

**BESPOKE ENVIRONMENTAL PERMIT APPLICATION**

**HOLME FARM**

**Appendix 6 Environmental Risk Assessment**

Prepared for: JH Willis & Son



Version 1

August 2020

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

## 1. Introduction

The following qualitative risk assessment has been prepared to support the variation application to the bespoke waste installation.

## 2. Summary of key parameters

<b>Facility</b>	Holme Farm Liquid Treatment Facility
<b>Operator</b>	JH Willis & Son
<b>Location</b>	Holme Farm Marsh Lane Ince Cheshire CH2 4NR
<b>Location of key environmental sites</b>	The Mersey Estuary (RAMSAR/SSSI/SPA) is located in the vicinity (1 000 m) of the site.  The locations of these sensitive sites are shown in the appended map.
<b>Risk assessment carried out by</b>	360 Environmental Ltd
<b>Date</b>	9 <sup>th</sup> October 2018
<b>Risk Criteria Summary</b>	
<b>Parameter 1</b>	The site will operate a liquid waste transfer station to store wastes suitable for further application to land (R13) under a 'bespoke' SR2010_No4 permit.  The site will operate a treatment facility to produce a treated sewage sludge for application to land (R3).  Waste is stored (R13) prior to transfer off site, or for treatment in the dedicated lime treatment tanks.
<b>Parameter 2</b>	Permitted waste types – those suitable for application to land under a 'bespoke' SR2010_No4 permit, a SR2010_No5 or SR2010_No6 permit.  Sewage sludge arising from domestic properties.
<b>Parameter 3</b>	Quantity of waste accepted at the facility – 75 000 tonnes per annum.

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

<b>Parameter 4</b>	All waste will be stored and treated on an impermeable surface with a sealed drainage system.
<b>Parameter 5</b>	There are no point source discharges to controlled waters.
<b>Parameter 6</b>	The activities are not carried out within a groundwater source protection zone 2, or within 250 m of any well, spring, borehole used for the supply of water for human consumption, including private water supplies.
<b>Parameter 7</b>	The liming activity is not carried out within 250 m of the nearest sensitive receptor.
<b>Parameter 8</b>	The liming activity is carried out within 500 m of a European Site or a Site of Special Scientific Interest (SSSI)
<b>Parameter 9</b>	The liming activity is carried out within 500 m of a RAMSAR site

### 3. Summary list of site receptors

Site name/description	Distance from site	Details
<b>Designated and non-designated habitats and wildlife sites</b>		
Mersey Estuary (RAMSAR)	275 m	Located to the north of the site.
Mersey Estuary (SSSI)	275 m	Located to the north of the site.
Mersey Estuary (SPA)	275 m	Located to the north of the site.
Frodsham and Helsby and Ince Marshes (LWS)		
<b>Groundwater and abstractors</b>		
		The site is located above bedrock classed as 'Principal' The aquifer is designated as Secondary (undifferentiated).
<b>Groundwater vulnerability</b>		
		The site lies within an area classed as 'medium - high for groundwater vulnerability.
<b>Source Protection Zones</b>		

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

		The site is not situated in a source protection zone.
<b>Surface water and abstractors</b>		
		No surface water abstraction licences found
<b>Water protection zone and status</b>		
		Area lies outside an NVZ 2017
<b>Soil classification</b>		
		<p>Soilscape 10</p> <p><i>freely draining slightly acid sandy soils</i></p> <p>Main Surface Texture Class - <i>sandy</i></p> <p>Natural Drainage Type - <i>freely draining</i></p> <p>Natural Fertility - <i>low</i></p> <p>Characteristic Semi-natural Habitats - <i>acid dry pastures; acid deciduous and coniferous woodland</i></p>
<b>Surface water</b>		
		<p>The site does not lie within a drinking water safeguard zone for ground or surface water.</p> <p>There is a small drain adjacent to the site that feeds in to the local surface water drainage system that eventually enter Manchester Ship Canal via the Hoolpool Gutter.</p>
<b>Flood risk</b>		
		The site lies in an area benefitting from flood defences.
<b>Air Quality Management Area</b>		
		The site does not lie in an air quality management area

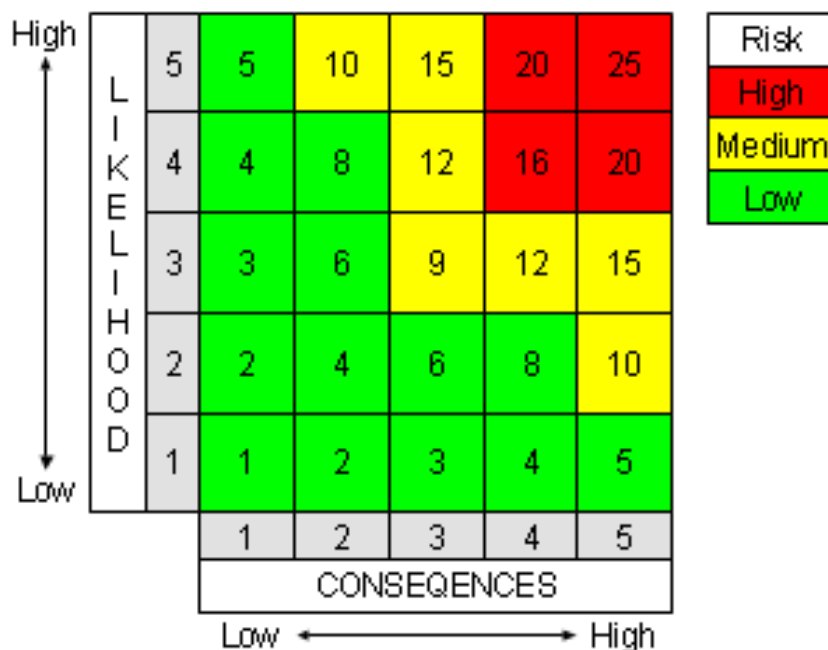
		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

#### 4. Risk criteria rating

Risk ratings are based on the likelihood of an event occurring multiplied by the severity of potential impact. Ratings are made of residual risk following implementation of preventative measures on site. The following scale is applied to rate these parameters:

Severity		Likelihood	
<b>1</b>	No environmental harm arising	<b>1</b>	Very unlikely to happen
<b>2</b>	Fleeting localised impacts	<b>2</b>	Low probability/occasional
<b>3</b>	Localised impacts medium term	<b>3</b>	Likely to occur
<b>4</b>	Wider scale impacts of a fleeting nature, or localised impacts of a more persistent nature	<b>4</b>	Highly likely to occur
<b>5</b>	Widespread/persistent impacts on high amenity/sensitive sites	<b>5</b>	Inevitable

Final calculated risk levels rating bands are as follows



		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

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?
<i>What has the potential to cause harm?</i>	<i>What is at risk? What do I want to protect?</i>	<i>How can the hazard get to the receptor?</i>	<i>What measures will you take to reduce the risk? Who is responsible for what?</i>	<i>How likely is contact (1-5)</i>	<i>What is the harm that can be caused? (1-5)</i>	<i>What is the risk that still remains? (Likelihood x Severity)</i>
Release of micro-organisms (bioaerosols)	Local human population	Air – wind blown dispersion in the atmosphere	Liming activities are not carried out within 250 metres of the nearest sensitive receptor. Waste types have a low propensity to generate bioaerosols.	Very unlikely to happen I	Nuisance – dust on cars, clothing and inhalation of dusts I	<b>Very low</b> I
Dust from the movement of vehicles to and from the site	Local human population	Air – wind blown dispersion in the atmosphere	Site Manager is responsible for checking wind strength and direction and taking corrective action if necessary. Road surfaces are concrete, so low likelihood of generation of materials that would become airborne.	Very unlikely to happen I	Nuisance – dust on cars, clothing and inhalation of dusts I	<b>Very Low</b> I

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Release of particulate matter and micro-organisms from wastes deliveries to, stored and despatched from site.	Local human population	Air – wind blown dispersion in the atmosphere	All liquid wastes are delivered by tankers directly to the site. Loose powders and dusts are not permitted. Lime is delivered in sealed packages and mixed in a purpose designed pre-mixing chamber. Waste materials have a moisture content of at least 95%, so unlikely to generate dust.	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts 2	<b>Low 2</b>
Input material may contain litter.	Local human population	Air – wind blown dispersion in the atmosphere	All liquid wastes are delivered by tankers directly to the site. Any waste generated on site will be stored in sealed bins and removed from site on a regular basis to ensure that large volumes of all types of waste do not accumulate on site. Any litter is cleared from any affected areas outside the site as soon as possible.	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts 2	<b>Low 2</b>
	Adjacent farm land					

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Mud on roads from the movement of vehicles to and from the site	Local human population	Deposited on the ground by vehicles entering and exiting the site	Road surfaces on the site are either concrete or asphalt so an insignificant risk of mud being generated on site. Road surface will be inspected regularly and kept clean should any mud be brought on to the site. Incoming vehicles will be inspected and any issues with mud being trafficked on to the site will be addressed with the haulier/supplier.	Very unlikely to happen 1	No environmental harm arising 1	<b>Low 1</b>
Odour from delivered waste	Local human population	Air – wind blown dispersion in the atmosphere	Delivered waste is placed in the appropriate tanks without delay. There is potential for exposure for anyone living or working downwind of the site (excluding operator and employees). Local residents not within 500 m of the site. Odour Management Plan in place.	Odours are unlikely to impact on local receptors as liming procedures and adherence to the OMP will reduce odours as far as possible.	Localised impacts medium term 2	<b>Low 4</b>



		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

				2		
Odour from the liming and storage of sewage wastes in the treatment process	Local human population	Air – wind blown dispersion in the atmosphere	<p>Liming produces and is likely to release odour.</p> <p>Liming carried out within sealed vessels.</p> <p>There is potential for exposure for anyone living or working downwind of the site (excluding operator and employees).</p> <p>Local residents can be sensitive to odour.</p> <p>Odour Management Plan in place.</p>	<p>Odours are unlikely to impact on local receptors as liming procedures and adherence to the OMP will reduce odours as far as possible.</p> <p>2</p>	Localised impacts medium term 3	<b>Low 6</b>
Odour from storage of wastes in the process	Local human population	Air – wind blown dispersion in the atmosphere	Once treated to the requirements of SUIAR the treated sludge is removed from site to on-field operations.	Odours are unlikely to impact on local receptors as	Localised impacts medium term 3	<b>Low 6</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

			<p>Sludge is transported off site to WWTW or land application.</p> <p>Sewage wastes awaiting liming are dealt with as soon as possible and on an ongoing basis to prevent further organic degradation that generates odours.</p> <p>Sealed tanks and pipes are used throughout the process to ensure that odours are not generated that may cause nuisance.</p>	<p>liming procedures and adherence to the OMP will reduce odours as far as possible.</p> <p>2</p>		
Flies in waste	Local human population	Air	<p>The wastes may be susceptible to limited fly infestation.</p> <p>All wastes will be delivered in a liquid form in sealed tankers.</p> <p>Wastes received may have been stored for long periods of time so this increases the odour potential.</p> <p>Anaerobic conditions on site will be avoided, sewage feedstocks mixed</p>	<p>Flies are unlikely to impact on local receptors as waste is not susceptible to fly infestation.</p> <p>2</p>	<p>Nuisance – Flies may be more prevalent in periods of warm, damp weather</p> <p>2</p>	<p>Low</p> <p>4</p>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

			and processed within 5 days of reception.			
Rodent infestation	Local human and wildlife population	Over land	The waste is in a liquid form and is not susceptible to rodent infestation. All wastes will be delivered in sealed tankers.	Infrequently due to waste types and containment arrangements. Signs of infestation to be monitored on an ongoing basis 2	Nuisance – from rodents and rodent damage. Hygiene and disease risk issues 2	Low 4
Scavenging birds and animals	Local human and wildlife population	Over land and through the air	The waste is in a liquid form and is not susceptible to scavenging birds and animals All wastes will be delivered in sealed tankers.	Very unlikely to happen 1	Nuisance and harm to human health from waste carried off site and faeces 2	Low 2

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

			Material will undergo sanitisation as part of the liming process.			
Noise from vehicle movements/ deliveries	Users of highway, local workplaces, and local dwellings.	Air	<p>Vehicle movements for waste delivery are scheduled to occur Monday to Friday during normal working hours. Emergency loads may be brought in outside normal hours. Liquid removals may operate at weekends, but will not operate out of normal working hours. Site already has well established traffic movements. The Site Manager is responsible for ensuring vehicles are turned around efficiently, with least impact on the neighbouring properties and that vehicles are removed from the surrounding roads quickly.</p>	<p>Site located in a remote location with good access from the highway. Infrequent impact to neighbours to cause nuisance</p> <p style="text-align: center;">2</p>	<p>Nuisance from noise. Duration should be short as vehicle movements reduced</p> <p style="text-align: center;">2</p>	<b>Low 4</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

			Loading/unloading can create some noise, but this is localised, and receptors distant enough to mitigate impact.			
Noise/vibration from pumps/screen	Local human and wildlife population	Air	All pumps and the screen are electrically operated.	Very unlikely to happen 	Nuisance – from noise vibration 	<b>Low 1</b>
Delivery of wastes	Ground/groundwater/surface water	Spillage through ground	All deliveries will be supervised and will take place during normal working hours. Deliveries will take place in a sealed, impermeable concrete area that drains to a sealed tank. State of repair of concrete is monitored on a regular basis, and proactive maintenance carried out if necessary.	Low as supervised delivery procedure in place, and delivery area has impermeable surfacing and drains to tank. 	Pollution of watercourse/groundwater/land 4	<b>Low 4</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Chemical/oil Delivery	Ground/groundwater/ surface water	Spillage during delivery to drain/ground	No bulk diesel or liquid chemicals are stored on site	Very unlikely to happen 1	Pollution of watercourse/ groundwater/land 4	<b>Low 4</b>
Storage of small volumes of chemicals	Local environment	Spillage during use or transferring	All cleaning chemicals are stored with lids or caps secured. All cleaning chemicals are stored to ensure substances are not exposed to conditions that could cause a reaction and spillages are contained. Chemicals are segregated as appropriate and stored in secondary containers to catch any small spillages.	Very low volumes are kept on site Storage is contained and indoors 1	Harm to local environment and animal health 2	<b>Low 2</b>
Flooding of site	Local human population and local environment	Contaminated flood waters	Permitted waste types are non- hazardous so any waste washed off site will add to the volume of the local post-flood clean-up workload, rather than the hazard.	No history of flooding in the area. Site is in an area protected by flood defences. 1	Contamination of buildings / natural habitats 2	<b>Low 2</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Spillage of liquids with high organic content.	All surface waters close to and downstream of site.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All operations carried out more than 10 metres from a water course on an impermeable surface with a sealed drainage system. All liquids kept in containers and provided with secondary containment.	Very unlikely to happen I	Pollution of watercourse/ land 4	<b>Low 4</b>
Spillage of liquids with high organic content.	Groundwater	Transport through soil/groundwater then extraction at borehole.	All operations carried out on an impermeable surface with a sealed drainage system. Any liquids kept in containers and provided with secondary containment.	Very unlikely to happen I	Pollution of groundwater/land 4	<b>Low 4</b>
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Local human population and local environment	Air transport of smoke. Firewater runoff from site.	Waste will be maintained with adequate moisture correction as per industry standard so that is not readily combustible. Permitted waste types are liquid and non-hazardous therefore only a low magnitude risk is estimated.	Very unlikely to happen I	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters. Pollution of water or land.	<b>Low 3</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

			Permitted activities do not include the burning of waste.		3	
Unauthorised access to site	Bodily injury to person or animal entering site	Direct physical contact	<p>The site is surrounded by a perimeter fence and has a lockable gate to the entrance.</p> <p>This gate is closed and locked always when staff are not present on site.</p> <p>The site is fitted with remote CCTV system so staff are alerted to the presence of intruders.</p> <p>All vehicles/people entering the site will be received by the weighbridge operator who will be present in this area while the site is open for deliveries.</p>	<p>Low as site is locked and fenced when not manned</p> <p>Access to the site is controlled during operating hours.</p> <p>1</p>	<p>Bodily injury/damage to plant</p> <p>3</p>	<b>Low 3</b>



		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Arson and / or vandalism causing the release of polluting material to air (smoke or fumes), water or land.	Local human population, staff, firefighters, vandals or local environment.	Air transport of smoke. Firewater runoff from site.	Permitted waste types are non-hazardous liquids so only a low magnitude risk is estimated. A series of procedures are in place to manage this eventuality: Accident and Emergency Management Plan.	Site is secure 2	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or vandals. Pollution of water or land. 3	<b>Low 6</b>
Harm to protected site through nutrient enrichment, leachate, contaminated surface water runoff, smothering, disturbance or predation.	Protected sites – RAMSAR/SSSI/SPA and protected species/habitats and other nature conservation sites (LWS)(LNR).	Any	Adjacent Local Wildlife Sites (Frodsham and Helsby and Ince Marshes) are protected as the lime treatment only takes place on an impermeable surface with sealed drainage in sealed vessels.	Very unlikely to happen 1	No environmental harm arising 1	<b>Low 1</b>

		<i>Operating Instruction</i>		Risk rating	Review
		<b>Qualitative risk assessment</b>		High	Annually
Ref: JHW_Qua/Risk/Ass	DRAFT	Owner	JH Willis & Son	Dept	Operations
Issue date		Compliance date		Review date	

Harm to protected site through nutrient enrichment, leachate, contaminated surface water run-off, smothering, disturbance or predation.	Protected sites – RAMSAR/SSSI/SPA and protected species/habitats and other nature conservation sites (LWS)(LNR).	Any	Adjacent protected sites are protected as the storage of liquids only takes place on an impermeable surface with sealed drainage in sealed vessels.	Very unlikely to happen 	No environmental harm arising 	<b>Low</b> 
19 05 99 only described as composting liquors from the aerobic treatment of biodegradable waste	Odour generation	Any	All sensitive receptors are protected as the storage of 19 05 99 only takes place on an impermeable surface with sealed drainage in sealed vessels.	Very unlikely to happen 	No environmental harm arising 	<b>Low</b> 