ENVIRONMENTAL STATEMENT
NON TECHNICAL SUMMARY
VOLUME 3

HINTS HOPWAS QUARRY
North West Extension and Consolidation Application

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1.0 INTRODUCTION

1.1 Background

A planning application has been submitted by Lafarge Tarmac Limited and CEMEX UK to Staffordshire County Council (SCC) which seeks planning permission for a north western extension to Hints Quarry, and the consolidation of the existing planning permissions into one overall planning permission.

A plan illustrating the location of the Hints quarry application site, including the north west extension area is produced as Figure 1-1.

In 2005, planning permission was granted by SCC for the amalgamation of the former Hopwas Quarry operated by CEMEX UK (previously RMC Aggregates), and Hints Quarry operated by Tarmac Limited (now Lafarge Tarmac Limited) into a single operational unit. The planning permission was also associated with an extension of Hints Quarry into land to the northwest of Hints Quarry, south east of Bucks Head Cottage. The development scheme provided for a transitional arrangement with the working of the remaining reserves at Hopwas Quarry via the then existing Hopwas Quarry processing plant and site access onto the A51. Thereafter, the extraction and processing of all remaining reserves would be undertaken via Hints Quarry and the access onto the then A5 Watling Street. The scheme included a comprehensive phased extraction and restoration plan, and operations have proceeded in accordance with the development scheme.

Restoration has progressed in the south eastern and south western areas of Hints Quarry, and within the eastern/south eastern areas of Hopwas Quarry in accordance with the approved restoration scheme. As a result, the planning application boundary associated with the current application site has been defined to exclude the already restored areas on the periphery of the quarries. The application site is thus confined to the remaining operational areas within Hints Quarry together with a proposed north western extension to the quarry. The application also incorporates a comprehensive updated restoration scheme which is considered to be an improvement of the currently approved scheme.

Remaining reserves within the current permitted area will allow extraction to proceed until approximately the spring of 2016. Additional reserves are thus sought to provide for continuity of production and supplies to long established markets.

1.2 The Application Site

Hints Quarry is located approximately 20km to the north east of central Birmingham, and 5km to the west of Tamworth within the county of Staffordshire and the district of Litchfield. It lies within a block of land bounded to the south by the new A5 dual carriageway, beyond which lies the old A5, now the C36, and to the north by the A51. The village of Hopwas lies some 800m to the north east, with the village of Hints some 400m to the south at the closest point.

The application site is some 94.7 hectares in extent, of which the north western extension is area is some 18.0 hectares. Land to the west of the north western extension area required for water management is some 5.87 hectares in extent. The remaining area within the existing Hints Quarry is some 71.0 hectares, comprising the existing processing plant site, fresh water and silt lagoon areas, remaining permitted extraction area, soil and overburden storage areas, land undergoing/awaiting restoration, and intervening areas.

The north western extension area is currently in arable use, with a plastic lined irrigation pond in the south eastern area of the site. The area is generally open with a single, gappy internal hedgerow. The land falls gently from circa 135m AOD in the east to circa 110m AOD in the west, with a shallow valley positioned centrally. Bucks Head Cottages lies just to the south of the proposed extension area.

The north western extension area is bounded by a number of rights of way, with bridleway (BW) ‘Hints 2’ along the northern boundary (Knox’s Grave Lane); BW18 along the southern boundary; BW Hints 3 along the south western boundary, continuing southwards along the western boundary of Hints Quarry; Hints 4 along the north western boundary,
which also forms part of the ‘Heart of England Way’, and which continues northwards as ‘Swinfen and Packingdon FP6’ and south westwards as FP Hints 4. Provision would be made as part of the development for the temporary diversion of BW 18, and its replacement as part of the final restoration scheme along a route which approximates to its original alignment.

1.3 The Proposed Development

The key element of the development is a north western extension of Hints Quarry which will yield reserves of some 4.8 million tonnes of sand and gravel. The reserves would be transported to the existing Hints Quarry processing plant by conveyor, consistent with the arrangements at the existing quarry. There would be no changes to the pattern of output and sales as a consequence of the extension development: the reserves would simply allow the quarry to continue in operation for an additional period of some 7 years based upon a continuation of output of some 700,000 tonnes per annum.

The scheme which is discussed in detail in Sections 3.0 and 4.0 of this ES makes provision for:

i) The completion of extraction of the remaining reserves within Hints Quarry, by approximately the spring of 2016;

ii) The completion of restoration of land in the south western area of Hints Quarry, also by April 2016;

iii) The phased extraction of some 4.8 million tonnes of sand and gravel from the north west extension area, working in phases generally from east to west to the extension area;

iv) The creation of a new silt lagoon in the north western area of the existing quarry, allowing the existing silt lagoon on its southern side to be decommissioned, capped and restored.

v) The early restoration of the non-operational areas of the existing quarry, comprising some 31.8 hectares of land in the north east and 13.7 hectares in the south east, the affect of which will be to create a substantial buffer of restored land around a central operational area;

vi) The establishment of temporary perimeter soil screen bunds around the northern and western sides of the north western extension area, and a temporary noise attenuation bund to the east of Bucks Head Cottages, which would be in position at the commencement of phase 4 of the north west extension development;

vii) The progressive phased stripping of ‘rocksand’ from above the commercial sand and gravel deposit, and the use of the rocksand either directly for backfill restoration within the previous working phase, or the temporary storage of rock sand in the central area of the quarry for use in final restoration works.

viii) The progressive stripping of the topsoil and subsoil from the working phases, and the use of the soil resource either directly in the restoration of preceding phases or temporary stockpiles for use as part of the restoration scheme;

ix) The use of the existing plant in the south eastern area of Hints Quarry for processing the sand and gravel together with ancillary plant (concrete plant); and

x) The use of the existing site access to Watling Street, formally the A5, now the C36, from where all HGV traffic from the quarry travels westbound to the junction with the A5/A38 at the M6 Toll 4 interchange.

1.4 The Non Technical Summary

An Environmental Impact Assessment (EIA) has been undertaken to consider the environmental effects of the proposed development. The results are presented in an Environmental Statement which accompanies the planning application. This document is a non technical summary (NTS) of the Environmental Statement (ES), and presents the main findings of the Environmental Impact Assessment
Non Technical Summary

(EIA) in non technical language. The NTS, as the title suggests, provides only a brief summarised account of a large amount of technical reports and data.

However, it is intended to provide a sufficient overview of the development scheme, and the environmental issues which would be associated with the development, to allow the reader to gain an understanding of the key issues, and the way in which the EIA has informed the preparation of the proposed development scheme.

The NTS comprises Volume 3 of a comprehensive submission which consists of:

- Volume 1: Environmental Statement (ES);
- Volume 2: Technical Appendices; and
- Volume 3: Non Technical Summary of the ES (i.e. this document).

The planning application is supported by a Planning Application Statement (PAS) which includes the formal application plans which illustrate the details of the proposed development. Selected plans are reproduced in this NTS for ease of reference.

1.5 Technical Studies

As part of the EIA, technical studies have been undertaken to consider the effect of the development in terms of:

- Landscape and Visual Impact;
- Ecology;
- Soils and Agricultural Land;
- Hydrology and Hydrogeology;
- Noise;
- Air Quality;
- Transportation; and
- Cultural Heritage.

In addition, technical inputs on the design of the working scheme, geology and reserve assessment, have been provided by in-house expertise at Lafarge Tarmac.

1.6 Document Availability

The ES volumes are available for inspection at the offices of Staffordshire County Council, Planning, Policy and Development Control, Block A, Tipping Street, Stafford ST16 2DH.

Copies may be purchased from the Applicant at CEMEX UK Operations Limited, Wolverhampton Road, Oldbury, Warley, West Midlands B69 4RJ (tel 0121 569 7459).

The cost of volumes (inclusive of VAT and postage) is:

- ES Volumes 1 – 3 and Planning Application Statement:
  - Printed versions £100.00
  - CD version £5.00
- Volume 3 NTS: (Printed version) £5.00
Non Technical Summary

Figure 1-1 - Site Location Plan
2.0 THE PROPOSED DEVELOPMENT

2.1 General Overview

Extraction of the reserves from the remaining working phase of the currently permitted working scheme is ongoing, and anticipated to be completed by the spring of 2016. Subject to the receipt of planning permission for the north west extension development, there would be an uninterrupted transition from the completion of extraction in the existing quarry to the commencement of the extraction in the extension area, with a continuation of the same working practices.

In summary, this involves the removal of ‘rocksand’ from above the commercial sand and gravel reserves, and the progressive use of that rocksand material for backfill restoration purposes within the quarry void. The rocksand varies between 7m and 22m thick, overlying a sand and gravel deposit between 18m - 22m thick. However, it is proposed to restrict the depth of extraction within the sand and gravel deposit to a maximum depth of 5.7m below mean groundwater level rather than to the full base of the deposit. This is generally consistent with operations in the existing quarry where extraction takes place to up to 5m below mean groundwater level, but where groundwater is managed by passive drainage rather than pumping. These issues are discussed further in the hydrogeology assessment of the ES which concludes that limiting extraction to the proposed maximum depth would ensure no adverse effects on wider hydrogeological interests.

A key objective of the scheme has been to provide for early restoration of peripheral non operational areas of the existing quarry which, together with restoration works already completed in the eastern area of Hopwas and south eastern area of Hints, will create a substantial periphery of restored land encircling the residual central operational area.

Subject to these broad principles, the extension development would proceed as a conventional phased extraction and restoration programme, working generally from east to west across the extension area in seven defined phases. Soils would be stripped from above the rocksand and used initially to create temporary peripheral soil screen bunds. Thereafter, as the development progresses, the soils would be used for ongoing restoration in areas which have been profiled to their final restoration contours.

The phased operation would strip the rocksand in phases from above the sand and gravel deposit, with the rocksand then used either for progressive backfill / re-profiling restoration works behind the advancing working area, or temporarily stockpiled for use in final restoration works. A detailed materials audit has been undertaken to ensure the deliverability of the restoration scheme in terms of the availability of material to create the proposed restoration contours (ref PAS Chapter 6.0, table 6.1).

The restoration works within the existing quarry and extension area would be implemented progressively as an integral part of the development, with the restoration strategy designed to create a variety of restoration after-uses comprising:

- (i) agricultural land in the western and south-western areas of the existing quarry, restored to a specific target profile to achieve best and most versatile land and providing a relationship with adjoining undisturbed agricultural land to the west;
- (ii) agricultural grassland to the south and south-east, also restored to a target profile of potential best and most versatile land, providing a link to the restored grassland outside the current application site boundaries; and
- (iii) a mosaic of heathland and acid grassland, with native woodland in the central/northern areas (including the north-west extension area) designed specifically to enhance the future nature conservation and biodiversity value of the restored sites.

Further diversification would be provided by the creation of a small open water-body and a variety of slope gradients, including geological sand outcrops.
2.2 Phased Quarry Development Scheme

2.2.1 Introduction

The northwest extension development would progress in seven phases, as illustrated on the block phasing plan reference HQ/NWE/8, reproduced in this chapter as Figure 3.1. Prior to the commencement of operations within the proposed extension area, all remaining reserves within the currently permitted extraction area would be worked out.

The anticipated progress of extraction and restoration within the respective phases is illustrated on plan reference numbers HQ/NWE/9-15, all produced within the PAS. The plans are reproduced at a smaller size at the end of this chapter as figures 3.2 – 3.9.

The key principles which have influenced the design of the working scheme have been to:

i) Provide for the early restoration of peripheral non-operational areas of the existing quarry, using rocksand fill material which will become available from the extension area;

ii) Ensure an overall materials balance which will deliver the restoration of the full application site area to the defined restoration contours;

iii) Limit the depth of extraction within the commercial sand and gravel deposit to a defined level below the mean groundwater level, consistent with the objective and requirement to ensure no adverse effect on the underlying groundwater resources;

iv) Utilise existing infrastructure at the site in terms of the conveyor link to the processing plant site and the existing plant, which has proven to operate efficiently and effectively;

v) Incorporate temporary screening mitigation measures along the northern and western boundaries of the extension area, designed to minimise the amenity effects of the operation;

vi) Incorporate specific noise attenuation measures at Buck Head Cottages in the form of a temporary noise bund;

vii) Provide for a phased working and restoration scheme which progresses from east to west which would provide maximum noise attenuation benefit to Bucks Head Cottages by allowing machinery to work below ground level and behind the advancing working face;

viii) Ensure that all temporary stockpiles of rocksand, topsoil and subsoil to be used for final restoration are located within the confines of the quarry void rather than at original ground level.

ix) Provide for a logical distribution of restoration after-uses, with restoration to agriculture (arable) in the west, using best and most versatile soils, in juxtaposition to undisturbed agricultural land; agricultural grassland in the south and east; and nature conservation orientated after-uses in the north, focussing particularly on the creation of heathland and acid grassland; and

x) Create a variety of restoration profiles and gradients, and avoid uniformity of slopes, thereby ensuring the creation of a naturalistic landform.

2.2.2 Preliminary Operations

The infrastructure for the transport of sand and gravel from the extraction area to the processing plant site is already in place via a conveyor link which runs south/south-east through the central area of the existing quarry. No changes are proposed to the existing arrangements at the outset of the extension development, and thus no preparatory works involving plant will be required to initiate operations within the extension area. The conveyor link will be extended into the extension area for later phases, but this will follow the progress of the phased development scheme.

The scheme proposes to restrict the depth of sand and gravel extraction to a maximum depth of 5.7m below mean ground water level. This reflects advice from the Environment Agency designed to ensure no adverse...
effects on the underlying groundwater (reference ES Chapter 9.0). The ability to work to these depths is based on the need to ensure that there is no overall loss of groundwater to the underground water storage system. The scheme has thus been designed to provide for the groundwater which is pumped from the base of the excavation to be recharged back into the ground via three recharge wells. These would be positioned on land to the west of the north-west extension area, in optimum locations to both facilitate recharge and minimise groundwater recirculation between the wells and the quarry.

Preliminary works would thus involve the drilling of the three wells in the approximate locations illustrated on plan reference numbers HQ/NWE/9-15. The wells would be linked to the quarry via a series of pipes which would be laid along the field boundaries at a depth of 1.5 metres to avoid interference with agricultural activities. The wells would be covered with ‘manholes’ and would be fenced off from the surrounding agricultural land within small circa 2-3m enclosures. The pipes would then be routed to the respective extraction phases, and related pumping infrastructure would be repositioned internally within the quarry as part of the phased development scheme.

2.2.3 Phase 1

Operations in phase 1 (Figure 3.3) would commence with the separate stripping of the topsoil and subsoil, with the topsoil to be placed in a 2 metre high screen mound along the northern and western side of the northwest extension area. Subsoil would be used as part of the soil profile in the area to be restored to the south/southeast of phase 1.

Rocksand from phase 1 would be used partly to cap the decommissioned ‘silt lagoon 7’ situated in the west/central area of the existing quarry; partly to create a bund wall for a new silt lagoon, with the remaining rocksand to be placed in a stockpile at the base of the northern area of the existing quarry void.

Sand and gravel extraction would then commence in phase 1, working generally from north to south from a working face along the southern edge of the phase. The sand and gravel would be extracted using a mobile excavator which would transport the material to a conveyor loading hopper. The existing conveyor link to the processing plant would remain on its existing alignment running south/southeast to the plant site.

Phase 1 would yield a reserve of some 580,000 tonnes of saleable material.

2.2.4 Phase 2

Prior to the commencement of operations in phase 2, an application would be made for the temporary diversion of bridleway 18 (BW18) which would be affected by operations in the western area of phase 2 (and subsequently by extraction in phases 4 and 7). The intention is to provide a temporary diversion around the eastern and southern sides of the operational quarry area, which would provide a circular route around the quarry, and where the temporary route would be located away from the main operational activities. Formal arrangements would be made to secure the temporary diversion in advance of commencement of operations in phase 2.

The existing agricultural irrigation pond in the north western area of phase 2 would be decommissioned at the commencement of this phase. This would require the pumping of residual water and the removal of the current engineered plastic lining which is used to perch the lagoon above the groundwater table.

Subject to these preliminary works, operations in phase 2 would progress westwards from the phase 1 area, commencing with the stripping of the topsoil and subsoil. This material would be used:

i) Partly for direct placement in the restoration of the former ‘silt lagoon 7’ on the western boundary of the quarry;

ii) Partly to complete the restoration of some 9 hectares of land in the north eastern area of the site, supplementing soils currently stored in that area; and

iii) The remainder of the topsoil and subsoil would be placed in temporary storage on land to the north of the plant site, hereafter referred to as the central soil storage area (reference Figure 3.3).
THE PROPOSED DEVELOPMENT 3

The rocksand from phase 2 would be used to commence the backfilling of the eastern area of phase 1 to its proposed restoration profiles.

Phase 2 would yield a saleable reserve of some 608,000 tonnes.

2.2.5 Phase 3

Phase 3 would be developed northwards from phases 1 and 2 to the defined boundary. Topsoil and subsoil stripped from phase 3 would be used partly to progress the restoration of phase 1 on the restoration landform created during phase 2. The remaining soils would temporarily placed in the central soil storage areas.

The rocksand from phase 3 would be placed in 4 areas:

i) At the southern extremity of the quarry to complete the restoration landform of land to the south of the plant site which would tie into the already restored land to the south and southeast of the plant site;

ii) Within the southern areas of the phase 1 and phase 2 extraction areas as a progression of the ongoing restoration backfill and re-profiling works;

iii) As a temporary storage area in the central area of the quarry to the east of silt lagoon 8; and

iv) As a temporary storage area 3 partly on the phase 1 re-profiled landform (prior to final restoration).

Extraction in phase 3 would progress generally from south to north, with the phase yielding a reserve of some 880,000 tonnes of saleable material.

2.2.6 Phase 4

Up to the commencement of phase 4, extraction and related operations in phases 1 – 3 would be at a minimum distance of 350 metres from the residential property at Bucks Head Cottages. Throughout this period, operations could take place within the noise criterion which has been set at Bucks Head Cottages, without the need for any additional noise attenuation mitigation measures (ref ES Chapter 9.0). However as operations within phase 4 (and subsequent phases) progress close to Bucks Head Cottages, a noise attenuation screening mound has been recommended to mitigate the effects of noise, and ensure that the operations remain within the noise limit criterion. It should be noted that permitted operations within the exiting Hints Quarry have taken place at similar standoff distances to Bucks Head Cottages (circa 85 metres), protected by a noise attenuation bund. The proposals within the north west extension area would follow similar practice in terms of a standoff distance to the limit of extraction of some 85 metres, with a more substantive soil bund in terms of surface area.

As part of the preliminary soil stripping operations in phase 4, a 3m high soil screen mound would therefore be created as a semi circular profiled mound on land to the east and northeast of Bucks Head Cottages. The mound would have a shallow outer gradient of 1 in 5 and would be seeded with grass and maintained for the remaining duration of the operation.

The remaining soils from phase 4 would be used partly to complete the restoration of the parcel of land to the south of the plant site, with the remaining topsoil placed as an addition to the central topsoil storage mound.

The rocksand from phase 4 would be placed directly into the eastern area of the phase 3 void to complete the extraction re-profiling of that area.

Extraction of sand and gravel reserves in phase 4 would progress generally from east to west, and would yield a reserve of some 615,000 tonnes.

2.2.7 Phase 5

Topsoil and subsoil from phase 5 would be used primarily to progress restoration within the backfilled and re-profiled phase 1 extraction area. The remaining topsoil would be added to the central topsoil storage bund, with a small volume of subsoil added to the inner side of the Bucks Head Cottages noise screen bund in readiness of restoration works following extraction in the adjoining phase 7 area.
The rocksand from phase 5 would be used partly to progress the backfill re-profiling works within the phase 3 areas to the east of the area restored with the phase 4 soils. The remaining rocksand would be added to the central rocksand storage area for use in final re-profiling works.

Extraction of sand and gravel in phase 5 would progress from east to west, and would yield a reserve of some 670,000 tonnes.

2.2.8 Phase 6

Topsoil and subsoil from phase 6 would be used primarily to progress restoration within the backfilled and re-profiled phase 3 area, with the surplus topsoil and subsoil placed as extensions to the central soil storage bunds.

The rocksand from phase 6 would be used to backfill and re-profile the adjoining phase 5 area, with a small volume used to commence restoration in the northern part of the plant site area.

Extraction of sand and gravel in phase 6 would progress from east to west, and would yield a reserve of some 716,000 tonnes.

2.2.9 Phase 7

Topsoil and subsoil from phase 7 would be used to progress restoration within the backfilled and re-profiled phased 5 area, with the remainder used to progress restoration in the northern part of the plant site area.

The rocksand from phase 7 would be stripped in 2 sequences, which reflects the limited operational space at the end of the phased development programme. Rocksand from the stage 1 strip would be placed in the northern area of phase 6, to progress the backfill re-profiling around the northern and north-western edge of the extension area. A stage 2 rocksand strip would progress this backfill re-profiling along the western side of phase 6.

Extraction of sand and gravel reserves in phase 7 would progress from north to south and would yield a reserve of some 733,000 tonnes.

All operations within phases 6 and 7 would be carefully planned to ensure that working faces are orientated in a way that provide maximum noise barrier attenuation to the residential property at Bucks Head Cottages.

2.2.10 Final restoration profiling works

Final restoration works would involve the use of the rocksand present in the temporary tips to create the remaining landform profiles within the worked out phase 7, and across the central area of the quarry. Following the decommissioning and removal of the processing plant, restoration works would extend across the plant site area. The sub soil and top soil in the central storage bunds would then be used to complete the restored profiles across the site.

A materials audit which confirms the use of the rocksand back fill material and sub soil and top soil resources is set out in table 6.1 of the PAS which confirms the availability of the required material to create the proposed landform and restoration soil profiles.

2.3 Hours of Operation

The current hours of working as prescribed in the 2005 planning permission L.02/09/805-808MW(R) are:

i) 0700-1900 Monday – Friday, and 0700-1300 on Saturday for the winning and working of sand and gravel; export of aggregate products from the site; and the undertaking of temporary operations comprising soil stripping, placement, construction and removal of bunds, and restoration and after-care; and

ii) 0600 – 2200 Monday – Friday and 0600 – 1300 on Saturday for the processing of minerals at the Hints Quarry plant site.

No operations take place on Sundays, Bank or Public holidays.

No changes to these operational hours and working practices are proposed as part of the current application.
2.4 Processing Plant

Following the dismantling of the Hopwas processing plant several years ago, all sand and gravel is processed via the Hints Quarry processing plant. The plant comprises a conventional washing and screening plant which produces the desired sand and gravel products.

No changes to the existing arrangements or output volumes are proposed as part of the current application.

2.5 Output and Traffic Movements

Current and recent output from the quarry averages 700,000 tonnes per annum. Based upon the above working hours, a 275 day working year, and average load sizes of 20 tonnes, this equates to an average of 127 loads per day (254 movements).

All traffic to and from the quarry uses the dedicated access route which runs north from the C36 Watling Street (formally the A5) via a tunnel beneath the new A5 dual carriageway to the processing plant site. Upon exiting the quarry, all traffic turns right, and travels westbound along the C36 for a distance of some 2.2 kilometres to the intersection with the A38, new A5 and M6 toll road, from where the products are distributed to their market destinations.

All HGV vehicles travelling towards the quarry similarly use the C36 from the A38/A5 junction.

There is a weight restriction eastbound on the C36 through Hints village, which prevents the HGV use of the eastbound section of the C36 to the junction with the A5 at Mile Oak.
Figure 2-1 Current Situation

Figure 2-2 Block Phasing
Non Technical Summary

Figure 2-3 Initial Works/Phase 1

Figure 2-4 Phase 2
Non Technical Summary

Figure 2-5 Phase 3

Figure 2-6 Phase 4
Non Technical Summary

Figure 2-7 Phase 5

Figure 2-8 Phase 6
3.0 RESTORATION STRATEGY

3.1 Introduction

The Restoration Master Plan is reproduced below as Figure 4.1. The Restoration Master Plan shows the various habitats and land uses which are proposed, together with the proposed restoration landform. A combination of areas of heathland / acid grassland mosaic, agricultural land (areas of best and most versatile land and of lower quality) and broadleaved native woodland form the primary land uses for the restored site. Species-rich hedgerows, ponds (with aquatic and marginal vegetation and areas of shingle), and sandstone outcrops provide further variety to the restored habitats.

In comparison to the currently approved restoration scheme for the existing quarry, the updated scheme provides a more characteristic proportion of farmland to heathland to woodland, which reflects identified priorities for the landscape of the locality. Accordingly, there is less woodland, and more heathland and agricultural restoration than in the approved scheme. Additionally, a higher quantity of species-rich hedgerows and field margins is proposed over the baseline situation. A similar area of ‘Best and Most Versatile’ (BMV) agricultural land to that currently present in the north west extension area would be re-created within the site.

3.2 Restoration principles

The site would be progressively restored, closely following the phases of mineral extraction (as shown on the submitted phasing plans). Each restored area would be subject to five years of establishment aftercare management, with areas of acid grassland / heathland mosaic subject to ten years (in total) of aftercare management.

Once aftercare has been initiated, annual aftercare updates would be produced and submitted to SCC prior to an annual meeting with interested parties to review operations undertaken in the previous year and to agree modifications and general operations for the following year.

Bridleway no 18 will need to be diverted during the operational phase of the proposed development from the commencement of phase 2, and a temporary route has been proposed which would ensure the availability of a BW route throughout the operational stages. The restoration scheme makes provision for the reinstatement of the bridleway route leading from the start and end points of the diverted route. Due to restrictions on longitudinal gradients (maximum 1:12) the route would not follow the original route, but it would follow the general orientation. The reinstated bridleway would be a minimum of 2m wide and would be delineated by stock netting and double-top line wires.

3.3 Restoration Landform and Drainage

Landform design using computer-aided ground modelling techniques has been undertaken to achieve a detailed restoration landform and confidence in the cut-fill volume requirements. This landform contains a variety or slopes, with areas of BMV agricultural land having a maximum gradient of 1:8, other agricultural areas having a maximum gradient of circa 1:5. Shallow slopes would be incorporated into the landform at pond edges, from 0.5m above to 0.5m below average water level.

Generally a maximum gradient of 1:4 has been sought although in the interests of providing variation (e.g. for sandstone outcrops) some areas are steeper, which are generally proposed to be restored to woodland, woodland scrub or heathland, to help integrate them with the adjacent landscape areas.

The landform has been devised to ensure that the final landform would integrate successfully into the surrounding landscape. The available overburden and mineral waste volumes are such that the proposed landform utilises the available restoration material fully, but without the need for importation of infill material.

During the restoration process, detailed design would be incorporated into the landform to provide localised variation and subtle changes that are not depicted on the contours shown on the Restoration Master Plan. This would further aid integration of the restoration landform into the surrounding landscape.
Site drainage would be controlled primarily through the existing and proposed water bodies and natural percolation. Peripheral ditches on agricultural fields would be employed to direct water towards water bodies within the site, where required. Sufficiency of drainage in agricultural areas would be kept under review during the aftercare period, and ameliorative action (e.g. secondary cultivations) undertaken accordingly.

3.4 Restoration Materials

The restoration would be achieved via the total reuse of the existing soil resource with no importation of restoration material.

Soils would be stripped in accordance with the recommendations in the soil survey set out in ES Chapter 8.0. Stripped topsoil and subsoil would be used exclusively for the restoration of agricultural areas. Mineral sand would be used to create the areas for acid grassland-heathland mosaic and (with appropriate preparation) woodland areas.

3.5 Restoration Land Uses

The restoration master plan makes provision for the following main restoration land uses:

- Acid Grassland / Heathland;
- Woodland;
- Hedgerows;
- Agriculture; and
- Wetland.

The Planning Application Statement includes detailed proposals for the ground preparation, establishment, soil conditions, seeding, tree and hedgerow planting species, wetland and pond edge planting species.

The Planning Application Statement also includes details of the aftercare management proposals with a 5 year management period proposed for all restoration after uses, with the exception of heathland, where a 10 year aftercare management period is considered to be appropriate as a safeguard to ensure the successful establishment of the vegetation.
Non Technical Summary

Figure 3-1 Restoration Master Plan
4.0 SUMMARY OF ENVIRONMENTAL ISSUES

4.1 Introduction

The ES considers the potential environmental effects of the proposed north west extension to Hints Quarry, the continuation of processing and related operations within the existing Hints Quarry, and the restoration of the overall application site including the exiting Hints Quarry. Based upon the studies and content of the individual chapters, the underlying conclusion of the EIA is that there is no single topic, or combination of issues which should objectively prevent the development from proceeding.

This is re-enforced by preliminary conclusions of the emerging Replacement Minerals Local Plan being prepared by SCC where the acceptability of the principle of extraction at Hints Quarry has been acknowledged by SCC.

The respective environmental studies have paid due regard to the environmental issues identified in the informal scoping exercise undertaken with SCC relating to environmental effects. Where relevant, the studies have made a series of recommendations for measures which could minimise effects, and/or result in positive enhancements.

These issues are summarised below as a brief resumé of the preceding chapters and the conclusions which are drawn. For each topic, the summary describes the key elements of the study which has been undertaken, the mitigation measures which have been incorporated into the development scheme or which will be implemented as part of the ongoing development, and the assessed residual effects taking into account the mitigation measures.

4.2 Landscape and Visual Effects

4.2.1 LVIA Study

No part of the site, or within 5km of the site boundary, lies within a statutorily designated landscape (e.g. an Area of Outstanding Natural Beauty or National Park).

No part of the site lies within or within 2km of a non-statutorily designated landscape, such as a Special Landscape Area.

The site lies within the West Midlands Green Belt.

No part of the site or surrounding area lies within a Registered Park or Garden.

The land within the north western extension area generally falls from east to west from circa 135m AOD to 110m AOD, with a shallow valley (aligned north-south) positioned centrally. Slope gradients are generally circa 1:15 or shallower.

To the immediate south, east and northeast, the surrounding landscape is heavily affected by past and current mineral operations at Hints and Hopwas Quarry, such that land levels and gradients are highly variable, but generally lower than the extension site. There is a fairly prominent retained hillock centrally located at the quarry complex at circa 151m AOD. The eastern boundary of the quarry complex forms a ridgeline (aligned north-south) at circa 140-145m AOD, beyond which the land falls away into a wide valley. To the west and north the land gradually falls away, undulating slightly, but generally lying between 80m AOD and 110m AOD. To the south, the land is affected by the A5 Hints Bypass which runs along a combination of man-made embankments and cuttings. To the south of this, the land generally starts to rise again, with numerous hillocks present, up to circa 157m AOD.

There are no dwellings within the extension site itself. The only built element is a plastic-lined irrigation lagoon.
Within the surrounding landscape there are very few dwellings close to the
extension site, with only isolated cottages and farmsteads located within
0.5km of the site boundary: one on the south eastern boundary (Buck’s
Head Cottages), and one circa 450m to the north (Common Barn).
Numerous dwellings are dispersed over the wider area, notably adjacent to
road routes and the villages at Hints (to the South) and Hopwas (to the
east).

The A51 road is located circa 600m north of the extension site, the A5
(Hints Bypass), running east-west, is circa 800m south of the site, and the
A38 (running north-south) is located circa 2km west of the site. Rock
Hill/Watling Street (the old A5, now C36) runs parallel to and south of the
A5 bypass. Flats Lane and Jerry’s Lane form a single length of minor road
running north-south, 600m west of the site at its nearest point.

A tall telecommunications mast is located on the hill centrally located
amongst, but just outside the existing quarry complex (Lichfield
Transmitting Station).

The north western extension area essentially consists of two fields of
arable farmland, an irrigation lagoon and a combination of hedgerow and
fenced field boundaries.

The adjacent quarry complex consists of large areas of exposed sand, silt
lagoons, operational mineral processing areas and areas of restored land.
Some areas have naturally colonised to a combination woodland and
scrub. Areas to the north and west consist largely of arable farmland with
hedgerow field boundaries, occasional woodland copses and access
tracks. To the east and northeast are larger areas of mixed woodland. To
the immediate south of the quarry complex are areas of market gardening.
Further afield to the south, the main land-use/land cover is a combination
of pasture grassland and woodland.

4.2.2 Landscape Impact

The predicted potential visual and landscape impacts are expected to
primarily relate to the mineral extraction operations in the north west
extension area, although changes to the restoration proposals and the
extended duration of existing quarry processing equipment etc. would also
potentially create visual and landscape impacts.

The main sources of potential effects would comprise:

- Change of land cover and landscape elements (during operational
  and restoration period)
- Mineral extraction operations and mobile plant
- Temporary landform changes during mineral extraction and from
  screening features
- Permanent landform changes upon restoration
- Soil handling operations and soil storage mounds
- Increased duration of retained operational elements (i.e.
  processing plant) at the existing site.

The north west extension area lies within an area mainly characterised by
farmland, quarrying, woodland, having a fairly open nature and with the
levels of tranquillity afforded being slightly adversely affected by existing
quarrying activity.

Removal of the existing land cover elements (farmland, existing landform
and hedgerows and engineered irrigation pond) would take place during
the operational period over a number of phases, coupled with progressive
restoration to minimise operational ‘land-take’.

The addition of new temporary grassed soil screening mound and bund
elements and new hedgerow and woodland elements would also take
place during the operational period.

The level of tranquillity afforded in the north west extension area and
immediate areas would reduce marginally during the operational period.
The proposed development (operations) would be a characteristic element
of the existing landscape but creating an adverse effect for a Medium-term
duration. The magnitude of adverse effect on the landscape character is
considered to be Medium during the operational period.

Following restoration, a new landform would be created in the landscape
which would be appreciable from close range locations and new public
rights of way (PRoW) routes only.
An open aspect would be retained due to the size of the internal area of the existing quarry complex with a variety of slope gradients (ranging from sheer sandstone outcrops to gentle slopes associated with arable and heathland areas).

The remaining residual characteristics upon restoration would contribute a number of desirable elements, including lowland heathland, lowland acid grassland, arable field margins and ponds and ‘high’ priority species-rich hedgerow habitats. Additionally, a similar area of ‘Best and Most Versatile’ (BMV) agricultural land to that currently present in the north west extension area would be re-created within the restored site.

4.2.3 Effects on Visual Amenity

The assessment of visual effects has focused on viewpoints which represent a range of sensitive locations with the potential to be affected to a significant level.

Nine viewpoints have been selected to best represent the range of sensitive viewpoint locations and are illustrated using photographs in Figures L3 to L11, produced within Appendix 6.2 of ES Volume 2.

Close range views are taken to be from viewpoints within 0.5km, Medium-range views from between 0.5 and 1.5km, and Long-range views from over 1.5km from the site.

The adverse effects on visual amenity are limited to a maximum level of Moderate-Major, primarily associated with users of the long distance footpath which runs along the western boundary of the north west extension area (ref viewpoints 3 and 4), with effects of moderate significance at Bucks Head Cottages (ref viewpoint 4). Other visual effects are generally assessed as minor / negligible.

Upon completion of the restoration scheme, the visual effects are generally assessed as Minor-Moderate beneficial. None of these effects is considered to be Significant.

4.2.4 Landscape Mitigation measures

Alternative directions of working, depths of working and restoration scheme configurations were all considered when seeking the most effective scheme for the proposed development. The proposed development has incorporated the following impact avoidance and reduction measures to mitigate adverse landscape and visual effects:

Planting hedgerow and tree vegetation at the earliest stage and managing thereafter to promote good growth to provide:

- Screening of the operations and screening mounds;
- Enhanced landscape structure and habitat corridors; and
- An early contribution to the restoration scheme.

Working the north west extension area in 7 phases, working initially towards potentially sensitive receptors to the north and west utilising the screening effects of the existing landform to its maximum screening effect.

Providing a temporary and permanent replacement bridleway route for the route which would be affected by the proposed development (BW18).

Utilising stored soils to provide additional screening from the adjacent public rights of way (PRoWs) and nearby properties.

Providing a suitable restoration design and a mosaic of habitats in a progressive manner to minimise adverse effects and operational ‘land-take’ over the period.

4.2.5 Landscape and Visual Impact Conclusions

Adverse effects on landscape and visual receptors have been acknowledged during the assessment process.

The adverse effects on visual amenity are limited to a maximum level of Moderate-Major with many others of a much lower level. None of these effects is considered to be Significant.
The adverse effects on the landscape resource are limited to a Minor-Moderate level. None of these effects is considered to be Significant.

The residual situation, upon completion of restoration, would be an increase in tranquillity afforded through a lower-lying landform that has more undulation and openness than was possible with the existing permitted extraction. Generally, upon establishment of the restoration, there would be an enhancement with regards to the landscape characteristics within the northwest extension area and within the site overall. Whilst there would be a reduction in the area of farmland and a change to the original landform, the replacement habitats are characteristic elements in the natural area and are considered to have a positive effect. The residual restoration provides beneficial landscape effects of a Minor-Moderate level.

4.3 Ecology

4.3.1 Ecology Study

The ecology of the site has been investigated in detail by undertaking a desk study to obtain previous records of species and to identify designated sites, a habitat survey, and where appropriate specific surveys for protected species.

The proposed north-west quarry extension area comprises of arable farmland. In 2014, the largest field was sown with carrots, and the smaller fields to the east were either ploughed or left fallow. The fields are bordered to the north by a narrow lane / bridleway (Knox’s Grave Lane), to the west by species-poor native hedgerows, and to the south and west by the existing quarry workings. An irrigation lagoon also occurs within the north-west extension area.

To the east of the proposed north-west extension site is the former Hopwas Quarry Plant site which comprises of bare ground which in the absence of active restoration is slowly naturally re-vegetating. A shallow settling lagoon, areas of birch woodland, pioneer acid grassland and some restored parcels of land (improved grassland) are present.

Elsewhere within the application site to the south are blocks of plantation woodland established as part of restoration or screening activities, and the main site offices, conveyor and stockpiles.

No statutory or non-statutory ecological designations occur within or immediately adjacent to the application site within the likely zone of influence associated with a continuation and extension of quarrying or restoration activities.

Habitat surveys confirmed that the majority of the survey area is dominated by the existing sand and gravel workings bordered by areas of plantation woodland. In the workings, vegetation is largely absent, with only scattered species.

Further surveys and assessments have also been of breeding birds, amphibians and bats due to the potential for habitats and species of ecological importance to occur.

The application site was assessed as having a generally low ecological value due to past and present quarrying activities, and intensive agricultural use within the extension area.

No direct or indirect impacts upon statutory, non-statutory or important undesignated ecologically designated sites or features have been predicted.

The potential impacts to species are considered to be insignificant based on the results of current surveys and assessments.

The ability to deliver biodiversity gains through the progressive restoration of the site are assessed as being positive at the County level due to the extent of new heathland which is proposed. Once all site restoration is complete, it is considered that the restored site would qualify and be appropriate for inclusion as a Site of Biological Importance and will assist in strengthening the network of ecological designations in the wider area.
4.3.2 Ecology Mitigation measures

No specific mitigation for bats is deemed to be required at the current time, as no roosts have been confirmed. The alteration in the location of foraging habitats associated with phased quarry development and restoration are highly unlikely to be critical to the maintenance of the favourable conservation status of the species known to use the site.

Due to the phased nature and lead in time associated with quarry development, it will be possible to undertake vegetation removal outside of the bird breeding season, which typically runs from March to the end of August. If this is not possible for any reason, the vegetation should be subject to a breeding bird survey beforehand by an appropriately experienced ecologist. Special protection should also be provided for nesting little ringed plover.

The restoration of Hopwas Plant site largely to heathland would complement the approved restoration to heathland of land to the east and north. The restoration would result in the loss of bare open ground and the settling lagoon which are used by a pair of little ringed plover for breeding. As mitigation, the new water-body, which is proposed in the southern area of the restored Hints Quarry would have an area of shingle/gravel beach to provide an alternative nesting site for this species.

A watching brief would be maintained in respect of badgers with the known sett being subject to regular inspection and repeat walkovers undertaken in advance of phases of quarry development to ensure that no new setts have become established.

4.3.3 Ecology Conclusions

Undesignated habitats within the application site have been valued as being of importance at a site level only. The proposed north west extension of Hints Quarry would result in the short term loss of arable farmland and associated species-poor hedgerows (480m). However, due to the quick turnover of land and the progressive nature of restoration, these losses would be temporary and short term in nature, when viewed in the context of the application site as a whole. Restoration would result in the reinstatement of arable fields and boundary features in relatively close proximity to the south. An increase in the extent of such habitats (especially woodland) would occur here and this would be of benefit to breeding birds associated with mixed land use and the assemblage of foraging bats which occur. As such, no residual impacts on these groups are predicted to occur.

The potential impacts to species are considered to be insignificant based on the results of current surveys and assessments and taking into account the significant gains to be delivered through restoration when compared to the low value of the existing site for ecology.

The ability to deliver significant biodiversity gains through the progressive restoration works are assessed as being positive at the County level. Once all site restoration is complete, it is considered that the restored site would qualify and be appropriate for inclusion as a Site of Biological Importance. This would strengthen the local network of ecological designations in Staffordshire and provide a significant new area of lowland heathland / acidic grassland which is of national importance as a habitat type.

Overall, the consolidation of planning permissions, north west extension and site restoration of Hints / Hopwas Quarry is not predicted to have any significant or long term adverse ecological effects.

4.4 Agriculture and Soil Resources

4.4.1 ALC and Soil Study

The northwest extension area extends to approximately 18.04 hectares and includes two field parcels and a lined reservoir located on its south boundary and a topsoil storage bund. The two fields are separated by a dry valley feature which falls northwest from the reservoir on the south boundary.

The agricultural land quality study has confirmed that the northwest extension area comprises land of grades 2 and 3a quality. The westernmost field is classified as Grade 2 agricultural land, and the soil profile to a depth of 1.2m includes topsoil, upper and lower subsoil. The easternmost field is classified as Grade 3a, and principally comprises two soil layers being topsoil and lower subsoil.
Non Technical Summary

In summary the northwest extension comprises some 12.3 hectares of Grade 2 land, with the remaining 5.7 hectares Grade 3a and contains the topsoil storage bund, which has a footprint covering about 1.2 hectares.

In addition to the topsoil storage bund in the northwest extension area, there are three further soil stores in the disused Hopwas Plant Site which lies to the east of the northwest extension area. Two of the bunds comprise indigenous topsoil and the third bund constitutes upper subsoil.

4.4.2 Mitigation Measures

The main negative agricultural impact of the proposals is the potential to damage the soil during lifting, storage and replacement operations. The scheme is however designed to ensure the sustainable use of all the indigenous soils. While formulating the development proposals, and the restored landform, particular consideration has been given to ensuring that there is no loss of best and most versatile (bmv) land through the development of the north west extension area.

The land uses proposed as part of the Restoration Masterplan will ensure that an equivalent area of best and most versatile land is restored.

The scheme ensures that the best soils are retained for bmv and non bmv agricultural restoration, while rocksand overburden and surplus soils are used to restore open heathland.

Topsoil and subsoil bunds would be built to maximum heights of 3 and 5 metres respectively with stable side batters.

At the earliest opportunity after each soil bund has been constructed it would be seeded with a low maintenance grass seed mix. The grass growth would be cut at least three times a year to keep the bunds tidy and clear of weeds. The last cut in the growing season will be in late October (subject to seasonal conditions), and the grass arisings would be removed.

After soil bunds have been constructed they would only be trafficked by agricultural equipment for maintenance purposes.

Soils would be handled using hydraulic excavators, articulated dump trucks and low ground pressure bulldozers. The objective is that all soils shall be handled when they are in a reasonably dry and friable state, which is when they will be least susceptible to lasting damage by compaction and smearing. Specific mitigation measures are proposed to ensure that soils are not handled during inappropriate weather conditions, and which ensure, via field testing, that soils are handled when they are of an appropriate condition and consistency.

4.4.3 Agriculture and Soils Conclusions

The mitigation measures would ensure that a broadly equivalent area of bmv land in the north west extension is restored as part of the overall restoration scheme and there is, therefore, no loss of best and most versatile land. The other parts of the application site would be restored to land uses in accordance with the proposed Restoration Masterplan. The irrigation lake that is removed in development of the northwest extension would be relocated in the Restoration Masterplan to the southern area of the restored site.

Detailed soil handling protocols are described based upon established techniques of soil stripping, storage and restoration which would ensure no adverse effect to soil resources.

All soil resources would be used sustainably as part of the restoration scheme, with the better quality soil resources targeted at creating appropriate soil profiles for the areas to be restored to best and most versatile quality land.

4.5 Surface and Ground Water

4.5.1 Surface and Groundwater Study

Surface Water

The River Tame is the principal watercourse in the vicinity, flowing from southeast to north through the study area and situated at a distance of some 1.5 km to the northeast of the site at the closest approach.
The site is located within the surface water catchment for the Bourne/Black Brook. This is a tributary to the River Tame, flowing from west to east and joining with the main river to the west of Tamworth. The Bourne/Black Brook is located approximately 800m south-southwest of the main quarry site at the closest approach.

The Bourne/Black Brook drains the area to the west and southwest of the site between Aldridge and Brownhills.

Local to the extension area, surface water drainage is largely absent due to the largely permeable nature of the underlying geological units. The closest watercourse arises within Moor Covert some 900m to the west-northwest, flowing to the northwest and onwards into Swinfen Lake.

Several water-bodies are located within the site boundary, or the adjacent former Hopwas Quarry workings to the north of the site. These are generally manmade features created during the mineral washing and silt settlement processes at either site.

Aside from the aforementioned quarry related features, there is an absence of naturally occurring ponds / water-bodies in the immediate vicinity (1km radius) of the extension area. Further afield a total of twenty four water-bodies are recorded within a 2km radius of the extension area. These are discussed further within ES Chapter 9.0.

The closest water-body to the proposed development is a lined manmade irrigation storage lagoon located within the extension area. This would be removed as part of the proposed extraction.

Of primary interest to this assessment is the lagoon created downstream of Moor Covert. This is used for irrigation, with pond levels maintained by spring flow from within the woodland to the southeast and through groundwater abstraction from an adjacent borehole.

Three springs have been identified within the survey area. The closest arises within Moor Covert as described above. Two further springs have been identified within the Black/Bourne Brook valley to the south of the site. The spring at Moor Covert feeds into a relatively large irrigation lagoon downstream. The storage lagoon also receives pumped discharge from an adjacent borehole during periods when irrigation is required.

**Ground Water**

Information on the local groundwater regime has been derived through a combination of data obtained from the network of monitoring boreholes, field investigations and a review of information collated during previous ground water studies.

A routine program for collection of groundwater data local to the site has been operated since June 2002, using a network of monitoring boreholes installed by the mineral operators.

Additional data is provided from a series of EA operated monitoring points installed within to the northwest and west of the site at Whittington Heath, and Weeford Flats.

Groundwater levels within the extension area during these periods show a variation between 93m AOD and 97m AOD within the eastern section, reducing to between 91m AOD and 94.5m AOD at the western boundary.

The groundwater level data indicate a general pattern of groundwater flow from east to west through the southern/central section of the site (and the extension area), with a component of flow to the north in the area north of the Lichfield Transmission Station.

To the west of the site, in the vicinity of Bucks Head Farm, the flow direction rotates more to the south and towards the Black/Bourne Brook.

**4.5.2 Surface and Ground Water effects**

The proposed development involves the removal of sand and gravel from both above and below the water-table. Sub-water-table working would require the local dewatering of the mineral deposit, which would have the effect of modifying existing local groundwater flow patterns.

Each phase of mineral extraction would be individually dewatered. The dewatering planned for the extension area would re-direct groundwater...
flows towards the quarry workings, creating a localised lowering of the groundwater surface. The magnitude of groundwater lowering would decrease with increasing distance from the workings, forming a “cone” of groundwater depression around the dewatered phase.

The discharge from the dewatering operation would be made to the series of recharge boreholes installed to the west of the extension area (expected peak discharge rate of 6 litres per second).

Working and subsequent restoration of the proposed extension area in the planned manner has the potential to impact upon the water environment in the following main ways:

- Potential modification of existing groundwater levels and flow rates surrounding mineral extraction areas (during and following works).
- Potential for derogation of surface water flow rates and water-bodies.
- Potential derogation of existing groundwater quality.
- Potential for derogation of surface water quality.
- Potential for impact on flooding risk in the locality.

4.5.3 Mitigation Measures

**Groundwater levels and flow rates**

The dewatering operation would intercept groundwater that would otherwise have eventually discharged naturally under gravity to the Black/Bourne Brook some 1.4km to the southwest or to the spring at Moor Covert some 900m to the northwest.

Water derived from dewatering operations would be discharged to recharge boreholes located to the west (down hydraulic gradient) of the extension area, thus seeking to offset any alteration in natural groundwater flow patterns.

With the recharge of any dewatering discharge to groundwater within the same groundwater resource block (and groundwater catchment), no significant variation to the current pattern of groundwater/surface water interaction is expected.

At completion of mineral extraction and restoration, dewatering would be terminated and ground levels restored to above the groundwater level.

With the cessation of the dewatering measures, groundwater levels in the locality are expected to return to levels approximating pre-extraction elevations in the vicinity of the site, and as such are not expected to result in any significant change to current conditions.

**Groundwater Quality**

During the proposed development potential exists for groundwater quality to be directly derogated as a result of:

- Spillages of potential contaminants (oils, lubricants and solvents) within the proposed working areas (mineral extraction phase).
- Discharge of poor quality water to the recharge boreholes.

It is important to recognise that the likelihood or consequences of such an occurrence are considered no greater than currently prevail for agricultural machinery currently utilised within the extension area.

In addition, quarrying is a historical activity in the wider locality and no historic records of contamination have been identified. Workings within the extension area would be carried out in an equivalent manner and within the same environment as the current operations. Therefore, neither the potential scale, nor likelihood of occurrence, of a derogation of groundwater quality will significantly increase as a result of the proposed quarry extension.

However, in recognition of the potential for this impact to occur, measures to minimise the risks for contamination of groundwater during working the planned development have been formulated and are set out as a detailed fuel handling protocol.
Groundwater would be abstracted from a given phase of extraction by pumping from a sump excavated into the base of working.

The proposed discharge will require a formal consent from the EA and hence will be subject to water quality conditions. It is recommended that a program of monitoring is instigated to ensure compliance with water quality conditions.

No offsite discharge to surface water features would be made as part of the proposed development. Incident rainfall will either be retained within the site and allowed to percolate to groundwater, or will be intercepted as part of the phased dewatering operation and discharged to the recharge boreholes.

**Surface Water Quality**

It follows that the measures proposed above for the protection of groundwater quality will provide subsequent protection for the surface water environment.

**Flood Risk**

The site is entirely located within Flood Risk Zone 1 (FRZ1: lands with a risk of fluvial flooding with a return period greater than 1 in 1000-years).

The conclusions of the Flood Risk Assessment indicate that no additional mitigation measures are necessary with regard to flooding related matters.

### 4.5.4 Surface and Ground Water Conclusions

A comprehensive investigation has been undertaken to assess the potential for the proposed extension area, to impact upon the water environment.

The assessment has involved the examination of surface and groundwater data from a wide range of sources including some 12 years of site-specific groundwater elevation data collected in the locality. This data has provided a sound understanding of the surface and groundwater conditions of the locality.

The study concludes that the lateral extension, when taking into account mitigation measures incorporated into the proposed development has minimal potential to cause negative impact to surface and groundwater interests.

However, in line with current EA guidance for assessment of dewatering impacts, recommendations are made with regard to the update and continuation of a monitoring program currently operated at the site. This includes incorporation of additional groundwater monitoring and measures to allow assessment of the ongoing efficiency of proposed recharge of dewatering discharge to purpose designed boreholes.

### 4.6 Noise

#### 4.6.1 Noise Study

The methodology for the noise study follows the advice and approach to suggesting site noise limits as set out in the Planning Practice Guidance to the National Planning Policy Framework (NPPF). Reference has also been paid to the existing Hints Quarry planning permission and the noise limits imposed for properties in the vicinity of the quarry. As part of pre application discussions, SCC have confirmed that the predicted noise levels associated with the proposed extension development will be assessed against the existing noise limits.

The nearest dwellings to the proposed north west extension area have been identified and noise monitoring has been undertaken at five defined locations:

- Location 1: Common Barn, to the northwest;
- Location 2: Woodside Stables, to the north;
- Location 3: Keepers Cottage, to the northeast;
- Location 4: Rock Hill, to the south; and
- Location 5: Bucks Head Cottage, to the west.

The façade that faces towards the proposed extension area has been considered for each of the noise sensitive receptors. The effect of noise screening provided by the noise screen bund to the east of Bucks Head

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**Hints Quarry**

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**SLR Consulting Limited**
Cottages has been included in the noise modelling. However, to provide a worst-case scenario assessment, the effect of intervening structures, other than those associated with the proposed development, have been ignored. Furthermore, the modelling has focused on the initial works in each of the operational phase when plant would be working at existing ground level therefore not benefitting from barrier attenuation provided by the void.

Whilst it is appropriate to ensure and show compliance for the “reasonable worst case” site noise levels it is also important and helpful to appreciate that, for most of the time, lower site generated noise levels than the “reasonable worst case” noise levels presented above would be experienced at the dwellings.

The results of the predictions are provided for each of the seven phases of operations, and are compared to the agreed noise criteria adopted for the assessment, i.e. the existing noise limits imposed by the existing planning conditions.

The results confirm that during operations within each of the seven operational phases within the extension area, the noise limits would be adhered to at each of the five assessed locations, with the exception of operations during phase 7 at Bucks Head Cottages where the noise limit, in the absence of further mitigation would be exceeded by 1.3dB.

Temporary operations associated with soil stripping and bund formation are exempted from the nominal daytime noise limit in the Planning Practice Guidance to NPPF but must conform to a site noise limit of 70 dB LAeq, 1 hour, free field at dwellings. A lower limit of 67 dB LAeq, 1 hour is imposed on the current Hints Quarry planning permission. Temporary operations must not exceed a total of eight weeks duration at any individual noise sensitive property in any twelve month period when they exceed the corresponding daytime noise limit for routine operations.

The calculated site noise levels without mitigation are below the temporary noise limit set out in the current planning conditions at all five assessment locations.

### 4.6.2 Noise Mitigation Measures

As noted above, the predicted noise levels represent a worst case during excavation at the highest working levels within the respective phases, and thus do not include any barrier attenuation provided by the working void.

Further calculations have been undertaken which indicate the noise limit at Bucks Head Cottages can be achieved when extraction operations work down to a level of 114m AOD and below. This is an average of 4 metres below ground level in the closest vicinity to Bucks Head Cottages. The key mitigation measure will thus be that in addition to soil and overburden stripping being carried out within a temporary 8 week period, extraction of the upper levels of the rocksand will also be undertaken within the 8 week temporary period to create a level at or below 114m AOD. These works can be carried out within the temporary noise limit of 67dB. Thereafter, extraction operations to levels below 114m AOD, and down to the base level of 87m AOD will benefit from barrier attenuation provided by the working face and increasing working depths, such that operations can comply with the noise limit of 55dB which has been set at Bucks Head Cottages.

### 4.6.3 Noise Conclusions

The assessment has considered the potential for operational noise to give rise to impacts at the closest noise-sensitive receptors to the proposed extension area.

Predicted operational noise levels have been compared to the existing noise limits at residential properties in the vicinity of the site, which have been agreed with SCC as being an appropriate basis for the assessment.

The assessment has found that the noise limits will be achieved at all receptor locations during phases 1 to 6. During the early stages of Phase 7, additional mitigation measures in the form of initial temporary operations will be required to ensure that the noise limits will be adhered to at Bucks Head Cottages. These initial operations of working down to a defined base level to provide barrier attenuation can be undertaken within the noise limits for temporary operations. Thereafter, operations within phase 7 would meet the noise limit set for ongoing operations.
The assessment has shown that predicted noise levels during the proposed extension would meet the noise limits which have been set and agreed with SCC. Subject to the mitigation measures which have been proposed, which would ensure adherence to the noise limits at the respective properties, no residual impact has been predicted.

4.7 Air Quality

4.7.1 Air Quality Study

The study describes the scope, relevant legislation, assessment methodology and the baseline conditions currently existing at the application site and its surroundings. It then considers any potential significant environmental effects the proposed operations would have on this baseline environment; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed.

The primary impacts from an air quality perspective in relation to site operations relate to the release of dust associated with mineral extraction, storage handling and processing, and traffic exhaust emissions and the potential exposure at sensitive receptors to these emissions.

The study therefore specifically focuses on the potential of the site to generate dust and the potential impact of this dust on the environment. Dust is generally categorised into two size classifications; ‘suspended dust’ with diameters below 10µm (microns) (PM10), and ‘deposited dust’ generally with diameters between 10µm and 75µm. (A ‘micron’ is a unit of measurement where 1 micron is one thousandth of a millimetre). The potential for any increase in vehicle numbers to have a significant effect on air quality is also considered within the assessment.

Existing air quality within the OS grid square centred on the site in terms of PM10 is considered to be good (17.56µg/m3), with concentrations ‘well below’ the annual objective of 40µg/m3. Therefore it is considered highly unlikely that the extension development at Hints Quarry would lead to an increase in PM10 to a level that would cause an exceedance of the AQS objective. This is re-enforced by the fact that the development would simply be a continuation of existing activities at the quarry, which themselves are shown to be being undertaken well within the air quality limit. Any mitigation measures implemented to reduce nuisance dust will also be effective at mitigating PM10.

The maximum nitrogen dioxide concentrations for the grid squares containing the site are also ‘well below’ the annual objective of 40µg/m3 for nitrogen dioxide.

There are a number of isolated properties surrounding the site in various directions, most notably Bucks Head Cottages which lies just beyond the north west boundary of the existing quarry, and which would lie at a similar distance just beyond the south western boundary of the proposed north west extension area. Common Barn lies some 400m to the north of the existing quarry, and at a similar distance to the extension area.

The closest settlements are Hints, some 400m to the south of the existing quarry, and some 1.3km south of the extension area, and Hopwas, some 800m to the east of the existing quarry, and some 1km to the east of the proposed extension area. Properties along Packington Lane to the east lie some 400m from the existing quarry at the closest point and some 1 km from the extension area.

The activities on site and their potential to generate dust emissions in the absence of mitigation measures will involve the following:

- removal, storage and replacement of soils and overburden;
- excavation of rocksand, analogous to mineral extraction;
- extraction of the sand and gravel commercial deposit;
- transfer of material within the site;
- processing of sand and gravel; and
- despatch of aggregate products from the site.

These activities represent conventional and routine operations at the quarry, and would be a continuation of historical operations for which dust mitigation measures are well established and are routine aspects of the overall development.
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The vast majority of particles responsible for annoyance are deposited within 100m – 200m of the source\(^1\) and hence it is in this zone that the risk of problems from dust is greatest. Coarse dusts (for example greater than 30µm in diameter) will largely deposit within 100m of the source.

For all sources, the creation and subsequent dispersion of dust will be highly dependent on the weather conditions. Wind speed can determine the amount of dust raised, while wind direction determines those areas that may be affected. Higher wind speed increases the potential for the generation of airborne dust due to the suspension and entrainment of particles in airflow; rainfall however, has a suppressive effect on the generation of dust.

There is only one property located within 100 of the extension area, namely Bucks Head Cottages. The property lies some 85m from the limit of extraction at the closest point, but it is at a similar distance from the closest point of extraction within the currently permitted area to the south east of the property. That separation distance was deemed to be acceptable as part of the 2005 planning permission which granted permission for the current working area, and the same distance has been adopted as part of the design of the current scheme.

Nevertheless, in the absence of mitigation measures, it is apparent that at such relative proximity, there is an elevated risk of impact at Bucks Head Cottages when working in closest proximity (phase 7) by virtue of the limited distance to the closest working boundary. Mitigation measures are therefore strongly recommended to minimise the potential for dust impacts at Bucks Head Cottages.

In view of the distances between the extension area and other receptors (in excess of 400 metres) there is not considered to be a risk of impact at any of the other local receptors as a result of the extraction and restoration operations.

\(^1\) Based upon research document - DETR, The Environmental Effects of Dust from Surface Mineral Workings (Dec 1995)

4.7.2 Air Quality Mitigation Measures

Mitigation measures for the stripping of soils / overburden, the storage and the subsequent restoration activities should focus on the sensible timing of operations and good site management in relation to rainfall, wind conditions and seasonal factors.

The sand and gravel would be extracted using a mobile excavator which would load the sand and gravel into the conveyor hopper. These operations would be undertaken at the base of the rocksand horizon, some 10 – 15m metres below adjoining ground level where there would be considerable dust barrier attenuation provided by the adjoining faces. The sand and gravel horizon lies in proximity to the mean water table, and a component of extraction would be below the water table, facilitated by the pumped dewatering of the excavation. The result will be that the sand and gravel deposit will be inherently damp, with minimal potential for dust generation.

In the unlikely event of dust arisings, control of dust should be aided through the use of water suppressants as and when required such as during dry and windy weather conditions.

As is the case with the current operation, the primary control measure that should be employed on site is the surface treatment of the haul roads through the use of watering by a tractor and bowser. Maintenance of haul roads by grading also minimises dust emissions due to less erosion of the haul road by passing vehicles.

Vehicle speed restrictions, again as enforced at the existing quarry, reduce the re-suspension of dust, and speed restrictions on site should therefore continue to be implemented and enforced.

The processing plant is an existing operational activity with no history of unacceptable dust emissions. The current mitigation measures are therefore considered to be adequate with no further recommendations required.

The sand and gravel would continue to be transported off site via the existing fully surfaced access road from the plant site to the quarry.
entrance onto the C36. The access road is sufficiently long (900metres) to ensure that no mud or other detritus is carried onto the public highway. The road is maintained to keep it free of deposits which might give rise to dust emissions.

In these circumstances, other than a requirement for regular maintenance and good housekeeping, no further mitigation measures are recommended.

### 4.7.3 Air Quality Conclusions

The assessment has considered the potential impacts as a result of the application for an extension to Hints Quarry. It has considered the relevant legislation, baseline conditions, activities associated with the site including haulage, excavation activities, storage and restoration of the site.

Impacts on local air quality from traffic emissions have been screened out of further assessment as, other than a continuation of operations for a further circa 7 years, there would be no material increase in traffic attributable to the proposed development.

The potential impacts of the development have been assessed in terms of potential emissions of particulates (dust). Two assessments have been undertaken; the first to assess the PM10 fraction for which Air Quality Standards exist, and the second to assess the coarse fraction dust which is typically associated with amenity issues.

PM10 background levels are ‘well below’ the limit and therefore it is assessed that the risk that operations will cause an exceedance of national Air Quality Objectives is low.

Sources of potential deposited dust have been identified, and particular attention has been afforded to the property at Bucks Head Cottages. A series of mitigation measures have been proposed. The implementation of dust control measures as part of routine good management is considered to be effective and therefore impacts are considered to be insignificant.

The potential for dust impacts on the surrounding ecological sites has been assessed as insignificant.

All potential dust impacts from the proposed development are considered to be reversible i.e. the risk of impact will cease on completion of the extraction and restoration activities at the site (i.e. circa 7 years time).

### 4.8 Traffic

#### 4.8.1 Traffic Study

Access to Hints Quarry is obtained via a T junction from the C36 Watling Street, previously the A5 prior to Watling Street being ‘downgraded’ following the opening of the new A5 dual carriageway. The new A5 dual carriageway opened in 2005, and the vast majority of vehicle flow on the old A5 has been transferred to the new A5. The old A5 has been reclassified accordingly as the C36, Watling Street.

The new A5 runs parallel to the old A5 some 200m to the north.

The access road into the quarry is some 900m long, averaging 3 metres wide with passing bays. The new A5 crosses the quarry access road via a road bridge some 200m north of the site access junction, with the new A5 continuing on embankments to the east and west of the road bridge.

The entire length of the access road is of a modern standard with a tarmac surface.

The junction with the C36 accommodates tapered acceleration and deceleration lanes, and the access road widens to circa 7m at the junction bell-mouth. Visibility at the site entrance is good and readily accommodates traffic from the quarry particularly in the context of the substantially reduced traffic flows on the C36.

Signage on the internal approach to the junction confirms that there is no left turn for HGV’s. This is reinforced by a 7.5 tonne weight restriction (except for access) on the highway to the east (left), with signage positioned some 30m to the east of the junction. The circumstances
contrast with arrangements prior to the opening of the new A5, where
HGV’s were able to travel along the old A5 from the site entrance
unrestricted in terms of direction, hence the (now redundant) eastbound
acceleration lane.

The C36 has a speed limit of 50MPH from its junction with the A38/A5 to
immediately east of the Hints Quarry access. From this point and through
the village of Hints the speed limit reduces to 40 MPH. Several speed
enforcement cameras are located on this stretch of the highway from which
it appears that traffic generally travels within the designated speed limits.

The opening of the new A5 has resulted in significant improvements to
safety along the reclassified C36 and, importantly over the last 5 year
period (2009 – 2014), there have been no recorded personal injury
accidents at the quarry entrance, and no accidents involving quarry HGVs.

The previous A5, now reclassified as the C36 following the opening of the
new A5, historically accommodated some 16,000 vehicles per day. This
has reduced by some 94%, with now only limited, predominantly local
traffic flows on the reclassified C36. There are no HGV flows eastbound
from the site entrance, other than for local access. It follows that the C36,
which retains the characteristics of its former trunk road status, has very
substantial spare capacity, and is readily able to accommodate a
continuation of vehicle flows from Hints Quarry.

It is also apparent that there has been a notable improvement in the safety
performance of the C36 following the substantial transfer if traffic to the
new A5. In view of the absence of any recorded personal injury accidents
along the C36 between the quarry entrance and A38/A5 junction in the last
5 years, it is concluded that the highway and quarry access operate
effectively, and that there is no reason to assume any deterioration in this
safety performance for the additional circa 7 year period which would be
associated with the north west extension development.

4.8.2 Traffic Mitigation Measures

The existing road network currently accommodates the traffic associated
with the activities at Hints Quarry without difficulty, and there is substantial
spare capacity on the C36 following its reclassification and the
redistribution of much of the former traffic flows on this highway onto the
new A5.

The existing site access is well established and functions well, and there is
no recent history of accidents involving HGV’s at the site entrance.

In these circumstances, the site access and highway network is considered
to be acceptable to accommodate a continuation of traffic flows for a
further 7 year period associated with the extension development. No
mitigation measures are required beyond routine maintenance of the
quarry access road and its visibility splays.

4.8.3 Traffic Conclusions

Hints Quarry gains access onto the C36 Watling Street, which was
previously the A5 trunk road. Following the opening of the new A5 dual
carriageway in 2005, traffic flows on the former A5 reclassified as the C36,
has reduced very substantially. There is correspondingly significant spare
capacity on the C36, which, despite its reclassification, has retained the
inherent characteristics of its former trunk road status.

The safety performance of the C36 has also substantially improved with no
recorded personal injury accidents in the most recent 5 year period, and no
accidents involving HGVs either at the Hints Quarry entrance or along the
C36 to its junction with the A38/A5.

In the circumstances, it is concluded that the continued operation of the
quarry for a further circa 7 year period would have no adverse effects in
terms of traffic flows of highway safety and, given the reduced flows and
the C36, no adverse wider environmental or amenity effects.

4.9 Cultural Heritage

4.9.1 Cultural Heritage Study

There are no designated assets (Scheduled Ancient Monuments, Listed
Buildings, Conservation Areas, Registered Battlefields, Registered Parks
and Gardens or Wrecks) within the proposed northern extension area,
within the quarry boundary as a whole, or the study area of 1km centred on the quarry.

Staffordshire Historic Environment Record lists ten monuments within the study area of which three are within the quarry (although now removed by mineral extraction). No monuments are recorded within the area of the proposed extension.

Within the study area, there are four monuments where features of potential archaeological origin have been recognised as cropmarks on aerial photographs. A possible rectangular enclosure was recorded in the field immediately to the south-west of Buck's Head Cottages. Immediately to the west, two parallel linear features extend north-south for approximately 300m curving slightly to the north-west. These cropmarks may represent the buried remains of a prehistoric or Roman enclosed farmstead and a droveway, in which two ditches define a route for moving livestock.

A ring-ditch noted on aerial photography immediately to the west of these features may represent the truncated remains of a prehistoric burial monument.

Immediately north of the proposed extension four parallel, east-west aligned linear features have been recognised as cropmarks running parallel to Knox's Grave Lane.

A Landscape Park exists around Packington Hall, one corner of which lies just within the study area. The extent of the park is mapped from the Second Edition Ordnance Survey 6-inch mapping dated 1903. The Park is not visible from the proposed extension.

A Romano-British lead pig was found in 1772 during gravel digging on Hints Common. Another lead pig with the same inscription was found in the area, and is now stored in the British Museum. This is recorded on the HER as within the current quarry, although the actual find-spot is only vaguely located.

A silver Late Iron Age unit or coin was recovered during metal detecting in Swinfen and Packington parish in October 2009, about 250m north of the northern edge of the proposed quarry extension.

There are no historic buildings recorded on the HER within the study area. However, some buildings of historic interest were noted during the site visit.

Buck's Head Cottage is a brick-built cottage which stands in an isolated position to the west of the proposed extension. The house has been modernised but has a date-stone on the frontage from the 1870s. To the rear of the cottage, a small set of farm buildings comprise a brick-built threshing barn with regular brick piercings on sides and gables and a gabled roof with gables projecting above the roof line and a low open fronted cattle shed.

The hedge line separating Knox's Lane and the proposed quarry extension is a parish boundary which has existed for more than 30 years. It is therefore considered to constitute an 'Important' hedgerow under the Hedgerow Regulations 1997. The hedgerow currently to the south of the proposed extension, while likely to be historic, does not meet the criteria to constitute an 'important' hedgerow.

### 4.9.2 Cultural Heritage Mitigation measures

It is recommended that initial stripping of the proposed extension to the natural substrate be subject to an archaeological watching brief. This should be undertaken on the condition that the method of stripping is suitable for the recognition of archaeological features i.e. removal of topsoil and subsoil to the top of the natural substrate using a machine fitted with a toothless grading bucket or similar to leave a smooth surface. A contingency should be allowed for additional staff to be available at short notice, should archaeological remains be uncovered during this process.

The scope and specification of mitigation works should be agreed with Staffordshire County Council.

Any watching brief required would be concluded by production of an archaeological report (and appropriate publication) to be deposited for
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public consultation with Staffordshire Historic Environment Record and a project archive to be deposited at a local museum.

4.9.3 Cultural Heritage Conclusions

Archaeological works undertaken in advance of previous extensions to the quarry have demonstrated the survival of archaeological features dating from the later prehistoric period. The presence of pits and a cremation suggests that the area was settled during this period and the buried remains of such settlement may survive in the vicinity. This may be represented by the set of cropmarks to the west of the development but may equally survive elsewhere or have been removed by later agricultural or quarrying. The potential for survival of heritage assets from the prehistoric period is considered to be Moderate to High.

The site lies close to the Roman Road of Watling Street. Romano-British pottery was recovered from the possible hearth found during the 2005 watching brief and two Roman lead pigs were found in the area during the 18th Century. The potential for survival of Romano-British deposits is considered to be low to moderate.

The site lies away from the medieval settlement in the area which is concentrated on the valley floor. The lead pigs discovered here were described as being dug up on Hints Common and the name of the former farm Common Barn, as well as its location on the hill to the north of the settlement of Hints, implies that this was common land prior to enclosure and is unlikely to have been settled. Knox's Grave Lane is clearly a well-used route and was probably in use during this time and there is a slight possibility that there was scattered settlement along this lane particularly as this may have been common land. The name Knox's Grave may imply a solitary grave but the tithe map records a parcel of land to the east of the proposed extension as Knox's Grave it may be concluded that were a grave to exist, it would be there.

The potential for survival of archaeological deposits from the medieval and post-medieval periods, other than features relating to agricultural practice, is considered to be low.

It is considered that should archaeological deposits be uncovered, it is unlikely that they will be of national importance and may therefore be preserved by record through a programme of archaeological works prior to mineral extraction.
5.0 CONCLUSIONS

This document comprises a Non Technical Summary of an Environmental Statement which describes the details of the proposed development and restoration strategy, and sets out the potential environmental effects which would be associated with the proposed extension to Hints Quarry; the continuation of processing and related operations at Hints Quarry; and the implementation of a comprehensive restoration scheme via the Restoration Master Plan which has been prepared.

The ES provides a detailed and objective analysis of the potential environmental effects which would be associated with the proposed development. The identified effects, measures to mitigate the effects, and the resulting mitigated ‘residual effects’ are summarised in section 4.0 of this NTS. The mitigation measures which are identified represent conventional, proven methods to minimise the effects of the extraction operations and related works, and follow well established measures already in place at the existing quarry, and which are regulated by conditions imposed on the existing planning permission. Similar conditions could be imposed on a planning permission for the proposed development which would enforce the same effective environmental controls and safeguards.

Based upon the studies and content of the individual chapters, the underlying conclusion of the EIA is that there is no single topic or combination of issues which should objectively prevent the development from proceeding.

This in part reflects the fact that a series of planning permissions have been granted at the existing quarry site, and the principle of an extension to the quarry is included as part of the emerging Replacement Minerals Local Plan being prepared by SCC.

The ES describes the details of the phased quarry extension development scheme, and the concurrent restoration scheme which would progress within the existing Hints Quarry. It also describes the restoration strategy for the overall quarry, and the range of restoration after uses which are proposed.

The ES has been prepared in order to assist SCC and other interested parties to reach a decision on the merits of the development and the environmental and amenity effects which would be associated with it. It sets out the results of very careful, detailed and systematic research into each of the potential environmental effects of the development and, where relevant, sets out modern and well designed methods of mitigating the effects which, in the majority of cases, as noted above, draw upon existing, well established and effective controls at the existing quarry.

These include measures which have been incorporated into the design of the working scheme as in-built mitigation measures, relating in particular to the measures to minimise the landscape and visual effects of the development; the noise attenuation measures inherent in the phased working scheme; and the continuation of existing dust management controls.

All quarry developments will give rise to some degree of environmental effects, and this is inevitable given the nature of the operations which are involved. However, the requirement of national and local planning policy is to ensure that effects are minimised and maintained within acceptable limits rather than be eliminated. The general conclusion reached by the ES is that the proposed scheme would successfully minimise the environmental effects, and that the existing and in some instances additional mitigation measures are capable of being adopted as part of the development.

The application, by encompassing the existing Hints and Hopwas Quarry, provides an opportunity to deliver a comprehensive restoration scheme for the entirety of the application site, with benefits in terms of the enhanced landform and land uses which are proposed compared to the currently approved restoration scheme.

These issues are explored further in the Planning Application Statement which also assesses the development against national and local planning policy. The key conclusions from this analysis are that there is an acknowledged need for the development in terms of maintaining supplies of sand and gravel to the construction industry; the development could proceed in a way which “minimises” environmental effects; and the effects from operations can be maintained within acceptable limits.
In the light of the above considerations, it is concluded that the development could proceed in accordance with the underlying objectives of policies relating to the extraction of aggregate, and, in particular, within the context of the national policies which have been highlighted. The planning policy analysis also concludes that the development could proceed in accordance with the development plan policies for the area.

In all these circumstances it is considered that there should be a firm presumption in favour of permission being granted.