the approximately 180 conditions of consent, 5 non-compliances were identified. Table 1 summarises the non-compliances which are further discussed in section 9.1 of the report.

Table 1 Non-compliances Summary

Schedule Condition	Condition Description (summary)	Details	Section in Annual Review
Sch. 3 Cond 12	Noise Limits	Noise monitoring at Nowra in August 2024 exceeded noise limit.	9.1.1
Sch. 3 Cond 12	Noise Limits	Noise monitoring at Terara & Bomaderry in January 2025 exceeded noise limit.	9.1.2
Sch. 3 Cond. 9	Emission Limits – Boiler Stacks	Boiler 5 and 6 stack Sulfur Dioxide (SO ₂) exceeded emission limits.	9.1.3
Sch.3 Cond. 9	Emission Limits – Boiler Stacks	Boiler 5 and 6 stack (Point 35) exceeded the % opacity limit.	9.1.4
Sch.3 Cond. 9A	Emission Limits – Boiler Stacks	Boiler 5 and 6 stack (Point 35) Coal sulfur content >0.4% by weight	9.1.5

N.B. The above non-compliances exclude the non-compliances raised in the 3 yearly Independent Environmental Audits which are discussed in Table 14 and Table 15 of this report.

2. INTRODUCTION

The Annual Environmental Management Report 2025 (AEMR) has been prepared to satisfy Schedule 4, Condition 3 (Annual Reporting) of Shoalhaven Starches Expansion Development Consent 06_0228 issued by the NSW Department of Planning, Housing and Infrastructure (DPHI). The format of the report has been prepared in accordance with the Annual Review Guideline, published by the NSW Government in October 2015.

Table 2 lists the annual reporting requirements and the relevant section in the document where this information can be found.

Table 2 Annual Report Requirements

By the end of October each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the Development to the satisfaction of the Secretary. This review must:	Section in report
a) be submitted to the Secretary by the end of October each year;	-
b) describe the development that was carried out over the previous 12-month period, and the development that is proposed to be carried out over the next year;	4.3 and 10
c) include a summary of monthly production levels over the year;	4.1
d) include a comprehensive review of the monitoring results and complaints records of the Development over the previous year, which includes a comparison of these results against:	6 and 7.1
(i) the relevant statutory requirements, limits or performance measures/criteria;	6
(ii) requirements of any plan or program required under this consent;	6
(iii) the monitoring results of previous years; and	6
(iv) the relevant predictions in the EA;	6
e) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	9.1
f) identify any trends in the monitoring data over the life of the Development;	6
g) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and	6
h) describe what measures will be implemented over the next year to improve the environmental performance of the Development.	6 and 10

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, beverage and industrial markets both locally and internationally.

Biogas generated from the anaerobic wastewater treatment process is recovered and used in the gas-fired boilers located at the factory for process heat, reducing the site's use of Natural Gas and coal.

This Project Approval (now referred to as a 'Development Consent') enables Shoalhaven Starches to increase its ethanol production at its Bomaderry Plant from 126 million litres per year up to 300 million litres per year. The Consent also consolidated all previous approvals into the one Consolidated Development Consent 06 0228.

Unfortunately, the expected increase in demand for ethanol to meet the demand arising from this mandate has not occurred due largely from a failure of the mandate to be imposed on petroleum suppliers. As a result, Shoalhaven Starches have been investigating alternative markets for the ethanol that is and will be produced at the Bomaderry plant in accordance with the Development Consent.

Figure 1 shows the Shoalhaven Starches Development Consent site boundary which includes the Factory and Environmental Farm operations.

3. CONSENTS AND LICENCES

Shoalhaven Starches operates primarily under one consolidated Development Consent 06_0228 (the 'Consent') issued by the NSW Department of Planning and Environment on the 28th January 2009. The issue of this Consent included the surrender of all previous development consents and project approvals.

Compliance with the site's Environment Protection Licence (EPL) 883 is reported annually to the NSW Environment Protection Authority (EPA) via the EPA Annual Return and EPA Annual System Performance Report.

Several development applications to modify the Consent and the associated environmental assessments (EA) have been approved by the DPHI.

Table 3 lists the site's current approved modifications (MODs) to the Consent and the current EPA licence.

Table 3 Development Consent and Licences

Consent Number	Description	Date Issued
06_0228	Shoalhaven Starches Expansion Project	28-1-2009
MP06_0228 MOD 1	Deletion of Dried Distillers Grain (DDG) Pelletiser	30-9-2011
MP06_0228 MOD 2	Operational & Energy Efficiency Improvements	14-9-2012
MP06_0228 MOD 3	Relocation of car park	9-10-2012
MP06_0228 MOD 4	Modification to the footprint, design and location of Dried Distillers Grain (DDG) Pelletising Plant	25-3-2014
MP06_0228 MOD 5	Modification to the footprint, design and odour controls on the Dried Distillers Grain (DDG) Pelletising Plant	16-9-2015
MP06_0228 MOD 6	Modification to demolish a building and construct a temporary car park	25-11-2015
MP06_0228 MOD 7	Relocation of Starch Dryer No.5	18-1-2016
MP06_0228 MOD 8	Alterations to Existing Flour Mill	1-3-2016
MP06_0228 MOD 9	Packing Plant	8-3-2017
MP06_0228 MOD 10	Flour Mill B	18-4-2017
MP06_0228 MOD 11	DDGS Dryers	1-9-2017
MP06_0228 MOD 12	Beverage Grade Ethanol	1-9-2017
MP06_0228 MOD 13	Conversion of Boilers	18-1-2018
MP06_0228 MOD 14	Use of Paper Mill Site	27-4-2018
MP06_0228 MOD 15	Carbon Dioxide Plant	7-8-2018
MP06_0228 MOD 16	Flour, Gluten and Starch Increase	18-6-2019
MP06_0228 MOD 17	Relocation of the approved No.5 Starch Dryer baghouse, installation of a service lift, alterations to the Specialty Products Building and Product Dryer Building including increase of building footprint, elevation of service conduit and alternative woodchip fuel source for Boilers 2 and 4.	23-10-2020
MP06_0228 MOD 18	Relocation of gas fired boiler to enable the production of hand sanitizer grade ethanol and the repurposing of existing de-fatting plant for production of hand sanitizer.	4-9-2020
MP06_0228 MOD 19	Expansion of the ethanol distillery plant including new distillery columns, three ethanol storage tanks and cooling towers to facilitate the production of 100 mega litres (ML) of beverage grade ethanol within the approved limits and additional site infrastructure.	8-3-2021
MP06_0228 MOD 20	Supagas Additional Storage Vessels	26-10-2021

MP06_0228 MOD 21	Amendments to packing Plant	16-5-2022
MP06_0228 MOD 23	Gas Fired Co-Generation Plant	28-4-2022
MP06_0228 MOD 24	Gluten Dyer No.8 Alterations	15-2-2022
MP06_0228 MOD 25	Extend existing rail line, extension to the product Dryers 3 & 4 building & installation of starch grinding baghouses.	5-6-2025
MP06_0228 MOD 27	Waste Water Buffer Tank	5-10-2022
MP06_0228 MOD 28	Temporary Emergency Grain Storage	20-6-2023
MP06_0228 MOD 29	MVR Evaporators and Substations	19-12-2024
Licence Number	Description	Version Date
883	Environment Protection Licence 883	3-6-2025

4. OPERATIONS SUMMARY

4.1 LIMITS ON CONSENT

The limits on Consent, as required under Schedule 2, Condition 6 are:

(1) The Applicant must not produce on site:

- a) more than 1,112,800 tonnes of industrial grade flour per year; and*
- b) more than 300 million litres of ethanol per year*
- c) more than 1.5 million litres of hand sanitiser per year*

The annual reporting requirements as stipulated in Schedule 4, Condition 3 c) require a summary of monthly production levels over the year. A summary of monthly production levels for flour and ethanol in 2024 are shown in Figure 2 and Figure 3.

Figure 2 - Monthly Ethanol Production Volumes

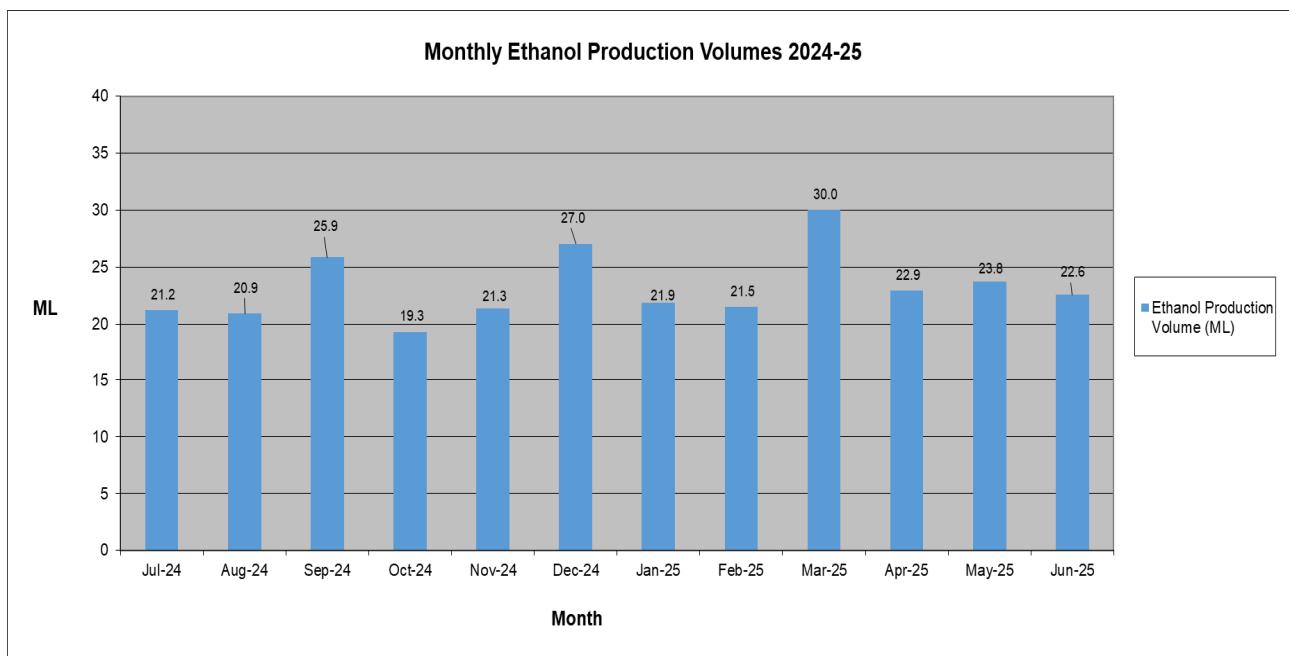
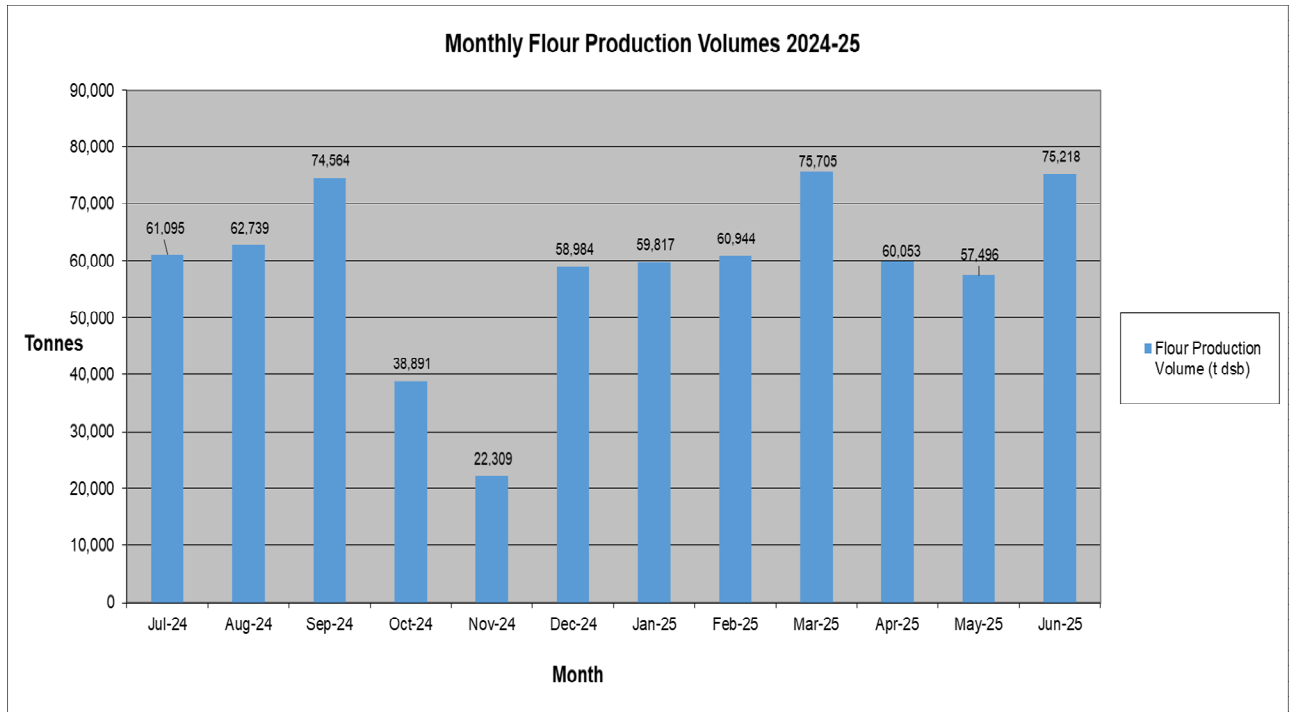


Figure 3 - Monthly Flour Production Volumes



A comparison of annual production levels from previous years against the approved production volumes are shown in Figure 4 and Figure 5.

Figure 4 Annual Ethanol Production Volumes

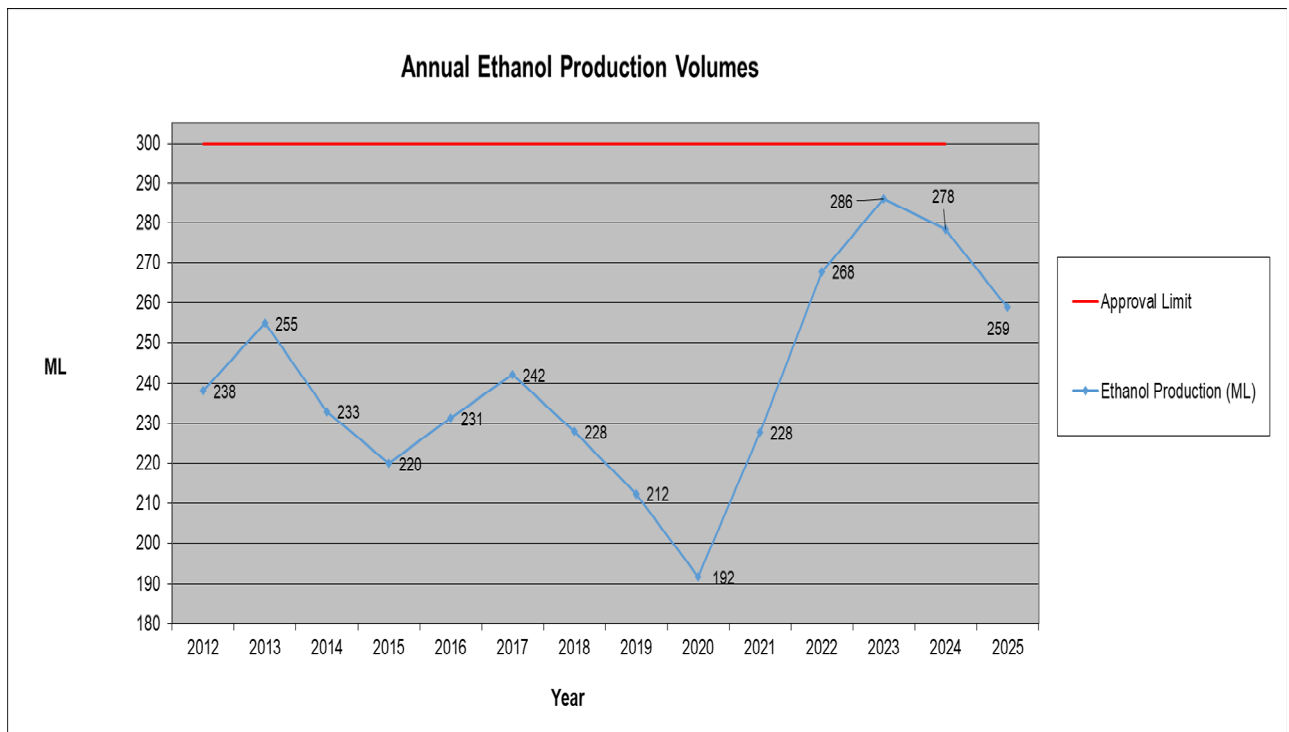
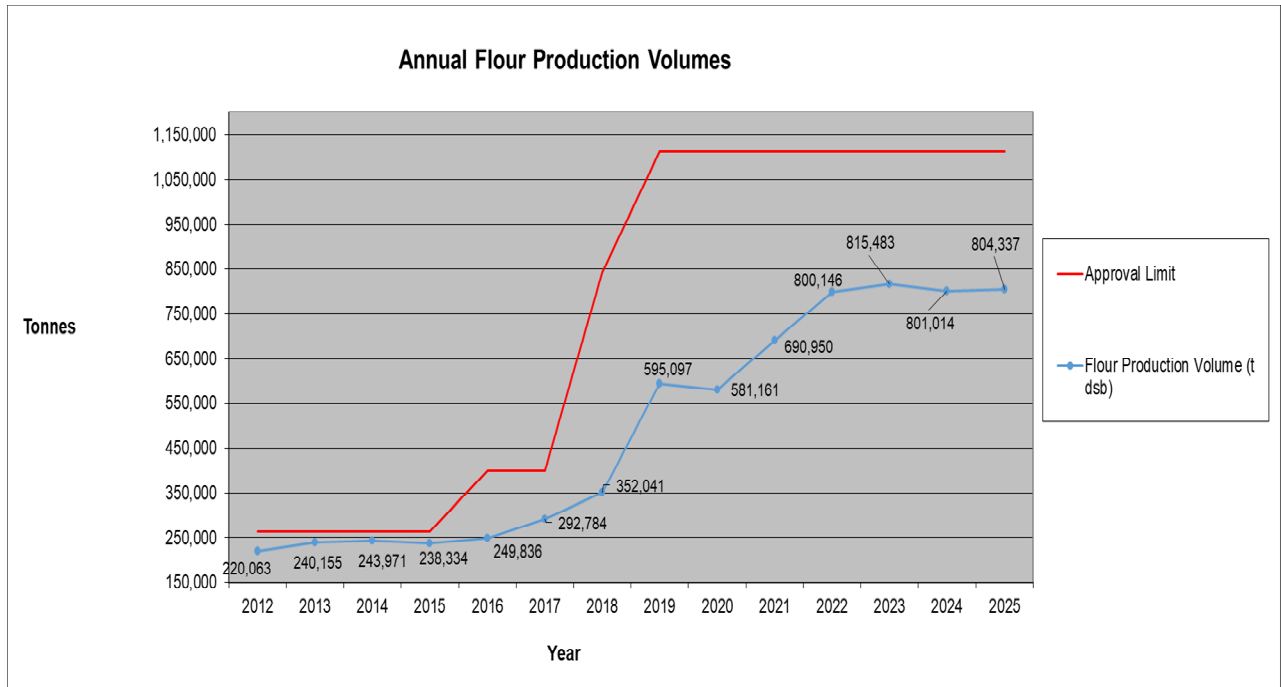


Figure 5 Annual Flour Production Volumes



4.2 HOURS OF OPERATION

The construction and operation hours for the site are carried out in accordance with schedule 3, condition 11 of the Consent, which are shown in Table 4 below.

Table 4 Construction and Operation Hours for the Development

Activity	Day	Time
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 1:00pm
	Sunday and Public Holidays	Nil
Piling activities	Monday – Friday	9:00am to 5:00pm
Operation	All days	Any time
<u>Use of Paper Mill site</u>	<u>Monday – Saturday</u>	<u>7:00 am to 6:00 pm</u>
	<u>Sunday and Public Holidays</u>	<u>8:00 am to 6:00 pm</u>

Note: Construction activities may be conducted outside the hours in Table 4 provided that the activities are not audible at any residence beyond the boundary of the site.

4.3 DEVELOPMENT DURING THE REPORTING PERIOD

The following planning and development activities occurred during the reporting period:

- Final stages of construction and pre-commissioning activities on stage 1 of the Packing Plant (MOD 21) involving modifications to the approved Packing Plant (MOD 9) and other works. This MOD was approved in April 2022 and includes the following:
 - amendments to the approved Packing Plant on the northern side of Bolong Road to accommodate the different packaging requirements for this increased range of specialised products.

- o The installation of a wastewater buffer tank adjacent to the existing waste water tank located within the vicinity of the water treatment plant and waste water storage ponds located on the Environmental Farm;
 - o The installation of an Ethanol Nitrogen Generator and storage vessels within the Shoalhaven Starches factory site.
 - o The installation of an Indirect Cooking plant within the Shoalhaven Starches factory site
 - o The installation of an additional two fermentation tanks within the eastern part of the site.
 - o Project Approval as well as the coal fired co-generation plant approved under Mod 16.
- Approval in December 2024 to construct additional evaporators and substations (MOD 29), which includes the following:
 - Stillage evaporator upgrades**
 - o Thin stillage evaporator which includes the installation of two new evaporators, finisher unit and cooling towers. Structures will range from 15 m to 30.8 m in height.
 - o Raised electrical substation situated over existing plant room.
 - o Overhead services bridge
 - Biofilter Reconfiguration**
 - o One new biofilter (biofilter #3) unit for odour management. Set back from the Shoalhaven River approximately 30 m
 - Stage 3 ethanol plant upgrade**
 - o Installation of Mechanical Vapour Recompression (MVR) No. 4 and stairwell.
 - o Installation of MVR No. 4 switch room
 - Starch and Glucose Plant Substation**
 - o Structure situated between existing grain plant and top of the Shoalhaven Riverbank with an approximate setback of 3.5 m.
 - o Two level structure where substation is located on the upper level.
 - o Access provided by internal and external stairwells
 - Main distribution substation 0.2 and 0.3**
 - o Low and high voltage substation.
 - o Multi-level structure to support the grain unloader which forms part of Modification 26.
- Approval of the rail line extension modification (MOD 25) application, submitted in February 2024, which includes the following:
 - o Extend the existing rail line from its current terminus at the western boundary of the former Australian Paper Mill (on Lot 1 DP54473) along the southern boundary of the Australian Paper Mill (Lot A DP 384559) before turning on Lot 102 DP 1283484 to head in a northerly direction generally along the eastern boundary of Lot 102 towards the Bolong Road frontage of this land.
 - o The rail line extension will generally comprise two separate rail lines, with the exception towards the terminus of the extended line which will involve a series of three lines to enable maintenance works to be carried out.

- o The rail line will be extended by a distance of approximately 1050 metres. This will include 143 metres maintenance spur railway lines, extending from existing terminus at the western boundary the former APM site to its proposed new terminus at the north-eastern corner of the former APM site.
- o Erect light towers with a modified height of 8.6metres at spacing of not less than 20 metres along the southern and eastern side of the rail line extension. These towers will be located a minimum of 4 metres from the top of the bank with the Shoalhaven River.
- o The carrying out of an upper-level addition to the Product Dryers 3 & 4 building having dimensions of 10 metres by 7 metres and to be erected upon part of the roof and upper level of the existing building and the installation of two starch grinding baghouses within the proposed addition.
- o The proposed addition will increase the overall height of part of this building from 25.65 m AHD to 32.87 m AHD an overall height above existing ground level of 28.84 metres.
- Preparation of modification (MOD 26) application for the erection of additional grain silos at the former Dairy Farmers factory to the east of the Shoalhaven Starches factory site and to construct associated grain handling facilities associated with this grain storage. MOD 26 includes the following aspects:
 - o The installation of three (3) wheat silos to the west of the former Dairy Farmers factory building. Each silo will have the capacity to store approximately 9,000 tonnes of wheat.
 - o Shoalhaven Starches seek to ensure that they are able to store a minimum of one week supply of wheat on site (23,000 tonnes initially). In addition to providing a buffer to interruptions to supply, the multiple silos will also enable Shoalhaven Starches to segregate wheat storage to reflect different quality specifications to enable the blending of wheat with different specifications to ensure a homogenous and consistent quality supply to the Shoalhaven Starches factory operations.
 - o Construct a train and truck unloading facility to the south of the former Dairy Farmers factory building. Wheat that is brought to the site will be loaded into this facility and then delivered to the storage silos by conveyors. The unloading facility will accommodate wheat brought to the site by either rail or road. Whilst the bulk of Shoalhaven Starches raw material is supplied to the site by rail, during times when rail supply is interrupted, wheat will continue to be supplied to the site by road and unloaded into the same system as used for unloading by rail. The unloading facility will have the capacity to unload 1500 tonnes per hour enabling Shoalhaven Starches to unload a train in three (3) hours.
 - o A container inverter to be sited immediately to the west of the proposed silos. If wheat supply is ever required to be imported to the site by container this facility will enable containers filled with imported or locally loaded wheat to be loaded into these hoppers to also enable storage in the silos.
 - o The installation of services and grain conveyor gantry. Wheat that is delivered to the rail and road intake pits will need to be lifted to enable it to be delivered into the silos. The stored grain will then need to be transferred from the bottom of the silos over the rail line and then transferred by conveyor along the southern boundary of the site to be used in the Shoalhaven Starches factory operations located further to the west.
 - o The installation of a weighbridge to be sited to the west of the proposed silos. The weighbridge will provide a commercially calibrated scale to weigh containers of wheat and provide a raw material intake scale.
 - o A maintenance workshop to the south of the container inverter to provide an area where repairs and maintenance can be undertaken. This facility will enable maintenance personnel to respond quickly and efficiently for maintenance and repair tasks to this plant.
 - o A low voltage electricity substation will be positioned adjoining and to the south of the proposed container inverter, while a high voltage substation will be sited adjoining the southern side of the former Dairy Farmers factory building. These substations will provide electricity supply (transformers) and the electrical distribution equipment to operate the grain intake system.
 - o The slight relocation of the existing car parking area located between the Bolong frontage of the site and the former Dairy Farmers factory building to enable heavy vehicle movement along the frontage of the site and then to the rear of the site.

The scope of MOD 26 was changed during the reporting year to include some components of the previous MOD 22 proposal which is no longer being prepared. These components now in the MOD 26 proposal include:

- o Wastewater treatment plant upgrade including the following:
 - o Construction of one in-ground treated effluent storage pond with a capacity of 150 ML.
 - o Convert the existing Wet Weather Storage Ponds No. 1, 2 and 3 into another Anaerobic Digester with a volume of approximately 80 ML.
 - o It is proposed to install an above ground enclosed steel 400 KL Equalisation Tank to the east of the existing SO Basin.
 - o Construction of a building for biogas collection fans from the new Pond 3 digester immediately to the south of the converted Anaerobic Digester.
 - o Installation of Biogas scrubber units.
 - o Interconnecting pipework, pumps and blowers.

Other works proposed in MOD 26 include:

- o Construction of a rail maintenance building at the terminus of the recently approved MOD 25 rail line extension.
- o Construct an Ethanol Maintenance building within the south-eastern part of the main factory site.
- o Construction of a Nitric Acid storage adjacent to existing cooling towers to the west of Abernethys Creek.

- Preparation of MOD 30 which includes proposed modifications to the Carbon Dioxide (CO₂) Plant (Supagas) at the former Dairy Farmers site.

Under the existing approvals for this project, it was envisaged that the site would process up to 50 TPD of CO₂ initially for Stage 1 increasing to 100 TPD at maximum processing capacity.

Supagas propose to now undertake alterations and additions to this existing carbon dioxide plant to process an additional 75 TPD of carbon dioxide bringing the total capacity of the plant at the site up to 165 TPD.

To achieve this increase in processing capability the proposal includes additional CO₂ processing equipment, two additional CO₂ storage vessels, additional cooling towers and other associated equipment.

- Preparation of MOD 31 & MOD 33 which seeks to undertake a range of heat recovery updates that enable infrastructure to capture and transform waste heat into usable energy to drive the ethanol, starch, and gluten manufacturing processes. This modification will result in a reduction of the amount of virgin steam that is required by 75 tph (637,500 tpa), therefore, removing the need to burn natural gas at the onsite co-generation plant and other gas-filled boilers.

The proposed heat recovery upgrades and enabling infrastructure will deliver a transformative, immediate, and ongoing reduction in its Scope 1 emissions of 95,266 tCO₂-e/pta (~25% based on 2023 emissions).

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REPORT

Follow-up actions from the previous AEMR 2024 submitted to the DPHI on the 31st October 2024 are outlined in the DPHI's letter dated 21th December 2024. The DPHI review letter considered that the 2024 annual report generally satisfied Schedule 4, Condition 3 of the Consent as modified and that details of the Odour and Noise pollution reduction studies be included in this report.

The DPHI review letter requested, in accordance with Schedule 4, Condition 6 of the Consent, to update Section 8 'Independent Environmental Audit' of the Annual report referring to the 'draft IEA' prior to uploading on company website.

This request has been completed by Shoalhaven Starches.

6. ENVIRONMENTAL PERFORMANCE

The environmental monitoring reporting requirements under Schedule 4, Condition 3 d), e), f), and g) are as follows:

- d) include a comprehensive review of the monitoring results and complaints records of the Development over the previous year, which includes a comparison of these results against the*
 - (i) the relevant statutory requirements, limits or performance measures/criteria;*
 - (ii) requirements of any plan or program required under this consent;*
 - (iii) the monitoring results of previous years; and*
 - (iv) the relevant predictions in the EA;*
- e) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;*
- f) identify any trends in the monitoring data over the life of the Development;*
- g) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies;*

A summary of the key environmental aspects monitored during the reporting period are shown in the following sections. Comparison against the relevant predictions in the EA and/or EPL limits are shown where applicable and have been updated to include the latest MOD 29 Consent.

6.1 WATER USE

Water is supplied to the Shoalhaven Starches site by Shoalhaven City Council (Council), which includes both potable and raw water supplies. Raw water is referred to water supplied by Council that has been taken from the Shoalhaven River upstream section prior to treatment by the Council's potable water treatment plant.

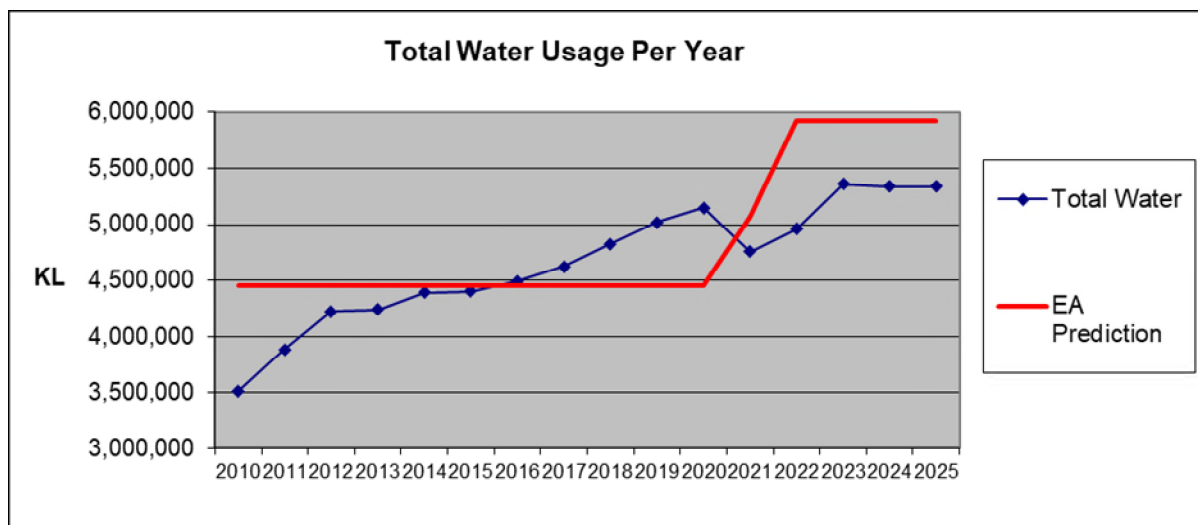
Shoalhaven Starches operates its own integrated wastewater treatment plant and recovers water from its Reverse Osmosis (RO) plant for re-use in its factory operations.

6.1.1 Total Water

Figure 6 shows total water use on site which includes purchased Council water and site RO water use. Total water use has increased by 0.1% in 2025.

Factors that will affect the amount of water used on site includes wheat quality which will vary from season to season, the amount of flour throughput and the types of finished products manufactured based on market demand, with each product having different water usage requirements.

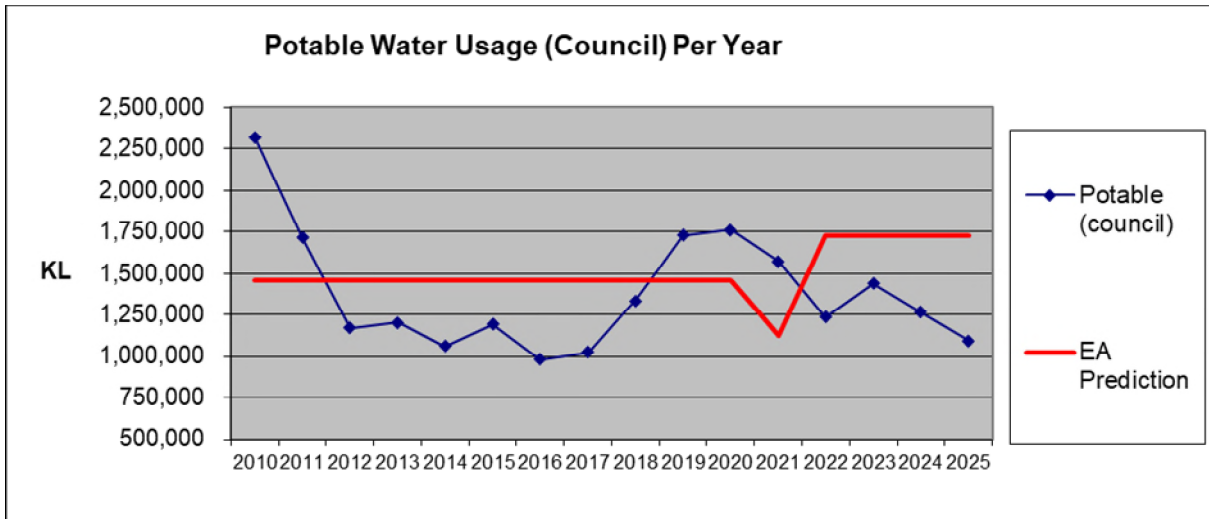
Figure 6 – Total Water Use



6.1.2 Potable Water

Figure 7 shows Council potable water use has decreased by 13.6 % in 2025. The decreased council potable water usage is the result of increased capability to use raw water where possible, especially in site cooling towers.

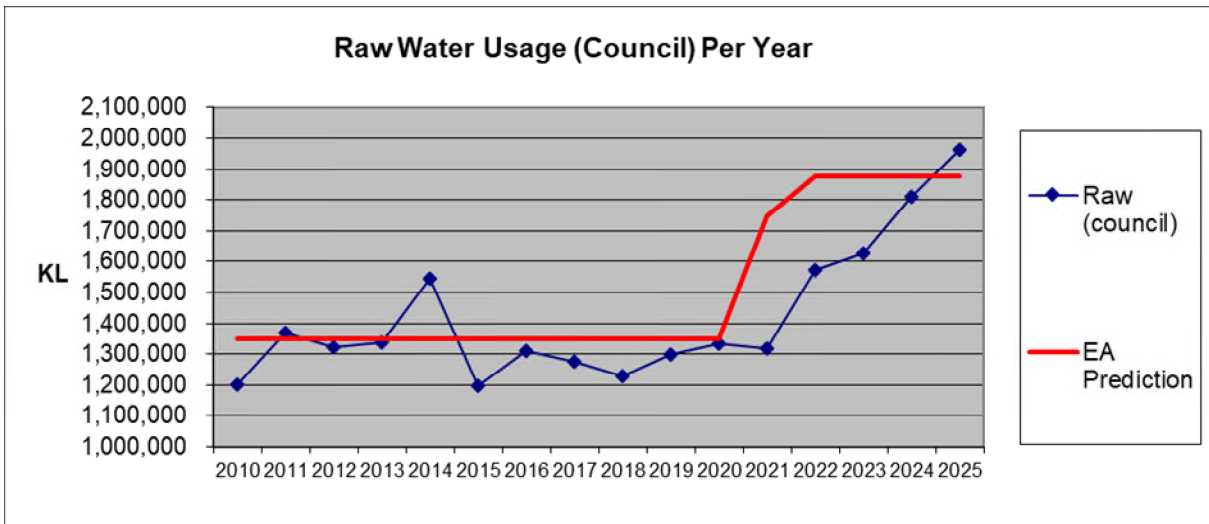
Figure 7 – Potable Water Use



6.1.3 Raw Water

Figure 8 shows council raw water use has increased by 8.4% in 2025. Raw water is used in cooling towers and feedwater for the boilers. Increased usage is a result of replacement of potable water.

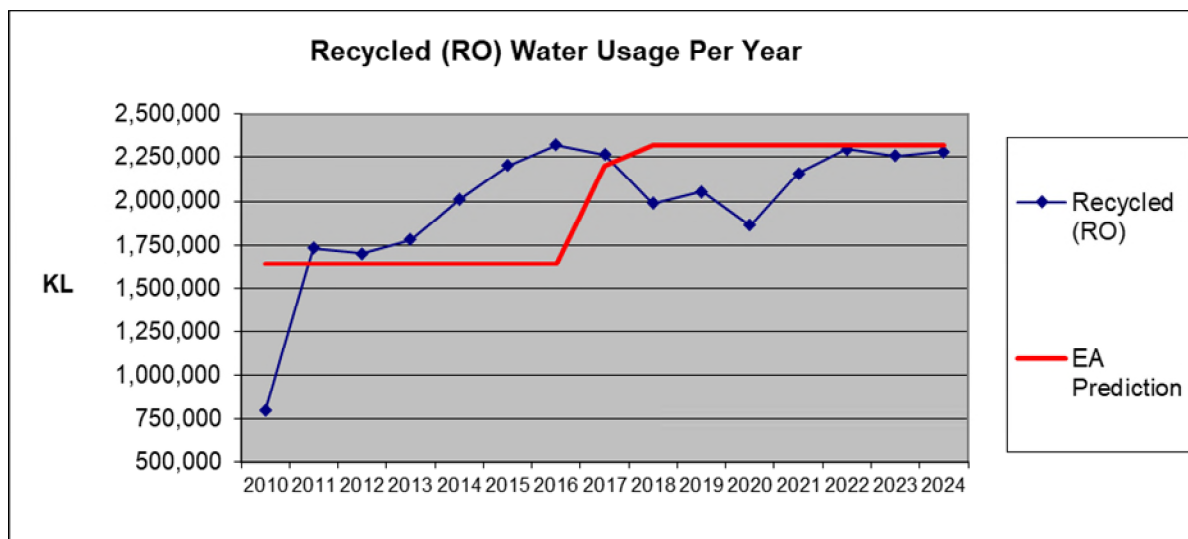
Figure 8 – Raw Water Use



6.1.4 Recycled Water

Treated water from the company's reverse osmosis (RO) plant is re-used back in the factory operations. Figure 9 shows recycled water use has increased by 1.0% in 2025.

Figure 9 – Recycled (RO) Water Use



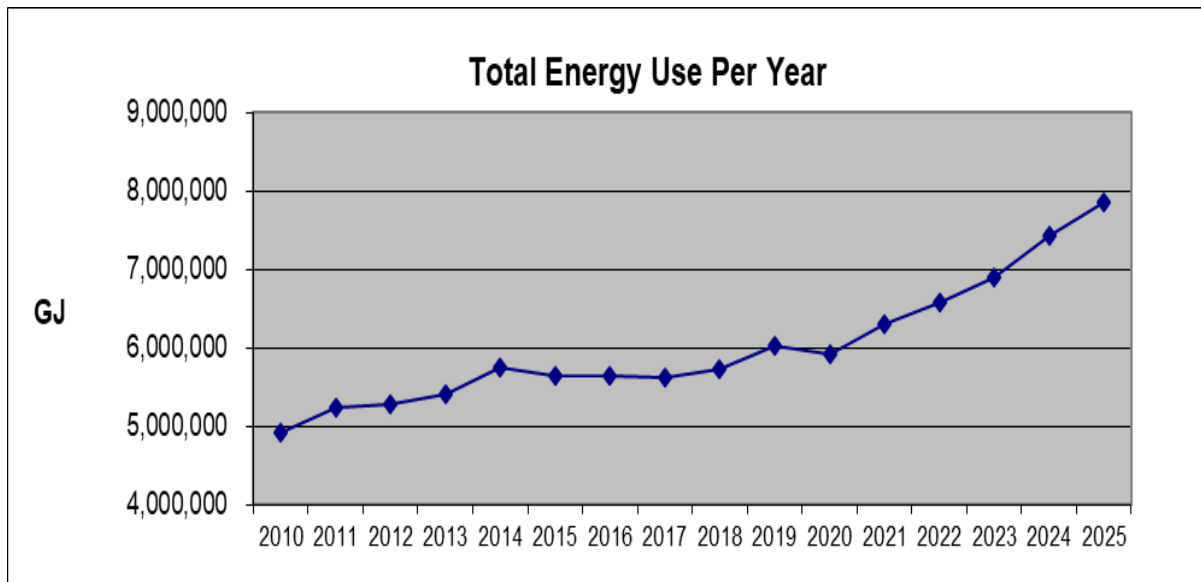
Water use on site is continually monitored and actions implemented to improve water efficiency during the production process. Installation of the company's wastewater treatment plant and increased RO capacity has reduced our council potable water usage since it was installed in 2010-11 (refer to Figure 7).

6.2 ENERGY USE

6.2.1 Total Energy

Figure 10 shows total on-site energy use (which includes coal, natural gas, biogas, and electricity) has increased by **5.6%** in 2025. Energy use will vary depending on the amount of flour processed and the types of finished products manufactured based on market demand, with each product having different energy intensities associated with its production.

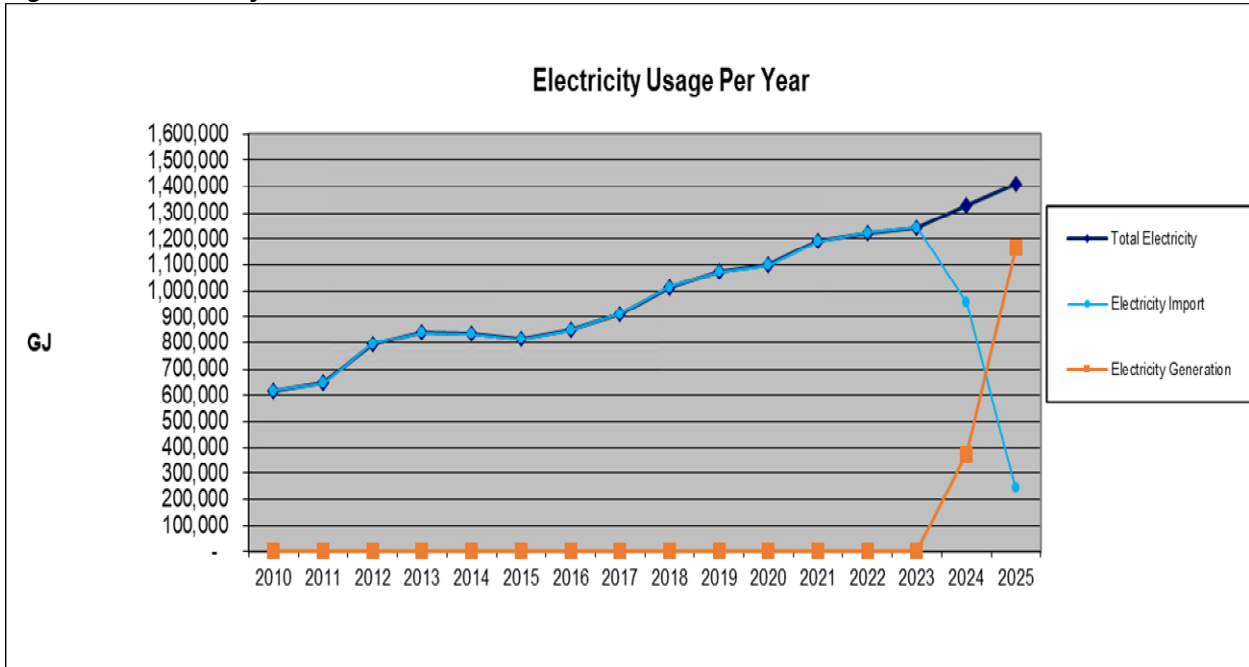
Figure 10 – Total Energy Use



6.2.2 Electricity

Figure 11 shows total electricity use has increased by 6.2% in 2025. With the completion of the Cogeneration Plant we are now using a mixture of onsite generation and imported power.

Figure 11 – Electricity Use



6.3 WASTE

6.3.1 Liquid Waste

Figure 12 shows total factory wastewater volumes to the site's wastewater treatment plant (WWTP) has decreased by 0.5% in 2025.

Figure 12 – Total Liquid Waste Volumes to WWTP

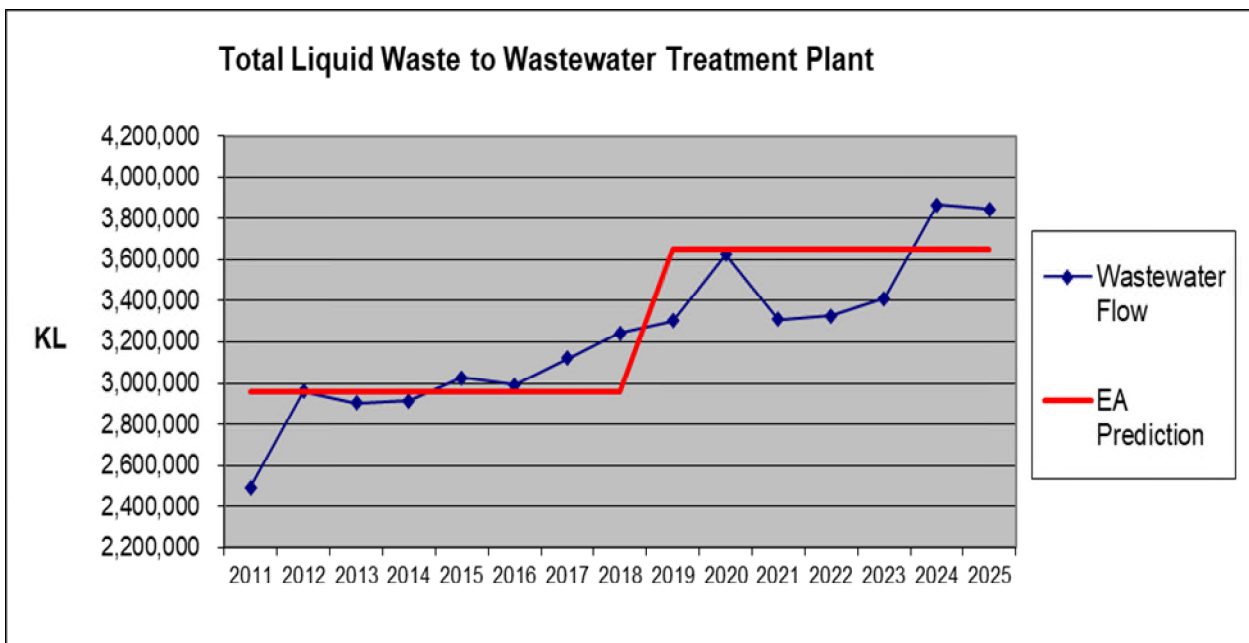
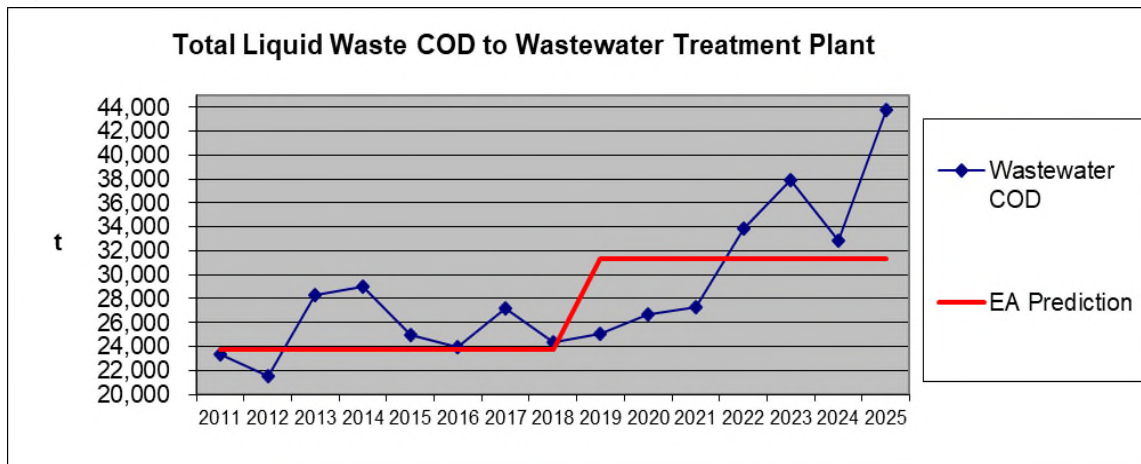


Figure 13 below shows total wastewater chemical oxygen demand (COD) load to the WWTP has increased by 33.3% in 2025. The COD volumes will vary due to errors in measurement uncertainty associated with continuous COD measurements, production throughput and fluctuations in the strength and volume of the wastewater generated from the factory.

Figure 13 – Total COD to WWTP



The WWTP continues to operate effectively as shown by the treated irrigation water quality monitoring results shown in the following section.

6.3.2 Treated Irrigation Water

The wastewater treatment plant (WWTP) continues to perform well since it was installed and began operating in 2011. Surplus treated water that is not passed through the Aerobic Membrane Bio-reactor (MBR) and RO process for factory re-use is stored in ponds for irrigation on the sites Environmental Farm.

Irrigation water quality monitoring is conducted in accordance with the sites EPL (Monitoring Point 2). The average annual results are shown in Figures 14 – 18 (there are no EPL limits prescribed)

Figure 14 Irrigation Water Quality – BOD

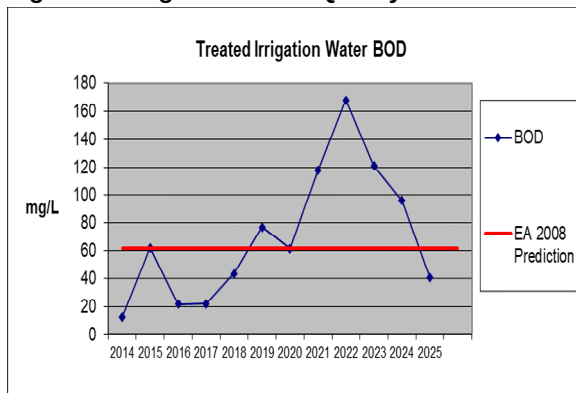


Figure 15 Irrigation Water Quality – Conductivity

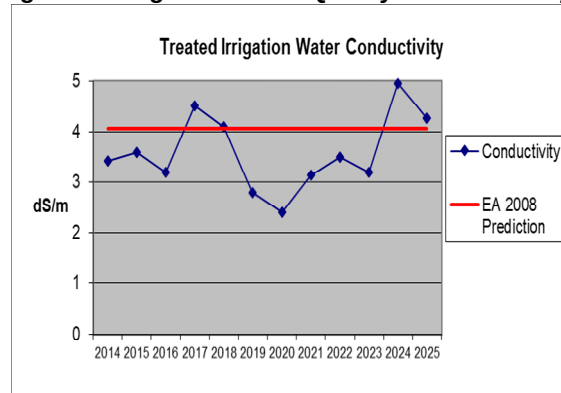


Figure 16 Irrigation Water Quality – Total Nitrogen

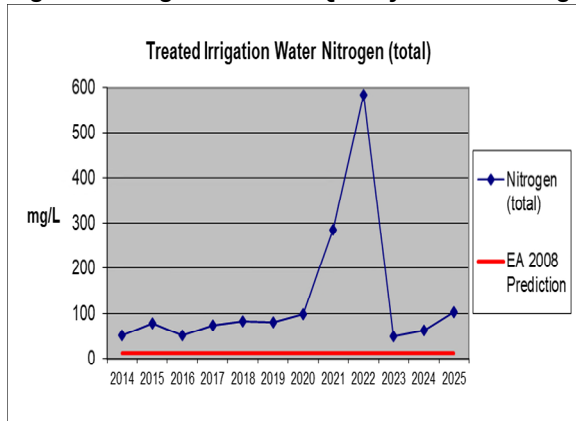


Figure 17 Irrigation Water Quality – Total P

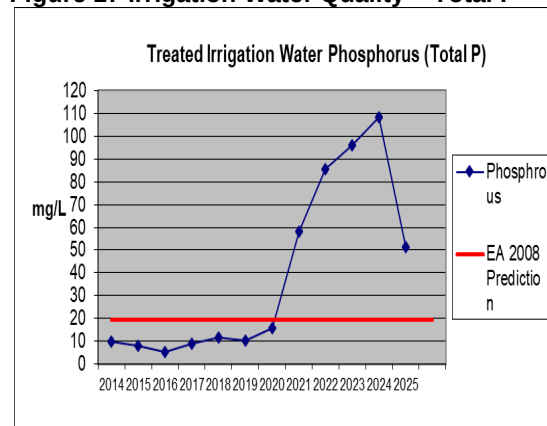
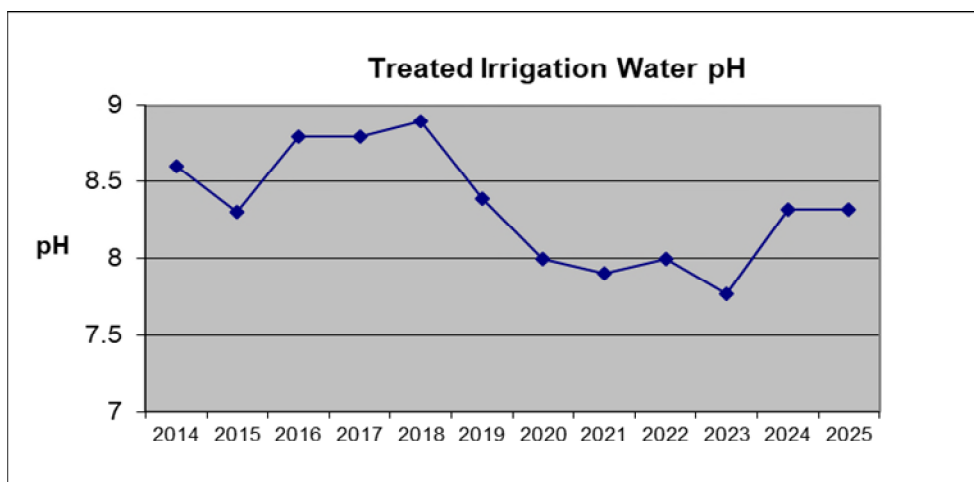


Figure 18 Irrigation Water Quality – pH



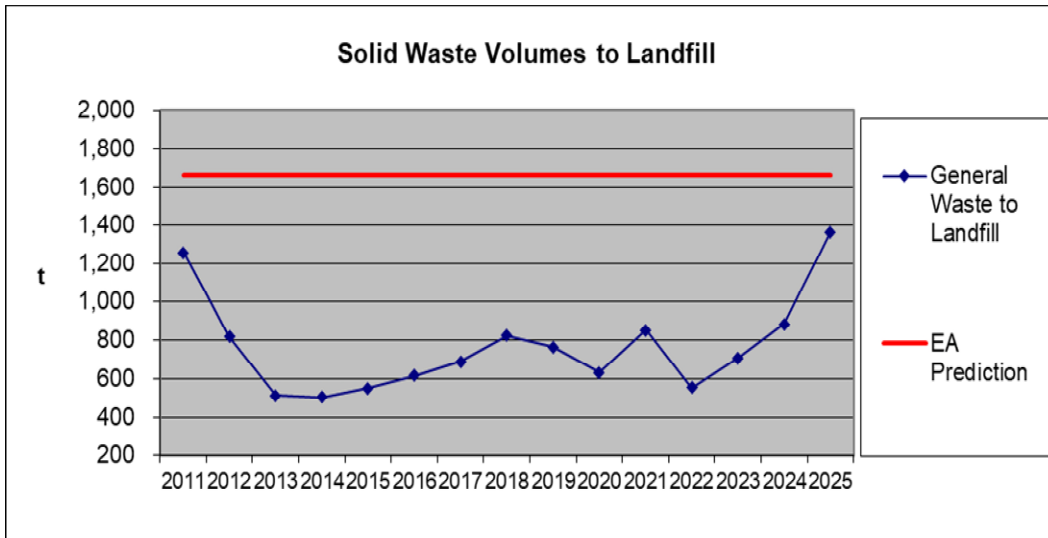
The 2025 treated water results show the conductivity has reduced to slightly above predicted levels in the EA. Total nitrogen (N), Total Phosphorous (P) levels remain above the EA prediction while Biological Oxygen Demand (BOD) has dropped below EA predictions. The uptake of nitrogen and phosphorous for pasture growth outstrips supply from the treated irrigation water. The pH results remain relatively steady (no predictions in the EA).

Continuing elevated Total P levels are the result of increased production of modified starches that utilise phosphorus as a chemical reactant. Factory trials have been implemented to reduce the P levels in the wastewater effluent which have reduced by approximately 50% in 2025 compared to the previous year. Further discussion of the wastewater quality impacts on soil monitoring results is presented in section 6.7 of this report.

6.3.3 Solid Waste

Figure 19 shows solid waste to landfill has increased by 54.9% in 2025, partly as a result of the cleanup of the major grain silo collapse. Better data collection processes from smaller waste service companies and contractors have also resulted in the increase. Solid waste is expected to decrease in 2026 but may not return to previous levels as further expansion projects are completed in the next few years and operations expanded.

Figure 19 – Annual Solid Waste Volumes to Landfill



6.3.4 Waste Recycling

Figure 20 shows total waste recycled has increased by 69.7% in 2025. Figure 21 shows the annual recycled volumes by type during the reporting year.

Volumes of compostable material has increase compared to the previous years due to an improvement in separation processes and diversion from landfill increases.

Waste volumes will vary depending on the number of construction projects that occur during the reporting year.

Figure 20 – Annual Recycled Waste Volumes

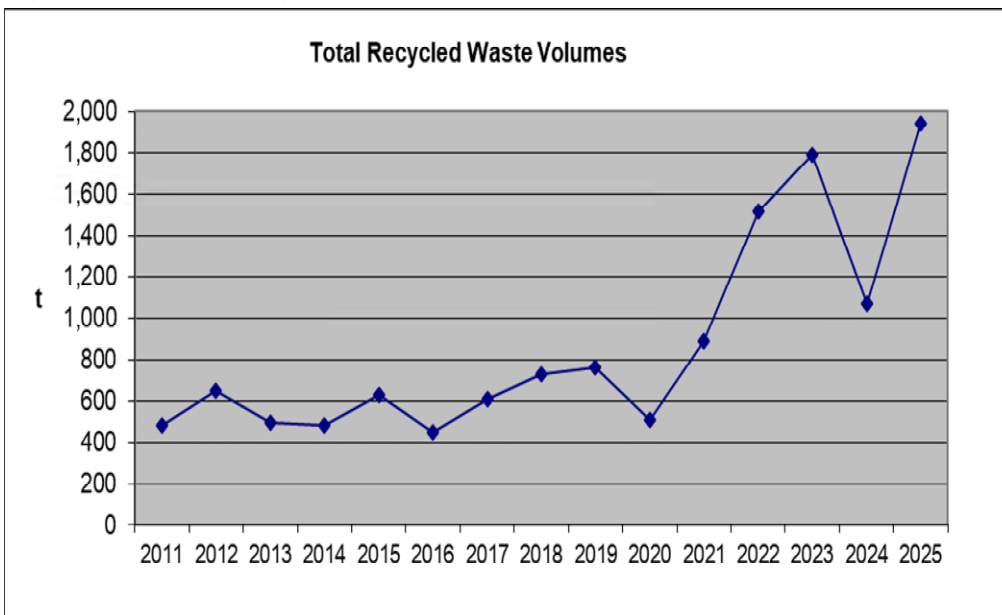
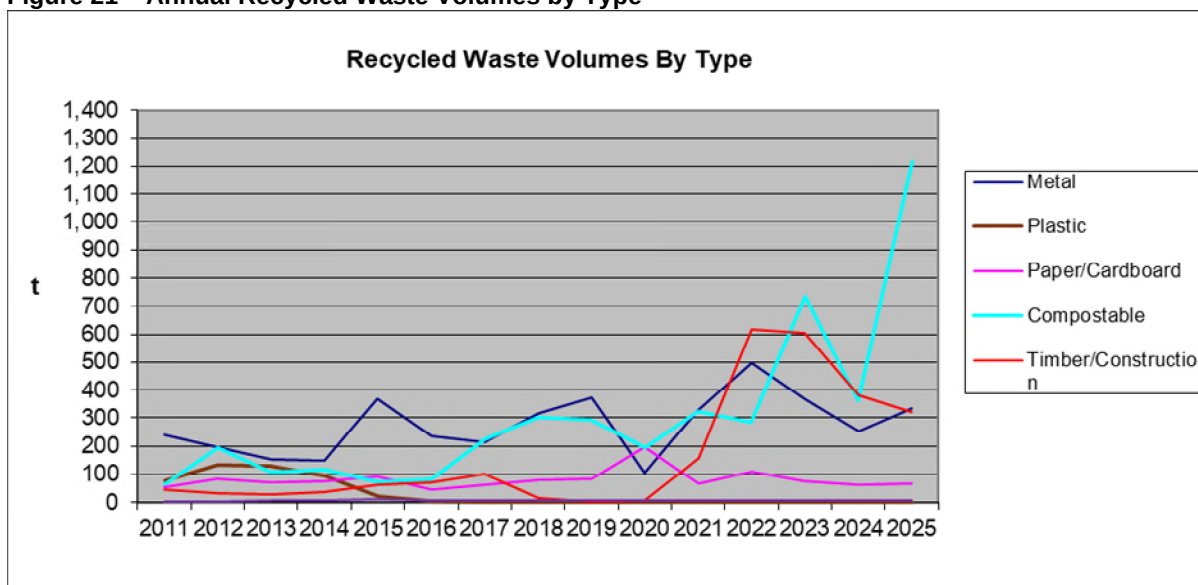


Figure 21 – Annual Recycled Waste Volumes by Type



6.4 AIR EMISSIONS

The air emission testing results of the Boiler stacks, as required by condition 9 of the Consent and the site's EPL is shown in the following sections.

6.4.1 Boilers 5 and 6 Monitoring Results

Quarterly air emission testing for the Boiler 5&6 stack (Monitoring Point 35) was not completed during the reporting year as these boilers have not been running. Boiler 6 is being converted from coal-fired to gas-fired and no longer requires quarterly testing and Boiler 5 remains on stand-by as a back-up boiler.

6.4.2 Boiler 2 Monitoring Results

Quarterly air emission testing for the Boiler 2 stack (Monitoring Point 45) was not completed during the reporting year as this boiler has not been running and is likely to be de-commissioned in the near future.

6.4.3 Boiler 4 Monitoring Results

Quarterly air emission testing for the Boiler 4 stack (Monitoring Point 42) was not completed during the reporting year as this boiler has been converted from coal-fired to gas-fired and no longer requires quarterly emission testing.

Shoalhaven Starches EPL will be updated to reflect the above changes in boiler operations.

6.5 ODOUR

6.5.1 Quarterly Odour Monitoring

Quarterly odour monitoring has been completed in accordance with the site's EPL. There are no specific odour limits (or EA predictions) for the EPL monitoring point sources. Figures 22 to 36 show the historical quarterly odour results up to and including the 2025 reporting year.

Results shown as zero represents the EPL point was not operating or not available on the days of testing.

The red lines shown in Figures 22 and 23 are running averages for all the gluten and starch dryers respectively. Care should be taken in comparing results and identifying trends as the measurement of uncertainty for odour testing is (generally) 3 times the determined value. Based on this, the long-term odour trends for all odour sources remain relatively steady.

Figure 22 - Gluten Dryers No's. 1, 2, 3 & 4 (EPL Point No's 8, 9, 10 & 11 respectively)

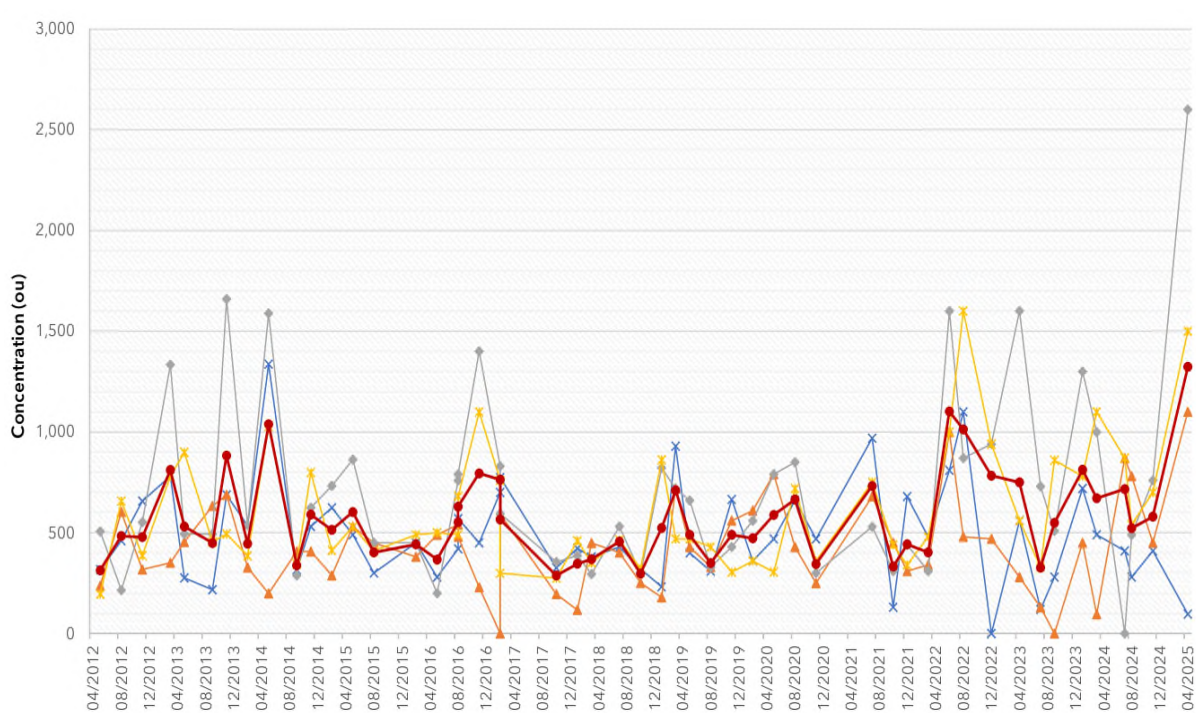
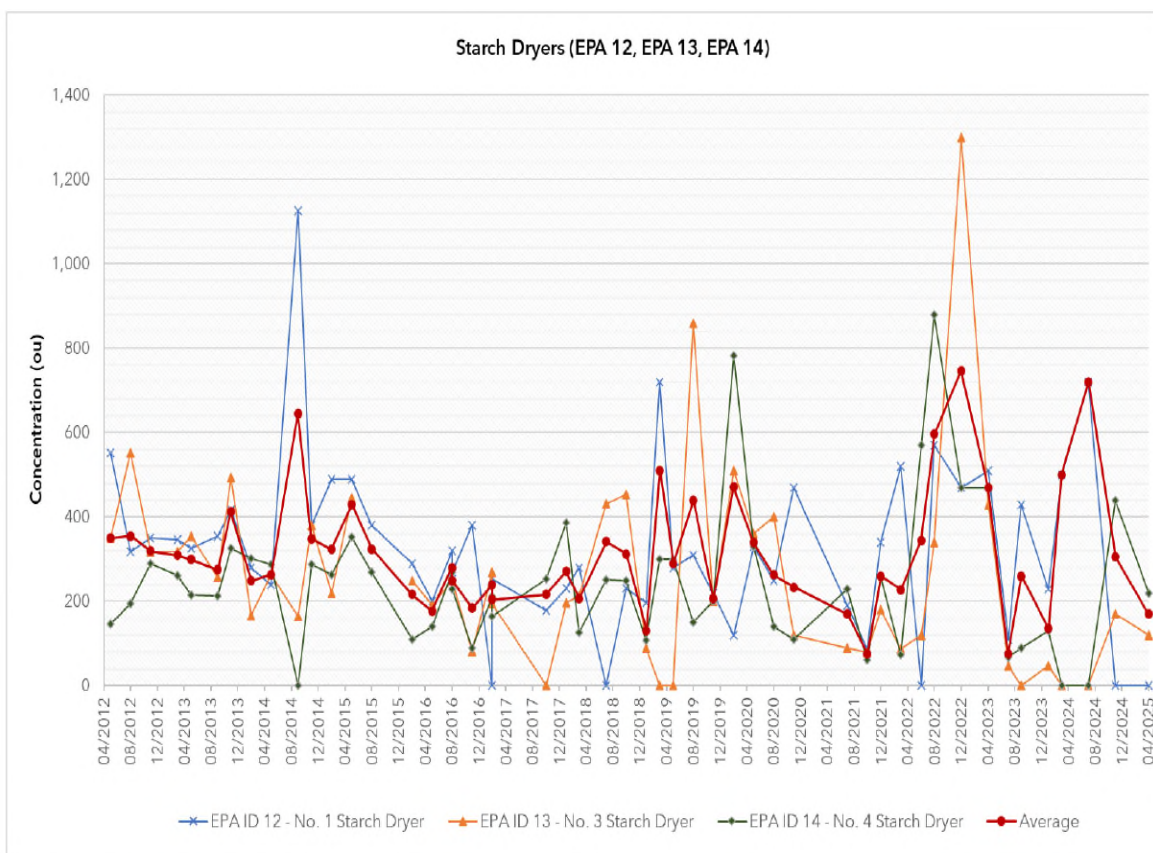
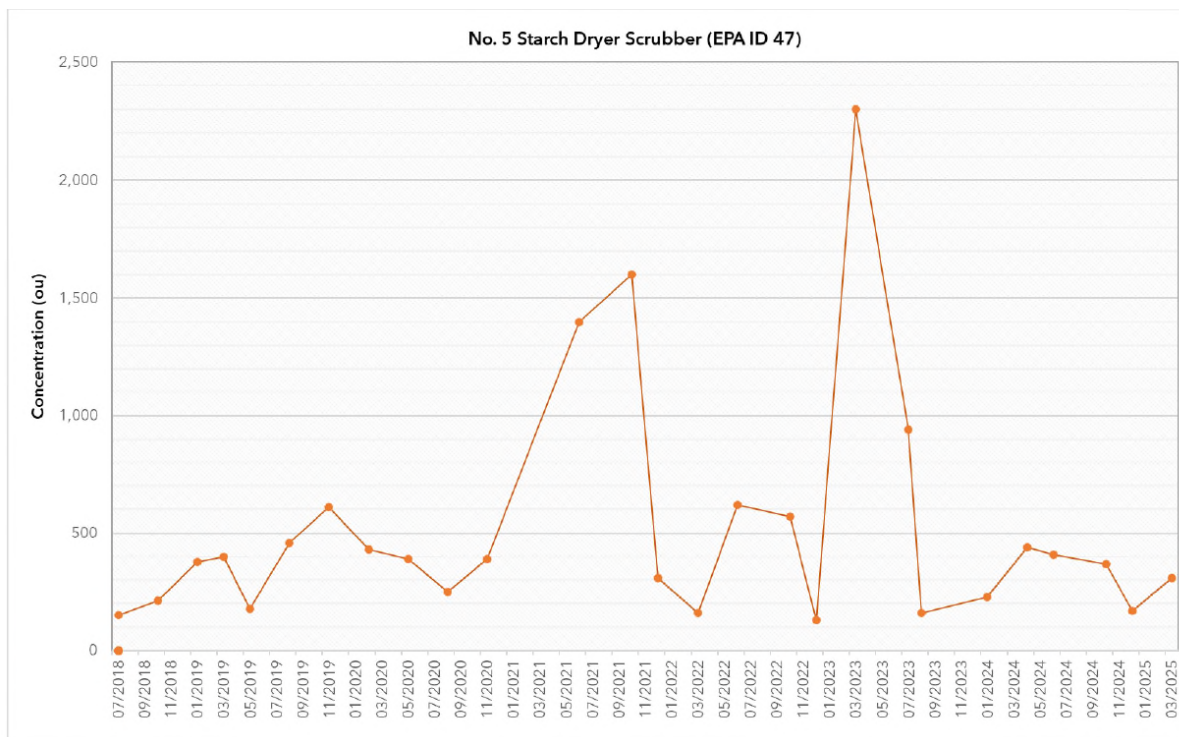


Figure 23 - Starch Dryers No's. 1, 3 & 4 (EPL Point No's. 12, 13 & 14 respectively)



Zero result represents Dryer not operating or unable to be accessed on days of testing.

Figure 24 - Starch Dryer No. 5



Investigations are underway into the cause of recent spikes in odour for Fermenters, but the cause is currently unknown at this stage.

Figure 25 - Fermenter's (EPL Point No. 44)

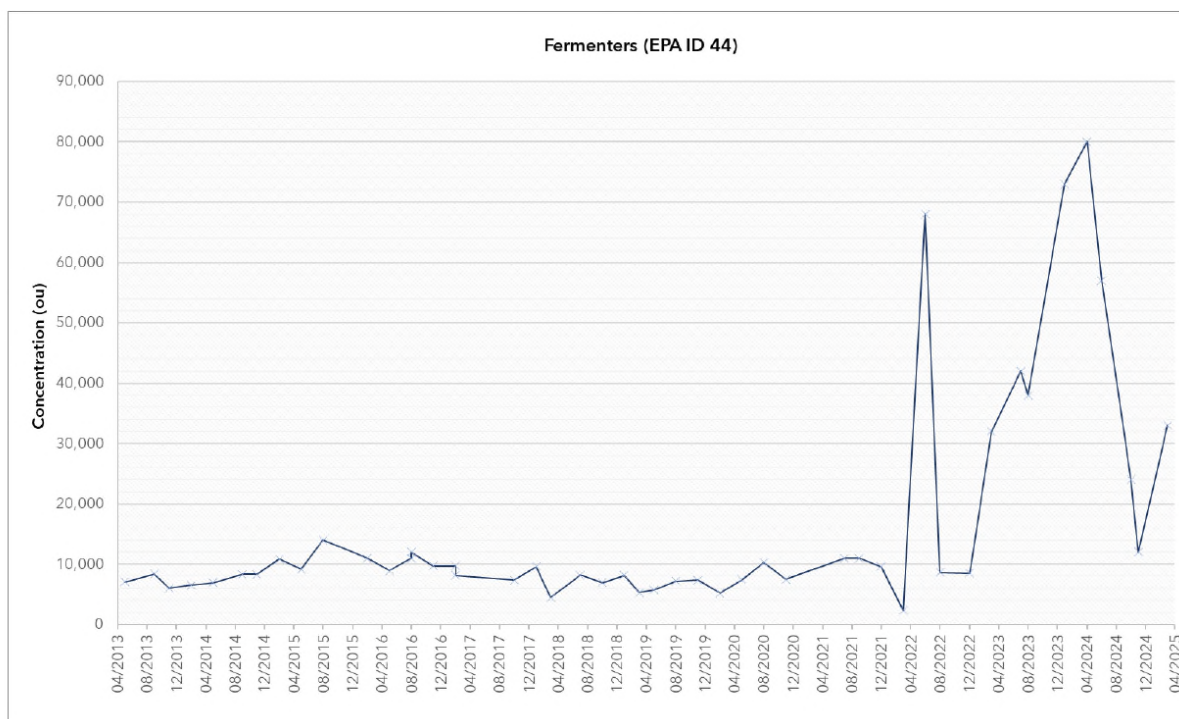
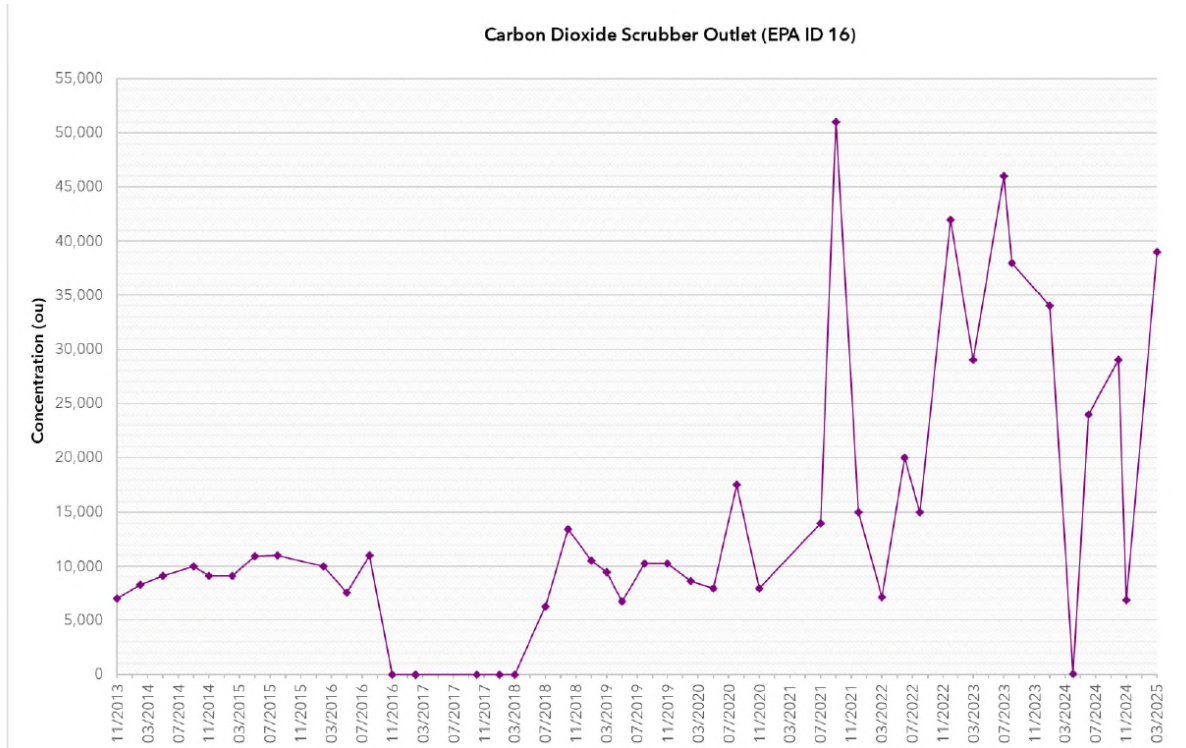


Figure 26 shows the odour emissions from the carbon dioxide (CO₂) scrubber. The CO₂ scrubber takes air emissions from the fermenters through a water scrubber to strip out residual ethanol. The CO₂ outlet odour testing was added to the EPL on 8th November 2013.

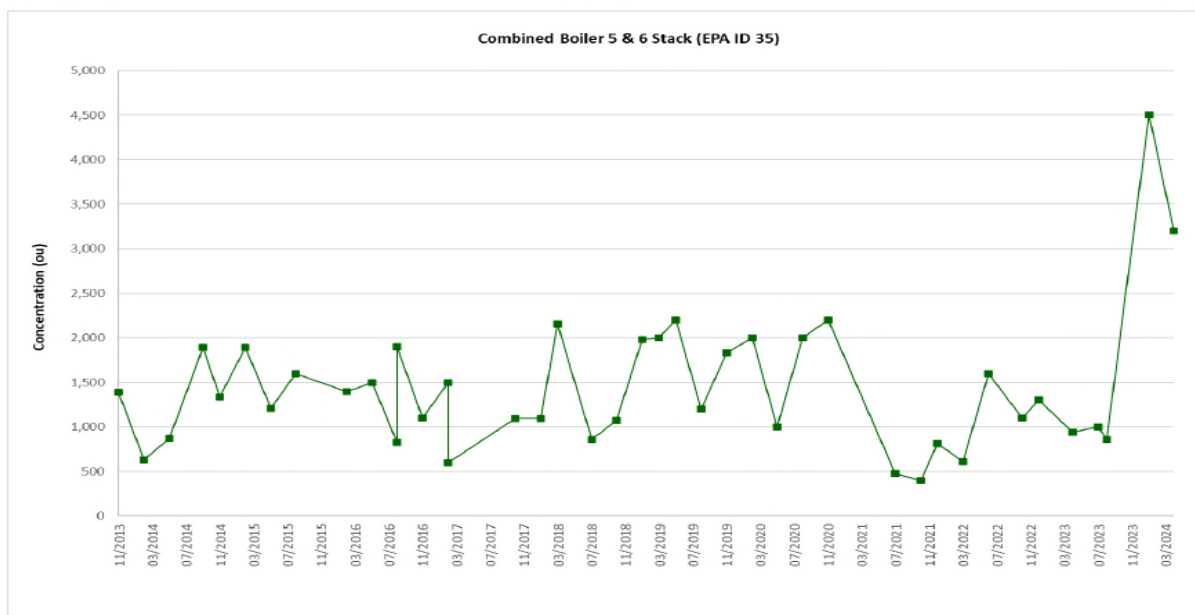
Figure 26 - Carbon Dioxide Scrubber (EPL Point No. 16)



Figures 27 to 29 show odour emission results from Boilers 5 & 6 stack (EPL Point 35), Boiler 4 stack (EPL Point 42) and Boiler 2 stack (EPL Point 45) respectively. Odours are captured from the Dried Distillers Grain (DDG) process and directed to the boilers air intake to reduce odours via boiler combustion.

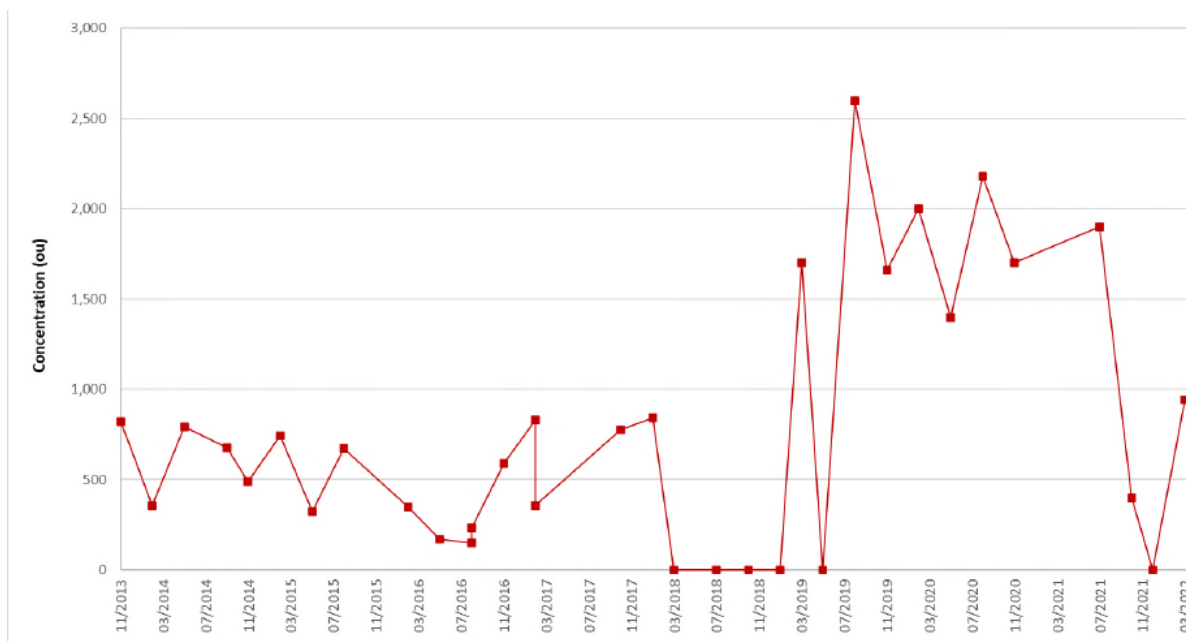
Odour testing for Point 35 and Point 42 was added to the EPL on 8th November 2013 and Point 45 added in October 2018.

Figure 27 - Combined Boiler 5 & 6 Stack (EPL Point No. 35)



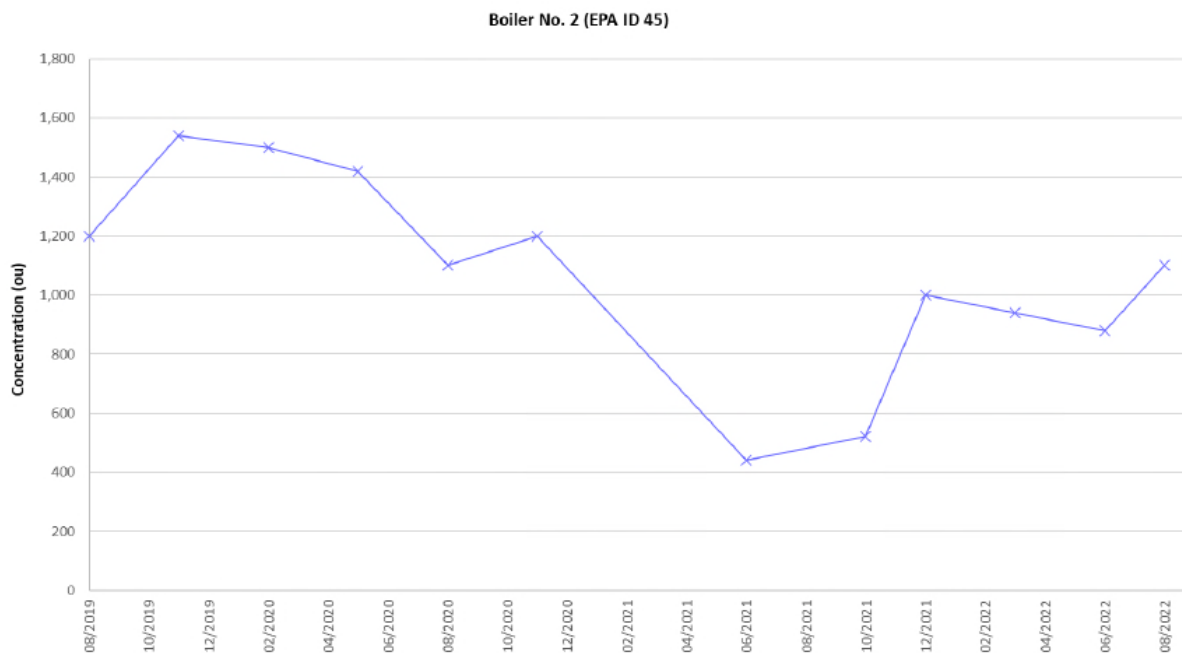
N.B. No further odour testing from previous year as Boiler not running – Odour destroyed through Boiler 4.

Figure 28 - Boiler 4 (EPL Point No. 42)



N.B. Boiler 4 Quarterly odour testing requirement has been removed from the EPL in 2022.

Figure 29 - Boiler 2 (EPL Point No. 45)



N.B. Boiler 2 Quarterly odour testing requirement has been removed from the EPL in 2022.

Figure 30 shows the odour results for the biofilter inlet and biofilter outlet. The biofilter's capture and treat DDG odours from the DDG Evaporator plant and DDG Dryer No.4 & 5. The biofilter outlet results are an average of the three biofilter's A, B & C.

The results show an increase in biofilter outlet odour concentrations which appears to coincide with the addition of DDG Dryer No. 4 & DDG Dryer No.5 operation and the recovered odours being sent to the Biofilters.

Actions are currently underway to address the increased odours which includes an additional fresh air fan and temperature reduction

Figure 30 - Biofilter Inlet & Biofilter Outlet A & B (EPL Point No's. 39, 40 & 41)

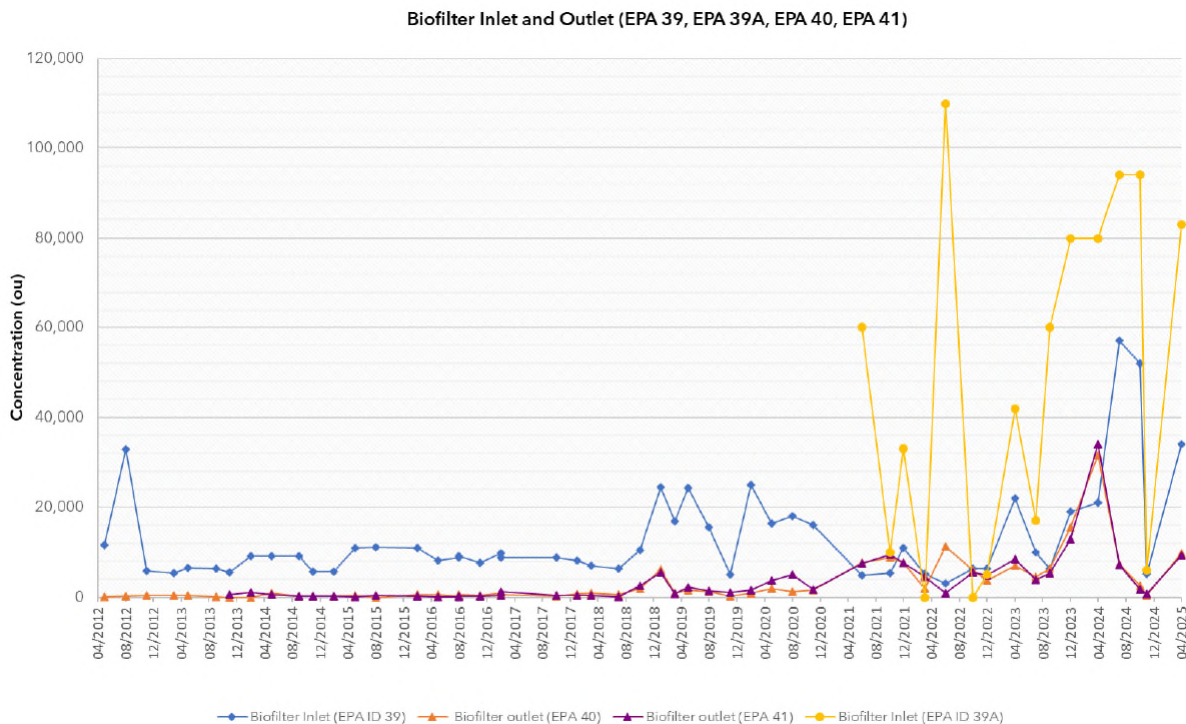
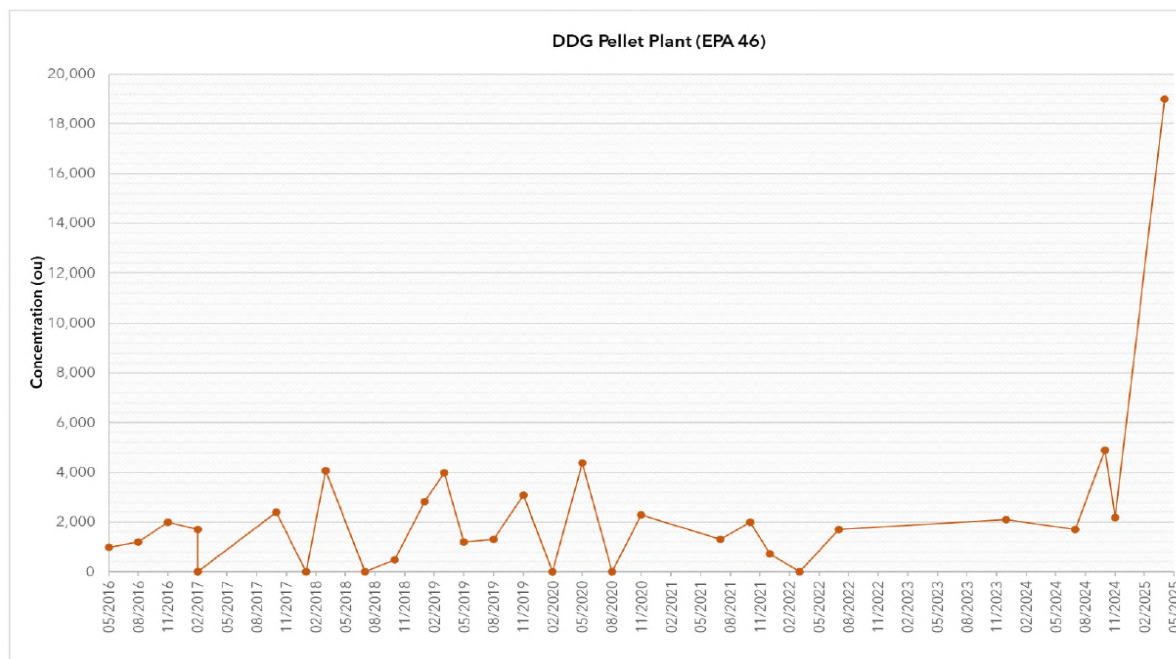


Figure 31 shows the odour results from the DDG Pellet Plant stack which was added to the EPL on 18th December 2015.

Figure 31 – DDG Pellet Plant (EPL Point No. 46)



6.5.2 Annual Odour Monitoring

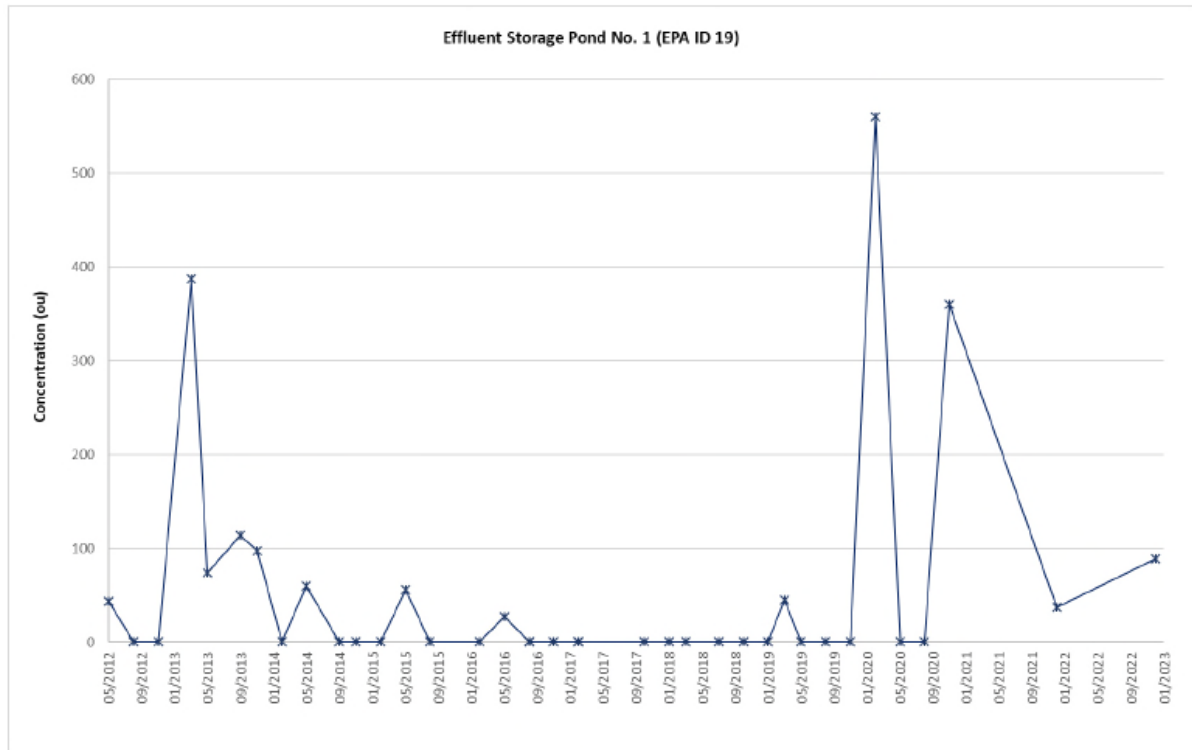
The following Figures 32 to 37 show the annual odour monitoring results from the sites Environmental Farm. In 2015 the EPL frequency for odour monitoring at the Environmental Farm was reduced from quarterly to yearly as a result of a significant reduction in odour emissions due to the installation of the WWTP in 2010.

The storage ponds store treated water from the WWTP for irrigation on the Environmental Farm. All the pond results show significant reductions in odour since operation of the WWTP.

The Sulphur Oxidation (SO) basin, as shown in Figure 37, is an aerated pond which receives treated water from the anaerobic treatment system prior to entering the MBR and RO systems. All water passing through the MBR-RO system is returned to the factory for re-use. Surplus water from the SO pond is sent to the storage ponds for irrigation.

Note the EPL reporting year is from 1st May 2024 to 30th April 2025, with the 2024-25 result tested in November 2024 (Quarter 3).

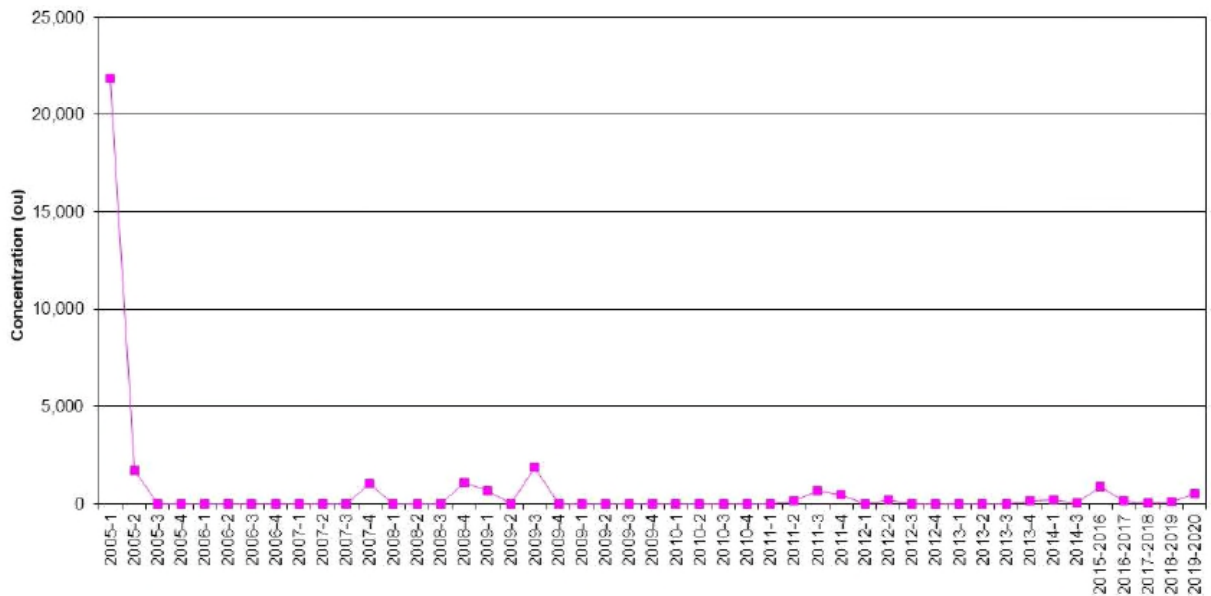
Figure 32 – Pond No. 1 (EPL Point No. 19)



Zero results represent insufficient volume to perform sampling.

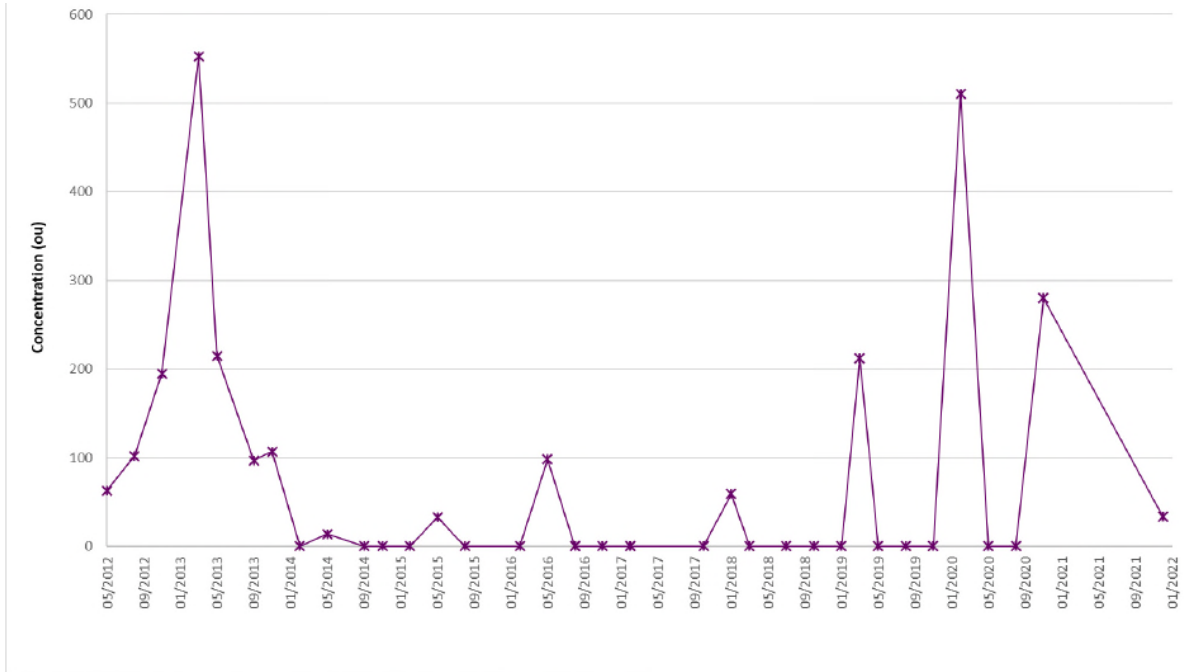
N.B. a sample of Pond 1 was not taken during the reporting year due to very low water level due to no longer being used to store treated water.

Figure 33 – Pond No. 2 (EPL Point No. 20)



N.B. a sample of Pond 2 was not taken during the reporting year due to very low water level due to no longer being used to store treated water.

Figure 34 - Pond No. 3 (EPL Point No. 21)



Zero results represent insufficient volume to perform sampling.

N.B. a sample of Pond 3 was not taken during the reporting year due to very low water level due to no longer being used to store treated water.

Figure 35 - Pond No. 5 (EPL Point No. 23)

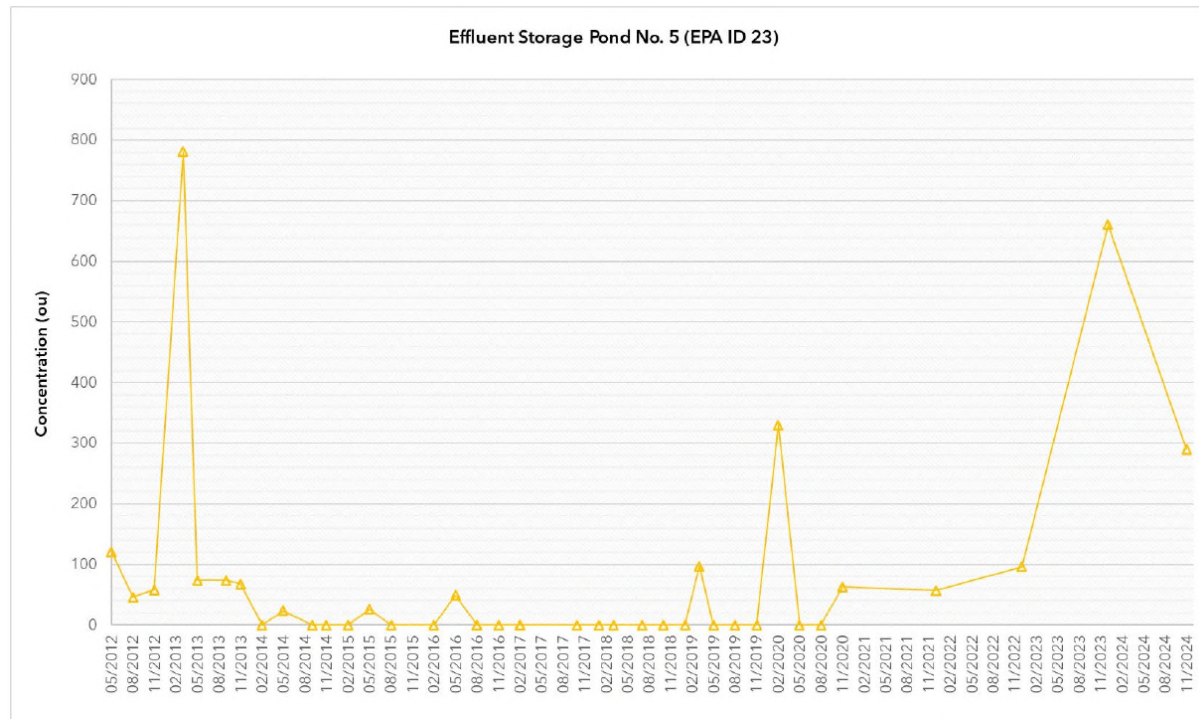


Figure 36 - Pond No. 6 (EPL Point No. 24)

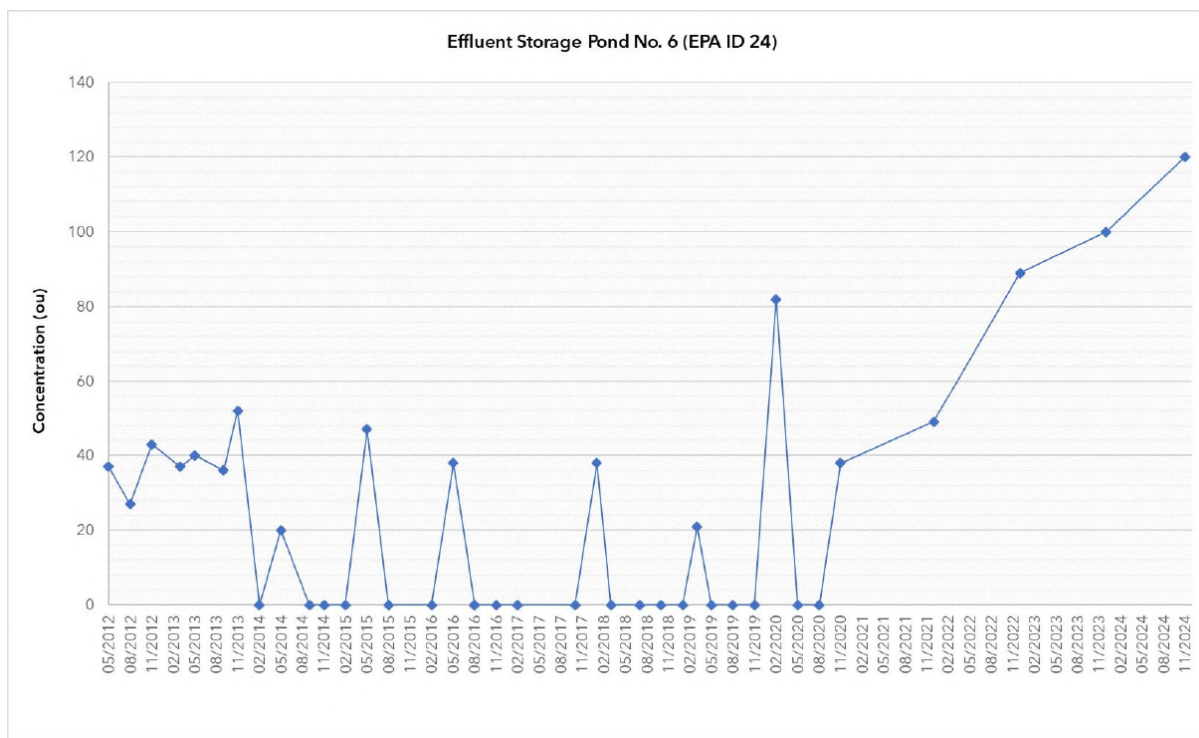
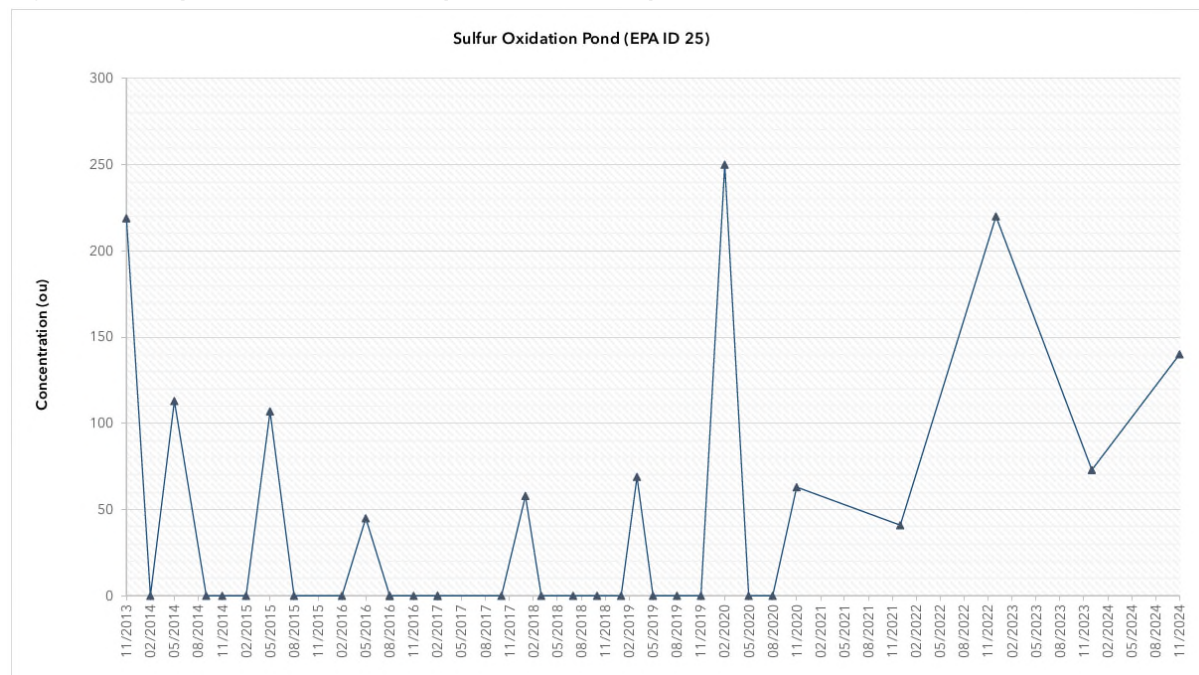


Figure 37 - Sulphur Oxidation Basin (EPL Point No. 25)



6.5.3 Annual Odour Audit

Annual odour modelling is conducted each year and submitted as part of the sites EPL Annual Return and annual odour audit requirements under schedule 3, condition 5 of the Consent. The 2025 independent odour audit was conducted in August 2025 by Northstar Air Quality Pty Ltd.

The odour modelling predicts the ground level odour concentration (in odour units, OU) at the nearest residential receptors. The previous 12 months of odour monitoring data are used to update the site's odour model. The results of the odour modelling for the current reporting period 2025 and the previous year 2024 are shown in Figures 54 and 55 respectively.

A comparison between Figures 38 and 39 shows similar contour plots to the previous year.

The figures below show 2 contour plots for comparison as follows:

1. Red/Green = All odour sources at current ethanol production levels (253 ML pa) in 2025*
2. Blue = All odour sources scaled to approved ethanol production limit (300 ML pa)

* Daily production rate converted to annual production equivalent at the time of sampling

Figure 38 - Odour Modelling Contour Plot 2025

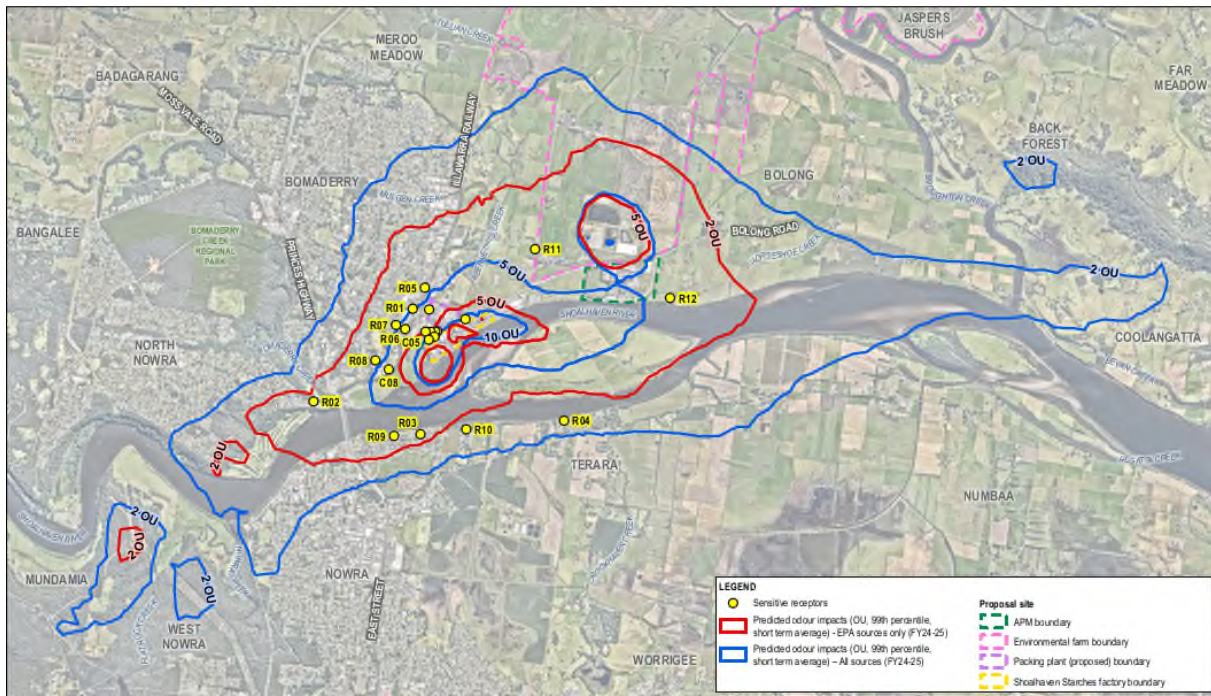


Figure 39 - Odour Modelling Contour Plot 2024



Predicted odour concentrations at all 4 receptor locations are shown in Table 5 below. The results show odour concentrations are below the 2008 EA predictions at Terara, Bomaderry & Nowra while North Nowra is slightly above the odour concentrations approved in the 2008 EA. Predicted odour concentrations has seen a modelled reduction compared to recent years,

Table 5 Annual odour modelling predicted odour concentrations

Receptor Location	EA 2008 Approval	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
R1 Bomaderry	6	4.7	4.8	4.7	3.6	4.2	4.4	4.8	4.3	3.1	3.8	3.9	4.1	5.2	5.1	6.2	4.9
R2 North Nowra	3	2.3	2.6	2.6	2	2.2	2.2	2.2	2.4	2.0	3.1	2.9	3.6	5.0	4.6	3.6	3.1
R3 Nowra	5	4.8	4.9	5.3	4.2	4.9	4.6	5.1	4.9	3.6	5.3	5.0	6.0	9.1	7.3	6.0	3.4
R4 Terara	5	5.3	5.1	5.4	3.9	4.6	4.6	5.3	4.6	3.0	4.0	3.9	4.3	6.2	5.7	3.2	2.2

N.B. Figures above and below are based on actual emissions, not scaled to 300 ML pa (as per EPL Annual Return requirements)

The predicted increase in odour concentrations at the receptors in 2024 is largely the results of elevated Biofilter outlet concentrations which are a ground-level odour source and due to its location have the most impact at the Nowra and Terara locations. Additional biofilter capacity was installed in May 2024 to increase odour treatment capacity.

Figures 40 to 42 show the odour unit concentrations at the nearest residential receptors against predictions in the EA (blue line) and NSW EPA guidelines (red line).

Figure 40 - Odour Modelling Results - Bomaderry

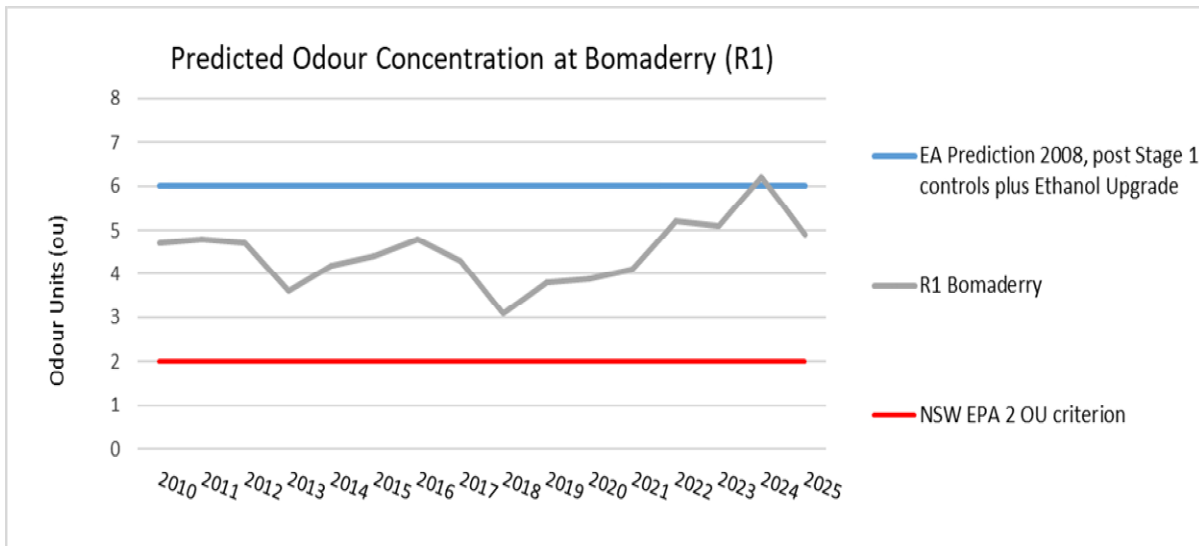


Figure 41 - Odour Modelling Results - North Nowra

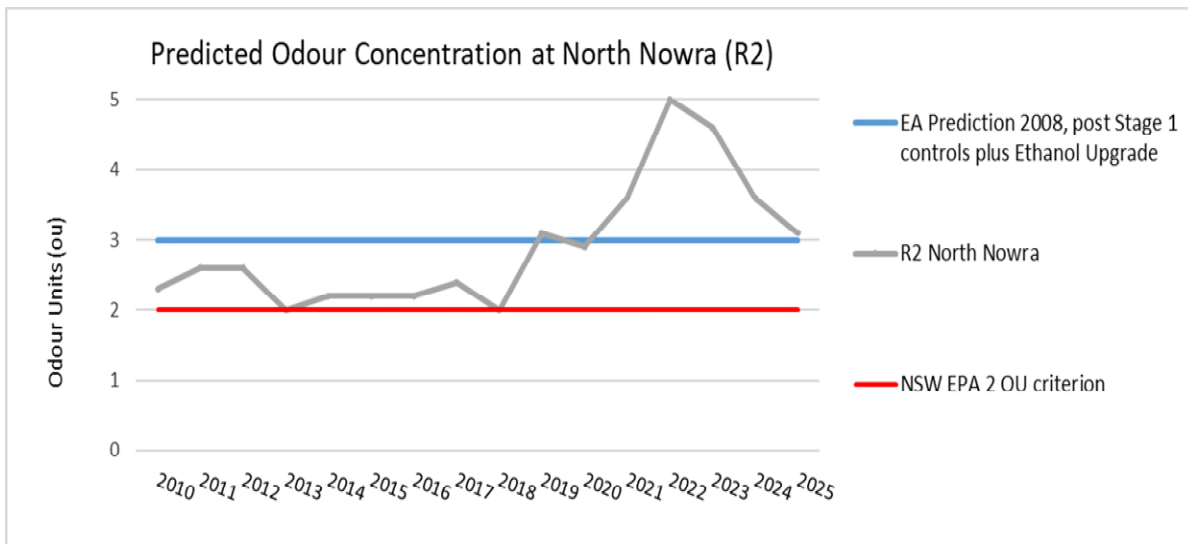
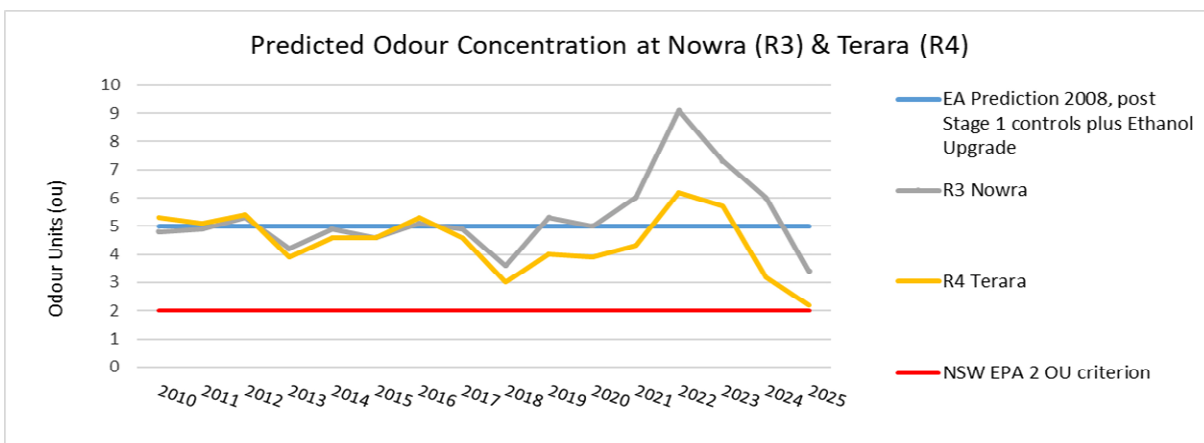


Figure 42 – Odour Modelling Results - Nowra and Terara



As required under condition 5 of the Consent, the annual independent odour audit was completed for the 2025 reporting year by Northstar Air Quality Pty Ltd.

The non-compliances and recommendations from the 2025 odour audit and Shoalhaven Starches response to the audit recommendations are shown in Table 6 and Table 7, which has been submitted to the DPHI and EPA.

Table 6 - 2025 Independent Odour Audit Non-compliances

Cond. No.	Condition and Requirement	Audit Report Non-compliances		Shoalhaven Starches (SS) Response	Timeframe	Status
N/A	No non-compliances received during audit period					

Table 7 - 2025 Independent Odour Audit Recommendations

Audit Reference	Audit Report Recommendations	Shoalhaven Starches (SS) Response	Timeframe	Status
24/25-REC-A	Section 3.2: It is recommended that the line of communication between the EPA and the Manildra complaint record is reviewed to ensure that complaints reported to the EPA are communicated and recorded as complaints in the Manildra complaint system.	Manildra will discuss with EPA ways to better ensure complaints are efficiently reported and documented correctly in the Manildra complaint system.	October 2025	In Progress
24/25-REC-B	Section 3.5: Based upon the data presented in Table 6, the biofilters (BF A, B, C) are not achieving the de facto 500 OU standard. It is recommended that the biofilters are operated to achieve a lower odour outlet concentration, although it is noted that BCA #27 demonstrates improved odour destruction efficiency compared to BCA #26.	Investigation of Biofilter performance and gas speciation undertaken by The Odour Unit in May 2025. Primary recommendation for increased fresh air addition being designed into the process and to be installed as soon as possible.	December 2025	In Progress New fan being designed
24/25-REC-C	Section 3.5: It is recommended that the extent of the rock contamination in biofilter 3 media is determined and the contamination removed.	Biofilter 3 (C) media was installed in January 2024 under the direct supervision and project management of The Odour Unit. TOU had provided a letter to Manildra indicating the condition and suitability for operation was met as per the design. All rocks on the surface observed during the audit have been removed.	October 2025	Complete.
24/25-REC-D	It is recommended that the EPL monitoring requirements for Effluent Ponds 1-4 (EPL 19, 20, 21, 22) are discussed with NSW EPA due to their non-operation.	Manildra will discuss with the EPA the ongoing monitoring requirements for the Effluent Ponds	October 2025	In Progress
24/25-REC-E	It is recommended that the EPL monitoring requirements for No3 and No4 starch drier are discussed with NSW EPA due to the health and safety risks identified.	Manildra will discuss with the EPA the ongoing monitoring requirements for Starch Dryer 3 & 4	October 2025	In Progress
24/25-REC-F	With regard to flow measurements at EPA ID 8 the odour monitoring reports state: "Sampling was undertaken at the exit of the stack as it was the only accessible area for the samples to be taken. No temperature or flow rate readings could be taken due to access issues." Shoalhaven Starches have advised that access is limited due to the addition of a silencer on this discharge point for noise control purposes. It is recommended that the access restrictions to EPA ID 8 are resolved to enable compliant odour monitoring to be performed.	The exit for this stack was recently fitted with a replacement silencer to reduce noise coming from this source, as a result the existing sampling point can no longer provide sufficient access for flow rate readings. Investigation into the relocation of this sampling point was undertaken and no other suitable location was found that would comply, not compromise the silencer and be safe to access. Historical flowrates and fan design specs could be considered a reasonable indicator of flow rate from discharge point.	December 2025	Complete

6.5.4 Odour Pollution Reduction Study

Odour Pollution Reduction Study (Stage 3) Condition U3.1 of Shoalhaven Starches EPL 883 required a dispersion modelling study be undertaken to identify major contributors to offsite odour. A report of the odour model findings was prepared and submitted to the EPA for review.

Recommendations from the report and initial feedback from the EPA include a biofilter performance review, continued field odour investigations, and further emissions inventory development which have all been completed and will continue to be monitored and implemented.

A recommendation to investigate real time monitoring of odour emissions was completed. The initial review revealed it is not reasonably practical for our operations.

Shoalhaven Starches is still awaiting final comments on the Stage 3 report from the EPA but continues identify opportunities for improvements based on the report's findings and recommendations.

6.6 NOISE

Six monthly noise monitoring is required in accordance with the sites EPL. The sites noise limits as per the EPL and Condition 12 are shown in Table 8 and the noise monitoring locations shown in Figure 43.

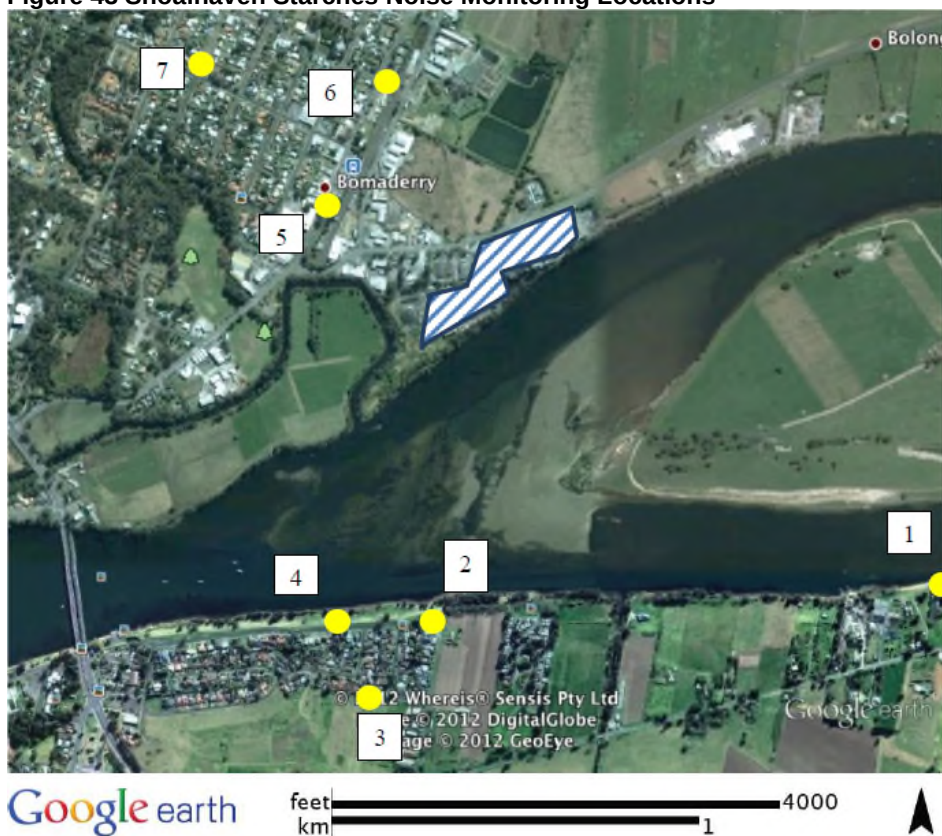
Table 8 Site Noise Limits

Location	Day/Evening/Night	Night
	LAeq(15 minute) dB(A)	LA1(1 minute) dB(A)
1 - Terara on the south side of the Shoalhaven River	38	48
2,3 & 4 - DILWra on the south side of the Shoalhaven River	38	48
5 - Meroo Street, Bomaderry	42	52
6 - Other residential locations in Bomaderry	40	50
<u>R1 – 390 Bolong Road Bomaderry</u>	<u>40</u>	=
<u>R2 – Pig (Burruga) Island</u>	<u>40</u>	=
<u>R3 – 39 Hanigans Lane Bomaderry</u>	<u>40</u>	=
<u>R4 – 1 Bryant Street Terara</u>	<u>40</u>	=

Notes:

- Noise limits for Location 6 (other locations in Bomaderry) is depicted in Figure 43 below as Location 7. This is due to two noise monitoring locations (5 and 6) being conducted in Meroo St Bomaderry.
- Noise limits underlined in red are applicable to the use of the Paper Mill site (MOD 14).

Figure 43 Shoalhaven Starches Noise Monitoring Locations



Noise monitoring results for August 2024 and January 2025 were found to be compliant with the EPL noise limits, except for Location 2 & 4 (August 24) & 1,5,6,7 (January 25), as shown in Table 9.

The non-compliances are further discussed in **section 9.1**.

Table 9 – August 2024 & January 2025 Noise Monitoring Results

Location	Date	Measurement Period	Measured levels dB(A) LA _{eq}	Low Frequency Noise Penalty dBA	Corrected Noise Level	100 percentile	Exceedance (yes/no)
						limit	
1	22/8/2024	15 min	-	-	-	38	No
2	22/8/2024	15 min	44	+2dBA	46	38	Yes
3	22/8/2024	15 min	37	-	37	38	No
4	22/8/2024	15 min	38	+2dBA	40	38	Yes
5	22/8/2024	15 min	39	-	39	42	No
6	22/8/2024	15 min	36	-	36	40	No
7	22/8/2024	15 min	36	-	36	42	No
1	21/1/2025	15 min	45	-	45	38	Yes
2	21/1/2025	15 min	38	-	38	38	No
3	21/1/2025	15 min	33	-	33	38	No
4	21/1/2025	15 min	35	-	35	38	No
5	21/1/2025	15 min	44	-	44	42	Yes
6	21/1/2025	15 min	45	-	45	40	Yes
7	21/1/2025	15 min	45	-	45	42	Yes

Note the noise limit descriptor has been changed from LA_{10} to LA_{eq} as per the site's EPL variation on 20-6-18 however the noise limits remain the same.

Historical six-monthly noise monitoring results are shown in Figures 43 and 44.

Figure 43 - Noise Monitoring Results at Nowra (locations 2, 3 & 4) and Terara (location 1)

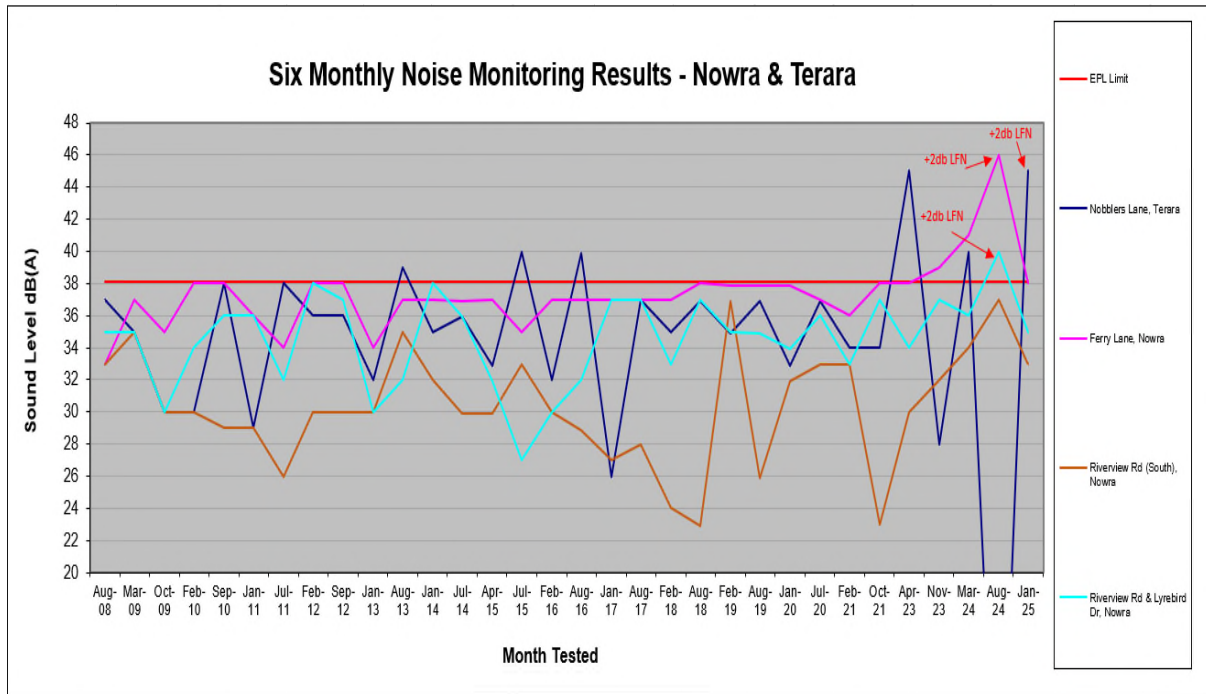
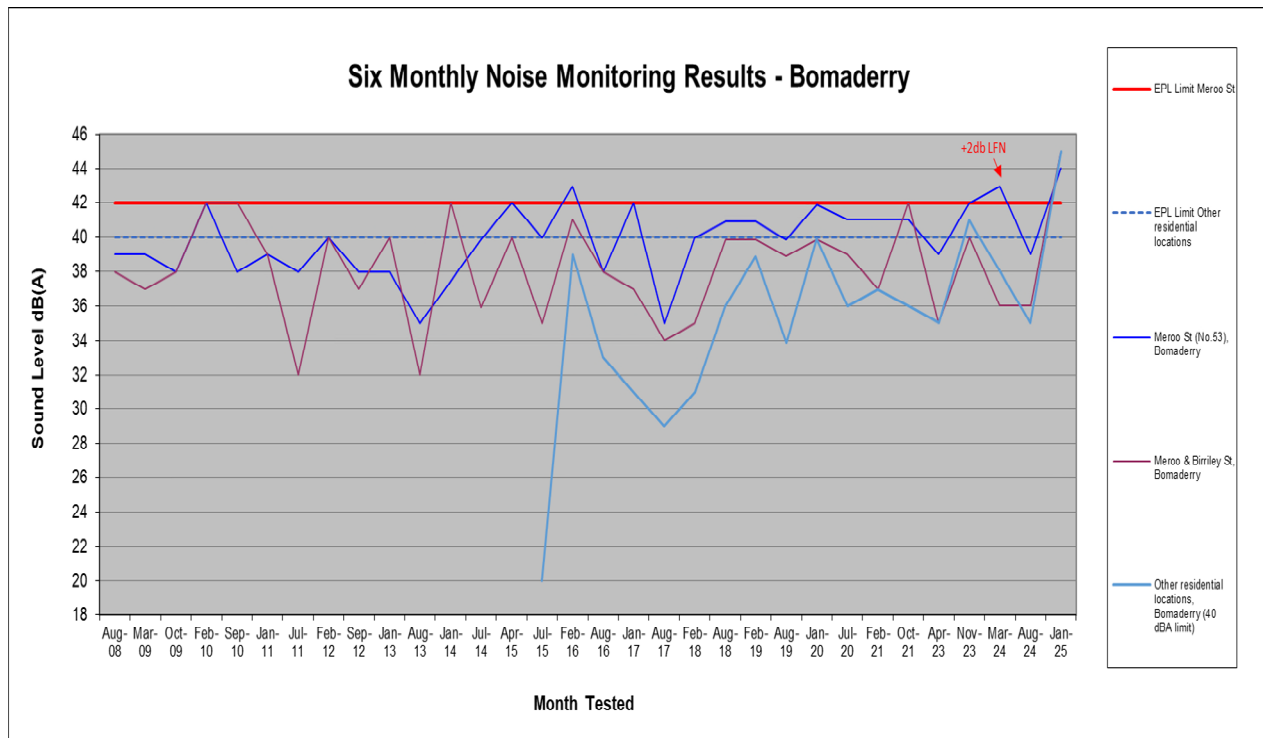


Figure 44 - Noise Monitoring Results at Bomaderry (Location 5 & 6)



N.B. Missing noise results in the above figures are due to unstable/variable weather conditions that would be described as atypical and from the EPA's *Noise Policy for Industry* would require exclusion during any compliance testing.

There is no EPL required for the former Paper Mill site, or any noise testing frequency stipulated in the Consent. Noise verification testing was conducted by The Acoustic Group in February 2019 at the Paper Mill site to determine compliance with the MOD 14 Consent and was found to be compliant with the noise limits which was reported in the 2020 AEMR.

6.6.1 Noise Validation

Noise validation testing was conducted in December 2024 across the whole site as part of the Noise PRS and further Site Wide Noise Model (SWNM) development.

Part of this testing included all the most recent plant and equipment installed under the Project Approval including Cogeneration Plant (MOD 23), Gluten Dryer 8 (MOD 16), Starch Specialty Product (MOD 16 & 17), and DDG Dryer No. 5 (MOD 11)

Outputs from the SWNM and Noise PRS investigation has shown that the contribution from many of the above recently constructed plant and equipment do not contribute materially to noise impacts on receptors and meet original noise design goals.

6.6.2 Noise Pollution Reduction Study

Condition U4 Noise Compliance Investigation was added to Shoalhaven Starches EPL 883 in September 2024 by the EPA. The Noise PRS requires Shoalhaven Starches to appoint a suitably qualified independent noise specialist to complete a review of the premises to determine sources of noise/vibration and document opportunities to attenuate noise at the premises.

In December 2024, GHD Pty Ltd attended site to conduct a weeklong noise source investigation and collect data for the improvement of Shoalhaven Starches SWNM. A report with the findings and possible mitigation measures was produced and provided to the EPA, including noise mitigation measures to be undertaken as part of staged approach to mitigation, focused on addressing the largest identified noise sources first.

Timelines for the implementation of the identified noise mitigation projects and predicted noise reductions was submitted to the EPA. These projects are currently being developed and follow-up noise measurements will be undertaken once completed to measure the reduction in noise and resultant compliance with EPL limits.

6.7 SOIL MONITORING

Annual soil monitoring has been completed in accordance with the sites EPL (no EPL limits prescribed). Annual testing of the topsoil profile is sampled from representative locations within the approved irrigation area (Point 43) at the sites Environmental Farm.

A summary of the average annual soil results is shown in Table 10.

Table 10 - Annual Soil Monitoring Results

Parameter	Average Soil Sampling Results												Units
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Cation Exchange Capacity	40.77	39.6	38.0	41	39.3	33.7	41.3	38	41.8	41.32	45.19	36.26	cmol(+)/kg soil
Electrical Conductivity	1.52	0.55	1.0	1.1	0.8	1.0	1.3	0.8	1.14	1.25	1.25	1.24	dS/m
Exchangeable sodium percentage	2.9	6	2.2	4.2	3.4	3.6	4.9	2.5	3.46	4.92	8.22	7.08	%
Nitrate	69	15.88	71.9	60	63.2	97.1	63.4	57.3	61	34.12	89.6	47.4	mg/kg
Nitrogen (total)	7.6	8217	6992	7311	7668	0.6	7030	6670	7350	6409	7677	5693	mg/kg
Organic Carbon	910	83510	48870	87046	61720	52	76350	60340	62437	73090	59269.2	52520.8	mg/kg
pH	7.3	8.01	7.3	7.4	7.3	7.4	7.4	7.2	7.6	7.7	7.7	7.8	pH
Phosphorus (total)	2.8	446	236	107	241	167.4	106.8	3830	4187	4005	4828	3895	mg/kg

General comments on the soil monitoring results are as follows:

- Test results will vary from paddock to paddock due to differences in soil type, irrigation volumes, changes in seasonal conditions, rainfall and land management practices taking place at the paddock scale.
- All soil parameters remain relatively steady compared to previous years. Continuing elevated Phosphorus levels are likely the result of elevated Phosphorus in the treated effluent for irrigation. Projects underway to help manage this which are showing promising results in 2025.
- Exchangeable sodium percentage (ESP) levels over 5% are classified as being sodic associated with an increased tendency for clay dispersion and loss of permeability. High levels of organic matter and salinity can help counteract the potential of dispersion and maintain soil structural stability. High levels of ESP are a natural feature for low lying areas of the Shoalhaven River.
- Nitrogen and Nitrate levels remain similar to previous years and fluctuate with seasonal conditions and pasture growth and removal.
- Elevated organic carbon levels help maintain soil structural stability.

6.8 LANDSCAPE & VEGETATION MANAGEMENT PLAN

Shoalhaven Starches Landscape & Vegetation Management Plan (LVMP) continues to be implemented during the reporting year. The action plan status of the LVMP is shown in Table 11.

Lantana removal and planting of lomandra species along Abernethy's Creek bank adjacent to the factory south of Bolong Rd towards the outflow to the Shoalhaven River has continued in addition to ongoing weed suppression across the site and along riparian zones.

Table 11 - LVMP Summary of Actions Update 2025

ASPECT / FORESHORE	MANAGEMENT ZONE	AREA	ACTIONS	IMPLEMENTATION SCHEDULE	STATUS	REFERENCE
Phase 1						
Landscaping	-	Fermenters	Plant Casuarina Glauca at 1.5m spacing to screen fermenters		Complete	Appendix A
		New Packaging Plant ¹	Remove weeds and plant Melaleuca, Eucalyptus and Casuarina species between packaging plant and Bolong Rd.	On completion of construction works	Incomplete (Packing Plant Not Constructed)	Appendix C
Shoalhaven River	Zone A	Emergency Revetment	Removal immature coral trees from revetment and adjacent area	On completion of construction works at flour mill	Complete	Figure 4
			Complete revegetation of revetment IAW landscaping plan (Appendix B)			
			Plant fast growing Casuarina glauca at rear of revetment			
			Plant Eucalyptus and Melaleuca canopy species, and Lomandra as a groundcover at rear of revetment			
		Confluence Shoalhaven River and Bomaderry Creek to 10m behind the bank	Slash and spray Kikuyu grass		Complete	Figure 4
			Eradicate African Boxthorn and remove Lantana			
			Plant out waterline with Grey Mangroves and Juncas Krausii			
			Plant fast growing native species at the top of the bank and canopy species at the rear of the bank, and fill in with groundcovers			
Bomaderry Creek	Zone A	Confluence with Shoalhaven River to 250m upstream	Slash and spray Kikuyu grass		Complete	Figure 5
			Plant top of bank with canopy species and midstorey species			
			Fill in with groundcovers			
Abernethy's Creek	Zone A	Western bank, north of Bolong Rd ¹	Slash and spray Kikuyu grass	To be completed when once Packing Plant is constructed.	Incomplete (Packing Plant Not Constructed)	Figure 6 and Appendix C
			Plant full list of riparian species at rear of bank			
			Plant top of bank with Melaleuca ericifolia and other listed species			
			Fill in the Lomandra and Dianella spp.			
Broughton Creek	Zone A	Stock flood refuge area to 10m behind bank	Slash and spray Kikuyu grass		Complete	Figure 7
			Plant canopy and midstorey species at rear of bank			
			Plant scattered Casuarina glauca and Myoporum acuminatum on bank (but not the waterline)			

			Erect temporary barriers when area is used as flood refuge			
		Embankments with no canopy or midstorey	Slash and spray Kikuyu grass		Complete	
			Plant canopy and midstorey species at rear of bank			
			Plant scattered Casuarina glauca and Myoporum acuminatum on bank (but not the waterline)			
Phase 2						
Shoalhaven River	Zone B	Dense area of Acacia mearnsii	Clear 10m x 10m plots and replant with other canopy species at 2m spacing		Complete	Figure 4
			Remove acacia seedlings and monitor success of plantings			
		Grassy area behind crib shed	Whipper-snip and spray Kikuyu grass	Commence by June 2024	Incomplete	
			Plant toe with water line species			
			Plant canopy and midstorey species at top of bank			
			Fill in with groundcovers			
	Zone C	Eastern boundary to revetment	Spray lantana		Complete	
			Plant out with groundcover species (Lomandra)			
		West of Abernethy's	Remove lantana using mosaic approach		Complete	
			Suppress African Boxthorn and Blackberry			
	Unzoned	Between crib shed and revetment	Geotechnical assessment of bank stability to assess potential of removing Coral trees from bank	Coral trees are to remain	Complete	
Bomaderry Creek	Zone B	Upstream and downstream embankment	Remove Lantana using mosaic approach		Complete	Figure 5
			Eradicate African boxthorn and Blackberry			
			Frill privet			
Abernethy's Creek	Zone B	Eastern bank, north of Bolong Rd ¹	Remove Lantana using mosaic approach	To be completed when once Packing Plant is constructed.	Incomplete (Packing Plant Not Constructed)	Figure 6
			Assist natural regeneration, or supplementary plantings			
		Both banks, south of Bolong Rd to electrical easement	Spray weeds on embankments	Estimate 2 - 3 years to complete	In progress	
			Dense plantings of groundcover species			
		Both banks, south of electrical	Suppress Privet and spray other weeds		In progress	
			Plant eastern bank with selection of midstorey species			

		easement to outflow ²				
Broughton Creek	Zone A	Stock flood refuge area to 10m behind bank	Plant out waterline with suitable mangrove species		Complete	Figure 7
		Embankments with no canopy or midstorey	Plant out waterline with suitable mangrove species		Complete	
	Zone B	Transition areas	Slash and spray and Kikuyu grass		Complete	
			Plant suitable upper bank canopy and midstorey species			
Phase 3 Additional Landscaping Works 2011 - 2019						
ASPECT / FORESHORE	PA 06_0228 Approval	AREA	ACTIONS	IMPLEMENTATION SCHEDULE	STATUS	REFERENCE
Landscaping	MOD 2	Bolong Rd - DME Storage / Ethanol Loadout	Screen plantings as per Landscape Plan Appendix 2B (MP06_0228 MOD 2)		Complete	Appendix A
		Bolong Rd - Fermenters / Cooling Towers	Screen plantings as per Landscape Plan Appendix 2B (MP06_0228 MOD 2)		Complete	
		Bolong Rd - Ethanol Distillery	Screen plantings as per Landscape Plan Appendix 2B (MP06_0228 MOD 2)		Complete	
		Bolong Rd - Fermenters to Mid-section of Open Paddock	Screen plantings as per Landscape Plan Appendix 2B (MP06_0228 MOD 2)		Complete	
Landscaping	MOD 3	Bolong Rd - Open Paddock to ex. Dairy Farmers site	Screen plantings as per Landscape Plan Appendix 2C (MP06_0228 MOD 3)		Complete	Appendix B
Landscaping	MOD 9	Packing Plant ¹	Screen plantings as per Landscape Plan MN262-002	On completion of construction works	Incomplete (Packing Plant Not Constructed)	Appendix C & Figure 6
Landscaping	MOD 11	Coal & Woodchip	Screen plantings as per Landscape Plan MN6638-102	Complete by December 2019	Complete	Appendix D

		Storage at Farm				
Landscaping	MOD 14	Former Paper Mill Site	Screen plantings as per Landscape Plan MN6416-001	Complete by end of June 2018	Complete	Appendix E
Landscaping	MOD 15	SupaGas Plant at ex. Dairy Farmers site	Screen plantings in front of CO2 Plant	On completion of CO2 Plant	Complete August 2019	Appendix F
Landscaping	MOD 16	BOC Gas site	Provide screening landscaping to the south of the proposed new indoor electrical sub-station along the frontage of Bolong Road. Refer to Plan MN6531-010	On completion of Indoor Electrical Substation	Incomplete (Substation not constructed)	Appendix G

Notes:

1. Phase 1 & Phase 2 landscape screening & riparian plantings along Abernethy's Creek north of Bolong Rd has not been completed due to the new Packing Plant (MOD 9 and MOD 21) project still under construction (any plantings will likely be impacted by construction works)

2. Some Phase 2 riparian plantings along Abernethy's Creek south of Bolong Rd towards the Shoalhaven River have been completed; this area will be given priority in the next 3 years.

3. References in the table are from Shoalhaven Starches Landscape and Vegetation Management Plan, EN-P-251.

7. COMMUNITY

7.1 COMPLAINTS

The annual reporting requirements under schedule 4, condition 3d) are:

d) include a comprehensive review of the monitoring results and complaints records of the Development over the previous year ...

A total of 21 environmental complaints were received in 2025, compared to 11 received in 2024. Total complaints received by year and by type are shown in Figures 45 and 46 respectively.

Table 12 details the types of complaints received during the year and the actions taken to address the complaint.

Table 12 - Summary of Complaints 2025

Date and Time Rec'd	Location	Issue	Action Taken
10-5-2024 21:32	Bomaderry	Noise	Noise complaint received via community direct email, sound described as "annoying". Investigation found the likely cause to be attributed to new mechanical evaporator installed at the farm. Procedure put in place to only run during daytime hours and install sound absorption around the mechanical components.
24-6-2024 13:05	Bomaderry	Vibration	Complaint received via community direct call, claimed their property in Coomea Street, Bomaderry was experiencing vibrations as result of Manildra operations. Investigation into site operations revealed no construction or similar happening around suggested times and that it would be extremely unlikely to be coming from Manildra given the proximity.
15-7-2024 10:14	Far Meadow	Air Quality	Air quality complaint received via community direct call, described yellow dust settling on his cars and property, believes from Manildra. Investigation found that sample of dust sent to lab for Scanning Electron Microscopy showed patterns that matched that of pollen and was not thought to have come from Manildra.
29-8-2024 16:20	Nowra	Noise	Noise complaint received via EPA email, sound described as constant humming noise. Investigation did not find the likely cause and believe that if it was from Manildra may be attributed to Cooling Towers which are being reviewed as part of the EPA Noise Reduction Program.
18-10-2024 15:10	Bomaderry	Noise	Noise complaint received via community direct call, sound described as constant throbbing noise. Investigation did not find the likely cause and believe that if it was from Manildra may be attributed to Cooling Towers which are being reviewed as part of the EPA Noise Reduction Program.
3-11-2024 ~21:00	Nowra	Noise	Noise complaint received via community complaints line, sound described as hammer drill or rattling sound. Investigation found the likely cause to be attributed to high pressure water cutting of steel structures post silo collapse. Noise management plan implemented that during clean up works, certain activities could not happen during the night. A community letter drop was undertaken to explain the situation.
3-11-2024 ~21:00	Terara	Noise	Noise complaint received via community complaints line, sound described as hissing sound or high-pressure air. Investigation found the likely cause to be attributed to high pressure water cutting of steel structures post silo collapse. Noise management plan implemented that during clean up works, certain activities could not happen during the night. A community letter drop was undertaken to explain the situation.
3-11-2024 ~21:00	Terara	Noise	Noise complaint received via community complaints line, sound described as high-pitch mulcher. Investigation found the likely cause to be attributed to high pressure water cutting of steel structures post silo collapse. Noise management plan implemented that during clean

			up works, certain activities could not happen during the night. A community letter drop was undertaken to explain the situation
3-11-2024 21:30	Unknown	Odour	Odour complaint received via community complaints hotline, no information, contact details or description of the smell was recorded. Investigation did not reveal any likely causes. Due to lack of details source of odour not identified
3-11-2024 22:30	Unknown	Odour	Odour complaint received via community complaints hotline, no information, contact details or description of the smell was recorded. Investigation did not reveal any likely causes Due to lack of details source of odour not identified
7-11-2024 09:00	Bomaderry	Noise	Noise complaint received via community direct call, sound described as low constant roar of an aeroplane. Investigation did not find the likely cause and believe that if it was from Manildra may be attributed to Cooling Towers which are being reviewed as part of the EPA Noise Reduction Program.
2-12-2024 02:49	Nowra	Noise	Noise complaint received via community direct email, sound described as metallic banging sound reverberating. Investigation found the noise was likely attributed to the breaking up of concrete slabs where the silo incident collapse had occurred. Reported to project manager who put a stop to this activity during the nighttime period and referred the subcontractor to noise construction guidelines.
17-12-2024 09:35	Terara	Noise	Noise complaint received via community direct call, sound described as loud banging & crashing noises. Investigation found that contractor was loading rocks into bins as part of the riverbank restoration post silo incident collapse. Riverbank restoration nighttime works ceased moving forward and called complainant to apologise.
18-12-2024 08:19	Unknown	Light Pollution	Light pollution complaint received via community direct email. Investigation found that the site is designed around Australian Standards for obtrusive effects of outdoor lighting and safety requirements with complainant informed of the requirements.
14-1-2025 10:01	Kiama	Noise	Noise complaint received via community direct call, sound described as 'bump.. bump... bump' noise coming from Manildra train. Investigation found that all rail safety protocols and checks had been followed and no damaged wheels could be identified.
26-2-2025 10:20	Far Meadow	Odour	Odour complaint received via community direct call, smell described as coming from Manildra way and "very strong". Investigation noted that BVF had been constantly under negative pressure and no leaks at time of complaint. Farm operations were mulching Pivot 4 but unlikely to cause odour. Source of odour not identified
1-4-2025 ~15:30	Bomaderry	Train	Rail complaint received via community direct call, described as major delay at Bolong Road crossing. Investigation noted that train had mechanical issues while crossing the intersection and was stuck for 30 mins while being repaired. Additional signage and pre-warning around train crossing indicators being explored.
1-4-2025 ~15:30	Bomaderry	Train	Rail complaint received via community direct call, described as major delay at Bolong Road crossing. Investigation noted that train had mechanical issues while crossing the intersection and was stuck for 30 mins while being repaired. Additional signage and pre-warning around train crossing indicators being explored
1-4-2025 ~15:30	Bomaderry	Train	Rail complaint received via community direct call, described as major delay at Bolong Road crossing. Investigation noted that train had mechanical issues while crossing the intersection and was stuck for 30 mins while being repaired. Additional signage and pre-warning around train crossing indicators being explored.
8-4-2025 16:06	Bomaderry	Odour	Odour complaint received via EPA email, smell described as vegemite/yeasty and has logged multiple instances in April. Investigation noted that the wind direction was consistent with the direction of site and odour smelt similar to Biofilter outlet.

16-4-2025 11:15	Bomaderry	Odour	Odour complaint received via community direct call, smell described as vegemite/yeasty and same as previous complaint to EPA on 8 th April. Investigation noted that the wind direction was consistent with the direction of site and odour smelt similar to Biofilter outlet.
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Note: complaints received are aligned with the EPL reporting year from 1st May 2024 to 30th April 2025.

Figure 45 – Total Complaints received by Year

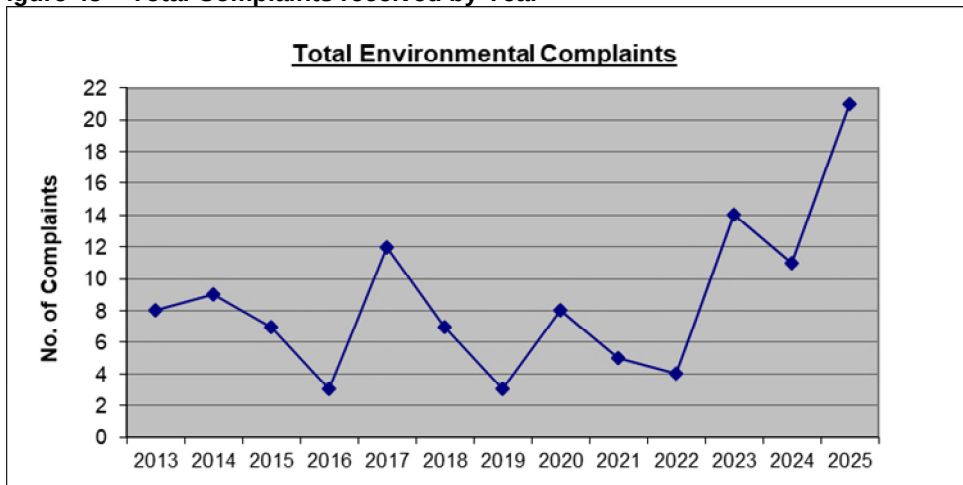
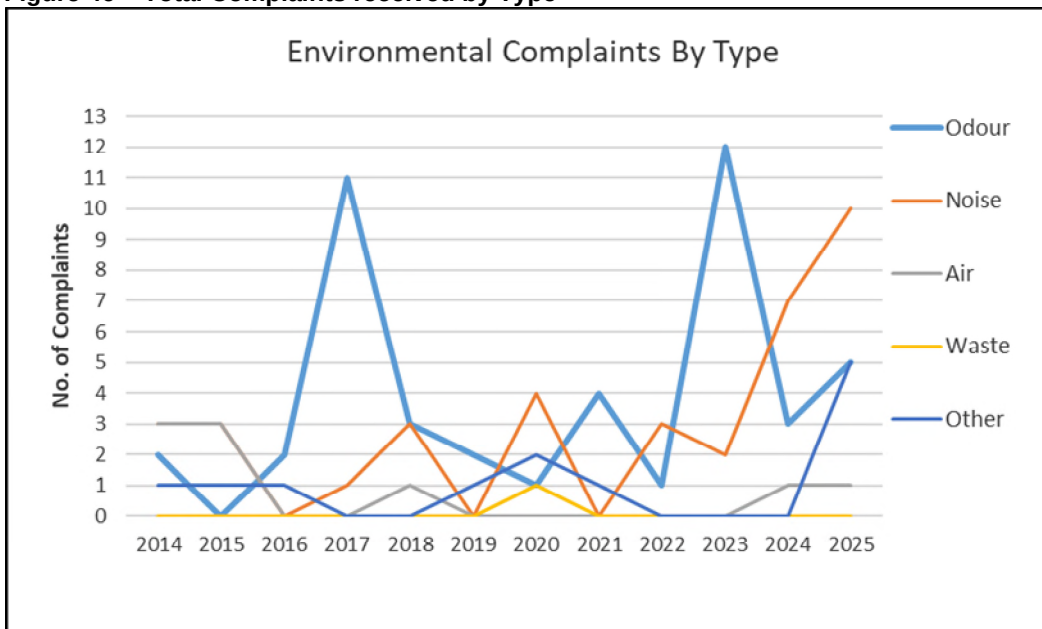


Figure 46 – Total Complaints received by Type



7.2 COMMUNITY RELATIONS

During the reporting period Shoalhaven Starches contributed significantly to the local community. Table 13 lists the local community organisations that received contributions from Shoalhaven Starches in the 2025 reporting year.

Table 13 - Community Funding Recipients

ORGANISATION / INDIVIDUAL / CHARITY	REMARKS
North Nowra Girl Scouts	Donation for archery equipment including bows, arrows, targets and safety gear to support local camps and events
Shoalhaven Council – Riverbank Restoration	Community grant for Shoalhaven City Council to deliver on two river foreshore revegetation projects to help protect against erosion and restore native habitat for flora and fauna
Shoalhaven Emergency Services Community Awards	Donation to SESCO as a bronze partner for the recognition of local emergency service responders
Mayors Christmas Giving Box	Sponsorship
Shoalhaven PCYC Breakfast Club	Donation supports the delivery of crucial healthy start to the day for 500-700 students each week across a number of local schools

Two Shoalhaven Starches Community Newsletters, Summer 2024 (edition 14) and Winter 2025 (edition 15), were prepared and distributed by mail to approximately 30,000 homes within postcodes 2540 & 2541 in the Bomaderry/Nowra region. The newsletter outlines the activities and projects ongoing at the Shoalhaven Starches site and has also been widely distributed electronically and is listed online through our website and social media channels. A copy of the newsletters can be found at: <https://www.manildra.com.au/shoalhaven-starches-newsletter>.

Shoalhaven Starches representatives engaged with 7 community groups, schools and other organisations through speaking presentations on the site operations and Q&A sessions in 2025 as follows:

- St Paul's College, Walla Walla, NSW
- Bomaderry High School, Bomaderry, NSW
- Nowra Probus Group
- Bomaderry Probus Group
- Mollymook Probus Group
- University of Sydney Agricultural PHD Students
- Presbyterian Ladies College, Croydon, NSW

8. INDEPENDENT ENVIRONMENTAL AUDIT

An independent environmental audit (IEA) 2024 was conducted in the previous reporting year against the sites consolidated Development Consent 06_0228.

The audit covered the three years since completion of the previous Independent Environmental Audit in June 2019.

A summary of the 2024 IEA is shown in Table 14 below.

Table 14 - Summary of 2024 Audit Findings

Schedule	Compliant	Non-compliant	Not triggered	Total
2 - Administrative Conditions	12	1	14	27
3 - Specific Environmental Conditions	64	17	66	147
4 - Environmental Management, Reporting & Auditing	6	1	5	12
Total	82	19	85*	186

*The Auditor notes that of the 85 conditions assessed as "Not triggered", 47 had been assessed as compliant in previous audits.

Table 15 provides the status of the non-compliances raised during the 2024 audit. Of the 19 non-compliances raised, 18 have been completed.

Table 15 - Action Plan to address non-compliances received in the 2024 Independent Environmental Audit

NC No.	Sched	Cond	Requirement	Finding	Recommendation	Shoalhaven Starches Response	Action	Time Frame	Status
NC1	2	11	The Applicant shall ensure that all plant and equipment used on the site is:	The occurrence of multiple pipeline failures resulting in reportable incidents demonstrates ineffective maintenance. Other incidents are also noted (pump failure and process failure (Fermenter)).	Applicant should consider implementing a recurring site wide pipeline integrity review. The review should be risk-based, focusing on pipelines whose failure could result in potential or actual environmental harm.	Where a reportable environmental incident occurs, Shoalhaven Starches do review similar plant & equipment across the site to assess if a similar failure would result in a reportable environmental incident, however we acknowledge improvements can be made in this area.	Undertake a risk assessment of pipeline integrity across the site, focusing on pipelines whose failure could result in potential or actual environmental harm.	Dec-24	Complete - Pipeline identification and risk assessment around high-risk environmental areas conducted - All pipework in these areas installed with pipe labelling and identification - Maintenance work orders for 3 monthly visual inspections established.
			a) maintained in a proper and efficient condition; and		In line with previous recommendation (refer Schedule 2, Condition 1), the auditor recommends broadening the scope of this review to include a sitewide investigation into suitable approaches or methods to improve preventative maintenance outcomes across the site.		Investigate methods to improve preventative maintenance outcomes across the site.		
			b) operated in a proper and efficient manner.						
NC2	3	6A	The Applicant shall ensure that any Independent Odour Audit submitted to the Secretary in accordance with Condition 5 of this Schedule includes:	Requirements for quarterly odour testing were not met in the 2020 – 2021 Independent Odour Audit.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Of the 12 quarters during the audit period, the CO2/ethanol scrubber and Fermenter tank was missed on one occasion. The Quarter 4 2021 testing was missed due to the air quality testing consultant unavailability (personal/health reasons).	Whilst every effort is made to test all ~ 25 monitoring points during the scheduled days of testing (typically 3 days), there are a number of reasons why a monitoring point may be missed in a quarter including no access due to maintenance in the area, weather conditions, availability of testing consultant or the plant & equipment is not operating.	Jul-24	Complete Review of conditions & wording to be included in the next Modification application to DPE. Submitted to DPHI on 23-10-25 in MOD 31 application.
			a) 3 monthly (quarterly) odour monitoring with samples taken from the carbon dioxide/ethanol recovery scrubber inlet/s and outlet/s; and			We were unable to engage another testing consultant within the required quarterly timeframe. A new air quality testing company was engaged and testing was completed during the following quarter. The EPA were notified by phone and email on 7th May 2021 advising them of the situation. No further action required, or taken, by the EPA.			

			b) quarterly odour monitoring with samples taken of single vent stack (direct to atmosphere) emissions from a filling fermenter tank.				SS to consult with the Department of Planning & Environment (DPE) Secretary & EPA on possible rewording or removal of this condition.		
NC3	3	6C	The Applicant shall conduct quarterly odour monitoring from the DDG exhaust stack and report the results in the independent odour audit required under Condition 5 of Schedule 3.	Odour monitoring was not completed in accordance with the requirements of the condition.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Of the 12 quarters during the audit period, the DDG Exhaust stack was missed on 3 occasions. The Quarter 4 2021 testing was missed due to the air quality testing consultant unavailability (personal/health reasons). We were unable to engage another testing consultant within the required quarterly timeframe. A new air quality testing company was engaged and testing was completed during the following quarter. The EPA were notified by phone and email on 7th May 2021 advising them of the situation. No further action required, or taken, by the EPA. On the other two occasions the testing was not completed due to unavailability of an EWP to access the sampling point and unable to access the area due to works occurring in the area. Where sampling of the DDG exhaust stack did not occur, odour samples were taken from the known major individual sources that contribute to EPA 46 Stack to provide an indicative measure of the odour concentration.	Whilst every effort is made to test all ~25 monitoring points during the scheduled days of testing (typically 3 days), there are a number of reasons why a monitoring point may be missed in a quarter including no access due to maintenance in the area, weather conditions, availability of testing consultant or the plant & equipment is not operating. SS to consult with the Secretary & EPA on possible rewording or removal of this condition.	Jul-24	Complete Review of conditions & wording to be included in the next Modification application to DPE. Submitted to DPHI on 23-10-25 in MOD 31 application.

NC4	3	6D	The Applicant shall conduct odour monitoring on the relocated starch dryer described in MOD 7 in accordance with the requirements of the EPL and report the results in the independent odour audit required under Condition 5 of Schedule 3.	Odour monitoring was not completed in accordance with the requirements of the condition.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Of the 12 quarters during the audit period, starch dryer 5 was missed on one occasion. The Quarter 4 2021 testing was missed due to the air quality testing consultant unavailability (personal/health reasons). We were unable to engage another testing consultant within the required quarterly timeframe. A new air quality testing company was engaged and testing was completed during the following quarter. The EPA were notified by phone and email on 7th May 2021 advising them of the situation. No further action required, or taken, by the EPA.	Whilst every effort is made to test all ~ 25 monitoring points during the scheduled days of testing (typically 3 days), there are a number of reasons why a monitoring point may be missed in a quarter including no access due to maintenance in the area, weather conditions, availability of testing consultant or the plant & equipment is not operating.	Jul-24	Complete Review of conditions & wording to be included in the next Modification application to DPE. Submitted to DPHI on 23-10-25 in MOD 31 application.
							SS to consult with the Secretary & EPA on possible rewording or removal of this condition.		
NC5	3	9	The Applicant shall ensure the emissions from boiler stacks 2, 4 and combined boiler stack 5 and 6 comply with the limits in the EPL.	Emissions from boiler stacks 2, 4 and combined boiler stack 5 and 6 exceeded the % opacity limits on numerous occasions.	The Auditor recommends the Applicant commences a sitewide investigation into suitable approaches or methods to improve preventative maintenance outcomes across the site.	Investigation into improved preventive maintenance of coal-fired boilers is not required due to the following actions: - Boiler 2 is no longer operational and has been de-commissioned. - Boiler 4 has been converted to gas-fired (no opacity testing requirement for gas boilers) - Boiler 6 scheduled to be shutdown on 15/4/2024 and converted to gas. - Boiler 5 scheduled to be shut down in September 2024 and converted to gas (all as per MOD 23 approval).	No further action required.	-	Complete
NC6	3	9B	Within three months of commissioning a modification to boiler 2, 4 and/or 6 and again after all boiler modifications have been commissioned, as described in MOD 13, the Applicant shall submit a written report to the Secretary and the EPA detailing the results of post-commissioning	A Post commissioning report was not submitted after all modifications were completed.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Post commissioning report was submitted for all 3 boilers. A second post commissioning report was not submitted to the Secretary & EPA, as the EPA licence condition E1 only required one post-commissioning test report. Subsequent quarterly boiler testing was completed post-commissioning as per EPA licence requirements and the results submitted to the EPA & the Secretary via Shoalhaven Starches (SS) Annual EPA return and Annual Environmental Management	No further action required.	-	Complete

			monitoring. The report shall: a) include the results of source emissions sampling and analysis undertaken in accordance with the requirements in the EPL; b) include data to demonstrate the operational capacity of the boilers during sampling, with sampling undertaken when the boilers are operating at maximum capacity; and c) assess compliance with the limits in the EPL.			Reports.			
NC7	3	9C	If the post commissioning verification report shows that an emission concentration limit is not being met, the Applicant is required to implement all reasonable and feasible measures to achieve compliance with the relevant limit, to the satisfaction of the Secretary.	A Post commissioning report was not submitted after all modifications were completed.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Condition not triggered. The emission test report that was submitted was within emission concentration limits specified in the EPL.	No further action required.	-	Complete
NC8	3	14H	Prior to the construction of any external mechanical plant exceeding a sound power level of 78dB(A), the Applicant shall prepare a noise validation report to demonstrate that operation of the	Secretary approval not obtained for MOD 21.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Noise report submitted to Secretary on 5-5-2023. Request for Information (RFI) issued by Secretary on 24-8-2023, which required further site wide noise modelling to be completed. Revised noise report submitted to Secretary on 14-2-2024.	SS to follow-up with Secretary on status of approval.	Jun-24	Complete. DPE post approval letter received 17-5-2024.

			mechanical plant meets the noise limits in condition 12. The noise validation report shall: a) be prepared by an appropriately qualified and experienced noise expert; b) be approved by the Secretary, prior to the installation of external mechanical plant; c) demonstrate that the location, design and operation of external mechanical plant would achieve the noise limits in Condition 12; d) describe any acoustic treatments required to ensure compliance with the noise limits in Condition 12; and e) if necessary, recommend, prioritise and implement measures to improve noise controls on-site to ensure the Development meets relevant criteria and protects off-site receivers from excess noise.						
NC9	3	14M	Prior to the construction of any modifications described in Schedule 2, Condition 2, the Applicant shall prepare a design noise verification report to demonstrate the additional plant and equipment will meet relevant design noise	Design Noise Verification Reports not prepared for MOD 18 and MOD 19	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system	Reports were not completed due to the unavailability of the noise consultant that undertook the associated Noise Impact Assessments. A new noise consultant was engaged and noise validation reports (as per Condition 14N) have been completed for MOD 18 and MOD 19.	No further action required.	-	Complete.

			goals to ensure noise from the site does not exceed the noise limits in Condition 12. The noise verification report shall: a) be prepared by an appropriately qualified and experienced noise expert; b) be approved by the Secretary, prior to construction of the modification; c) demonstrate that the location, design and operation of the modification would achieve the noise limits in Condition 12; and d) if necessary, recommend, prioritise and implement measures to improve noise controls on-site to ensure the Development as modified meets the noise limits in Condition 12 and protects off-site receivers from excess noise.						
NC10	3	14N	Within 12 months of operation of each modification described in Schedule 2, Condition 2, the Applicant shall undertake noise validation monitoring to confirm noise from the modified site complies with the noise limits in Condition 12. The results of noise validation monitoring shall be included in the	Noise compliance testing not undertaken in second half of 2022.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system	Noise compliance testing was undertaken during the second half of 2022 but we never received the noise consultant's report (consultant became unavailable). A new noise consultant was engaged and the next round of testing was undertaken in April 2023. Reported to the EPA via the Annual Return 2022-23. No further action taken by EPA.	No further action required.	-	Complete.

			Annual Report required by Schedule 4, Condition 3. If the results of monitoring show any exceedance of the noise limits in Condition 12, the Applicant shall investigate and implement all reasonable and feasible noise mitigation measures to achieve compliance.						
			Note: If a modification does not require a design noise verification report or validation monitoring as required by Conditions 14M and 14N, the Applicant shall provide written justification to the satisfaction of the Secretary.						
NC11	3	22F	The Applicant shall update the Stormwater Management Plan for the development to include the Packing Plant described in MOD 21. The plan shall include the following requirements for the Packing Plant as follows: a) be prepared in consultation with Council and submitted to the Planning Secretary for approval prior to the commencement of construction; b) include detailed stormwater drainage design plans prepared by a suitably qualified engineer and include the following:	Approval from Planning Secretary not obtained prior to construction.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system	A revised Integrated Water Cycle Management Strategy (IWCMS) Rev. 2 dated 7 Apr 2022 was prepared and submitted as part of MOD 21 application to address Council comments. The revised IWCMS addressed most of the requirements in Condition 22F, however SS stormwater management plan was not updated to include the IWCMS in the required timeframe. N.B. Packing plant is still under construction.	A Stormwater engineer has been engaged and is currently preparing the updated stormwater management plan.	Jun-24	Complete Updated SMP approved by Council on 7-10-25 & submitted to DPHI on 17-10-25.

			i) minor and major systems must be designed for a 10% AEP and 1% Annual Exceedance Probability (AEP) rainfall events, respectively. ii) existing drainage systems through lots draining public roads are to be upgraded where necessary to contain flows in accordance with Council's Engineering Design Specifications – Section D5.04. iii) piping, swales and easements to facilitate future development of the site. c) include detailed design of permanent and vegetated swale stormwater quality improvement devices in accordance with Council's Engineering Design and Construction Specifications including detailed design of permanent water quality, retention and reuse devices; and d) include adopted WSUD Management, Operation, Maintenance and Monitoring Manual/s prepared in accordance with the approved Integrated Water Cycle Management Plan.						
NC12	3	25	The Applicant shall prepare a Wastewater Management Plan for the development to the satisfaction of the Secretary. This plan must:	Update to Wastewater Management Plan not completed within stipulated time frames of MOD 16 Approval.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system	Wastewater Management Plan took longer to prepare than anticipated as the previous author of the plan had retired and a new consultant was engaged and had to prepare the plan from 'scratch'.	Updated Wastewater Management Plan dated 12 October 2023 was approved by the Secretary on 23 November 2023.	-	Complete.

		a) be prepared in consultation with EPA and be submitted to the Secretary for approval within 12 months of this consent; b) be prepared in accordance with DECC's Environmental Guidelines: Use of Effluent by Irrigation; c) outline the location, design and management of the irrigation, crop and grazing system, including measures to minimise soil and groundwater degradation; and d) include: • baseline data on soil and groundwater quality and characteristics; • wastewater and soil quality impact assessment criteria and the effluent treatment and irrigation system performance measures; • details of the wastewater, soil, silage and groundwater monitoring program; • procedures for the reporting the monitoring results against the criteria and to determine the annual site nutrient and analyte budgets and water balance; • contingency measures to address exceedances, pollutant triggers and problems with the wastewater management systems; and						
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			a description how the effectiveness of actions would be monitored over time.						
			e) be updated to include the additional measures identified in the capacity assessment for MOD 16, including management of sludge inventory, increased alkalinity supplementation and a review of factory process efficiencies to identify and manage sources of hydraulic and organic load peaks.						
NC13	3	26C	The Applicant shall ensure that all hazardous materials stored on site are stored above the 1% AEP flood level.	Not all hazardous materials stored on site are stored above the 1% AEP flood level.	Given the site constraints relating to flood level, the Applicant should, in partnership with a suitably qualified professional, undertake a comprehensive review of hazardous materials storage, that includes findings on best practice approaches available on site.	Condition 26C is derived from Shoalhaven Council's SDCP 2014 Chp. G9 Development on Flood Prone Land. The objective of this clause is to ensure hazardous substances are stored above the 1% AEP so they do not become floating debris and cause potential for pollution during a flood. Chapter 9 states the 'Applicant to demonstrate that there is an area where hazardous and valuable goods can be stored above the 1% AEP Flood Level'.	In consultation with structural engineer, review adequacy of hazardous material storage with regards to 1% AEP Flood levels.	Oct-24	Complete Structural Engineer review has been completed. Review of condition & potential wording changes to be included in the next Modification application to DPE. Submitted to DPHI on 23-10-25 in MOD 31 application.
					Consultation with the Secretary should then be undertaken to determine appropriate resolution (which may include revision to condition wording).	The majority of the SS site is ~ 1 to 1.5 m below the 1% AEP flood level which means there is no area that smaller (portable) hazardous chemical storages could be easily relocated above the 1% AEP, and it is not practical or feasible to construct platforms to store these chemicals above the 1% AEP. For bulk hazardous storage tanks (fixed) and their associated bund walls, they are designed to withstand the forces of flood waters up to the 1% AEP.	Consult with the Secretary on the outcomes of the review to determine appropriate resolution.		

NC14	3	27B	No later than 31 May 2018, the Applicant shall provide written evidence to the Secretary of Council's acceptance of the works-as-executed plans and Council's acceptance of care and maintenance responsibilities for the section of Bolong Road from Railway Street to the Dairy Farmers site access	The requirements have not been met in the agreed timeframe.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Evidence of Council's acceptance of Condition 27B was submitted to the Secretary on 13-1-2023 and Secretary's acknowledgement received 18-1-2023.	No further action required.	-	Complete.
NC15	3	32	The Applicant shall ensure that vehicles associated with the development do not park or queue on the public road network at any time.	Parking viewed on site was considered adequate for normal operations, and appropriately delineated, however the Auditor notes instances where construction contractors parked off site.	Based on historical complaints received with respect to contractors parking offsite, Manildra should consider implementing specific controls around contractor parking onsite. (E.g. tied to sign on/induction/contract requirements)	A number of steps have been taken to ensure contractors do not park on the public road network including Notices, Letters, contractor site inductions, increasing car parking spots on site and disciplinary action for repeat offenders.	SS to review contractor management systems to ensure parking requirements are clearly understood and communicated.	On-going	Complete Added to Manildra consequences table, submitted to all contractors.
NC16	3	37B	The Applicant shall update and implement the Safety Management System required under Condition 37(c) no more than 1 months prior to the commencement of commissioning of MOD 19, or as otherwise agreed upon by the Planning Secretary. The updated Safety Management System must include a dangerous goods register prepared in consultation with an independent dangerous goods consultant. The register must be maintained for the life of the	The Safety Management System (Hazardous Chemical Manifest) was not updated in the required timeframe.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Hazardous Chemical Manifest has been prepared in consultation with an independent DG consultant. Review of hazardous chemical storage occurs as part of WHS scheduled site inspections.	No further action required.	-	Complete

			development and as modified, and provide sufficient details on:						
			a) reasons why full compliance cannot be achieved with all relevant Australian Standards;						
			b) engineered solutions and actions to achieve at least an equivalent level of safety required under full compliance, taking into account industry best practice or requirements by SafeWork NSW; and						
			c) completion dates for all actions in Condition 37B b) above.						
NC17	3	39A	For all works associated with MOD 19 and for any further modifications to this consent approved thereafter, dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled in accordance with: a) all relevant Australian Standards; b) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management – technical bulletin (EPA, 1997).	Dangerous goods not stored in accordance with AS1940-2017 - <i>The storage and handling of flammable and combustible liquids.</i>	Ensure the scope of future Dangerous Goods (DG) Audit covers storage of all dangerous goods on site. Consider including dangerous goods storage checks in weekly or monthly site inspections.	DG Audit checklist and audit schedule has been developed.	Implement DG audits as per schedule.	Jul-24	Complete Annual DG depot audit has been developed & implemented. Management of Change process updated to capture changes in DG storage.

NC18	3	43B	The Applicant shall engage a suitably qualified geotechnical engineer to regularly review the survey data obtained in accordance with Condition 43A and shall carry out maintenance and/or repairs to the rock revetment wall if required, to the satisfaction of the Secretary. Maintenance and/or repairs shall be completed within 2 months of identifying the need for the repairs, unless otherwise agreed with the Secretary.	Repairs to the rock revetment wall were not completed within in 2 months of need for repair being identified.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system.	Conditions 43A & 43B were issued in relation to the rock revetment wall adjacent to the Flour Mill. No maintenance repairs to the rock revetment wall have been identified that require repair in this rock revetment. SS engaged a consultant (SMEC) to assess riverbank stability for the entire length of the factory site. A numbers of areas require riverbank stabilisation works, including other rock revetments, which requires development approval. A preliminary development application for riverbank stabilisation works has been submitted to Council.	SS is currently preparing a riverbank stabilisation DA for submission to Council.	Dec-26	In progress Due to complexity & costs of the DA, timeframe revised to Dec-26.
NC19	4	2	The Applicant shall implement the Environmental Management Strategy and the management plans required in Schedule 3 of this consent (as revised and approved by the Secretary from time to time) for the duration of the development, as modified.	Whilst the Auditor considered the Applicant was generally implementing the Environmental Management Strategy, requirements for quarterly odour monitoring were not being met.	Ensure all approval requirements are captured, tracked and assigned a responsibility in a compliance management system. Additionally, the Applicant should undertake a program of annual internal EMS audits to ensure ongoing compliance with the requirements of the system/strategy.	An 'Airtable' has been developed which tracks all the conditions of consent for all Modifications under Development Consent 06_0228, including responsibilities, reminders and due dates for completion.	Implement annual EMS internal audit program.	Jul-24	Complete Internal audits are being conducted. Automatic emails generated to the responsible person when Approval requirements are due.

9. INCIDENTS AND NON-COMPLIANCES

9.1 NON-COMPLIANCES

During the reporting period, 5 non-compliances were identified against the conditions of the Consent. Details of the non-compliances are as follows:

9.1.1. Noise Limits – Nowra (Sch. 3, Cond. 12)

- Six-monthly (22nd August 2024) noise monitoring at the receivers in Nowra (M2) & (M4) exceeded the sites noise limits.
- Low Frequency Noise (LFN) penalties of 2dB were applied to these receiver's measured noise levels which resulted in receptor M2 exceeding the noise limit by 8 dBA and receptor M4 by 2 dBA.
- Details of the non-compliance was reported in Shoalhaven Starches EPL 2024-25 Annual Return to the NSW EPA.
- The cause of the non-compliance is currently under investigation with additional noise monitoring, modelling and noise reduction projects being undertaken.

9.1.2. Noise Limits – Terara & Bomaderry (Sch. 3, Cond. 12)

- Six-monthly (21st January 2025) noise monitoring at the receivers in Terara (M1), Bomaderry (M5), (M6) & (M7) exceeded the sites noise limits.
- Results suggest that Terara (M1) was over the noise limit by 7 dBA and Bomaderry (M5) by 2 dBA, (M6) by 5dBA & (M7) by 3dBA. No low frequency penalty applied on this occasion.
- Details of the non-compliance was reported in Shoalhaven Starches EPL 2024-25 Annual Return to the NSW EPA.
- The cause of the non-compliance is currently under investigation with additional noise monitoring, modelling and noise reduction projects being undertaken.

9.1.3 Emission Limits – Boiler 5 and 6 Stack Sulfur Dioxide SO₂ (Sch. 3, Cond. 9)

- Boilers 5 and 6 stack (Point 35) sulfur dioxide (SO₂) not tested during yearly testing.
- Details of the non-compliance was reported in Shoalhaven Starches EPL 2024-25 Annual Return to the NSW EPA.
- The cause of the non-compliance was due to Shoalhaven Starches moving away from the burning of coal and that the boilers were non-operational during testing days.

9.1.4 Emission Limits – Boiler 5 and 6 Stack Opacity (Sch. 3, Cond. 9)

- Boilers 5 and 6 stack (Point 35) exceeded the % opacity EPL limit (20%).
- Details of the non-compliance was reported in Shoalhaven Starches EPL 2024-26 Annual Return to the NSW EPA.
- The cause of the non-compliance was due to holes in the boiler baghouse filter socks.
- The baghouse filter socks were replaced.
- Shoalhaven Starches has fully transitioned away from coal as a fuel source

9.1.5 Coal Sulfur Content – Boiler 5 and 6 (Sch. 3, Cond. 9A)

- Coal used in Boiler 5 and 6 (Point 35) exceeded the sulfur content >0.4% by weight EPL limit.
- Details of the non-compliance was reported in Shoalhaven Starches EPL 2024-25 Annual Return to the NSW EPA.
- The cause of the non-compliance was due to expiry of coal supply contracts during transition off coal to Natural gas, and inability to obtain coal consistently below sulfur content limit.

N.B. The above non-compliances exclude the non-compliances raised in the 3 yearly Independent Environmental Audits which are discussed in Table 15.

9.2 INCIDENTS

There were three reportable incidents which occurred during the reporting period. The details are as follows:

Incident 10-9-2024:

- On Tuesday 10th September 2024, a slump was observed (approx. 3m in length) along the western face of Abernathy Creek following a rain event, an eroded part of the embankment had uncovered some discoloured soil material.
- Investigation found that a bund containing a dilute caustic tank which had overflowed and leaked through a construction gap had made its way into the subsoil.
- Affected soil material was removed and the area rehabilitated under the guidance of an Environmental Consultant.

Incident 17-10-2024:

- On Thursday 17th October 2024 at approximately 10:00 pm, very significant damage was suffered to grain silos at the Shoalhaven Starches premises, spilling wheat grain onto the surrounding area and into the Shoalhaven River.
- All spilled grain, silo fragments and other debris was lifted from the river via excavator and barge before being disposed of appropriately.
- The cause of the event is still under investigation with the EPA and SafeWork NSW.

Incident 25-1-2025:

- On Saturday 25th January 2025 at approximately 7:00 am, dry vital wheat gluten was discharged from a blocked stainless-steel blow line, resulting in dry gluten onto the bank of Abernathy Creek and a small amount entering the creek.
- The incident was caused by a product blockage in a section of blow line that runs over Abernathy Creek with the unblocking requiring disconnection of a flange which is when the incident occurred.
- All dry gluten was removed by vacuum tanker and disposed of appropriately at the Environmental Farm.

9.3 LEGAL COMPLIANCE

There have been no penalty notices or legal proceedings received by the company from the NSW EPA or DPHI during the reporting period.

One official Warning Letter from the DPHI was received by Shoalhaven Starches on the 16th July 2024. The Warning Letter was issued for non-compliances identified as part of the Independent Environmental Audit (IEA) 2019-2024 which has resulted in breaches of the condition of approval. Shoalhaven Starches must provide a summary of actions taken to address these non-compliances in this year's annual report which can be found in Table 15 of this report.

Two official EPA Clean Up Notices were received by Shoalhaven Starches on 18th October 2024. The Clean Up Notices were issued in response to the grain silos collapse incident on 17th October 2024 where a significant amount of grain and structure had spilt into the Shoalhaven River following the collapse of two grain silos.

A Clean-Up protocol was developed inline with notice requirements and adhered to throughout the process. The EPA investigation into the incident is still ongoing, however discussions between Shoalhaven Starches and the EPA regarding an Enforceable Undertaking is currently underway.

One official Caution Letter from the EPA was received by Shoalhaven Starches on 31st January 2025. The Caution Letter was issued in response to a reported incident on 10th September 2024 where Shoalhaven Starches observed a slump in the bank of Abernathy's Creek which was later attributed to a dilute caustic tank leak after the construction joints in the bund close by were found to have been deteriorated. The EPA considered when making its decision for caution that Shoalhaven Starches immediately commenced clean up action, notified the EPA and was cooperative with their investigation.

An official Enforceable Undertaking (EU) from the DPHI was entered into by Shoalhaven Starches on the 4th June 2025. The EU was issued in response to a breach of section 4.2 (a) & 4.2 (b) of the EP&A Act by Shoalhaven Starches as it commenced construction of the proposed MOD 25 Rail line Extension prior to receiving development approval.

As part of the EU, Shoalhaven Starches has committed to a number of undertakings including delivery of environmental training packages to directors and managers, native tree plantings and helping to fund other community lead projects in the region.

10. ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The following activities planned for the next reporting period include:

- Subject to DPHI approval, commencement of construction by Supagas of the MOD 30 Proposed Alterations and Additions to the CO2 Plant.
- Construction of the Main distribution substation 0.2 and 0.3 approved under MOD 29.
- Completion and operation of the MOD 25 Rail Line extension and Dryer Baghouse.
- Finalisation and submission of MOD 26 application to DPHI.
- Finalisation and submission of MOD 31 application to DPHI.
- Finalisation and submission of MOD 33 application to DPHI.
- Preparation of a Modification application to DPHI to construct a grain storage shed to replace the approved temporary grain bunker (MOD 28) located at Shoalhaven Starches Environmental Farm.
- Preparation of a Modification application to DPHI to seek approval for an increase in approved ethanol production from 300 ML p.a. to 400 ML p.a.