BEFORE THE HEARINGS PANEL

AT THE TIMARU DISTRICT COUNCIL CHAMBERS,

2 KING GEORGE PLACE, TIMARU CENTRAL

IN THE MATTER	of the Resource Management Act ("**the Act**")
AND	
IN THE MATTER	of the hearing of submissions on the Proposed Timaru District Plan Hearing Stream B: Rural

STATEMENT OF EVIDENCE OF HANNAH RITCHIE

FOR NEW ZEALAND PORK INDUSTRY BOARD

(NZPork)

JULY 2024

Contents

SUMMARY STATEMENT

1. This statement of evidence has been prepared in relation to a submission from the New Zealand Pork Industry Board (NZ Pork) on the Proposed Waitomo District Plan.

2. Pig farming systems in New Zealand can generally be classified as intensive or extensive, based on housing types and stocking densities. Intensive and extensive systems can differ in the type and intensity of amenity effects, with those from extensive farming systems more akin to other pastoral farming systems.

3. NZ Pork supports the proposed definitions for intensive indoor primary production, intensive outdoor primary production, and extensive pig farming. Specifically, we endorse defining an "extensive pig farm" based on the maintenance of permanent vegetation cover. This aligns with recent district plan changes in the Canterbury region and avoids the risk of low-impact farm systems being classified as "intensive" under definitions based on soil fertility or imported feed, as established in case law.

4. We support a permitted activity status for extensive pig farming under GRUZ-R1 on the basis that environmental effects controlled by the district council, primarily amenity effects, are similar to other extensive farm systems when a farm is operating to NZ Pork's Good Management Practices for Outdoor Pigs.

5. We also support a permitted activity status for Intensive Primary Production under GRUZ-R1, subject to the standards contained in GRUZ-S5. We consider that the amenity effects of intensive pig farming are well understood and can be adequately controlled by the standards proposed.

6. NZ Pork supports strong provisions for addressing reverse sensitivity issues in the GRUZ between intensive farming operations and activities that may be sensitive to their effects.

7. In my experience, reverse sensitivity effects arising from new neighbours moving near an existing farm and complaining about odour is the most prevalent environmental issue facing the New Zealand pork sector.

8. In several recent examples, new neighbours have moved near established piggeries and consistently lodged complaints with the regional council about

piggery odours. These complaints persist even when the council compliance officers repeatedly find no breach of the rules. Such situations place a significant burden of stress on farmers and can threaten the continued viability of their operations, despite the absence of wrongdoing on their part.

9. NZ Pork supports the use of setback distances between intensive primary production and sensitive activities as a simple method to reduce the risk of reverse sensitivity, thus providing farms with more operational security.

10. Providing accommodation on site for workers is an important component of many commercial pig farming operations, which often require the onsite provision of farm workers accommodation to provide onsite farm assistance, animal husbandry and security.

11. Pigs have a greater need for shelter and their social and dietary requirements are more complex than sheep and cattle. Such an intensive role often necessitates pig farmers providing on-site accommodation for workers, so staff can be present to provide the round-the-clock, year-round care and services needed on-farm.

QUALIFICATIONS AND EXPERIENCE

12. My name is Hannah Ritchie. I am currently employed as the Environment and Planning Manager at NZ Pork. Prior to this role, I held the position of Senior Environmental Advisor at NZPork from 2019 – 2023. Additionally, I have worked as a policy advisor for the Foundation for Arable Research and spent seven years in resource management roles at Canterbury Regional Council.

13. I have a Bachelor of Science in Environmental Science from the University of Southampton and I have recently completed a Postgraduate Certificate in Environmental Management at Lincoln University. I have also completed courses in Intermediate Sustainable Nutrient Management and Agricultural Greenhouse Gases at Massey University.

14. While this is not a hearing under the Environment Court, I have read the Environment Court's Code of Conduct for Expert Witnesses, and I agree to comply with it. My qualifications are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise, except

where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

INTRODUCTION

15. NZPork is a statutory Board funded by producer levies. It actively promotes "100% New Zealand Pork" to support a sustainable and profitable future for New Zealand grown pork. The Board's statutory function is to act in the interests of pig farmers to help attain the best possible net ongoing returns while farming sustainably into the future.

16. The New Zealand pig industry is a highly productive specialised livestock sector, well integrated within New Zealand's primary production economic base. It draws on both downstream and upstream inputs and economic activity from New Zealand's rural sector including feed inputs, equipment and animal health supply, transport, slaughterhouse facilities plus further processing. Currently, New Zealand's pig farmers produce around 38% of pig meat consumed by the domestic market, with the other 62% provided by imported pig meat from a range of countries. Nationally there are less than 80 commercial pork producers, comprising a relatively small but significantly integrated sector of the New Zealand agricultural economy.

17. There are currently three commercial pig farms and one major pork processing plant in the Timaru District. Approximately 50% of all commercial pig farms are based in the Canterbury region. The dry climate and free-draining soils, coupled with ready access to feed supply and processing facilities make the Timaru district an attractive location for new pig farms that may seek to establish in the future.

18. New Zealand pork producers are facing several economic, social and environmental challenges to remain viable. The contribution of imported pork to New Zealand's total pork consumption has increased significantly in recent years, placing further demands on producers who have responded by developing increasingly efficient systems.

TYPES OF PIG FARMING SYSTEMS IN NEW ZEALAND

19. A wide range of farming and housing systems are used to raise pigs. Breeding units carry breeding sows, their replacements, and boars. The management of the breeding unit is on a regular weekly flow or batch system where at any time there will be gestating sows, sows about to be mated, boars, replacement gilts, and lactating sows and litters on hand.

20. Pigs weaned (known as weaners) from the breeder unit can move to a weaner/nursery facility on the same site or be sold or transferred to another farm. Newly weaned pigs remain in the nursery for up to 6 weeks and are then transferred to a grower/finisher facility where they are grown until point of sale at about 20 weeks of age. At each stage the housing, feed, environmental and husbandry needs are different, and this will determine the type of accommodation required to house pigs.

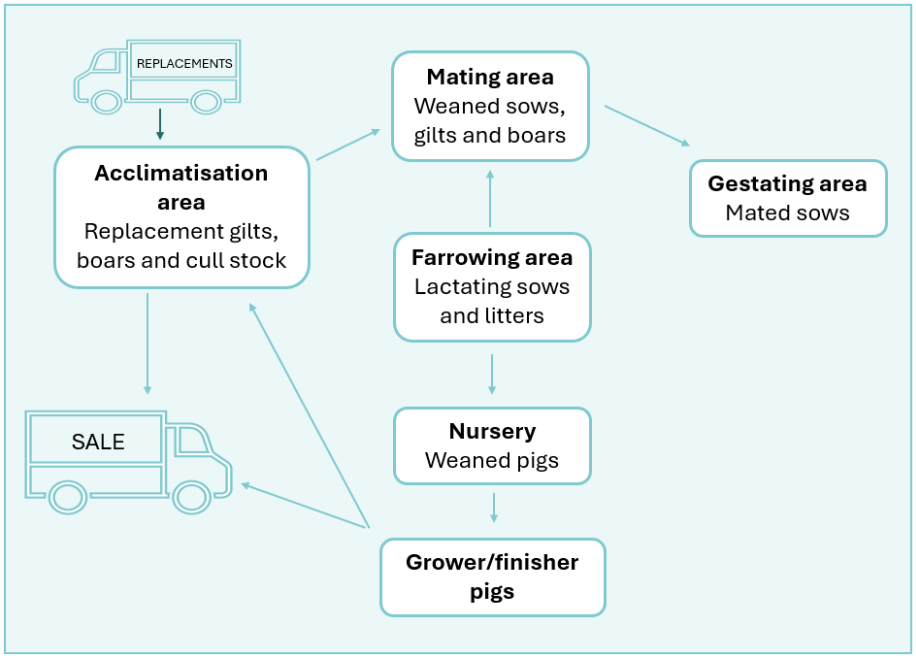

Figure 1: Schematic layout of a pig farm structure and flow

21. Pig farming systems can be broadly separated into two categories: Indoor pig farming and outdoor pig farming.

22. Approximately 55% of New Zealand's commercial pig herd are farmed indoors. Animal housing for indoor pig farms can consist of different styles of buildings, constructed from timber or steel framing with varying amounts of

insulation. Walls can be constructed of concrete panels, concrete blocks, plywood and 'freezer panel' walls with corrugated iron or 'freezer panel' roof construction. Ventilation systems include fully enclosed controlled environments to more reliance on natural ventilation using curtains and roof vents. Pole barns, utility implement sheds or hooped framed shelters covered with a waterproof fabric are often used in conjunction with straw or sawdust bedding as a deep litter system. The different housing systems, have different systems used for manure collection, storage, and utilisation via application to land.

23. Images 1 – 4 show various types of indoor housing facilities.

Image 1: Indoor group housed dry sows

Figure 2: Sow and litter in indoor farrowing facility

Image 3: Indoor group housing for growing pigs on a fully slatted floor

Image 4: Indoor group housing for weaned pigs on straw bedding

24. Outdoor pig farms typically have outdoor-based breeding herds and an indoor-based housing system on straw or sawdust for bedding for growing pigs. Breeding pigs are housed in fenced paddocks with a weatherproof hut or shelter available to protect pigs and their young and provide access to shade from direct sunlight.

25. Dry sow huts/shelters are designed to accommodate groups of breeding animals. These come in a variety of forms, as shown in Images 4 and 5 below. At farrowing time, sows are moved to a separate area and give birth in individual huts, as shown in Image 6 below.

Images 4 and 5: Examples of outdoor housing for dry sows.

Image 6: Sow and litter in an outdoor farrowing paddock, with movable farrowing huts visible in the background.

26. Outdoor farm systems occur almost exclusively in the Canterbury region, due to the requirement for low rainfall, flat topography and light soils.

ENVIRONMENTAL MANAGEMENT ON PIG FARMS

27. Pig farmers in New Zealand have a firm grasp of environmental issues and demonstrate a high level of innovation and environmental stewardship. The New Zealand pork industry has committed significant time and resources to projects centred on environmental initiatives, including the development and implementation of Environmental Guidelines and Nutrient Management

Guidelines which provide a reference for acceptable practices for managing the environmental impacts of pork production.

28. Good Management Practice (GMP) Guidelines for Outdoor Pigs were developed by NZPork, working in conjunction with Landcare Research and Environment Canterbury, to primarily manage nutrient, sediment and pathogen loss to waterways from farms. The guidelines include stocking rates for outdoor sows and grower pigs, and minimum acceptable levels of groundcover. The level of groundcover is a key determinant in managing contaminant losses from outdoor pig farming, with losses increasing as groundcover decreases. For this reason, the maintenance of groundcover is a foundation of good environmental management on outdoor pig farms.

29. The nature and size of our industry and our commitment to best practice, means we have a small environmental footprint relative to other parts of the primary production sector. We encourage our farmers to adopt good management practices, ensuring they are stewards of the environment, sustainably managing water, land and nutrients to preserve and enhance the environment for future generations.

30. Pigs, being monogastric animals, produce significantly lower levels of enteric methane emissions compared to ruminant animals like cows or sheep.

31. Consequently, we see the potential for growth in pork production as consumers and regulators seek out strategies to reduce greenhouse gas emissions from agriculture and manage the environmental impact of livestock farming and meat production.

32. The potential growth prospects of the industry underscore the need for a practical and effective planning framework within the Timaru District Plan for pig farming operations.

NZ PORK SUBMISSION

Definitions for pig farming activities.

33. NZ Pork supports the definition of Intensive Primary Production, Intensive Indoor Primary Production and Extensive Pig Farming as proposed.

34. Our support is based on the adoption of similar definitions in other recent district plan updates (discussed further below) and legal precedent, including the Environment Court's consideration of whether outdoor pig farming should be defined as an intensive farming activity in the case of Bates v Selwyn District Council[1].

35. This case provides useful context on the evolution of definitions related to pig farming in district planning regimes and so I will provide a summary here.

36. The Bates family operated an outdoor piggery in the Selwyn District, involving a maximum of 235 sows and small animal shelters. Some food was produced on-site, however, most pig feed was brought in from off-site.

37. The Bates believed that their operation was permitted under the district plan and did not apply for a resource consent. After receiving a complaint, the Selwyn District Council requested that they apply for a consent. When they did not comply, abatement notices were issued to cease operations.

38. The Bates appealed the abatement notices in the Environment Court, arguing that their operation did not constitute "intensive livestock production". The court was then tasked with interpreting this definition and determining if the Bates' operation fit this classification.

39. At the time, the definition of Intensive Livestock Production in the Selwyn District Plan was:

> *Means the use of land and buildings for the commercial rearing and management of livestock where the viability of that activity is not dependent on the soil fertility of the land on which that activity is undertaken*.

40. The Court found that the piggery's reliance on off-site feed, rather than the soil fertility of the land, meant that the operation did meet the definition of intensive livestock production.

41. While I agree with the Court's interpretation of this definition, the case did raise questions on the appropriateness of defining intensive operations based on the requirement to import feed to the site, for several reasons.

[1] Bates v Selwyn District Council [2014] NZEnvC 32.

42. Firstly, such an interpretation could capture any farming operation that, at some point, requires supplementary feed to be bought into the site. This could include most types of pastoral farming.

43. Secondly, pigs are monogastric animals requiring a varied diet. Any amount of pigs on the land, irrespective of the actual 'intensity' of the system, will require food to be brought onto the site to meet the dietary needs of the animals. Therefore, reliance on imported feed is not an appropriate measure of the intensity, or the likely effects, of any pig farming system.

44. We note that the definition under consideration in Bates vs Selwyn District Council case is similar to the definition of Factory Farming in the Operative Timaru District Plan, which reads:

> *A farm or unit of production in which the process is carried out largely indoors or in a restricted space and which is not dependent on the soil characteristics of the site on which it is situated and includes mushroom farming, poultry farming, feed lots and intensive pig farming.*

45. For the reasons noted above, NZ Pork supports a move away from this definition to a specific definition of Extensive Pig Farming in the proposed plan, which is as follows:

> *"means the keeping of pigs outdoors on land at a stock density which ensures permanent vegetation cover is maintained and in accordance with any relevant industry codes of practice, and where no fixed buildings are used for the continuous housing of animals".*

46. I note that this is the same as the definition of Extensive Pig Farming in the Canterbury Regional Air Plan.

47. Using the measure of vegetation cover to determine whether a system is defined as intensive or extensive is also consistent with other recent district plan updates in Canterbury, including the Hurunui District Plan, the Partially Operative Selwyn District Plan and the Proposed Waimakariri District Plan, as referenced in the evidence of Mr Vance Hodgson for NZ Pork. These three districts collectively account for 45% of the country's total pork production.

48. The presence or absence of groundcover is heavily influenced by the stocking rate in an outdoor piggery operation. In turn, the stocking rate is a heavy influence on the potential amenity effects, including dust and odour, produced by the activity.

49. Therefore, the extent of groundcover can be linked to the different amenity effects expected from high intensity or low intensity operations, and therefore, the level of control that the plan should exert on such activities.

Activity status for pig farming in the GRUZ

50. In the absence of a specific rule for Extensive Pig Farming in the GRUZ, we consider that this activity would fall under GRUZ-R1 as a permitted activity.

51. NZ Pork supports a permitted activity status for extensive pig farming under GRUZ-R1 on the basis that environmental effects controlled by the district council, primarily amenity effects, are similar to other extensive farm systems when a farm is operating to NZ Pork's Good Management Practices for Outdoor Pigs.

52. While our submission sought an exclusion from the 10m setbacks in the GRUZ-S3, this is workable for the sector. However, we note the S42A recommended amendment to GRUZ-R1, as follows:

> *PER-4*
>
> *For milking sheds and buildings used to house or feed stock are located at least:*
>
> 1. *200m from any land in the Māori Purpose Zone, Settlement Zone and Residential Zones; and*
> 2. *100m from the notional boundary of an existing sensitive activity on a separate site under different ownership.*

53. If the intent of the recommendation is to capture permanent and movable buildings of any size that house stock then this may significantly impact existing farmers and new entrants. This will also likely impact a farm's ability to provide necessary animal shelter and husbandry requirements and sterilise supporting activities from large parts of primary production land.

54. If the s42A recommendation is accepted we suggest that an exclusion is provided for moveable pig shelters, including farrowing huts 10m2 in area and less than 2m in height as the case in the Selwyn District in the context of building coverage limitations.

55. We support a permitted activity status for Intensive Primary Production under GRUZ-R1, subject to the standards contained in GRUZ-S5. We consider that the amenity effects of intensive pig farming are well understood and can be adequately controlled by the standards proposed.

56. To illustrate the varying amenity effects of different pig farming systems, Table 1 presents information on potential sources of odour and mitigations for both indoor and outdoor pig farming operations.

	Indoor System	Outdoor System
Factor	Mitigation	
Diet composition	Feed composition is closely matched to pig's nutritional requirements, especially protein to minimise the amount of odour precursors subject to anaerobic decomposition of protein in the manure. This means 2 or more and appropriate diets and feed levels for the physiological (reproductive) states of animal e.g. separate gestation diet and lactating diet and for growing pigs separate weaner, grower and finisher diets.	Feed composition is closely matched to pig's nutritional requirements, especially protein to minimise the amount of odour precursors subject to anaerobic decomposition of protein in the manure. This means 2 or more and appropriate diets and feed levels for the physiological (reproductive) states of animal e.g. separate gestation diet and lactating diet and for growing pigs separate weaner, grower and finisher diets.
Treatment ponds	Maintain consistent effluent flow and sufficient active treatment volume. Maintain pH of 6.8-8.0 for effectiveness of microbial decomposition.	Does not occur

	Covering ponds can significantly reduce odour emissions.	
Solid Separation	Maintain equipment to ensure effectiveness. Capture separated solids within a controlled drainage area with an impermeable base. Regularly transfer wet solids to the manure storage area or re-use area.	Does not occur
Slurry storage	Only stir slurry when emptying sumps or ponds	Does not occur
Slurry drains/pipes	Where possible have covered sumps or pits and use pipes rather than open drains.	Does not occur
Cleanliness of yard and raceway areas	Manure on yards and raceways following stock handling and moving, hosed away directly on completion.	Does not occur in paddocks
Housing and Management	Ventilation systems designed for correct air flow to prevent build-up of odours. All pens and stock checked for cleanliness on a daily basis. All pens cleaned between batches. Potential odorous spillages such as feed and manure cleaned up immediately. Stocking density maintained at or below	Pigs rotated around clean paddocks. Ground cover maintained. Feed wastage removed. Stocking density is very light compared to Welfare Code requirements.

	those in Welfare Code	
Under slats	Flush out regularly	Does not occur
Pull plug pits	Flushed at a time to minimise transfer of odorous emissions	Does not occur
Spreading manure to land	Spread at a time to incorporate into crops. Spread with a favourable wind direction	Does not occur. Pigs deposit dung and urine daily
Spreading of slurry to land	Spread at a time when plants utilise nutrients. Spread with a favourable wind direction. Use low trajectory splash plate or irrigator. Spreading at a time of favourable weather forecast.	Does not occur
Feed storage	Dry feeds and feed ingredients all stored in covered bins and hoppers.	Dry feeds and feed ingredients all stored in covered bins and hoppers.

Table 1: Odour sources and potential mitigations for indoor and outdoor pig farm systems

Reverse sensitivity and incompatible activities

57. In my experience with NZ Pork, I have found that reverse sensitivity issues arising from odour complaints are the biggest single resource management issue in the pig farming sector.

58. Complaints seem to be more prevalent in areas where rural lifestyle developments have gradually encroached on existing pig farming operations. Subdividing land into smaller lots means pig farmers have more neighbours. Moreover, the nature of complaints received by both farmers and councils

indicates that some rural lifestyle residents have expectations regarding amenities that don't align with the realities of a productive rural environment.

59. Table 1 outlines practices farmers can adopt to reduce odour emissions from intensive pig farming. However, there may be instances or conditions where it is not feasible to contain all odour emissions within the property boundary. Moreover, this expectation would not be reasonable in a working rural environment.

60. Rules 7.65-7.66 and 7.69 in the Canterbury Air Regional Plan regulate the discharge of contaminants, including odours, into the air from intensive pig farming. Each rule includes the condition that:

> *"1. The discharge of odour does not cause an offensive or objectionable effect beyond the boundary of the property of origin, when assessed in accordance with Schedule 2".*

61. As the number of sensitive receptors near pig farms increases, the likelihood of offensive or objectionable odours also rises. Even if complaints about such odours are not substantiated, they can still create pressure that threatens the continued operation of these farms.

62. An example of such an occurrence is a farm in the Selwyn District near Rolleston, which houses growing pigs in an intensive indoor facility. This farm has been running for over 40 years, with infrastructure largely unchanged since the 1990s.

63. The land surrounding the pig farm has seen an increase in rural-lifestyle developments, with the farm now bordered mostly by 4-hectare blocks. Recently, a new owner bought the property next to the farm. Within the last 18 months, this new owner has lodged over 150 complaints with Environment Canterbury regarding odour from the farm, leading to more than 25 visits by compliance officers. Out of these visits, only three times was the odour deemed offensive or objectionable. However, the constant scrutiny from both the neighbour and the regional council has severely impacted the farmers' ability to operate. Consequently, the farmer no longer believes the farm is viable in its current location.

64. This is not an isolated case. Another indoor pig farm, also in the Selwyn District, received more than 150 complaints in one year following a new neighbour moving into the area. In this case, Environment Canterbury did not substantiate any of the complaints, and yet, the complaints persisted. The farmer spent significant time and money on odour mitigation practices and technologies which reduced the odour complaints, but the complaints only ceased when the farmer was able to demonstrate to the regional council that the neighbour had a 'no complaint' covenant registered on their property.

65. In my opinion, regional rules managing odour discharges from pig farming activities are not sufficient to manage the risk of these types of complaints arising from reverse sensitivity. I submit that the most effective way to reduce such incidents is to reduce the potential for reverse sensitivity to occur in the first place.

66. The potential for piggery odours to affect the surrounding environment depends on various site-specific factors, including aspects related to the piggery itself and the landscape or natural features of its surroundings.

67. Multiple potential odour sources exist on a pig farm, including pig housing buildings, effluent holding tanks or ponds, compost piles, and effluent discharge fields.

68. The age of the facilities can also influence odour potential, with newer facilities incorporating more modern designs to mitigate odour.

69. Natural features such as wind direction and velocity, topography, and vegetation play a role in odour dispersal. For example, odour dispersal conditions are more favourable when the odour source is on flat land with few obstacles nearby.

70. NZ Pork advocates for the use of minimum setback distances from existing intensive primary production activities to new sensitive activities as a simple method to reduce the risk of reverse sensitivity, thus providing farms with more operational security.

71. Reciprocity of setbacks for new intensive primary production activities to existing sensitive activities is also supported by NZ Pork to prevent new farms from establishing in unsuitable locations. Once buildings and other activities

associated with intensive pig farming are established, it can be very expensive to try and mitigate odour. The appropriate location of facilities at the outset can reduce the risk of offensive or objectionable odour occurring.

Workers Accommodation

72. Providing accommodation on site for workers is an important component of many commercial pig farming operations, which often require the onsite provision of farm workers accommodation to provide onsite farm assistance, animal husbandry and security.

73. Farming pigs is very different from farming other livestock. Stockpersons are far more intimately involved with the care of pigs than other livestock. Pigs have a greater need for shelter and their social and dietary requirements are more complex than sheep and cattle. Animal care is a daily responsibility, as pigs are not like ruminants which derive their nutrition from grass: pigs are monogastric like humans, and require a balanced diet fed daily.

74. The size of the operation will determine the amount of day-to-day 'hands-on' involvement. As a rule of thumb, one staff member is required for every 100 sows.

75. Most farms operate similar, regular (often weekly) production cycles with births, weanings, matings and sales occurring all year around. On smaller farms, the 'pig farmer' role requires the person to operate in all areas of the farm, including providing for 7-day-a-week coverage. As the farms grow, the 'pig farmer' role may specialise more in one of the five main facilities on the farm (farrowing, dry sow and mating, nursery, weaner/grower and feed preparation,) and may operate as part of or manage a 'team' in that area.

76. Such an intensive role often necessitates pig farmers providing on-site accommodation for workers, so staff can be present to provide the round-the-clock, year-round care and services needed on-farm.

77. Pig farming in New Zealand is also heavily reliant on skilled migrant workers. For farmers employing skilled migrants, accommodation on-farm is often a component of their employment package.

Hannah Ritchie

4th July 2024