**Environmental Risk Assessment**

**Farm name:** Dale Farm

**Table 1 Assessment of Odour Risk**

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| **What do you do that can harm and what could be harmed?** | **Managing the risk** | **Assessing the risk** |
| **Hazard** | **Receptor** | **Pathway** | **Risk management** | **Probability of exposure** | **Consequence** | **What is the overall risk?** |
| **What has the potential to cause harm?** | **What is at risk? What do I wish to protect?** | **How can the hazard get to the receptor?** | **What measures will you take to reduce the risk? If it occurs, who is responsible for what?**  | **How likely is this contact?** | **What is the harm that can be caused?** | **What is the risk that still remains?** **The balance of probability and consequence** |
| Odour from feed delivery | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Odour Management Plan in placeFeed delivery will be sealed and blown directly into bins to minimise atmospheric dust. Any spillage of feed around the bin is immediately cleaned up. The condition of feed bins is checked frequently so that any damage or leaks can be identifiedAll feed ingredients are stored in covered tanksThe unit is relatively isolated so there is minimal risk of dust causing direct odour nuisance | Unlikely | Odour annoyance | Not significant |
| * Odour arising from problems with housing ventilation system
* Inadequate air movement in the house leading to high humidity and wet bedding
 | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | The ventilation system will be regularly adjusted according to the age and requirements of the hens.The ventilation system will be designed to efficiently remove moisture from the house.Stocking density maintained at or below levels set out in Welfare Regulations. | Unlikely  | Odour annoyance | Not significant |
| Manure removal management: * Odours arising from muck removal
* The use of insufficient shavings
* Spillage of water from drinking systems
* Disease and vice outbreaks
 | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Controls on feed and ventilation (see above) help to maintain air qualityAdditional controls include: Insulated walls and ceilings to prevent condensationRegular maintenance and correct positioning to avoid overflow from feed and drinking systemsConcrete floors to prevent water ingress and surfaces arranged to avoid build-up of stagnant waterStocking density at optimal levels to prevent overcrowdingFrequent removal of manure | Unlikely | Odour annoyance  | Not significant |
| Carcase disposal: * Inadequate storage of carcases on site
* Removal of carcases by Lawlors
 | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Frequent removal of fallen stockAll odour complaints are logged and investigatedAll carcases are placed in sealed, lockable containers immediately after they are removed and are promptly removed and disposed of off-site by contractors | Unlikely | Odour annoyance  | Not significant – fallen stock are not stored in the shed, other than daily mortality.  |
| Buildings: * Cleaning and disinfection
* Removal of manure
 | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Frequent removal of manure (twice weekly)Cleaning of the sheds to be kept in normal working hours (8am – 5pm) | Likely | Odour annoyance | Not significant if carefully managed |

**Table 2 Assessment of Noise Risk**

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| **What do you do that can harm and what could be harmed** | **Managing the risk** | **Assessing the risk** |
| **Hazard** | **Receptor** | **Pathway** | **Risk management** | **Probability of exposure** | **Consequence** | **What is the overall risk?** |
| **What has the potential to cause harm?** | **What is at risk? What do I wish to protect?** | **How can the hazard get to the receptor?** | **What measures will you take to reduce the risk? If it occurs – who is responsible for what?** | **How likely is this contact?** | **What is the harm that can be caused?** | **What is the risk that still remains? The balance of probability and consequence** |
| Noise problems from large vehicles travelling to and from the farm. Mobile source | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Vehicles are required to be driven on to and off site with due consideration Deliveries of feed are made only during the daytime, if possible, so that disturbance is minimisedAll vehicles maintained so as to minimise engine noise and are driven slowly to and from the site Roads and tracks maintained to minimise noise producedSpeed limit enforced | Unlikely | Noise annoyance | Not significant if managed carefully |
| Large vehicles on site for delivering feed, removal of muck from houses, removal of dirty water from underground tanksMobile source | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Vehicles have to be well maintained and must be driven slowly around the siteEngines to be switched off when not in useVehicles which are fitted with an audible 'vehicle reversing' warning system are generally used only in the daytimeDirty water removal is only emptied at turnaround – not during the flockIdling of machines avoided and engine revs kept low with an effective silencer | Unlikely | Noise annoyance | Not significant |
| Small vehicles travelling to and from the farm eg staff and visitors’ cars, courier van deliveries, etc Mobile source | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Small vehicles arrive during the normal working day and therefore are seen as low risk | Unlikely | Noise annoyance | Not significant |
| Feed transfer from lorry to binsFixed source | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Vehicles are well maintained and designed so that noise during feed transfer is minimised Conveyors and augers not operated when emptyBlower and vacuum type delivery vehicles fitted with low noise units | Unlikely | Noise annoyance | Not significant |
| Operation of fansFixed source | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Efficient extractor fans used and maintained in good condition to avoid excessive noiseFans sited away from the on site caravanForced ventilation systems with automated controls to minimise run time and fan speed | Unlikely | Noise annoyance | Not significant |
| Alarm system and standby generatorFixed source | Neighbouring dwellings within 400m of installation.EmployeesSurrounding land and vegetation. | Air | Weekly system test (required by law) timed in order to minimise nuisanceAll electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice. (CFM- electrician)  | Unlikely | Noise annoyance | Not significant |
| Hen depop and deliveryMobile source | Neighbouring dwellings within 400m of installation.EmployeesSurrounding land and vegetation. | Air | During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when fullStaff understand noise and are prepared | Unlikely | Noise annoyance | Not significant |
| PersonnelMobile source | Neighbouring dwellings within 400m of installation.EmployeesSurrounding land and vegetation. | Air | Staff and other contractors are required to carry out their work without creating excessive noise from shouting and use of radios, etcAny noisy work is carried out during daylight hours | Unlikely | Noise annoyance | Not significant |
|  Repairs | Neighbouring dwellings within 400m of installation.EmployeesSurrounding land and vegetation. | Air | If repairs to the site are required, the work is undertaken with due regard for possible noise nuisance and during the normal working day Work carried out during day time hours where residents are at work. Holidays of staff and major repair work are taken into consideration. | Unlikely | Noise annoyance | Not significant |

**Table 3 Assessment of Fugitive Emissions Risk**

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| **What do you do that can harm and what could be harmed** | **Managing the risk** | **Assessing the risk** |
| **Hazard** | **Receptor** | **Pathway** | **Risk management** | **Probability of exposure** | **Consequence** | **What is the overall risk?** |
| **What has the potential to cause harm?** | **What is at risk? What do I wish to protect?** | **How can the hazard get to the receptor?** | **What measures will you take to reduce the risk? If it occurs – who is responsible for what?**  | **How likely is this contact?** | **What is the harm that can be caused?** | **What is the risk that still remains? The balance of probability and consequence.** |
| **To air** |  |  |  |  |  |  |
| DustSources: * Feed
* Shavings
* Dry in house litter quality
 | Staff and on site caravan* Nuisance
* Contributes to odours
* Human health (inhalation)

 Surrounding vegetation: Covers leaves and inhibits photosynthesisSurrounding land: Nutrient enrichment of soilsContributes to respiratory problems for hens, and staff | Air | Use of suitable bedding materials and good storage of such materials. Shavings are always covered.Regular clearing of dust to prevent build up within buildings, on roofs and around vents, as part of the disease control strategyTreatment of lightly contaminated surface water by soak-away | Dust could potentially reach the road and surrounding land when a strong wind blows in that directionManagement actions should prevent this happening | Nuisance: dust on surrounding vegetation, cars, clothingSmothering and direct damage to nearby vegetationHens/staff may get stressed and become unwell | Not significant if managed carefully |
| AmmoniaSource: Hen housing and manure removal | On site caravanHens and staff: high levels can cause respiratory problemsAlso perceived as a nuisance as it contributes to odoursSurrounding vegetation: direct toxic effect and changes to sensitive ecosystemsSurrounding land: Nutrient enrichment and acidification of soils | Air | Mitigation measures as for odourFeed formulated to match hen requirements and to minimise amount of ammonia producedRations under periodic reviewWeekly muck belt runsVentilation systems designed to provide optimal environment and regularly monitored and maintainedFrequency of manure removal to optimise pen cleanliness Fully trained operatorsSoils regularly analysed and applications made in response to crop requirements to avoid spreading more manure than is needed | The impact of ammonia on air emissions from the installation has been assessed in the building review and calculationsThe results demonstrate that there will be little likelihood of impact to nearby wildlife sites | Aerial deposition and direct toxic effect on treesNutrient enrichment of soils and changes to sensitive ecosystems Respiratory problems in humans and mammals  | Not significant |
| Zoonoses and notifiable diseases | Human health and livestock health | Air/direct contact | Detailed biosecurity precautions in place, eg frequent stock inspection, use of disinfectants and appropriate clean overalls, boots, etc for staff, visitors and contractors, to prevent spread of diseaseSecure site visitor policyLivestock monitored for signs of disease and incidents reported quicklyUse of a health plan, with specialist veterinary input in place. | Unlikely | Human and livestock health implications | Not significant if managed carefully |
| **To water** |   |   |   |   |   |   |
| Nutrients such as N and P plus organic matter | Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses  | Land | Used bedding/feed spilt on yard/roadways during clean out is cleaned up | Unlikely |  | Not significant if managed carefully |
| Spillages from storage and use of pesticides and chemicals | Vulnerable groundwater beneath site | Land | Management techniques employed aimed at avoiding or minimising use where possibleUse of approved chemicals onlyOperators fully trained and all equipment regularly maintained to avoid any in-field spillage or dischargeRegular inspections planned | Unlikely | Contamination of surface and groundwatersKilling of flora and fauna | Not significant |
| **To land** |  |  |  |  |  |  |
| Ammonia from muck removal  |  | Air | As for odour and ‘To water’ aboveFeed selected to minimise excretion of nutrientsStorage sites sited away from sensitive receptors | Likely | Direct toxic effect on trees, nutrient enrichment and acidification of soilsChanges to sensitive ecosystems. | Not significant if managed carefully |
| Waste materials, packaging, etc.Source: Non-organic waste storage and disposal | Neighbouring dwellings and surrounding habitats and countryside  | Air | Policy to avoid production where possibleDedicated storage areas and facilitiesCollected by licensed contractors (Bruntons) for re-cycling or disposalRegular checks made for rubbish dumped by third parties | Unlikely | Amenity value of countryside spoilt by rubbishPossibility of causing harm to wildlife | Not significant |
| **Pests** |  |  |  |  |  |  |
| Flies Birds and rodents | Neighbouring dwellings within 400m of installation.Surrounding land and vegetation. | Air | Pest management programme in placeFood sources covered and secure from pests | Unlikely | Flies and rats are a vector of pollution that can harm human healthConcerns about this pollution can cause offence and affect amenity | Not significant if managed carefully |

**Table 4 Assessment of Accident Risk**

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| **What do you do that can harm and what could be harmed** | **Managing the risk** | **Assessing the risk** |
| **Hazard** | **Receptor** | **Pathway** | **Risk management** | **Probability of exposure** | **Consequence** | **What is the overall risk?** |
| **What has the potential to cause harm?** | **What is at risk? What do I wish to protect?** | **How can the hazard get to the receptor?** | **What measures will you take to reduce the risk? If it occurs – who is responsible for what?**  | **How likely is this contact?** | **What is the harm that can be caused?** | **What is the risk that still remains? The balance of probability and consequence.** |
| Spillages from pesticide and biocide handling and storage areas escaping | Potentially polluting liquids flow over yard to clean drain inlet | Flowing over yard or through cracks in poor impermeable surface and through the ground | Repair any infrastructure and design appropriate containment measuresMaintenance and regular inspection procedure designed and implementedFoot dips on good concrete with drains to slurry store or dirty water system and located where overflowing gutters will not diluteRemoved from site by licensed contractor – skip removal | Very unlikely | Contamination of local groundwater and potential nearby abstractions | Not significant with measures indicated |
| Spillage manure and feed  | Land | Land | Standard operating procedures applied for loading and unloadingAny spillage of feed around the bins is immediately cleaned upThe condition of feed bins are checked frequently so that any damage or leaks can be identified in accordance with the site maintenance and inspection procedureLevels measured to prevent overfilling All suppliers are supervised while on siteOverhead pipework checked regularlyFully trained operators | Unlikely |  | Not significant |
| Incorrect disposal of wash water | Clean drain and soakaways | Drains, land | Staff trained in correct operation proceduresAll drains shown on drainage plan | Unlikely | Contamination of ground and surface waters | Not significant |
| Acts of vandalism which cause damage to structures and fittings | Surrounding land, surface and ground water | Land, water  | Site securityRegular site checks after working dayBright lights minimising risk | Low | Contamination of soil and or water | Low |
| Flooding and other storm damage | Surrounding land, surface and ground waters | Land, drains, water courses  | Good site layout and designMaintenance of site infrastructure and local flood defencesObserve weather forecasts and weather warnings | Low | Water and soil pollution | Low |
| Fire | Livestock, staff, buildings, chemicals, bedding, feed, local habitats and neighbouring dwellings | Air | Regular inspection and maintenance of equipmentStorage of fire extinguishersAnnual testing of fire extinguishers | Unlikely | Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and storesExploding gas and fuel canisters and containersIncreased numbers of dead animals for disposal | Low |
| Below ground dirty water tank and pipe ruptures/overflows (including used disinfectant) | Dirty water flows over yard to clean drain inlet and into local water course | The surface water drainage system | Curbing to prevent water entering nearby water coursesUse of Defra/NOAH approved disinfectantsIf already entered drain, block off ditch with boards and sand bagsContact office or duty manager. If necessary contact Environment Agency | Unlikely | Contamination of local water course | Not significant |