



LAKE BARNES FARM

ROTATIONAL OUTDOOR PIGGERY

Environmental Management Plan

Lot 5907 Lake Barnes Road and Lot 819 Spencer Road

Narrikup

Shire of Plantagenet

Milne Agrigroup Pty Ltd

March 2020

DISTRIBUTION

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1. EXECUTIVE SUMMARY

This document outlines an environmental management plan (EMP) for the operation of a breeder, rotational outdoor piggery (ROP) on Lot 5907 Lake Barnes Road and Lot 819 Spencer Road, Narrikup in the Shire of Plantagenet. This EMP is submitted as supporting information for the application for planning consent from the Shire of Plantagenet.

Due to the increasing demand for Plantagenet Pork’s free range pork products produced in the Albany and Mount Barker regions, the company is looking to increase the number of farms in the area. Currently Plantagenet Pork operate ten outdoor, rotational breeder and grower farms in the area generating significant ongoing investment and employment. This planning application is for the establishment of a rotational, outdoor, grower farm on Lake Barnes Road, Narrikup. This EMP document will provide details of the proposal and how the ongoing operations will be managed. The following matters are considered:

- *Policy framework for the establishment of piggeries generally and outdoor rotational operations specifically;*
- *Land capability, buffers and sensitive receptors; and*
- *Process and environmental management of the proposed operation.*

Details relating to this assessment are summarised in Table 1 and explained in the document text.

TABLE 1: SUMMARY TABLE

ITEM	APPLICATION	COMMENT
Property Details:	Lot on Plan P165162 5907 P101282 819 Land ID Number 1988776 1985457 Locality NARRIKUP Local Government PLANTAGENET	The properties are owned by Wayne and Sandra Meade. Land uses on the property includes general agriculture including grazing.
Piggery Type:	Free range, rotational outdoor grower piggery (ROP).	Registered and operated in accordance with the APIQ Assurance Program.
Density of Pigs:	Model Code of Practice for the Welfare of Animals – - <i>Weaner shelter (max. average weight 22kg) – 0.24m²/pig.</i> - <i>Grower shelter – (max. average weight 60kg) - 0.47m²/pig.</i>	The following densities are proposed for the piggery: - <i>Weaner shelter provision of 0.38m²/pig.</i> - <i>Grower shelter provision of 0.76m²/pig.</i>

ITEM	APPLICATION	COMMENT
	<p>RSPCA Approved Farming Scheme Standards for Pigs</p> <ul style="list-style-type: none"> - <i>Weaner shelter (max. average weight 22kg) – 0.37m²/pig.</i> - <i>Grower shelter – (max. average weight 60kg) - 0.73m²/pig.</i> 	<p>The proposed densities are compliant with the Model Code of Practice and RSPCA Standards.</p>
Total Number of Pigs:	Maximum 8,500 pigs at any one time.	Proposed 3,500 weaners and 5,000 growers at any one time, producing approximately 28,000 pigs per year.
Rotation Areas:	67 hectares of the property identified and suitable for the establishment of ROP areas.	A total ROP area of 67ha has been identified as being suitable. This allows for at least four rotations. Each area will be used for two years and rested for at least two years.
Transport of pigs and traffic:	<ul style="list-style-type: none"> - Weaner piglets are delivered one day a week, directly from a breeder in Mount Barker. - Pigs are transported one day per week from site to be processed at an abattoir - Feed is brought onto the property twice per week. 	<ul style="list-style-type: none"> - Piglets (as weaners) are transported using a small rigid truck. - Pigs will be transported to processing facility in B-double truck. - Feed is delivered by a road train (consisting of a prime mover towing two semi trailers). - All access to the site will be via Lake Barnes Road, from the Spencer Road end.
Buffer requirements as outlined by Australian Pork Limited (APL, 2010).	<p>Buffers required:</p> <ul style="list-style-type: none"> - Public road carrying < 50 vehicles per day – 100m. - Public road carrying > 50 vehicles per day – 200m. - Town - 750m. 	<p>The proposed ROP meets these buffer requirements.</p> <p>The closest dwellings external to the subject land are less than 300m from the northern and eastern property boundaries and at least 685m and 683m from the closest proposed ROP.</p>

ITEM	APPLICATION	COMMENT
	<ul style="list-style-type: none"> - Rural residential area - 500m. - Rural dwelling – 250m. - Property boundary – 20m. 	

Design and Management of Outdoor Free Range Areas for Pigs (Tucker <i>et al.</i> , 2011)		
Site Selection Factors:	Site Conditions	Comment
Annual rainfall less than 750mm:	726mm per annum.	The ROP meet this site selection requirement.
Mean maximum January temperature less than 28°C:	23°C in January.	The ROP meet this site selection requirement.
Mean minimum July temperature exceeding 3°C:	9°C in July.	The ROP meet this site selection requirement.
Buffer of 800m between piggery and major water supply storage:	There are no major water supply storage areas within 800m of the subject land.	Proposed ROP meet this site selection requirement.
Buffer of 100m between piggery and a defined water course:	ROPs are set back at least 100m from water courses.	Proposed ROPs meet this site selection requirement.
Buffer of 200m to a public road carrying more than 50 vehicles per day.	Lake Barnes Road does not carry more than 50 vehicles per day.	Proposed ROPs meet this site selection requirement.
Buffer of 100m to a public road carrying less than 50 vehicles per day.	Lake Barnes Road carries less than 50 vehicles per day. A buffer for proposed ROPs allows for a 100m buffer.	Proposed ROPs meet this site selection requirement.

Design and Management of Outdoor Free Range Areas for Pigs (Tucker <i>et al.</i>, 2011)		
Buffer of 750m to a town site.	The Narrikup townsite is located 2.5km east of the property boundary. A SCA surrounds the townsite, with the SCA boundary 400m from the proposed ROP area.	Proposed ROPs meet this site selection requirement.
Buffer of 500m to a rural residential area.	There are no rural residential areas within 500m.	Proposed ROPs meet this site selection requirement.
Buffer of 250m to external rural dwelling:	The nearest dwelling external to the premise is 683m from the nearest proposed ROP.	Proposed ROPs meet this site selection requirement.
Buffer of 20m from a property boundary (including individual lot boundaries):	All proposed ROPs are at least 20m from the external property boundary. 20m buffers from internal boundaries are not maintained as this would decrease operational efficiency. In the event the one of the land parcels is sold, the buffer distance will be established and maintained.	Proposed ROPs meet this site selection requirement for external boundaries, and an exemption is sought for internal boundaries.
Soils: Well drained soils with sufficient clay to retain nutrients:	The ROP sites comprise sandy/gravelly soils with a clay content at around 0.5m.	The ROPs meet this site selection requirement.
Slopes: Gently sloping land:	The site is gently sloping to allow for drainage but not so steep that erosion is likely to occur.	The ROPs meet this site selection requirement.

2. INTRODUCTION

2.1 BACKGROUND

Plantagenet Pork intend to lease the piggery area from the property owners, W and S Meade for the operation of a rotational outdoor grower piggery at Lot 5907 Lake Barnes Road and Lot 819 Spencer Road, Narrikup in the Shire of Plantagenet ('the subject land'). This EMP has been prepared to accompany the 'Application for Development Approval' to the Shire of Plantagenet to demonstrate how the site can sustainably manage the piggery operations.

Piggeries are defined as a 'Noxious Industry' under the Shire of Plantagenet Town Planning Scheme (TPS) No. 3, which requires approval by Council and needs to demonstrate that it complies with the relevant standards and requirements and may be subject to conditions imposed by the Council in granting planning consent. This EMP outlines how the operation will be managed to ensure that unacceptable impacts will not occur.

2.2 APPLICANT DETAILS

Details relating to property of subject to this application are summarised in Table 2. The full extent of the farm owned by W and S Meade includes Lot 759, 562, 781, 819 and 5907 as the site boundary in Figure 1. As the proposed ROP areas are located entirely on Lot 819 and 5907, the scope of this planning application is restricted to these two lots. Plantagenet Pork plan to lease the land from the landowners and assume full responsibility for the operation of the piggery.

TABLE 2: APPLICANT DETAILS

APPLICANT DETAILS	INFORMATION
Owner details	Contact: Sandra Meade Mobile: 0428 361 063 Email: dsmeade@bigpond.com
Operator details	Company: Milne Agrigroup Contact: Sean Hunter Mobile (24 hour contact): 0419 973 485 Email: hunters@milne.com.au
Land details	Lot 5907 Lake Barnes Road and Lot 819 Spencer Road, Narrikup
Total land area	213.7ha
Shire of Plantagenet Local Planning Scheme No. 3– District Scheme Zoning	Rural

2.3 SCOPE OF WORKS

This document considers the existing environment of the subject land and requirements for ROPs according to National standards and environmental guidelines, State policies and Codes of Practice. Information gathered during desktop and field surveys in relation to the subject land is considered in relation to potential impacts of the ROP and this EMP outlines management strategies to ensure sustainable operation of the piggery.

Preparation of this document has included:

- *A desktop review of existing information;*
- *Site inspection;*
- *Desktop soil assessment;*
- *Consideration of applicable standards, guidelines and policies;*
- *Liaison with the Shire of Plantagenet.*

3. POLICIES AND PLANNING FRAMEWORK

The following standards, guidelines and policies apply to the operation and management of the ROP.

3.1 NATIONAL ENVIRONMENTAL GUIDELINES FOR ROTATIONAL OUTDOOR PIGGERIES

The *National Environmental Guidelines for Rotational Outdoor Piggeries* (Tucker and O’Keefe, 2013) provides guidance with respect to the siting, buffers and operation of piggeries which are free range and operate on a rotational basis. This document provides a useful guide in the form of a planning principles checklist that is applicable to this development. A copy of the Planning Principles checklist is included in Appendix A.

3.2 APIQV[®] STANDARDS MANUAL FOR ROTATIONAL EXTENSIVE PIGGERIES

Australian Pork Limited has worked with key stakeholders to develop a Standards Manual for Rotational Piggeries (V3.2.3, 2012), referred to as the Australian Pork Industry Quality Assurance Program (APIQV[®]). The program aims to put into place documented procedures and methodologies to carry out key tasks to ensure that high quality pig products can be produced consistently and that impacts on the environment and surrounding amenity are sustainably managed. A number of sections of the APIQV[®] are relevant to the preparation of this EMP, and are included in Appendix A.

3.3 FACT SHEET, DESIGN AND MANAGEMENT OF OUTDOOR FREE RANGE AREAS FOR PIGS

Australian Pork Limited (July 2011) has produced a fact sheet that summarises the desired site selection characteristics, buffer distances and nutrient management actions specifically for outdoor free range piggeries. This fact sheet provides a reference for the assessment of the suitability of the site for the development of a free range piggery, and independent verification of the proposed management practices. A copy of the fact sheet is included in Appendix A.

The Shire of Plantagenet TPS No. 3 defines extensive piggeries as a ‘Noxious Industry’. This type of land use is permitted in rural zones, subject to meeting the requirements of the environmental guidelines listed above and approval of a planning scheme consent application by the Plantagenet Shire Council. Development for such a purpose requires approval by Council to ensure that siting, operations and management objectives can be met. Council considers each application based on its merits and likely impacts and seeks input from the community to ensure that relevant factors are taken into consideration.

3.4 SHIRE OF PLANTAGENET HEALTH LOCAL LAW 2008

Section 5.6.2 (1) of the *Shire of Plantagenet Health Local Law 2008* states that premises will not be used as a piggery unless approved by the local government. In addition, the local law states that no premises shall be approved as a piggery by the local government unless every portion of the piggery complies with the minimum separation distances listed in Table 3. Sites unable to satisfy the separation requirements may be approved at the discretion of the Shire of Plantagenet, if the Council is satisfied that approving the piggery will not give rise

to a health nuisance. It is considered that the national standards (Tucker *et al.*, 2010 and Tucker and O’Keefe, 2013) will adequately cater for buffer distances so that dwellings closer than 1km will not be impacted. This is largely due to the proposed piggery being of the outdoor, rotational nature, where the potential nuisance from odour is significantly less than that of a conventional intensive piggery, which required effluent treatment pond systems, sludge management and wastewater disposal systems. The closest dwelling to a ROP rotation will be at least 683m to the north west.

TABLE 3: REQUIRED BUFFER DISTANCES FOR PIGGERIES – HEALTH LOCAL LAW

BUFFER	DISTANCE
Townsite Boundary	5,000m
Isolated rural dwellings, dairy and industries	1,000m
Public roads and recreation areas	100m
Neighbouring rural property boundaries	50m
Major water course and water impoundments	300m
Bores, wells or soaks used for drinking, stock or irrigation	300m
Minor water courses	100m

3.5 ENVIRONMENTAL PROTECTION AUTHORITY GUIDELINES

The Western Australian Environmental Protection Authority (EPA) has prepared *Guidance for the Assessment of Environmental Factors – Separation Distances between Industrial and Sensitive Land Uses No. 3* (EPA 2005). The Guidance Statement is intended to provide advice on generic separation distances between specific industry and sensitive land uses to avoid or minimise the potential for land use conflict. The distances outlined are not intended to be absolute separation distances, rather they are a default distance for the purposes of:

- identifying the need for specific separation distance or buffer definition studies; and
- providing general guidance on separation distances in the absence of site specific technical studies.

The separation distances in EPA Guidance Statement 3 (EPA, 2005) are intended to be used as a tool, supplemented by other appropriate techniques, to assist in the assessment of:

- new individual industries, infrastructure and estates, in the vicinity of existing/proposed sensitive land uses; and
- new individual sensitive land uses or estates, in the vicinity of existing/proposed industry and infrastructure.

The separation distances are also intended to provide assistance to strategic planning studies and processes.

Guidance Statement 3 (EPA 2005) states that extensive piggery (premises on which pigs are fed, watered and housed in outside paddocks or enclosures) may need a 1000m buffer to sensitive land uses. Land uses considered by the guidelines to be potentially sensitive to emissions from industry and infrastructure include residential developments, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings. Some commercial, institutional and industrial land uses which require high levels of amenity or are sensitive to particular emissions may also be considered “sensitive land uses”. Examples include some retail outlets, offices and training centres, and some types of storage and manufacturing facilities.

The EPA Guidance statement refers to Department of Agriculture and Food (DAFWA) *Guidelines for New and Existing Piggeries* (Latto *et al.* 2000; Table 2 Page 10) which state that a buffer to isolated rural dwellings should be 300m. There are no sensitive land uses within 1km of the proposed ROP.

3.6 MODEL CODE OF PRACTICE FOR THE WELFARE OF ANIMALS – PIGS (REVISED)

The *Model Code of Practice for the Welfare of Animals – Pigs (Revised)* was prepared by the Animal Welfare Working Group (AWWG) within the Primary Industries Ministerial Council (PIMC) committee system in 2007. The document guides the care and management of pigs so that the basic needs of food, water, space, socialisation, accommodation/shelter and health care are of an adequate standard.

3.7 RSPCA – APPROVED FARMING SCHEME – PIGS

The RSPCA (2011) has developed standards for pig producers that ensure a high level of welfare for farmed pigs. Pig producers can apply to participate in the RSPCA Approved Farming Scheme and participation is granted if the farming system meets the RSPCA’s standards. Farmers on Approved farms are allowed to label their produce with the RSPCA logo so that consumers can be assured that the pigs are kept according to the RSPCA’s welfare standards. These standards are higher than those recommended by the Model Code of Practice for the Welfare of Animals: Pigs. The standards are based on providing an adequate diet and water; freedom from discomfort, pain, injury or disease; ability to express normal behaviour and reduction of fear or distress. While these standards are not mandatory, systems which are eligible for approval under the RSPCA Approved Farming System demonstrates that pigs are raised and handled to the highest standard.

3.8 ENVIRONMENTAL PROTECTION ACT 1986

ROPs do not constitute a prescribed activity under the *Environmental Protection Act 1986* and therefore do not require a works approval or licence from DEC.

3.9 PLANTAGENET PORK ENVIRONMENTAL POLICY

Plantagenet Pork are committed to protecting the environment by reducing environmental risks of operations. Therefore, the operators and owners voluntarily commit to the following:

1. *Sustainable development – integrate environmental management into planning and decision making processes, to ensure sustainability and minimal impact on the environment;*

2. *Pollution prevention – Conduct operations in a manner that prevents pollution, conserves resources and proactively addresses past environmental contamination (where this is applicable);*
3. *Legal compliance – Ensure that operations comply with applicable environmental guidelines, regulations and requirements;*
4. *Employee involvement – Ensure environmentally responsible stewardship by employees through recycling, conserving resources, reducing waste and eliminating environmental risks in business operations;*
5. *Continual improvement – Regularly measure performance and practice continual improvement; and*
6. *Training – Staff will be adequately trained in environmental management.*

4. SITE DESCRIPTION

4.1 LOCATION AND CURRENT LAND USE

The subject land is situated in the locality of Narrikup, approximately 2.2km west of the Narrikup townsite, and 18km south of the Mount Barker town site in the Shire of Plantagenet (Figure 1). The subject land consists of 213ha of 'Rural' zoned land which is currently used for livestock grazing. This area was used for plantation blue gums, which have been removed from the site and the land returned to suitable condition for general agriculture.

The western boundary of the subject land is bordered by Lake Barnes Road, the southern boundary is bordered by Spencer Road, and the north and east boundaries are bordered by private agricultural properties (Figure 2). Surrounding land is zoned 'Rural' and is used for agricultural purposes including grazing, cropping, horticulture and blue gum plantations. Two reserves exist in proximity to the site, the Lake Barnes Road Nature Reserve to the north west, and the Lake Eyrie Nature Reserve to the south west. These are both approximately 1.5km from the site boundary and zoned 'Recreation'. The Narrikup townsite is located 2.2km to the east.

One of the criteria for establishment of an outdoor pork production system is the availability of a sufficient area of land to operate a sustainable rotational system. The subject land provides a large area of land with sufficient buffers to accommodate the outdoor piggery system. 67ha have been identified for operation as ROP within the subject land and is shown in Figure 1.

4.2 SURROUNDING LAND USES AND SENSITIVE RECEPTORS

The main farming practices in the area have traditionally been sheep/cattle farming, cereal cropping and blue gum plantations. However, other farming enterprises have also been established, including intensive horticulture, specialty livestock (e.g. goats and alpacas), vineyards, berries and tourism ventures. Land uses immediately adjacent to the subject land include cattle grazing, blue gum plantations and viticulture.

In order to minimise the impact of a ROP on surrounding landusers, Australian Pork Limited (2011) have produced buffer guidelines. Table 4 summarises the level of compliance with the buffer recommendations for the proposed development.

TABLE 4: BUFFER COMPLIANCE

Design and Management of Outdoor Free Range Areas for Pigs (APL, 2011)		
Site selection factors:	Recommendation	
Buffer of 800m between piggery and major water supply storage:	There are no major water supply storage areas within 800m of the subject land.	Proposed ROP meet this site selection requirement.
Buffer of 100m between piggery and a defined water course:	ROPs are set back 200m from minor water courses.	Proposed ROPs meet this site selection requirement.
Buffer of 200m to a public road carrying more than 50 vehicles per day.	Lake Barnes Road does not carry more than 50 vehicles per day.	Proposed ROPs meet this site selection requirement.
Buffer of 100m to a public road carrying less than 50 vehicles per day.	Lake Barnes Road carries less than 50 vehicles per day. A buffer for	Proposed ROPs meet this site selection requirement.

	proposed ROPs allows for a 100m buffer.	
Buffer of 750m to a town site.	The Narrikup townsite is located 2.2km east of the property boundary. A special control areas (SCA) surrounds the townsite, with the SCA boundary 400m from the proposed ROP area.	Proposed ROPs meet this site selection requirement.
Buffer of 500m to a rural residential area.	There are no rural residential areas within 500m.	Proposed ROPs meet this site selection requirement.
Buffer of 250m to external rural dwelling:	The nearest dwelling external to the premise is 683m from the nearest proposed ROP.	Proposed ROPs meet this site selection requirement.

There are 4 rural dwellings and/or sensitive receptors located within 1km of the subject land’s boundaries as shown in Figure 2. The closest residence/sensitive receptor to the ROP area is located at Lot 1443 to the north and is 617m from the nearest ROP area. The next closest dwelling is 690mm to the north of the ROP area at 210 Lake Barnes Road, Narrikup. Both distances significantly exceed the 250m buffer recommended for external rural dwellings. A bed and breakfast operation is located 839m from the closes ROP at 32 Lilford Road, Narrikup.

4.3 CLIMATE

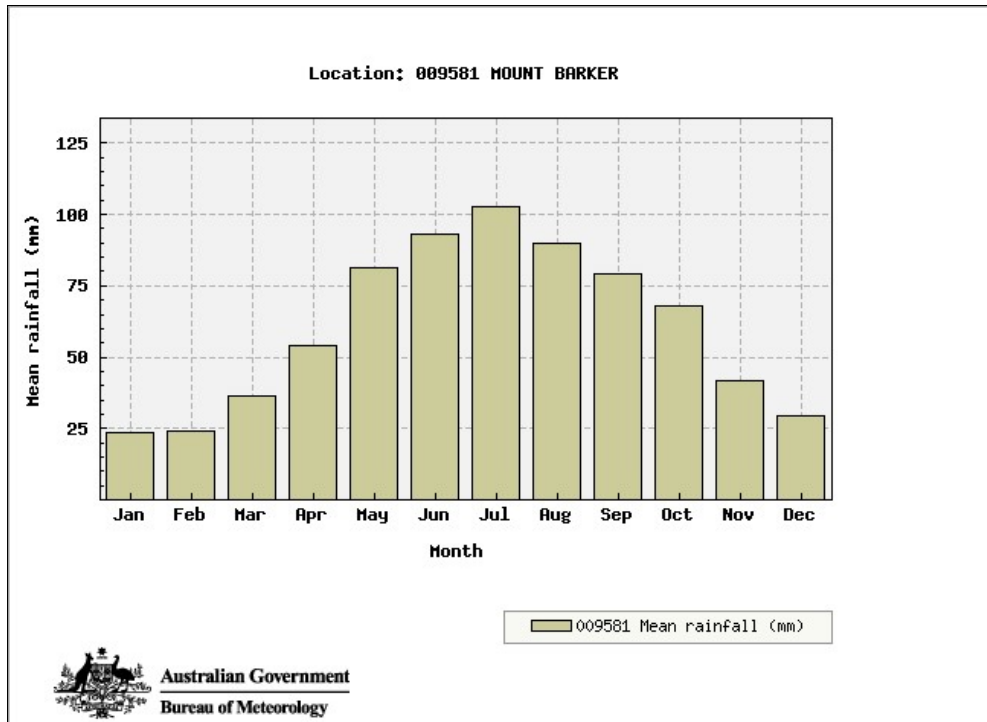
Mount Barker has a Mediterranean climate with generally hot summers and cool, wet winters. Mount Barker’s proximity to the south coast means that the progression of winds from east through north, west, south and returning to east over periods of several days to a week or more during summer can bring a large variation in weather from fine and mild to hot with thundery showers, to cool and cloudy with drizzle. When the ridge moves north in the cooler months, the moisture-laden westerly winds south of the ridge deliver much of the area’s annual rainfall. Atmospheric disturbances embedded in the westerly winds are common in the winter months with sometimes several cold fronts passing through southwest WA in a week. The climate in the region is conducive to the establishment of a ROP as extremes of heat and cold are generally not experienced.

4.3.1 Rainfall

The closest rainfall measurement station to the subject land is Mount Barker (Bureau of Meteorology (BOM) site number 9581; Plate 1). Mount Barker’s long-term median annual rainfall is 727mm although there can be considerable variation in the total rainfall from year to year (BOM, 2013). On average, approximately 40% of the annual rainfall occurs in winter between June and August. Although cold fronts are responsible for much of the recorded rainfall total, a moist onshore flow can occur in any season and bring showers or drizzle. July is the wettest month, with a long-term average of over 103mm. The driest month is January with a mean of 15mm. Like other parts of south-west WA, winter rainfall has decreased in the region during the latter half of the twentieth century, which is thought to be due to natural variability and climate change. Rainfall levels in the area are conducive for the establishment of a ROP as consistent rain prevents the ROPs from becoming too dry.

Site selection for outdoor pork production systems (Australian Pork Limited, 2011) identifies that an annual rainfall of less than 750mm per annum is desirable. The proposed site meets this climate requirement with its annual average of 584mm.

PLATE 1: AVERAGE MONTHLY RAINFALL)



4.3.2 Temperature

The closest temperature measurement station to the subject land is Mt Barker (BOM site number 9581; Plate 2) which is located 20km south of the site. Average maximum temperatures peak in January and February, with monthly means of 26°C although considerably hotter temperatures (above 35°C) often occur when hot, dry northerly winds blow from inland. Overnight average minima peak in February at 13°C, with frosty conditions sometimes experienced during the winter months (e.g. July 6°C). Winter daily maximum temperatures drop to around 14°C in July (Plate 2). Temperatures in the area are conducive to the establishment of a ROP as extremes are generally not experienced or do not occur for extended periods of time.

Site selection for outdoor pork production systems (Australian Pork Limited, 2011) identifies that a mean maximum January temperature of less than 28°C and a mean minimum July temperature exceeding 3°C is desirable. The proposed site meets these climate requirements with a mean maximum January temperature of 27°C and a mean minimum July temperature of 6°C.

PLATE 2: MAXIMUM TEMPERATURE AVERAGES (MOUNT BARKER)

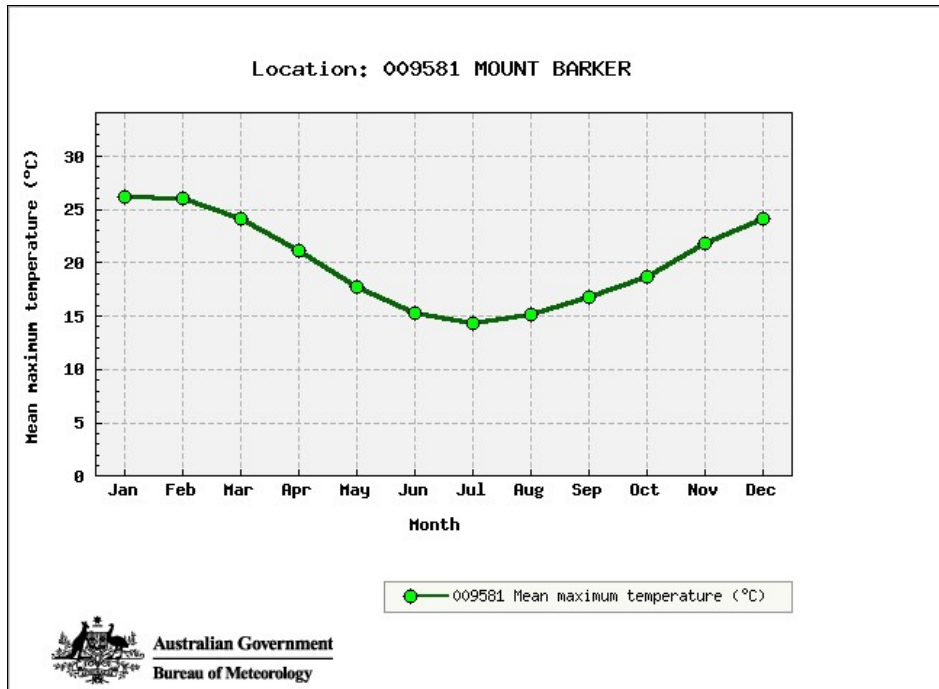
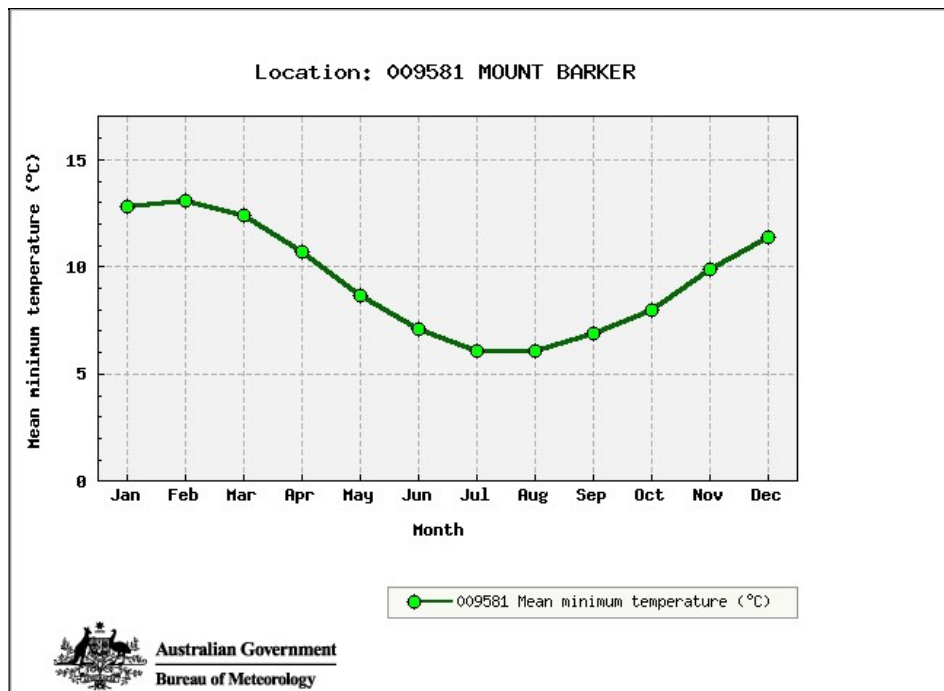


PLATE 3: MINIMUM TEMPERATURE AVERAGES (MOUNT BARKER)



4.3.3 Prevailing Winds

Wind speed and direction can be significant factors in the dispersal and transmission of odours from intensive rural industries. However, odours are usually associated with intensive operations such as indoor piggeries and poultry farms. Experience has shown that the extensive nature of ROPs are not likely to cause odour issues,

especially when adequate buffers to sensitive environments are in place. In the unlikely event that the ROP activities generate odours, an analysis of wind speed and direction factors has been undertaken as follows.

The nearest weather station to Narrikup that records wind direction and speed data is the Albany Airport, which is 25km to the south of the subject land. It is considered that the conditions experienced at the Airport reflect those at the site, although the sea breeze influence may be significantly less pronounced.

The Albany Airport experiences a varied wind climate with a bias toward an easterly wind component in summer and a westerly component in winter. On average, the windiest part of the day during winter is the morning and in summer is the afternoon. Spring and summer afternoon sea breezes are regularly experienced from directions from the southwest through to the east. However, sea breezes from the south-east or east are most common. Summer sea breezes are frequently quite fresh and sometimes reach 25 knots (46 km/h) or more. Late autumn, winter and early spring see regular north-westerly morning winds due to a combination of the sub-tropical ridge being located to the north, with a high centre over the continent, and a land-breeze effect. Cold fronts with winter westerly winds regularly occur during this period and may bring strong to gale force winds.

The wind data for different times of the day, based on the Albany Airport weather information from the Western Australia Bureau of Meteorology, is described below (Table 5) and shown in Appendix B.

TABLE 5: PREVAILING WIND DIRECTIONS DURING DAYTIME FOR THE ALBANY AIRPORT

SEASON	PREVAILING WIND		DETAILS
	9am (% of time)	3pm (% of time)	
Summer (January)	Easterly (24%)	South-easterly (31%)	<p>In Summer mornings, calm conditions occur 6% of the time and the wind blows in an easterly direction 24% of the time (2% at 1-10km/h, 7% at 10-20km/h). Wind blows from the south east 13% of the time (2% at 1-10km/h, 4.5% at 10-20 km/h). Southerly winds blow 12% of the time (2% at 0-10km/h and 6.3% at 10-20km/h). South westerly winds blow 14% of the time (3% at 1-10km/h and 5% at 10-20km/h).</p> <p>The most prevalent wind in the afternoon (blowing 31% of the time) is from the south east (3% at 10-20km/h and 17% at 20-30km/h). Winds from the south occur 22% of the time (7.5% at 10-20km/h and 11% at 20-30km/h). South west winds occur 22% of the time (3% of 10-20km/h and 12.5% of 20-30km/h). There are rarely calm conditions at this time of the day in Summer.</p>
Autumn (April)	North-westerly (20%)	South-westerly (15%) to South-easterly (19%)	<p>In Autumn, mornings are calm for 17% of the time. Wind is most prevalent from the north west at 20% of the time (5% at 0-10km/h and 8% at 10-20km/h). Winds from the south west (4.5%), south (5%) and south east (4%) are relatively infrequent.</p> <p>Autumn afternoons have 4% time calm, with the most prevalent wind direction being south easterly 19% (2% at 0-10km/h and 7.5% at 10-20km/hr). Winds from the south occur 15% of the time (2% at 0-10km/h and 9% at 10-20km/h).</p>

SEASON	PREVAILING WIND		DETAILS
	9am (% of time)	3pm (% of time)	
Winter (July)	North-westerly (37%)	Westerly (27%) to North-westerly (24%)	<p>Winter mornings are calm for 13% of the time. The most prevalent wind is from the north west for 37% and north for 23% of the time. Winds from the south west (6%), south (2.5%) and south east (1%) occur relatively infrequently.</p> <p>Winter afternoons have calm conditions 5% of the time with predominant winds coming from a westerly (27%) and north westerly (24%) direction. Winds from the south west occur 18% (2% 0-10km/h and 3% 10-20km/h). Winds from the south (5%) and south east (3%) occur infrequently.</p>
Spring (October)	Westerly (22%)	South-west (25%), West (18%) to South-easterly (15%)	<p>Spring mornings are calm for 8% of the time. The most prevalent winds are from the west (22%). Winds from the south west occur 12% of the time (1.5% 0-10km/h and 4% 10-20km/h). Winds from the south and south east occur less commonly (7%).</p> <p>Spring afternoons are calm 1% of the time. The most prevalent winds are from the south west 22% of the time (0.9% at 0-10km/h and 9% at 10-20km/h). Winds from the west and the south occur 18% of the time (2% at 0-10km/h and 10% at 10-20km/h). Winds from the south east occur 15.5% of the time (1% at 0-10km/h and 4% at 10-20km/h).</p>

Source: Bureau of Meteorology, 2011.

Percentages based on the number of days that wind direction was recorded over the total number of observation days at the Albany Bureau of Meteorology Station between 1965 and 2004.

Should odours be generated by the ROP, they would be unlikely to impact surrounding residences due to the appropriate buffer distances that are in place at the site, and also as winds from the south east, south and south west sectors are typically strong, blowing more than 20km/h. High velocity winds would have the effect of dissipating any odours through mixing within the air stream. Light winds from the south-west, south and south-east, which would have a greater capacity to transport odours offsite, occur less than 5 % of the time in autumn and spring and less than 10 % of the time in summer. As a result, there is a low risk of odour from the ROP impacting on surrounding residences.

4.4 TOPOGRAPHY AND SLOPES

National Environmental Guidelines for Piggeries (APL, 2010) state that optimal slopes for ROP compartments is between 2 - 6%. These slopes assist in optimising drainage without promoting erosion. Ideal slopes depend on soil type, land use, vegetative cover, rainfall intensity, agronomic practices and soil conservation methods.

The subject land comprises grades from a high point of 160m AHD in the centre of the property to 120m AHD along the southern boundary. While the majority of the ROP are meets with the slope guidelines, some areas have a slope of up to 8.3%. Due to the nature of the soil type, and experience operating on slope of this grade, Plantagenet Pork are confident that the grower operation can be successfully managed on the proposed area.

4.5 GEOLOGY, LANDFORM AND SOILS

Geology, landform and soil types found on the subject land are listed in Table 6 and shown in Figure 3. Of the three major soil types which occur on the subject land, the soil unit which is associated with the ROP compartments comprises 242Re. 242Re is part of the Redmond subsystem is comprised of undulating plateau with scattered depressions, in the east of the Albany Sandplain Zone. Sandy gravel, pale deep sand, non-saline wet soils and grey sandy duplex. Marri-jarrah forest, swamp yate-paperbark-sheoak woodland and heath.

Based on the information from National Maps (<https://nationalmap.gov.au/>) the site has a low risk of phosphorus export. This is important and it indicated a high ability for the soil to retain nutrients (nitrogen and phosphorus) within the soil the profile and to make them available for the cropping rotations scheduled between rotations.

TABLE 6: SOIL UNITS, LANDFORM AND GEOLOGY

SOIL UNIT	SUMMARY DESCRIPTION	LANDFORM	GEOLOGY	PHOSPHORUS EXPORT RISK	LOCATION AND SUITABILITY
242ReMI-Mitchell Subsystem	Broadly undulating uplands. Typical vegetation: On crests, Jarrah-Marri forest and in depressions, Jarrah-Sheoak woodland	Broadly undulating uplands. Leached sands in depressions	Duplex sandy gravel. Gravelly yellow duplex soils and laterite on crests	Low: 10-30% of map unit has a high to extreme phosphorus export risk	Soil unit present through the central part of the site and is deemed most suitable for ROP. All ROP areas fall within this soil unit.
242ReBO-Boulongup Subsystem	Broad, shallow poorly drained depressions in plateau surface; complex of swamps, lakes, low lateritic rises, lunettes and hummocks	Broad depressions and swamp lake areas	Deep pale sands. Yellow solonetzic soils in swamps, podzols in sands	Moderate: 50-70% of map unit has a high to extreme phosphorus export	Occurs in the northern and southern part of the site. Not considered suitable for ROP establishment. No ROPs located on this soil unit.

Source: Department of Agriculture and Food (2013); Green Skills, 2008; Geological Survey of Western Australia, 1984; Churchward *et al.* (1988).

4.6 SURFACE AND GROUNDWATER

The subject land is located within the catchment of the Hay River, which is a major tributary of Wilson Inlet. Wilson Inlet is a water body of significant environmental, social and economic value to the region. The subject land does contains one tributary along the northern boundary that feeds to Sleeman Creek, which in turn flows to the Hay River. The creek flows west to east across the site. All ROP areas are set back a minimum of 200m from the surface water bodies. *National Environmental Guidelines for Piggeries* (APL, 2010) recommends that ROPs are located at least 100m from a defined water course.

Source water from the piggery operations will be sourced from an onsite groundwater bore. The subject land is not in a surface or groundwater protection area and licenses are not required for the use of water for stock purposes.

4.7 VEGETATION

Most of the subject land has historically been cleared of native vegetation for the purpose of agriculture. Pockets of native vegetation have been retained. Existing vegetation types (and those previously found on the subject land) are summarised in Table 6 by soil type. Remaining vegetation is in a relatively degraded condition due to long term grazing of livestock and weed invasion. No native vegetation is proposed to be cleared for the establishment of ROPs, and pigs will not have access to areas covered by native vegetation.

5. DESCRIPTION OF PROPOSED OPERATION

5.1 ROTATIONAL OUTDOOR PIGGERY – GROWER

Plantagenet Pork propose to operate a piggery which raises pigs using an accredited free range system. ROPs allow for pigs to be raised outdoors with shelter from the elements. The operation consists of outdoor paddocks which allow for rooting and foraging areas and huts with bedding for shelter. The huts allow the pigs to shelter from environmental extremes.

Free range systems such as this provide enough space for the land to assimilate nutrients which are generated through pig manure, as long as suitable soil types and slopes are chosen, stocking rates are consistent with recommendations and rotations occur on a two year basis. Also, outdoor operations reduce the levels of odour build up (in comparison to shed based piggeries).

5.1.1 Rotation

Rotational areas are proposed to be established within the ROP area defined in Figure 1. Rotating the use of active pig areas will be undertaken on a two year cycle, to allow pasture to regenerate and/or uptake of nutrients through cropping, assimilation of nutrients and reduction of the risk of land degradation and disease.

5.1.2 Fencing and Water Supply

Pigs are contained and protected from predators such as foxes by providing shelters and using secure fencing and electrification (where necessary). Other pest control methods, such as exclusion fencing are also used to reduce risk (e.g. from foxes). Plates 4 and 5 show a typical weaner shelter.

Water for drinking will be provided from a groundwater bore on the property. Water is provided to the pens via pipe work that sits on the surface of the ground at the perimeter fence. Wallows are provided, where required in each pen during summer and autumn which prevents sunburn and helps to control pests.

PLATE 4: TYPICAL WEANER ENCLOSURE



PLATE 5: INSIDE WEANER SHELTER



5.1.3 Density of Pigs

Densities of pigs are guided by the *Code of Practice for Animal Welfare – Pigs* (AWWG, 2007) and the RSPCA Approved Farming Scheme Standards for Pigs (RSPCA, 2010). Through all phases of the production cycle, the stocking rate will be compliant or less those proposed in the guidelines. The guidelines specify the minimum area requirements for the shelter within the free range enclosure, with the shelter area requirements summarised in Table 7.

TABLE 7: ROTATIONAL OUTDOOR PIGGERY DENSITIES

Regulation	Maximum Stocking Density
Model Code of Practice for the Welfare of Animals	- Weaner shelter (max. average weight 22kg) – 0.24m ² /pig; - Grower shelter (max. average weight 60kg) - 0.47m ² /pig
RSPCA Approved Farming Scheme Standards for Pigs	- Weaner shelter (max. average weight 22kg) – 0.37m ² /pig; - Grower shelter (max. average weight 60kg) - 0.73m ² /pig

Source: Code of Practice (AWWG, 2007); RSPCA Approved Farming Scheme Standards for Pigs (RSPCA, 2011).

The proposed stocking densities for weaner and grower shelters areas are based on the maximum average weights of the pigs within an enclosure. The maximum average weight for the weaners is 22kg, and 60kg for the grower shelter. The proposed stocking densities for the piggery are:

- *Weaner shelter area of 0.38m²/pig*
- *Grower shelter area of 0.76m²/pig*

These densities comply with both the Model Code of Practice (AWWG, 2007) and the RSPCA Standards (2011) for the raising of pigs. There is no specification for the amount of outdoor area for each pig in the guidelines, but it should be noted that all pigs have access to the outdoors at all times, as such meeting with the APIQ specification for free range. The following outdoor paddock areas are provided in addition the shelter areas specified above:

- *Weaner free run area of 0.57m²/pig; and*
- *Grower free run area of 10.1m²/pig.*

5.1.4 ROP Areas

Each ROP comprises two phases, the weaner then the grower phase. The dimensions of the weaner enclosures are 30m x 7m (210m²) with 12m x 7m (84m²) undercover. These pens house 220 weaner piglets with weights ranging from 4 to 30kg. The grower shelters are 60m x 20m (1,200m²) with 12m x 7m undercover (84m²). A maximum of 110 grower pigs are housed in each grower pen. The number of enclosures is dependent on the number of pigs associated with a particular rotational cycle. At full capacity, the site will support 20 weaner shelters, and 52 grower (minimum operating pig area of 8.9ha) pens housing a maximum of 8,500 pigs at any one time. A maximum of 28,000 pigs will be produced per a year.

5.2 INFRASTRUCTURE AND OTHER FEATURES

Infrastructure and other features associated with the operation of the ROP includes:

- Silo/s for food storage; and
- Storage area for straw for bedding.

5.3 OPERATIONS

The processes and operations for pig breeding, rearing and transport will be in line with the Model Code of Practice for the Welfare of Animals – Pigs (Revised) (AWWG, 2007) and RSPCA Approved Farming Scheme Standards for Pigs (RSPCA, 2011). Plantagenet Pork has an operation manual that guides day to day activities and the cycles of pig management.

- Feed for the pigs will be transported to the site with two road trains per week. Food for the pigs comprises pellets which will be stored in silos. Feed is provide in self feeders which are regularly moved within the pig areas to assist in the even distribution of nutrients;
- Straw is partially sourced from the subject land or imported periodically. Straw is kept at a single location per ROP area to reduce fire risk. Straw is used for bedding in communal shelters, weather protection at the end of the shelters and for managing runoff;
- Weaners will be transported to the site weekly in a tandem axle rigid truck;
- Pigs will be transported to be processed at an abattoir facility in a B-double; and
- Fuel is stored in the main farm outbuilding area, separate to pig operations.

Traffic accessing the ROP will use Albany Highway and then turn directly onto Spencer Road and Lake Barnes Road.

5.4 BIOSECURITY

Australian agriculture is free from many of the more devastating diseases that exist in other countries around the world. The introduction of exotic diseases and those that already occur in Australia could have a large impact on the livestock industry, including pig production. Adequate biosecurity is required on a pig farm to maintain sanitation, disease control and vermin management and is integral to the health of the pigs and quality of the product. This means that access to the ROP needs to be limited to authorised personnel with a high standard of hygiene at all times.

Plantagenet Pork will ensure that effective contingency plans are in place and that staff are adequately trained to respond to disease risk and other emergency situations. The Australian Veterinary Emergency Plan (AUSVETPLAN; Animal Health Australia, 2008) is a coordinated national response for the control and eradication of high impact animal diseases. In addition, APL and affiliated operators are party to the Animal Health Australia Cost Sharing Deed of Agreement on Emergency Animal Disease Response (Animal Health Australia, 2001).

Plantagenet Pork will implement the following:

- *Signage installed to inform visitors they cannot enter the ROP area without permission as per Plate 6;*
- *Visiting vehicles are not permitted to drive over alleyways used to walk pigs from pen to pen. Visiting vehicles, including trucks that visit other pig properties are only allowed access to a quarantined area;*
- *Visitors must not have come into contact with pigs in the 24 hours prior to visiting the ROP. This includes contact with pigs at agricultural shows, farm stays, transport vehicles, abattoirs and pig processing. Exemptions may apply if the pig contact is within the Plantagenet Pork production group and visitation is approved by the Livestock Manger or the consultant veterinarian;*

- *Visitors must not be experiencing any cold or flu like symptoms;*
- *Visitors must not have been on an aircraft in the preceding 72 hours;*
- *Visitors must sign the visitors book and provide relevant details;*
- *Visitors must wear the protective clothing and footwear provided; and*
- *Food scraps must not be fed to pigs to the pigs by any person on site.*

PLATE 6: EXAMPLE OF SIGNAGE AT ENTRY TO ROP



5.5 ACCIDENTS AND EMERGENCY RESPONSE

Emergency responses in the pig industry sector are guided by AUSVETPLAN Enterprise Manual – Pig Industry (Animal Health Australia, 2011) and the Australian Pork Industry Biosecurity Program (APL, 2003).

AUSVETPLAN is a series of technical response plans that describe the proposed Australian approach to an emergency animal disease incident. APL (2003) outlines a code of practice for dealing with emergency pig disease responses in accordance with Clause 14 of the Government and Livestock Industry Cost Sharing Agreement. The documents provide guidance based on recent analysis of risks, linking policy, strategies, implementation, coordination and emergency management plans.

Mass pig deaths due to factors such as abnormal heat stress or disease rarely occur. However, a plan is required for disposal of the pigs should mass deaths occur and management of the issue should the cause be an infectious disease. When disease is the cause of death, the farm owner will obtain a veterinary report and immediately contact the Emergency Disease Watch Hotline (1800 675 888), Shire of Plantagenet Environmental Health Officer (EHO), DAFWA and Department of Health (DOH), where applicable. These agencies will provide guidance to the landowner on disease control and hygiene, transport and disposal of diseased dead pigs.

Where there are not mass deaths and disease is not the cause, burial of the pigs on the property will be undertaken as described in Section 6.4.3.

Harsh chemicals such as disinfectants will not be used in this piggery operation. However, for any farming operation, any person storing, handling or transporting dangerous goods (including agricultural chemicals) is required to report spills and other dangerous events to a dangerous goods officer within the Department of Industry and Resources as soon as practicable. Where an agricultural chemical spill is likely to cause pollution or environmental harm, the occupier of the land on which the discharge occurred is required to inform the DWER.

5.6 FIRE RISK MANAGEMENT

Each rotational area will have a 4m firebreak around its boundary and the property has a fast attack unit to respond to a fire on the property, should the situation arise. Fire risk within each ROP area will be minimised by storing flammable material such as straw bedding in a single section of the operational area.

5.7 PUBLIC RELATIONS AND TRAINING

The landowner and Plantagenet Pork wish to promote good relations with neighbours and the general public to reduce the risk of complaints based on lack of adequate information of farm operations or fears based on misconceptions. All complaints received directly will be recorded in a log book and dealt with in a professional and sensitive manner. Where issues cannot be resolved easily, Plantagenet Pork will liaise with the Shire of Plantagenet EHO and/or planning officer.

A piggery manager is primarily responsible for the operation of the ROP, including transport of pigs to, from and within with property, unloading and loading, feeding and general management and maintenance. Staff will be adequately trained in best practice methodology for management of the ROP.

6. ROTATIONAL OUTDOOR PIGGERY – PROPOSED MANAGEMENT

Free range piggeries, when adequately located and managed, present few management issues. The management considerations for any piggery is odour, dust, noise, waste, fly breeding, nutrient export and visual management. The extent of possible impacts are closely related to the size of the operation, density of pigs, management and type of operation being carried out. Generally, the more intensive the operation, the more risk there is of generating impacts on-site and off-site. This ROP will operate within the recommended density of pigs on a site which has suitable characteristics to support sustained operation. The identified 67 ha of ROP area will provide flexibility in managing the locations of the pigs.

6.1 ODOUR

ROPs are not required to meet site-specific separation distances, but should meet the minimum separation distances set out in the National Guidelines (Tucker et al., 2010 and Tucker and O’Keefe, 2013). The ROP areas proposed in this EMP meet all separation distances outlined. ROPs pose a low risk of causing a substantial off-site odour impact, provided they are designed and managed according to sustainable nutrient loading rate criteria (Tucker et al., 2010 and Tucker and O’Keefe, 2013). Measures that assist in keeping odour to acceptable levels include:

- Keeping pig densities at recommended levels;
- Ensuring that there is adequate infiltration of water and drainage of pens;
- The existing screen of mature vegetation and planted trees adjacent to all ROPs will assist in creating turbulent airflow, which will help to disperse any odour generated on the site.
- Dead animals will be immediately collected and placed in the dedicated burial trench. The animals will be covered with a minimum of 0.3m of suitable cover material within 3 hours of disposal.

6.2 DUST

Dust from ROP operations can be generated from traffic movements, dry conditions when pens have dry soil exposed or from associated farm operations such as feeding. The proposed setbacks from roads and property boundaries, plus existing shelter belts and vegetation buffers will ensure that impact from dust is minimal.

Dust generation will be minimised through:

- Placement of pens in suitable soil types (i.e. coarse sand/loamy soils with clay and laterite elements); and
- Vehicle movements on access roads to be restricted to moderate speeds, and travel distances on gravel minimised.

6.3 NOISE

A low level of noise will be generated by the pigs and use of associated equipment. Noise risk in ROPs is generally not an issue due to setbacks and the fact that the low density of pigs reduces noise related to competition for food and aggression. Noise associated with loading and unloading the pigs will be limited to

daylight hours. In the event of adversely high daytime temperatures, loading and unloading will be undertaken during early morning and evening. It is also considered that noise impacts are unlikely to be a problem given the distances to sensitive receptors (e.g. residences), the nearest of which will be 683m to the northwest of the ROP. In addition, noise generated will be of a volume generally associated with farming activities in a rural area.

6.4 WASTE MANAGEMENT

The ROP will generate waste products including pig manure mixed with straw bedding. The nutrients present in these materials including nitrogen (N), phosphorus (P) and potassium (K) will need to be managed to reduce the risk of export from the property. Design and management factors which will be applied to this ROP (in accordance with National Environmental Guidelines for Piggeries; Tucker et al., 2010) include:

- **Nutrient budgeting:** While N, P and K accumulate in soils of ROPs, the nutrient accumulation rate is generally not high unless an area has been stocked continuously for more than two years (APL, 2011). Consequently, rotations will be planned so that pigs are not continuously stocked on an area for longer than two years. Following the pig stocking phase, crops for hay (or similar) will be grown to utilise accumulated N, P and K;
- **Facilitating even spreading of manure nutrients:** In ROPs, manure and consequently nutrients, are not spread evenly across the paddocks. This increases the risk of nutrient overloading a specific site, leaching and/or runoff. Moving feeding facilities regularly during the stocked phase and cleaning out manure between pig phases assists in spreading nutrients more evenly. These practices assist in evenly distributing the nutrients within the ROP paddock area;
- **Minimising uncontrolled movement of nutrients from ROP paddocks:** This will be achieved through regular spelling from pig production, with a plant growth and harvest phase to remove the nutrients added through the stocked phase and provision of a physical barrier and/or vegetative buffer on the downstream side of the piggery. Each pig area will be rested for a minimum of two years before reuse. In addition, as a precaution, straw bales will be located along the downstream side of all ROPs to intercept any surface runoff. This will slow the rate of runoff flow, and capture any soil that may be transported from the pig areas; and
- **Monitoring and surveillance:** Routine environmental monitoring of soil and surveillance of drainage lines will be undertaken during the pig phase and following cropping phase of the rotation. Soil sampling will be undertaken in accordance with the APIQ guidelines, and will include samples collected prior to the pig phase commencing on a site, and then again prior to reusing an area as an ROP. This will be undertaken to ensure that the nutrient levels have returned to satisfactory levels prior to reusing an area as an ROP.

6.4.1 Nutrient Management

The management of nutrient during and following the ROP phases is an important part of the operation of the facility. Manure and straw bedding are applied evenly to the soil of the ROP area so that nutrients can be taken up by a cropping phase when the pig production phase has been completed. Table 8 provides estimates of the total nutrients applied from a range of pig classes.

TABLE 8: PREDICTED NUTRIENT OUTPUT BY CLASS OF PIG AND BEDDING MATERIAL (KG/HEAD/YEAR)

PIG CLASS	TOTAL SOLIDS	VOLATILE SOLIDS	ASH	NITROGEN	PHOSPHORUS	POTASSIUM
Gilt	197	162	35	12.0	4.6	4.0
Boar	186	151	35	15.0	5.3	3.8
Gestating sow	186	151	35	13.9	5.2	3.7
Lactating sow	310	215	95	27.1	8.8	9.8
Sucker	11.2	11.0	0.2	2.3	0.4	0.1
Sow and litter	422	325	97	50.0	13.0	11.0
Weaner pigs	54	47	7	3.9	1.1	1.1
Grower pigs	108	90	18	9.2	3.0	2.4
Finisher pigs	181	149	32	15.8	5.1	4.1
Wheat straw*	89	-	-	0.58	0.41	0.51

Source: *National Environmental Guidelines for Piggeries* (Tucker et al., 2010). Highlighted rows apply to this operation.

Due to the nature of nitrogen in fresh pig manure, a significant portion will be lost through ammonia volatilisation and nitrous oxide emissions. When comparing pig manure to synthetic fertilisers usually applied to crops, it should also be noted that not all nitrogen, phosphorus and potassium in pig manure are in the form that is immediately available for uptake by plants. This is a result of manure having a slow release effect compared to synthetic fertilisers.

The net result of cropping after the pig production phase is the removal of nutrients from the soil, and the export of these offsite. Typical data for cropping suggests that nutrient removal rates provided in Table 9 would be applicable for to the site. Both the National Environmental Guidelines for Piggeries (Tucker et al., 2010) and the APIQ guidelines have a heavy emphasis on the sustainable management of nutrients at the site. In addition, APL Fact Sheet (APL, 2011) states the accumulation of nitrogen, phosphorus and potassium in free range piggeries is unlikely to be high unless an area is stocked for more than two years. As Plantagenet Pork is committed to a lower stocking density than the maximum allowable, it is unlikely that nutrient accumulation would occur at a level that will negatively impact on the surrounding environment. To ensure this does not occur, Plantagenet Pork are committed to undertaking the APIQ soil monitoring to ensure that nutrient limits have returned to acceptable levels prior to reusing an area for ROP operation. This data will be collected and sent to the APIQ for approval to maintain accreditation. Therefore, a number of management measures, and on site testing will ensure that nutrients are appropriately managed to maximise reuse and minimise potential impacts on the environment.

TABLE 9: TYPICAL NUTRIENT REMOVAL THROUGH CROPPING (KG /YEAR)

	AVERAGE YIELD	NITROGEN		PHOSPHORUS		POTASSIUM	
	tonnes/ha	kg/tonne	kg/ha	kg/tonne	kg/ha	kg/tonne	kg/ha
Hay	6	20	120	2	12	25	150
Wheat	3.5	23	80.5	3	10.5	4	14
Barley	3.5	20	70	2.9	10.15	4.4	15.4
Canola	1.8	40	72	6.5	11.7	9.2	16.6

*Source: Summit Fertilizer Nutrient Removal Tables

6.4.2 Runoff Management

The APIQ Standards Manual (Australian Pork Limited, 2012) provides some guidelines for the management of nutrients on site.

1.2.4 Land and Water Protection Standard

The removal of nutrients in stormwater runoff is minimised by:

- *maintaining groundcover over paddocks throughout both the pig and the crop, forage or pasture phases; and/or*
- *maintaining a continuous resilient vegetative buffer strip ideally consisting of a runner developing, nonclump forming grass species at least 10 m wide immediately downslope of the entire paddock area/s; or*
- *installing terminal ponds sized and located to catch the first 12 mm of runoff from the piggery paddocks and other land within the same local catchment area.*

Plantagenet Pork propose to satisfy this standard through a combination of utilizing existing drains and dams, vegetated strips (ie hay) and/or vegetated swales drains to retain surface runoff onsite. The successful implementation of the range of surface water management measures, will ensure successful operation of the rotational piggery without negatively impacting on the surrounding environment.

6.4.3 Disposal of Dead Pigs

A mortality rate of 5% of pigs per year is generally accepted in piggery grower facilities. Previous data collected from Plantagenet Pork grower operations suggests that the mortality rate well below accepted industry levels with a rate of around 1.5%. This rate suggests that of the 28,000 pigs produced per annum, around 420 pigs may die, corresponding to approximately 8 tonnes of carcasses.

Plantagenet Pork plan to dispose of dead pigs is by placing them in a purpose dug trenches onsite. Burial trenches will be operated in accordance with the National Environmental Guidelines for Piggeries, Second Edition (Revised) 2010. Lime will be added and the trench will be immediately backfilled. It should be noted

that mass pig deaths will be dealt with as outlined in Section 5.5. Elevation of the proposed burial sites will be above 160m AHD, to ensure sufficient separation to groundwater will be maintained.

6.5 FLY BREEDING

Fly breeding may be a risk in the operation due to the generation of manure at the site. In the event that this does become a risk, pest reduction application will be applied if and when required. These methods have proved effective at other piggery operations.

6.6 VISUAL

The visual impacts of the ROP is expected to be acceptable. The southern and eastern portions of the ROP areas will be visible for particular 2 year rotations from Spencer Road, although at a distance of at least 450m. The placement of the ROPs, the natural topography of the land and the location of existing vegetation on the site result in the views of the operations being minimal from Spencer Road. The ROP areas are setback at least 50m from Lake Barnes Road.

6.7 TRANSPORT AND ACCESS

The ROP will rely on vehicle movements to bring pig feed, bedding, deliver weaner piglets and transport grower pigs from the site. The subject land is serviced by Lake Barnes Road, which will be accessed directly from Spencer Road. The access into the property will be constructed to be a well formed gravel road.

Transport impacts will be minimised by:

- Ensuring that loads are appropriately sized, secured and coordinated to reduce movements;
- Keeping traffic speed on access road low (30kmh);
- Not moving pigs during the night;
- Ensuring all trucks enter the property to service enter from the Spencer Road and then on to Lake Barnes Road.

6.8 CHEMICALS AND FUELS

ROPs use far fewer chemicals than many other farming enterprises (e.g. no herbicides, disinfectants). However, from time to time the use of pesticides, vaccines and other pharmaceutical products may be required. These materials will be stored in the farm sheds on the subject land according to manufacturer instructions and legislative requirements (where applicable). This applies to any rural activity where chemicals are required. In this instance, chemicals will be stored in an enclosed area on a concrete floor. All pesticides will be stored, applied, transported and disposed of in accordance with the *Health (Pesticides) Regulations 1956*. Medications such as vaccines will be stored in a refrigerator solely for that purpose.

7. SUMMARY AND COMMITMENTS

Suppliers of pigs are required to meet exacting standards to ensure that the end product meets processor and market expectations. This ROP will meet the standards set by the RSPCA Approved Farming Scheme (RSPCA, 2011) and the Model Code of Practice for the Welfare of Animals – Pigs (Revised) (AWWG, 2007).

Examination of environmental factors, guidelines and policy requirements indicates that the proposed ROP can be managed to meet desired objectives for its operations without impacting on the surrounding environment or the health or amenity of surrounding property owners and the wider public.

The following commitments are made by the landowner in support of this EMP (Table 10).

TABLE 10: LANDOWNER COMMITMENTS

	COMMITMENT	TIMING/RESPONSIBILITY
1	ROPs will only be established within the boundaries shown on Figure 1.	Operator
2	An area of the 67ha ROP areas identified will be used for two years and rested for at least two years prior to reuse (and pending results of nutrient testing).	Two years use, minimum of two years rest. Operator.
3	Density of pigs meets with RSPCA and Model Code of Practice Guidelines.	Operator
4	Surface water flow from the ROP paddocks will be monitored and prevented through the installation of swale drains, vegetated buffers or temporary structures such as straw bale baffles.	Operator
5	Apply <i>National Environmental Guidelines for Piggeries</i> (Tucker <i>et al.</i> , 2010), <i>Model Code of Practice for the Welfare of Animals – Pigs (Revised)</i> (AWWG, 2007) and <i>RSPCA Approved Farming Scheme Standards for Pigs</i> (RSPCA, 2011) to operations of the ROP.	Operator
6	After use, the ROP compartment will be planted to a suitable harvestable crop (e.g. hay) for at least two seasons to utilise nutrients.	Minimum two years. Operator.
7	Testing for nutrient levels prior to re-use of ROP area for pigs.	Operator
8	Biosecurity measures will be in compliance with the <i>Australian Pork Industry Biosecurity Program</i> (APL, 2003) and <i>AUSVETPLAN</i> (Animal Health Australia, 2011).	Operator
9	Pigs which die on the property will be disposed of in the dedicated burial trenches the methodology detailed in Section 7.7.7 of <i>Piggery Manure and Effluent</i>	Operator – immediately following pig deaths.

	COMMITMENT	TIMING/RESPONSIBILITY
	<i>Management and Reuse Guidelines</i> (APL, 2015). This does not apply where mass deaths or disease occurs.	
10	Vehicle speed on access road will be limited to 30km/hour.	Operator and contractors.
11	Install sign at entry to ROP compartments with information regarding biosecurity.	Operator
13	Operations such as delivering and removal of pigs from the property will be undertaken during daylight hours.	Operator
14	Any complaints will initially be dealt with by the landowner, with advice and assistance from the Shire of Plantagenet Environmental Health and/or Planning Officer, where necessary.	Operator and Shire of Plantagenet.
15	Piggery will be registered, and operated in accordance with the Australian Pork Industry Quality Program (APIQ). Proof of APIQ accreditations will be provided to the Shire of Plantagenet as requested.	Operator

8. REFERENCES

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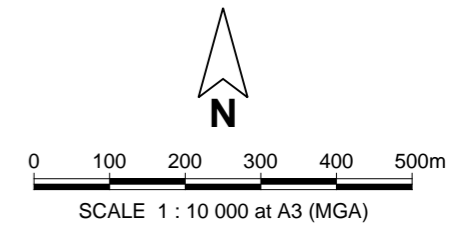
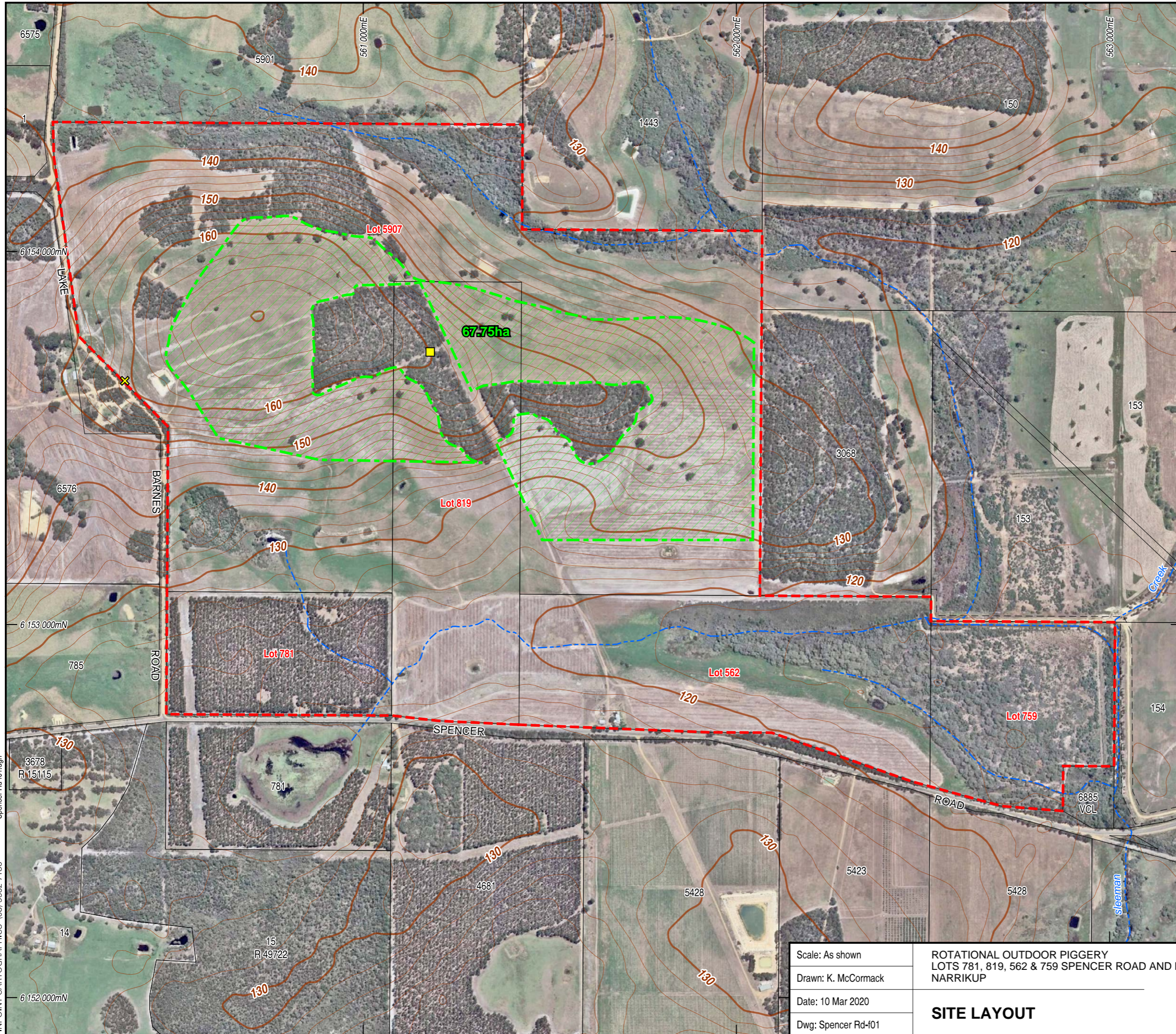
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FIGURES



- Legend**
- - - Site Boundary
 - Cadastral Boundary
 - Easement Boundary
 - Topographic Contour
 - - - Watercourse
 - Rotational Outdoor Piggery Area (75.5ha)
 - ✕ Access Point to Rotational Outdoor Piggery Area
 - Burial Pit Location

CONTOUR SOURCE: Dept. of Agriculture, 2000.
 CADASTRAL SOURCE: Landgate, January 2020.
 AERIAL PHOTOGRAPH SOURCE: Google Earth, flown October 2017.
 WATERCOURSE SOURCE: Landgate 1:50 000 Topographic Mapping.

Scale: As shown
 Drawn: K. McCormack
 Date: 10 Mar 2020
 Dwg: Spencer Rd-f01

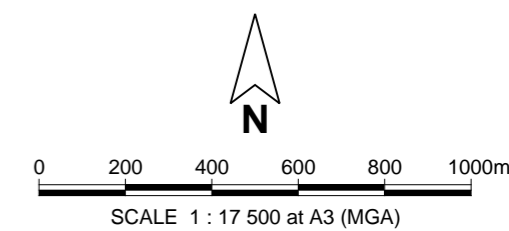
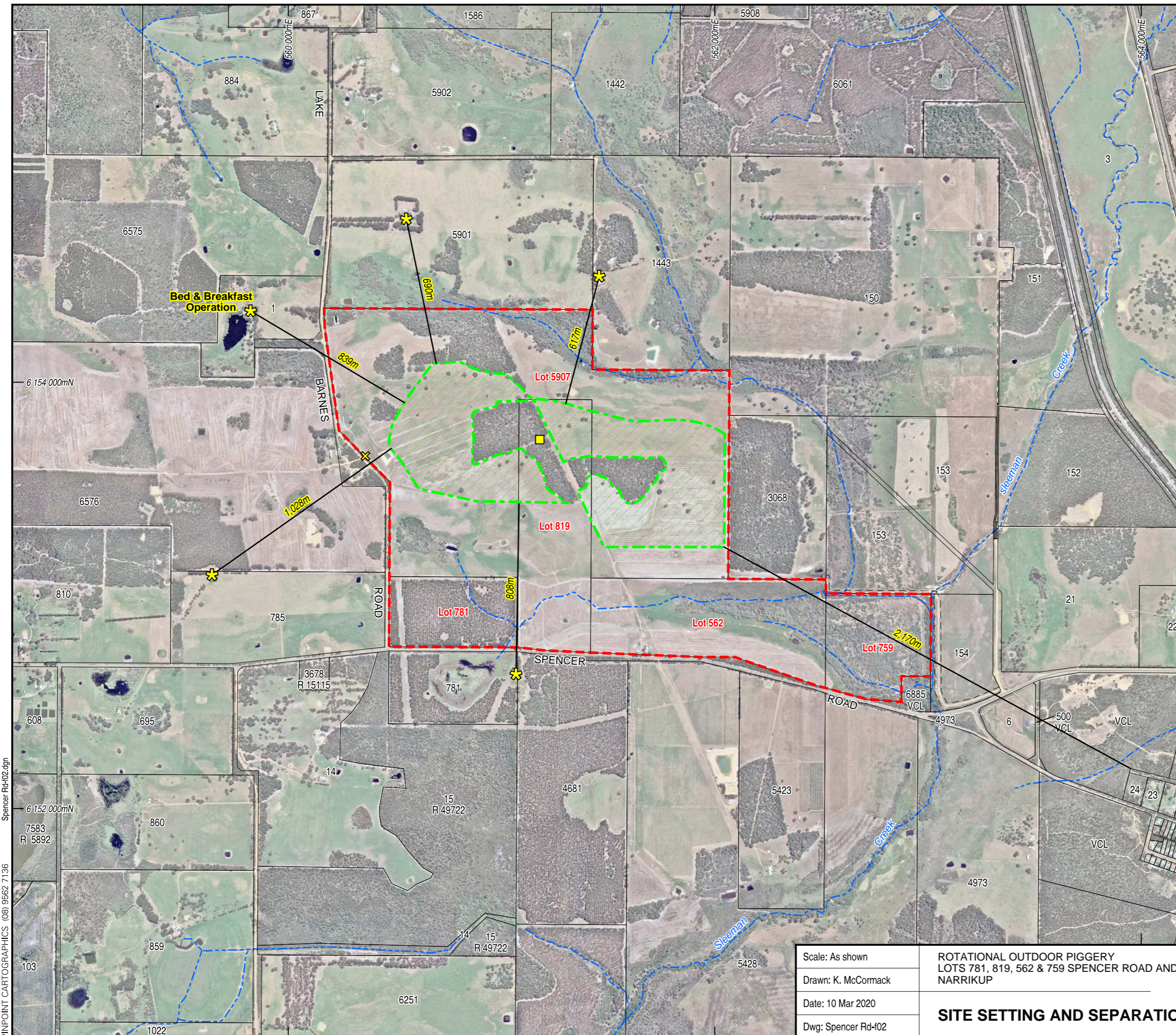
ROTATIONAL OUTDOOR PIGGERY
 LOTS 781, 819, 562 & 759 SPENCER ROAD AND LOT 5907 LAKE BARNES ROAD
 NARRIKUP

SITE LAYOUT

Figure 1



PINPOINT CARTOGRAPHICS (08) 9562 7136
 Spencer Rd-f01.dgn



- Legend**
- - - Site Boundary
 - Cadastral Boundary
 - - - Easement Boundary
 - - - Watercourse
 - Rotational Outdoor Piggery Area
 - ✕ Access Point to Rotational Outdoor Piggery Area
 - Burial Pit Location
 - ★ Residence

CADASTRAL SOURCE: Landgate, January 2020.
 AERIAL PHOTOGRAPH SOURCE: Google Earth, flown October 2017.

Scale: As shown
 Drawn: K. McCormack
 Date: 10 Mar 2020
 Dwg: Spencer Rd-f02

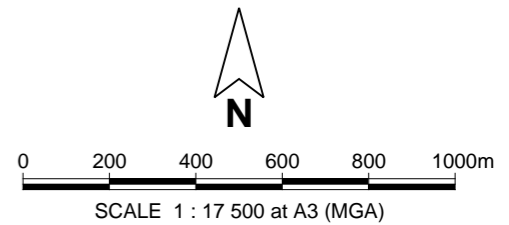
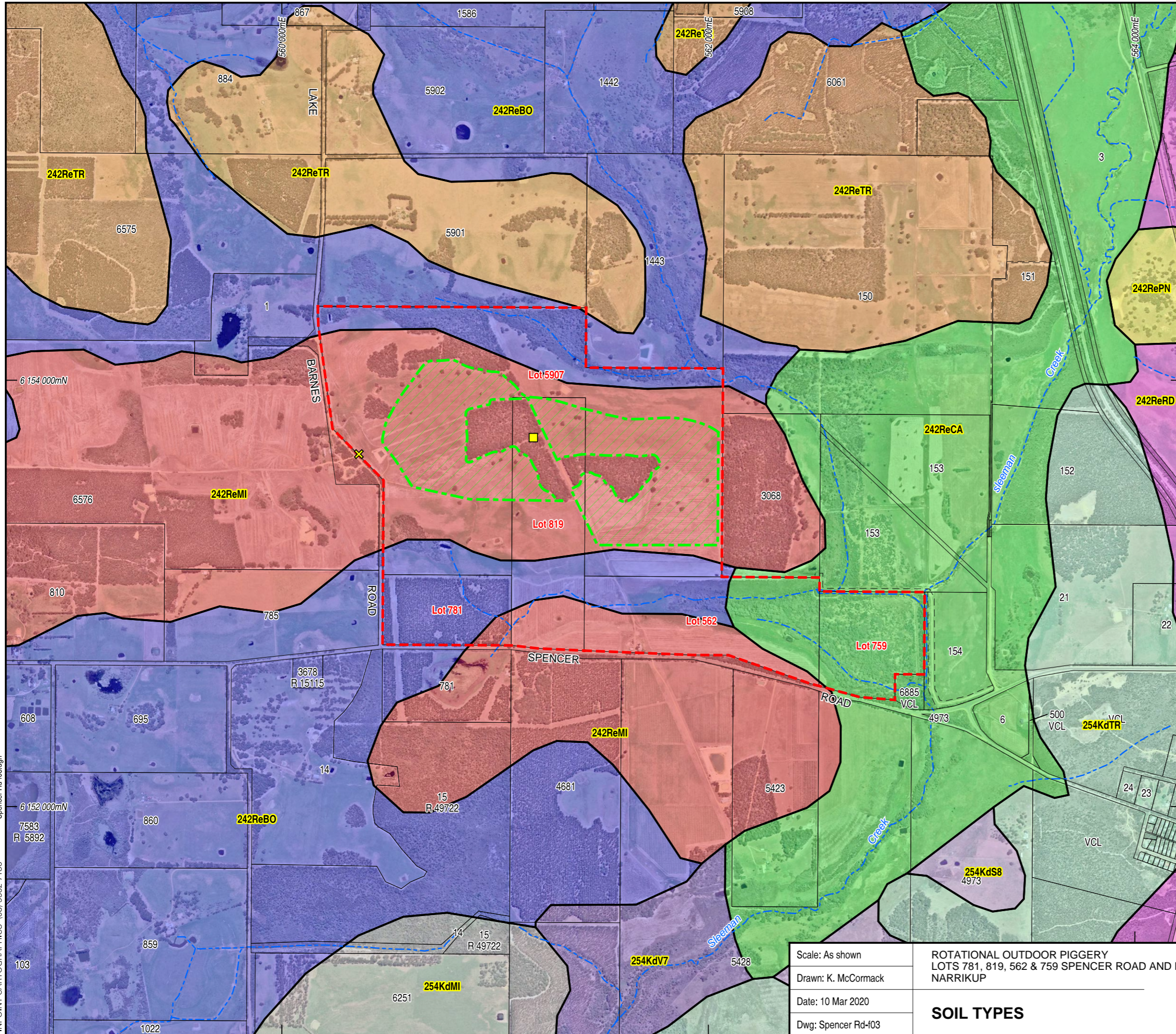
ROTATIONAL OUTDOOR PIGGERY
 LOTS 781, 819, 562 & 759 SPENCER ROAD AND LOT 5907 LAKE BARNES ROAD
 NARRIKUP

SITE SETTING AND SEPARATION DISTANCES

Figure 2



PINPOINT CARTOGRAPHICS (08) 9562 7136
 Spencer Rd-f02.dgn



- Legend**
- - - Site Boundary
 - Cadastral Boundary
 - - - Easement Boundary
 - - - Watercourse
 - Rotational Outdoor Piggery Area
 - Soil Type Boundary
 - 242ReRD** Soil Type
 - X Access Point to Rotational Outdoor Piggery Area
 - Burial Pit Location

PINPOINT CARTOGRAPHICS (08) 9562 7136 Spencer Rd-f03.dgn

CADASTRAL SOURCE: Landgate, January 2020.
 SOILS SOURCE: Dept of Agriculture, November 2004.
 AERIAL PHOTOGRAPH SOURCE: Google Earth, flown October 2017.

Scale: As shown
 Drawn: K. McCormack
 Date: 10 Mar 2020
 Dwg: Spencer Rd-f03

ROTATIONAL OUTDOOR PIGGERY
 LOTS 781, 819, 562 & 759 SPENCER ROAD AND LOT 5907 LAKE BARNES ROAD
 NARRIKUP

SOIL TYPES

Figure 3



APPENDIX A:

Planning Principles Checklist and APIQ Standards

2 Planning Principles

The following planning principles can apply to new developments, expansions or changes in material use at piggeries. The first step in planning involves the identification of any land use or zoning issues from local government, and the state government agencies responsible for piggery licensing and approval, water licensing, soil conservation and vegetation clearing. Consultation with the relevant agencies, ideally through a pre-lodgement, on-site meeting, helps to determine if the site is suitable, and the major issues to be addressed in an application. These issues are listed below in a checklist.

The next step is to gather and compile the information. As the National Guidelines provide recommended siting, design and management information, they can be used to assemble the supporting information for a piggery development application. Submission of application forms and supporting information, advertising the development and formal assessment, will follow. For large or complex applications, professional assistance may be necessary.

ISSUES	CHECK
Applicant details	
Site description (including plans) and assessment	
Real property description	
- Land tenure	
- Land area	
- Cadastral plan	
Land zoning, and zoning of the surrounding land	
Climatic data	
- Median annual rainfall	
- Average monthly rainfall	
- Rainfall intensity data (1-in-20-year design storm, 1-in-20-year 24-hour storm)	
- Average monthly evaporation	
- Monthly maximum and minimum temperatures	
- Wind speed and direction	
Soil description for the piggery complex site (including analysis of basic physical properties) and reuse areas (including analysis of basic chemical and physical properties)	
Description of groundwater resources and geology of the site	
- Details of any bores on the subject property	

PLANNING PRINCIPLES (continued)

ISSUES	CHECK
- Analysis of the chemical properties of groundwater for use in piggery	
- Details of any licenses held	
Description of surface water resources on the property or in the vicinity of property	
- Analysis of the chemical properties of surface waters for use in piggery.	
- Details of any licenses held	
Description of the current vegetation of the site and the extent of any proposed clearing	
Identification of any items, sites or places that may have cultural heritage significance	
Description of the proposed piggery operation	
Total pig or standard pig unit (SPU) numbers	
- herd composition	
- numbers and weights of incoming and outgoing stock	
- sources of stock	
Description of housing and layout plans	
Water requirements for drinking, cooling, cleaning and shandying with effluent, and water sources and quality	
Bedding requirements and bedding sources	
Feed requirements, sources and storage areas	
Staff numbers	
Hygiene practices	
Prediction of manure production and mass balance estimate of the nutrient content of solid and liquid by-products	
Design of effluent collection, pre-treatment and treatment system, including plans	
Sizing and proposed management of the reuse areas, including location, area, method, frequency and general management of spreading/irrigation activities	
Description of carcass management or disposal, including plan for mass mortalities	
Calculation of traffic numbers and consideration of access and road safety. There is also a need to negotiate with state or territory and local governments regarding road upgrading and maintenance responsibilities	

PLANNING PRINCIPLES (continued)

ISSUES	CHECK
Environmental impact assessment	
Community amenity impacts - particularly odour, dust, noise, traffic Calculate separation distances to sensitive receptors	
Surface water impacts – quality and availability for other potential users	
Groundwater impacts – quality and availability for other potential users	
Vegetation impacts – effects of clearing on rare and threatened species and communities	
Impacts on items, sites or places of cultural heritage significance	
Impacts to soils of reuse areas	
Summary of design and management features to minimise adverse environmental impacts	
Proposed environmental monitoring and reporting	
Environmental Management Plan (EMP) - An EMP focuses on the general management of the whole farm, taking into account the environment and associated risks. It should document design features and management practices; identify risks and mitigation strategies; include ongoing monitoring to ensure impacts are minimised; and processes for continual review and improvement	
Plans including:	
<i>Topographic plan</i> - showing watercourses and drainage lines; flood lines, protected land; and location of nearby residences	
<i>Recent aerial photograph</i>	
<i>Farm plan</i> – showing current land uses; proposed piggery complex location; proposed carcass composting or burial site; proposed reuse areas; on-farm roads; location of on-farm bores; and location of any soil conservation or drainage works	
<i>Piggery complex layout plan</i> - including location of by-products treatment and storage facilities	
<i>Effluent treatment ponds plan</i> - (if applicable)	
<i>Separation and buffer distances plan</i> - showing location of piggery complex (including feed storage; and by-products storage and treatment facilities) and reuse areas; and distances to sensitive land uses e.g. houses and towns, as well as buffers around sensitive natural resources	

1.2 Free Range Production Requirements

Standard	The piggery production system complies with the APIQ✓ [®] definition and standards for 'Free Range' (FR).
Performance indicators:	
<p>A. Weaners and growers and the sows from which they were bred have access to paddocks at all times for their entire life.</p> <p>Where pigs are confined temporarily for vaccinations, mating or under veterinary advice, systems are in place which support the need for confinement.</p>	
<p>B. Shelter is available to provide protection from the elements at all times.</p> <p>Steps are taken to minimise the risks to pigs from predators.</p> <p>All pigs are able to move freely in and out of shelter provided.</p> <p>Bedding is provided in the shelters.</p>	
<p>C. Suitable paddocks with rooting and/or foraging areas are available to pigs at all times.</p> <p>Wallows are provided where state regulations and the season permits.</p>	
<p>D. Shelter provided for weaners and growers meets the space allowance standards of the <i>Model Code</i>, 3rd edition, 2007, Appendix 3, Table 5.</p>	
<p>E. Shelter for dry sows in groups, lactating sows with piglets and boars meet the space allowance in the <i>Model Code</i>, 3rd edition, 2007, Appendix 3, Table 8.</p>	

1.2.1 Soil Monitoring Standard

Standard	<p>Sampling and analysis of soils is either:</p> <ul style="list-style-type: none"> - Done in accordance with the conditions of a licence, approval or consent that requires specific soil monitoring but at least every two years; OR - Done before pigs move onto that land if the pig phase is expected to exceed 24 months in length; AND - At the end of any 24 month period in which pigs are stocked on an area for any length of time and at the end of each subsequent 24 months that includes a pig phase; AND - Samples are collected from the expected nutrient-rich area of each block of paddocks.
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Performance indicators:

A. Soil sampling produces a set of samples that is representative of the expected nutrient-rich area of each block of paddocks¹ by:

- drilling at least ten holes from dispersed locations between the shelter/s and the feeding and watering points from a block of paddocks; **AND**
- bulking the samples of soils collected from common depths to produce a single composite sample for each depth from all blocks of paddocks sampled (i.e. a bulked top soil, subsoil and profile sample).

B. Soil sampling occurs

- before the commencement of each pig phase that is expected to exceed 24 months in length; **AND**
- at the end of any 24 month period in which pigs are stocked on an area for any length of time; **AND**
- at the end of any subsequent 24 month period that includes a pig phase.

C. Soil sampling depths and analysis parameters are either in accordance with the conditions of a planning or development consent, approval, permit or licence; **OR**

if not stipulated, in accordance with the following:

Soil test parameter	Depth
pH	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone
Electrical conductivity	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone
Nitrate-nitrogen	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone
Available phosphorus	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone
Phosphorus buffer capacity or phosphorus sorption index	0-0.6 m OR 0 m to base of soil profile OR 0 m to base of root zone
Potassium	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone
Organic carbon	0-0.1 m
Exchangeable cations and CEC	0-0.1 m 0.3-0.6 m OR bottom 0.3 m of soil profile OR 0.3 m to base of root zone

¹ A block of paddocks is defined as a group of adjacent paddocks used simultaneously to run pigs. For piggeries that operate with a radial paddock system, one radial would constitute a block of paddocks. Similarly, if a piggery uses eight adjacent rectangular paddocks at a time this would constitute a block of paddocks.

1.2.2 Nutrient Management Standard

Standard	<p>If the pig phase is expected to last for 24 months or longer, the results of soil testing show that soil nutrients are at suitable levels before the pigs move onto a land area; AND</p> <p>The results of soil testing undertaken at the end of any 24 month period that includes a pig phase show that soil nutrients are at suitable levels for the area to be used for ongoing or subsequent pig phases.</p>
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Performance indicators²:

A. Before the commencement of a pig phase expected to exceed 24 months in length, the results of soil testing show that:

- the soil properties are below the trigger values suggested as indicators of sustainability in section 17.5.4 of the *APL National Environmental Guidelines for Piggeries, Second Edition (Revised)* Published in 2011; **OR**
- the soil properties are similar to; i.e. no more than 30% greater³ than those of a representative background plot⁴; **OR**
- the soil properties are satisfactory to the licensing authority or an independent soil scientist or agronomist⁵.

B. The results of soil testing undertaken on areas that have included a pig phase over any part of any 24 month period show that:

- the soil properties are below the trigger values suggested as indicators of sustainability in section 17.5.4 of the *APL National Environmental Guidelines for Piggeries, Second Edition (Revised)* Published in 2011; **OR**
- the soil properties are similar to; i.e. no more than 30% greater³ than those of a representative background plot; **OR**
- the soil properties are satisfactory to the licensing authority or an independent soil scientist or agronomist.

2 A Nutrient Management Plan (NMP) is not specifically included as a Performance Indicator. However, it is valuable to develop and implement a NMP to ensure the soil nutrient properties required by the Performance Indicators can be achieved.

3 APIQ[✓]® FR and OB Standards Guide for Producers and Auditors.

4 A representative background plot is an area of land that has a similar soil type and is physically close to the land being monitored, that is sampled and analysed at the same time, to provide a basis for comparison when interpreting soil test results. It should not have been used for outdoor pig production, irrigated with effluent or spread with manure, or recently had fertiliser applied. It is recognised that it is not always easy to find a suitable background plot. The location of the representative background plot should be carefully noted as samples should be collected from the same location each time.

5 It is the farm's responsibility to ensure that their business complies with the permit/licensing arrangements required by their state authority/local council.

1.2.3 Promoting Even Nutrient Distribution Standard

Standard	Facilities and practices are actively managed to promote dispersal of manure nutrients over the paddock area.
<p>Performance indicators:</p>	
<p>A. For breeder paddocks:</p> <ul style="list-style-type: none"> - readily movable structures that could include shelters, shade, feeding points, waterers, wallows and spray or drip cooling facilities are moved within the paddock at least every six months to promote more even manure deposition over the land; OR - feed is always delivered right along the length of a paddock perimeter fence line or dispersed over a significant part of the paddock area and feeding areas are well separated from shelters; OR - when the length of the pig phase is less than six months, readily movable structures that could include either shelters, shade, feeding points, waterers, wallows and spray or drip cooling facilities are located in different positions before the return of pigs to the area. 	
<p>B. For grower paddocks:</p> <ul style="list-style-type: none"> - readily movable structures that could include shelters, shade, feeding points, waterers, wallows and spray or drip cooling facilities are moved within the paddocks at least every three months to promote more even manure deposition over the land; OR - feed is always delivered right along the length of a paddock perimeter fence line or dispersed over a significant part of the paddock area and feeding areas are well separated from shelters or these feeding areas are moved to a new location at least every three months; OR - before the return of pigs to the area and when the length of the pig phase is less than three months, readily movable structures that could include shelters, shade, feeding points, waterers, wallows and spray or drip cooling facilities are moved to different positions within the paddock. 	
<p>C. If significant quantities of spent bedding are produced from shelters, this material is:</p> <ul style="list-style-type: none"> - dispersed over land within the pig paddocks that is not within the expected nutrition rich areas that are bounded by the shelters, shade, feeding points, waterers, wallows and spray or drip coolers; OR - removed from the pig paddocks for spreading on other parts of the farm or for reuse off-farm. 	

1.2.4 Land and Water Protection Standard

Standard	Land and water are protected by minimising soil erosion throughout both the pig and the crop, forage or pasture phases of the rotation; by rehabilitating the site after the pig phase; by using water protection measures; and by properly constructing and managing wallows.
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Performance indicators:

A. Land is managed to minimise soil erosion by:

- selecting sites with a flat to gentle slope; **AND**
- maintaining sufficient groundcover⁶ over paddocks as much as practical throughout both the pig and the crop, forage or pasture phases to minimise erosion; **AND / OR**
- installing and maintaining properly designed shelter belts and / or filter strips and / or contour banks in blocks of paddocks.

B. Each block of paddocks is examined:

- on completion of the pig phase; **OR**
- where the pig phase exceeds 24 months in length the paddocks are examined at least every 24 months; **AND**
- any soil erosion or structural issues that need addressing are identified; **AND**
- a plan to address these is developed and implemented within three months of the completion of the examination.

C. Where significant soil compaction has resulted from the pig phase, the site is remediated by:

- only cultivating the soil when the moisture content is between wilting point and field capacity; **AND / OR**
- growing pasture ley crops (ungrazed); **AND / OR**
- deep ripping the soil (if this is a suitable measure for the soil type); **AND / OR**
- applying gypsum to the soil (if this is a suitable measure for the soil type).

D. Removal of nutrients in stormwater runoff is minimised by:

- maintaining groundcover over paddocks throughout both the pig and the crop, forage or pasture phases; **AND / OR**
- maintaining a continuous resilient vegetative buffer strip ideally consisting of a runner developing, non-clump forming grass species at least 10 m wide immediately downslope of the entire paddock area/s; **OR**
- installing terminal ponds sized and located to catch the first 12 mm of runoff from the piggery paddocks and other land within the same local catchment area.

E. Sites selected for wallows have loam to clay soils or the base of the wallow is lined with compacted clay.

⁶ Groundcover is any material on or near the soil surface that provides protection for the soil against the erosive action of rainfall runoff or wind. It may include plant material (alive or dead), spent bedding and other cover materials providing these will not be carried away in rainfall runoff or blown away by the wind. Since attached plant material is more effective than dead plant material or other light matter lying on the soil surface it is recommended that it make up the majority of the groundcover.

F. Wallows are remediated when they are replaced and if needed within three months of completion of the pig phase by:

- deep ripping the soil; **AND / OR**
- applying gypsum to the soil (if these are suitable measures for the soil type); **AND**
- filling with soil; **AND**
- levelling to match the slope of the immediately surrounding land.

G. A forage crop or pasture is given time to establish before the commencement of a pig phase.

NOTE: Only producers who meet the full set of APIQ✓[®] FR Standards will be APIQ✓[®] FR certified. Those producers who meet Standards 1.2A to 1.2E and are able to demonstrate that they are in the process of addressing Standards 1.2.1 to 1.2.4, will be certified as Conditional APIQ✓[®] FR. A producer with Conditional APIQ✓[®] FR certification has until close of business (COB) 30 April 2014 to comply with all APIQ✓[®] FR Standards at which time APIQ✓[®] Certification Policy 9 (CP9), Producer APIQ✓[®] Certification Status and non compliance to APIQ✓[®] Standards, comes into effect.

1.3 Outdoor Bred Production Requirements

Standard	The piggery production system complies with the APIQ✓[®] definition and standards for 'Outdoor Bred' production. Production is carried-out according to accepted Good Agricultural Practices (GAP) for the production of Outdoor Bred pigs.
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Performance indicators:

Sows and piglets are managed as per Free Range Standards until weaning (see 1.2 B – E)

A. The piglets up until weaning and the sows from which they are bred have access to paddocks at all times.

Where pigs are confined temporarily for vaccinations, mating or under veterinary advice systems are in place which support the need for confinement.

B. At weaning piglets are transferred to deep litter housing, intensive indoor housing, or feedlot outdoor pens for growing and/or finishing.

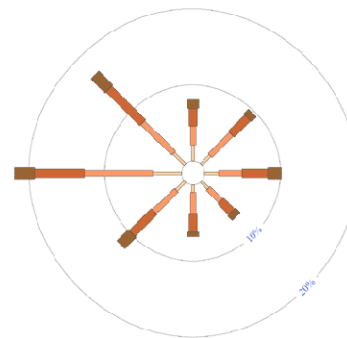
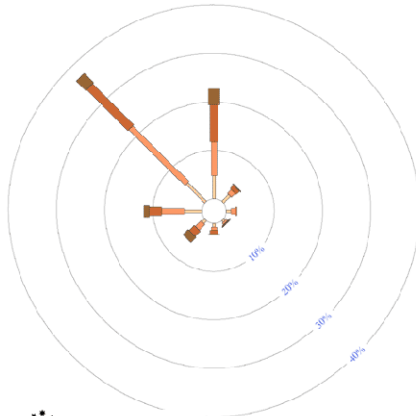
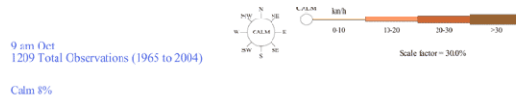
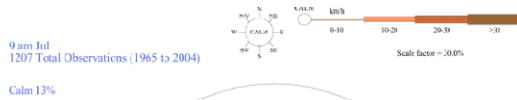
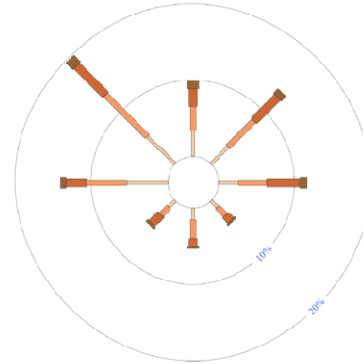
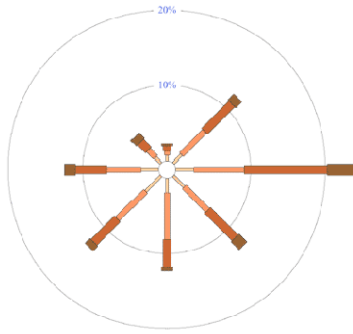
Note: Additional standards for outdoor bred piggeries are being developed and will be available once approved.

APPENDIX B:

Albany Wind Roses – Bureau of Meteorology

Appendix D: Albany Wind Roses

Wind Roses for Albany Airport at 9am



Wind Roses for Albany Airport at 3pm

