

SECTION 38(1) PLANNING ACT

**APPLICATION FOR EXCEPTIONAL
DEVELOPMENT PERMIT**

**FOR
A MEAT PROCESSING PLANT**

**AT
LOT 4 AND SECTION 5410 HUNDRED OF
CAVENAGH**

30 September 2011



**APPLICATION FOR EXCEPTIONAL DEVELOPMENT PERMIT FOR MEAT
PROCESSING FACILITY AT LIVINGSTONE**

Erratum

The land subject of the application is described in the application report as Lot 4 and Section 5410 Hundred of Cavenagh.

This description should read “Lot 4 Hundred of Cavenagh and Section 5410 Hundred of Strangways”

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SECTION 38(1) PLANNING ACT – APPLICATION FOR EXCEPTIONAL DEVELOPMENT PERMIT

LOT 4 AND SECTION 5410 HUNDRED OF CAVENAGH

1. FORMAL MATTERS

1.1. Party making the application

This application is made by June D’Rozario & Associates Pty Ltd, on behalf of Australian Agricultural Company Ltd (AACo). AACo has an option to purchase the land.

A letter from the owner, authorising the application is attached.

1.2. Nature of the application

This application is made under section 38(1) of the *Planning Act 1999*.

The application is for an exceptional development permit to authorise the construction of a meat processing plant in the eastern portion of Section 5410.

The proposal is shown in the attached drawings, prepared by MeatEng.

A meat processing plant answers the definition of “abattoir” in the NT Planning Scheme, where “abattoir” is defined as : “premises used for the slaughter and dressing of animals, and includes the processing of meat from such slaughter”.

The land is zoned Rural (Zone R) under the NT Planning Scheme, within which abattoir is a prohibited use.

The proposal meets the circumstances described in section 38(2)(a) of the *Planning Act*.

1.3. Brief overview of the proposal

AACo is the largest producer of beef cattle in Australia, and supplies domestic and global markets. The company owns 8 pastoral stations in the Territory, which are located from VRD through the Barkly Tablelands and Eastern Barkly region to the Queensland border.

The company’s key strategic objectives include enhancement of its supply chain management, and developing a vertically integrated business by expanding its beef processing activities.

In pursuit of these objectives in the Territory, AACo wishes to develop a state-of-the-art meat processing plant in the Top End, and has identified the parcel comprising Lot 4 and Section 5410 Hundred of Cavenagh, at Livingstone, as being suitable for the plant.

The parcel has an area of approximately 601 ha. A significant proportion of the site contains streams and land units characterised by waterlogged soils. The siting, design and operation of the processing plant will respond to these sensitive environmental features.

The plant will occupy about 4 ha in the eastern portion of Section 5410. A further 14 ha will be required for waste treatment and disposal. These area requirements amount to approximately 3% of the parcel area.

Upland areas will be used to irrigate pasture paddocks, using treated water from the plant operations, to optimise nutrient uptake and hay production.

The plant is designed for a hot-boning operation; ie, the carcass is boned and processed immediately after slaughter. The processing capacity of the plant will be 1,000 head per day in two shifts.

The plant is designed to enable future extension, as markets for additional processed beef products grow.

1.4. Reasons for EDP instead of rezoning

Section 40(1) of the *Planning Act* requires the Minister to be satisfied that it is preferable to issue the permit than to amend the Planning Scheme. The applicant submits that the grant of an EDP is preferable to amending the Planning Scheme for reasons that follow.

There are only two zones in which a meat processing plant would be permissible under the NT Planning Scheme. These are Zones DV (Development) and A (Agriculture).

Land currently zoned DV is located predominantly around East Arm Port, with a small component at Thorngate to accommodate defence support industry. The primary purpose of the zone is to provide for the development of major strategic industries including gas based, road, rail or port related industries.

Land zoned A is located predominantly along the western floodplains of the Adelaide River.

Of the two zones, Zone A is potentially more suitable for the proposed development than Zone DV. However, the reasons for making an application for EDP instead of rezoning are :

First, establishment of the processing plant on the land would require a rezoning application, and a subsequent development application. The time required to

obtain approval for the proposal could be shortened significantly by seeking an EDP, because if the site were rezoned to A, it would still be necessary to apply for development consent. This is because an abattoir is discretionary development in Zone A.

The time required to consider an application for an EDP is similar to that required for a rezoning application. However, if the application for EDP is granted, it will authorise the development without incurring additional time that would be required for rezoning and development application processes.

Secondly, the processing plant will occupy about 3% of the land area, with the rest of the land to remain in its natural state or in agricultural production through the pasture production operation described in this application. The land is used currently for agricultural purposes, with a cattle-raising and hay production operation carried out on the land. The proposal will not affect the essential agricultural quality of more than 90% of the land.

In these circumstances, it is considered that an application for EDP is a superior instrument for seeking authorisation of the proposed development.

1.5. Application for EDP under *Planning Act* and submission of Notice of Intent under *Environmental Assessment Act*

The proponent acknowledges the requirement to assess the environmental effects of the proposal. These effects, and their management, are detailed as part of the documentation for this application. Accordingly, the proponent requests that the application for EDP be taken as a Notice of Intent for the purposes of the *Environmental Assessment Act*.

2. SITE SELECTION

AACo considered a total of 5 sites in the Top End before selecting the application site as the proposed location for its meat processing plant. The sites were assessed against criteria, including –

- Land tenure
- Sufficient land area for the operation and its associated activities
- Relatively short distance to Stuart Highway
- Accessibility to sealed road transport to bring live cattle to the site and take product off the site
- Relative proximity to East Arm Port
- Distance from sensitive land uses

- Suitable topography and soils for drainage and waste water systems
- Proximity to water, electricity and gas services
- Relative proximity to workforce and housing
- Relative proximity to community services
- Avoidance of sites with significant populations of threatened species
- Avoidance of sites of archaeological, heritage or Aboriginal significance

The application site was selected because, of all the sites considered, it aligns best with these criteria.

3. SITE DESCRIPTION

3.1. Location, site area, existing access and existing land use

The application site comprises Lot 4 and Section 5410 Hundred of Cavenagh (270 Blyth Road, and 2660 Stuart Highway, Livingston). The location of the site is shown in the image below.



The site has an area of approximately 601 ha, consisting of 484.7 ha in Section 5410 and 116.4 ha in Lot 4.

The land has a boundary to Stuart Highway of approximately 372 m, and a boundary to Blyth Road of about 211 m. The alignment of Mulgara Road extends into the northern portion of Section 5410 by about 455 m, but this road is unformed in Section 5410.

The North-South rail corridor forms the north-eastern boundary of the land.

Access to the site is from a right of way in the southern tip of Section 5409, across the rail corridor.

A water supply easement runs from west to east across the middle of the site. The asset in the easement is a water pipeline.

The land is used for cattle-grazing and hay production, and the improvements on the land include a dwelling and farm sheds, cattle yards, stock watering points, paddocks and fencing.

3.2. Climate

The land is in a region that experiences two distinct seasons. The wet season is typified by high temperatures and humidity, and significant rainfall events, with most rain falling between November and April.

The dry season, extending between May and September, is characterised by low humidity and temperatures, and very little rain.

Temperatures at locations around Darwin inland from the coast are typically one to two degrees hotter in the wet season, and one to two degrees cooler in the dry season. Records held by the Bureau of Meteorology for the nearby weather station at Noonamah show that the mean maximum temperature is 34 degrees, and the mean minimum temperature is 21 degrees.

Rainfall records for stations near the site, at Elizabeth Valley and Noonamah, show that the annual average rainfall is 1,660 mm at Elizabeth Valley and 1,900 mm at Noonamah (the period of records at Noonamah is much shorter than for Elizabeth Valley).

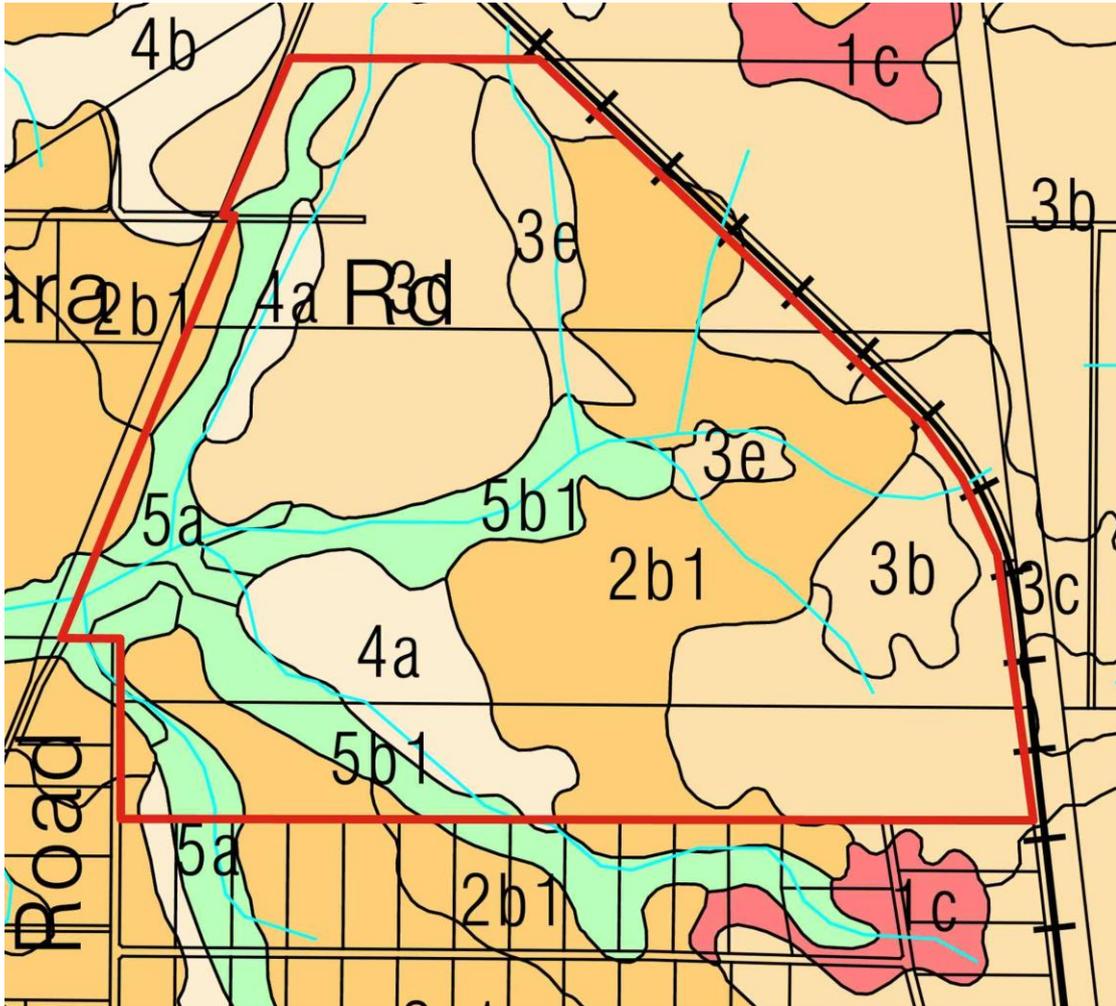
Wind speeds of 10 to 30 kph, predominantly from the north-west, are experienced during the wet season, and winds of similar speeds from the south-east occur in the dry season.

Rainfall, temperature, and wind data are at Annexure 6.

3.3. Topography and land units

The land drains from east to west, with elevation varying from 54 AHD to 24 AHD across the site. The gradient is approximately 1.5%.

Land units represented on the site include Land Units 2b1, 3b, 3c, 3e, 4a, 5a, and 5b2.¹ Their distribution is shown in the diagram below².



Land Unit 2b1 is characterised by gentle sideslopes of 2 to 5% gradient. Soils are generally moderately deep gravelly yellow massive earths grading through the soil profile to sandy loam to sandy clay or light clay at depth. Soils are well drained.

¹ **Litchfield Shire Land Units Map**, prepared by Department of Infrastructure, Planning and Environment. These land unit classifications and descriptions follow

² Land unit classifications and descriptions follow PJ Fogarty, B Lynch & B Wood **The Land Resources of the Elizabeth, Darwin and Blackmore Rivers** Conservation Commission of the Northern Territory Technical Report No 15

Land Unit 3b is characterised by flat to very gently undulating upland surfaces, with gradient of 0.5 to 2.5%. Soils are generally moderately deep to deep gravelly yellow massive earths usually overlying friable weathered material and minor red massive earths, grading through the soil profile to sandy loam to sandy clay loam and light clay at depth. Soils are well drained.

Land Unit 3c is characterised by flat to gently undulating upland surfaces, with gradients between 1 and 3%. Soils are generally shallow to moderately deep gravelly yellow massive earths, grading through the soil profile to loamy sand to sandy clay loam subsoils. Soils are well drained.

Land Unit 3e describes drainage areas within gently undulating upland surfaces. Soils are slow draining, with high water tables in the wet season. Vegetation consists of minor open woodland forest with dense patches of *Pandanus spiralis* and *Grevillea peridiifolia* and dense grasses and sedges.

Land Unit 4a is characterised by gentle lower slopes, with gradient of about 1.5%. Soils are generally deep mottled grey massive earths with lateritic gravel, grading through the soil profile to sandy loam to light sandy clay loam to light clay at depth. Soils are slow draining and waterlogged in the wet season. Vegetation communities in this land unit commonly consist of open woodland with medium to dense shrub understorey, and dense grasses and sedges.

Land Unit 5a describes narrow alluvial plains within upland terrain. Soils are slow draining, with wet season waterlogging and inundation. Vegetation is mainly grassland with scattered trees.

Land Unit 5b2 describes narrow alluvial plains with incised drainage lines. Soils are slow draining and drainage lines will flow during the wet season. Vegetation consists of open woodland to open shrubland with dense grasses and sedges.

As part of site investigations, a site and soils investigation was undertaken by Zinga & Associates Pty Ltd, Environment and Agricultural Consultants. The investigation included field sampling and laboratory analysis to assess the suitability of soils for effluent irrigation. A copy of the Site and Soils Investigation Report is at Annexure 1.

3.4. Surface water

Three second order (Strahler's Order) streams associated with the Berry Creek system are present on the land. The north branch runs on an east-west alignment through the centre of the site, while the southern branch runs from a point near the intersection of Scrutton and Cornock Roads outside the site, through Lot 4 and to the south-western corner of Section 5410. The west branch runs roughly parallel to the western boundary.

The stream margins are well vegetated.

3.5. Groundwater

There are no registered bores on the land. Records of bores drilled on rural living allotments around the site indicate that water bearing zones are between 27 and 95 metres in depth, with yields varying between 0.5 to 5.0 litres per second. Records which included notes on water quality indicated good water quality.

A hydrogeology investigation undertaken for the project by Zinga & Associates is at Annexure 2.

3.6. Vegetation and fauna

Most of the land has been cleared for agricultural production in earlier years. A site investigation and inspection by Zinga & Associates confirmed that the site is well vegetated with mainly improved pastures Humidicola and Jarra, and that the lower imperfectly drained areas are dominated by a range of water-tolerant grass species and taller *Pandanus spiralis*.

No threatened flora species are recorded on the land.

Three fauna species listed as vulnerable in the NT Threatened Species list are recorded on land surrounding the site. These are *Ardeotis australis* (bustard), *Dasyurus hallucatus* (Northern quoll), and *Conilurus pennicillatus* (brush-tail tree rat).

3.7. Heritage

A search of the NT Heritage database indicates that there are no registered heritage sites on or near the land.

World War II Livingstone Airfield, Camp and Anti-aircraft Gun Site are located near the south-western corner of the site, adjacent to the rail corridor and Stuart Highway. The site was nominated for inclusion on the NT Heritage Register in 2001, but in 2007 the Heritage Advisory Council decided that, although the site possessed some heritage significance, it did not warrant inclusion on the register.

A request for information from records held by the Aboriginal Areas Protection Authority returned advice that the Authority has no record of sacred sites within the site. See Annexure 7.

3.8. Surrounding land use

The land on the southern boundary of the site has been subdivided into 8 ha lots, consistent with the lot size permissible in Zone R, and the lots are occupied for rural living.

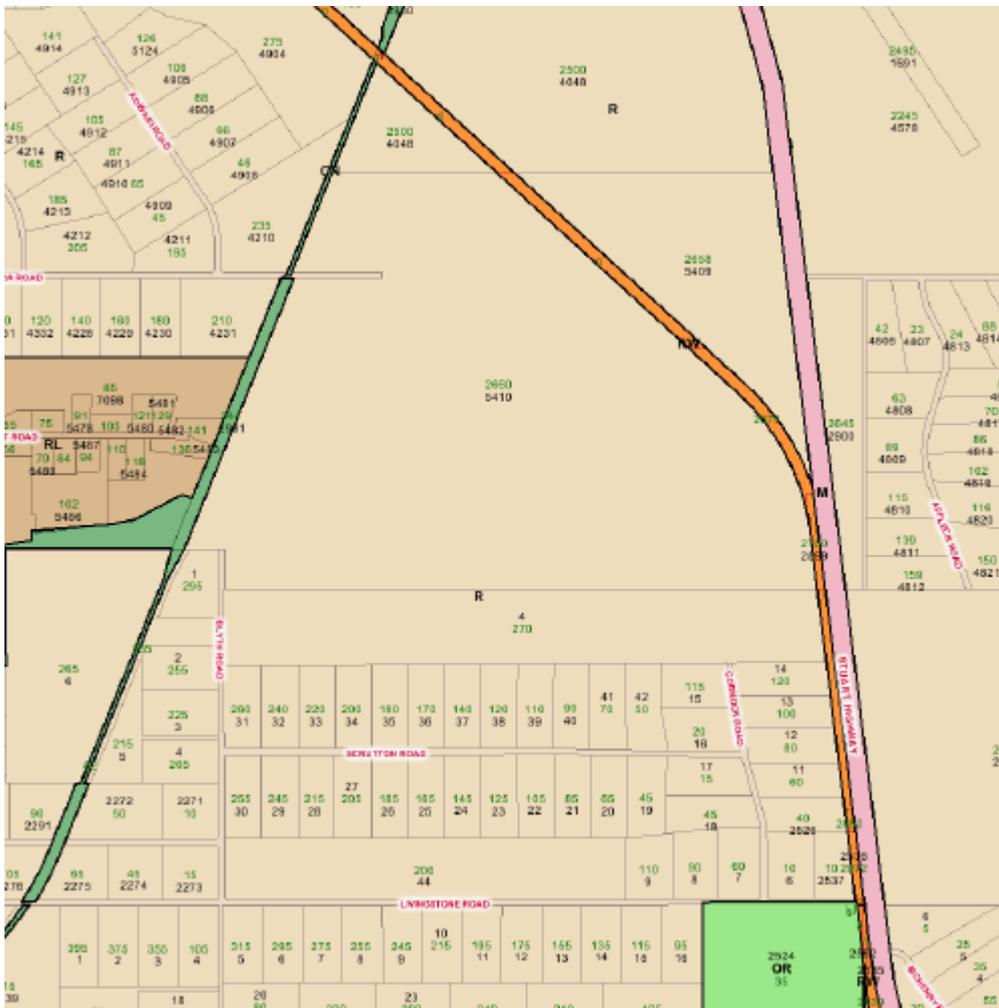
There is a linear Conservation zone, incorporating the former rail corridor, on the western boundary of Section 5410, and on the western side of the Conservation zone, the land is subdivided into 2 ha and 8 ha lots for rural living purposes. The 2 ha lots are clustered on Bandicoot Road and are zoned RL.

The lots on the western side of Blyth Road are also zoned R, and are generally 8 ha in size, and occupied for rural living purposes.

The land on the north-eastern side of the rail corridor is used for farming, and Section 4048 is part of the holding known as Santavan. It is a cattle-holding property and has holding yards for about 6,000 head.

The eastern boundary of the site contains the Stuart Highway and rail corridors.

An extract of the zoning map in the locality of the site is shown below.



3.9. Noise environment

The site abuts Stuart Highway and the rail corridor, and these features are the principal sources of noise in the locality of the site.

4. DETAILS OF THE DEVELOPMENT PROPOSAL

4.1. Meat processing operations

The processing plant is designed as a state-of-the-art hot-boning export manufacturing plant. It will process cattle that would otherwise be exported live, and those which exceed recently-introduced weight limits for shipped cattle.

As a plant processing beef for export, the facility is required to meet licensing requirements of the Australian Quarantine and Inspection Service (AQIS), as well as those of receiving jurisdictions in the European Union and the United States. Slaughter practices must also comply with the Australian standard of halal meat production.

Cattle will be sourced from the Territory, North Queensland, South Australia and Western Australia.

At peak production, the plant will process 1,000 head per day in two daily shifts. Holding yards will accommodate cattle for two days' production.

Cattle will be received by road transport and unloaded in holding yards adjacent to the plant, where they will be tallied, recorded and washed, if necessary, prior to resting and slaughter. AQIS will inspect all animals prior to slaughter.

Animals will be moved to pens, and from there up a ramped race to the stun enclosure. Electrical stunning will be used.

The stunned animal is conveyed to the slaughter floor, where the carotid and jugular incisions are made, and a mechanical tipper tips the carcass onto a mechanised bleed table. After most of the blood is drained, the weasand is clipped, and the carcass is hoisted onto a mechanized conveyor and moved through a series of workstations where the sequence of steps required to process each carcass is undertaken.

These steps include : removal of horns and hoofs; hide removal; head removal; evisceration; carcass splitting and inspection and grading; boning; cutting and trimming; bulk packing or vacuum packing; packing in cartons; weighing and identifying carton contents; conveying to cold or freezer storage; palletisation; and loadout (ie. leave the site).

A flow diagram, showing the steps involved in processing a carcass, is at Annexure 8.

Edible red and green offal will be recovered, and will be washed, packed and stored in cold or freezer storage rooms.

Inedible material generated from these processes, with the exception of hides, will also be processed on the site. Hides will be conveyed to a processing shed beside the rendering plant and salted. Waste salt and brine will be collected daily and removed to onsite evaporation pans for salt recovery. Hides will be palletised, containerised, and transported off the site to foreign and domestic tanneries.

Other material from the carcasses, including blood, bone, horns, and slaughter waste, will be conveyed to the rendering plant and fed into a continuous rendering system to produce tallow, and blood and bone meal.

Heat generated in the rendering plant will be recovered by capturing vapours and flash steam, and passing them through heat exchangers. The recovered heat will be re-used to heat hot water used in other processes.

The plant will employ about 270 people in two shifts.

The entire plant must be cleaned daily, and this activity will be undertaken within the 8-hour period when there are no processing shifts.

The operation of the plant will taper off in the two months prior to a complete stop in January each year, when the plant will close for a month for comprehensive servicing of all machinery and equipment.

4.2. Buildings and facilities

The processing plant will be located towards the Stuart Highway end of the site, near the existing vehicle access point.

The building complex will comprise :

- the main meat processing plant, within which slaughter, evisceration, boning, dressing, and packaging of beef products will be conducted;
- cold stores and chiller rooms;
- a rendering plant;
- hide room;
- engine and boiler rooms;
- mechanical workshop and store;
- hay and machinery sheds;
- cattle holding yards and pens;
- loading docks;
- transformer kiosk;
- administrative and staff facilities, including change rooms, medical treatment room, training and lecture rooms, and canteen;
- separate office space and staff facilities for AQIS officers;
- a community centre; and
- car parking.

The buildings are arranged to facilitate the efficient flow of cattle through the plant.

The main meat processing building will be constructed over a concrete slab with trade waste drainage, with structural steel frame, colorbond roofing and fascia to the upper third, and overlapping insulated panel walls and ceiling.

To control noise, the refrigeration engine room will be constructed tilt-up concrete panels.

The rendering plant will be a complete packaged plant, including all equipment from raw material bins to road freight loadout.

The maintenance workshop and render plant will be of steel shed type construction, consisting of concrete slab, structural steel frame, and colorbond roofing and walls.

The administration and staff amenities building, and community building will be of masonry construction with colorbond roof.

The processing and rendering plants will be fitted with state-of-the-art purpose-built machinery and equipment. As an export facility, the plant will be required to meet AQIS construction and equipment standards, as set out in *Construction and Equipment Guidelines for Export Meat*. The scope of the standards is set out in the list of contents at Annexure 9.

The buildings will be serviced by a new ring mains system, hydrants, pump and water storage to meet current fire protection requirements.

The buildings will generally be single-storey structures, although there will be raised platforms to facilitate loading and access to mechanical equipment. The tallest part of the meat processing building will be the plate freezer, where building height to the ridge line will be 16.7 m. The height of other parts of this building will be between 11 m and 14 m.

The appearance of the buildings will be consistent with farm buildings and buildings used to process farm produce.

The processing and rendering buildings will be set back 460 m from Stuart Highway, 1 km from the southern site boundary, and 2.3 km from the western boundary.

The community building will contain a child care centre, medical suite, and training room.

Parking for 255 cars (including 33 near the community building) will be provided on the site, and the parking areas will be segregated from the path taken by heavy vehicles attending the site.

Cattle holding yards are sized to accommodate 2 days processing capacity, ie. 2,000 head. Cattle will be walked from unloading area to the yards.

Cattle will be walked from holding yards to covered, sealed and drained pens to service the slaughter operation. These pens will drain to the effluent treatment system. The pens are sized to hold half a day's processing capacity, and

configured in an angled Temple Grandin arrangement. This arrangement is an essential part of the humane despatch of cattle.

Other elements that support the operations to be carried out on the site are also shown on the site plan. These elements include access ways; effluent treatment ponds, stormwater storage ponds, irrigation paddocks; compost stockpile, salt pans, and biofilter.

Siting of the facilities takes into account the natural constraints of the land, proximity to the Stuart Highway for stock transport efficiency, and recommended distances from houses.

The separation distances recommended by NSW environment and planning authorities are 500 m from a processing plant and 1,000 m from a rendering plant. These radii are shown on the site plan, and it can be seen that there are no houses within these envelopes.

4.3. Animal welfare

All animal handling activities will be carried out humanely. Cattle will be cleaned and watered, and holding yards will be maintained in a clean condition.

The race and stun box are designed to avoid stress in the animals, and it is proposed to use the electric stunning method. The plant is designed to minimise the time between stunning and slaughter to about three seconds.

Australian practice does not permit ritual slaughter prior to stunning, regardless of the destination of the final product. For export facilities, AQIS inspectors are present on the site throughout the processing cycle. Approval for ritual slaughter without stunning is required from AQIS, and this approval is not given.

The treatment of all animals brought to the site will be in accordance with the Australian Government's *Model Code of Practice for the Welfare of Animals : Livestock at Slaughtering Establishments*, and the *Industry Animal Welfare Standards : Livestock Processing Establishments* published by the Australian Meat Industry Council.

4.4. Access and traffic

Vehicle access to the site will be from the existing access point in Stuart Highway. This access point is currently by a right of way in the southern tip of Section 5409.

It is proposed to formalise the right of access by excising this small piece from Section 5409 and consolidating it with Section 5410. A sale agreement between the owner of Section 5409 and North Australian Beef Ltd (the AACo entity that will hold the application site) has been executed, and is subject to the application

for EDP being approved. A copy of the survey drawing showing the proposed subdivision and consolidation is at Annexure 10.

Access to the site also requires crossing the rail line bordering the north-eastern boundary of the site.

The existing alignment of the access way to the railway is not suitable for the proposed development, and the access alignment will be reconfigured to improve turning movements and safety of heavy vehicles leaving and entering the Stuart Highway.

Heavy vehicle attendance at the site each working day will include 7 to 8 cattle road trains, 12 container trucks carrying processed meat, and two containers of rendered products.

The predominant source of other vehicles attracted to the site will be employees. The proposal includes parking for 255 vehicles. This number exceeds the requirement of the Planning Scheme, under which 128 bays would be required. The increased number is to accommodate demand during the change of shift period.

Heavy vehicle movements will be segregated from normal traffic, with road trains and trucks directed to holding yards and loading docks on the northern and western sides of the complex, and employee and visitor parking located on the eastern side.

To ensure safety of vehicles attending the site and operational efficiency of access, the proponent commissioned a specialised traffic impact study by i3 Consultants. See Annexure 5.

The study found that peak hour trip generation for light vehicles is likely to occur between 2:00 pm and 3:00 pm. This period accommodates the shift changeover period, when there will be overlap between people leaving and entering the site. The study estimates that a total of 190 trips will be generated during this peak period.

The heavy vehicle trip generation peak period is identified as 3:00 pm to 5:00 pm, when a total of 30 cars and 22 heavy vehicles is estimated.

The study found that :

- i. The existing road intersection has spare capacity to safely accommodate the expected increase in traffic.
- ii. All the required sight distances at the existing road intersection are met or exceeded.
- iii. There are some obstructions to the required sight lines for the approach to the railway crossing, but these can be addressed by relocating the existing Stop signs closer to the rail and clearing areas on both sides of the rail corridor.

- iv. A significant deficiency is the lack of adequate sight lines for a stationary design vehicle (a fully laden road train) to commence a crossing at the Stop sign and complete the crossing safely. The sight line distance is required to be more than 1,000 m, whereas the sight line in the proposal is 400 to 500 m.
- v. Active control measures (eg. flashing lights) are required for the rail crossing, subject to detailed assessment using the Australian Level Crossing Assessment Model (ALCAM).
- vi. The proposed realigned access road into the site, railway and rail crossing offer safety advantages over the existing layout.

In relation to the subject matter of findings iii, iv and v, the proponent will adopt the measures outlined in the traffic impact study. The operator of the AustralAsia Railway, Genessee and Wyoming Australia Pty Ltd (GWA), has indicated that it is supportive of these measures, as they will improve overall safety at the crossing.

A copy of the letter from GWA is included in Annexure 5.

A copy of the traffic impact study has been forwarded to Road Network Division and GWA.

4.5. Infrastructure and utilities

The proponent has discussed the services requirements for the proposed development with Power and Water Corporation (PWC). PWC has confirmed the availability of electrical supply, potable water, and gas to the processing plant for the foreseeable future up to 15 to 20 years.

Regarding electricity supply, PWC says it has supply available to meet the project's demand. The service would be supplied on a commercial basis, contingent upon the proponent reaching agreement with PWC on the provision of electricity infrastructure, including headworks.

PWC's early advice was that a new water main would be required from PWC's future treatment site in Cox Peninsular Road. However, later advice is that water for the project can be sourced from the existing 375 main in Stuart Highway opposite the project site. The proponent would be required to install tanks to hold one day's supply, and a chlorination facility until PWC's treatment plant is built.

PWC has confirmed that it has gas supply available to meet the project's demand, and will supply gas on a commercial basis, contingent upon the proponent meeting the cost of the required infrastructure.

Letters from PWC are at Annexure 11.

4.6. Stormwater and erosion and sedimentation control

To protect the sensitive water environment of the site, the proponent has commissioned the preparation of a stormwater and erosion and sedimentation control plan (ESCP). See Annexure 4.

The ESCP includes protection of the riparian features of the site by identification of a riparian margin within which no structures will be located, and fencing these areas to promote their revegetation. The ESCP also includes installation of sediment fences, check dams, drop structures and silt traps, drains, stormwater storage ponds, and batter protection.

Some stormwater will be captured in storage ponds to supplement water required to irrigate pasture paddocks.

Details of the system are shown in drawings prepared by Byrne Design at Annexure 4.

There will be minimal, if any, exposed surfaces on the site; it will be maintained in a covered condition, either as vegetated surfaces or hard sealed surfaces for building pads and vehicle access, storage and turning movements.

4.7. Waste disposal

The facility is designed as an integrated plant, meaning that it includes a meat processing plant as well as a rendering plant, and process design integrates the activities that occur in these separate operations. In this model, solid materials from animal carcasses that would otherwise be regarded as waste (bones, blood, hides, heads, horns, offal etc) are valuable as secondary products, and are recovered by the rendering process for use in other industries. When these materials are recovered, they are co-products and not waste.

In this proposal, the hide will be the only part of a carcass that will leave the site in a partially treated condition. All other parts of the carcass will leave the site as product ready for use.

The rendering process is thus a very significant waste minimisation measure.

The operations to be carried out on the site require waste streams to be identified and treated separately.

Waste streams from the facility are :

- Stormwater
- Administration, staff and ancillary buildings
- Packaging
- Animal waste
- Processing waste

Stormwater is dealt with in the stormwater and ESCP, and the waste minimisation method includes capture in three ponds for use as irrigation of pasture paddocks.

Waste emanating from humans on the site will be treated by installing a type-approved package sewage treatment plant in accordance with the Department of Health's *Code of Practice for Small On-site Sewage and Sullage Treatment systems and the Disposal or Re-Use of Sewage Effluent*.

Packaging waste will mainly comprise cartons and plastic materials. These will be baled for removal to the municipal recycling depot. Other trash will be collected in receptacles and removed by licensed contractors for disposal at approved sites.

Specially designed systems are required to treat animal waste and processing waste. The treatment of these wastes include systems for liquid and solid waste. The liquid water treatment system will consist of anaerobic and aerobic ponds and a storage dam. Treated effluent will be used to irrigate pasture paddocks.

Solid waste treatment will be mainly composting of manure, fibrous paunch content, and organic material recovered from sedimentation structures designed into the treatment system. Composting will convert these materials into stable humus for use in soil improvement.

The descriptions of these waste systems and their management methods are dealt with in detail in the Environmental Management Plan, which forms part of the application documents. See Annexure 3.

4.8. Dust, noise, and odour emission control

The project's approach to controlling these emissions is based on prevention and minimisation.

The effect of these emissions on surrounding receivers can be reduced significantly by designing the complex to meet the recommended separation distances from houses of 500 m from the meat processing plant and 1,000 m from the rendering plant. The proposal has been designed with these separation distances to residential properties, as shown on the site plan.

Another major contributor to controlling these emissions is the installation of state-of-the-art purpose-designed machinery and equipment, as intended in this proposal. For example, Food Science Australia (a CSIRO venture) notes in its publication *Noise Control in Processing Areas* :

“The purchase of new plant, the design of the area in which it is to be installed and the design of new workplaces generally, provide an opportunity for cost-effective noise control measures. All new plant and equipment should specify maximum noise emission data, and this should be a consideration in future purchases. Although many abattoirs rarely

enjoy new plant opportunities, when these do arise, the issue of noise generation should be part of the design brief.”³

An attendant factor is maintenance of machinery and equipment, to ensure that performance is not compromised. In addition to daily cleaning of all equipment, and routine maintenance, the plant will close down for one month (January) each year to allow for comprehensive servicing and maintenance of all machinery and equipment used in the operation.

In addition to these two factors – separation distances, and new machinery and equipment – which reduce all three types of emissions, the design of the project includes measures which will control specific emissions, as outlined below.

4.8.1. Dust

The design of the proposal includes the following additional measures to control dust –

- Maintenance of vegetative cover over the site.
- Establishment of a tree break around the perimeter of the site.
- Sealing access roads, vehicle manoeuvring surfaces, and car parks
- Lairage pens will be sealed.
- Holding yards will be surfaced with crushed rock compound.

4.8.2. Noise

The design of the proposal includes the following measures to control noise –

- The walls of the meat processing plant will be constructed of insulated panels.
- The refrigeration engine room will be constructed of concrete tilt-up panels.
- Animal holding pens are located as far from existing houses as practical.
- Attendance of heavy vehicles on the site will take place when ambient noise levels are highest, ie. in daylight hours.

³ CSIRO/Food Science Australia **Noise Control in Processing Areas** Meat Technology Update
November 2006

4.8.3. Odour

Odour control will be achieved by the following design measures –

Render plant

The rendering plant will be enclosed in a building designed for the air extraction rate to produce negative pressure to capture emissions. Foul air from point sources will be collected near roof level of the building and ducted to a biofilter. A schematic diagram showing the point source collection system is shown in Drawing DA014.

The biofilter consists of an open bed of rice hull or woodchip and compost. The foul air from render plant point sources is humidified in a water spray column before distribution to biofilter cells. The humidifier saturates the foul air and prevents the filtration media from drying out. The design incorporates an up-flow through a plenum, which ensures the foul air is distributed evenly over the biofilter and seeps up through the filtration media.

A bacterial film formed in the moist filtration media will degrade gases in foul air, and treated air is vented to the atmosphere at the surface of the biofilter, at which stage odour is reduced to indiscernible levels.

CSIRO reports that odour removal efficiencies of 95% to 98% have been reported for biofiltration systems⁴.

A schematic diagram illustrating the biofilter is at Drawing DA015.

The collection of point source foul air and ducting to a biofilter allows mechanical ventilation systems to vent residual low-odour air in the rendering building into the atmosphere.

In addition to design measures to reduce odour, all material sent for rendering will be fresh, as the rendering process is part of the continuous processing cycle. Rendering fresh material is a recognised factor in odour reduction.

Waste water ponds

The waste water ponds will be designed, constructed and operated to best practice guidelines developed by Australian EPAs and industry authorities (including Food Science Australia/CSIRO).

These agencies say that the best practice method of controlling odour from anaerobic ponds is to establish a stable crust on the pond with minimal perforation over a small area around the wastewater inlet.

Regular monitoring of pond conditions and ensuring that the discharge into a downstream unit is submerged on entry will ensure that odours are not detectable beyond the plant boundary.

⁴ CSIRO/Food Science Australia **Odour Management** Meat Technology Update April 2002

Odour emissions from aerated ponds are not considered to be a concern if the pond is located away from plant boundaries, and the ponds are not overloaded such that they become anaerobic. The odour from aerobic ponds has a typical earthy smell.

Best practice recommendations include maintaining adequate reduction-oxidation potential in the aerobic system, and desludging when accumulated solids rise to within 30 cm of the water surface.

Animal yards

In line with best practice guidelines, odour suppression from animal yards will be achieved by –

- Regular cleaning out of animal waste from yards and pens.
- Diversion of wash-out water to the waste water treatment system.
- Collection and composting of manure and paunch content in accordance with the detailed description set out in Section 6.0 of the Environmental Management Plan (Annexure 3.)

Meat processing plant

The meat processing plant will be enclosed in a mechanically ventilated building to provide a controlled environment. It is a requirement for an export plant to have no odour penetration from sources outside the building. Consequently, the meat processing plant is not an odour source.

4.9. Site security

Existing perimeter fencing will be maintained and additional internal stock fencing will be constructed.

The 4 ha area containing the processing and rendering plant complex will be fenced with chain-mesh fencing. Vehicle access to the complex will be controlled through a gatehouse entry, and pedestrian access from the car park will be controlled by a secure turnstile.

External security lighting will be installed around the buildings.

5. POTENTIAL IMPACTS, ENVIRONMENTAL RISK AND PROPOSED MITIGATION MEASURES

5.1. Erosion

The site has a gradient of more than 1%, and consequently is regarded as at risk of erosion if vegetation is removed, which in turn could result in loss of soil from the site and affect stream health.

To address this risk, the proponent has prepared a Stormwater and Erosion and Sedimentation Control Plan (ESCP), which is submitted at Annexure 4 as part of the application documents.

The site is well vegetated, with minimal or no exposed soils. The site will continue to be maintained in this condition.

5.2. Water quality

A detailed hydrogeology investigation has been conducted by Zinga & Associates. A copy of the report is at Annexure 2. The report concludes that there is an adequate buffer of clayey material between the proposed operations and deeper water-bearing sediments provided works do not encroach into areas of seasonally waterlogged soils.

The report also concluded that, in addition to the clay buffer, groundwater will be protected and adverse environmental effects avoided through suitably constructed and lined effluent treatment ponds, balanced manure application and irrigation rates, and sealed cattle holding yards and composting pads.

All these measures are to be incorporated in the design of the facility.

In addition, groundwater will be monitored regularly, as set out in the Environmental Management Plan (Annexure 3).

Surface water quality is to be protected by retention and revegetation of the riparian margins; appropriate siting and design of the waste water treatment ponds; and implementing the nutrient and irrigation management plan outlined in the Environmental Management Plan.

Implementation of the Environmental Management Plan will address risks to water quality.

5.3. Dust, noise, and odour

Measures to mitigate the effects of dust, noise and odour are set out in section 4.8 of this statement

5.4. Traffic

The proposal will increase traffic generation from the site. The expected increase in traffic is estimated in the Traffic Impact Study (Annexure 5).

The traffic effects of the proposal on local amenity are addressed in the following ways –

- Despite availability of access from local roads, all access will be restricted to Stuart Highway, from the existing access point to the site.
- The buildings and facilities are to be sited and fenced such that no vehicles attending the site will have reason to travel down Livingstone and Cornock Roads.
- The Traffic Impact Study identified the peak vehicle period as between 2:00 pm and 5:00 pm. This period is not ordinarily a time when nearby residents are sensitive to traffic noise.

All operational and safety considerations have been taken into account in the Traffic Impact Study, and measures recommended in the study are to be adopted.

6. SUSTAINABILITY ISSUES

AACo is developing a Carbon Footprint Reduction Plan, which aims to reduce its carbon footprint by 60% over a 10-year period. Key initiatives that are currently being implemented across AACo's business, or which will be implemented in the near term future include –

Improvement to herd efficiency

AACo owns the largest cattle herd in Australia (approximately 485,000 head). The dominant greenhouse gas produced by AACo's operations is methane from enteric fermentation. The business is currently focusing on making the herd more productive, so that meat is produced with a reduced level of enteric emissions. In the last few years, AACo has aggressively culled unproductive breeding females from its herd.

Pasture efficiency

Improved pasture use will reduce methane emissions. Near term future plans include : greater use of legume-based pasture; use of pasture mapping technologies; and prevention of energy stress by altering herding techniques and introducing new supplement products.

AACo has committed significant resources into pasture research. The research projects use advanced technologies, including LIDAR (light detection and ranging) lasers, unmanned aerial vehicles, and NDVI (Normalised Difference

Vegetation Index) to improve understanding of energy efficiency of pasture resources. This knowledge will enable the company to graze its pasture resources in a way that will reduce methane emissions.

Research conducted at CSIRO's Lansdown Research station near Townsville has found that cattle fed on leucaena (a legume) in Northern Australia emit less methane than cattle grazed on tropical grasses⁵.

In addition to the matters outlined above, key sustainability issues relevant to the proposed development are –

- The integration of meat processing and rendering operations is a significant resource recovery and waste minimisation strategy. The principle at work is that material that would otherwise be waste is given a commercial value and treated as a co-product rather than waste.
- By its processes, rendering removes significant amounts of carbon from the environment. Beef fats and protein have high carbon content, which would release CO₂ and methane if unwanted parts of the carcass are disposed of by burial, incineration, or decomposition in landfill.
- Nutrients in processing effluent are considered valuable, and will be recovered and applied to pastures, which in turn will improve fodder yields and provide a carbon sink.
- Heat will be recovered from the rendering plant, and will be re-used to produce hot water for other processing activities.
- Animal waste will be converted into a product of commercial value, and will be applied to maintain and improve soil condition on and off the site.
- The facility will reduce considerably the distances that cattle have to be transported, reducing fuel use. In some cases, the reduction in distance will be from 3,000 km to 1,200 km. The reduction in transport distance and time will also reduce the incidence of animals arriving at the plant in poor condition.

⁵ CSIRO "Research sheds new light on methane emissions from the northern beef herd" Media release 27 May 2011.

7. STAKEHOLDER ENGAGEMENT

The proponent engaged specialist community consultation consultants, Creative Territory, to advise on stakeholder engagement.

The stakeholder engagement program consists of briefing community representatives on the project; preparing and circulating information about the project to neighbouring landholders; face to face meetings with neighbouring landholders; and identifying to stakeholders specific people to whom they can direct questions and concerns.

Engagement with stakeholders will continue during the next few months, and if the project is approved, there will be ongoing dialogue with neighbouring landowners and other stakeholders to ensure that their concerns are addressed and that the project is delivered and operated in an acceptable manner.

A copy of the material sent to neighbouring landowners is at Annexure 12.

8. MATTERS TO BE TAKEN INTO ACCOUNT : SECTION 42 PLANNING ACT

Section 42 of the *Planning Act* sets out the matters from section 51 that are to be considered by the Minister in determining whether to grant an exceptional development permit.

s 51(d) an environmental protection objective within the meaning of the *Waste Management and Pollution Control Act* that is relevant to the land to which the application relates

and

s 51(s) any beneficial uses, quality standards, criteria, or objectives, that are declared under section 73 of the *Water Act*

By s 18 of the *Waste Management and Pollution Control Act*, any beneficial use, quality standard, criteria or objective declared under s 73 of the *Water Act* is an environment protection objective.

The land is within the Darwin and Blackmore Rivers catchment, for which two declarations for beneficial uses are current. For surface waters, the declared beneficial uses are Aquatic Ecosystem Protection, Recreational Water Quality & Aesthetics and Agricultural Water Use.

For groundwater, the declared beneficial uses are Raw Water for Drinking Water Supply and Agricultural Water Use.

There are currently no other environmental protection objectives that are specifically relevant to this land.

The application documents include a Stormwater and Erosion and Sedimentation Control Plan, and its implementation during both the construction and operation stages of the proposed development will ensure that the declared beneficial uses are not adversely affected.

The application documents also include an Environmental Management Plan, and its implementation will ensure that there is no adverse effect on the water environment.

s 51(g) if a public environmental report, or an environmental impact statement has been prepared or is required under the *Environmental Assessment Act* in relation to the proposed development - the report or statement and the results of any assessment of the report or statement under that *Act* by the Minister administering that *Act*

The proponent requests that the application documents be taken as a Notice of Intent under the *Environmental Assessment Act*.

The applicant considers that all environmental issues have been taken into account in formulating the proposal, and will provide any additional information that is requested by assessing authorities to enable the environmental effects of the proposal to be considered.

s 51(h) merits of the proposed development as demonstrated in the application

and

s 51(n) the potential impact on the existing and future amenity of the area in which the land is situated

The proposal will be a modern state-of-the-art facility, incorporating the best available production and processing technology, and will be conducted in accordance with best practices endorsed by Australian EPAs and industry organisations.

It will add value to the cattle industry, which is one of the largest sectors of the Territory economy, and provide an alternative to the live cattle trade for cattle producers.

The proposal will generate about 230 jobs during the construction phase, and will have a workforce of about 270 employees during the peak operational phase. It will increase local employment opportunities, including traineeships and opportunities for Indigenous workers.

The application acknowledges the potential environmental effects of the proposal, and the proposal includes measures to prevent or minimise these effects. The measures

include siting, design, construction, operation, and management of all aspects of the activities on the site to ensure minimal environmental effect.

The application recognises the concerns of neighbouring residents and land owners, and has designed the proposed development to minimise adverse effects on their amenity. Most of the amenity effects have been dealt with in earlier parts of this statement.

It is submitted that there will be minimal effect on the amenity of the locality.

s 51(j) the capability of the land to which the proposed development relates to support the proposed development and the effect of the development on the land and on other land, the physical characteristics of which may be affected by the development

The design of the proposal and the Environmental Management Plan have taken into account the physical and environmental constraints of the land. The application documents outline the manner in which the siting, design, construction, operation, and management of the facility will contain and manage environmental effects.

The soils investigation carried out for the proposal (Annexure 1) indicates that the soils are capable of sustaining irrigated pastures, as proposed in the application.

The proponent does not intend extract groundwater, so the proposal will not affect the availability of groundwater to any other land.

Accordingly, it is submitted that the proposed development will not affect the physical characteristics of any other land.

s 51(k) the public facilities or public open space available in the area in which the land is situated and the requirement, if any, for the facilities, or land suitable for public recreation, to be provided by the developer

One of the considerations in selecting the application site is relative proximity to a range of public facilities. The site is approximately 18 km from Humpty Doo Centre, which includes primary and secondary schools, two medical clinics, retailing, service commercial, and recreation facilities.

The site is also about 8 km from Berry Springs Centre and Noonamah. Major recreational facilities are located at Berry Springs and Freds Pass Reserve.

s 51(m) the public utilities or infrastructure provided in the area in which the land is situated, the requirement for public facilities and services to be connected to the land and the requirement, if any, for those facilities, infrastructure or land to be provided by the developer for that purpose - s. 46(3)(g) and s. 51(m)

The proponent has consulted with Power and Water Corporation, which has confirmed that power, water and gas services can be made available to the land.

s 51(p) the public interest

The proposal serves the public interest by providing a facility to support the cattle industry, deepening investment in that industry, and providing skilled employment.

The proposal will add to the value chain, and will increase export volume and the range of goods exported through East Arm Port. It will strengthen the regional economy and improve business opportunities for related industries and industries supplying the facility.

s 51(r) any potential impact on natural, social, cultural or heritage values

The application recognises the streams and wetlands on the site as having natural values. The Stormwater and Erosion and Sedimentation Control Plan and the Environmental Management Plan describe in detail the measures to be implemented to protect natural values of the site.

Information supplied by Aboriginal Areas Protection Authority and the NT Heritage Register indicate that there are no registered items of cultural or heritage value on the application site.

Livingstone WWII Airfield, Camp and Gun Site are in the transport corridor adjacent to the site, but this complex was not recommended for inclusion in the Register. In any event, the proposal has no effect on the airfield complex.

s 51(t) other matters it thinks fit

There are no additional matters under this head.

JUNE D'ROZARIO