



**AN APPLICATION FOR AN ENVIRONMENTAL PERMIT  
TO AUTHORISE THE DEPOSITION OF WASTE ON  
LAND AS A RECOVERY ACTIVITY FOR THE  
RESTORATION OF PHASES 3A, 3B, 4A, 4B, 5A, 5B, 6A,  
6B, 6C AND 7 AT ALREWAS QUARRY, ALREWAS,  
STAFFORDSHIRE**

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

**VERSION 1.1**

Report reference: TAR/AL/AW/5648/01/ERA  
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## 1. Introduction

- 1.1** MJCA is commissioned by Tarmac Trading Limited (Tarmac) to prepare an application for a bespoke Environmental Permit for the deposition of waste on land as a recovery activity in order to restore Phases 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 6C and 7 of Alrewas Quarry, Croxall Road, Alrewas, Staffordshire to agriculture, amenity and nature conservation. Throughout this application Phases 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 6C and 7 of Alrewas Quarry 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 B and 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 L.19/09/817 MW (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** Based on information from the Defra MAGIC website there are no Ramsar Sites, Special Protection Areas (SPA), Local Nature Reserves (LNR) or National Nature Reserves (NNRs) located within 2km of the site. The River Mease is located approximately 1.4km east of the site at its closest point (Figure ESSD 1) and is designated as both a Special Area of Conservation (SAC) and a Site of Special

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

Scientific Interest (SSSI). The River Mease is the only SAC and SSSI within 2km of the site. Based on the SSSI citation information available for the River Mease, “*The River Mease represents a lowland clay river supporting nationally significant populations of spined loach *Cobitis taenia* and bullhead *Cottus gobio*, two internationally notable species of native freshwater fish with a restricted distribution in England.*”

- 1.5** Based on information from the Defra MAGIC website there are areas of deciduous woodland (Priority Habitat) adjacent to parts of the site and areas of Ancient Woodland (Wetleyhay Wood and Brookhay Wood) are located to the south of Phase 5A. Wetleyhay Wood and Brookhay Wood are also designated as Local Wildlife Sites (LWS). A513 LWS is located approximately 1.2km north of the site.
- 1.6** Planning permission for the site reference L.19/09/817 MW was granted on 21 June 2021 by Staffordshire County Council (SCC) for ‘...*the winning and working of sand and gravel including a southern extension and the re-phasing of permitted working and restoration schemes; the restoration of the quarry by the importation of inert waste material...*’. The approved documents in Condition 1 of the planning permission include the following Ecological Impact Assessments and survey reports.

- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 1 - Preliminary Ecological Appraisal)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 2 - Breeding Bird Survey Report)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 3 - Bat Roost Survey Report)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 4 - Bat Activity Survey Report)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 5 - Harvest Mouse Survey Report)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 6 - Great Crested Newt Survey Report)**
- **Appendix 7 Ecological Impact Assessment dated September 2019 (Appendix 7 - Hedgerow Survey Report)**
- **Construction and Environmental Management Plan (CEMP) (ref M13.116(t).R.004)**
- **Great Crested Newt Mitigation Scheme (ref M13.116(t).R.006)**
- **Landscape and Ecological Management Plan (ref M13.116(t).R.005A)**

- 1.7** In the Ecological Impact Assessment it is stated

*“An assessment of the significance of the possible ecological impacts that would result from the proposed development has been*

*undertaken and it is not considered that the extraction of mineral and associated works proposed at the site, with the implementation of appropriate mitigation measures, would have a significant negative impact on any statutory or non-statutory nature conservation sites.*

*The habitats present on the site are not considered of higher than local level importance, with the majority being habitats that are common and widespread in the local area. No significant negative impacts are anticipated on the habitats present within the site providing the restoration plan is delivered as specified. Consistent with existing planning controls at the quarry, a landscape and ecological management plan will be produced to ensure the long-term benefits of the habitats to be created, which will provide enhancements to the site above the existing situation.*

*A number of mitigation measures have been detailed to ensure that all legally protected species recorded within the site are adequately protected throughout the duration of the works. No significant negative impacts are anticipated on any known protected species or habitats present within the site providing the restoration plan is delivered as specified. Consistent with existing planning controls at the quarry, a Construction Environmental Management Plan will be produced to detail the specific measures required to protect the faunal species on site.”*

- 1.8** The Ecological Impact Assessment includes details of Great Crested Newt (Protected Species Code 2) surveys undertaken in the vicinity of the site and the CEMP (referred to above under Condition 1 of the Planning Permission) provides details of the mitigation measures that will be implemented in respect of the Protected Species Code 2.

## 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			X	X	X	X	X	X					
INDUSTRIAL PREMISES			X	X	X	X	X	X					
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					
NATURE SITE OF LOCAL IMPORTANCE (e.g. LNR, CWS)					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)					X	X	X	X					
SPECIAL AREA OF CONSERVATION (within 2km)					X	X	X	X					
SPECIAL PROTECTION AREA (within 2km)													
LISTED BUILDINGS (within 500m)			X	X	X	X	X	X					
SCHEDULED MONUMENT (within 500m)			X	X	X	X	X	X					
AIRPORT													
RAILWAY					X	X	X	X					
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 permanent deposit of inert waste at Phases 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B, 6C and 7 at Alrewas Quarry**

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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	A noise assessment in respect of the proposed development has been carried out and is presented at Appendix N of the Application Report. The proposed development has been assessed with reference to BS 4142 'Methods for rating and assessing industrial and commercial sound' in line with Environment Agency stipulations. A noise management plan is included in the noise assessment. Following an initial estimate of noise impact, along with consideration of the context and any potential effects of uncertainty, it is considered that there will be no significant or unacceptable adverse impacts at existing noise-sensitive premises in the vicinity of the site.	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	Very low

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
						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 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						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	The inert wastes that will be accepted have a very low

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
						waste acceptance and operational procedures will provide confidence that the deposited waste is inert.	potential to generate gas
The inert wastes that will be accepted have a very low potential to generate litter or to attract birds, vermin or insects.						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
Mud and debris deposited on the public highway	Public highway	Vehicle movements	Low	Mud on the public highway	Low	Wheel cleaning facilities already are provided in the site reception area. Vehicles associated with waste operating will use the wheelwash 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	Very low

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
						to minimise the potential for unauthorised entry to the site. The site gates are locked outside normal working hours.	
Vehicle movements on site	Local human population gaining unauthorised access to the site	Direct physical contact	Low	Bodily injury	Medium	Security measures are implemented currently in respect of the existing mineral extraction 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.	Low
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	Medium	Flooding associated with the generic receptors identified in Table ERA 1	Low	Based on information provided on the gov.uk flood map for planning website the majority of the site is located in Flood Zone 1 which is defined as having a less than 1 in 1000 year annual probability of flooding from rivers. Areas of the site which are located in Flood Zones 2 and 3 are generally located in the eastern area of the site. Flood Zone 2 is defined as having between a 1 in 100 year and 1 in 1000 year annual probability of flooding from rivers and Flood Zone 3 is defined as having a greater than 1 in 100 year annual probability of flooding from rivers. Flood risk is an issue which has been addressed in the application for the	Low

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
						planning permission. It is stated in the FRAs presented in the 2014 and 2019 Hydrogeological Impact Assessments that the mineral extraction operations and restoration activities will not result in an increase in flood risk at or in the vicinity of the site and that sustainable drainage principles will be incorporated in the design of the surface water management system during operations and following restoration so as to provide for the sustainable management of surface water.	
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 associated risks from fire-fighting water being discharged to controlled waters are negligible.	Very low
Waste operations may cause harm to and deterioration of nature conservation sites.	Protected sites - European sites and SSSIs	Air or run off	Low	Harm to protected site through contamination, nutrient enrichment, smothering, disturbance, predation etc.	Very Low	The River Mease is located approximately 1.4km east of the site and is designated as both a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI). The River Mease is the only SSSI and European site within 2km of the site. The River Mease represents a freshwater habitat for the bullhead <i>Cottus Gobio</i> populations in the rivers of central England. The site will only accept inert wastes which should not cause harm to the nature conservation sites by virtue of their composition. The measures in place to minimise	Negligible

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
						risks associated with fugitive emissions from the site will further minimise the risk of any potential impacts.	
Waste operations may cause harm to and deterioration of heritage conservation sites.	Designated heritage sites – Scheduled Monuments and Listed Buildings	Direct physical contact	Low	Deterioration of designated heritage sites	Low	There are 10 Grade II listed buildings within 500m of the site. The closest listed building to the site is the Grade II mile post located beyond Croxall Road at the eastern most boundary of Phase 7. Roddige Farmhouse which is a Grade II listed building is located in the area between Phases 6B and 3B. There is a scheduled monument entitled “Site of round barrow near River Tame” located approximately 530m north east of the site. Measures 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.	Low
Waste operations may cause harm to and deterioration of heritage conservation sites.	Wildlife sites of regional or local importance and protected habitat and species including priority habitat and Protected	Air or run off	Low	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation, etc.	Very Low	There are no Local Nature Reserves within 2km of the site. There are three LWS within the vicinity of the site, the A513, Brookhay Wood and Wetleyhay Wood. Brookhay Wood and Wetleyhay Wood are also designated as ancient woodland. There are areas of deciduous woodland adjacent to the site. Measures to safeguard habitats and protected species will be implemented in accordance with the Construction and Environmental Management Plan dated March 2020 (reference M13.116(t). R.004)	Negligible

What do you do that can harm and what could be harmed?			Assessing the risk			Managing the risk	
Hazard	Receptor (see ESSD)	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?
	Species - Code 2 Local Wildlife Sites (LWS),					as required under planning permission reference L.19/09/817 MW for the site. The potential hazards from the permitted activities pose a low risk to the broad sensitivity of species and habitats groups. Measures 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 local nature conservation and habitat features.	