Environmental Risk Assessment Scampston

**Farm name:** Scampston Pig Unit **Operator:** JSR Farms **Permit number:** EPR/GP3101LS/A001

**Table 1 Assessment of odour risk**

| **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 need 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 harm can be caused?** | **What is the risk that remains?**  **The balance of probability and consequence** |
| Odour from feed mixing, delivery and storage | Two neighbouring farms within 400 m of the installation | Air | Measures as described in ‘How to comply with your environmental permit for intensive farming V2 Jan 2010’  (EPR 6.09 Sector Guidance Note)  Odour Management Plan in place  Feed delivery will be sealed 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 identified  All feed ingredients are stored in covered bins  The 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 * Inadequate system design causing poor dispersal of odours | Two neighbouring farms within 400 m of the installation | Air | Measures as described in ‘How to comply - intensive farming’  The ventilation system will be regularly adjusted according to the age and requirements of the pigs (relevant to finisher unit)  The ventilation system within finisher unit will be designed to efficiently remove moisture from the house  Buildings with higher ventilation rates will discharge exhaust air via roof vents for improved dispersal  Stocking density maintained at or below levels set out in welfare regulations | Unlikely | Odour annoyance | Not significant |
| Manure and slurry management:   * Odours arising from poorly managed muck and slurry collection, removal and distribution * The use of insufficient or poor-quality straw * Spillage of water from drinking systems * Disease and vice outbreaks | Two neighbouring farm within 400 m of the installation | Air | Measures as described in ‘How to comply – intensive farming’  Controls on feed and ventilation (see above) help to maintain air quality  Additional controls include: Insulated walls and ceilings to prevent condensation  Regular maintenance and correct positioning to avoid overflow from feed and drinking systems  Concrete floors to prevent water ingress, and surfaces arranged to avoid build-up of stagnant water  Stocking density at optimal levels to prevent overcrowding  Pens and yards kept clean  Manure is removed onto an impermeable muck store which is exported on a regular basis.  Dirty water drainage set up and regularly emptied to either reception pit at gilt growout or underslat slurry storage at the finisher unit.  Frequent removal of manure and slurry; wind direction observed  Any potentially odorous spillages cleaned up promptly | Unlikely | Odour annoyance | Not significant |
| Carcase disposal:   * Inadequate storage of carcases on site * On-site disposal of carcases by incineration | Neighbouring dwelling houses within 400 m of the installation | Air | Measures as described in ‘How to comply – intensive farming’  Carcases are placed in sealed containers and are removed to be disposed of by a dead stock collector  All odour complaints are logged and investigated | Unlikely | Odour annoyance | Not significant |
| Buildings:   * Cleaning and disinfection * Emptying slurry pits * Removal of manure | Neighbouring dwelling houses within 400 m of the installation | Air | Pens and yards kept clean  Dirty water collection systems enclosed and regularly emptied, to avoid anaerobic conditions  Frequent removal of manure and slurry, wind direction observed  Any potentially odorous spillages cleaned up promptly | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure/slurry spreading | Neighbouring dwelling houses within 400 m of the installation | Air | As above  FYM is exported by a third-party farm  Land-spreading information will be provided by Scampston Farming Co. who will be exporting all slurry and utilising it on their land.  Intermittent activity only | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure and slurry  Storage – dirty tanks, slurry tank/lagoon FYM field heaps | Neighbouring dwelling houses within 400 m of the installation | Air | Site will operate under odour management plan  Feed selection to minimise excretion of nutrients  Storage areas (including field heaps) sited away from neighbours  Areas of open, dirty concrete minimised  Stores emptied regularly  Composting of manure (exported off site) | Likely | Odour annoyance | Not significant if carefully managed |

**Table 2 Assessment of Noise Risk**

| **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 need 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 harm can be caused?** | **What is the risk that remains? The balance of probability and consequence** |
| Noise problems from large vehicles travelling to and from the farm  Mobile source | Neighbouring dwelling houses within 400 m of the installation | Air | Measures as described in ‘How to comply – intensive farming’  Vehicles are required to be driven onto and off site with due consideration for neighbours  Deliveries of feed and fuel are made only during the working day, if possible, so disturbance is minimised  General animal movements made during working hours and of short duration, with minimum stress  All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site  Roads and tracks maintained to minimise noise produced | Unlikely | Noise annoyance | Not significant if managed carefully |
| Large vehicles on site for delivering feed, loading live pigs at end of the growing period, removal of muck and slurry from houses, removal of dirty water from underground tanks  Mobile source | Neighbouring farm within 400 m of the installation | Air | Measures as described in ‘How to comply – intensive farming’  Vehicles need to be well maintained and must be driven slowly around the site  Engines to be switched off when not in use  Idling of machines avoided and engine revs kept low  Slurry tanker filling and emptying done as an intermittent activity  Machinery and equipment sited as far as possible from neighbours  Electric submersed pump, intermittent operation, regular servicing | Unlikely | Noise annoyance | Not significant |
| Small vehicles travelling to and from the farm, e.g. staff and visitors’ cars, courier van deliveries, etc.    Mobile source | Neighbouring dwelling houses within 400 m of the installation | Air | Measures as described in ‘How to comply – intensive farming’  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 bins and tanks  Fixed source | Neighbouring dwelling houses within 400 m of the installation | Air | Vehicles are well maintained and designed so that noise during feed transfer is minimised  Conveyors and augers not operated when empty  Tipping-type delivery vehicles and augers used, whenever possible, for bulk dry ingredient delivery | Unlikely | Noise annoyance | Not significant |
| Operation of fans  Fixed source | Neighbouring dwelling houses within 400 m of the installation | Air | Some buildings naturally ventilated  Efficient extractor fans used and maintained in good condition to avoid excessive noise  Forced ventilation systems with automated controls to minimise run time and fan speed (for finisher unit) | Unlikely | Noise annoyance | Not significant |
| Alarm system and standby generator  Fixed source | Neighbouring dwelling houses within 400 m of the installation, staff and pigs | Air | Weekly system test (required by law) is carried out each Friday morning, timed to minimise nuisance to neighbours  All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice | Unlikely | Noise annoyance | Not significant |
| Pigs  Mobile source | Neighbouring dwelling houses within 400 m of the installation | Air | Noise from pigs may be considered to be a likely cause for complaint during the growing period  During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when full | Unlikely | Noise annoyance | Not significant |
| Personnel  Mobile source | Neighbouring dwelling houses within 400 m of the installation | Air | Staff and other contractors are required to carry out their work without creating excessive noise from shouting and use of radios, etc. | Unlikely | Noise annoyance | Not significant |
| Repairs | Neighbouring dwelling houses within 400 m of the installation | Air | Noise Management Plan in place  If repairs to the site are required, the work is undertaken with due regard for possible noise nuisance and during the normal working day  In the event of major repair work being undertaken, which is likely to cause significant noise and disruption, neighbouring residents will be notified in advance | Unlikely | Noise annoyance | Not significant |
| Manure/slurry spreading | Neighbouring dwelling houses within 400 m of the installation, wildlife | Air | Machinery operated at reasonable times, where possible, and idling avoided  Equipment maintained to optimum standards | Likely | Noise annoyance | Not significant if managed carefully |

**Table 3 Assessment of Fugitive Emissions Risk**

| **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 need 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 harm can be caused?** | **What is the risk that remains? The balance of probability and consequence** |
| **To air** |  |  |  |  |  |  |
| Dust  (including bio aerosols)  Sources:   * Straw * Feed * Incinerator ash | Neighbouring dwelling houses within 400 m of the installation:   * Nuisance * Contributes to odours * Human health (inhalation)     Surrounding vegetation: Covers leaves and inhibits photosynthesis  Surrounding land: Nutrient enrichment of soils  Contributes to respiratory problems for pigs and staff | Air | Use of suitable bedding materials and good storage of such materials  Use of liquid and pelleted feed delivered in sealed systems and stored in covered containers  Regular clearing of dust to prevent build-up within buildings, on roofs and around vents, as part of the disease control strategy | Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction, which it does around 50 days per year  Management actions should prevent this happening | Nuisance: Dust on surrounding vegetation, cars, clothing  Smothering and direct damage to nearby vegetation  Pigs/staff may get stressed and become unwell | Not significant if managed carefully |
| Ammonia  Source:  Pig housing and manure/slurry/dirty water storage, removal and spreading | Neighbouring dwelling houses within 400 m of the installation  Pigs and staff: High levels can cause respiratory problems  Also perceived as a nuisance as it contributes to odours  Surrounding vegetation: Direct toxic effect and changes to sensitive ecosystems  Surrounding land: Nutrient enrichment and acidification of soils | Air | Measures as described in ‘How to comply – intensive farming’  Mitigation measures as for odour  Feed formulated to match pig requirements and to minimise amount of ammonia produced  Rations under periodic review  Provision of sufficient straw in bedding to bind nitrogen, where appropriate (gilt housing)  Ventilation and heating control systems designed to provide optimal environment and regularly monitored and maintained  Frequency of slurry/manure removal to optimise pen cleanliness when alllowed    Dedicated purpose-built facilities for slurry, dirty water and manure  Manure/slurry spread at low level and in accordance with the Manure Management Plan and NVZ rules  Fully trained operators  Soils regularly analysed and applications made in response to crop requirements to avoid spreading more slurry/manure than is needed by Scampston Farming Co. | The impact of ammonia on air emissions from the installation has been assessed using the H1 methodology and detailed air dispersion modelling  The results demonstrate there will be little likelihood of impact to nearby wildlife sites | Aerial deposition and direct toxic effect on trees  Nutrient 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 disease  Secure site visitor policy  Livestock monitored for signs of disease and incidents reported quickly  Use 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  Source: Wash water run-off to nearby watercourse, muck and slurry spreading | Adjacent Watercourse: Mill Stream  Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses | Land | Wash water run-off is diverted to underground/ dirty water storage tanks  Used bedding/feed spilt on yard/roadways during clean-out is cleaned up  Field manure heaps (third party exports so responsible for their location) - sited away from watercourses and boreholes  Manure management plan followed, including NVZ rules for spreading manure and slurry (Scampston farming Co. and third-party responsibility) | Unlikely | Pollution of watercourse leading to eutrophication and poisoning of flora and fauna | Not significant if managed carefully |
| Spillages from storage and use of pesticides and fuel/chemicals | Vulnerable groundwater beneath site | Land | Management techniques employed aimed at avoiding or minimising use, where possible  Use of approved chemicals only  Operators fully trained and all equipment regularly maintained to avoid any in-field spillage or discharge | Unlikely | Contamination of surface and groundwaters  Killing of flora and fauna | Not significant |
| **To land** |  |  |  |  |  |  |
| Ammonia from storage of dirty water, slurry, manure and housing | Sensitive nature and conservation sites identified in pre-application screening  Is there a SSSI within 500 m? | Air | As for odour and ‘To water’ above  Feed selected to minimise excretion of nutrients  Storage sites sited away from sensitive receptors | Likely | Direct toxic effect on trees, nutrient enrichment and acidification of soils  Changes 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 possible  Dedicated storage areas and facilities  Collected by licensed contractors for recycling or disposal  Regular checks made for rubbish dumped by third parties | Unlikely | Amenity value of countryside spoilt by rubbish  Possibility of causing harm to wildlife | Not significant |
| **Pests** |  |  |  |  |  |  |
| Flies on manure heap could move off site and affect nearby residents  Also, birds, rats, etc. | Neighbouring dwelling houses | Air | Pest management programme in place  Manure heap is regularly inspected to check for maggots and flies  Heap will be treated with pesticide and covered with sheeting if flies become an issue  Food sources covered and secure from pests  Pest control programme in operation | Unlikely | Flies and rats are a vector of pollution that can harm human health  Concerns about this pollution can cause offence and affect amenity | Not significant if managed carefully |

**Table 4 Assessment of Accident Risk**

| **What do you do that can harm and what could be harmed** | | | **Managing the risk** | **Assessing the risk** | | |
| --- | --- | --- | --- | --- | --- | --- |
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| **What has the potential to cause harm?** | **What is at risk? What do I need 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 harm can be caused?** | **What is the risk that 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/ ditch/stream/  pond/swale and surrounding land  Also vulnerable groundwater beneath site | Flowing over yard or through cracks in poor impermeable surface and through the ground | Accident Management Plan in place  Repair any infrastructure and design appropriate containment measures  Maintenance and regular inspection procedure designed and implemented  Regular inspection of facilities and records kept  Dedicated container for storage with impermeable hard standing within bund  Removed from site by licensed contractor  Damaged or suspect packaging rejected at time of delivery | Very unlikely | Contamination of local groundwater and potential nearby abstractions | Not significant with measures indicated |
| Fuel oil in storage tank/vehicles escaping the containment | Land, local watercourse | The surface water drainage system | Regular inspection in accordance with the site maintenance and inspection procedure and complies with SSAFO regulations  Barriers in place to prevent vehicles damaging tanks and equipment  Concrete base and bund containing tank and fill point  Double valves locked when not in use  If spills occur, the spill equipment is located nearby | Very unlikely | Contamination of local watercourse | Not significant |
| Failure to contain firewater or off-site pollutants | Ditches, local watercourse |  | Accident Management Plan in place  Drain inlets to be covered by sandbags, drain bung inserted, diverter valve closed (where possible)  Stem flow of run-off from edge of yard using sandbags, use loader to push soil into a dam and excavate a sump where possible | Unlikely | Contamination of local watercourse and surrounding land | Not significant |
| Incorrect disposal of wash water | Clean drain, ditches, local watercourse and soakaways | Drains, ditches, land | Staff trained in correct operation procedures  All drains marked  All drains shown on drainage plan | Unlikely | Contamination of ground and surface waters | Not significant |
| Spillage when loading and emptying incinerator of non-SRM material, e.g. ash containing trace elements, heavy metals, calcium, phosphate and dust | Neighbouring dwelling houses  Surrounding land and watercourses | Air, land and water | Accident Management Plan in place  Regulation and regular inspection of facilities and records kept  Impermeable hard standing with liquid collection  APHA-approved activity includes records and inspections | Unlikely | Contamination of local watercourse, groundwater, vegetation, soil, etc. | Not significant |
| Acts of vandalism which cause damage to structures and fittings | Surrounding land, surface and ground waters | Land, water | Site security | Low | Contamination of soil and/or water | Low |
| Flooding and other storm damage | Surrounding land, surface and ground waters | Land, drains, watercourses | Good site layout and design  Maintenance of site infrastructure and local flood defences  Observe weather forecasts and warnings | Low | Water and soil pollution | Low |
| Power outage causing failure of slurry pumping systems, resulting in tank overflow  Failure of automatic liquid level control sensors and devices | Surrounding land, surface and ground waters | Land, drains, watercourses | Stand-by generator with automatic start-up and switch over | Low | Overflow of storage facilities | Low |
| Fire | Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats and neighbouring dwellings | Air | Regular inspection and maintenance of equipment | Unlikely | Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and stores  Exploding gas and fuel canisters and containers  Increased numbers of dead animals for disposal  Dust and fibres from sheet building material which may contain asbestos | Low |
| Below ground dirty water tank and pipe ruptures/overflows (including used disinfectant) | Dirty water flows over yard to clean drain inlet at the back of the office and into local watercourse | The surface water drainage system | Curbing to prevent water entering nearby watercourses  Use of Defra/NOAH-approved disinfectants  Block off drain inlet with sand bags kept by diesel tank  Contact office or duty manager. If necessary, contact Environment Agency | Unlikely | Contamination of local watercourse | Not significant |