

# Caulmert Limited

Engineering, Environmental & Planning  
Consultancy Services

## Daneshill Soil Treatment Facility

FCC Recycling (UK) Limited

## Amenity and Accident Risk Assessment

Environmental Permit Variation Application

### Prepared by:

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3982-CAU-XX-XX-DR-V-1800 Sensitive Receptors Plan

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## 1.0 INTRODUCTION

### 1.1 Background

- 1.1.1 This report is an amenity and accident risk assessment of the impact of the activities subject to this variation and forms part of the permit variation application.
- 1.1.2 FCC Recycling (UK), the Operator, proposes a number of permit variation activities including the operations of a Soils Treatment Facility (STF) within the footprint of their Daneshill Landfill Site. The STF is proposed to accept and process up to 29,999 tonnes per annum of hazardous soils and 20,001 tonnes of non-hazardous waste. The soils treated will be used for the restoration of the wider Daneshill Landfill site. The total storage capacity of the site is 50,000 tonnes. The usual maximum treatment time for soils is 6 months in general with the majority being treated in periods of between 8-16 weeks.
- 1.1.3 The proposed bioremediation process will utilise industry standard biopile technology and will operate through means of use of biopiles and moisture control, addition of suitable amendments to the soil, forced air extraction to encourage micro-organism growth and breakdown of hydrocarbons into by products such as carbon dioxide and water vapour. The hazardous soils contaminated with asbestos fragments will undergo pre-screening and hand picking to remove oversized asbestos materials. The non-hazardous soils maybe also be screened to remove oversize inclusions prior to use in the restoration of the landfill after validation testing is complete.
- 1.1.4 All soils will be stored and processed on a newly constructed treatment pad with impermeable surfacing, as there is no surface water/foul sewer connections, the treatment pad will be constructed with sealed drainage which will be pumped to holding tanks prior to collection and treatment at a suitable facility.
- 1.1.5 In addition to the STF, it is proposed to add the following listed activities to the current permit to facilitate this proposed operation
- Section 5.3A(1)(a)(i) - Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment;
  - Section 5.3A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment;
  - Section 5.4A(1)(a)(i) - Disposal or recovery of non-hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment;
  - Section 5.6 Part A (1) (a) – Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2 and 5.3;

## 1.2 Identification of receptors

- 1.2.1 The Site is centred on national grid reference SK6764786722 within a flat lying land resting on highly permeable sand/gravel and Sherwood Sandstone deposits.
- 1.2.2 The proposed STF site is in a predominantly agricultural setting, the nearest residential dwellings include a travellers site located 155m SWS from the proposed treatment facility and Loundfield Farm 500m to the east. Industrial/ commercial properties such as Retford Ready Mix Limited (concrete suppliers) and Retford Dismantlers (used trucks) are located 330m south and 440m south-south-east from the site. Recreational activities including the Daneshill Sailing Club is located 520m west from the site boundary which utilises the Daneshill Local Nature reserve and lakes as part of its activities.
- 1.2.3 The site is bound by a number of populated settlements; the village of Lound 1.5km south east, Torworth Village 1.8km west, Mattersey village 2.6km north-north-east and the largest of the four settlements, Ranskill located 1.9km north-west from the site boundary.
- 1.2.4 It is considered that the potential pathway for emissions from the site is via airborne transport. Meteorological data from windfinder.com details that the prevailing wind direction for Doncaster/Sheffield Weather is from the south-west/west-south-west towards north-east and east-north-east. Given the location and orientation of Doncaster/Sheffield airport, it is considered that weather patterns will reflect those similarly experienced at Daneshill Landfill Site.
- 1.2.5 The wind direction is likely to blow towards Mattersey Village and agricultural fields. Given the distance from the site boundary and the transient nature of odours and dust from site, it is considered that receptors are unlikely to be impacted as odours are likely to dissipate in this distance.
- 1.2.6 A search within 500m did not locate any Special Protection Areas (SPA's), Special Areas of Conservation (SAC's), Areas of Outstanding Natural Beauty (AONB), National Nature Reserves (NNR's) RAMSAR Sites, Ancient Woodlands or World Heritage Sites.
- 1.2.7 There are no Air Quality Management Areas (AQMA's) in the vicinity of the site.
- 1.2.8 The site is located on river material classified by the Environment Agency as a secondary A aquifer of which is further underlain by the Chester Formation, part of the Sherwood Sandstone Group and which is classed as a principal aquifer.
- 1.2.9 The potential receptors within 500m of the site boundary are provided on Drawing 3982-CAU-XX-XX-DR-V-1800 and are summarised in Table 1.

**Table 1: Potential Receptors identified within 500m of the site boundary**

Receptor	Activity	Distance from site	Direction from site
Travellers Site	Residential	155m	SWS, S
Daneshill Road	Public road	250-500m	S, W, SW

Retford Ready Mix Limited	Industrial premises (concrete plant)	330m	S
Daneshill Lakes Nature Reserve	Nature Conservation	400m	W
Retford Dismantlers	Industrial vehicles dismantling	440m	W
Loundfield Farm	Residential	495m	E
Mattersey Hill Marsh SSSI	Nature Conservation	500m	NW
Residential properties off Daneshill Road	Residential	500m	SW
Daneshill Sailing Club	Recreational	520m	W
Scrap Yard	Industrial	860m	NW

### **Surface Water**

- 1.2.10 The closest surface water feature is a stream approximately 460m to the West of the site, which flows North into the River Idle. There are two fisheries in the surrounding area, Clearwater Lake fishery located 1.1km North of the site boundary and Lakeside fisheries located 1.1km north west.
- 1.2.11 Daneshill Lakes Nature Reserve is located 400m West of the site boundary, in which there are several small lakes where the area is used for recreational use and sailing.
- 1.2.12 The site is not located within a flood risk zone.

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## 2.0 RISK ASSESSMENTS

### 2.1 Odour, noise and vibration, fugitive emissions and accidents risk assessments

- 2.1.1 Separate risk assessment tables have been completed for odour, noise and vibration, fugitive emissions and accidents in line with GOV.UK guidance document.
- 2.1.2 Possible hazards (i.e. odour sources, sources of noise or vibration, sources of fugitive emissions that could be harm the environment or escape beyond the permit boundary and possible sources of accidents that could harm the environment) have been identified. For each possible hazard, an assessment of the risk that it poses to potential receptors has been carried out; taking into account the control measures that will be in place.
- 2.1.3 The STF will be handling and processing hazardous soils contaminated with bound asbestos. That will undergo initial waste characterisation to ensure asbestos fibre levels are compliant with waste acceptance limits prior to pre-screening and hand picking of bound asbestos fragments. Asbestos containing soils are detailed further below and the possible hazards detailed above has been considered further.

### 2.2 Asbestos Storage

- 2.2.1 Upon satisfactory pre-acceptance and waste acceptance checks, on arrival to site, the soils will be weighed and directed from the weighbridge to the soils reception area and undergo an inspection and sampling for reception analytical testing. Asbestos soils will be stored on an impermeable surfaced pad provided with bunding and sealed drainage. After placement on the storage area, the soils will be sheeted to reduce the potential for air borne emissions. The pre-acceptance testing is carried out to confirm that the soil does not contain asbestos fibres above >0.1% for chrysotile and >0.01% for other forms of asbestos to ensure that airborne asbestos fibres cannot be generated at concentrations above the HSE clearance/reoccupation limit of 0.01f/ml at the treatment equipment location and an agreed background reference level at the site boundary (See Section 8 Monitoring in the Emissions Management Plan, document ref: 3982-CAU-XX-XX-RP-V-0307). Until this initial reception testing has been completed, the soils will remain sheeted. Following formal compliance with the waste acceptance limits confirming that there are no unacceptable asbestos fibre concentrations, the soil is formally accepted and can be stored un-sheeted and will undergo pre-screening and handpicking for asbestos fragments. Soils containing asbestos of >0.1% for chrysotile and >0.01% for other asbestos types, that are observed to contain asbestos concentrations in excess of the waste acceptance limits, will be rejected from site.

### 2.3 Pre-screening and Handpicking of asbestos containing soils

- 2.3.1 Pre-screening will be carried out prior to hand picking. Formally accepted soils can be un-sheeted as they have no potential for releasing airborne asbestos fibres above the detection limit of 0.01f/ml or the agreed background reference level. The picking station will provide an enclosed working area for hand-picking. A conveyor belt will be used on

the picking line providing a effective means for removing visible bound asbestos. Handpicking of small bound asbestos inclusions will only be undertaken by suitably trained operatives and recovered asbestos fractions will be placed in individual polythene bags within the picking station. The bags will be sealed and double bagged and will be placed in a designated sealed and locked asbestos bin.

- 2.3.2 Dust suppression will be provided for the screener as a dust mitigation measure if required, in addition, air monitoring will be carried out to assess airborne concentrations of asbestos fibres. Further detail on controls and mitigation for the release of emissions from the proposed activities are provided in the Emissions Management Plan, document ref: 3982-CAU-XX-XX-RP-V-0307.
- 2.3.3 The risk assessments are presented in Table 2 to 5 below.



**Table 2: Odour risk assessment**

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 the transfer and treatment of contaminated soils.	Workers and visitors to the site.  Industrial works located within a 500m radius of the site.  Residential receptors within 200m of the site.	Air	Preventative measures include: <ul style="list-style-type: none"> <li>• General housekeeping, such as sweeping of surfaces and machinery being cleared regularly of residue build up.</li> <li>• Air extracted through the biopiles will pass through a biofilter before being discharged to air, which will reduce any VOC's present that have the potential to create odour.</li> <li>• Meteorological conditions should be considered before activities such as transfer of waste takes place, these activities should be minimised during unfavourable wind conditions, in particular when winds are towards receptors to the south-east.</li> <li>• An Odour Management Plan has been included as part of the application which details site controls and procedures for odours, under document ref: 3982-CAU-XX-XX-RP-V-0308.</li> </ul>	<b>Fairly unlikely.</b> Waste acceptance measures will ensure that soils are not be overly odorous. Should any particular odorous soils be accepted the biofilter is in place to mitigate the potential for odour.	Seasonal variations such as warmer temperatures in the spring and summer has the potential for increased odour nuisance to human/residential receptors.	<b>Low - provided management procedures adhered to</b>

<p>Odour from reception and storage of contaminated soils.</p>	<p>Local human population</p> <p>Industrial works located within a 500m radius of the site.</p> <p>Residential receptors within 200m of the site.</p>	<p>Air transport, then inhalation.</p>	<p>Odour could be generated during delivery and offloading, sorting, or during stockpiling.</p> <p>Measures to prevent odour nuisance from the reception and initial storage of soils will include:</p> <ul style="list-style-type: none"> <li>Waste acceptance procedures to ensure that only suitable soils are accepted. This includes hydrocarbon contaminated soils. The potential for odour problems will be assessed on receipt and actions, including immediate rejection taken when required.</li> <li>Excessively malodorous soils will not be authorised for acceptance, if any are deposited on site they be removed from site and a non-conformance note issued.</li> <li>Odour olfactory monitoring undertaken daily to assess odour levels from site activities.</li> <li>An Odour Management Plan has been included as part of the application which details site controls and procedures for odours, under document ref: 3982-CAU-XX-XX-RP-V-0308.</li> </ul>	<p>The frequency of exposure is likely to be <b>low</b> as:</p> <p>Receptors are some distance away (&gt;200m).</p> <p>The travellers site is not downwind to the proposed facility, therefore significant impact not likely.</p> <p>the prevailing wind direction is south west</p>	<p>Nuisance</p>	<p><b>Low - provided management procedures adhered to</b></p>
<p>Odour from Soil Bioremediation Process</p>	<p>Local human population</p> <p>Industrial works located within a 500m radius of the site.</p> <p>Residential receptors</p>	<p>Air transport, then inhalation.</p>	<p>Measures to prevent odour nuisance from soil bioremediation process will include:</p> <ul style="list-style-type: none"> <li>Industry standard biopile technology</li> <li>Moisture control</li> <li>Forced air extraction to encourage micro-organism growth.</li> <li>Addition of suitable materials (nutrients and fertilizer) to the soil.</li> <li>Continuous running of the bioremediation process under vacuum extraction.</li> </ul>	<p>The frequency of exposure is likely to be <b>low</b> as:</p> <p>Following industry standards will allow for sufficient oxygen ingress to minimise the impact of odours.</p>	<p>Nuisance, loss of amenity</p>	<p><b>Low - provided management procedures adhered to</b></p>

	<p>within 200m of the site.</p>		<ul style="list-style-type: none"> <li>• A biofilter will be in place to reduce odour as well as filter out any VOC's present.</li> <li>• An Odour Management Plan has been included as part of the application which details site controls and procedures for odours, under document ref: 3982-CAU-XX-XX-RP-V-0308.</li> <li>• Odour olfactory monitoring undertaken daily to assess odour levels from site activities.</li> </ul>			
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**Table 3: Noise risk assessment and management plan**

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 from soil handling and treatment.	Workers and visitors to the site.  Residential receptors at Travellers Site	Air	Preventative measures include: <ul style="list-style-type: none"> <li>Fully trained and competent plant operators to operate silenced machinery.</li> <li>Daily site inspections will include routine checks to ensure noise emissions from site operations are not overly excessive.</li> <li>Maintenance of mobile plant/equipment in line with manufactures specifications to ensure screening/turning process produces minimal noise.</li> <li>Vacuum extraction blowers and pumps are housed in acoustic enclosures to significantly reduce noise levels from the soil and water treatment equipment</li> <li>Restriction of operating hours to non-sensitive times of day would normally form part of the planning consent conditions.</li> <li>Where practicable, mobile plant and site equipment fitted with silencers or acoustic hoods.</li> </ul>	<b>Low</b> It is considered that receptors residing at the Travellers site are unlikely to be significantly impact by operations at the STF due to existing background noise levels from the vehicle dismantler site and ready mix plant. Residential receptors are unlikely to be	Noise may cause annoyance to people working in the local businesses within 300m of the site.	<b>Low - provided management procedures adhered to</b>

			<ul style="list-style-type: none"> <li>• Avoiding un-necessary revving of engines, engines switched off when not in use or idle for long durations.</li> <li>• Use of broadband type noise reverse alarms (i.e. non-beeper type)</li> <li>• Minimisation of drop heights during tipping;</li> <li>• Local industries nearby include a cement factory and vehicle dismantling workshop – these industries are inherently noisy operations and working on site unlikely to be impacted by noise operations from the site as baseline noise levels are established.</li> <li>• Noise Impact Assessment undertaken by Spire Environmental (document ref: R20.1365-2-AG) concluded that the proposed STF and asbestos operations at the site would not result in any additional noise that would be above the existing planning permissions noise conditions at site. The STF plant does not increase the overall noise levels during landfill operations. Noise is also not expected to be significant during the construction phase. Further noise control and mitigation measures are detail within the Noise Impact Assessment.</li> </ul>	affected at >200m distance.		
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**Table 4: Fugitive emissions risk assessment**

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>DUST</b>						
Dust from contaminated soil treatment	Workers and visitors to the site	Air - wind borne dust.	Preventative measures include: <ul style="list-style-type: none"> <li>provision on site of a water bowser equipped with rain gun and adequate year-round water supply and dust suppression by regular spraying in dry conditions;</li> <li>Waste acceptance procedures to ensure soils that have the potential for dust emissions are not accepted</li> <li>Dust suppression cannon/system with added asbestos surfactant;</li> <li>Asbestos monitoring will be carried out quarterly against background reference levels determined with on site monitoring as a pre-commencement condition;</li> <li>use of clean water for dust suppression, to avoid re-circulating fine material;</li> </ul>	<b>Low</b> Emissions Management Plan in place under document ref: 3982-CAU-XX-XX-RP-V-0307.  Dust emissions are transient in nature and likely to dissipate before settling  Nearest residential receptors unlikely	Nuisance - dust on cars, clothing etc.	<b>Low - provided management procedures adhered to</b>
Dust from storage of hazardous storage	Industrial works located within a 500m radius of the site.  Residential receptors within 200m of the site.					

			<ul style="list-style-type: none"> <li>• high standards of house-keeping to minimise track-out and windblown dust;</li> <li>• a preventative maintenance programme, including readily available spares, to ensure the efficient operation of plant and equipment;</li> <li>• minimisation of drop heights during tipping;</li> <li>• clear delineation of stockpiles to deter vehicles from running over edges; and</li> <li>• effective staff training in respect of the causes and prevention of dust.</li> <li>• Daily dust monitoring carried out to assess levels of emissions from site activities.</li> <li>• Pre-acceptance testing will be undertaken to quantify that asbestos fibres are lower than 0.1% for Chrysotile and 0.01% for any other forms of asbestos detected in soil. If there are exceedances of these limits then that soil will be rejected from site.</li> </ul> <p><b>Specific measures</b> in relation to activities within the treatment facility include:</p> <ul style="list-style-type: none"> <li>• Misting equipment to be employed if required during summer months</li> </ul> <p>Meteorological conditions should be considered before activities such as transfer, and this activity should be minimised during unfavourable wind conditions.</p>	<p>to be affected due to distance from site boundary. Not likely to significantly impact on travellers site due to tree screening and not downwind to the proposed STF. In addition, background dust from external sources at the Retford Concrete Plant, is likely to impact on Travellers site due to close distance.</p> <p>Direction of predominant wind not towards adjacent sensitive, travellers site and residential receptors</p>		
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Pre-screening of asbestos soils	Workers and visitors to the site	Wind – airborne asbestos fibres and inhalation	<p>Preventative measures include:</p> <ul style="list-style-type: none"> <li>• provision on site of a water bowser equipped with rain gun and adequate year-round water supply by regular spraying in dry conditions with added asbestos surfactant;</li> <li>• Dust suppression cannon/system</li> <li>• Asbestos monitoring will be carried out quarterly against background reference levels determined with onsite monitoring as a pre-commencement condition;</li> <li>• For occupational exposure, daily asbestos monitoring will be carried out during soil screening operations. (See ‘Section 8 Monitoring’ in the Emissions Management Plan, document ref: 3982-CAU-XX-XX-RP-V-0307.</li> <li>• Use of clean water for suppression, to avoid re-circulating fine material;</li> <li>• Minimisation of drop heights during tipping;</li> <li>• Hand-picking operations are carried out in a fully enclosed picking station;</li> <li>• Pre-acceptance testing will be undertaken to quantify that asbestos fibres are lower than 0.1% for Chrysotile and 0.01% for any other forms of asbestos detected in soil. If there are exceedances of these limits then that soil will be rejected from site.</li> </ul>	<p><b>Low</b></p> <p>Emissions Management Plan in place under document ref: 3982-CAU-XX-XX-RP-V-0307.</p> <p>Nearest residential receptors unlikely to be affected due to distance from site boundary. Not likely to significantly impact on travellers site due to tree screening and not downwind to the proposed STF.</p> <p>Direction of predominant wind not towards adjacent sensitive, travellers site and residential receptors</p>	Asbestos linked illness	<b>Low - provided management procedures adhered to</b>
Handpicking of asbestos soils	<p>Industrial works located within a 500m radius of the site.</p> <p>Residential receptors within 200m of the site.</p>					



To Water						
Runoff from site surfacing directly into surface water.	Surface waters downstream of site	Surface water drainage system	The site's treatment areas comprise impermeable pads and sealed drainage which is pumped to holding tanks (disposed of to an appropriate and permitted facility)	<b>Unlikely</b> given the treatment plant which is in place. (Accidental spillages are dealt with in Table 5).	Contamination of local surface water.	<b>Low - provided management procedures adhered to</b>
Contaminated run-off percolating through ground.	Groundwater or surface waters close to the site	Migration through site surfacing and underlying soil.	Measures to control contaminated runoff into ground will include: <ul style="list-style-type: none"> <li>• Offloading of soils to be supervised by suitably trained staff who will be aware of storage requirements for various wastes.</li> <li>• Daily site inspections will include checks to see that soils are stored in their designated storage areas.</li> <li>• All areas used for storage or handling of soils that may have contaminated runoff will be on impermeable pads which drain to sealed drainage sumps, containing any run-off.</li> <li>• Regular inspections of impermeable ground: Any damage detected that could impair the integrity of the pad should be recorded and repairs carried out as soon as possible.</li> <li>• All storage areas are bunded to contain run-off which drains into the network into the holding tanks.</li> </ul>	<b>Unlikely.</b> The areas of the site used for soil activities are located on impermeable pads which drain to sealed drainage sumps.	Contamination of groundwater and surface water.	<b>Very low</b>
Pests						
Rodents/ pests	Workers and visitors to site, nearby agricultural land.	Over ground.	Unlikely due to nature of wastes accepted  Measures taken to prevent infestation: <ul style="list-style-type: none"> <li>• Daily site inspections will monitor for the presence of rats/pests on site.</li> </ul>	<b>Unlikely</b> However, with any kind of biodegradable waste, occasionally	General nuisance and health risk from rats being vectors for human	<b>Low provided management procedures adhered to</b>

			<ul style="list-style-type: none"> <li>Waste acceptance procedures will ensure that non-conforming wastes are rejected.</li> <li>Soils unlikely to attract rodents if strict waste acceptance procedures adhered to.</li> <li>In general, good housekeeping with regular sweeping and clearing of waste areas is encouraged.</li> </ul> <p>Actions in the event of rodents/pests being detected at the site: -</p> <ul style="list-style-type: none"> <li>The incident must be reported to the site manager;</li> <li>A record must be made of the incident and actions taken;</li> <li>Waste acceptance and storage procedures should be reviewed; and</li> <li>Specialist pest control contractor will visit site regularly and on an ad hoc basis.</li> </ul>	rats/s can be present, but the types of wastes are unlikely to result in rats/pests being a significant problem.	pathogens (e.g. weill's disease).	
Flies breeding in in soils treatment facility.	Workers and visitors to site. Residential receptors > 200 m from site and travellers site.	Air	<p>Unlikely due to nature of wastes accepted</p> <p>Measures taken to prevent infestation:</p> <ul style="list-style-type: none"> <li>Waste acceptance procedures will ensure that non-conforming wastes are rejected.</li> <li>Daily site inspections will monitor for the presence of flies on site.</li> <li>In general, good housekeeping with regular sweeping and clearing of waste areas is encouraged.</li> </ul> <p>Actions in the event of a fly infestation being detected at the site: -</p> <ul style="list-style-type: none"> <li>The incident must be reported to the site manager;</li> <li>A record must be made of the incident and actions taken;</li> </ul>	<b>Fairly Unlikely</b> Significant flies are not anticipated	General nuisance	<b>Low - provided management procedures adhered to</b>

			<ul style="list-style-type: none"> <li>Waste acceptance and storage procedures should be reviewed; and</li> <li>In the event of severe infestations, the specialist pest control contractor will visit more regularly and on an ad hoc basis.</li> </ul>			
<b>Mud/Litter</b>						
Litter from off-loading and processing of mixed loads including possibility of some light wastes.	Workers and visitors to industrial estate. Sensitive Receptors dwelling at nearby Travellers Site.	Air - via wind.	Measures taken to prevent litter leaving the site: <ul style="list-style-type: none"> <li>Waste acceptance procedures to ensure the acceptance of only approved waste.</li> </ul> Actions in the event of litter being detected leaving the site: - <ul style="list-style-type: none"> <li>Litter picking will be carried out. Priority is given to clearing any litter outside the permit boundary furthest away and working inwards.</li> <li>The incident must be reported to the site manager.</li> <li>A record must be made of the incident and actions taken.</li> <li>Waste acceptance, storage and treatment procedures should be reviewed, and additional control imposed as deemed necessary by the site manager.</li> </ul>	<b>Unlikely</b> Litter may be identified from time to time but likely to be in relatively small quantities and only problematic during high winds.	Nuisance to nearby receptors.	<b>Low - provided management procedures adhered to</b>
Mud being tracked onto surrounding roads.	Workers and visitors to site and users of surrounding roads	Tracking on vehicle tyres entering/leaving the site.	Measures taken to prevent mud leaving the site: <ul style="list-style-type: none"> <li>Roads and site areas will be regularly inspected/swept.</li> <li>Drivers will be encouraged to ensure their vehicle tyres are clean before leaving site and that any loose material is in enclosed containers or the loads are sheeted or netted.</li> <li>Daily site inspections will monitor for mud or debris being tracked from the site.</li> </ul>	<b>Unlikely</b> Mud and debris may be tracked onto surrounding roads.	Nuisance to nearby road users In severe circumstances, mud on the road could affect road safety.	<b>Low - provided management procedures adhered to.</b>

			<ul style="list-style-type: none"> <li>• In general, good housekeeping with regular sweeping and clearing of debris is encouraged.</li> <li>• Road sweeper can be hired in as necessary.</li> </ul> <p>Actions in the event of mud and debris is being tracked onto roads outside the site: -</p> <ul style="list-style-type: none"> <li>• Affected road areas will be swept.</li> <li>• The incident must be reported to the site manager.</li> <li>• A record must be made of the incident and actions taken.</li> </ul>			
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**Table 5: Accidents risk assessment**

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
Spillage or leak of fuel or other hazardous liquids.	Underlying soil, Groundwater and/or Surface water.	Through site surfacing and ground.	<p>Fuel and various liquid products used in equipment or vehicle maintenance may have hazardous properties. These could leak during storage or spillages could occur during use.</p> <p><b>Preventative measures:</b></p> <ul style="list-style-type: none"> <li>• The soil bioremediation operation and associated activities take place on impermeable surfacing with drainage to holding tanks.</li> <li>• The site surfacing will be bunded to ensure that any leaks are contained within the facility.</li> <li>• All fuels and tanks will be appropriately stored and bunded.</li> <li>• Regular inspections to check for integrity of site surfacing and correct storage of any hazardous liquids e.g. fuel for mobile plant.</li> <li>• All staff involved in soils handling will be inducted in the emergency procedures regarding the handling of spills.</li> </ul>	<b>Unlikely</b> Impermeable pads will prevent migration of spills or leakages to underlying ground. In the event of any uncontained spill, the drainage system will collect any oil spillages and other hazardous liquids would be collected by the drainage system. On that basis, it is very unlikely that any	Contamination of local water course or underlying ground or groundwater.	<b>Low - provided management procedures adhered to.</b>

			<p><b>Actions</b> in the event of spillages:</p> <ul style="list-style-type: none"> <li>• Incidents to be managed in accordance with emergency procedures regarding the handling of spills.</li> <li>• Spillages will be contained using appropriate spill kits or absorbent materials (e.g. soils).</li> <li>• Depending on the severity of the spill, the Environment Agency will be contacted.</li> </ul> <p>The emergency procedure includes incident reporting and, as part of the environmental management system, incidents will be reviewed by management on a regular basis.</p>	spills would reach water courses or groundwater.		
Fire in processing areas.	Surface water receiving contaminated fire waters.  Surrounding site facilities.  Air.	Air  Ground.	<p>Unlikely for fires to occur on waste piles due to the nature of the waste itself. Fires could occur as a result of arson, from sources of ignition, or from electrical faults on site.</p> <p>Unlikely for contaminated fire waters to enter surface/groundwater water environment as the site will be served with impermeable surfacing which will be kerbed and provided with sealed drainage pumped to site holding tanks.</p> <p><b>Preventative measures:</b></p> <ul style="list-style-type: none"> <li>• No smoking policy.</li> <li>• Emergency vehicles will be able to gain access to all operational areas.</li> <li>• All staff involved in soil handling will be inducted in the emergency procedures</li> </ul>	Even with measures in place to prevent the occurrence of fires, it is possible that fires could break out. However, measures in place to prevent the fire spreading or to limit its consequences will significantly reduce the probability of receptors being affected by a fire.	Smoke, local nuisance, risk of fire spreading to other areas or properties.	<b>Low - as long as management procedures adhered to.</b>

			<p>including the fire action plan and a regular fire drill.</p> <ul style="list-style-type: none"> <li>• Daily checks and emergency procedures in place to prevent fire risk.</li> <li>• Site staff trained in fire risk and how to deal with an incident on site.</li> <li>• Any visitors to the site will be inducted and be made aware of the fire risks.</li> <li>• <b>Actions</b> in the event of fire:</li> <li>• Where it is safe to do so, site staff will use on-site fire-fighting equipment to extinguish fires.</li> <li>• Where a fire may have been caused by electricity or is close to electrical equipment, electricity to that area should be switched off and isolated.</li> <li>• Clear directions will be given to the fire service and a member of staff will wait at the entrance to the site to direct the service to the site on arrival, to ensure that the speediest service is provided.</li> <li>• A list of actions is outlined in the Fire Prevention Plan and associated Fire Risk Assessment</li> </ul> <p>The emergency procedure includes incident reporting. As part of the environmental management system, incidents will be reviewed by management on a regular basis to identify whether lessons can be learnt, and procedures improved.</p>			
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Flooding	Underlying soil. Groundwater. Surface water.	Flood water. Drainage systems.	<p><b>Preventative measures:</b></p> <ul style="list-style-type: none"> <li>Materials with hazardous properties (e.g. fuel) are contained and unlikely to leak as a result of partial submersion.</li> <li>Flood Risk Assessment, document ref: 3982-CAU-XX-XX-RP-C-0300 indicates that the site is not at risk of flooding.</li> </ul> <p><b>Actions</b> in the event of flooding:</p> <ul style="list-style-type: none"> <li>In the event of flood warnings for the area, the site manager or technically competent manager should consider the possibilities of moving waste materials or any other materials with hazardous properties</li> <li>Where flooding could reach areas where electrical equipment is used, electricity to that area should be switched off and isolated.</li> <li>After flood waters have receded, the areas outside the site should be inspected and any materials which have escaped the boundary should be picked up.</li> </ul>	<b>Unlikely.</b> None of operational area of the site is deemed to within flood zone <sup>1</sup> . <sup>1</sup> (low risk of flooding)	Contamination of surface waters or surrounding areas with soil materials could, depending on the properties of the soils (hydrocarbon content), affect water quality or be unsightly.	<b>Low.</b>
Soils treatment process failure, material becoming anaerobic and giving rise to odours	Local human population	Air transport, then inhalation	<p>Preventative measures will include:</p> <ul style="list-style-type: none"> <li>Good management of the treatment process, i.e. good mixing, aeration and regular monitoring, experienced and competent staff.</li> </ul> <p>In the event of failure of the treatment process:</p>	<b>Unlikely,</b> the likelihood of soils becoming anaerobic is low.	Odour nuisance.	<b>low</b>

<sup>1</sup> Daneshill Landfill Soil Treatment Facility Flood Risk Assessment November 2019, 3982-CAU-XX-XX-RP-C-0300.



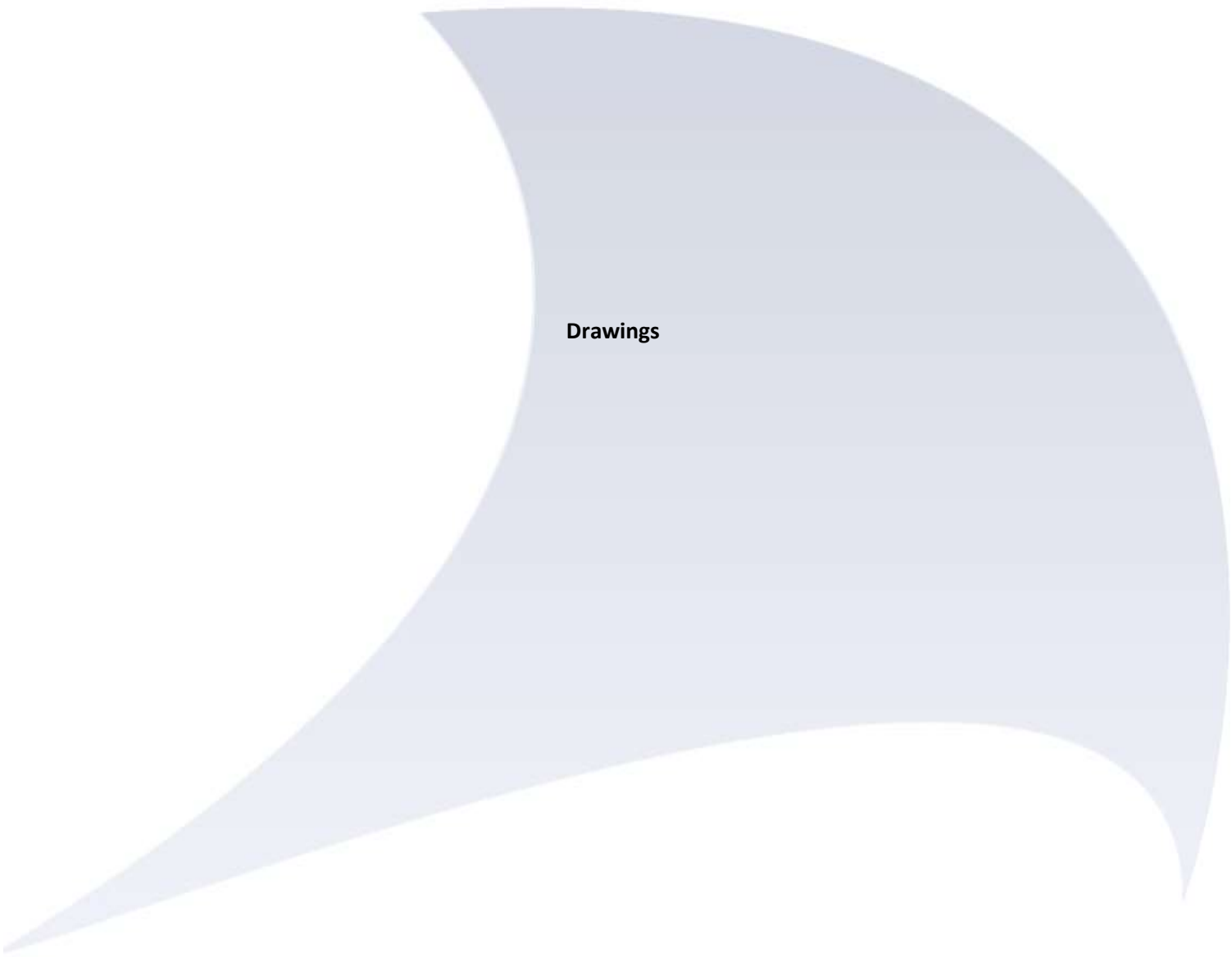
			<ul style="list-style-type: none"><li>• If material has become anaerobic and malodorous, the material may be covered with more soils to minimise odour and, if required, the removal of the failed material to landfill.</li></ul>			
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### 3.0 CONCLUSION

- 3.1.1 The risk assessments above enable identification of appropriate mitigation measures to control the amenity and accident risks from the activities in relation to the proposed contaminated soils treatment facility. All identified risk mitigation measures will be incorporated within the management system for the site.
- 3.1.2 The amenity and accident risk assessment indicate that provided the identified risk mitigation measures (as identified in the tables above) are implemented, the risk of nuisance or pollution from fugitive emissions or accidents is low and will not present a significant impact on nearby receptors.

#### 4.0 REFERENCES

1. GOV.UK Guidance 'Risk assessments for your environmental permit' Updated 10<sup>th</sup> January 2019 – replaces previous: Environment Agency (2010): How to comply with your environmental permit. Additional guidance for: Horizontal Guidance Note H1 - Annex (a).

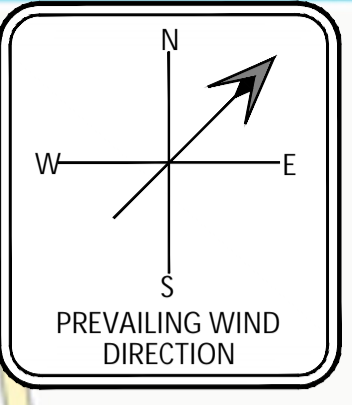


**Drawings**





- LEGEND**
- AREA OF PROPOSED ACTIVITY
  - 1000m OFFSET BOUNDARY
  - MAJOR ROAD
  - MINOR ROAD
  - RAIL
  - SURFACE WATER
  - PUBLIC AREAS
  - AGRICULTURAL
  - COMMERCIAL
  - INDUSTRIAL
  - RESIDENTIAL
  - EDUCATION
  - SSSI



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P02	RECEPTOR BOUNDARY INCREASED	EJD	KB	AS	25.11.20
P01	ISSUED FOR INFORMATION	EJD	KB	AS	10.12.19
REV	MODIFICATIONS	BY	RE	AP	DATE
PURPOSE OF ISSUE					STATUS
FOR INFORMATION					S2
CLIENT:					
PROJECT:					
<b>DANESHILL SOILS TREATMENT FACILITY</b>					
TITLE:					
<b>1000m SENSITIVE RECEPTOR PLAN</b>					
DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY		
KB	EJD	KB	KB		
DATE	SCALE @ A1	JOB REF:	REVISION		
04.11.2019	1:2500	3982	P02		
DRAWING NUMBER					
3982-CAU-XX-XX-DR-1800					
<small>engineering environmental planning</small>					

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