



**AN APPLICATION FOR AN ENVIRONMENTAL PERMIT  
TO AUTHORISE THE TRANSFER AND DEPOSITION OF  
WASTE ON LAND AS A RECOVERY ACTIVITY FOR  
THE RESTORATION OF THE SOUTHERN EXTENSION  
TO SWARKESTONE QUARRY, BARROW UPON  
TRENT, DERBYSHIRE**

**NUISANCE AND AMENITY ENVIRONMENTAL RISK  
ASSESSMENT (ERA)**

Report reference: TAR/SW/AW/5655/01/ERA  
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This report has been prepared by MJCA with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between MJCA and the Client. This report is confidential to the client and MJCA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by MJCA beforehand. Any such party relies upon the report at their own risk.

## 1. Introduction

- 1.1** MJCA is commissioned by Tarmac Trading Limited (Tarmac) to prepare an application for a bespoke Environmental Permit for the transfer and deposition of waste on land as a recovery activity in order to restore Phases 1 and 2 and parts of Phases 3 and 4 of the southern extension to Swarkestone Quarry, Twyford Road, Barrow upon Trent, Derbyshire to agriculture and nature conservation habitats. Throughout this report the areas in Phases 1 and 2 and those parts of Phases 3 and 4 in which waste will be deposited together with the area adjacent to the existing Swarkestone Quarry exclusively for the storage and transfer of restoration materials (proposed transfer area) will be the subject of an Environmental Permit are referred to as the site. This document comprises a nuisance and amenity environmental risk assessment (ERA) prepared to support the application based on the risk screening matrix provided in Table ERA 1 and the assessment presented in Table ERA 2.
- 1.2** The ERA considers potential receptors and pathways for impacts based on the understanding of the environment surrounding the site that is presented in the Environmental Setting and Site Design (ESSD) report presented at Appendix F to the application report and in particular Figure ESSD 1, Figure ESSD 2 and the maps included in the Envirocheck reports provided at Appendix ESSD C to the ESSD report. The assessment of the risks associated with the restoration of the site is based on the information on the design and operation of the site described in the ESSD report and the general principles in the Environment Agency guidance “Risk assessments for your environmental permit” published on the GOV.UK website on 1 February 2016 and last updated on 1 April 2022<sup>1</sup>.
- 1.3** The selection of potential receptors has been informed by information presented on the Defra MAGIC website and the Environmental Statement (ES) prepared in support of the application for planning permission reference CM9/1215/122 (the planning permission). This risk assessment takes into consideration receptors within 500m of the site with the exception of statutorily designated nature conservation sites for which the relevant distance is up to 2km.
- 1.4** Anchor Church is the closest Grade II listed building to the site located approximately 150m east-south east of the site. Based on information from the Defra MAGIC

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<sup>1</sup> <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>

website there are no Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Special Areas of Conservation (SACs), National Nature Reserves (NNRs) or Local Nature Reserves (LNR) located within 2km of the site. Anchor Church and Anchor Church Rocks West are the only Local Wildlife Sites (LWS) located within 1km of the site and as explained above are located approximately 150m to the east-south east of the site. Sinfin Moor Local Nature Reserve is located approximately 2.6km north-north east of the site and Ticknall Quarries SSSI is the closest SSSI to the site and is located approximately 3.4km to the south east of the site.

## 2. Conclusions

- 2.1 The ERA presented in Table ERA 2 that has been completed to support the application demonstrates that the operation of the facility has a low or very low risk of adverse impact on the surrounding environment including sites of heritage or nature conservation interest.

**TABLES**

Table ERA 1 Risk screening matrix (deposit of waste on land as a recovery activity)

RISK TYPE	ODOUR		NOISE AND VIBRATION		FUGITIVE EMISSIONS								
					PARTICULATE MATTER				LITTER		BIRDS, VERMIN AND INSECTS		MUD ON THE ROAD
GENERIC HAZARDS	Waste storage and handling	Waste delivery	Waste delivery	Waste storage and handling	Waste delivery	Waste storage and handling	Restored surfaces	Access routes	Waste delivery	Waste storage and handling	Waste delivery	Waste deposition	Vehicle Movements
GENERIC RECEPTORS <sup>1</sup>													
DOMESTIC DWELLING			X	X	X	X	X	X					
SCHOOLS AND COLLEGES			X	X	X	X	X	X					
HOSPITALS													
OFFICES/COMMERCIALPREMISES													
INDUSTRIAL PREMISES													
PUBLIC FOOTPATH OR BRIDLEWAY			X	X	X	X	X	X					
HIGHWAYS OR ROADS					X	X	X	X					X
PARKS AND PUBLIC OPEN SPACES			X	X	X	X	X	X					
FARMLAND WITH LIVESTOCK			X	X	X	X	X	X					
FARMLAND ARABLE					X	X	X	X					
PRIORITY HABITAT			X	X	X	X	X	X					
NATURE SITE OF LOCAL IMPORTANCE (e.g. LNR, CWS)			X	X	X	X	X	X					

RISK TYPE	ODOUR		NOISE AND VIBRATION		FUGITIVE EMISSIONS								
					PARTICULATE MATTER				LITTER		BIRDS, VERMIN AND INSECTS		MUD ON THE ROAD
GENERIC HAZARDS	Waste storage and handling	Waste delivery	Waste delivery	Waste storage and handling	Waste delivery	Waste storage and handling	Restored surfaces	Access routes	Waste delivery	Waste storage and handling	Waste delivery	Waste deposition	Vehicle Movements
GENERIC RECEPTORS <sup>1</sup>													
SITE OF SPECIAL SCIENTIFIC INTEREST (within 2km)													
SPECIAL AREA OF CONSERVATION (within 2km)													
SPECIAL PROTECTION AREA OR OTHER RELEVANT SSSI (within 2km)													
LISTED BUILDINGS (within 500m)			X	X	X	X	X	X					
SCHEDULED MONUMENT (within 500m)													
AIRPORT													
RAILWAY													
SURFACE WATER					X	X	X	X					

X = generic receptor type present and generic hazard considered as part of this assessment set out in Table ERA 2

<sup>1</sup> All generic receptors within 500m have been identified unless an alternative distance has been identified.



**Table ERA 2 – Assessment of nuisance and amenity risks associated with the transfer and permanent deposit of inert waste at Swarkestone Quarry**

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see Table ESSD 2)	Pathway	Probability of exposure	Consequence	What is the overall risk?	Risk management	What is the residual 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?	How likely is this contact?	What is the harm that can be caused?	What is the risk? The balance of probability and consequence	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	What is the risk that still remains?
<b>Odour</b>							
There are no potential sources of odour at the site.						The wastes will be inert wastes. Acceptance procedures will be in place.	Negligible
<b>Noise</b>							
Mobile plant and vehicles including waste deposition	Local human population	Air	Medium to low	Nuisance from noise	Medium to low	The potential impacts of noise have been assessed as part of the permit application for the southern extension and are considered to be acceptable with a low impact in accordance with BS 4142. Measures to minimise the potential noise emissions associated with the proposed operations at the site are presented in the Noise Management Plan.	Very low
<b>Vibration</b>							
Mobile plant and vehicles including waste deposition	Local human population	Ground	Low to very low	Nuisance from vibration	Medium to low	Potential sources of vibration are limited to site-based activities only. It is considered that these are more likely to be associated with ground borne vibration rather than transmissions of vibration through the air. Based on the nature and location of the proposed activities it is considered unlikely that ground borne vibration will have a significant effect on potential receptors within the vicinity of the site. In the unlikely event that vibration becomes	Very low

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What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk? The balance of probability and consequence	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	What is the risk that still remains?
						an issue in respect of the permitted operations at the site a vibration management plan will be prepared and implemented.	
<b>Fugitive emissions</b>							
Particulates from access routes, waste delivery, waste storage and waste deposition	Local human population / properties / farmland arable / public highway / water bodies / sensitive habitat	Air	Low	Deposition of particulate matter	Medium to low	A Dust and Particulate Matter Emissions Management Plan (DEMP) has been prepared to support the operation of the site. The DEMP describes the operations at the site which may have the potential to have an impact on air quality as a result of emissions of particulate matter, describes the operational controls which are implemented to minimise emissions and describes the monitoring which is carried out to confirm the effectiveness of the management controls.	Low to very low
The inert wastes that will be accepted have a very low potential to generate gas	Local human population / properties / farmland arable / public highway / water bodies / sensitive habitat	Air	Low	Landfill gas migration	Very low	Waste deposited in the site area will be under close visual observation by site personnel at all times during placement and levelling when the presence of biodegradable waste materials in the waste will be clearly visible so that biodegradable materials inadvertently deposited can be removed. The site waste acceptance and operational procedures will provide confidence that the deposited waste is inert.	Negligible
The inert wastes that will be accepted have a very low potential	Local human population / properties / farmland	Air	Low	Litter, attract vermin	Very low	Acceptance procedures will be in place. The waste types to be accepted at the site have a very low potential to generate litter, attract scavenging animals and scavenging birds or insects.	Negligible

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What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk? The balance of probability and consequence	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	What is the risk that still remains?
to generate litter or to attract birds, vermin or insects.	arable / public highway / water bodies / sensitive habitat						
Mud and debris deposited on the public highway	Public highway	Vehicle movements	Low	Mud on the public highway	Low	A wheel bath is already provided in the Swarkestone Quarry complex reception area. Vehicles associated with waste operations will use the wheel bath when travelling from the site to the public highway. All site roads will be inspected daily and maintained in a condition consistent with minimising the risk of the accumulation of mud and debris on the highway. A mobile road sweeper will be used as necessary.	Low
<b>Accidents</b>							
Waste stored and deposited on site	Local human population gaining unauthorised access to the waste operation	Direct physical contact	Low	Bodily injury	Low	The inert waste types that will be accepted at the site should not cause harm to human health by virtue of their composition. Security measures which are implemented currently in respect of the existing mineral extraction operations comprising the use of fencing, natural barriers, safety signs and regular inspections will continue to be implemented to minimise the potential for unauthorised entry to the site. The site gates are locked outside normal working hours.	Very low
Vehicle movements on site	Local human population	Direct physical contact	Low	Bodily injury	Medium	Security measures are implemented currently in respect of the existing mineral extraction	Low

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	gaining unauthorised access to the site					operations and will continue to be implemented to minimise the potential for unauthorised entry to the site. Vehicles will employ suitable non-tonal reversing alarms.	
Accidental release of fuel	Water resources	Infiltration to ground	Low	Contamination of water resources	Medium	Company operational, maintenance, inspection and accident management procedures are in place and will continue to be implemented. Spillage kits are available and site personnel are trained in their use.	Low
Flooding	The generic receptors identified in Table ERA 1	Flood waters	High	Flooding associated with the generic receptors identified in Table ERA 1	Medium	Based on the information provided on the GOV.UK Flood map for planning website ( <a href="https://flood-map-for-planning.service.gov.uk">https://flood-map-for-planning.service.gov.uk</a> ) the entirety of the site is located in Flood Zone 3 which is defined as land assessed as having a 1 in 100 or greater annual probability of river flooding. Flood risk, mitigation and surface water management are addressed in the Hydrogeological Impact Assessment and Flood Risk Assessment (HIA and FRA) <sup>2</sup> that was prepared in support of the application for the planning permission.	Low
Fire	Atmospheric emissions	Air	Very low	Nuisance from smoke and odour Contamination of water resources	Very low	As the materials deposited at the site will be non-flammable and non-combustible the risk of occurrence of fires is negligible. As a result	Very low

<sup>2</sup> Golders Associates (UK) Ltd, 2018. Swarkestone Quarry Southern Extension. Hydrogeological Impact Assessment and Flood Risk Assessment for Proposed Extraction of Sand and Gravel. Report number 14514240365.501.

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What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk? The balance of probability and consequence	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	What is the risk that still remains?
						associated risks from fire-fighting water being discharged to controlled waters are negligible.	
<b>Nature and heritage conservation sites</b>							
Waste operations may cause harm to protected species	Protected species and their migratory routes	Air or run off	Very Low	Harm to species health through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Very Low	A nature and conservation screen undertaken by the EA in respect of the application for Environmental Permit number EPR/FP3193SY/V005 (to the north of the River Trent) identified protected fish species in the River Trent. The site will only accept inert wastes which should not cause harm to protected species by virtue of their composition. The measures in place to minimise risks associated with fugitive emissions from the site will further minimise the risk of any potential impacts.	Very low
Waste operations may cause harm to and deterioration of nature conservation sites.	Wildlife sites of regional or local importance and protected habitat	Air or run off	Very Low	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Very Low	There are no Local Nature Reserves, Priority Habitats or any other non-statutory designated sites of nature conservation interest located within 500m of the site. Anchor Church and Anchor Church Rocks West Local Wildlife Sites are located approximately 150m to the east-south east of the site. Measures are in place to minimise the risk of unacceptable impacts from the waste operations on the surrounding environment which will be protective also of local nature conservation and habitat features.	Negligible
Waste operations may cause harm to and deterioration of	Designated heritage sites – Scheduled	Direct physical contact	Low	Deterioration of designated heritage sites	Medium	There is one Grade II listed building within 500m of the site. Anchor Church is located approximately 150m to the east-south east of the site. Measures	Low

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What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk? The balance of probability and consequence	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	What is the risk that still remains?
heritage conservation sites.	Monuments and Listed Buildings					will be in place to minimise the risk of unacceptable impacts from the waste operations on the surrounding environment which will be protective also of the designated heritage conservation sites.	