**BPEX MODEL TEMPLATE B3.5 6A**

**Environmental Risk Assessment**

**Farm name: The Piggery Thorpe Salvin WORKSOP Operator: Mr T Ridley Permit number:** EPR/

**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 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 and storage | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Measures as described in ‘How to comply with your environmental permit for intensive farming V2 Jan 2010’  (EPR 6.09 Sector Guidance Note)  Feed delivery will be sealed to minimise atmospheric dust. Any spillage of feed around the bin and sheds is immediately cleaned up.  The condition of feed bins is checked frequently so that any damage or leaks can be identified and immediately repaired.  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. | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | 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 livestock and weather conditions.  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 and slurry management:   * Odours arising from poorly managed muck and dirty water/ slurry collection, removal and distribution * The use of insufficient or poor-quality straw * Spillage of water from drinking systems * Disease and vice outbreaks | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | 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 building materials to prevent condensation, where applicable  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  Dirty water collection systems enclosed and regularly emptied to avoid anaerobic conditions  Frequent removal of manure and dirty water; wind direction observed  Minimal agitation of the dirty water tank on removal and 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 400m of the installation  (N/A as nearest dwelling >600m) | Air | Measures as described in ‘How to comply-Intensive Farming’  Carcases are placed in sealed containers immediately after they are removed and are promptly disposed of via a licenced deadstock collector  There is no incinerator.  All odour complaints are logged and investigated promptly. | Unlikely | Odour annoyance | Not significant |
| Buildings:   * Cleaning and disinfection * Emptying dirty water tank * Removal of manure | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Pens and yards kept clean  Dirty water collection systems enclosed and regularly emptied to avoid anaerobic conditions  Frequent removal of manure and dirty water, wind direction observed  Minimal agitation of dirty water tank on removal and potentially odorous spillages cleaned up promptly | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure/dirty water/slurry spreading | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | As above  FYM and dirty water which is land-spread is highlighted in the manure management plan and also follows NVZ rules  No slurry.  Intermittent activity only | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure, slurry and dirty water.  Storage – dirty water/slurry tanks and FYM midden and field heaps | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Site will operate under odour management plan  Feed selection and ration managed to minimise excretion of nutrients  Storage areas (including field heaps) sited away from neighbours  Areas of open, dirty concrete minimised and cleaned regularly  Stores regularly emptied  Composting of manure  No slurry | 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 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 dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Measures as described in ‘How to comply-Intensive Farming’  Vehicles are required to be driven on to and off site with due care and consideration for neighbours  Deliveries of feed etc are made only during the daytime, if possible, so that disturbance is minimised  General animal movements made at social 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 livestock at end of the growing period, removal of muck and dirty water/slurry from houses, removal of dirty water from storage lagoon  Mobile source | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Measures as described in ‘How to comply-Intensive Farming’  Vehicles have to be well maintained and must be driven slowly around the site at all times  Engines to be switched off when not in use  Vehicles which are fitted with an audible 'vehicle reversing' warning system are generally used only in the daytime  Idling of machines avoided and engine revs kept low with an effective silencer where possible  Ad lib feed so no spikes in noise due to restricted feeding.  Dirty water tanker filling and emptying, and FYM removal, done little and often.  Machinery and equipment sited as far as possible from neighbours | 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 dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | 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 400m of the installation  (N/A as nearest dwelling >600m) | 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  Blower and vacuum type delivery vehicles fitted with low noise units | Unlikely | Noise annoyance | Not significant |
| Operation of fans  Fixed source | Neighbouring dwelling houses within 400m of the installation  (N/A as no fans are used and nearest dwelling >600m) | Air | N/A Buildings naturally ventilated | Unlikely | Noise annoyance | Not significant |
| Alarm system and standby generator  Fixed source | Neighbouring dwelling houses within 400m of the installation, staff and livestock  (N/A as alarm system and generator are not present and nearest dwelling >600m) | Air | N/A Buildings naturally ventilated. No audible alarm system.  All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice. No generator stored on site. | Unlikely | Noise annoyance | Not significant |
| Livestock  Mobile source | Neighbouring dwelling houses within 400m of the installation  (N/A as nearest dwelling >600m) | Air | Noise from livestock 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 400m of the installation  (N/A as nearest dwelling >600m) | 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 400m of the installation  (N/A as nearest dwelling >600m) | 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/dirty water spreading | Neighbouring dwelling houses within 400m of the installation, wildlife  (N/A as nearest dwelling >600m) | 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 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** |  |  |  |  |  |  |
| Dust  (including bio aerosols)  Sources:   * Straw * Feed | Neighbouring dwelling houses within 400m of the installation (N/A as nearest dwelling >600m):   * Nuisance * Contributes to odours * Negative impact on Human health (inhalation)     Surrounding vegetation: Covers leaves and inhibits photosynthesis  Surrounding land: Nutrient enrichment of soils  Contributes to respiratory problems for livestock and staff | Air | Use of suitable bedding materials, where applicable, and good storage of such materials  Use of dry feed delivered in sealed systems and stored in covered feed bins  Regular clearing of dust to prevent build up within buildings, on vehicles, on roofs etc, as part of the disease control strategy  Uncontaminated road and yard rainwater is directed into gutters. Dirty water that has arisen from effluent in the buildings is directed to the midden areas and dirty water storage facilities. | Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction  Management actions should prevent this happening | Nuisance: dust on surrounding vegetation, cars, clothing  Smothering and direct damage to nearby vegetation  Livestock/staff may get stressed and become unwell | Not significant if managed carefully |
| Ammonia  Source:  Livestock housing and manure/slurry/dirty water storage, removal and spreading | Neighbouring dwelling houses within 400m of the installation (N/A as nearest dwelling >600m)  Livestock 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 livestock requirements and to minimise amount of ammonia produced  Rations under periodic review  Provision of sufficient straw in bedding to bind nitrogen, where appropriate  Covered dirty water store  Regular monitoring of tank and store contents and maintenance of facilities and equipment  Frequency of dirty water/manure removal to optimise pen cleanliness    Dedicated purpose-built facilities for dirty water and manure  Manure/dirty water 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 | The impact of ammonia on air emissions from the installation has been assessed using the H1 methodology  The results demonstrate that 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 daily 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 water course, muck and slurry spreading | Any adjacent watercourses  (N/A as no adjacent watercourses)  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 promptly  Field manure heaps sited away from watercourses and boreholes  Manure management plan followed including NVZ rules for spreading manure and slurry | Unlikely | Pollution of water course 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  All tanks bunded and compliant with legislation  No fuel tanks on installation. | 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  There is no SSSI within 500m. | Air | As for odour and ‘To water’ above  Feed selected to minimise excretion of nutrients  Storage sites sited away from sensitive receptors  Manure stored on impermeable concrete pad  There are no SSSI areas within a 500m vicinity | Likely  Unlikely | Direct toxic effect on trees, nutrient enrichment and acidification of soils  Changes to sensitive ecosystems | Not significant if managed carefully  Not Significant |
| Waste materials, packaging, etc.  Source: Non-organic waste storage and disposal | Neighbouring dwellings and surrounding habitats and countryside | Air | Policy to avoid waste production where possible  Dedicated storage areas and facilities  Collected by licensed contractors for re-cycling 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** | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **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 drains/ditches  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  Foot dips on good concrete with drains to dirty water system and located where overflowing gutters will not dilute  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 water course | The surface water drainage system | No fuel stored on site  Or  Regular inspection in accordance with the site maintenance and inspection procedure and complies with SSAFO regulations  Concrete base and bund containing tank and fill point  Double valves locked when not in use  If spills occur the oil spill equipment is located nearby and clean-up is prompt | Very unlikely | Contamination of local water course | Not significant |
| Spillage of slurry, manure, feed and fuel due to operator error when loading and unloading | Land, local water course | Land, the surface water drainage system | Standard operating procedures applied for loading and unloading  No slurry.  Any spillage of feed around the bins and tanks is immediately cleaned up using materials and equipment which are stored nearby  Area drains to dirty water tank so containment provided  The condition of feed bins and tanks is checked frequently so that any damage or leaks can be identified in accordance with the site maintenance and inspection procedure  Levels measured to prevent overfilling and sight gauge enclosed by guard  Barriers are in place to prevent collision  All suppliers are supervised while on site  Fully trained operators | Unlikely | Contamination of local water course | Not significant |
| Failure to contain firewater or off-site pollutants | Ditches, local water course |  | Accident Management Plan in place  Gradients and curbing protect the soakaway and direct water from the pig buildings to the dirty water tank.  If necessary, stem flow of runoff from edge of yard using sandbags, use loader to push soil into a dam and excavate a sump | Unlikely | Contamination of local watercourse and surrounding land | Not significant |
| Incorrect disposal of wash water | Clean drain, ditches, local water course and soakaways | Drains, ditches, land | Staff trained in correct operation procedures  All drains shown on site plan | Unlikely | Contamination of ground and surface waters | Not significant |
| Spillage when loading and emptying incinerator of non SRM material, eg ash containing trace elements, heavy metals, calcium, phosphate and dust | Neighbouring dwelling houses  Surrounding land and water courses | Air, land and water | N/A – no incinerator | Unlikely | Contamination of local water course, 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. Gated entrance. | 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 design for purpose  Maintenance of site infrastructure. Not in a flood risk area.  Observe weather forecasts and weather 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, water courses | No slurry system.  Frequent monitoring of dirty water tank, especially ahead of washing out.  Dirty water tank emptied with a tanker system. | 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 water course | The surface water drainage system | Curbing to prevent water entering soakaway/nearby land  Use of Defra/NOAH approved disinfectants  Block off drain inlet with e.g. sand bags  Refer to contingency plan in Technical Standards and the Emergency Action Plan for the site.  Contact office or duty manager. If necessary contact Environment Agency | Unlikely | Contamination of local water course | Not significant |

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