

**Environmental Risk Assessment**

<b>Facility:</b>	SRCL Knowsley Healthcare Waste Treatment and Transfer Station
<b>Location:</b>	Bradman Road, Knowsley Industrial Park, Merseyside, L33 7UR
<b>Location of environmentally sensitive sites (km / m):</b>	Greater than 200m
<b>Risk assessment carried out by:</b>	John Anderson
<b>Date:</b>	19-Aug-22

Data and information				Judgement				Action (by permitting)	
Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
Local human population	Releases of particulate matter (dusts) and infectious micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Low	High	Medium	Treatment activities have the potential to cause releases but probability of exposure is low due to existing control measures and distance from residential areas.	Waste is only accepted in bags or containers. Reusable containers require disinfection before leaving site. Site surfaces and static containers require periodic disinfection. Waste treatment takes place within a building and achieves STAATT Level III. Abatement plant including HEPA filters and carbon in use to control bio-aerosol emissions.	Low
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	Very low	Low	Very low	Local residents often sensitive to dust, but activities do not produce dust and nearest residential area is over 1000m away.	As above. Activities by their nature do not tend to produce dusts.	Very low
Local human population, livestock and wildlife.	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition	Low	Medium	Low	Local residents often sensitive to litter, but control measures are in place and nearest residential area is over 1000m away.	As above. Routine site inspections as part of management system ensure any litter is cleared up on a daily basis.	Very low
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Very low	Low	Very low	Road Safety. Activities do not produce mud, vehicle movement areas are all fully surfaced. Nearest residential area is over 1000m away.	As above. All areas of vehicle movement are surfaced.	Very low
Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Medium	High	Medium	Local residents often sensitive to odour. Nearest residential area is over 1000m away. Odour abatement system in effect.	Treatment plant abatement system designed to remove odours from treatment process. Treatment activity within building. All waste storage in full enclosed containers. Odour management plan in place.	Low
Local human population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Very low	Medium	Low	Local residents often sensitive to noise and vibration. Nearest residential area is over 1000m away.	Plant equipment does not produce significant noise or vibration and is assessed during the planning process. Plant noise should not be detectable beyond site boundary. Vehicle noise appropriate in industrial setting, residential areas over 1000m away.	Very low
Local human population	Scavenging animals and scavenging birds	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land	Low	Medium	Low	Permitted wastes include infectious materials and may attract scavenging animals and birds.	All wastes stored on site are fully containerised with no access to pests. Site inspection and stock turnover processes ensure any odourous wastes are processed promptly.	Very low

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Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land	Low	Medium	Low	Permitted wastes include infectious materials and may attract pests.	As above	Very low
Local human population and local environment	Flooding of site	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Very low	Medium	Low	Hazardous wastes washed off site will add to the volume and hazard of the local post-flood clean up workload. Site is not in a flood risk area.	All wastes stored on site are fully containerised. Site is not in a flood risk area.	Very low
Local human population and / or livestock after gaining unauthorised access to the waste operation	All on-site hazards: wastes; machinery and vehicles.	Bodily injury	Direct physical contact	Low	Medium	Low	Although some permitted waste types are hazardous, a medium magnitude risk is estimated. Site is manned 24/7 to prevent unauthorised access.	All wastes are fully containerised, liquids have secondary containment. Site is manned and operational 24/7 so unauthorised access to waste, plant equipment or vehicles is highly unlikely.	Very low
Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Low	High	Medium	Although some permitted waste types are hazardous and some are flammable, a medium magnitude risk is estimated. Site is manned 24/7 to prevent unauthorised access.	As above. Emergency response plan in place in event of a fire.	Very low
Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	As above.	Low	High	Medium	Risk of accidental combustion of waste is low.	As above. Emergency response plan in place in event of a fire. Drainage network has shut off valves and site is adequately bunded to prevent fire water from leaving the site boundary.	Very low
Protected sites - European sites and SSSIs. Other nature reserves (Acornfield Plantation 1200m from site).	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Very low	Medium	Low	Waste operations may cause harm to and deterioration of nature conservation sites.	No European sites or SSSI's within 200m of the facility. Local nature reserve - Acornfield Plantation, located approx. 1200m to the SE of the site. No impact predicted due to all control measures.	Very low
All surface waters close to and downstream of site (Simonswood Brook nearest water course, approx. 350m to north of the site).	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids.	Acute effects: oxygen depletion, fish kill and algal blooms	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Medium	Low	Although permitted waste types include some hazardous liquids a low magnitude risk is estimated. Site has impermeable surfaces and secondary containment.	All waste is containerised in leak-proof containers. Liquid wastes have secondary containment. All waste storage areas have impermeable surfaces with sealed drainage to foul sewer. Emergency response procedures include spillage management. Drainage network has shut off valves and site is adequately bunded to prevent any spillages from leaving the site boundary prior to remediation.	Very low
All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality	As above. Indirect run-off via the soil layer	Low	Medium	Low	Permitted waste types include hazardous liquids so harm may not be temporary and reversible.	As above	Very low
Abstraction from watercourse downstream of facility (two agricultural abstraction licences 308m E of site, one potable water abstraction licence 580m SW of site).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Low	Medium	Low	All waste is fully containerised. Although permitted waste types include some hazardous liquids a low magnitude risk is estimated. Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off.	As above, also site is not within a Groundwater Source Protection Zone 1 (within total catchment zone 3).	Very low
Groundwater (four groundwater abstraction licences within 2km of the site)	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Low	Medium	Low	Permitted waste types include hazardous liquids so harm may not be temporary and reversible.	As above, also site is not within a Groundwater Source Protection Zone 1 (within total catchment zone 3).	Very low
Local human population	As above	Harm to human health - skin damage or gastro-intestinal illness.	Direct contact or ingestion	Low	Medium	Low	Unlikely to occur, but might restrict recreational use.	As above. No known recreational use of waters within vicinity of site.	Very low

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Foul sewer system - Fazakerley Waste Water Treatment Works	Spillage of liquids, leachate from waste, contaminated run-off to foul sewer from spillage clearance; treatment process effluents.	Inhibition of treatment works efficacy; downstream effects	Transport through foul sewer	Medium	Medium	Medium	Possibility of occurrence but magnitude low due to small volumes involved. Controlled by consent.	Trade effluent discharge consent in effect. Emergency response procedures include spillage management. All wastes containerised, with secondary containment for liquids. Storage of effluent and waste water treatment plant has a self contained drainage system with shut off in the event of an emergency.	Very low
River Alt	Spillage of liquids, leachate from waste, contaminated run-off to foul sewer from spillage clearance; treatment process effluents.	Acute effects: oxygen depletion, fish kill and algal blooms. Chronic effects: deterioration of water quality	Transport via foul sewer system to Fazakerley Waste Water Treatment Works then into River Alt	Very low	Medium	Low	Possibility of occurrence but magnitude low due to small volumes involved. Controlled by consent. Highly unlikely that WWTW could be overwhelmed.	As above.	Very low
Atmosphere	Emission of pollutants from treatment plant stack emission points	Emission of greenhouse gases	Gas burner emissions to air from stacks	High	Low	Medium	Gas burners for steam raising boiler used routinely. Modern efficient design.	Modern energy efficient design of gas fired boilers. Subject to planned preventative maintenance regime to ensure efficient use.	Very low
Atmosphere	Emission of pollutants from treatment plant stack emission points	Emission of volatile organic compounds	Treatment plant emissions to air from stack	Low	Medium	Low	Emissions to air routine but significant quantities of harmful chemicals are abated in the pollution control system.	Abatement system is designed to abate VOC emissions down to permitted levels.	Very low
Land beneath site	Litter; waste and liquid spillage; oil spillage	Contamination of land; deterioration of soil quality	Transport through damaged surfaces or unsurfaced areas	Low	Medium	Low	Pathway unlikely as all storage and treatment areas fully surfaced and all wastes containerised.	All storage and treatment areas have impermeable surfaces subject to planned preventative maintenance regime. Emergency response procedures include spillage management. All wastes fully containerised with secondary containment for liquids.	Very low