

Data and information				Judgement				Action (by permitting)	
Source	Harm	Pathway	Receptor	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
<i>What is the agent or process with potential to cause harm?</i>	<i>What are the harmful consequences if things go wrong?</i>	<i>How might the receptor come into contact with the source?</i>	<i>What is at risk? What do I wish to protect?</i>	<i>How likely is this contact?</i>	<i>How severe will the consequences be if this occurs?</i>	<i>What is the overall magnitude of the risk?</i>	<i>On what did I base my judgement?</i>	<i>How can I best manage the risk to reduce the magnitude?</i>	<i>What is the magnitude of the risk after management?</i>
<b>Dust/Particulates</b>									
Particulate matter and dusts from delivery, handling and deposit wastes/materials, including trafficked mud and debris, preparation engineering	Harm to human health - respiratory irritation and illness.	Air transport, deposition then inhalation.	Local human population  (R2, R3, R4, R5, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20 & R30)	Low-Moderate	High	<b>Moderate-High</b>	With regard to Receptors R6, R7 & R30 (public highways and rights of way) dust from the inert waste landfill poses very little risk to human health due to the transient nature of these receptors, as members of the public are simply passing through these areas and no long-term dust exposure will occur. Dust may be a nuisance to these receptors.  An area of human occupation within 210m of Husbands Bosworth Quarry proposed landfill environmental permit boundary (Receptor R10 – Husbands Bosworth village) is located north-west of the site, therefore, the prevailing wind (directed from the south-southwest west to the north-northeast) will not blow dust directly into the residential area. Additionally, these receptors are also located ~275m from the proposed landfill footprint of the site. This offers a significant intervening distance between the site and this potential receptor.  The waste materials handled will principally consist of coarser particle sizes that will settle out within 200m of its source.	All delivery and dispatch vehicles will be sheeted.  Mechanical road sweeper and/or mobile spray bowser will prevent waste surfaces and haul roads from becoming dry and dusty, especially during periods of dry weather.  Operational staff to be trained to assess dust generation at the site throughout the working day. Further visual assessment to be carried out daily by the site operations manager, TCM or nominated deputy.	Low
	Nuisance - dust on property, clothing etc.	Air transport then deposition	Local human population  (R2, R3, R4, R5, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20 & R30)	Low-Moderate	Moderate	<b>Moderate</b>		All haul roads outside of the quarry void to be of concrete hardstanding and kept free from mud and debris  Vehicle speed limits will be imposed to prevent dust arising.  Upon delivery, waste will be directed straight to the active tipping face of the landfill for deposit. This will reduce the handling of the waste as (apart from in abnormal circumstances) the waste will not be stored on site prior to deposit.	Low
	Smothering of habitats and crops	Air transport then deposition	Local wildlife habitats/species  (R24, R25, R26, R27, R28, R1, R21, R22, R23, R31 & R34)	Moderate	Moderate	<b>Moderate</b>	R29 (agricultural land) surrounds the site in all directions, therefore, such land is situated downwind of the prevailing wind direction which may experience some nuisance issues from dust.  The surface water receptors (including R1, R21 and R22) are typically cross wind of the prevailing wind direction at the site, situated to the east and west. R23 lies upwind of the site and is unlikely to be affected by any fugitive emissions. The only surface water receptor to be close to downwind of the site is R34 (Grand Union Canal) which is to the north of the site. However, this lies c.810m from the site and due to this significant intervening distance is unlikely to be affected by any potential emissions from the site.  R26, R27 and R8 (woodlands) lie cross / up wind of the prevailing wind at the site (east, south-east and south); furthermore R27 has a significant intervening distance from the site of 285m. R 24 is on site and R25 is adjacent to the north of the site. While these receptors may be affected, owing to the dust suppression measures at the site it is unlikely that significant impacts or harm would occur.  The waste materials handled will principally consist of coarser particle sizes that will settle out within 200m of its source.	Drop heights will be minimised during unloading and waste deposit to avoid dusty plumes.  Following deposit, waste will be compacted by bulldozers which will bind the surface and reduce the amount of loose material able to be suspended via 'wind whipping'.  A Dust Emissions Management Plan ( <i>Document Ref.: MG1001/12.R0</i> ) has been prepared and will be maintained throughout the active tipping phase of the development.	Low

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<b>Odours</b>									
Odours from delivery and dispatch of wastes/materials  Handling and deposition of waste.	Nuisance, loss of amenity	Air transport then inhalation.	Local human population  (R2, R3, R4, R5, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19 & R20)	Very Low	Moderate	<b>Low</b>	Only inert wastes will be accepted at the site, therefore the risk of odour generation and emission from the site is negligible.  The site is located in rural setting, meaning that human receptors are typically more dispersed.  Areas of human occupation within 210m of site boundary (R10).  Receptors R6, R7 & R30 (public highways and rights of way) are not likely to be affected by odours due to their transient nature.	All wastes loads delivered to the site will be sheeted.  All wastes to be inspected prior to acceptance at the site.  Operational staff will be trained to assess any odour generation at the site throughout the working day and will alert the site manager, TCM or a nominated deputy in the unlikely event that a malodour is detected, who will conduct an investigation and take corrective action.	Negligible
<b>Litter</b>									
Litter within waste deposited at the site	Nuisance, loss of amenity, road traffic accidents and harm to animal health	Vehicles entering and leaving site.  Air transport and then deposition	Local human population, livestock and wildlife. Local road users.  (All Receptors)	Very Low	Moderate	<b>Low</b>	Only inert waste will be accepted at the site which will not contain any significant quantity of light fractions.	All loads will be inspected upon delivery to the site to ensure contaminated wastes are not accepted.  All deliveries of waste will be sheeted to prevent windblown litter.  The site, particularly the entrance, will be inspected daily for evidence of litter.  Site entrance to be mechanically swept of debris deposited. Litter picking to be carried out upon signs of litter generation. The source of any litter will also be investigated and remedied.  Deposited waste will be compacted straight away which will reduce the risk of loose material being 'wind blown'.	Very Low
<b>Mud and Debris</b>									
Waste debris and mud on local roads  Tracking of mud and debris onto public roads causing accident, hazards and nuisance to road users.	Nuisance, loss of amenity, road traffic accidents and harm to animal health	Vehicles entering and leaving site.	Local human population, Road users  (R7, R8, R10, R13, R15, R16, R17)	Low	Moderate	<b>Low-Moderate</b>	The existing quarry access road is metalled for a distance of over 200m from the junction with A5199 (Welford Road)	All waste delivery vehicles will be sheeted.  Internal roadways and wheel washes present at the quarry prior to vehicles existing on the site.  All vehicles will be inspected prior to leaving the site. Wheel cleansing facilities will be provided / utilised as appropriate.  When needed, a mechanical road sweeper will be utilised to prevent mud and other debris building up on public highways surrounding the site.  The site entrance will be inspected daily for evidence of mud and debris.	Very Low

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<b>Scavengers and Pests</b>									
Scavenging animals and scavenging birds, Pests (e.g. flies) attracted to or infesting wastes	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.  Negative effects on habitats and crops	Air transport and over land.	Local human population, crops and local habitats.  (All receptors)	Very Low	Low	<b>Very Low</b>	Only inert waste will be accepted at the site, this will have a low potential to attract scavengers and pests such as birds, vermin and insects.  The site is located in a rural area and, therefore, a variety of wildlife is likely to be in relatively close proximity to the proposed inert waste landfill. An increase in pests and scavengers to the area could impact on the natural wildlife balance.	Discharge of deliveries to the site will be supervised by trained site operatives. Visual inspection of incoming wastes will be undertaken at the weighbridge.  Daily visual inspections will be carried out on site. Staff will be trained to recognise and alert the relevant personnel of any suspected pest infestations.  Standard operational techniques will be adhered to, including the maintenance of a small operational area and the rapid emplacement and compaction of wastes.  In the unlikely event that flies, or other insects are found to be present and posing a nuisance, insecticides will be utilised that offer both rapid and long-lasting results.  Should scavenging birds present an issue, appropriate bird scarers, distress calls and decoys shall be deployed (following consultation with the EA).	Negligible
<b>Noise &amp; Vibration</b>									
Noise and vibration caused by engine noise and vibrations from site plant and equipment, lorry movements etc.	Nuisance, loss of amenity, loss of sleep or harm.	Noise through the air and vibration through the ground.	Local human population  (R2, R3, R4, R5, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20 & R30)	Low	Moderate	<b>Low-Moderate</b>	Distance of site from receptors (mainly R10; residential area the village of Husbands Bosworth, within 210m).  3m high soil screening bunds are present on the south, west and northern boundaries of the operational area, these will also be extended. These are positioned to provide an additional buffer between the site and the village of Husbands Bosworth c. 210m to the north-west of the site.  Site Operations restricted to: 07:30 to 18:00 Monday to Friday 07:30 to 13:00 on Saturdays No working on Sundays or Bank Holidays.	Noise levels generated by the inert waste landfill will be effectively controlled and mitigated by a combination of good operational practice and screening bunds.  Speed limit of 15mph to apply on internal roads throughout Skelbrooke Quarry. Internal roads will also be maintained and kept free of ruts and potholes to minimise body slap.  All plant and vehicles used on site will be operated and maintained in accordance with manufacturer recommendations and fitted with exhaust silencers where deemed necessary.  Noise levels will be monitored daily by site manager) or nominated deputy) to ensure that operations are not resulting in significant levels of noise beyond the site boundary.	Low

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<b>Water</b>									
Generation of contaminated run-off and leachate from waste deposits and other hazardous substances handled on site (e.g. fuels, oils etc).	Harm to protected site through nutrient enrichment, leachate, contaminated surface water runoff,	Surface water run-off, and sub-surface transport of leachates then base and spring flows to rivers.	Groundwater, surface water bodies and their associated habitats.  (R1, R21, R22, R23, R31 & R34)	Low	Moderate	<b>Low-Moderate</b>	Leachate will not be an issue at the site owing to the fact that deposited wastes will comprise inert material, primary soils and stones.  The impermeable nature of the Lias Clay at the base of the quarry will impede infiltration of waters to groundwater.  Surface water and groundwater will be managed with a series of ditches, as well as storage and settlement ponds pending reuse for site processes or discharge via the consented surface water discharges (Permit Ref.: PRNNF12734 & EPR/ZP3724XU).	As stated, the nature of the waste eliminates the risk of leachate contamination to surrounding ground and surface waters.  Surface water run off from all areas of the landfill, and groundwater discharging from the quarry sidewalls will continue to be managed the way it is presently; i.e. collection from lagoons for reuse via the onsite activities prior to treatment and discharge to surface water via the consented discharge points.  All surface water collected at the site will be monitored prior to discharge for visual evidence of oils / hydrocarbons. In the event these are observed on the surface of water, arrangements will be made to transfer the water offsite via tanker for treatment. The source of the contamination will be investigated and remediated as soon as possible.	Very Low
Flooding of the site	Contamination of buildings, gardens, agricultural land, natural habitats etc downstream resulting from waste washed off-site.	Flood waters	Local human population, crops and local habitats.  (All receptors)	Very Low	Low	<b>Very Low</b>	Upon review of the Environment Agency flood risk map, the site lies within a Flood Zone 1 (annual flood probability of less than 0.1%; low risk). Therefore, the site is not at risk of flooding.  Furthermore, the type of waste to be deposited here is inert, therefore, even in the unlikely event of flooding there is low pollution / contamination risk to nearby receptors.	The flood risk is very low and a Flood Risk Assessment (FRA) has been prepared for the site (Document Ref.: MG1001/06.R0). The FRA demonstrates that the proposed site will remain safe and operational during times of flooding, there will not be a loss of floodplain storage and the operation of a landfill in Husbands Bosworth Quarry will not increase the flood risk elsewhere.  The surface water lagoons on site can also provide flood storage attenuation for surface water run-off.	Negligible
<b>Accidents</b>									
On site hazards: wastes, machinery, vehicles, surface water lagoon.	Bodily injury	Direct physical contact	Local human population  (Unauthorised visitors to the site, users of R30)	Moderate	Moderate-High	<b>Moderate-High</b>	A Public Right Of Way (PRoW) traverses the site.	The site is surrounded by continuous, high fencing and gates are locked shut outside of operational hours.  Signs are present at the site entrance and along the perimeter to deter trespassers.  All site staff and visitors will received an induction to the site to ensure safety protocols are adhered to.  Appropriate signage and/or markings will be displayed along the PRoW to warn users of the hazards and ensure that they stay on the route.  Signs will also be placed in the vicinity of the PRoW to advise of the presence of the PRoW and the potential hazards.	Very Low

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Fire resulting from arson/vandalism or an accident causing the release of polluting materials (smoke or fumes) to air, water or land.	Bodily injury	Direct physical contact	Local human population  (R2, R3, R4, R5, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20 & R30)	Low	Moderate	<b>Low-Moderate</b>	Only non-combustible waste will be accepted at the site.	All flammable substances (e.g. fuels) will be kept in banded / double skinned tanks and secured. The bund volume will be at least 110% of the capacity of the largest storage tank.  The waste to be deposited is not flammable and no waste will be burned within the confines of the site.  Firefighting equipment at the site will be clearly marked and tested, at appropriate intervals, to confirm their suitability and functionality. Site personnel will be made aware of the locations of all firefighting equipment and will be trained in their correct use.	Very Low
Leaks and Spillages from on-site plant/vehicles, waste or contaminated rainwater runoff.	Deterioration of water quality, contamination of ground/surface waters,	Direct run off from site across ground surface, indirect runoff via the soil layer or transport through soil/groundwater	Groundwater, surface water bodies and their associated habitats.  (R1, R21, R22, R23, R31 & R34)	Low	Moderate	<b>Low-Moderate</b>	Groundwaters within the superficial aquifers will drain into the quarry within worked areas and limit the transport of pollutants further into the aquifer.  Underlying bedrock is of low permeability.  Additionally, the waste to be deposited will be inert with very low pollution risk.	Waste acceptance procedures will be in place to fully characterise and inspect waste prior to acceptance.  Daily visual site inspections will be conducted across the site and on all plant and equipment.  Spillages will be dealt with as a matter of urgency.  The source of the spillage will be identified and remediation will be carried out to prevent reoccurrence.  Any spillages of dry wastes will be cleared by either manual or mechanical means, for example handpicking, sweeping or shovelling, dependant on the size and location of the spillage.  Minor spillages of liquid will be contained using spillage kits or any suitable readily available absorbent material. This material will be disposed of in a manner appropriate to the type of material absorbed.  In the event of a major spillage of liquid such as heavy plant oil/fuel, actions will be taken to ensure no off-site transfer can occur, the incident will be reported to the appropriate personnel, access to the spillage site will be restricted until a clean-up solution is implemented and if necessary inert low permeability material such as clay will be utilised to temporarily contain the spill.  In the event a vehicle or item of plant is identified as leaking, wherever practicable, it will be stored on an impermeable pavement or on highly compacted made ground within a banded area where the spillage can be contained until necessary repairs or replacements are carried out.	Very Low

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<b>Protected Species and Habitats</b>									
On site activities	Harm to a protected site through contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Protected species and habitats  (R32 & R33)	Moderate	Moderate	<b>Moderate</b>	<p>The presence of Great Crested Newts (GCN's) (<i>Triturus cristatus</i>) and Sand Martins (<i>Riparia riparia</i>) on site has been confirmed.</p> <p>There is one Local Wildlife Site (LWS); Bosworth Lane Pond within 1km of the site. This LWS lies c.810m northwest of the site.</p> <p>There are no other protected habitats or species situated within 2km of the site.</p> <p>Only inert wastes will be accepted at the site.</p> <p>Dust emissions are considered above.</p>	<p>Due to the nature of the waste to be deposited, there is very low pollution / contamination risk or risk of nutrient enrichment.</p> <p>The onsite pond in which GCN's are present is to be retained and protected at the site for the during of the active mineral extraction and restoration activities. A Biodiversity Enhancement Plan has been prepared for the site and will be maintained. A copy of the Biodiversity Enhancement Plan is presented in Appendix ESSD5 for the accompanying Environmental Setting and Site Design Report (Doc Ref. MG1001/07).</p>	Low