

DRAFT
ENVIRONMENTAL MANAGEMENT PLAN

Piggery Name: Pine Block Piggery

**Location: Wombelano – Charm Road
Edenhope**

Land: CA 79, 80A Parish of Charam

Operator: James Hawkins

Contact: James Hawkins

Telephone: 0419446058

Email: jmhawkins1@hotmail.com

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1. SCOPE

This Environmental Management Plan addresses the operation of a Piggery with capacity of 11,054 Standard Pig Units as a free range piggery growing out approximately 250 female pigs a week from 4 weeks of age to market weight approximately 21 - 23 weeks age and 250 male pigs a week in straw lined shelters for 8 to 23 weeks of age and associated straw and manure management.

2. ENVIRONMENTAL POLICY

The piggery environmental policy is to provide, operate and maintain effective waste management systems for the piggery production systems, that are feasible to protect the environment.

In addition, the management and staff will pursue waste minimization (feed, water, energy and chemicals) practices by all of our employees for the benefit of the environment, safety of our employees and the continued success of our piggery business.

Signed Manager:
(Manager)

Signed Owner:
James Hawkins

3. ENVIRONMENTAL MANAGEMENT

3.1 Environmental Objectives and Targets

The piggery's environmental objectives are that the operation should not lead to:

- * any reduction of the beneficial uses of surface or groundwaters, or ecosystem disruption which would result from an increase in their contents of organic matter, nutrients, salts, chemical and biological contaminants or temperature
- * any unacceptable changes in soils to which effluent is added, including structure loss, onset of or increased salinisation, acidification, chemical and biological contamination, waterlogging, soil loss via erosion, or decrease in permeability
- * intolerable off-site impact on the community, for example, odours or traffic noise

Achievement of these environmental objectives requires that the piggery and associated reuse operations are managed to protect:

- * surface waters
- * groundwaters
- * soils
- * vegetation
- * public amenity

The piggery's environmental targets and/or specific objectives are:

- Efficient use of pig feed. This will be monitored by feed conversion measurements and monitoring and visual inspection by employees and management of feeders.
- Avoid contaminating any runoff that cannot be contained on the properties.
- The appropriate application of manure and bedding to improve the land.
- Nil incident reports in the recording book with respect to odour, traffic complaints, runoff contamination or soil erosion.
- Contain any runoff from the manure and bedding stockpiles (composting pad) and evaporate it or apply any excess to land
- Contain any runoff from the pig mortality composting pad and evaporate it.

- Apply pig mortality compost to areas that will not be grazed by livestock for 60 days (need at least 30 days of no access by livestock to avoid disease transmission)
- Contain any runoff from the free range grower pig paddocks
- Manage the straw and manure waste applications to land to maximize nutrient retention in the soil for crop growth and production.
- Implementation of practical, sustainable energy practices in the operation of the piggery.

3.2 Environmental Management Programme

The waste management system for the bedding pig production system consists of the following processes:

Collection: The wastes consist of bedding straw, urine soaked bedding and manure which accumulates for the period that the pigs are in the grower shelters about 13 – 14 weeks.

Once a shelter is emptied of pigs, the bedding material will be picked up by a front end loader and placed in covered trucks for removal to local land application sites or stock piled on the manure and straw storage pad (contingent measure, windrows pasteurized composting) for removal off site at a more convenient time.

Treatment: The wastes, straw and manure deposited by the pigs or spread on land will be broken down in the soil by the local soil microflora, and the nutrients released for plant uptake.

Straw and manure placed on the composting pad will be pasteurized after 4 turns of the windrow when it reaches a predetermined temperature around 55°C

Land Application: These wastes will be applied to family land at farms to the east of the piggery at Wombelano at rates of about 20kg – 40 kg Phosphorus/hectare equivalent or greater depending on soil testing. The material will be applied to land by a gypsum spreader, manure spreader or similar equipment.

In accordance with the new Livestock Manure and Effluent Determination EPA Publication 2006 June 2021

- you must inspect each consignment to ensure it only contains manures
- the manures must be received for the purpose of depositing to land as a soil amendment or for irrigation.

3.2.1 Inputs

- Feed - Grower feed 5750 tonnes/year
- Straw - 1355 tonnes 4500 bales approx./year
- Water - Approximately (depending on season)
 Growers 11600 x 9 l/day x 365 = 40MI
- Pigs- 500 no. 8 week old pigs 24-27kg (liveweight) per week

Table 1: Permitted Number of pigs on site.

| | | |
|-----------|----------------------|-------------|
| Number of | | |
| Weaners | 4 weeks x 250/week | 1000 |
| Growers | 7 weeks x 500/week | 3500 |
| Finishers | 7.5 weeks x 500/week | <u>3750</u> |
| | | 8250 |

The piggery “R” value will be about 8250 number of pigs

The National Environmental Guidelines for Piggeries 2018 (NEGP 2018) published by Australian Pork Limited uses the concept of a Standard Pig Unit for classifying a piggery as set out in the following table—

Table 2: Standard Pig Units

| Class of Pig | SPU/Pig | No of Pigs | No of SPUs |
|--------------|---------|------------|------------|
| Weaners | 0.5 | 1000 | 500 |
| Growers | 1.0 | 3500 | 3500 |
| Finishers | 1.6 | 3750 | 6000 |
| Total | | | 10000 |

3.2.2 Outputs

The main output is 500 pigs per week with a liveweight of 105 -110 kg average.

Table 3: Estimated nutrient content of pig wastes excreted by the growers in shelters

Typical Waste Production

Per grower pig: 63-154 days

| | Total Material Mass | As Moisture |
|---------------------------|-----------------------------|-------------|
| Total Manure | 91 days x 3.7 + 60 = 372 kg | 312 kg |
| Total Solids (dry matter) | 56.4 kg | - |
| Urine | 212kg | 208* |
| Total Nitrogen | 2.85 kg | - |
| Total Phosphorus | 0.98 kg | - |
| Total Potassium | 1.0 kg | - |

* Assuming 1.8% solids in urine

As Measured Material Removed from Shelter per grower finisher pig (loss of ammonia Nitrogen to atmosphere)

| | | |
|-----------------------------|--------------------|-----------------|
| Straw and Manure as removed | 270 kg | 168 kg moisture |
| Total Nitrogen | 1.59 kg | |
| Total Phosphorus | 0.98 kg | |
| Total Potassium | 1.0 kg | |
| Bulk density | 550 kg/cubic metre | |

Estimated Output per Shed, based on as measured material:

| | Per batch 250 pigs tonnes | Total Development tonnes/year |
|---------------------|------------------------------|----------------------------------|
| Material as removed | 69 | 3590 |
| Total Nitrogen | 0.15 | 7.8 |
| Total Phosphorus | 0.10 | 5.2 |
| Total Potassium | 0.325 | 16.9 |

NUTRIENT CONTENT

The nutrient content of the wastes removed from the buildings are estimated as:

| | |
|-------------------------------|------|
| Total Nitrogen (tonne/year) | 7.8 |
| Total Phosphorus (tonne/year) | 5.2 |
| Potassium (tonne/year) | 16.9 |

Land Area Required

Straw and manure to other land needs to satisfy the following criteria:

- (a) There shall be no contaminated runoff from the property.
- (b) No polluting material shall be permitted to enter any aquifer.
- (c) The nutrient loading on any soil should not exceed 120 kilograms per hectare per year for plant available nitrogen, 15 kilograms per hectare per year for plant available potassium or 12 kilograms per hectare per year for phosphorus. Preferably, nutrient loading should match the plant requirements based on soil testing and nutrient availability. The area of land required for the land treatment and/or utilisation of the solid wastes is governed by the phosphorus loading.

3.3 DISPOSAL OF DEAD PIGS

The estimated mortality rates for the piggery operation in full production are

| Class of pig | Number/week | Kg/week |
|--------------|-------------|---------|
| Growers | Up to 15 | 600 |
| Total | | 600 |

The disposal of these mortalities will be composting on site in accordance with recommended practices in the National Environmental Guidelines for Piggeries 2010, and that outlined in Appendix 4, The location of the composting site for the mortalities is shown on the property map.

A 10 metre zone of bare earth will be maintained around the dead pig composting facility during the gazetted fire season, by mechanical means or herbicide sprays.

The composted pig carcasses, straw and manure will be applied to land every three months at the same phosphorus loading rate as the straw and manure material of 40 kg per hectare.

4. IMPLEMENTATION AND OPERATION

The Manager of the Piggery organises the day to day operation of the piggery and its waste management systems. This includes the moving of pigs and the heaping of the bedding straw and manure after a batch of pigs, the storage of the manure and bedding and/or the management of the spreading operation. As well as the on going monitoring and maintenance of the waste management system.

Emergency Contacts:

Site Manager

Manager James Hawkins
 All Hours 0419446058

CFA Number

EPA Number

4.1 Equipment Register :

Frontend loader

Telehandler

Trucks

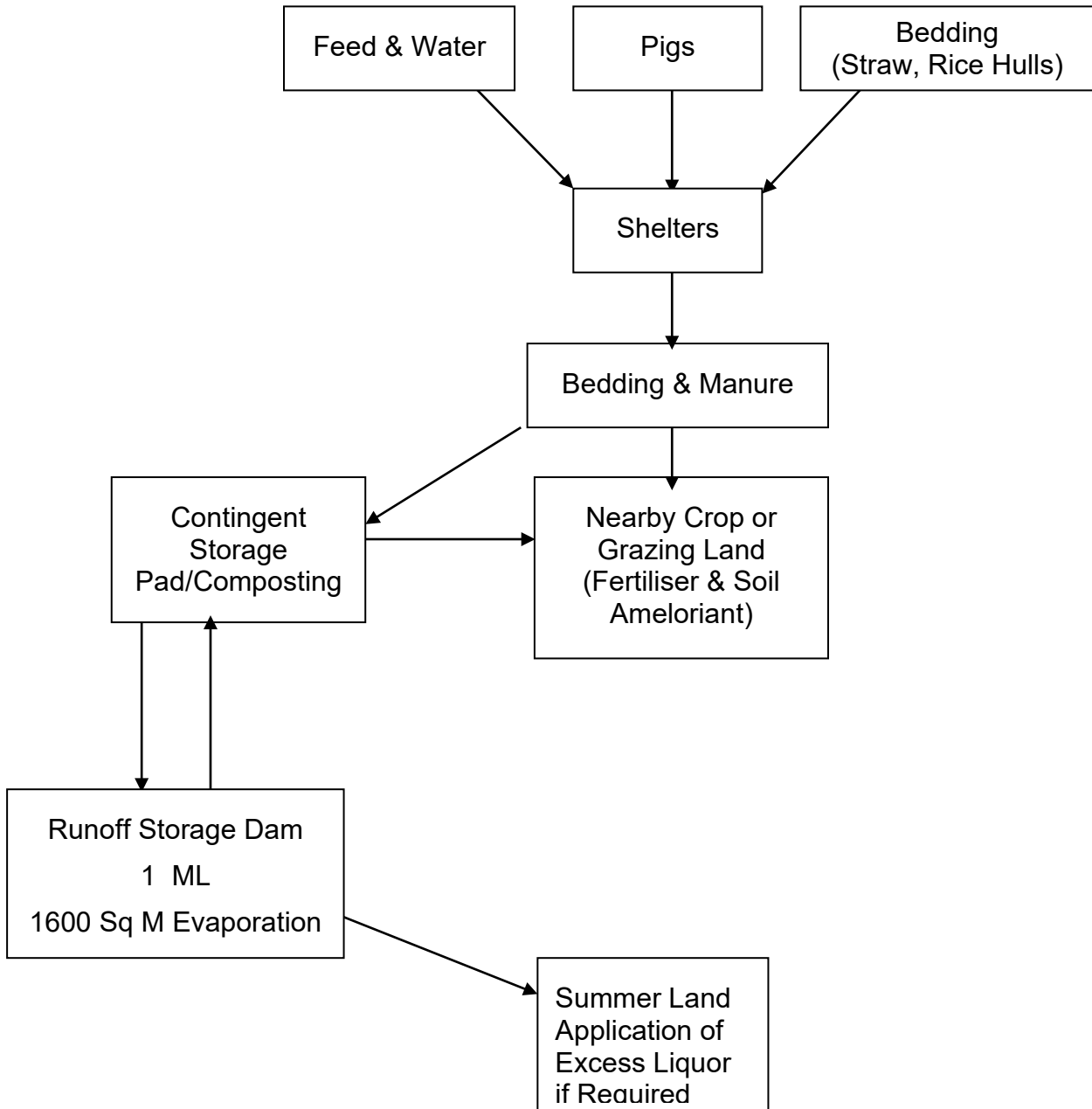
Contract spreader

4.2 Waste Storage Pad

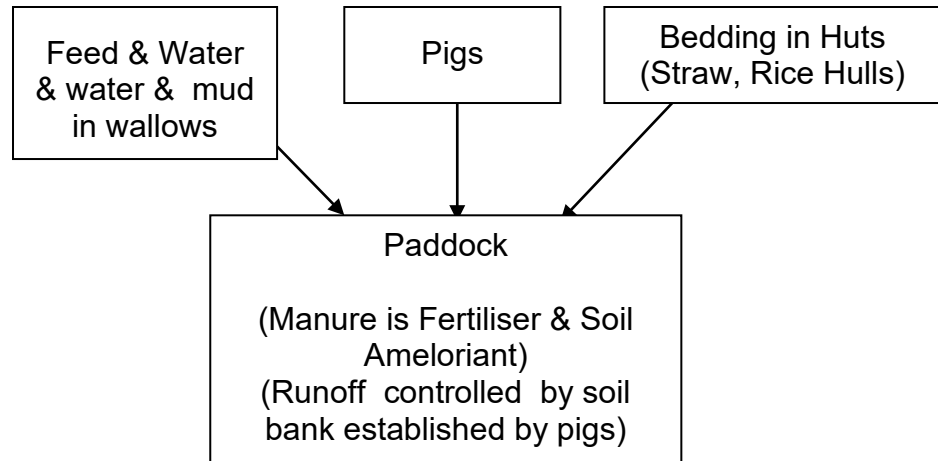
A waste storage pad will be established on the east side of the piggery shelter site, this will be used for storing and processing the straw and manure in the event that the material removed from a shelter that week cannot be despatched directly to the receiving farm.. Any runoff from the pad will be collected in the drainage system into the run off collection dam. The manure and bedding from the shelters on the site has an all weather gravel access road to the storage pad. The moisture content of the manure and bedding material can be adjusted by pumping liquid out of the runoff dam onto the windrows. These wastes will be removed as soon as possible to the receiving farm from the storage area. The windrows on the storage pad will be turned at least 4 times when the temperature is above 55oC to complete the pasteurization process of composting.

4.3 Waste Management Flow Chart

Waste Management Flow Chart Pig Shelters



Waste Management Flow Chart Free Range Pigs



4.4 VERMIN CONTROL MICE & FLIES

Research indicates that strategic control measures carried out during late winter and early spring - before mouse numbers begin to build rapidly, provide the best opportunities to -

- * limit mouse numbers
- * reduce damage during a plague

Damage to stored produce (feed and straw), buildings and equipment can be reduced by strategic baiting.

- * Baiting stations which ensure non-target species have limited access will be used
- * Baited mice will be regularly collected and disposed of by burying
- * Weeds and other likely breeding grounds will be cleaned up regularly
- * Any spilt feed will be cleaned up within 16 hours
- * Bait stations will be located strategically around straw storages

Vermin:

Bait stations made from 80mm dia PVC pipe containing Bromakill Rodent Poison (Green coloured wheat poison) will be used. the baits will be kept fresh and refilled as required. Regular out of hours inspections will be conducted to identify rodent problems. Gastion tablets will be used to gas rodents in known nesting situations.

Fly control will also be in accordance with the best practices available and will be regularly sprayed and baited for. Any spillages that may occur will be cleaned up immediately.

Flies:

'Dy-fly' fly killer (red granules) placed on hessian mats which are damp and suspended in cages on a pulley inside the eco-shelters. There would be three bait stations per shelter. A knock down spray would also be used from time to time as required. When each shelter is emptied of pigs, the walls and blinds would be sprayed with water based insectigard 'Cyndan'.

5. MONITORING

Objectives -

1. Waste minimization
2. Management of the land application system
3. Check against the Environmental Management Plan and hence confirm conformance with regulatory requirements
4. To show continued improvement in environmental management

The following information will be collected to allow monitoring for the above objectives.

1. Feed usage generated monthly.
Inspection for waste feed, following clean out of grower shelters. Feed efficiency and consumption will be determined monthly on a rolling average.
2. While applying wastes to land an analysis of the bedding and manure material be taken for total Kheldahl Nitrogen, total and available phosphorus and Potassium every 3 months. Sampling will be done for a year initially, to build up data of nutrient content.

Required to determine application rates onto the land, so as to match application against build up of fertility and removal by plant growth.
3. Prior to land application a representative soil test for fertiliser recommendations be undertaken as appropriate for the spreading regime,

Required to match application rate with current fertiliser recommendations (more applicable in years to come as fertility of land is improved)
4. Monitoring of the system will consist of paddock soil testing as for fertilizer recommendations on a minimum of a yearly basis (ie in February – March) for paddocks that are receiving straw and manure analysis to include available and total phosphorus, total nitrogen and nitrate, and as recommended in Table 17.1 National Environmental Guidelines for Piggeries 2018.
5. Soil testing at 750mm depth (below root zone) from 4 sites receiving straw and manure, analysis to include nitrate and total phosphorus, and as recommended in Table 17.1 National Environmental Guidelines for Piggeries 2018.
6. The bore will be established in the centre of the piggery so that the water table level and water quality can be monitored annually for the parameters in Table 17.1 National Environmental Guidelines for Piggeries 2018.

7. Incident recording book, detailing any equipment breakdowns, accidental spills, land spreading operations, complaints, by date and time.
8. Annual water test of water supply for the piggery including nitrate, phosphorus, salt.
9. Monthly inspection (monitoring) of piggery property and land receiving straw and manure for signs of erosion and/or sedimentation and any other adverse land management issues.

5.1 Incident Report

**DATE TIME REPORTED BY
Contact details**

DETAILS:

**Wind Direction
Weather conditions**

ACTION TAKEN:

MANAGER NOTED DATE

**DATE TIME REPORTED BY
Contact details**

DETAILS:

**Wind Direction
Weather Conditions**

ACTION TAKEN:

MANAGER NOTED DATE

5.2 Land Application of straw and manure Report

In accordance with the new livestock manure and effluent determination EPA Publication 2006 June 2021

- you must inspect each consignment of straw and manure to ensure it only contains manures
- the manures must be received for the purpose of depositing to land as a soil amendment or for irrigation.

| DATE | TIME | Paddock | Operator | Inspected |
|-------------|-------------|----------------|-----------------|------------------|
| | ON | | | |
| | | | | |

5.3 Compost Runoff Dam Monitoring Report

The runoff dams are to be monitored on the first monday of the month as to their level on the measuring staff. If the level is at the trigger level the relevant action plan is activated.

Action plan pump some of the contents onto the manure and straw heaps on the pad, monitor weekly, if September to May and soils are dry apply some excess liquid to the land through sprinkler system.

| DATE | Level Runoff Dam Mortality Compost | Level Manure Pad Runoff Dam | Action |
|-------------|---|--|---------------|
|-------------|---|--|---------------|

5.4 Land Management Area Inspection

Monthly inspection (monitoring) of piggery paddocks

| | | | | | |
|-------|----------|---------|-------------|----|--------|
| Date: | Location | Area | Paddock No. | | |
| | Wind | Erosion | Yes | No | Action |

| | | | | | |
|-------|----------|---------|-------------|----|--------|
| Date: | Location | Area | Paddock No. | | |
| | Wind | Erosion | Yes | No | Action |

5.5 National Pollutant Inventory

Before 30 September each year provide annual reporting of ammonia emissions to the National Pollutant Inventory based on the accepted piggery protocol to Victorian EPA

6. ENVIRONMENTAL MANAGEMENT REVIEW

In March each year the Site Manager, Piggery Owner, Managing Director of The Pastoral Pork Company Pty Ltd (or his nominee), and an independent consultant with appropriate expertise (if required) will review the previous 12 months waste management performance and the progress made towards achieving the objectives and targets. All the monitoring information for the previous 12 months and the previous years will be collated and considered. This Environmental Management Plan will be updated each year at the review process.

7. CONTINGENCY PLANS

In the event of:

- 7.1 Runoff collection dam becoming odorous at the boundary fence, the contents will be pumped onto any straw and manure windrows to enhance the composting process by maintaining optimum moisture content of 55% or onto land through a sprinkler system to lower the runoff dam level.
- 7.2 Cracking of compacted clay bases in manure pads. A layer of decomposed straw and manure (50-100 mm) from the shelters will be maintained on the compacted clay surfaces or other surfacing materials. Any visible areas where the surface may have broken down will be excavated out, the material is then replaced with compacted clay and or road base materials or concrete to make the base impermeable.

- 7.4 If soil analysis indicate detrimental effects, the affected land area will not be used for piggery activities until the detriment has been rectified by harvesting nutrients in crops or land remediation as required to rectify the situation.

APPENDIX 1 – Planning Permit

APPENDIX 2 – Victorian Planning Provisions for Zone

35.07
31/07/2018
VC148

FARMING ZONE

Shown on the planning scheme map as **FZ** with a number (if shown).

Purpose

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To provide for the use of land for agriculture.

To encourage the retention of productive agricultural land.

To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.

To encourage the retention of employment and population to support rural communities.

To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

To provide for the use and development of land for the specific purposes identified in a schedule to this zone.

APPENDIX 3 – MORTALITY COMPOSTING

Mortality Composting

Sample pig carcass compost mixture (weekly basis):

| | Volume Ratio | Weight Ratio | Weight kg |
|---------------------------------|---|--------------|-----------|
| Manure and litter from shelters | 2 | 1.5 | 1200 |
| Pig carcasses | 1 | 1.0 | 600 |
| Straw | 1 | 0.1 | 60 |
| Water | to add to give a damp sponge consistency 50% wet basis | | |

Carbon : Nitrogen Ratio 20:1 to 25:1

In a bay on the Mortality Composting Pad

| | |
|--------------|--|
| Bottom Layer | Manure and litter from shelters 300mm |
| Next layer | Straw 300mm |
| Next layer | Carcasses small pigs, growers and sows dissected |
| Top layer | Manure and litter from shelters |

Once bay has been filled up with composting components start another bay.

After turn material over in bay to aerate and provide base for next weeks carcasses to be composted.

Turn each bay every seven days.

Weekly quantities in full production 1860 -2000 kg as is moist material
volume approx 4 cubic metres

Design on a fortnightly bin basis ie 14 cubic metres per bin
le Bins 3 x 2.4 m 1.5 - 2 m high

6 fortnightly bins (compounds) 3 months total storage.

(Reference : On Farm Composting Handbook Northeast Regional Agricultural Engineering Service)

APPENDIX 4 – SOIL ANALYSIS PARAMETERS (Table 17.1 NEGP 2nd Edition 2018)

| Soil Test Parameter | Depth |
|--|---|
| pH | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Electrical Conductivity | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Nitrate Nitrogen | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Available Phosphorus (Colwell) | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Phosphorus Sorption capacity | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Potassium | 0- 0.1 metres 0.3-0.6 or base of root zone |
| Organic carbon | 0- 0.1 metres |
| Cation exchange capacity (Calcium, Sodium, Potassium Magnesium) | 0- 0.1 metres 0.3-0.6 or base of root zone |

APPENDIX 5 APIQ Environmental Standards and Performance Indicators

6.1 Environmental Regulatory Compliance²⁷

| | |
|--|--|
| Standard | The piggery is environmentally responsible. |
| Performance Indicators: | |
| A. Piggeries established since 1 January 2017 have a permit and/or licence to operate ²⁷ where required by their local authority. | |
| B. Piggeries established prior to 1 January 2017 have: | |
| <ul style="list-style-type: none"> – A permit and/or Licence to Operate. or – An Environmental Management Plan ²⁸ in place which identifies potential environment risks and specifies how these risks are being managed ²⁹. | |

6.2 Piggery Upkeep

| | |
|---|---|
| Standard | The piggery and its surrounding environment are maintained in a condition that is consistent with good function and effective risk management. |
| Performance Indicators: | |
| A. The premises are maintained in a clean tidy state. | |
| B. Repairs and maintenance to buildings and equipment are carried out in a timely manner. | |
| C. Accumulated rubbish, redundant equipment, or scrap metal is kept in controlled areas separate from livestock, feed storage, and public access. | |
| D. There is a weed/grass control program in place which prevents excessive build-up of weeds/grass. | |

27 See the State Planning Guide Version 1.0 1/2017 on <http://www.apiq.com.au/> for information if needed.

28. Producers may use the APIQ Environmental Management Plan (EMP) Template found on the APIQ* website to develop a Plan or other EMP templates provided they cover the minimum requirement of the APIQ EMP template. EMPs may be completed by the producer or any representative the producer deems suitably qualified and experienced.

29. Disclaimer: Compliance to standard 6.1B does not remove a producer's responsibility to comply with local government requirements.

ATTACHMENT 1 – Quality Policy Statement

Quality Policy Statement incorporating animal welfare standards, the following statement form part of The Pastoral Pork Pty Ltd, Quality Assurance Programme.

QUALITY POLICY STATEMENT

I, _____, as a Contract Grower for The Pastoral Pork Company Pty Ltd, guarantee that all pigs leaving this property meet the requirements of the Australian Pork Industry Quality Program.

This is achieved through the implementation of a Hazard Analysis Critical Control Point System (HACCP) Plan, which secures compliance with the biological, chemical, physical, meat quality, and animal welfare standards.

The Pastoral Pork Company Pty Ltd is committed to the production of safe wholesome pork that meets the needs of the consumer. Systems and procedures have been put in place which enable us to produce pigs which meet the standards. These systems and procedures are reviewed annually for their ongoing relevance and their capacity to meet the Australian Pork Industry Quality Programme.

Signed: _____
(James Hawkins Contract Manager)

Signed: _____
(Martin Newman Managing Director)

ATTACHMENT 2 – Standard Operating Procedures

MANAGEMENT OF FREE RANGE PIG PADDOCKS

Purpose: To maintain pig paddocks with distributed manure over paddock area and minimized wind soil erosion.

To manage the pig paddocks wallows so as provide cooling for pigs

Actions:

1. Feeders and shelters in pig paddocks are moved between batches of pigs
2. Vegetated strips are protected at fence lines by electric fences to minimize surface wind speed and soil erosion
3. Pig wallows will be established with clay bases and/or impermeable liners to hold water and mud over summer months with water drippers
4. Pigs are encouraged to establish soil banks along the fence lines to contain any runoff of rain falling in the pig paddocks and not seeping into the light soils

Records:

Managers Diary

Standard Operating Procedure:

Manure Removal Offsite

Purpose: To maintain cleanliness of shelters

To manage the clean out of shelters, removal straw and manure offsite.

Actions:

- 1 All manure and bedding material is removed mechanically (telehandler, bobcat) between batches of pigs and placed in covered tipping truck.
- 2 Manure and bedding material is taken offsite to be used directly as a soil conditioner fertilizer on farms in the district.
3. Land owner receiving manure has to inspect each load for foreign materials

Records:

Land owners diary

Farm diary