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The Primary Food Company Pty Ltd

TAMWORTH GRAIN REFINERY

PRELIMINARY ENVIRONMENTAL ASSESSMENT

March 2013

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Prepared by
Umwelt (Australia) Pty Limited

on behalf of
The Primary Food Company Pty Ltd

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Report No.	**3144/R01/V2**
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1.0 Introduction

The Primary Food Company Pty Ltd (PFC) is seeking development consent for the construction and operation of a fully integrated grain refinery in an industrial area of Tamworth NSW (the Project) (refer to **Figures 1** and **2**). The proposed facility has currently been designed to process up to 275,000 tonne per annum (tpa) of grain (wheat and sorghum). The Project area can potentially support a facility capable of processing up to 500,000 tonne per annum of grain. The potential to increase the throughput capacity of the proposed facility to greater than 275,000 tpa will be subject to further design and assessment of potential associated environmental impacts and will be detailed in the EIS.

The main focus of this facility will be the production of food ingredients including a range of bran products, protein products, human food products, animal food products with the production of liquid alcohols (for the beverage and industrial markets) as a secondary focus.

The Project is located on a 12 hectare site zoned heavy industrial IN(3) (the Project area) approximately 4 kilometres west of the City of Tamworth in NSW. The Project area has frontage to Goddard Lane, which connects to Wallamore Road and the Oxley Highway (refer to **Figure 2**). The Project area is located immediately adjacent to a large sale yard complex in an area that supports other industrial land uses, including abattoirs, a concrete manufacturing plant, a grain storage facility and other engineering facilities. The Project area is located approximately 500 metres to the west of the Tamworth Waste Water Treatment Facility.

Raw materials will be transported to the facility by road via approved B-Double routes.

Water supply for the plant will be drawn from Tamworth Regional Council's Town Water Supply. The facility will operate 24 hours per day 7 days a week. It is estimated that 500 jobs will be created during construction and 50 full-time positions during operation of the facility.

The current project design with a throughput capacity of 275,000 tpa includes the following plant components:

- grain storage of up to approximately 50,000 tonne of wheat and sorghum;
- dry milling plant capable of grinding the incoming wheat to flour and production of bran/mill mix;
- wet milling plant for separation of flour and production of vital wheat gluten, A and B starch;
- starch to alcohol plant with a capability to produce approximately 72 million litres per annum of fuel and/or beverage grade ethanol;
- drying plant to produce approximately 40,000 tonnes per annum (tpa) of dry A and B starch, approximately 19,000 tpa of dried vital wheat gluten and approximately 40,000 tpa of wheat protein meal extract;
- a glucose plant producing approximately 20,000 tpa of glucose syrup;
- associated utilities and services including water treatment and energy raising plant;
- a control room and laboratory;
- an administration building;

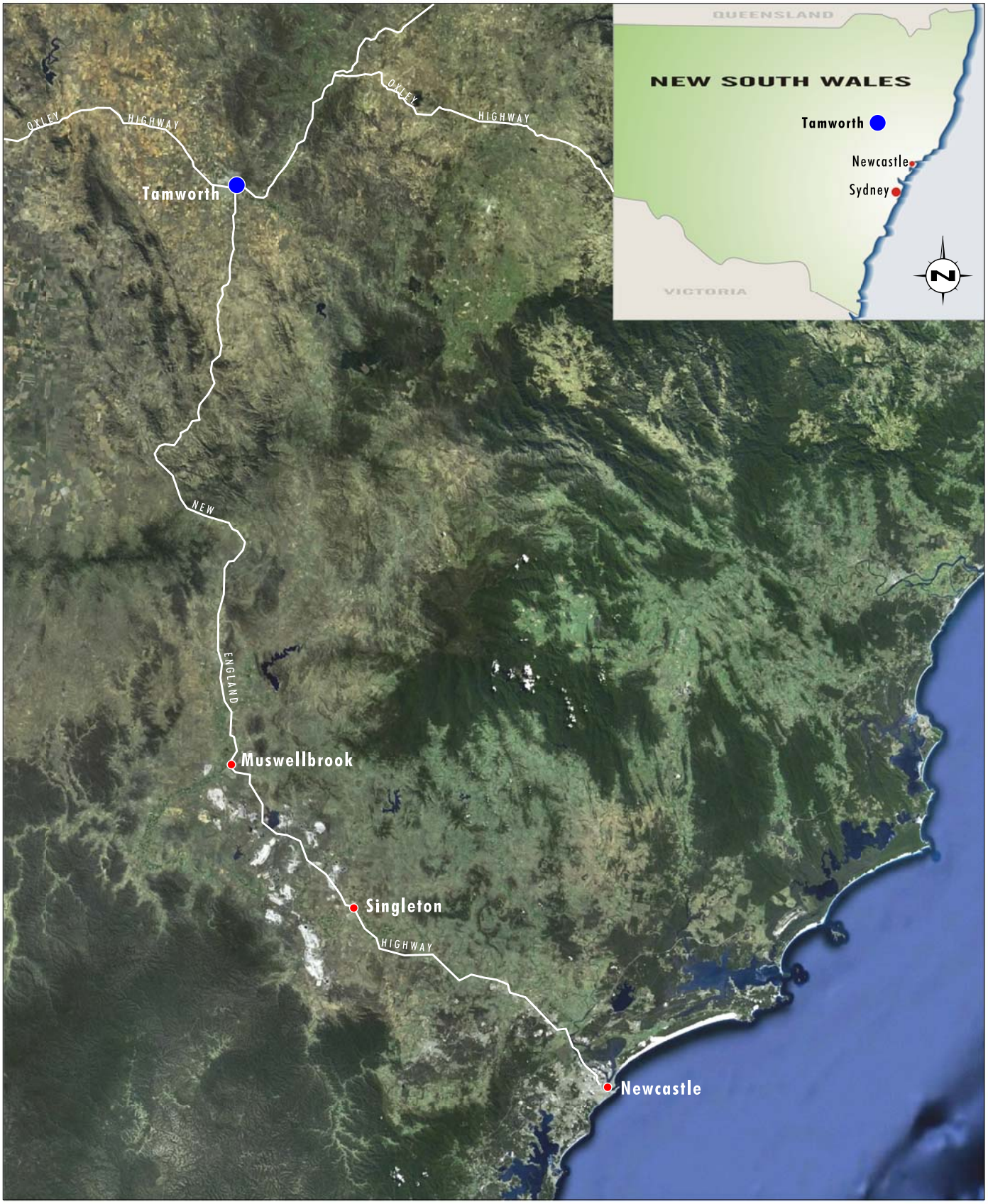

Image Source: Google Earth (2013)

0 20 40 60km
1: 1 200 000

FIGURE 1

Locality Plan

Image Source: Google Earth (2006)
Data Source: PFC (2013)

0 100 250 500m
1:10 000

Legend

- Project Area
- Glen Artney Industrial Estate

FIGURE 2

The Project Area

- a workshop and stores; and
- associated infrastructure.

The nearest residential area is approximately 1.4 kilometres to the south-east with some small rural residences in closer proximity to the Project area. Based on a throughput capacity of 275,000 tpa, the facility will require approximately $92 million in capital expenditure to establish.

The Project is a State significant development (SSD) as defined under the *State Environmental Planning Policy (State and Regional Development)* 2011 and will require consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Minister for Planning will be the consent authority.

This preliminary environmental assessment (PEA) has been prepared by Umwelt on behalf of the PFC for submission to the Department of Planning and Infrastructure (DP&I). Following consideration of the PEA and consultation with relevant government agencies, DP&I will provide Director-General's Requirements (DGRS) for the preparation of the Environmental Impact Statement (EIS).

This document provides a brief outline of the proposed development; an overview of the community and environment context; an environmental risk analysis; and identifies key issues proposed to be addressed in the EIS for the Project.

2.0 Existing Environment

2.1.1 Location

The Project area is an approximately 12 hectare site on Goddard Lane, Tamworth (Part Lot 2 DP 816346). It is located approximately 4 kilometres to the west of the City of Tamworth, NSW (refer to **Figures 1** and **2**).

The Project area has frontage to Goddard Lane which connects to Wallamore Road and the Oxley Highway. The Project area is located to the West of the Tamworth Waste Water Treatment facility and approximately 500 metres to the North West of the Central Ranges Natural Gas Pipeline Station. The Project area is located in an area that supports other industrial land uses, including a beef cattle abattoir, sheep abattoir, adjacent sale yard complex, concrete manufacturing plant, grain storage facility and other engineering facilities. The North Western Railway is located immediately to the north east of the Project area. The proposed Project area is located in the Peel River Catchment area and the Tamworth Local Government Area.

2.1.2 Description

The Project area is approximately 12 hectares in size with an elevation of approximately 380 mAHD to 400 mAHD and typically exhibits slopes of approximately 1.5 per cent. Road access to the Project area will be via Goddard Lane. A preliminary site layout for the Project is illustrated on **Figure 3**.

The Project area has not previously been developed for industrial purposes and is currently under agricultural tenure. It has historically supported agricultural uses, primarily grain production (refer to **Plates 1** and **2**). The Project area was rezoned to IN(3) heavy industry as part of the Tamworth Regional Local Environmental Plan 2010, which came into effect on 21 January 2011.

2.1.3 Access to Services

Due to the proposed Project area location close proximity to a well serviced industrial area, the following services are readily accessible:

- Electricity – the main industrial zone electricity substation is to the immediate west of the Project area;
- Gas – the Central Ranges Natural Gas Pipeline station is some 500 metres from the proposed Project area;
- Water – local connection available;
- Telecommunications – readily accessible to the proposed Project area;
- Road – the proposed Project area has a bitumen sealed road to the Project area entrance; and
- Rail – The North Western Railway is located immediately to the North East of the Project area.

Image Source: Google Earth (2006)
Data Source: PFC (2013)

0 50 100 200m
1:5 000

Legend

- Project Area
- Proposed Infrastructure

FIGURE 3

Proposed Tamworth Grain Refinery
Conceptual Layout

PLATE 1
View towards Glen Artney Industrial Estate - looking north west

PLATE 2
View towards existing substation - looking west

2.1.4 Land Ownership and Land use

The Project area is currently a privately owned property. The PFC has indicated that it has an agreement in place with the landholder of the property to purchase the site following consent for the Project being granted.

The area surrounding the Project is currently utilized for a range of land uses (refer to **Figure 2**). The Tamworth Airport is located approximately 0.9 kilometre to the south west of the Project. The land immediately to the south of the Project area supports agricultural land uses, primarily cropping. The Glen Artney Industrial Estate is located immediately to the north west of the Project and supports a number of privately and Council owned industrial enterprises. Land to the north east of the Project area is privately owned rural and rural residential with some dairy farms. The Tamworth Wastewater Treatment Plant is located approximately 0.5 kilometre to the south east of the Project area. The nearest residential area is a suburb called Westdale that is located approximately 1.4 kilometres to the south east of the Project.

3.0 Project Overview

The Project will combine three separate processes within the grain refinery, dry milling, wet milling and alcohol production.

The Project has been designed to be capable of processing up to 275,000 tonnes of wheat and sorghum each year to produce a range of bran products, protein products, human food products and liquid alcohols for the beverage and industrial markets. However, the Project area is capable of supporting a grain refinery that can process up to 500,000 tonnes of wheat and sorghum per year. Further detailed design during the early stages of EIS preparation may result in approval being sought for a processing capacity of greater than 275,000 tonnes per annum.

The raw material feedstock (cereal grains) will be transported to the facility via B-Double road transport. It is envisaged that the large proportion of these will arrive from the west of Tamworth via the Oxley Highway, an approved B-Double route. Grains will likely be sourced from grain growing areas within 150 kilometres of Tamworth in normal seasons. The majority of the grain is expected to be sourced from areas to the west of the site.

Water supply for the refinery will be drawn from Tamworth Regional Council's Town Water Supply. The potential to treat and reuse water from Council's Wastewater treatment plant will also be explored. The process has a 75 per cent water recycle design and is very efficient in regard to water reuse.

It is estimated that the project will require approximately $92 million in capital expenditure to establish and will generate up to 500 construction positions. During the operational phase of the development 50 direct full time positions will be created, indirect positions created in the regional area as a direct result of the economic stimulus that a project of this nature will cause through additional demands on service providers.

3.1 Process

Grain will be transported to the Project area by road, and will be stored on site prior to cleaning and milling via a series of standard roller mills. A process flow diagram for the proposed food refinery is shown on **Figure 4**.

3.1.1 Stage 1 – Dry Milling

The incoming wheat grain is fed through a series of roller mills that effectively remove 22 per cent of the wheat outer layers known as bran to produce clean flour. The bran that is removed is sold as human consumption bran and stock feed. The wheat flour then is sent to Stage 2 of the production process.

Incoming sorghum grain is ground separately and sent directly to Stage 3 of the production process for alcohol production.

3.1.2 Stage 2 – Wet Milling

It is important to have a very clean flour sample to enable success of this next process stage. Moisture is added to the flour and this second phase becomes a wet process that is necessary to enable the separation of the various fractions within the wheat flour. Basically the flour is separated into A Starch, B Starch, Protein, and the residual is sent to the third and final phase of the production process.

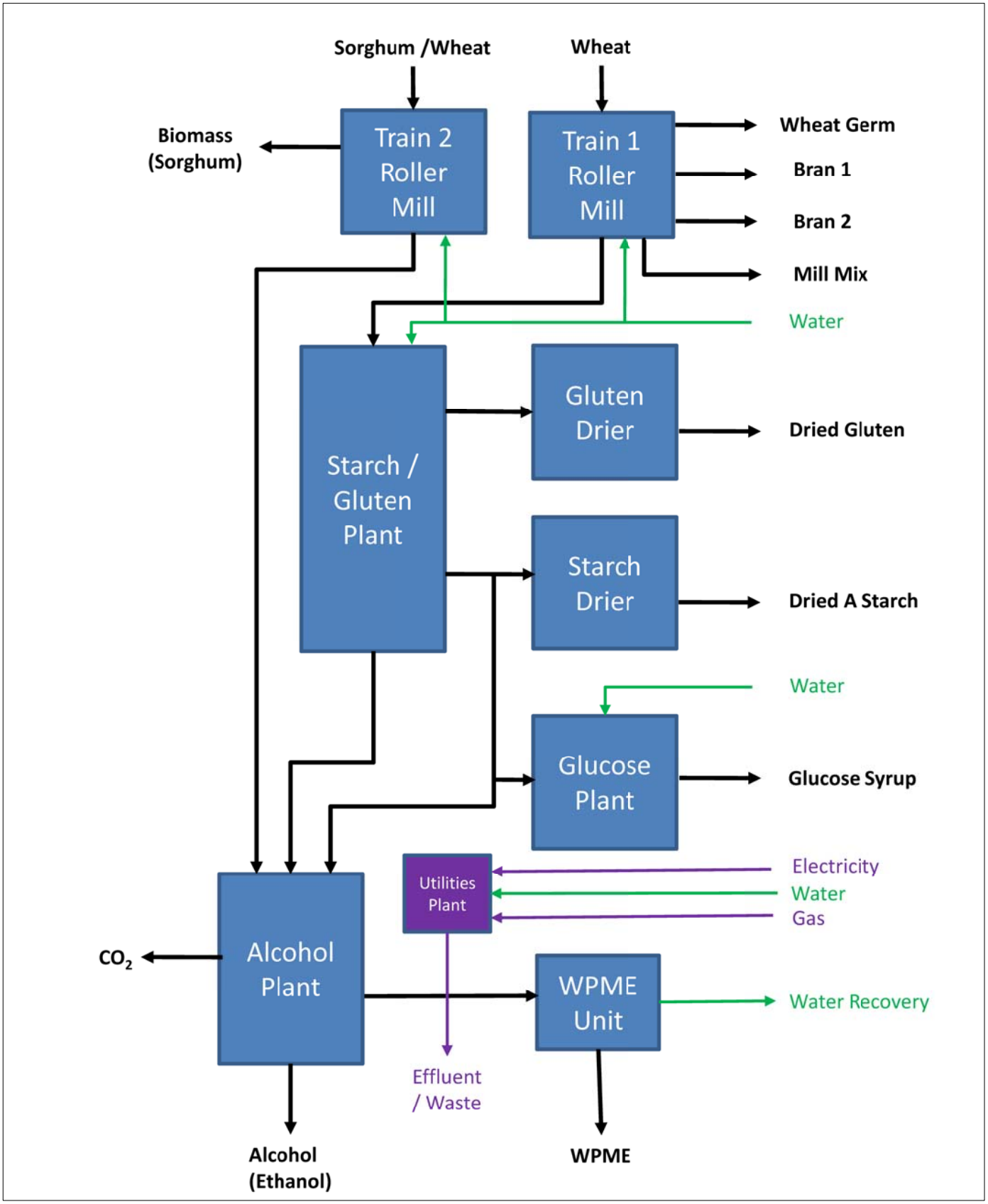

Image Source: PFC (2013)

FIGURE 4

Tamworth Grain Refinery Process Diagram

A Starch is used for human food production as a staple ingredient but also in the paper and cardboard packaging and manufacturing business.

B starch similarly can be used in the production of various grades of cardboard packaging. Liquid glucose is used in the beer manufacturing process and also extensively in the cereal and snack food manufacturing business.

Human consumption protein will be used solely by the baking industry for inclusion in breads, cereals cakes, snack foods and other products.

3.1.3 Stage 3 – Alcohol Production

The sorghum flour together with waste starch from Stage 2 will be directed to the alcohol production phase whereby the starches are converted to sugars and fermented to produce alcohols. The alcohols produced will be dried with the use of a molecular sieve. The residual from this process is then dried to produce a high protein animal stock feed.

3.2 Products

The Project has currently been designed to process up to 275,000 tonnes of wheat and sorghum per annum to produce the following products (described further in **Section 4.0**):

- mill mix and brans;
- starch (A starch and B starch);
- liquid glucose;
- vital wheat gluten;
- ethanol for beverage and industrial usage; and
- wheat protein meal extract for animal consumption.

Estimated quantities produced are contained in **Table 3.1** below:

Table 3.1 – Products to be Produced by the Project

Product	**Tonnes per annum**
mill mix and brans	42,000
starch (A and B)	40,000
liquid glucose	15,000
vital wheat gluten	18,900
wheat protein meal extract	40-50,000
Product	**Million Litres**
alcohols - beverage and industrial	72

As discussed the potential to increase the throughput capacity will be considered further during preparation of the EIS.

4.0 Need for the Project

The Project addresses needs globally, regionally and locally as outlined in the sections below.

4.1 Global

With a rapidly expanding global population food ingredient production facilities are becoming key infrastructure assets for future food security. This is particularly the case in the Asian region and specifically China where the growing number of middle class are changing the dynamics of global consumption of food ingredients. Research sourced by PFC indicates that previously China was an active exporter of food ingredients however according to National Starches Australia 'with this expanding population, domestic consumption is increasing at such a rate that China is quickly becoming a net importer'. This growing middle class is demanding more processed starches and food ingredients. Australia, with its raw material production capability and global reputation for producing clean green produce of a high quality, is ideally placed to meet this demand.

The increasing demand for food and food ingredients is a key driver for the development of the Project.

This facility will produce food ingredient products that will in turn be placed in to expanding growth markets both domestically and internationally. The Project has attracted stakeholder support from both domestic and international blue chip food companies.

4.2 Regional and Local

Australia is facing a decline in industrial production. This Project will contribute to the manufacturing base within Australia. The Project will add value to the locally grown primary feed stocks and in so doing avoid that value being lost off shore. The Project will create a major new domestic market for locally grown grains.

The Project will significantly add to Regional Development and will create 50 direct employment positions. PFC estimate that operation of the proposed facility will generate an additional 180 indirect positions injecting in excess of $5 billion dollars of economic stimulus into North Western NSW over an initial 5 year period.

With over $100 million in annual revenues the operation will be a major tax payer and will create and underpin new and existing trade suppliers within the North Western region of NSW.

4.3 Products

The Project will produce six key products, namely Mill Mix, Vital Wheat Gluten, starch, glucose, ethanol and Wheat Protein Meal Extract.

4.3.1 Mill Mix

Mill mix is a co-product of the flour milling industry. Its use is predominantly as a filler in stock feed rations for sheep, horses, pigs, dairy and beef cattle and in the poultry industry. Demand is strong for this type of product with many intensive livestock industries located in the Liverpool Plains area of NSW.

4.3.2 Vital Wheat Gluten

The primary outlet for Vital Wheat Gluten is in bakery products and pet food manufacturing. Vital Wheat Gluten is added to both conventional and continuous white pan bread, bread and rolls, including rye, specialty protein and diet breads, rolls and buns, and sweet yeast-raised products. It is generally used at 2 to 4 per cent of the flour in breads and rolls.

There are many uses of wheat gluten outside the food industry and research is on-going, as outlined in **Table 4.1**.

Table 4.1 – Uses of Wheat Gluten

Films	Gluten-based packaging films and coatings can be excellent edible, renewable, and biodegradable air barriers with good mechanical properties.
Coatings	Gluten coatings may protect flavour and shelf-life of foods.
Polymers, resins and plastics	Modified gluten hydrolyzates give flexibility and elasticity to certain polymers and resins. Gluten, as well as starch, can be grafted into polymers.
Inks	Gluten in water-thinned inks can reduce drying of pen tips, while speeding drying on some surfaces.
Laundry detergents	Modified gluten hydrolyzates may stabilise enzymes added to detergents to remove stains.
Cosmetics and hair care products	Gluten hydrolyzates act as moisturizers, foaming agents, and conditioners in cosmetics and hair care products.
Adhesives	Modified gluten hydrolyzates are useful in pressure-sensitive adhesives.
Rubber products	Modified cereal flours can reinforce certain types of non-tire rubber.
Milk replacer's	Partially-hydrolyzed gluten has potential as a milk replacer in animal nutrition.
Functional food products	Acid or enzymatic hydrolysis of gluten improves its emulsifying, foaming, and solubility properties for foods.
Medical products	Biodegradable elastic products containing gluten can be prepared by extrusion or coagulation. Gluten can encapsulate medicines for slow-release. Shaped food containers - gluten can be an ingredient and water-repellent coating in shaped biodegradable food containers.
Paper products	Gluten can be a whitener in re-pulping newspaper, and modified glutens are useful for paper sizing.
Materials	Gluten can entrain air in concrete, can be incorporated into biodegradable packing, and can be used in ceramics.
Environmental applications	Gluten is useful for heavy metal recovery, to solidify waste oils, and in biodegradable hydrating cat litter.
Agriculture	Gluten-encapsulated agricultural agents provide slow release. Gluten hydrolyzates give pre-emergence weed control.

4.3.3 Starch

Starch is the most common carbohydrate in the human diet, but has many other uses. In food applications it is also used as a thickener and stabiliser. Industrial usage includes papermaking, corrugated cardboard adhesives, gypsum wall board manufacture, clothing starch, inks and many other uses. Starch can also be used in a modified form and processed to form simpler carbohydrates such as sugars, of which glucose is one form.

4.3.4 Glucose

Glucose is a food and beverage ingredient widely used in confectionary manufacture, beverage manufacture and in many foods.

4.3.5 Ethanol

Ethanol is a clear, colourless, flammable liquid. Ethanol has traditionally been used as a feedstock to manufacture a variety of petrochemicals, in alcoholic beverages, pharmaceutical and for various other industrial purposes (solvents, dyes, etc.). Now ethanol is used globally as petroleum volume extender, octane booster, and as a fuel oxygenate.

4.3.6 Wheat Protein Meal Extract

The Project will also produce a feed meal product ideally suited for the intensive livestock industries, e.g. cattle feedlots, poultry, meat chickens. This market consumes over 900 ktpa with less than 40 per cent currently met from domestic production.

4.4 Summary

The increasing demand for food and food ingredients at the local, regional and global levels is a key driver for the development of the Project. In addition, the industrial/manufacturing sector in Australia has been in decline in recent times. This Project will increase the manufacturing base within Australia. The Project will also result in the direct employment of 50 full-time positions during operation of the facility and approximately 500 during construction. Consequentially, the Project is expected to inject in excess of $5 billion dollars of economic stimulus into North Western NSW over an initial 5 year period. Over $100 million is expected to be paid in annual taxes by the Project. The Project is ideally placed to meet the demand for the six high quality food and beverage products it will produce.

5.0 Planning Considerations

The Project will require development consent under Part 4 of the EP&A Act. . The Minister for Planning will be the consent authority for the development. The Project falls under Schedule 1, Clause 3 of the State Environmental Planning Policy (State and Regional Development) 2011 (SEPPSRD) in that it relates to 'Agricultural produce industries and food and beverage processing' with a capital investment value of more than $30 million. As State Significant Development, the Project is permissible provided it is not wholly prohibited by an environmental planning instrument. The Project area is zoned IN(3) Heavy Industrial under the provisions of the Tamworth Regional Local Environmental Plan 2010 and the Project is a permissible land use with development consent in this zone.

In addition to development consent under Part 4 of the EP&A Act, the Project will also require approvals under a number of additional Acts and consideration of factors under various State Planning Policies (SEPPs). The additional Acts and policies relevant to this project are listed in **Table 5.1** below with an indication of any approvals likely to be required.

Table 5.1 – Other Potentially Relevant Acts and Environmental Planning Instruments

Planning Provision	Comments	Relevance
Commonwealth Legislation		
Environment Protection and Biodiversity Conservation Act 1999	The highly disturbed agricultural nature of the Project area minimises the likelihood of listed species/communities/populations being present on-site. A comprehensive ecological impact assessment will be prepared as part of the EIS.	Given the level of disturbance of the site, approval under the EPBC Act is considered unlikely; however an ecological assessment will be completed for the Project which will identify any further approval requirements.
Native Title Act 1993	The Native Title Act is administered by the National Native Title Tribunal. The Tribunal is responsible for maintaining a register of native title claimants and bodies to whom native title rights have been granted. The Act prescribes that native title can be extinguished under certain circumstances, including the granting of freehold land.	As the site is freehold land, Native Title has been extinguished. However, this will be confirmed during the preparation of the EIS.
NSW Legislation – Environmental Planning Instruments		
Tamworth Regional Local Environmental Plan 2010	Regulates permissibility and planning considerations in the Tamworth LGA.	Project is permissible with development consent
State Environmental Planning Policy 33	*SEPP No. 33* requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. A hazard assessment is completed for potentially hazardous development to assist the consent authority to determine acceptability.	The Project is considered to be potentially hazardous. A Preliminary Hazard Analysis (PHA) will be prepared for the Project as part of the EIS.

Table 5.1 – Other Potentially Relevant Acts and Environmental Planning Instruments (cont.)

Planning Provision	Comments	Relevance
State Environmental Planning Policy 44	*SEPP No. 44* restricts a Council from granting development consent for proposals on land identified as core koala habitat without preparation of a plan of management.	No clearing is proposed as part of the Project and there will be no off-site impacts to koala habitat; therefore this SEPP does not apply. The Tamworth LGA is not listed in SEPP 44; therefore the SEPP does not apply to this Project. However, SEPP 44 will be considered as part of the comprehensive ecological assessment.
State Environmental Planning Policy (State and Regional Development) 2011	The project is of a class of development listed in the SEPP. The project is therefore identified as being State Significant Development.	Assessment under Part 4 of the EP&A Act as State Significant Development. An EIS must accompany the development application.
NSW Legislation – Acts		
Environmentally Hazardous Chemicals Act 1985	The Office of Environment and Heritage (OEH) is granted power under the *Environmentally Hazardous Chemicals Act* 1985 to assess and control chemicals and declare substances to be chemical wastes. A licence is required for any storage, transport or use of prescribed chemicals.	A license will be required under this Act if any prescribed chemicals are proposed to be stored or used as part of the project. Further details will be provided in the EIS.
Protection of the Environment Operations Act 1997 (POEO Act)	The POEO Act is administered by OEH and requires licences for environmental protection including waste, air, water and noise pollution control.	Under Schedule 1 of the POEO Act, an Environment Protection Licence (EPL) is required for agricultural produce industries that have the capacity to process more than 30,000 tonnes of agricultural produce per year. Agricultural produce includes seeds, fruit, vegetables and other plant material. The Project falls into this category and will therefore require an EPL for operation. PFC will apply for an EPL following development approval.
Roads Act 1993	The *Roads Act* 1993 is administered by the Roads and Maritime Service (RMS), local council or the Department of Lands. The RMS has jurisdiction over major roads, the local council over minor roads, and the Department of Lands over Crown road reserves.	The Project will require connection to Goddard Lane which runs adjacent to the Project area. Goddard Lane is classified as a local road. Accordingly, approval under the Roads Act will be required from Tamworth Regional Council (TRC). During the EIS process it will be confirmed that approval is required under the *Roads Act 1993*.

Table 5.1 – Other Potentially Relevant Acts and Environmental Planning Instruments (cont.)

Planning Provision	Comments	Relevance
Dangerous Goods (Road & Rail Transport) Act 2008	The *Dangerous Goods (Road & Rail Transport) Act 2008* makes provision for safety in the transport of dangerous goods by road and rail as part of the system of nationally consistent road and rail transport laws.	Ethanol is a flammable liquid and is therefore a Class 3 Dangerous Good – Flammable Liquids. During the EIS process it will be determined if an approval is required under this Act.
National Parks and Wildlife Act 1974	This Act is the principle legislation dealing with the management of Aboriginal heritage and protection of native flora and fauna.	An Aboriginal heritage impact permit under s. 90 of the act is not required where the activity is granted development consent under Part 4 of the EP&A Act. As such, this Act does not apply to the Project.
Heritage Act 1977	This Act makes provisions to conserve the environmental heritage of the State. It provides for the identification and registration of items of State heritage significance, provides for the interim protection of items of State heritage significance, constitutes the Heritage Council of New South Wales and confers on it functions relating to the State's heritage.	An approval under Part 4 (effect on interim heritage orders and listing on State Heritage Register), or an excavation permit under section 139 (disturbance or excavation of relic) and Division 8 Part 6 of the Heritage Act is not required where the activity is granted development consent under Part 4 of the EP&A Act. As such, this Act does not apply to the Project.
Threatened Species Conservation Act 1995 (TSC Act)	Under the EP&A Act, impacts on threatened species listed under the TSC Act are required to be assessed.	All threatened species listed in the TSC Act located or potentially located within the Project area will be assessed as part of the ecological assessment.
Water Management Act 2000	This Act regulates the taking, interception, storage and use of surface water and groundwater within areas subject to water sharing plans.	TRC has already agreed to supply water to the Project. The Peel valley is the subject of a water sharing plan. The water management implications of this water sharing plan will be assessed and documented in the EIS. The Project is unlikely to intercept groundwater. There will also be no discharges of process water off-site.
Water Act 1912	This Act has been repealed by the *Water Management Act 2000*, however, some of the licensing provisions remain in force where the water source is not covered by a water sharing plan.	The need for these licences will be assessed as part of the EIS.

Table 5.1 – Other Potentially Relevant Acts and Environmental Planning Instruments (cont.)

Planning Provision	Comments	Relevance
Strategic Regional Land Use Plans		
Strategic Regional Land Use Plan – New England North West 2012	The plan aims to manage land use in the region, particularly focused on conflicts arising from the rapid expansion of coal mining and coal seam gas activities.	The Project is not a state significant mining or coal seam gas project and is not expected to impact agricultural resources; accordingly a detailed Agricultural Impact Statement (AIS) is not required.

6.0 Consultation

6.1 Authority Consultation

Consultation will be undertaken with key government agencies and local council to inform them of the Project, obtain their requirements for the environmental assessment, and discuss assessment results.

The following agencies will be consulted regarding the Project (as required):

- Department of Planning and Infrastructure;
- NSW Office of Environment and Heritage (OEH);
- NSW Environment Protection Authority (EPA);
- NSW Office of Water;
- Roads and Maritime Services; and
- Tamworth Regional Council.

In the unlikely scenario where the Project triggers the requirement for an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the Commonwealth Department of Sustainability, Environment, Water, Population and Communities will also be consulted regarding the Project.

Additional consultation with government agencies will be undertaken as required regarding particular issues as EIS preparation progresses.

6.2 Community, Industry and Stakeholder Consultation

Consultation with the community and other stakeholders will be undertaken throughout the EIS preparation.

It is planned that the consultation process will be undertaken in two phases. Phase 1 will comprise background research on stakeholders and community context to inform consultation planning, and culminate in the development of a detailed community engagement plan. Phase 2 will comprise implementation of the Plan developed during Phase 1, as well as feeding findings into the wider EIS (particularly social impact assessment – SIA) process.

It is anticipated that the following key tasks will be undertaken as part of the community consultation process.

6.2.1.1 Phase 1

- Community profile/baseline assessment:
  - stakeholder identification and analysis;
  - demographic description of community (local/regional against NSW);
  - mapping of social infrastructure (e.g. schools, medical) and discussion of capacities;

- summary of local/regional strategic context (e.g. Council social plans etc); and
- scoping of existing community values and attitudes (from Council surveys etc.).

- Assessment of risks and issues:
  - review of previous Tamworth Regional Council consultation regarding Project area rezoning (if any);
  - review of consultation taken place previously for similar projects to understand the types of issues raised by the community;
  - brief review of community responses/attitudes to similar processes or products; and
  - identification of any specific risks or issues emerging from community profile.
- Development of community engagement plan that outlines the key stakeholders, consultation methods and consultation schedule.

6.2.1.2 Phase 2

Phase 2 of the consultation process will involve the following:

- implementation of community engagement plan i.e. undertake the consultation; and
- integration of community engagement findings into the SIA process (refer to **Section 7.2.11**).

7.0 Preliminary Environmental Assessment

7.1 Preliminary Environmental Risk Analysis

To assist in identifying the key environmental and community issues that require further assessment, a preliminary environmental risk analysis has been completed for the Project and is included in **Table 7.1** below. The preliminary environmental risk analysis identifies those issues requiring further investigation in the EIS.

Table 7.1 – Potential Environmental Impacts Associated with the Project

Aspect	Environmental Assessment	Further Assessment Required for the Project?
Noise	Construction and operation of the Project has the potential to result in noise emissions. Taking into consideration the existing industrial environment and the distance to nearby residences it is unlikely that there will be exceedances of noise criteria, however an assessment is required to confirm this.	Yes, refer to **Section 7.2.1**
Blasting	Blasting is not proposed to be undertaken as part of the Project.	No
Air Quality	Construction and operation of the Project has the potential to impact on local air quality. Due to the process to be implemented for the Project, potential odour impacts also require assessment as part of the EIS.	Yes, refer to **Section 7.2.2**
Hazard	The Project meets the definition of a potentially hazardous development according to SEPP 33. Therefore a Preliminary Hazard Analysis will be prepared for the Project	Yes, refer to **Section 7.2.3**
Water Resources	A site water management plan will need to be developed for the Project and an assessment of the potential surface water impacts of the Project is required. The project is unlikely to interact with groundwater due to the regional groundwater being at depth (greater than 50 metres) and due to the project not requiring substantial subsurface works (NSW Government, 2013). The Project is not considered to have the potential to impact on groundwater; therefore no further assessment is proposed for groundwater.	Yes, refer to **Section 7.2.6**
Ecology	The Project area is unlikely to contain significant ecological features; however an ecological assessment will be completed to confirm this.	Yes, refer to **Section 7.2.9**
Greenhouse Gas and Energy	The Project has the potential to impact on greenhouse gas emissions. Therefore an assessment of the greenhouse gas emissions and energy use associated with the Project is proposed.	Yes, refer to **Section 7.2.5**
Visual Amenity	The Project has some potential to impact on the visual amenity of the area. A visual assessment will be completed as part of the EIS.	Yes, refer to **Section 7.2.4**

Table 7.1 – Potential Environmental Impacts Associated with the Project (cont.)

Aspect	Environmental Assessment	Further Assessment Required for the Project?
Socio-economic	A detailed consultation process and social impact assessment (SIA) will be undertaken to assess the potential socio-economic impacts of the Project.	Yes, refer to **Section 7.2.11** and **Section 6.0**
Soils, land capability and agricultural suitability	The Project will be entirely contained within an area that was zoned for heavy industrial land uses in 2011. At a planning level, potential impacts of developing the site for industrial purposes on soils, land capability and agricultural suitability were considered at the time of rezoning. Sediment and erosion controls and potential for associated off-site impacts on surrounding agricultural land will be addressed as part of the surface water assessment, see **Section 7.2.6**.	No
Traffic	The Project is located adjacent to and will be accessed from Goddard Lane, which connects to the Oxley Highway and is the main access road into the Tamworth Industrial Estate. This route is currently utilised by B-doubles. Traffic movements will not significantly increase as a result of the Project (i.e. approximately 36 per day) and due to the proximity to the Oxley highway, it is proposed to use existing available data on the road network to complete the traffic assessment for the Project.	Yes, refer to **Section 7.2.10**.
Aboriginal Archaeology/Cultural Heritage	The Project area has a long history of agricultural use including being extensively cropped for grain production over a long period of time. It is unlikely to retain Aboriginal cultural values (beyond that attributed to the whole landscape) and is highly unlikely to retain any sites of scientific archaeological value. A preliminary archaeological assessment of the site has been undertaken and will be further reviewed in consultation with the local Aboriginal Land Council (LALC) during preparation of the EIS.	Yes, Refer to **Section 7.2.7**.
Historical Heritage	Preliminary investigations have not identified any evidence of historic heritage value within the Project area. The Project is not expected to impact on any historic heritage values. This will be confirmed through site searches and a site inspection, which will be documented in the EIS.	Yes, refer to **Section 7.2.8**.
Waste	The EIS will document the types of wastes the Project will generate during both construction and operation. It will also outline the mitigation measures that will be implemented for the Project to manage waste.	No, refer to **Section 7.2.12**

The proposed approach to the detailed assessment of key environment and community issues as part of the EIS is discussed in **Section 7.2**.

7.2 Environment and Community Issues

7.2.1 Noise

Background

The Project is situated in an industrial area, with heavy industry located to the north and the Tamworth Airport located to the west. The nearest residential area is located approximately 1.4 kilometres to the south east with smaller rural residences in closer proximity.

The Project will move industry slightly closer to the residential area of Westdale located to the south east. Potential noise impacts could result from the construction or operation of the Project.

Taking into consideration the existing industrial environment and the distance to nearest residences it is considered unlikely that noise criteria would be exceeded at the nearest residences. However, a noise impact assessment will be completed for the Project in accordance with the methodology outlined below.

Assessment Methodology

A comprehensive noise assessment will be undertaken for the EIS in accordance with the NSW Industrial Noise Policy.

The comprehensive noise impact assessment will include:

- measuring and determining existing/current background and ambient noise levels in the locality of the Project and nearest effected residence;
- determination/revision of the project specific noise levels based on the existing intrusive and amenity noise levels;
- the application of adjustments if the Project is expected to produce annoying noise characteristics;
- quantification of sound power levels representative of equipment that will be used on the Project area;
- prediction of noise levels to be produced by the development under a range of applicable meteorological conditions;
- comparison of the predicted noise against the project-specific noise levels and assessment of the likely impacts;
- consideration of feasible and reasonable noise mitigation strategies where the project-specific noise levels are exceeded;
- an assessment of the cumulative noise impacts from the facility and other relevant nearby activities;
- an assessment of the noise impacts from the traffic movement generated by the Project;
- an assessment of the construction noise impact of the project in accordance with relevant assessment procedures; and
- preparation of a noise impact assessment report.

The noise impact assessment will consider noise associated with the construction and operation of the Project.

7.2.2 Air Quality

Background

The existing air quality environment of the Project area is likely to be influenced by neighbouring industrial developments such as the abattoirs and the stock sales yard.

Emissions to air associated with the project include emissions of:

- particulate matter generated during construction and operation of the facility;
- odour generated during operation; and
- gaseous emissions associated with operation of the facility, including:
  - Oxides of nitrogen (NOx);
  - Oxides of sulphur (SOx);
  - Carbon monoxide; and
  - Volatile organic compounds (VOCs).

It is envisaged that the refinery will include a number of air quality controls within its design, which may include:

- the ethanol tanks will incorporate a floating blanket system, preventing contact with the ambient air, reducing evaporative emissions and VOC emissions to the atmosphere;
- biofilters are to be employed which will reduce emissions to air of NO_2, SO_2, CO and Odour;
- a CO_2 scrubber is to be installed on the fermentation stack to reduce VOC and ethanol emissions;
- the mills will be fully enclosed to reduce dust emissions; and
- bag filtration is to be employed on the mills.

Taking into consideration the existing air quality environment, industrial nature of the area and the distance to nearest residences it is considered unlikely that air quality criteria would be exceeded at the nearest residences however an air quality assessment will be completed for the Project and included in the EIS.

Assessment Methodology

A comprehensive air quality assessment will be undertaken for the EIS in accordance with OEH's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Department of Environment and Conservation (DEC) 2005a), which specifies how assessments based on the use of air dispersion models should be undertaken.

The air quality impact assessment will include:

- review all available information relevant to potential air quality impacts associated with the operational phase of the project;

- obtain available meteorological data from the closest Bureau of Meteorology weather station (wind speed, wind direction, temperature inversions, rainfall, relative humidity, evaporation and fog and frost frequency);
- review available meteorological data and compile a meteorology set covering one year of hourly observations for use in the atmospheric dispersion model;
- review existing air quality monitoring data for the area and describe and characterise the existing ambient environment (data to be obtained from the nearest OEH monitoring stations and other available sources);
- establish air quality goals (including odour) for all potential atmospheric emissions in accordance with the approved methods;
- review the likely construction activities associated with the project and provide an assessment of the likely air quality impacts;
- identify all aspects of the operational phases of the project that could have air emissions based on detailed emission testing data from current or equivalent operations (if available). Take into account all the operational stages of the project including, staging of the development, equipment selection, air emission control equipment, and stack discharge parameters/emission rates;
- estimate atmospheric pollutant emission rates based on emission data and relevant operational flow diagrams;
- using a regulatory approved dispersion model (currently assumed to use the US EPA regulatory model AERMOD) conduct atmospheric dispersion modelling (i.e. worst case meteorological conditions only) to infer ground level concentrations of relevant atmospheric pollutants such as NO_X, SO_2, CO, TSP, PM_{10}, speciated VOCs and odour associated with the stack sources based on calculated emission rates over the proposed hours of operation;
- prepare single point predictions of ground level concentrations at nearest sensitive receptors and isopleths (contour plots) of atmospheric pollutants that are predicted to exceed the air quality goals;
- assess predicted impacts and recommend mitigation treatments where appropriate including control options, equipment selection, stack height, and finalise agreement on emission abatement techniques to be employed for the project during its operational phase;
- provide a qualitative assessment of construction phase air quality impacts; and
- prepare a report detailing the methodology and outcomes of the air quality assessment detailed above.

7.2.3 Hazard

Background

The Project is a new facility manufacturing a range of human and livestock food ingredients and will involve the manufacture of ethanol. The Project is located within an area zoned for industrial development and will be located adjacent to existing industrial facilities.

The Project meets the criteria of a potentially hazardous development (as defined by Part 1, Clause 3 of the State Environmental Planning Policy No 33 — Hazardous and Offensive Development). For 'potentially hazardous industry' SEPP 33 establishes a comprehensive test by way of a preliminary hazard analysis (PHA) to determine the risk to people, property and the environment at the proposed location in the presence of controls.

Assessment Methodology

A PHA will be undertaken for the Project, in accordance with the requirements of *State Environmental Planning Policy 33 (SEPP 33) Hazardous and Offensive Developments* and associated Department of Planning Hazardous Industry Planning Advisory Papers (HIPAP).

SEPP 33 screening involves compiling information on the quantity of hazardous materials used in a proposed development, the mode of storage and location with respect to the Project area boundary and the number and size of annual and weekly road movements of the hazardous material.

A proposed development is considered potentially hazardous and requires a PHA if the storage of hazardous substances exceeds specific screening thresholds. HIPAP6 – *Guidelines for Hazard Analysis* notes that a PHA should identify and assess all hazards that have the potential for off-site impact. The expectation is that the hazards would be analysed to determine the consequence to people, property and the environment and their potential to occur.

A proposed development may also be considered a potentially hazardous based on the number of traffic movements involving hazardous materials the facility uses or generates. If a proposed development is found to be potentially hazardous with respect to transportation, a route evaluation study would be required.

SEPP 33 also applies to developments that are considered to be 'potentially offensive'. A development is potentially offensive if it requires licensing by the Environment Protection Authority.

It is anticipated SEPP 33 will require the preparation of a PHA and the *Multi Level Risk Assessment* process will require the PHA to include, at minimum, a partially quantitative Level 2 risk analysis. While a *Multi Level Risk Assessment* process may also identify risks that will trigger a fully quantitative Level 3 risk analysis the need for this level of assessment can only be identified once the risk screening is complete. The PHA for the Project (excluding the full quantitative (Level 3) evaluation) will cover:

- SEPP 33 screening of input/output materials storage, processing and handling;
- societal risk screen in accordance with the Department of Planning's *Multi Level Risk Assessment;*
- a qualitative (Level 1) evaluation of the possible risks and causes of potentially hazardous incidents associated with the proposed development and the identification of potentially hazardous incidents that have the potential or offsite impact;
- a partial quantitative (Level 2) evaluation of consequence/likelihood of the hazardous incidents that have the potential for offsite impact;
- identification, with the proponent, of appropriate safeguards and procedures which may be employed to minimise risk to the adjacent land users;
- an outline of all operational and organisational safety controls;
- evaluation of the adequacy of safeguards against identified risk levels; and
- an assessment of the cumulative risk associated with the surrounding land users.

7.2.4 Visual Amenity

Background

As outlined above, the Project would be located in an industrial area. This existing industry will provide a visual backdrop to the Project. The nearest residential area is approximately 1.4 kilometres to the south east with some smaller rural residences located in closer proximity. The Project has the potential to result in visual amenity impacts. The tallest proposed structure would be the distillation structure and dry mill building at approximately 40 metres and 50 metres respectively. All other structures would be approximately 30 metres or less in height.

However, an existing ridgeline provides some screening of the Project. PFC will implement a range of on-site mitigation measures, to reduce any potential visual impacts. Measures may include the planting of screening vegetation and painting the infrastructure so that it blends in with the surrounding environment.

Assessment Methodology

An assessment of the potential visual impacts of the Project will be undertaken as part of the EIS. The visual assessment will be undertaken using a combination of 3D digital terrain modelling and preparation of photo montages to determine potential viewing locations and assess impacts. The photomontages will be taken from representative surrounding residences and view points as part of the assessment. The photomontages will include an image of the current view from pre-determined viewing locations and an image representing what the viewing location will resemble once the Project is constructed.

7.2.5 Greenhouse Gas Emissions

Background

The Project has the potential to impact on greenhouse gas emissions, and accordingly a comprehensive greenhouse assessment is required to be completed as part of the EIS.

Assessment Methodology

A comprehensive greenhouse gas and energy assessment (GHGEA) will be completed for the Project and will include:

- estimating scope 1, 2 and 3 emissions associated with the construction of the Project. Emission sources will include the energy and materials required to construct the Project's infrastructure;
- estimating scope 1 and 2 emissions for annual operations. Emission sources will include:
  - fermentation;
  - energy use; and
  - waste management;
- estimating scope 3 emissions associated with annual operations. Emission sources for the Project will include:
  - feedstock (wheat, sorghum);
  - feedstock transport;

  - product transport;
  - product use; and
  - waste management;

- qualifying how the Project may contribute towards climate change;
- evaluating the impact of the Project's emissions on state, national and international greenhouse gas emission targets; and
- assessing reasonable and feasible measures to reduce the impact of the Project.

7.2.6 Water Resources

Background

The Project is located within the Peel River catchment, approximately 2 km to the West of the Peel River. The Project area is approximately 15 metres above the Peel River and some 5 metres above the Tamworth Regional Council Wastewater Treatment Plant.

Water supply for operation of the facility will be obtained from Tamworth Shire Council's town water supply with the potential for reusing water from the wastewater treatment plant also currently being explored by PFC. The annual water demand for the plant will be approximately 440 ML/year and PFC has indicated that it has negotiated a water access agreement with Council. The plant will have no wastewater discharge and as such no requirement to dispose of surplus wastewater.

Assessment Methodology

To assess the potential water resources impacts for the Project, a number of matters will be considered. These will include:

- review and compilation of government agency requirements and guidelines as they relate to the Project area, including:
  - *Water Act 1912;*
  - *Water Management Act 2000*;
  - Central West Catchment Blueprint 2003; and
  - State Water Management Outcomes Plan 2003;
- review and definition of the Project in relation to existing infrastructure, stormwater catchment areas, watercourses and groundwater systems;
- prepare conceptual layouts for surface water management requirements, including erosion and sediment controls during construction and stormwater management measures during operations. The conceptual design for soil and water management measures will be included in the EIS;
- assess the potential impacts on surface water and groundwater resources; and
- prepare a water resources assessment section to be included in the EIS.

7.2.7 Aboriginal Archaeology and Cultural Heritage

Background

Due to the Project area's small size and prior level and long history of disturbance, it is unlikely to retain known Aboriginal cultural values (beyond that attributed to the whole landscape) and is highly unlikely to retain archaeological value. Prior knowledge of the archaeological context of the general Wallamore Road area suggests that Aboriginal archaeological sites are not likely to occur within the Project area. However, it cannot be discounted that an inspection of the area may locate a small number of Aboriginal artefacts discarded during hunting and gathering activities across the broader area.

A preliminary Aboriginal archaeological assessment of the site was undertaken in 2008. This assessment will be reviewed in consultation with the LALC and considered during preparation of the EIS.

Assessment Methodology

It is a requirement of all State significant developments to assess the potential impact of the Project on Aboriginal cultural heritage or archaeological values as part of the heritage assessment process. The Department of Planning and Infrastructure (DP&I) refers proponents to the draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC[1] 2005b) for the requirements for assessing Aboriginal cultural and archaeological values for State significant developments (hereafter the draft Guidelines (2005)). In this regard, the draft Guidelines (2005:3) state that if during the PEA it can be shown that these values are 'not likely to occur on the proposed development Project area that no further assessment is required'. Based on this statement a two staged approach is being undertaken for the Project.

- Stage 1 – Undertake a due diligence assessment under the Department of Climate Change and Water (DECCW 2010c) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (hereafter the DECCW Code (2010)). Umwelt are currently in the process of undertaking this due diligence assessment with the intention of submitting a due diligence report to DP&I prior to the DGRs being issued.
- Stage 2 – If required, undertake a full Aboriginal cultural heritage and archaeological assessment (ACHA) in compliance with the draft Guidelines (2005).

Stage 2 would only be required if the due diligence assessment process could not determine that Aboriginal and archaeological values are not likely to occur within the Project area.

The following sections provide a description of the planned two stage process for assessing the Aboriginal cultural and archaeological values of the Project area.

Stage 1 – Due Diligence Assessment

The proposed due diligence assessment process is reviewing the values of the Project area from both an Aboriginal and archaeological perspective. The due diligence assessment includes:

- a search of the OEH *Aboriginal Heritage Information Management Service* (AHIMS) *Sites Register* and *Archaeological Reports Register* for listed sites within or in proximity to the Project area;

[1] DEC – became Department of Environment and Climate Change (DECC), then Department of Environment and Climate Change and Water (DECCW) - now the Office of Environment and Heritage – OEH.

- a review of relevant previously recorded Aboriginal cultural heritage and archaeological literature;
- reviews of other known sources of information such as the *Register of the National Estate* and undertake a Native Title search;
- a brief discussion of past environmental factors that may influence the likelihood of Aboriginal sites being present within the Project area;
- a predictive model for Project area location in the Wallamore Road area, based on the location, type and contents of previously identified sites in the area and the environmental information;
- the results of a pedestrian inspection of the Project area in relation to levels of disturbance, any artefactual material observed (if any) and assess the likelihood of potential archaeological deposits (PADs – subsurface archaeological material) occurring within the Project area; and
- comment on the Aboriginal significance/value of the Project area and any artefacts/PAD located (if any) for inclusion within the assessment (this information is being provided by any Aboriginal stakeholder groups participating in the due diligence assessment.

If artefactual material or PAD is located or specific Aboriginal cultural values are identified, then the due diligence assessment process would cease at this point and the Stage 2 full ACHA would then require implementation. If no artefactual material, PAD or specific Aboriginal cultural values are identified within the Project area or in its proximity during the background review and inspection, the due diligence assessment process will continue as detailed below:

- a draft report will be prepared in relation to the findings of the due diligence assessment process that will provide:
  - information in relation to the Project;
  - a discussion of the Aboriginal consultation process;
  - the information from the searches and literature review;
  - the predictive model;
  - a discussion of the Project area inspection and outcomes;
  - relevant plans and diagrams; and
  - clear guidance in relation to there being no assessed requirement for a full ACHA.

Due Diligence Inspection – Aboriginal Stakeholder Consultation

Whilst consultation with the Aboriginal community is not a formal requirement of the due diligence process, DP&I and OEH recognise that Aboriginal cultural heritage has social/cultural, historic, aesthetic and scientific (archaeological) significance. OEH accords the same weight to all these aspects of Aboriginal cultural heritage and recommend that proponents assess these aspects equally.

In order to address the Aboriginal cultural values of the Project area it is proposed to include Aboriginal stakeholders in the pedestrian inspection of the Project area. During this inspection the Umwelt archaeologist will record any comments regarding Aboriginal cultural values provided by Aboriginal stakeholder representatives and incorporate these into the draft due diligence assessment. The draft assessment will then be supplied to the relevant Aboriginal stakeholders for their endorsement/further comment. Upon receipt of comment from the Aboriginal stakeholders, the report will be finalised and provided to the DP&I as an addendum to the PEA, with the expectation that the issue can be discounted at this point with no further assessment required within the EIS.

The Project area is within Gamilaroi tribal territory and within the Tamworth Local Aboriginal Land Council (TLALC) boundary. Initial contact will be made with TLALC to organise its involvement in the due diligence assessment process. Should TLALC or the Native Title search identify any specific knowledge holders or Native Title registrants for the Wallamore Road area it is anticipated that they would also be included in the due diligence assessment process.

Stage 2 – Aboriginal Cultural Heritage and Archaeological Assessment (ACHA) (if required)

If the due diligence assessment process identifies Aboriginal artefacts, a PAD or specific Aboriginal cultural values within the Project area then the Stage 2 ACHA process would need to be implemented.

The ACHA process is required to follow the draft Guidelines (2005). It is noted that this document is out of date and draft but that is has not been replaced by OEH or DP&I, though a draft of new legislation[2] has been introduced by DECCW/OEH in 2010 and 2011 in relation to requirements for Aboriginal and archaeological assessment and Aboriginal consultation for projects that are **not** of State significance. Thus the draft Guidelines are still the relevant document for State significant developments.

The draft Guidelines (2005) set out the various steps in the preparation of the ACHA and provide guidance in relation to the Aboriginal consultation process. The draft Guidelines (2005) require that an ACHA addresses:

- the social and cultural values of the Project area to Aboriginal people with the information to be gathered from relevant Aboriginal stakeholders;
- a description of the Project;
- provision of information in relation to the relevant legislation with regard to ACHAs and Aboriginal consultation;
- full details of the Aboriginal consultation process (see below);
- a description of the physical landscape and its Aboriginal resources and the cultural landscape;
- archival documentation related to relevant historical and ethno-historic sources and data base searches;
- previous archaeological research in the area;
- integration of the environmental, Aboriginal cultural and archaeological information to prepare a predictive model for Project area location, type and contents in the Wallamore Road area;
- survey of the Project area and a description of prior disturbance;
- results of the survey;
- potential impacts of the development on Aboriginal and/or archaeological values,

[2] OEH (2011) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW;* DECCW (2010b) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* ; and the DECCW (2010a) *Aboriginal Cultural Heritage Consultation Requirements for Proponents.*

- a discussion of possible management options; and
- management recommendations.

Aboriginal Stakeholder Consultation and Participation

It is necessary as part of the ACHA process to identify Aboriginal knowledge holders, therefore to commence the consultation process it will be necessary to undertake the notification process referred to in the Guidelines (2005). These are the DEC (2005c) *Interim Community Consultation Requirements for Applicants* (hereafter the ICCRs). It is noted that the ICCRs have been replaced by the DECCW (2010a) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (the ACHCRs) for all **non** State significant development but remain relevant to State significant development. The ICCRs and the ACHCRs are not significantly different with the most important differences being related to timeframes for Aboriginal stakeholders to register an interest in the Project and for the amount of time provided by the Aboriginal stakeholders to provide comment on various aspects of the Project (i.e. 21 days for the ICCRs and 28 days for the ACHCRs).

The notification process should involve the following tasks:

- compiling a list of Aboriginal people who may have an interest in the Project area and who hold knowledge relevant to determining the cultural significance of the Project area by writing to:
  - OEH;
  - Tamworth Local Aboriginal Land Council;
  - the Registrar, *Aboriginal Land Rights Act 1983* for a list of Aboriginal owners;
  - the National Native Title Tribunal for a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements;
  - Native Title Services Corporation Limited; and
  - Tamworth Council.

A minimum of 14 days from when the notification letters are received must be provided for a response. At the end of this time it is necessary under the ICCRs to:

- write to the Aboriginal people whose names are on the list compiled during the first stage of the notification process to notify them of the Project and to request they register if they do have an interest; and
- placing an advertisement in the local newspaper explaining the Project and its location and requesting interested Aboriginal stakeholders to register for involvement in the consultation process.

Once again a minimum of 14 days from the date the letters were received or the notice published must be provided to allow interested parties time to register their interest in the Project.

This process will identify the Aboriginal stakeholders that will be consulted throughout the Project. Recent projects within Gamilaroi territory for the ACHA process have identified 120+ interested Aboriginal stakeholders including multiple Native Title registrants. It is not envisaged that this number will register for the current Project due to its very limited size. It is also not envisaged that all registrants would be given the opportunity to inspect/survey the Project area or that there would be a necessity to involve all registrants in meetings, however, all registrants must be afforded the opportunity to provide comment on the

methodology for how the ACHA will be progressed (including the survey methodology) and to provide comment on the draft report. Thus there are at a minimum two 21 day comment periods involved in the process as well as the two 14 day registration periods (a total of 70 days).

Due to the small size of the Project area it is not anticipated that any meetings will be required with the Aboriginal stakeholders.

Should a full Aboriginal archaeological and cultural heritage assessment process be required, it will be completed and included in the EIS.

7.2.8 Historic Heritage

Background

Preliminary investigations have not identified any evidence of historic heritage value within the Project area. The Project area also has a long history of agricultural disturbance. The Project is not expected to impact on any historic heritage values however an assessment of historic heritage values will be completed in accordance with the methodology below to confirm this.

Assessment Methodology

It is proposed to undertake a desktop historic heritage assessment as part of the EIS. The desktop assessment will aim to confirm the potential for significant historical heritage sites to be present within or in the immediate vicinity of the Project area that have the potential to be impacted by the Project. If the desktop assessment confirms the lack of potential for any historic heritage values, there will be no need to include a detailed assessment as part of the EIS.

The desktop historical heritage assessment will include:

- updated searches of the Australian Heritage Database (including the Register of the National Estate and Commonwealth and National Heritage lists), NSW State Heritage Register and State Heritage Inventory and local planning instruments for sites within or adjacent to the Project area;
- desktop review of relevant readily available archaeological, historical and heritage literature applicable to the Project area;
- desktop historical research focusing on any areas of potential historical heritage value identified during the heritage searches and/or review of available literature;
- preparation of a brief historical and archaeological context in which to assess the potential for any historical archaeological resource or heritage item to be present within the Project area; and
- if no potential historical archaeological resource or heritage item is identified within or in the immediate vicinity of the Project area, the above information will be compiled into a section for inclusion in the EIS.

In the unlikely event the proposed desktop historical heritage assessment identifies any potential significant historical heritage sites within or in the immediate vicinity of the Project area that has the potential to be impacted by the Project further assessment would be undertaken as part of the EIS.

At this stage, no specific historical heritage site inspection is deemed necessary. However, the results of the Project area inspection proposed to be undertaken as part of the proposed Aboriginal due diligence assessment will be considered as part of the desktop historical heritage assessment. If the Aboriginal site inspection identifies any items of potential historical heritage value, a targeted historical heritage site inspection will be undertaken as part of the detailed historic heritage assessment.

7.2.9 Ecology

7.2.9.1 Existing Environment

The Project area has a long history of agricultural use and has been extensively cropped for grain production. It is heavily modified from its natural state by farming management practices as illustrated in **Plates 1** and **2**, and it lacks key habitat features for many threatened or migratory species. The site perimeter and road verge contain some grassland likely to be dominated by exotic species. The Project area is unlikely to contain significant ecological features; however as the Project constitutes a State Significant Development, an ecological assessment of its potential impact is required. Umwelt will undertake this ecological assessment with a focus on potential ecological value for threatened ecological communities (TECs), endangered populations, threatened species and migratory species with potential to occur within the area to be impacted.

Assessment Methodology

Literature Review

A detailed review of all available ecological information pertaining to the Project area will be undertaken in order to gain a thorough understanding of the ecological features present (or potentially present) on the Project area. Literature types targeted for this review will include, but not necessarily be limited to, the following:

- ecological studies undertaken within, and in proximity to, the Project area;
- a search of the Office of Environment and Heritage (OEH) Atlas of NSW Wildlife and the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) Protected Matters Database, within a 10 kilometre radius of the centre of the Project area to identify threatened and migratory species, endangered populations and TECs previously recorded within the locality. The objective of the database searches is to identify ecological issues that could potentially occur but are difficult to detect without extensive and seasonal survey effort; and
- any other available relevant ecological documentation or resources.

The results of the literature review will be documented within the ecological assessment and will be used to inform the requirement for any targeted field surveys.

Project Area Inspection

Current and historical land uses have resulted in the Project area having very limited habitat value. As such, detailed field surveys of the Project area are not deemed to be necessary. Rather, a brief Project area inspection by an ecologist will be completed to confirm the habitat types present, with particular focus on the threatened species lobed blue grass (*Bothriochloa biloba*) (listed as vulnerable under the EPBC Act), finger panic grass (*Digitaria porrecta*) (listed as endangered under the *Threatened Species Conservation Act 1995* (TSC Act) and the EPBC Act) and the following TECs:

- Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (listed as an endangered ecological community (EEC) under the TSC Act and EPBC Act); and

- White Box Yellow Box Blakely's Red Gum Woodland and Derived native grasslands (listed as an EEC under the TSC Act and critically endangered ecological community (CEEC) under the EPBC Act).

It is anticipated that the Project area inspection would consist of recording and sampling the dominant flora species present, determining if suitable habitat is present for threatened or migratory species and recording opportunistic vertebrate species if encountered. The inspection will focus on the least disturbed areas of vegetation present (i.e. primarily previously uncultivated areas around fence lines). The field inspection will be undertaken during the known flowering period for lobed blue-grass (*Bothriochloa biloba*), being between November and June, in order to optimise the potential for identification.

Upon completion of the literature review and Project area inspection, an ecological assessment will be prepared, which will document the results and findings. The ecological assessment will identify and discuss the ecological values of the Project area, including all threatened species, migratory species, endangered populations, TECs (or their habitats) occurring, or with potential to occur within the Project area for the proposed facility.

A detailed impact assessment (by way of State and Commonwealth tests of significance (if necessary)) will be prepared in accordance with the requirements of the EP&A Act, EPBC Act and State Environmental Planning Policy No. 44 (Koala Habitat Protection) as required. This assessment will address any threatened and migratory species, endangered populations and TECs, listed under the TSC Act and EPBC Act that are recorded, or could potentially occur within the Project area.

7.2.10 Traffic

Background

The Project is located adjacent to Goddard Lane which is directly connected to the Oxley Highway which links rural NSW with the Pacific Coast. Goddard Lane is currently utilised by B-doubles. As outlined in **Section 3.0**, approximately 50 people will be employed during operation of the Project and approximately 500 during construction. Employees will generate some light vehicle traffic on the local road system.

The transport of raw materials and product to and from the Project area is expected to generate some heavy vehicle traffic. Estimated traffic movement and quantities of deliveries for the Project are estimated in **Table 7.2** below.

Table 7.2 – Estimated Traffic Movements and Quantities of Deliverables at a throughput of 275,000 tpa of Grain

Product	In/Out	Vehicle	Trucks Per Day
Feedstock	IN	50T B-Double	12
Alcohols	OUT	B Double	9
Mill mix	OUT	T B-Double	3
Wheat protein meal extract	OUT	T Truck	6
Native A starch	OUT	B-Double	2
Vital wheat gluten	OUT	B Double	2
Glucose products	OUT	B Double	2
TOTAL			**36**

Assessment Methodology

The EIS will consider the impact of traffic generated by the road transport of raw materials and product, the construction phase and employee vehicles on the local road system. This will include:

- identification of transport routes to be utilised by the Project;
- estimation of predicted traffic movements in terms of average annual movements, average daily movements, peak hourly and daily movements and times of transport;
- assessment of current traffic levels and composition on the proposed transport routes and assessment of the capacity of these routes and intersections to safely convey the predicted traffic movements generated by the Project; and
- assessment of potential impacts and identification of proposed mitigation measures.

We will consult with Council and the RMS to obtain any relevant traffic count information. If necessary, this information will be supplemented by traffic count information collected specifically for the Project.

It is not anticipated that the structural capacity of the road system will be assessed as part of the traffic assessment. The traffic assessment will be included in the EIS.

7.2.11 Socio-economic

Background

The Project area is located approximately 10 kilometres from the Tamworth city centre in the Tamworth LGA. Tamworth had a population of approximately 56,000 in 2011 (ABS, 2013). At the time of the 2011 census, there were 26,421 people who reported being in the labour force; of these 59.8 per cent were employed full-time, 28.6 per cent were employed part-time and 5.8 per cent were unemployed (ABS, 2013).The most common occupations of employment in the Tamworth LGA include Professionals (16.8 per cent), Technicians and Trade Workers (14.5 per cent), Labourers (13.8 per cent), Managers (13.5 per cent), and Clerical and Administrative Workers (13 per cent) (ABS, 2013).

The area surrounding the Project is currently utilised for a range of land uses (refer to **Figure 2**). The Tamworth Airport is located approximately 0.9 kilometres to the south west of the Project. The land immediately to the south of the Project area supports agricultural land uses, primarily cropping. The Glen Artney Industrial Estate is located immediately to the north west of the Project area. Land to the north east of the Project area is privately owned rural and rural residential with some dairy farming. The nearest residential area is a suburb called Westdale that is located approximately 1.4 kilometres to the south east of the Project.

The Project (based on a throughput of 275,000 tpa) proposes to employ approximately 50 people during operation of the Project and approximately 500 during construction. The Project will have a capital investment value of $92 million.

Assessment Methodology

A socio-economic assessment will be completed for the project.

Socio-economic considerations will be closely linked with the Project's community consultation program, with findings from the engagement process informing the SIA. The socio-economic assessment will include the following:

- identification and assessment of the social and economic context of the local area and region;
- identification and assessment of social infrastructure (e.g. schools. childcare, housing etc.) potentially impacted by the project (including impacts due to employment);
- identification of the impacts (positive and adverse) of the project on the local area, region and State;
- incorporating and addressing relevant community views and issues identified through the community engagement process; and
- identification of appropriate mitigation measures to address any negative socio-economic impacts identified by the assessment.

Consideration will be given to the socio-economic impacts of both the construction and operations phases of the project.

7.2.12 Waste Management

Waste management was not identified as a key issue for the Project. However, the Project is expected to generate the following wastes during construction:

- general waste;
- recycle metal wastes;
- regulated wastes (i.e. oily rags, filters, batteries, paint tins);
- waste oils; and
- septic/grey water.

The Project will also generate some wastes as a result of operation. The EIS will document the types of wastes the Project will generate during both construction and operation. It will also outline the mitigation measures that will be implemented for the Project to manage waste.

7.2.13 Cumulative Impacts

Cumulative impacts associated with the construction and operation of the Project will be considered as part of the EIS. The respective specialist studies will assess and document any potential cumulative impacts associated with the Project and the results of these studies will be included in the EIS.

8.0 References

Australian Bureau of Statistics (ABS) 2013. Retrieved from http://www.abs.gov.au/ on 7 March 2013.

Department of Environment and Conservation (NSW) (DEC) 2005a. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

Department of Environment and Conservation (NSW) (DEC) 2005b. Draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*.

Department of Environment and Conservation (NSW) (DEC) 2005c. *Interim Community Consultation Requirements for Applicants.*

Department of Environment Climate Change and Water (DECCW) 2010a. *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.*

Department of Environment Climate Change and Water (DECCW) 2010b. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.*

Department of Environment Climate Change and Water (DECCW) 2010c. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.*

NSW Government 2013. Retrieved from http://waterinfo.nsw.gov.au/gw/ on 7 March 2013.

Office of Environment and Heritage (NSW) (OEH) 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*.

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