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Report

Broiler Development at Goolgowi

Animal Welfare and Biosecurity Assessment

Muscat Developments Pty Ltd

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1. INTRODUCTION

Advitech Pty Limited (trading as Advitech Environmental) was engaged by Tattersall Lander Pty Ltd on behalf of Muscat Developments Pty Ltd (the proponent) to assess animal welfare, biosecurity and disease management matters in relation to the construction of a poultry facility at Goolgowi, New South Wales. This report is appended to an Environmental Impact Statement (EIS), which addresses environmental considerations identified in the Secretary's Environmental Assessment Requirements (SEARs), dated 18 November, 2016, and relevant to animal welfare, biosecurity and disease management:

- *Details of how the proposed development would comply with relevant codes of practice and guidelines;*
- *A biosecurity assessment between other nearby poultry farms and any potential waterbird habitat(s);*
- *Details of all disease and bio-security control measures; and*
- *A detailed description of the contingency measures that would be implemented for the disposal of livestock in the event of disease outbreak.*

Advitech Environmental understands that the proposed poultry facility at Goolgowi would be for five independently run farms each with 20 tunnel ventilated sheds. Each shed would house approximately 60,000 per cycle, amounting to approximately 6,000,000 birds per cycle.

There are several Codes of Practice and Guidelines designed to safeguard the health and welfare of poultry during growing, transportation and slaughter associated with meat chicken production, and of matters relating to biosecurity in the State, that form the foundation for this assessment. These include:

- Australian Chicken Meat Federation Inc. (ACMF), 2010. *National Farm Biosecurity Manual for Chicken Growers*. Australian Chicken Meat Federation Inc.
- Australian Department of Agriculture Fisheries and Forestry (DAFF), 2009. *National Farm Biosecurity Manual for Poultry Production*. Department of Agriculture Fisheries and Forestry.
- Australian Poultry CRC, 2008. *National Animal Welfare Standards for the Chicken Meat Industry: Manual for Meat Chicken Farming*. Australian Poultry CRC Pty Ltd. Australian Poultry Cooperative Research Centre Pty Ltd.
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- Primary Industries Standing Committee, 2002. *Model Code of Practice for the Welfare of Animals - Domestic Poultry (The Model Code)*. 4th Edition SCARM Report 83. CSIRO Publishing.

- Primary Industries Standing Committee, 2006. *Model Code of Practice for the Welfare of Animals - Land Transport of Domestic Poultry*. 2nd Edition PISC Report 91. CSIRO Publishing.
- The Australian Department of Agriculture Fisheries and Forestry *National Farm Biosecurity Manual for Poultry Production* (2009).
- The Australian Department of Agriculture Fisheries and Forestry *National Water Biosecurity Manual for Poultry Production* (2009).

2. ANIMAL HEALTH AND WELFARE

Bird welfare, flock performance and economic functioning go hand-in-hand. Muscat Developments is committed to maintaining the highest animal welfare standards in accordance with *The Model Code*. Key aspects of this commitment to animal health and welfare include the following issues which are further discussed in **Section 2.1** to **Section 2.8** below:

- Housing, Space, Temperature and Humidity;
- Equipment;
- Lighting;
- Ventilation;
- Food and Water Supply;
- Inspections;
- Transportation; and
- Shed Personnel and Bird Handling requirements.

2.1 Housing, Space, Temperature and Humidity

Stocking densities of sheds are determined by a combination of weather, shed design and climate control capabilities. To prevent birds from overheating in hot weather, stocking density will be such that poultry have adequate space to move freely around on a soft litter substrate, and to facilitate body heat loss through panting, gular flutter, and the ability to hold wings away from the body. Stocking densities in each shed at the facility will not exceed 35 kg/m². However, stocking densities may be re-evaluated immediately and adjusted accordingly upon the occurrence of disease or evidence of behavioural changes, such as cannibalism, but never greater than the stocking density of 40 kg/m² as stated in *The Model Code* for tunnel ventilated sheds. The need to adjust stocking densities will be revised following daily inspection.

Calculations of maximum stocking density for the Goolgowi facility have been based on the following assumptions:

- Start cycle 19.3 birds / m²;
- Shed dimensions of 18.3 m x 167.75 m = 3,069.825 m²;
- Day 1 stocking number per shed = 60,000 birds;
- Routine mortality rate of 0.1% per day (MCE, 2016); and
- Thinning rate at days 35 and 42 of 30% each event.

Based on the proposed shed dimensions and assumptions listed above, the recommended maximum stocking density at the end of a cycle would be 29.400 birds per shed (9.6 birds per m² at 3,069.825 m²). Planned day one stocking rates of 60,000 chicks will result in an end of cycle stocking density of 103,100 kg total end weight (approximately 34 kg/m²), taking daily mortality and thin outs into consideration. Hence, the maximum stocking densities proposed for the Goolgowi facility are less than the maximum stocking rates recommended in the *Model Code*.

2.2 Equipment

All equipment to which the birds have access will be selected and maintained to avoid injury, pain and stress to the birds.

Automated shed control equipment, including ventilation and temperature control systems, will be regularly checked and maintained to ensure optimum efficiency. Feeding and watering equipment will be checked daily to ensure all birds have sufficient access to food and water.

Automated equipment monitors and alarms will be installed in case of equipment failure.

2.3 Lighting

Lighting within the poultry sheds will be operated in accordance with the Processor's management manual, and depend on the production cycle and operations being undertaken in the shed. The practices adopted in the shed will ensure:

- Sudden increases in light intensity would be avoided to prevent flight reactions;
- Adequate lighting to allow thorough inspection of poultry welfare (supplemented with a torch where needed);
- Lighting provided over at least eight hours per day;
- Lighting used for bird pickup and the grow out stage would be capable of being dimmed and turned on in a dimmed state; and
- Lighting levels will be checked routinely with light metering equipment.

2.4 Ventilation

The proposed sheds are designed with tunnel ventilated fully enclosed climate control systems. The tunnel ventilated system is able to provide optimal environmental parameters to maintain poultry wellbeing, growth and productivity. The tunnel system will be fully automated, computer controlled and alarm monitored. The facility will incorporate a backup power generation system for use in the event of power failure.

The facility ventilation systems for each farm at Goolgowi will meet the criteria outlined in *The Model Code*, ensuring that:

- Fresh air is provided;
- Shed temperature and relative humidity are maintained at acceptable levels (below 80% at temperatures above 30°C), even during extreme weather events;
- Dust and odour are minimised; and
- Build-up of harmful gases are reduced, with hydrogen sulphide levels kept below 5 ppm, ammonia below 25 ppm, and carbon dioxide below 3000 ppm (0.3%).

2.5 Food and Water Supply

In accordance with *The Model Code*, there will be no greater than 85 birds, maximum density, per pan feeder. Poultry would be fed a diet containing adequate nutrients and provided access to sufficient potable water for good health and vitality. Automated feed delivery would be maintained daily and kept flowing; however, enough food would be on hand in the case that the mechanical feeding system fails.

Each shed will incorporate four rows of pan feeders with individual pans spaced at 0.75 m. Based on the proposed shed dimensions, each shed will house 895 feeders (167.75 m / 0.75 m x 4 rows) providing a maximum of about 64 birds per pan feeder at Day 1 stocking rates and about 31 birds per pan feeder at the end of cycle. These densities are well within the recommended feed space and access requirements described in *The Model Code*. Availability of pan feeders during the brooding period (Day 1 to 14) will vary dependent on the size of the chicks' restrictions within the shed.

Water supply lines will be provided by a nipple drinking system for the supply of sufficiently potable water to meet physiological requirements. Water should be cool in summer and below a temperature at which birds refuse to drink. Water testing should be frequently be tested for salt content and microbiological contamination, especially any water sourced from dams.

In accordance with *The Model Code*, during brooding, there should be a maximum density of 50 chicks per nipple, and during grow out, the density will be 25 birds per nipple. Water would be supplied at a temperature at which they do not refuse to drink. Prior to commencement of operation, water would also be tested for salt content and microbiological contamination.

Nipple feeder drip lines will be spaced each 3 metres across the sheds and at 0.2 metre intervals along each drip line. Based on the proposed shed dimensions, there will be 4190 nipple access points available or a maximum of 5 birds per nipple at the end of the cycle. Availability of nipples during the brooding period (Day 1 to 14) will vary dependent on the size of the chicks' restrictions within the shed. At no time will the water availability exceed the maximum bird per nipple density described in *The Model Code*.

Best Management Practice (DPI, 2012) requires the availability of at least 2 days of water supply (total 2 Litres per bird) in the event of an emergency service interruption. The site will incorporate 4 x 500,000 L tanks (total of 2 ML) and a 300 ML dam per property. Assuming, conservatively, that there is full stocking of all sheds and all tanks and dams are full, a two day requirement would be a total of 2.28 ML and thus on site water storage exceeds best practice management.

In the unlikely event of daytime transportation of birds, water and pan feeders will not be lifted any earlier than three hours before transportation/loading times.

2.6 Inspections

The poultry facility will engage in a schedule of daily and weekly inspections to ensure the humane treatment and welfare of the poultry are maintained. Under some circumstances, such as hot weather, disease outbreak and or cannibalism, inspections would be carried out more frequent than once a day. To ensure the welfare of the birds, daily inspections will incorporate checks for:

- Reduced bird health and general wellbeing manifesting as reduced food and water intake, injury, reduced production, changes in activity level, abnormal feather or dropping condition or any other physical feature;
- Presence of parasites (for example, the presence of lice) and infectious diseases, with appropriate and effective treatment instituted;
- Checking for entrapment in manure areas;
- Problem behaviours (for example, fighting, feather pulling and cannibalism);
- Sufficiency of food and water supply systems;
- Effectiveness of ventilation and lighting; and

- Dead and injured birds which will be removed for disposal or appropriate treatment. Any bird which is removed but not deceased, and cannot be suitably isolated and treated without unreasonable pain, will be humanely destroyed.

Weekly inspections of lighting levels and uniformity, alarm systems, cooling systems, fans and general site maintenance and housekeeping will be conducted. Records of inspections and findings will be rigorously maintained.

2.7 Shed personnel and bird handling

Persons responsible for the management and handling of birds will need to have undergone appropriate induction, training and supervision in the humane treatment of the shed stock before being deemed competent, as prescribed by *The Model Code*. To ensure bird welfare during management and handling:

- The ability of birds to move to reach food and water, as well as other signs of ill health (for example, abnormal feathers or droppings and behavioural changes), is assessed daily. If this is not possible, injured birds would be culled promptly and humanely (neck dislocation is an acceptable method that may be used, and would be carried out competently);
- Effective program run to manage internal and external parasitism (for example lice);
- Outbreaks of feather picking and cannibalism are managed through reducing stocking density, light intensity, temperature, humidity, removing instigating birds, eliminating sharp beams of sunlight;
- Entrapped birds are freed immediately and actions taken to reduce risk of this reoccurring;
- Birds escaped into the manure area returned to the production run or destroyed humanely;
- Once a day and immediately before pickup, dead, incurably sick and injured birds will be removed;
- Sheds will be managed to minimise entry of predators (for example, by cats, foxes and rats), wild birds and other pests, which may stress stock birds and or introduce disease;
- To reduce stress, cooler periods of day or evening would be used for pick up;
- Access to water is not removed until pick-up crews arrive on the farm;
- Feed lines will be left in place for less than three hours before pick up; and
- Following part pick-up, water lines and feed-lines will be quickly reinstated.

2.8 Poultry transport

Since transportation can be highly stressful for poultry, Muscat Developments Pty Ltd is committed to providing facilities and equipment that enable the transportation, handling, loading and unloading to take place with exacting animal welfare standards. *The Model Code - Land Transport of Poultry* will be strictly adhered to, especially in relation to the pre-transportation of the flock and the actual loading process.

The facility and associated infrastructure would be designed to allow loading and unloading of poultry without undue pain, suffering or distress in relation to building design and transportation access. Procedures will be implemented to ensure that transportation does not occur until all certification and chains of custody are clearly defined and completed to ensure minimal delay during bird movement.

Only fit and healthy birds will be allowed to travel, with sick, injured or weakened birds rejected. Site staff will be responsible from removing poultry unfit to travel. Transportation of birds from Goolgowi will generally be undertaken outside the ambit of the facility owner. Cooler periods, such as at night, are used to reduce stress on the chickens, as hotter temperatures usually result in significant stock loss. Transportation will generally occur during the night time period (that is, after 9:00 pm). However, day transportation will be considered in cooler months. It is noted that the processor will determine transportation timings.

3. BIOSECURITY AND DISEASE MANAGEMENT

3.1 Procedures and practices

Muscat Developments is committed to upholding the objectives of the *National Farm Biosecurity Manual for Chicken Growers* (ACMF 2010), which are:

- To prevent the introduction of infectious disease agents to meat chicken flocks;
- To prevent the spread of disease agents from an infected area to an uninfected area; and
- To minimise the incidence and spread of microorganisms for public health significance.

A copy of the *National Farm Biosecurity Manual for Chicken Growers* (ACMF, 2010) will be maintained at the site with ready availability for staff.

Biosecurity refers to those measures taken to prevent or control the introduction and spread of infectious agents to a flock. It aims to prevent the introduction of infectious diseases, and prevent the spread of disease from an infected area to an uninfected area. The nature of each avian influenza outbreak that has occurred in Australia (five over the past 50 years) suggests that one or more biosecurity deficiencies were involved in the spread of the virus within and between properties (AAHC, 1999). Effective biosecurity practices are an integral part of a successful poultry production system. The biosecurity procedures and practices to be implemented include, but may not necessarily be limited to:

- **Farm signage:** Appropriate signage will be erected at all farm entrances. Signs will notify visitors of biosecurity requirements and direct them to contact the operator prior to proceeding, and any other requirements relating to access.
- **Farm isolation:** Muscat Developments is located greater than 4 km south west of the nearest intensive poultry facility located on the Mid Western Highway at Lot 77 and 79 Deposited Plan (DP) 756056. This distance exceeds the minimum separation distance requirements defined by NSW DPI (2012); a minimum of 1,000 m to other intensive poultry farms, and 5,000 m to poultry breeder farms. The separation of the proposed poultry facility also conforms to the *Broiler Poultry Farms Draft Model Development Control Plan* (DIPNR), which recommends a biosecurity buffer of 2 km from existing broiler facilities.
- Since pathogens (disease causing organisms) can survive for some time on people and their clothes, breaks between visits of personnel and equipment to other poultry farms would be ensured. This time isolation would allow equipment to be disinfected and for personnel to minimise risk of introducing pathogens to the Goolgowi farms by showering and change clothing. Additional measures to ensure isolation from disease include:
 - Secure perimeter fencing will be installed;
 - Control gates will be installed at the site office/manager residence of each farm to restrict access to the immediate farm production area;
 - Ensure poultry supply water provided to the birds is free from microbial contamination that could cause disease and or food safety issues by conducting regular water quality tests and, if necessary, sanitised prior to storage in reservoirs;
 - Poultry sheds and equipment will be cleaned and disinfected at the end of each production cycle;
 - Dogs and cats would not be allowed in shed, unless dogs are part of flock security strategies;

- Feeding systems are, wherever possible, closed to ensure that feed is protected from contamination by wild birds and rodents;
 - Shed litter will be removed from site at the end of each cycle;
 - Bird mortalities during the cycle will be composted on site in composting facilities screened with a vegetated earth mound. Composting facilities will be designed in accordance with *Environmental Guidelines: Composting and Related Organics Processing Facilities* (DEC, 2004) (see the main body of the EIS for more detail);
 - All farm staff members working in direct contact with poultry livestock will not be permitted to keep other bird species or pigs at their place of residence;
 - All farm staff members and visitors will not be permitted to travel between separate poultry farms without changing clothes and footwear;
 - Attempts will be made to limit and detract wild birds and vermin from the poultry sheds, related farm buildings, and surrounding area of the farm. This will include keeping the shed doors closed following final pickup, washing and disinfecting, shed doors would be remained closed to prevent access by wild birds where feasible;
 - Litter and manure would not be stockpiled in the production area; and
 - The poultry sheds will provide adequate hygiene footbaths, hand sanitisers and change facilities.
- **Single Age Sheds:** To reduce the risk for disease transfer and outbreak, the poultry flock units placed within any given shed on the farm will all be of the same age to prevent the potential for infected vaccinated stock without signs transferring disease to younger or susceptible birds.
 - **Closed Flock System:** Once a flock is established on site, no new birds will be introduced from any other source.
 - **Pest control:** Pest control measures, for example rodent control, will be implemented. Pest management will also be detailed in the agreed Processor Agreement.
 - **Vehicle hygiene:** Vehicle hygiene is managed under the guidance of the processor. All vehicles entering site will be required to pass through a wheel wash prior to site entry. Further, the potential for mechanical transmission of disease pathogens is reduced through the requirement that vehicles pass through processor washing facilities prior to leaving the processor site and do not enter other production facilities on route to the facility.
 - **Documentation and training for biosecurity:**
 - All farm staff will receive training in the relevant part of the manual and training will be recorded;
 - Maintenance of appropriate records; and
 - Site induction and restricted access procedures.
 - **Water quality standards:** Maintenance of appropriate water quality standards will be maintained in accordance with the National Water Biosecurity Manual - Poultry Production (DAFF, 2009).
 - **Personnel Standards** to minimise the introduction or spread of disease or contaminants by staff contractors and visitors:
 - Equipment cleaning and timing of maintenance procedures;
 - Visitor (including contractor) check-in procedures and inductions systems will be implemented and maintained; and

- Biosecurity procedures for pickup and delivery crews relating to scheduling of delivery, litter delivery and traceability of movements.
- **Emergency management for animal disease** aimed at minimising and isolating movement of biosecurity threats. The facility will establish clear guidelines regarding when an emergency disease alert should be raised, appropriate contact details for notification and immediate cessation of bird and other movements. Additional actions for emergency biosecurity management include:
 - Locked facility and sheds;
 - Availability of equipment for disinfection;
 - Additional visitor restriction;
 - Routine work restriction;
 - Additional hygiene standards when leaving the production area for personnel and vehicles; and
 - Adherence to procedures as required at the direction of the State’s Chief Veterinary Officer and in accordance with Animal Health Australia.

3.2 Disease management

There is a major economic incentive for the proponents to ensure flocks are kept disease free. As well as affecting bird health and welfare, disease can significantly reduce production efficiency and product quality. If a flock requires depopulating, the economic gain from the flock is immediately lost. In addition, there is considerable cost associated with the removal and euthanasia of birds, carcass disposal, shed disinfection and remediation activities. On this basis, there is increasing emphasis on maintaining flock health through proper nutrition, vaccination, farm hygiene and biosecurity.

A consideration that will be made by the proponents is the efficient disposal of wet litter. Excessive wet litter can lead to an outbreak of foot pad dermatitis lesions (RIRDC, 2015). To maintain acceptable dry and friable litter quality, a warm and ventilated shed will be maintained to ensure moisture evaporation, along with good nutrition to ensure gut integrity, and regular maintenance of watering lines.

Australia has an excellent record on quarantine and stringent disease control measures, which are critical to ensuring healthy flocks. Due to Australia’s ‘island’ status, high standards are set by the Australian Quarantine and Inspection Service (AQIS), and the industry’s biosecurity measures provide significant protection against disease entering local poultry flocks. The proponents are committed to upholding these standards and will implement a range of biosecurity measures in accordance with the *National Farm Biosecurity Manual - Poultry Production* (DAFF, 2009), as well as be part of any requisite national coordinated response as outlined in the *Enterprise Manual Poultry Industry (chickens, ducks and turkeys)* (AUSVETPLAN, 2013).

The two most serious diseases that must be kept out of poultry flocks are Newcastle disease and avian influenza (see **Section 3.2.1** and **Section 3.2.2** respectively). Although these two devastating diseases are not present in commercial poultry in Australia, the poultry industry is at risk from their introduction. Other poultry diseases include coryza, chronic respiratory disease, infectious laryngotracheitis, lice and mite infestations, chlamydiosis, blackhead and internal parasites. A strict hygiene program is required to keep diseases out of poultry. Some diseases are controlled by vaccination or medication strategies.

3.2.1 Avian Influenza

Avian influenza (AI) is an infectious viral disease of birds. AI can be spread by movements of infected birds (domestic or wild), through droppings and secretions of infected birds directly or through movement of contaminated objects, clothing or vehicles. Windborne spread from infected large flocks is also possible over short distances. Other animals like cats and dogs can also spread the AI virus if they come in direct contact with contaminated materials or infected birds.

There have been a number of outbreaks of AI in domestic poultry since 1976 in Victoria, Queensland and NSW. All outbreaks were contained and successfully eradicated. Five outbreaks between 1976 and 1997 were caused by the H7 subtype AI, and none were related to migratory birds. In 2012, two egg farms near Hay, NSW, were infected with the H7 subtype.

The Australian Government has an extensive emergency animal disease response plan in place that clearly sets out how industry and government agencies would act to isolate farms with the disease and eliminate it, while ensuring no further spread occurs (AUSVETPLAN, 2011). The Goolgowi facility would strictly adhere to this protocol.

3.2.2 Newcastle Disease

Newcastle disease (ND) is a viral disease of domestic poultry (chickens, turkeys, ducks and geese), cage and aviary birds, and wild birds. ND usually presents as a respiratory disease, but depression, nervous manifestations, or diarrhoea may be the predominant clinical signs.

In response to outbreaks of the Newcastle Disease between 1998 and 2002, the Australian government and the poultry industry jointly developed a National Newcastle Disease Management Plan to provide for a national approach to the long-term management of the disease in Australia (Animal Health Australia, 2012; see also AUSVETPLAN, 2014). A key element of this Plan is the compulsory vaccination of all commercial domestic poultry flocks across Australia, according to nationally agreed standard operating procedures. Since the adoption of the National Management Plan, the implementation of vaccination and other measures, such as enhanced biosecurity practices, the Australian poultry industry has, at least to date, prevented the re-emergence of Newcastle Disease in Australia.

3.3 Mass mortalities

Broiler farms need to have a contingency plan for the occurrence of high mortalities. An Emergency Quarantine and Disease Management Plan will be established prior to commencement of farm operations and will address both consultation, and treatment and disposal options.

3.3.1 Consultation

In the unlikely event of mass bird deaths, the proponents would institute the Emergency Quarantine and Disease Management Plan and would immediately contact the integrator/processor who will arrange for an inspection by the company technical staff to ascertain the cause of death. The NSW Department of Primary Industries (DPI) will be notified by the Broiler processor.

In NSW high mortality and disease events fall under the jurisdiction of the following legislation and regulations:

- *New South Wales Exotic Diseases of Animals Act 1991;*
- Exotic Diseases of Animals (General) Regulation 1998;
- *Stock Diseases Act 1923;*

- Stock Diseases (General Regulation) 1997; and
- *State Emergency and Rescue Management Act 1989*.

If the cause of the deaths is an Emergency Animal Disease (EAD), the NSW Department of Agriculture will be notified in accordance with relevant AUSVETPLAN manual procedures. All birds on the farm and adjacent farms may need to be slaughtered with an extended vacancy time before the reintroduction of birds.

The Emergency Quarantine and Disease Management Plan will outline immediate measures to be implemented to isolate the infected farm, effect strict quarantine procedures to prevent the spread of the disease, and notify all relevant persons of the nature of the outbreak. Destruction and disposal of carcasses, spent litter, feed and the decontamination of equipment, buildings, equipment and so on, in this instance, will be under the direct control of the Chief Veterinary Officer of the DPI. Where appropriate and directed by DPI, urgent ring vaccination will be considered.

Upon confirmation that it is a disease outbreak, and immediate slaughter of farm stock is necessary, killing will be managed by the DPI in co-ordination with the EPA and the processor. The birds will be euthanased humanely within the sheds at the facility.

The Carrathool Council may need to be contacted to assist in the disposal of the birds on farm (burial, composting) or off-farm (land fill site).

3.3.2 Treatment and Disposal Options

The method of destruction of birds will depend on the site and number of birds involved but usually is by dislocation of the neck or gassing in accordance with the *AUSVETPLAN Destruction of Animals Manual (AUSVETPLAN, 2015)*.

The disposal options available for a mass death of birds will depend upon the cause of death (*AUSVETPLAN, 2015*). The preferred method of mass bird disposal will be determined by the processor with consultation with the DPI to ensure appropriate quarantine control and standard operating procedures are implemented in line with the relevant AUSVETPLAN disease strategy. For diseases such as Newcastle disease, birds may need to be incinerated at high temperature. Other disposal options may include:

- Mass onsite disposal: from an historical perspective, on-site burial of diseased poultry has been favoured for reasons of practicality and expediency. However, this practice is now discouraged on the basis of significant environmental risk and more favourable options becoming available. If poultry are to be buried on-farm as a requirement of a government agency with an exotic disease outbreak, specification will be as advised in the *National Environmental Management System for the Meat Chicken Industry (RIRDC 2014)*;
- Disposal in a land-fill site;
- Protein recovery facility: preferable, but may be economically, geographically and logistically prohibitive in some circumstances. If the carcasses are to be rendered, contact will need to be made with local plants;
- On-farm in shed composting: euthanased birds are layered and with a co-composting material and formed into windrows within the sheds and managed in accordance with document *The Biosecurity of Mass Poultry Mortality Composting (RIRDC, 2014)*; and
- Incineration.

Infected sheds, equipment, disposal sites and personnel involved in the operation will need to be disinfected and decontaminated to prevent the spread of a disease in accordance with the *AUSVETPLAN Operational Procedures Manual Decontamination* (AUSVETPLAN, 2008).

If an EAD is diagnosed all subsequent activities will be decided by NSW and Federal authorities.

4. COMMITMENTS REGARDING ANIMAL WELFARE AND BIOSECURITY

4.1 Animal Welfare Commitments

Muscat Developments statements of commitment in relation to Animal Welfare Issues are presented in **Table 1**.

Table 1: Animal Welfare Statement of Commitments

Aspect/Commitment
Animal Welfare
<ul style="list-style-type: none">The proponents will meet all standards of care and management for animal health and welfare as presented in Section 2 of this document, and as detailed in the <i>National Animal Welfare Standards for the Chicken Meat Industry</i> (Australian Poultry CRC, 2008).

4.2 Biosecurity and Disease Management

Muscat Developments statements of commitment in relation to Biosecurity are presented in **Table 2**.

Table 2: Biosecurity Statement of Commitments

Aspect/Commitment
Biosecurity
<ul style="list-style-type: none">The proponents will implement a suite of biosecurity measures, as presented in Section 3.1, and in accordance with the <i>National Farm Biosecurity Manual for Chicken Growers</i> (ACMF, 2010).
Disease management / Mass mortality
<ul style="list-style-type: none">In the unlikely event of a major disease outbreak, the EPA, DPI and Wollondilly Council will be contacted as soon as the breakout is suspected. Immediate measures will be implemented to isolate the infected sheds, effect strict quarantine procedures to prevent the spread of the disease, and notify all relevant stakeholders. Where permitted, urgent ring vaccination of flocks within the controlled area will be organised.Upon confirmation that it is indeed an exotic disease or EAD outbreak and as immediate slaughter of farm stock becomes necessary, slaughter will be managed by the DPI in coordination with the EPA and technical service units of the poultry industry. The birds will be slaughtered humanely within the poultry sheds.Depending on the scale of the mass mortality event and advice from the DPI and EPA, the following options can be implemented for the disposal of bird carcasses and fomites:<ul style="list-style-type: none">– Rendering - transportation to a protein recovery plant for treatment and disposal. This would occur under the supervision of the DPI to ensure appropriate quarantine control and standard operating procedures are implemented in line with the relevant AUSVETPLAN disease strategy.– Landfill disposal - landfilling would be carried out under appropriately qualified supervision from the DPI, EPA and Council to ensure appropriate quarantine control and standard operating procedures are implemented in line with the relevant AUSVETPLAN disease strategy.– In-shed composting - composting would occur under the supervision of the DPI and EPA and in accordance with the standard operating procedures for mass poultry composting developed by RIRDC (2014).– Incineration - high temperature gas incineration is available within this poultry growing district if and when required.

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