Title:	**Installation Information**
Report Reference:	**HWD-R01-F1**
Client:	**Beck House Poultry Farm**
Submitted To:	**Environment Agency**
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Main Contributor:	**Edward Bennett – AWSM Recycling Limited**

Report Issue History

Report Reference	*Details*
HWD-R01-D1	18-08-25 Draft for internal review
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AWSM Recycling Limited / p: 01833 600859 / e: edward@awsmfarms.co.uk

Contents

1 Introduction

1.1 Background

Mr & Mrs H Mitchinson are applying to vary their Intensive Farm Environmental Permit for their broiler installation. The installation is located at Beck House Poultry Farm, Southwaite, Carlisle, Cumbria, CA4 0PY and is split into two sites. The National Grid Reference (NGR) for the centre of:

- Site 1 is NY 42388 47396;
- Site 2 is NY 42346 46919.

The Environment Agency Pre-Application Refence Number related to this variation application is EPR/LP3530UB/P001.

1.2 Summary of Changes to Permitted Operations

The changes requiring a variation to existing 'Permitted' operations, are:

- The erection of two new broiler sheds on Site 2 with the capacity for 40,000 birds each, taking the Permitted Capacity of the broiler unit from 426,000 places to 506,000 places.
- Increase in the Permitted Boundary of Site 2 to accommodate the sheds.
- New houses are fitted with high velocity ridge fans, baffled gable end fans and heat exchanger.
- Installation of a Standby Generator of Site 2.
- Addition of emission points for soakaways for domestic effluent on Site 1 and Site 2.
- Removal of the emission point for the Incinerator on Site 1.

1.3 Permitting Requirements

The facility is required to vary their Environmental Permit (EP) in order to comply with the Environmental Permitting (England and Wales) Regulations 2016, SI 2016/1154. The relevant sections of the Regulations to describe the prescribed processes are:

Table 1.1 – Permitted Activities	
EPR Schedule 1 Reference	**Description**
Section 6.9 A(1)	Rearing poultry or pigs intensively in an installation with more than-
(a) (i)	40,000 places for poultry

1.4 Guidance

The following 'sector' guidance documents, and associated BAT requirements, have been considered when preparing this variation application:

- Environment Agency guidance - Intensive farming: comply with your environmental permit;
- EC's Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs. Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control).

1.5 Application Documentation

The following documents have been submitted in support of the Permit variation application:

- EA Application Forms.
- HWD-R01-F1: Installation Information
- HWD-R02-F1: Environmental Risk Assessment
- HWD-R03-F1: BAT Assessment
- HWD-R04-F1: EMS Summary.
- HWD-R05-F1: Supplementary Site Condition Report
- HWD-R06-F1: Site Drawings
- HWD-R07-F1: Non-Technical Summary
- EM 01-009 Dust Bio-Aerosol Management Plans

1.6 Report Format

The report is structured as follows:

- Introduction.
- Changes to Site Operations.
- Emissions and Monitoring.
- Raw Materials and Energy.
- Wastes and Animal By-Products.
- Fugitive Emissions.

1.7 Diagrams and Plans

Document reference HWD-R06-F1: Site Drawings, includes relevant drawings and plans including Site Layout and Sensitive Receptor Plans.

2 Changes to Site Operations

2.1 Introduction

Operations on site are to be expanded from 426,000 places to 506,000 places. Site 1 currently has capacity for 255,000 birds and Site 2 currently 171,000. Site 2 is to be expanded by 80,000 places. This section of the report details the proposed process and ancillary activities associated with the requirement to vary the Environmental Permit.

2.2 Places and New Housing Systems

Table 2.1 below sets out the housing systems and number of livestock places covered by the Permit.

Table 2.1 – New Livestock Places and Housing System		
Shed	**Places**	**Housing System**
Shed 10 and Shed 11	40,000 each	Indoors, fan ventilated fully littered floor, non-leaking drinkers. High-speed ridge fans (11 m/s). Additional gable end fans operated during periods of hot weather and each shed fitted with heat exchangers.
Notes – The Location of the sheds is detailed on the Site Layout Plan within the document referenced HWD-R06-F1 – Site Drawings.		

2.3 Housing Configuration and Features

The housing systems have been designed to ensure animal welfare requirements are met, ease of handing livestock and efficient clean down. The following measures have been incorporated into the design to ensure effective management of housing thus minimising the associated emissions:

- Drinkers and feeders are designed to prevent leakage / wastage.
- Housing surfaces kept clean through high standards of management and effective control of environmental conditions.
- Ventilation systems controlled to ensure optimal housing conditions and comfortable temperature for the birds.
- Heat exchangers fitted to aid maintaining optimal temperatures.
- Capacity calculated on floor space allowances ensuring compliance with associated welfare and assurance scheme standards.
- Regular inspection of sheds, including floors and walls to ensure any damaged is repaired in a timely fashion.

2.4 Process Description

Stocking is on an all-in and all out basis. Upon arrival, the birds are placed directly into the shed and bedded up on dust extracted shavings. Birds will be grown on a 7- week growing cycle.

Water is supplied via a nipple drinking system fitted with cups to reduce leakage and spills leading to drier litter. Feed when delivered is blown into the bulk feed silos adjacent to each shed. From there it is augured into the houses and distributed to the birds via a pan feeding system. Birds are fed a

minimum of three diets during their cycle, gradually reducing levels of protein and phosphorous as the birds age.

Stocksmen monitor the sheds throughout the day to ensure sufficient feed and water is available, the ventilation systems are operating optimally and check the welfare of the birds. When carrying out welfare checks any fallen stock will be collected securely stored in lockable vermin proof containers awaiting incineration in existing on site Permitted incinerators.

The birds are thinned across the growing cycle and sent for slaughter, with sheds fully empty at the end of a 7-week growing cycle. Once all birds have been depopulated, the sheds will be thoroughly washed and disinfected in preparation for the next cycle. 'Wash out water' is channelled to underground collection tanks to await export off site for spreading on land owned by the third parties. Spent litter is exported off-site for energy generation.

2.5 Secondary Processes

2.5.1 Stand By Generator

A 124 kVA / 108 kW standby generator will be installed to meet the base electrical load of the site should the mains electricity supply fail. The generator is a standard industrial Gas Oil unit is housed in a sound attenuated, weatherproof housing and fitted an industrial exhaust silencer. The generator base houses a c.160 litres fuel tank. The Thermal Input Rating of the Generator is 0.3 MWth. The Medium Combustion Plant Directive controls do not apply to the generator given the thermal input rating is below 1MWth.

2.6 Design and Maintenance

Process equipment is designed and installed to operate effectively. Site staff will perform routine planned preventative maintenance (PPM), with support from competent engineers and contractors, as required.

Maintenance will take the form of reactive maintenance activities (reacting to breakdowns etc) and planned preventative maintenance (PPM), (to reduce breakdowns / down time and to maintain equipment efficiency). The site will utilise a PPM system detailing the frequency operations maintenance in line with the manufacturers' recommended inspection and maintenance schedules, will be used to log all items of equipment requiring PPM.

2.7 Incidents and Corrective Action

In addition to the PPM regime, site will implement a monitoring and inspection programme to detect any faults or deficiencies with the process and associated operations. Deficiencies encountered will be detailed as part of the Incident and Corrective Action Reporting structure implemented on site. This process ensures the appropriate level of management commitment to ensure any corrective actions / repairs are commissioned and undertaken in a timely fashion.

2.8 Site Staffing and Training

The Organisation Structure and Responsibilities document forms part of the EMS and details the roles and responsibility of staff and sets out the requirement for them to be trained in the appropriate work instructions and procedures.

Site management will ensure that there is sufficient staff, that they are adequately trained and competent including those aspects that could possibly lead to a pollution incident, dealing with accidents and the site's responsibilities under the Environmental Permit.

2.9 Points of Clarification

As required by the associated Environment Agency Variation Application Form, it can be confirmed that:

- Operator details are unchanged as a result of the above changes.
- Only Site 2 'Permitted Area' changes due to increased area.
- There are no new emission points to surface water.
- Septic tanks located on Site 1 and Site 2 to be added to the Permit, details of which are provided below.

3 Emissions and Monitoring

3.1 Introduction

This Section of the report provides detail on the emission points associated with the change to Permitted activities and details any monitoring methods to be implemented.

The potential for environmental impact from the emissions identified below, have been assessed with the Environmental Risk Assessment (ERA) submitted in support of this Permit Variation application, see document referenced HWD-R02-F1.

3.2 Emissions to Air

3.2.1 Point Source Air Releases

Table 3.1 below describes the point source releases to air from site to be added to the current Permit.

Table 3.1 - Point Source Emissions to Air

Emission Point Reference	Source	Nature of Release	Fuel Source
A1	Broiler Houses 10-11	Ventilated air from animal housing.	N / A
A2	Outlet from Heat Exchangers on Houses 10-11	Air from animal housing.	N / A
A3	Standby Generator	Exhaust from standby generator serving Houses 10-11.	Gas Oil

Note: The Emission reference refers to the release points marked on Site Layout Plan in the report referenced HWD-R06-F1 Site Drawings.

3.2.2 Point Source Air Release Controls and Monitoring

To ensure optimal combustion performance the equipment will be routinely maintained and serviced in accordance with the manufacturer's recommendations. The ERA concluded that no further monitoring requirements are deemed necessary for point source releases.

3.2.3 Fugitive Releases to Air

Fugitive emissions to air from varied operations at the installation are detailed within Section 6 below. The Environmental Management System implemented on site includes routine and documented inspections to ensure that any fugitive releases are identified and rectified accordingly. The ERA concluded that no further monitoring requirements are deemed necessary for fugitive releases.

3.3 Emissions to Ground / Water

3.3.1 Point Source Releases to Water

There are no point source releases to water to be added to the Permit. Clean roof water and yard water will continue to be discharged to Pow Beck from Site 2.

3.3.2 Foul Water Discharges

As per current arrangements, 'Wash out water' will be channelled to underground collection tanks to await export off site for spreading for agricultural benefit, on land owned by third parties. The 'wash out water' collections tank are shown on the Site Layout Plan within the repot referred HWD-R06-F1 – Site Drawings.

Septic tanks have been installed on site to serve 'domestic' items on site. The septic tanks are shown on the Site Layout Plan within the repot referred HWD-R06-F1 – Site Drawings. The tanks are Tricel Ventile 6. The Tanks are CE marked to comply with Construction Product Regulations and is tested and certified to EN12566-3 and benefit from a treatment efficiency of 95.7%.

The outlets of the tank discharges within the installation boundary and the chamber will be emptied as required. Contents from the chamber will be recovered in line with current Environmental Regulations.

3.3.3 Trade Effluent Discharges

There are no trade effluent discharges from site to sewer introduced as a result of the varied operations.

3.3.4 Fugitive Releases to Ground / Water

The Environmental Management System implemented on site includes a thorough infrastructure monitoring programme designed to ensure there is no loss of integrity to the systems designed, to prevent fugitive emissions to land and controlled waters. The infrastructure monitoring programme forms part of the EMS and incorporates the incinerator.

Any deficiencies encountered are reported as part of the EMS using the incident and corrective action structure and repairs instigated.

4 Raw Materials and Energy

4.1 Introduction

This Section of the report details any changes to the principal and ancillary raw materials used in the process as a result of the proposed changes at the installation.

4.2 Principal Raw Materials

4.2.1 Livestock

Table 4.1 details the changes to principal raw materials at the Installation.

Table 4.1 – Principal Raw Materials			
Material	**Composition**	**Annual / Throughput**	**Environmental Fate and Behaviour**
Livestock	Broilers	Additional 80,000 places / yr.	• Biodegradable. High organic content. • Bacteriological and pathogenic content. • Odour, noise, dust generating potential. • Entry into a watercourse would increase the BOD. • Entry into an aquatic environment would have potentially detrimental effect on aquatic life. • Insignificant environmental risk due to storage and handling arrangements in place to meet animal welfare requirements.

4.2.2 Feed

Only dry feed is to be utilised on site. Feed will be delivered to feed silos. The estimated quantity of additional feed to be consumed on site per production cycle place is c.300t.

A typical feed ratio breakdown over the production cycle to show reduction in N and P levels within the feed has been shown in Table 4.3 below.

Table 4.3 – Feed Details		
Diet	**Protein %**	**Phosphorus%**
Starter Crumb	CP- 22.6%	P- 0.66%
Starter Pellet	CP- 21.0%	P- 0.52%
Grower Pellet	CP- 20.3%	P- 0.41%
Finisher Pellet	CP- 20.0%	P- 0.36%

4.2.3 Water Use and Efficiency

Water used on site is to be supplied from the following sources:

- Existing metered borehole supply, with mains backup.

Water will be used on site for livestock drinking water and cleaning purposes. Water consumption will be measured and record on a daily basis. It is anticipated water use will increase by c.15m^3 / day. The following water efficiency controls are implemented –

- High performance nipple drinkers with 'drip cups' are used to minimise water wasted and improve litter quality, subsequently reducing ammonia levels inside the sheds.
- Water consumption monitored and recorded daily from water meters located within the houses.
- Daily checks by stockmen to ensure equipment height is adjusted meeting the need of the birds. Having drinkers at the correct level and adjusting the flow pressure ensures the birds utilise the water correctly, minimising wastage of water and maintaining litter quality.
- Daily checks ensure issues are located and rectified efficiently i.e. leaking drinker nipple.
- Clean down undertaken following the site-specific terminal hygiene plan, to meet welfare requirements. The plan details dilution rates for detergents and disinfectants used to optimise efficiency of raw material usage.
- Site Staff and cleaning contractors trained specifically in terms of the clean down plan.
- Livestock houses are fully insulated, with suitable ventilation systems to regulate temperature and maintain a healthy indoor environment inside the house. Providing a stable environment ensures optimal use of drinking water.

4.2.4 Energy Use

Energy is consumed on Site 2 in the form of mains electricity, LPG and existing biomass boilers on site. It is estimated that the annual anticipated energy consumption per year will increase by c.165 MWh (95 MWh electricity / 70 MWh LPG).

The following items are the main sources of energy consumption on the expanded site area -

- Livestock building ventilation.
- Livestock building lighting.
- Feed delivery systems.
- Standby Generator.

4.2.5 Energy Efficiency

The energy efficiency measures implemented on-site include operational, maintenance and procedural controls. Control measures include:

- Ventilation systems installed in accordance with supplier's instructions.
- Ventilation systems form part of the installation's planned preventative maintenance programme i.e. regularly inspected and serviced to ensure continued efficiency.
- Optimisation of ventilation systems and use of heat exchangers.
- Livestock buildings and water supply pipework are to be insulated and kept in good repair.
- Energy usage monitored and recorded to establish and monitor consumption trends.
- LED energy efficient lighting systems installed, lights are only in use when needed.
- Optimisation of ventilation systems.

4.2.6 Monitoring and Targets

Energy efficiency audits will continue to be undertaken in line with Permit Requirements and include varied operations. Audits are designed to review energy consumption data and document whether there are opportunities to further improve energy efficiency on site.

4.3 Ancillary Raw Materials and Reviews

There are no changes to the ancillary materials to be used on site. Raw materials reviews will continue to be undertaken in line with the standard Permit condition.

5 Wastes and Animal By-Products

5.1 Introduction

There is no change to the sources of waste and animal by-products (ABP) to be handled / produced at the installation as a result of the varied operations. Notwithstanding this, there will be a slight increase in the wastes / ABPs produced, which have been detailed below and assessed within the Permit Variation application's supporting Environmental Risk Assessment, document reference HWD-R02-F1.

5.2 Waste and ABPs

Table 5.1 below identifies the waste and ABP streams produced on-site that volumes will see a notable increase from varied operations, along with site handling and storage arrangements.

Table 5.1 – Sites Waste and ABP

Waste / ABP [1/2]	EWC	EWC Description	Site Handling and Storage Arrangements[3]	Disposal / Recovery Method
ABP				
Litter from bird housing.	02.01.06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site	Litter is removed from sheds at depopulation and placed into trailers, which are then covered prior to removal from site.	Transferred off site for incineration energy recovery
Wash Waters from housing washdown.	02.01.06		Captured in dedicated wash down tanks. Pump transfer to spreading equipment prior to removal off site.	Transferred off site for spreading to land for agricultural benefit.
Wastes				
Fallen stock carcasses form bird housing.	02.01.02	Animal-tissue waste.	Enclosed securely within bin and transferred to existing on farm incinerators for disposal.	Incinerated on-site.

Notes –

1. EWC and associated description for ABPs listed for completeness.
2. All wastes / ABP produced on site will be stored in containers that are durable for the substances stored.
3. Incompatible waste / ABP types will be segregated.

5.3 Documentation

Waste and ABP documentation control forms part of the EMS on site. In summary, all waste / ABP contractors transferring and / or receiving waste / ABP shall have appropriate licences and approvals in place. Copies of these licenses and approvals will be held in the records section of the EMS.

Duty of Care transfer documents will be generated to cover transfers of waste / ABP from site. Duty of Care documentation covering these transfers will be held on site or electronically for the following retention periods as a minimum –

- Non-Hazardous Waste Transfer Notes / Season Tickets – 2 years.
- Hazardous Waste Consignment Notes – 3 years.
- ABP Commercial Documents – 2 years.

5.4 Recovery to Land

Wash waters generated on site are exported for recovery to land outside of the Permit boundary. Written evidence will be maintained to:

- Record the quantities and the date of transfer to third party for spreading to land.
- The names and addresses and land bank available where litter and wash waters are exported for spreading to land.
- Where a third party accepts liability for removing materials from the installation for spreading, the third party to provide acceptable confirmation that as a minimum, the material is spread to land in accordance with the Code of Good Agricultural Practice; or that the spreading will be in accordance with a manure management plan for the receiving land
- Other land banks or recovery outlets will be identified should land become inaccessible for a prolonged period, such as Anaerobic Digestion.

5.5 Waste Review and Monitoring

Waste audits will be undertaken in line with Permit Requirements. Audits are designed to review waste reduction measures and to ensure that waste produced by the activities is avoided or reduced where possible. Where waste is produced, it is recovered whenever practicable or disposed of in such a manner to minimise its impact on the environment.

6 Fugitive Emissions

6.1 Introduction

The Environmental Risk Assessment (ERA) completed in support of this Permit Variation Application, document referenced HWD-R02-F1, demonstrates that fugitive emissions from the proposed changes at the installation are deemed to be insignificant.

The sections below outline the potential fugitive emission sources and control techniques for:

- Noise,
- Vibration.
- Dust and bio-aerosols.
- Odour.

6.2 Noise

6.2.1 Noise Sources

Varied operations at the installation are not inherently noisy, and the ERA concluded that noise emissions from the varied operations are anticipated to be insignificant. Table 6.1 details the sources of noise associated with the operation.

Table 6.1 – Noise Sources

Source	Nature of the Source of Noise	Hours of Operation	Frequency	Assessed Contribution to Site[1]	Adopted Noise Control Techniques
Livestock Transport	Heavy goods vehicle engines and associated livestock noise.	Deliveries scheduled.	Infrequent-Movements – Stocking cycle every 7 weeks.	Medium	Drivers requested not to excessively rev their engines. Engines of standing vehicles to be turned off. Livestock moved in compliance with animal welfare requirements to ensure stress and therefore noise levels of livestock are minimised.
Livestock	Birds in units.	24 hours	Constant	Medium	Animals housed in dedicated unit. Animal welfare regulations ensure animals are kept well looked after and stress levels minimised.
Raw material / feed	Heavy goods vehicles / Vehicle	During all hours of	Intermittent	Medium	Drivers requested not to excessively rev their engines.

Table 6.1 – Noise Sources					
Source	**Nature of the Source of Noise**	**Hours of Operation**	**Frequency**	**Assessed Contribution to Site[1]**	**Adopted Noise Control Techniques**
deliveries / waste and ABP Collection Vehicles	engine noise, including reversing alarm noise.	process operations.			Engines of standing vehicles to be turned off.
Generator	Site Generator Engine	24 hours	Constant.	Medium	Generator operated as per suppliers instructions and serviced under contract.

Notes

1. Definitions

High	Noise detectable and distinguishable from background, with significant possibility of causing nuisance
Medium	Noise detectable and likely to be distinguishable from general background, but not expected to cause nuisance
Low	Noise likely to be undetectable and undistinguishable from general background

6.2.2 Noise Control Techniques and Surveys

As described above the site's principal noise reduction techniques are that:

- birds are provided with dedicated housing unit.
- drivers are requested not to excessively rev engines and to turn vehicle engines off when vehicles are standing.

Combined with an effective planned preventative maintenance regime on site, further noise reduction measures are deemed unnecessary. In addition, owing to the low number of nearby receptors and the low noise generating potential of site activities, environmental noise surveys and not necessary.

6.2.3 Noise Management Plan

This industry sector guidance documents require noise emissions to be given further consideration. It is noted that there is the potential for noise emissions from varied operations at the installation. However, the ERA, has concluded that noise emissions from the site are anticipated to be insignificant. There are no relevant sensitive receptors within 400 metres of the installation boundary.

6.3 Vibration

Varied operations are not anticipated to be a source of vibration noticeable off-site. In short, the site does not use equipment of the type known to be a source of external vibration, therefore, there is no potential for vibration from site activities to be noticeable off-site.

6.4 Dust and Bio Aerosols

This industry sector guidance documents require dust and bioaerosols to be given further consideration. It is noted that there is the potential for dust and bioaerosols emissions from the varied operations at the installation. However, the ERA, has demonstrated that dust and bioaerosols emissions from the site are anticipated to be insignificant. The document referenced EM 01-009 Dust and Bio Aerosol Management Plan (DBMP) and submitted with this application, is the DBMP to be implemented at site.

6.5 Odour

This industry sector guidance documents require odour emissions to be given further consideration. It is noted that there is the potential for odour emissions from the varied operations at the installation. However, the ERA, has concluded that odour emissions from the site are anticipated to be insignificant. There are no relevant sensitive receptors within 400 metres of the installation boundary.