

# NOISE

## Environmental Risk Assessment

**Farm name:** Willow Tree Farm

**Operator:** Cattle Holderness Ltd

**Permit number:** new application

**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 mixing, delivery and storage	Neighbouring dwelling houses within 400m of the installation	Air	<p>No neighbouring dwelling houses within 400m.</p> <p>In general, measures taken as described in 'How to comply with your environmental permit for intensive farming V2 Jan 2010' (EPR 6.09 Sector Guidance Note)</p> <p>Feed delivery sealed to minimise atmospheric dust. Any spillage of feed around the bins is immediately cleaned up.</p>	Unlikely	Odour annoyance	Not significant

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			<p>The condition of feed bins is checked frequently so that any damage or leaks can be identified</p> <p>All feed is stored in covered silos.</p> <p>The unit is relatively isolated so there is minimal risk of dust causing direct odour nuisance.</p>			
<ul style="list-style-type: none"> <li>• Odour arising from problems with housing ventilation system</li> <li>• Inadequate air movement in the house leading to high humidity and wet bedding</li> <li>• Inadequate system design causing poor dispersal of</li> </ul>	Neighbouring dwelling houses within 400m of the installation	Air	<p>No neighbouring dwellings within 400m.</p> <p>Measures as described in 'How to comply-Intensive Farming'.</p> <p>The ventilation system will be regularly adjusted according to the age and requirements of the pigs.</p>	Unlikely	Odour annoyance	Not significant

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odours.			The ventilation system will be designed to efficiently remove moisture from the house. It will discharge exhaust air via high speed fans located in roof and via chimneys for improved dispersal. Stocking density maintained at or below levels set out in Welfare Regulations. Fully slatted system means that there is no bedding used.			
Manure and slurry management: <ul style="list-style-type: none"> <li>• Odours arising from poorly managed muck and slurry collection, removal and distribution</li> </ul>	Neighbouring dwelling houses within 400m of the installation	Air	No neighbouring dwellings within 400m.  Measures as described in 'How to comply-Intensive Farming'	Unlikely	Odour annoyance	Not significant

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<ul style="list-style-type: none"> <li>• The use of insufficient or poor-quality straw</li> <li>• Spillage of water from drinking systems</li> <li>• Disease and vice outbreaks</li> </ul>			<p>Controls on feed and ventilation (see above) help to maintain air quality</p> <p>Additional controls include: Insulated walls and ceilings to prevent condensation.</p> <p>No bedding used. Water wastage minimised by use of nipple drinkers as opposed to river drinkers.</p> <p>Regular maintenance and correct positioning to avoid overflow from feed and drinking systems</p> <p>Surfaces prevent water ingress and arranged to avoid build-up of stagnant water</p> <p>Stocking density at</p>			

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			<p>optimal levels to prevent overcrowding</p> <p>Pens kept clean</p> <p>No manure handling.</p> <p>No separate dirty water collection.</p> <p>Frequent removal of slurry via enclosed tanks for separation and eventual storage in slurry bag. Separate removed to temporary field heaps.</p> <p>Liquid applied to land by injection or dribble bar, solid separate at low trajectory. Wind direction and land and weather conditions observed.</p> <p>Slurry not agitated on removal and</p>			

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			potentially odorous spillages (very unlikely) cleaned up promptly			
Carcase disposal: <ul style="list-style-type: none"> <li>• Inadequate storage of carcasses on site</li> <li>• On-site disposal of carcasses by incineration.</li> </ul>	Neighbouring dwelling houses within 400m of the installation	Air	No neighbouring dwellings within 400m.  Measures as described in 'How to comply-Intensive Farming'  Carcasses are placed in sealed containers immediately after they are removed and are promptly removed by a licenced deadstock collector.  There is no incinerator.	Unlikely	Odour annoyance	Not significant

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Buildings: <ul style="list-style-type: none"> <li>• Cleaning and disinfection</li> <li>• Emptying slurry pits</li> <li>• Removal of manure</li> </ul>	Neighbouring dwelling houses within 400m of the installation	Air	No neighbouring dwellings within 400m.  Pens and yards kept clean  No manure production.  No separate dirty water storage.  Frequent removal of slurry via enclosed tank system, for separation and storage in slurry bag.  Slurry not agitated on removal and potentially odorous spillages (very unlikely) cleaned up promptly.	Likely	Odour annoyance	Not significant if carefully managed

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Odour arising from manure/slurry spreading	Neighbouring dwelling houses within 400m of the installation	Air	<p>As above</p> <p>No neighbouring dwellings within 400m.</p> <p>No FYM handling.</p> <p>Slurry removed by enclosed system and applied to land by injection or dribble bar. Slurry separated before storage.</p> <p>Access to air, significantly low and very little risk of aerosol creation.</p> <p>The separated solids are spread at low trajectory.</p> <p>Any which is land-spread is highlighted in the manure management plan and also follows NVZ rules</p>	Unlikely	Odour annoyance	Not significant if carefully managed



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			Intermittent activity only			
Odour arising from manure and slurry. Storage – dirty tanks, slurry tank/lagoon FYM field heaps	Neighbouring dwelling houses within 400m of the installation	Air	<p>No neighbouring dwellings within 400m.</p> <p>Feed selection to minimise excretion of nutrients</p> <p>Slurry separated in enclosed system.</p> <p>Temporary field heaps for solid separate are carefully located to reduce risk of odour nuisance.</p> <p>Enclosed slurry handling system and storage.</p> <p>Stores regularly emptied</p>	Unlikely	Odour annoyance	Not significant if carefully managed

## NOISE

**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
<p>Noise problems from large vehicles travelling to and from the farm.</p> <p>Mobile source</p>	<p>Neighbouring dwelling houses within 400m of the installation</p>	<p>Air</p>	<p>Measures as described in 'How to comply-Intensive Farming'</p> <p>No sensitive receptors within 400m.</p> <p>Vehicles are required to be driven to and off site with due consideration.</p> <p>Deliveries of feed and fuel are made only during the daytime, if possible, so that disturbance is minimised</p> <p>General animal movements made during daylight hours, if possible, and of short duration with minimum stress</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant if managed carefully</p>

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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
			<p>All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site</p> <p>Roads and tracks maintained to minimise noise produced</p>			
<p>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</p> <p>Mobile source</p>	<p>Neighbouring dwelling houses within 400m of the installation</p>	<p>Air</p>	<p>Measures as described in 'How to comply-Intensive Farming'</p> <p>Vehicles have to be well maintained and must be driven slowly around the site</p> <p>Engines to be switched off when not in use</p> <p>Vehicles which are fitted with an audible 'vehicle reversing'</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant</p>

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			warning system are generally used only in the daytime  Idling of machines avoided and engine revs kept low with an effective silencer  Slurry bag and separate store emptying done as an intermittent activity  No neighbours within 400m.			
Small vehicles travelling to and from the farm e.g. staff and visitors' cars, courier van deliveries, etc  Mobile source	Neighbouring dwelling houses within 400m 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	Neighbouring dwelling houses within 400m of the	Air	Vehicles are well maintained and	Unlikely	Noise annoyance	Not significant

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Fixed source	installation		<p>designed so that noise during feed transfer is minimised</p> <p>Conveyors and augers not operated when empty</p> <p>Blower and vacuum type delivery vehicles fitted with low noise units</p>			
<p>Operation of fans</p> <p>Fixed source</p>	Neighbouring dwelling houses within 400m of the installation	Air	<p>Efficient extractor roof fans used and maintained in good condition to avoid excessive noise</p> <p>Forced ventilation systems with automated controls to ensure efficient running</p>	Unlikely	Noise annoyance	Not significant
<p>Alarm system and standby generator</p> <p>Fixed source</p>	Neighbouring dwelling houses within 400m of the installation, staff and pigs	Air	<p>Weekly system test (required by law) is carried out, timed in order to minimise nuisance to receptors. No neighbours within 400m.</p>	Unlikely	Noise annoyance	Not significant

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			<p>All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice</p> <p>No fixed generator. One would be hired from local plant hire if necessary.</p>			
<p>Pigs</p> <p>Mobile source</p>	<p>Neighbouring dwelling houses within 400m of the installation</p>	<p>Air</p>	<p>No neighbouring dwellings within 400m.</p> <p>Noise from pigs may be considered to be a 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</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant</p>

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Personnel Mobile source	Neighbouring dwelling houses within 400m of the installation	Air	No neighbouring dwellings within 400m. 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	Air	No neighbouring dwellings within 400m.  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	Unlikely	Noise annoyance	Not significant

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Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
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			residents will be notified in advance			
Slurry spreading	Neighbouring dwelling houses within 400m 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



## FUGITIVE EMISSIONS

**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.
<b>To air</b>						
Dust (including bio aerosols)  Sources: <ul style="list-style-type: none"> <li>• Feed</li> <li>• Incinerator ash</li> </ul>	Neighbouring dwelling houses within 400m of the installation: <ul style="list-style-type: none"> <li>• Nuisance</li> <li>• Contributes to odours</li> <li>• Human health (inhalation)</li> </ul> Surrounding vegetation: Covers leaves and inhibits photosynthesis  Surrounding land: Nutrient enrichment of soils  Contributes to respiratory problems for pigs and staff	Air	No neighbouring dwellings within 400m.  Fully slatted systems in all buildings, so no dusty beddings used.  Dry meal feed delivered in sealed systems and stored in covered containers  No incinerator.  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, surrounding land and surrounding vegetation when a strong wind blows. Dust could cause an issue for pigs and staff.  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

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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.
<p>Ammonia</p> <p>Source: Pig housing and manure/slurry/dirty water storage, removal and spreading</p>	<p>Neighbouring dwelling houses within 400m of the installation</p> <p>Pigs and staff: high levels can cause respiratory problems</p> <p>Also perceived as a nuisance as it contributes to odours</p> <p>Surrounding vegetation: direct toxic effect and changes to sensitive ecosystems</p> <p>Surrounding land: Nutrient enrichment and acidification of soils</p>	Air	<p>Measures as described in 'How to Comply – Intensive Farming'</p> <p>Mitigation measures as for odour</p> <p>Feed formulated to match pig requirements and to minimise amount of ammonia produced</p> <p>Rations under periodic review</p> <p>Ventilation and heating control systems designed to provide optimal environment and regularly monitored and maintained.</p> <p>Slurry stored below buildings and in enclosed slurry system and store. Slurry separated, reducing losses of</p>	Ammonia modelling results demonstrate that there will be little likelihood of impact to nearby wildlife sites	<p>Aerial deposition and direct toxic effect on trees</p> <p>Nutrient enrichment of soils and changes to sensitive ecosystems</p> <p>Respiratory problems in humans and mammals</p>	Not significant

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			nutrients including release of ammonia.  Regular monitoring of store contents and maintenance of facilities and equipment  Frequent slurry removal to optimise pen cleanliness.  Dedicated purpose-built facilities for slurry. No separate storage of dirty water. No creation of FYM.  Slurry injected or applied by dribble bar - and in accordance with the Manure Management Plan and NVZ rules  Separate solids spread at low trajectory.  Fully trained			

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			operators  Soils regularly analysed and applications made in response to crop requirements to avoid spreading more slurry/manure than is needed			
Zoonoses and notifiable diseases	Human health and livestock health	Air/direct contact	Detailed biosecurity precautions in place, e.g. 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	Unlikely	Human and livestock health implications	Not significant if managed carefully

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			Use of a health plan, with specialist veterinary input in place.			
<b>To water</b>						
<p>Nutrients such as N and P plus organic matter</p> <p>Source: Wash water run off to nearby water course, muck and slurry spreading</p>	<p>Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses</p>	Land	<p>Wash water is diverted to under-slat pits and then to slurry store.</p> <p>In event of feed spilt on yard/roadways, it is cleaned up promptly</p> <p>Temporary field heaps of solid slurry separate.</p> <p>Manure management plan followed including NVZ rules for spreading slurry</p>	Unlikely	<p>Pollution of water course leading to eutrophication and poisoning of flora and fauna</p>	Not significant if managed carefully

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Spillages from storage and use of pesticides and fuel/chemicals	Vulnerable groundwater beneath site	Land	<p>Management techniques employed aimed at avoiding or minimising use where possible</p> <p>Use of approved chemicals only</p> <p>Operators fully trained and all equipment regularly maintained to avoid any in-field spillage or discharge</p> <p>No fuel storage on installation.</p> <p>Chemicals stored in bunded container. Chemicals and medicines in locked store.</p>	Unlikely	<p>Contamination of surface and groundwaters</p> <p>Killing of flora and fauna</p>	Not significant

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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 500m?	Air	As for odour and ‘To water’ above  Feed selected to minimise excretion of nutrients  Slurry storage enclosed – under slat pits in buildings and enclosed slurry handling system and store (slurry bag). No storage of dirty water or manure. Solids from slurry separation stored in temporary field heaps, carefully sited.	Unlikely	Direct toxic effect on trees, nutrient enrichment and acidification of soils  Changes to sensitive ecosystems .	Not significant if managed carefully

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<p>Waste materials, packaging, etc.</p> <p>Source: Non-organic waste storage and disposal</p>	<p>Neighbouring dwellings and surrounding habitats and countryside</p>	<p>Air</p>	<p>Policy to avoid production where possible</p> <p>Dedicated storage areas and facilities</p> <p>Collected by licensed contractors for re-cycling or disposal</p> <p>Regular checks made for rubbish dumped by third parties</p>	<p>Unlikely</p>	<p>Amenity value of countryside spoilt by rubbish</p> <p>Possibility of causing harm to wildlife</p>	<p>Not significant</p>
<b>Pests</b>						
<p>Flies on manure heap could move off-site and affect nearby residents</p> <p>Also, birds, rats, etc.</p>	<p>Neighbouring dwelling houses</p>	<p>Air</p>	<p>Site kept clean and tidy. No attractive cover or access to feed.</p> <p>No FYM. Solids from slurry separation stored in temporary field heaps and monitored regularly for signs of pests.</p>	<p>Unlikely</p>	<p>Flies and rats are a vector of pollution that can harm human health</p> <p>Concerns about this pollution can cause offence and affect amenity</p>	<p>Not significant if managed carefully</p>



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			Food sources covered and secure from pests  Pest control programme in operation			

## ACCIDENT RISK

**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 drain inlet, ditch/stream/pond/swale and surrounding land areas  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 slurry 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	Very unlikely	Contamination of local groundwater and potential nearby abstractions	Not significant with measures indicated

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			Removed from site by licensed contractor  Damaged or suspect packaging rejected at time of delivery			
Fuel oil in storage tank/vehicles escaping the containment	Land, local water course	The surface water drainage system	No fuel storage on installation or related specifically to the pig enterprise.	N/A	N/A	N/A
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  Any spillage of feed around the bins is immediately cleaned up  The condition of feed bins is checked frequently so that any damage or leaks can be identified in accordance with the	Unlikely	Contamination of local water course	Not significant

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			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  Overhead pipework routed through buildings with internal slurry storage.  Fully trained operators  Fully monitored slurry system and well designed and maintained equipment and infrastructure.			

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			See below for containment protocols.			
Failure to contain firewater or off-site pollutants	Ditches, local water course		<p>Accident Management Plan in place</p> <p>Attenuation pond prevents water from the site from being discharged directly to the watercourse.</p> <p>Drain inlets to be covered by sandbags if necessary. Drains shut off.</p> <p>Contaminants to be contained and removed or directed to slurry storage as appropriate.</p>	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	<p>Staff trained in correct operation procedures</p> <p>All drains marked</p>	Unlikely	Contamination of ground and surface waters	Not significant

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			<p>All drains shown on drainage plan</p> <p>All wash water automatically collected in slurry store via under-slat storage.</p>			
Spillage when loading and emptying incinerator of non SRM material, e.g. ash containing trace elements, heavy metals, calcium, phosphate and dust	<p>Neighbouring dwelling houses</p> <p>Surrounding land and water courses</p>	Air, land and water	No incinerator	N/A	N/A	N/A
Acts of vandalism which cause damage to structures and fittings	Surrounding land, surface and ground waters	Land, water	Site security. The site can be accessed only via the single access track and the building will only have one entrance via a personal door which will be locked. The loading ramp will have a roller shutter door operated from inside the building.	Low	Contamination of soil and or water	Low

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Flooding and other storm damage	Surrounding land, surface and ground waters	Land, drains, water courses	<p>Good site layout and design</p> <p>Maintenance of site infrastructure and local flood defences</p> <p>Observe weather forecasts and weather warnings</p> <p>There is no known flooding risk for this site.</p> <p>Attenuation pond captures clean water from the site, with significant capacity to allow for sudden and high rainfall.</p>	Low	Water and soil pollution	Low
<p>Power outage causing failure of slurry pumping systems resulting in tank overflow</p> <p>Failure of automatic liquid level control sensors and devices</p>	Surrounding land, surface and ground waters	Land, drains, water courses	Significant contingency margin in storage capacity.	Low	Overflow of storage facilities	Low

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Fire	Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats and neighbouring dwellings	Air	Regular inspection and maintenance of equipment.  Fire alarms.  Minimal flammable materials, so risk is significantly reduced.  No gas or fuel stored on site.  No asbestos.  See above for firewater containment.	Unlikely	Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and stores  Increased numbers of dead animals for disposal  Dust and fibres from building material	Low

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