Appendix 10: Noise Management Plan

Environmental Permit Bespoke Application

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Contents

1. Introduction

This Noise Management Plan (NMP) details the methods by which the site operator at Llwyngwilym Poultry Unit will systematically assesses, reduce and prevents noise emissions from the proposed boiler chicken unit in accordance with the Environmental Permitting Regulations.

Guidance entitled *How to Comply with Your Environmental Permit for Intensive Farming* is provided by the Natural Resources Wales (NRW). This guidance document states:

"Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration."

This NMP will:

- identify and employ '*all appropriate measures'* to minimise the generation and noise and subsequent exposure / impact;
- limit exposure of people outside the site to levels of noise which would result in complaints; and

minimise the risk of unplanned *'noisy'* events which have the potential to result in off-site noise complaints.

2. Guidance

2.1 Horizontal Guidance Note for Noise

The purpose of the *Horizontal Guidance Note for Noise Assessment and Control* is to provide supplementary information, relevant to all sectors, to assist applicants in preventing and minimising emissions of noise and vibration as described in the *Sector Guidance Notes* (or the General Sector Guidance Note).

The guidance is in two parts:

> *Part 1 – Regulation and Permitting* – outlines the main considerations relating to the setting of Permit conditions and subsequent regulation of noise. Part 1 is aimed primarily at the information needs of regulators.
>
> *Part 2 – Noise Assessment and Control* – describes the principles of noise measurement and prediction and the control of noise by design, by

operational and management techniques and abatement technologies. Outline methods of noise control are provided such as:

- use of inherently quieter processes;
- selection of inherently quiet plant or "*low-noise options*";
- site layout to maximise natural screening, screening by buildings and separation distances;
- orientation of directional noise sources away from sensitive receptors; and
- noise barriers or bunding.

The document also details how noise should be managed and includes at Appendix 4 information that should be included in a NMP. Part 2 is aimed equally at the Regulator and at Operators.

2.2 Technical Guidance Note IPPC SRG 6.02 (Farming)

Technical Guidance Note IPPC SRG 6.02 (Farming) *Noise Management at Intensive Livestock Installations* (2002) sets out guidance and best practice for the assessment and management of noise at pig and poultry installations. The guidance is applicable to intensive poultry operations with at least 40,000 birds; developments which are subject to environmental permitting.

The guidance details under what circumstances a noise impact assessment may be required, and details how noise should be managed, and if required, how a NMP should be implemented.

3. Noise Management Plan

3.1 Objectives

NMP's are developed and employed to principally:

- identify and employ '*all appropriate measures'* to minimise the generation and noise and subsequent exposure / impact;
- prevent exposure of people outside the site to levels of noise which would result in complaints; and
- minimise the risk of unplanned *'noisy'* events which have the potential to result in offsite noise complaints.

This NMP serves to aid the decision-making process on the choice of controls, general site design, and operational practice in line with current industry best practice. The NMP is a working document with the specific aims of ensuring:

- noise impact is considered as part of routine operations;
- the minimisation of the risk of unplanned '*noisy*' events that could result in offsite complaints;
- noise is primarily controlled at source by good operational practices, the correct use and maintenance of plant, and operator training; and
- 'all appropriate measures' are taken to prevent or, where that is not reasonably practicable, to minimise noise emanating from the installation.

3.2 Site Setting

The site is within a grassland field around 900 metres to the south-west of the existing farmstead and around 850 metres north of Rhayader. The site is accessed via an internal access track off the B4518. The access is being improved as part of the approved unit.

Llwyngwilym lies within a rural area approximately 850 metres from edge of the town of Rhayader. There are also several individual properties in the vicinity of the site with the closest being Bryn Pedol approximately 150 metres from the site.

The closest potentially receptive sensors can be seen below (based on site area not emissions points which may be further away):

Residential
Bryn Pedol= 230m east
Beli Gof Workshop = 190m south-east
Ffos Mascal = 334m south-east
Coed yr Ardd = 230m south-west
Coed Cochion = 375m north-west

Commercial/Services
None

Public Rights of Way
Footpath 150/157
150/157 70m Passes to south-east of site on far side of existing building

Public roads
B4518 = 220m south-west

The prevailing weather/wind direction is from the west-south-west direction.

A list of discrete receptor locations modelled as part of the Noise Impact Assessment are included below;

Location	Relationship to Farm	OS Grid Reference	Approximate Distance from Application Boundary (m)
AL01 – Coed yr Ardd	None	297453, 269263	230
AL02 – Rhayader Nursery	None	297343, 269612	315
AL03 – Beili Gof	Relation	297874, 269268	190
AL04 – Bryn Pedol	None	298014, 269388	230

Figure 1 below presents the site location, red line boundary, noise monitoring locations and the nearest receptor locations.

Figure 1: Site, Monitoring and Receptor Location Plan © Google Earth

To further ensure that noise does not cause a problem to local residents in the future this NMP has been produced, as set out below.

3.3 NMP Framework

Potential sources of noise have been identified in the Amenity Risk Assessment at Appendix 7 and in this NMP.
The format of this NMP is based on the NMP requirements presented in *Horizontal Guidance for Noise Part 2 - Noise Assessment and Control* (2004), and the Technical Guidance Note IPPC SRG 6.02 (Farming) *Noise Management at Intensive Livestock Installations* (2002).

3.4 NMP Status

This NMP is a controlled document, and forms part of the site Management System. The specification for the periodic review and update of the NMP will be set out within the site Management System and will be on an annual basis, as a minimum. However, the NMP is intended to be a live document which serves as a reference during daily operations, and as such would be updated on a more frequent basis should the following occur:

- significant changes are made to the plant or operational practices;
- the EA requests that the NMP is updated, in their role as regulator; or
- complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this NMP.

3.5 Key Issues: Noise from Llwyngwilym Poultry Unit

The potential sources of noise that have been identified in the Amenity Risk Assessment at Appendix 7 and in this updated NMP are:

- Ventilation Fans;
- Fuel and Feed Deliveries;
- Feeding Systems;
- Alarm Systems;
- Bird Catching;
- Clean Out Operations;
- Maintenance and Repairs;
- Set up and Placement; and
- Standby Generator Testing.

3.6 Noise Sources Assessed

In accordance with Table 2.9.2 of *Horizontal Guidance for Noise Part 2 - Noise Assessment and Control* (2004) the noise sources identified in this NMP, are detailed

in Table 3-2. The nature of each noise is described and the contribution to the overall noise emission is presented.

Table 3-2
Noise Sources

Source of Noise	Nature of the Noise	Contribution to Overall Emission
Extraction fans per building in the poultry buildings. There will be ridge fans installed within all poultry buildings.	The fans will operate intermittently on five minute timers. During transitional ventilation the fan on-time will increase.	High
gable end fans for sheds	Gable end fans operate via minimum ventilation requirements during the later stages of the production cycle. These are connected the ammonia scrubbers.	High
HGV Movements (at worst 2 movements at any one time)	HGVs will be infrequent and population and depopulation will take place at night.	High
Feeding System	Not a dominant source of noise.	Low
Alarm System	When operating by its nature this noise source will be dominant. However, it will be infrequent.	High
Broilers (110,000 in total over the two sheds)	For the purpose of the assessment it has been assumed that broiler noise will be constant. The broilers will be housed in acoustically sound sheds from which noise will radiate. The contribution of radiated sound from the shed roofs to the overall specific noise level is high.	High
Clean Out Operations	Not a dominant source of noise.	Low
Maintenance and Repairs	Not a dominant source of noise.	Low
Set up and Placement	Not a dominant source of noise.	Low
Standby Generator Testing	During testing this noise source will be audible. However, it will be infrequent.	High

4. Noise Management and Contingency Plan

Potential Noise Source	Potential Risk and Problems	Contingency Plan / Actions taken to prevent and minimise risk / Minimisation Technique	When is action taken and how long would contingency measure be carried out for	Person responsible for implementing contingency measures and Environment Agency involvement
Ventilation Fans	• Noise created from backdrafts in ventilation systems. • Noise created from worn fan motors and bearings • Noise created from equipment.	• Fan noise will be audibly assessed during daily inspections by the Site Manager or designated personnel. • Fans will operate intermittently on five minute timers. During transitional ventilation the fan on-time will increase. The on-time will be determined by internal and external climates. If necessary fans closest to receptors will not be operated, or be operated at a lower capacity. • Regular maintenance will be carried out at the end of each cycle as a minimum. Maintenance records should be kept up to date and be available upon request. • Earth bunding may be needed and the effectiveness of such	• Immediate action will be undertaken is fans stop working, become faulty or excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if the fans stop working or there is an emergency. • Notify the Site Operator if they are not present. • Suitably qualified contractors to fix any breakdowns or repairs required. • Review of Contingency Plan and Accident Management Plan to take place after	• Site Manager and any members of Staff on site during the incident to take immediate responsibility. • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan. • Carry out measures set out in the

		bunding can be temporally tested using hay bales. • Tree or shrub screening is taking place and planting may be considered. This will not reduce noise levels but may reduce complaints as the source of the noise will be out of view.	incident by the Site Operator.	Accident Management Plan.
Feed / Fuel Deliveries	• Vehicles arriving at the site • Revving of engines • Rattling of empty bulk trailers • Release of air brakes. • Engine noise from both vehicles and blowing motors • Delivery of feed through pipework into feed bins • Location of feed bins in relation to sensitive receptors	• 15mph speed restriction in place for any HGV's coming to or leaving the site, with a 10mph restriction once on site. • Speed restrictions to be observed at all times. • Delivery lorries should be fitted with silencers. If an exhaust silencer is defective then the lorry must be repaired as soon as possible and in the meantime an alternative lorry used. • Engines to be switched off when not in use. • Large capacity lorries to reduce the number of deliveries required should be used. • Regular road and track maintenance should be undertaken and maintenance	• Immediate action will be undertaken if excessive noise is noticed during delivers. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if there is an emergency. • Notify the Site Operator if they are not present. • Review of Contingency Plan and Accident Management Plan to take place after incident by the Site Operator.	• Site Manager and any members of Staff on site during the incident to take immediate responsibility. • • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan to discuss how a solution can be achieved.

		records should be available upon request. • All feed bins are positioned at the furthest locations possible away from any sensitive receptors without comprising operation requirement. • Feed bins are positioned between the poultry buildings, which will help to absorb noise. • Delivery time restrictions if needed. If complaints are received at night lorry movements should be wherever possible be undertaken in the day.		• Carry out measures set out in the Accident Management Plan.
Feeding Systems	• Delivery of feed through pipework into poultry buildings. • Location of feed bins in relation to sensitive receptors	• Daily inspections by the Site Manager or designated personnel should be made to ensure that the equipment is well maintained. • Feed bin stocks are regularly checked to prevent augers running empty. • Maintenance records should be kept up to date and be available upon request. • Regular maintenance at the end of each cycle should be undertaken as a minimum.	• Immediate action will be undertaken is systems stop working, become faulty or excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if the systems stop working or there is an emergency. • Notify the Site Operator if they are not present.	• Site Manager and any members of Staff on site during the incident to take immediate responsibility. • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment

			• Suitably qualified contractors to fix any breakdowns or repairs required. • Review of Contingency Plan and Accident Management Plan to take place after incident by the Site Operator.	Agency via telephone as per the emergency contact numbers within the Accident Management Plan. • Carry out measures set out in the Accident Management Plan.
Alarm systems	• Noise of the alarms	• Audible alarms should be timed to normal working hours to avoid disturbance to nearby residents. Normal working hours may be considered to be 09:00 hours to 17:00 hours. • Use of pagers and mobile phones should be used wherever possible.	• Immediate action will be undertaken is systems stop working, become faulty or excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if the systems stop working or there is an emergency. • Notify the Site Operator if they are not present. • Suitably qualified contractors to fix any breakdowns or repairs required. • Review of Contingency Plan and Accident Management	• Site Manager and any members of Staff on site during the incident to take immediate responsibility. • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan.

			Plan to take place after incident by the Site Operator.	• Carry out measures set out in the Accident Management Plan.
Broilers / Bird Catching & Placement	• Loading and unloading of live bird modules on/off intake trailers and movement around site. • Bird excitement / stress.	• Set up and placement of birds is to be carried out during normal working hours. Normal working hours may be considered to be 09:00 hours to 17:00 hours. • The catch teams are fully trained. Training records should be kept up to date and be available upon request. • Only approved contractor trained in the catching of poultry are to be instructed to load drawers in modules. • Lorries should be scheduled to minimise the duration of the catch. • Doors or curtains should be operated for entry and exit of forklifts as necessary. • Lorries should be parked as close to each shed as health and safety allows in order to reduce forklift travel. • Screen curtains should be fitted to lorries as necessary.	• Immediate action will be undertaken if excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if there is an emergency. • Notify the Site Operator if they are not present. • Review of Contingency Plan after incident by the Site Operator.	• Site Manager and any members of Staff on site to take immediate responsibility. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan to discuss a solution.

Clean out Operations	• Cleaning out machines and the scraping of internal floors to remove litter. • High pressure compressed air used for blowing down building internals. • Location of washing trailers in relation to sensitive receptors. • Prolonged engine noise from wash pumps running.	• Litter removal during daytime hours. Daytime hours may be considered to be 09:00 hours to 17:00 hours. • Trailers should be parked as close as possible to minimise loader travel distance. • Large trailers should be used to reduce traffic levels. • Modern low noise pumps requested through approved contractor. • All wash pumps and equipment located inside the buildings / within the service area (concrete apron). • Washing down to be carried out during normal working hours. Normal working hours may be considered to be 09:00 hours to 17:00 hours.	• Immediate action will be undertaken if excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if there is an emergency. • Notify the Site Operator if they are not present. • Review of Contingency Plan and Accident Management Plan to take place after incident by the Site Operator.	• Site Manager and any members of Staff on site to take immediate responsibility. • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan. • Carry out measures set out in the Accident Management Plan.
Maintenance and Repair	• Equipment failure leading to excessive noise.	• Maintenance and repair to be carried out during normal working hours. Normal working hours may be considered to be 09:00 hours to 17:00 hours.	• Immediate action will be undertaken if excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident	• Site Manager and any members of Staff on site to take immediate responsibility. • To report to Site Operator afterwards but in the first

			Management Plan, if there is an emergency. • Notify the Site Operator if they are not present. • Review of Contingency Plan and Accident Management Plan to take place after incident by the Site Operator.	instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via telephone as per the emergency contact numbers within the Accident Management Plan. • Carry out measures set out in the Accident Management Plan. •
Standby Generators	• Routine testing of generator	• Test run during normal working hours. Normal working hours may be considered to be 09:00 hours to 17:00 hours. • Fully noise insulated.	• Immediate action will be undertaken is systems stop working, become faulty or excessive noise is noticed. • Site Operator and trained Staff on site to take action. • Follow sets in the Contingency Plan and steps set out in the Accident Management Plan, if the systems stop working or there is an emergency. • Notify the Site Operator if they are not present.	• Site Manager and any members of Staff on site during the incident to take immediate responsibility. • To report to Site Operator afterwards but in the first instance to deal with the emergency. • Site Manager or Staff members present to contact the Environment Agency via

			• Suitably qualified contractors to fix any breakdowns or repairs required. • Review of Contingency Plan and Accident Management Plan to take place after incident by the Site Operator.	telephone as per the emergency contact numbers within the Accident Management Plan. • Carry out measures set out in the Accident Management Plan.

In addition to the above table all staff and contractors are instructed not to raise voices or play radios etc. unnecessarily at night.

All equipment and infrastructure has been designed and is located as far away from sensitive receptors as possible without comprising the operation of the poultry site.

The three highest source contributories to the specific noise level are:

- the ridge fans and the gable end fans;
- broiler noise emanating from each shed; and
- the intermittent HGV movements.

Management of noise from these sources is key to this NMP, and techniques to minimise noise from these three components are discussed further.

As part of the development of the site there will be additional landscaping planted on the site, which will include landscaping bunds around the new sheds as part of the construction of the site.

This landscape planting and bunds will act as a natural noise absorbent around the site to limit and noise exposure as part of the expansion of the poultry site.

Ventilation

The noise minimisation techniques presented in section 4 will be implemented at Llwyngwilym Poultry Unit.

The sheds will be ventilated with ridge and gable end fans connected to ammonia scrubbers. These are no gable end fans directly facing any sensitive receptors. There is the built environment around the gable end fans and landscape screening further limits any noise.

The ventilation requirements of the birds within the sheds varies depending on the age of the brood, internal environmental factors (temperature, air quality, relative humidity etc.) and external environmental factors (external ambient air temperature etc.).

The ventilation system fans will be inspected every crop turnaround, damaged fans will be with-drawn from use and noted for repair by an engineer. Broken or damaged machinery can generate excess noise resulting in greater stress for the birds as well as increased noise emissions. A full maintenance inspection will be undertaken by qualified engineers annually on the ventilation system.

The fans however are very quiet running, with the majority of the noise produced from the air movement being akin to a light breeze.

If a complaint of noise from the ventilation fans is received in the first instance the fans must be inspected to identify if maintenance is required.

After this inspection careful consideration of the on-time of the fan/s closest, or in line of sight, to the sensitive receptor must be made. It may be possible to reduce the fan on-time, and offset this decrease by an increase in the on-time of the fan/s furthest, or out of site, from the sensitive receptor. Noise levels may subsequently be mitigated.

A further option that may be considered to mitigate site noise is to prevent a line of site between the identified noise source/s by including acoustic barriers if required.

The Technical Guidance Note IPPC SRG 6.02 (Farming) *Noise Management at Intensive Livestock Installations* (2002) states at paragraph 2.1.4 that the... *"following are examples of good acoustic barriers:*

- buildings on site;
- earth banks;
- heavy and solid close boarded wooden fencing, masonry walls;
- straw bales can provide good temporary noise barriers provided there is no fire risk".

All four options listed will be considered at Llwyngwilym Poultry Unit. As a temporary measure straw bales will be used in the first instance, and if an improvement is noted, consideration will then be given to a more permanent feature.

If it was identified that there is noise pollution or noise nuisance at a sensitive receptor, the noise level may be reduced by the use of substantial, permanent earth banks together with a solid permanent structure such as acoustic fencing or masonry wells. These structures would be constructed and sited between the poultry farm and the affected sensitive receptors. These structures would be designed and sited so as to reduce the level of noise from the poultry farm to an acceptable level.

Broilers

The broilers are to be housed in two sheds on the poultry site.

In the calculation of the specific noise it was assumed that l broiler noise would be constant during both the daytime period and the night-time period, a scenario that may be considered unlikely. At times it is likely that the broilers will be much quieter.

If the l broiler noise does lead to complaints, management techniques may be introduced to quieten the birds; such measures may include:

- increasing the temperature as broilers are noisy when cold;
- reducing draughts as draughts may cause broilers to cluster and elevate noise in a localised area; and
- reduce lighting as broilers are quieter when lighting is dimmed.

HGV Movements

Whilst HGV movements will be infrequent, when they do occur, management of noise is required as they are a high contributor to the specific noise level.

Due to animal welfare considerations and factory opening times, this operation usually occurs over-night in order to minimise the bird's time in transit. The predominant noise source during this operation is from the lorries engines and also the sliding drawers on which the birds are held during transit.

As part of mitigation nearby residents will be informed of thinning and harvesting dates so that they are aware that HGV movements would be occurring at night.

The following management techniques at Llwyngwilym Poultry Unit will be used as part of the operating the site;

- scheduling traffic during bird catching to minimise duration
- instructing drivers to use low revs and drive at low speed;
- 15mph speed restriction is in pace for any HGV's coming to or leaving the site, with a 10mph restriction once on the site. Speed restrictions are observed at all times.
- instructing drivers to turn engines off when stationary;
- maintaining the access road in good repair to avoid rattles and/or body slap; and
- restricting HGV arrival and departures to times when background noise levels are typically higher.
- the collection vehicles fitted with a plastic drawer system to reduce noise.
- Machine operators are to work inside the buildings.
- There will be no scraping of external concrete aprons – these areas are to be mechanically brushed only.
- High pressure air compressors are to be positioned within the building, being blown down to reduce external noise through running engines.
- the noise assessment consultants suggest that nearby residents are informed of collection dates so that they are aware that HGV movements would be occurring at night.

1.0 Noise Surveillance

The purpose of noise surveillance is to demonstrate to Natural Resources Wales that the permitted development is being operated in such a manner as to minimise the noise impact at nearby noise-sensitive receptors. In the event that complaints are received noise monitoring would prompt remedial actions to ensure ongoing future compliance.

In the first instance a responsible person shall undertake regular noise patrols at the nearby noise-sensitive receptors. Audibility or otherwise of the site should be logged in a register.

The noise patrols will be undertaken on a daily basis in the first instance from receipt of a complaint and then move to fortnightly for monitoring should there be no further noise issues noted. Full investigation will be undertaken by the site operator until the noise problem is identified.

The Noise Impact Assessment highlighted locations for undertaking noise monitoring. Full details of this locations can be seen within the NIA and as detailed above. The sites will be included in the fortnightly patrols.

5. Complaint Procedure

If a complaint is received from a local resident, an investigation shall be instigated within one working day to identify the cause of the non-compliance/complaint and the Noise Complaint Form detailed in section 6 will be filled in and appropriate action will be taken to remedy the problem should the complaint be validated.

A complaint investigation may involve the identification and cessation of the activity or activities considered to be the cause of the non-compliance/complaint and/or the investigation of mitigation measures to reduce the noise emission levels from the activity or activities, for example the replacement of noisy plant with quieter alternatives and/or the use of temporary screening mounds.

Any deviation from agreed working practices shall be identified immediately and conformance to the working practice reinstated.

If it is not possible to identify the source of the complaint it may be necessary to undertake a noise survey. If this is needed a suitably qualified person should be employed to undertake the required survey work. The date and results of the noise survey should be logged and reported in accordance with the relevant British Standard.

6. Noise Complaint Form

Llwyngwilym Poultry Unit	**Date Recorded:**	**Reference No:**
Name and address of caller		
Telephone		
Location of caller in relation to installation		
Time and date of complaint		
Date, time and duration of offending noise		
Callers description of noise		
Has the caller any other comments on noise?		
Weather conditions		
Wind strength and direction		
Any previous complaints relating to this noise?		
Any other relevant information?		
Potential odour sources that could give rise to the complaint		
Operating conditions at the time of the offending noise		
Follow up – date and time caller contacted		
Action taken		
Amendment requirement to Noise Management Plan		

Form completed by (print)		Signed and date	