ENVIRONMENTAL PERMIT VARIATION APPLICATION
NON-TECHNICAL SUMMARY

CROSS LEYS QUARRY
LEICESTER ROAD
THORNHAUGH
PETERBOROUGH
PE8 6NH

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ENVIRONMENTAL PERMIT VARIATION APPLICATION: NON-TECHNICAL SUMMARY
CROSS LEYS QUARRY, LEICETER ROAD, THORNHAUGH, PETERBOROUGH

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1.0 INTRODUCTION

1.1 APPLICATION BACKGROUND

Application Details

1.1.1 Mick George Limited (Mick George) is applying to vary Environmental Permit EPR/DB3132AZ to refocus the waste recovery operations to support the restoration of the north-western section of Cross leys Quarry, Thornhaugh, Peterborough.

1.1.2 The recovery operation is currently permitted within the south-eastern section of the former mineral working. Following a revision of the approved scheme of restoration for the quarry, the operator seeks to revise the permit to focus future restoration activities in the north-western section of the quarry (this includes an area formerly restored via a Paragraph 9 exemption). The operator is looking to amend the scheme of restoration which would necessitate the placement of further inert wastes in the north-western area of the site to allow for this change.

Site Setting

1.1.3 The site to which this application relates is Cross Leys Quarry, located adjacent to the A47 and largely surrounded by agricultural land. The National Grid Reference (NGR) for the site is TF 02900 00536. Overall, the quarry extends to around 28.4 hectares (ha) and is broadly triangular in shape.

1.1.4 Entrance to and exit from the site is undertaken from the main access road (A47) (at NGR TF03114 00707) which runs adjacent to the northern site boundary. This access point was built in accordance with the provisions of a planning permission granted in 1981 (ref. P1166/80). It is aligned at approximately 45 degrees to the carriageway of the A47 (in the direction of Peterborough to the east). Visibility splays at the junction are provided. The access is currently blocked by large concrete blocks, beyond which is a secured metal gate.

1.1.5 The operational boundaries are depicted in **Drawing No MG1002/14/02**. The site is bounded to the east and southeast by agricultural land and to the southwest and west by Wittering Coppice Woodland. The village of Wittering is located 2.8 km to the northeast of the site boundary. Peterborough city centre is situated approximately 16km east southeast of the site boundary.

1.1.6 The site is bisected by a northeast to southwest aligned pipeline (and associated corridor) which supplies aviation fuel to RAF Wittering. To the northwest of this pipeline, the site contains the remnants of the processing plant, roadways and numerous stockpiles of both soils and mineral wastes. This area extends to ~14 ha. The northern areas of the workings have been largely backfilled whilst along the western boundary (adjacent to Wittering Coppice) the quarry face is still visible, at the foot of which is a narrow water body which expands adjacent to the pipeline. The area along the northern side of the pipeline has also been backfilled. To the southeast of the pipeline are a number of large waterbodies, along with visible rock faces, further stockpiles of soils and an area along the southern boundary that has been restored. The southern part of the quarry extends to around 13ha. Planning documents for the site indicate that Cross Leys Quarry has a void capacity of 433,333m^3, of which 395,000m^3 will be filled using imported wastes. Some restoration operations have been

undertaken within the site, particularly along the southern boundary and the northwestern corner.

1.1.7 The East Northants Resource Management Facility (ENRMF) is located ~1.3km to the southwest of the quarry, which incorporates a hazardous landfill and soil treatment centre. The ENRMF handles various hazardous waste streams, including ash residues from EfW and Biomass Plants, dredgings, contaminated soil and low-level radioactive waste. This site has been operational since 2009. Also, Thornhaugh Landfill Site (a non-hazardous and stable non-reactive hazardous waste landfill) lies ~ 1.25km to the southeast of the quarry and has been operational since 2005. Both ENRMF and Thornhaugh Landfill site are operated by Augean South Limited.

1.1.8 There are limited number of residential properties within 2km of the site, together with several designated conservation area. Collyweston Great Wood and Easton Hornstocks SSSI, National Nature Reserve (NNR) and ancient woodlands extend across an area of for a distance of over 2.5km to the west of the quarry. Bonemills Hollow SSSI extents ~1.5km to the northwest from immediately beyond the A47 to the north of the quarry. Bedford Purlieus Woods SSSI is located ~460m to the east of the future waste operations boundary. There are no RAMSAR sites, Special Areas of Conservation (SACs) or Special Protected Areas (SPAs) located within 2 km of the site boundary. Additionally, Cross Leys Quarry does not lie within an Air Quality Management Area (AQMA) or a Source Protection Zone (SPZ). Wittering Coppice Woodland is a protected habitat, namely a deciduous Ancient Woodland and lies adjacent to the site's western boundary.

1.1.9 Cross Leys Quarry does not lie within an Air Quality Management Area (AQMA) or a Source Protection Zone (SPZ). The Wittering Airfield, home to the Royal Air Force, is situated approximately 1.6km to the north of the site. Businesses within 2km of the site include the aforementioned East Northants Resource Management Facility (situated c. 1.3km southwest of the site) and the Thornhaugh Landfill site (1.25km to the southeast), as well as Silo Services Ltd steel fabricator.

1.1.10 DEFRA's "Magic Map" Application indicates that the historic land use in the area (250m grid) primarily consists of Enclosed Agriculture (including ancient, pre-modern and modern forms), with patches of woodland and forestry. This is interspersed with settlements, unimproved land and areas of Industry. For example, the area upon which the site lies is shown as having historic landscape classifications of both enclosed agriculture and industry (which is a reference to the presence of the quarry.

1.1.11 The site is within a Flood Zone 1, which means that the land has been assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

1.1.12 The site overlies a principle bedrock Aquifer which is classified as being of high vulnerability owing to soluble rock risk. The Bedrock geology over the western section of the site comprises Lower Lincolnshire Limestone, while the bedrock geology of the eastern section of the quarry comprising Upper Lincolnshire Limestone.

Regulated Facilities

1.1.13 The current permit allows the importation of up to 65,000 tonnes of non-degradable non-hazardous wastes to support the restoration of the south-

eastern section of the quarry. Following revisions to the approved scheme of restoration, Mick George are seeking to re-focus the waste recovery operations to support the restoration of the northwestern section of the quarry. This area will require the importation of a further 395,000m^3 of suitable non-hazardous restoration materials.

The Operator and Its Activities

1.1.14 The landfill operator will be Mick George Limited whose registered office and installation addresses are below:

Registered Office:	Installation Address:
Mick George Limited, 6 Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XU	Cross Leys Quarry, Leicester Road Thornhaugh Peterborough PE8 6NH

1.2 TECHNIQUES FOR POLLUTION CONTROL

Management Techniques

1.2.1 Mick George Limited will operate the landfill facility in accordance with an Environmental Management System accredited to ISO14001.

The Main Activities

Site Construction and Engineering

1.2.2 The site comprises basal areas of exposed bedrock of Lincolnshire Limestone Formation surrounded by historically (partially) restored areas. Due to the limited attenuation available within fractured limestone bedrock, the basal areas will be engineered with a 0.5m thick Artificially Established Geological Barrier with a maximum permeability of $1x10^{-7}$m/s.

1.2.3 The majority of the northern and southern sidewalls of the quarry have previously been tipped against using site-won restoration materials or imported wastes under the Paragraph 9 exemption. Site-won materials will also be tipped against the remaining exposed limestone sidewalls along the western and southwestern edges of the restoration area. No sidewall engineering will therefore be required.

1.2.4 Imported wastes will be used to achieved final levels in existing partially restored areas. No engineering is proposed to be constructed on these areas.

Waste Recovery Operations

1.2.5 Waste deliveries to the installation will take place via the following infrastructure:

- Surfaced Access and Internal Haul Roads;
- Wheel cleaning equipment.

1.2.6 Vehicles will access the facility via an existing service road which connects to A47 north-eastern corner of the restoration area. Deliveries will be subsequently directed to the active tipping area through designated engineered haul roads that route into the landfill area.

1.2.7 Waste deposited at the quarry will be handled and compacted using tracked dozers.

Surface Water

1.2.8 Surface waters from all areas of site will be managed through the construction of ditch and infiltration ponds as restoration progresses. Water collected and contained within this drainage system will subsequently be utilised as process water on-site.

Groundwater Management

1.2.9 The majority of the site is located above the water table. The deeper flooded sections of the site will be infilled as part of the preliminary material movement phase of the restoration scheme (refer to **Drawing No. CL5/1**). These activities involve the handling and use of site-won materials only and fall outside the scope of the permitted activities

1.3 RISK ASSESSMENTS

Overview

1.3.1 As part of the Application for an Environmental Permit, the following Risk Assessments have been prepared to determine whether any of the permitted activities will have an unacceptable impact on the environment:

- Stability Risk Assessment
- Hydrogeological Risk Assessment
- Environmental and Accident Risk Assessment

Stability Risk Assessment

1.3.2 The Stability Risk Assessment (SRA) considers potential stability and integrity issues that could arise with the placement of the attenuation layer/Artificially Established Geological Barrier (AEGB) and imported restoration materials as part of the approved scheme of restoration for Cross Leys Quarry.

1.3.3 A Stability Assessment (SA) was carried out to determine the stability of the imported restoration soils and the integrity of the AEGB using the finite element analysis software PLAXIS 2D. All the factors of safety found from the assessments for stability and integrity are deemed to be acceptable. The stability assessment found that the temporary soil flanks shall not be constructed at gradients steeper than 1:3 and they must be constructed no quicker than 8 months.

Hydrogeological Risk Assessment

1.3.4 The Hydrogeological Risk Assessment (HRA) considers the risk posed by the proposed waste recovery operation to the local hydrogeological setting.

1.3.5 The HRA developed a conceptual Source-Pathway-Receptor model using the proposed waste types, local geology and hydrogeology and the surrounding groundwater and surface water receptors.

1.3.6 Cross Leys Quarry is located within exposed section of the Lincolnshire Limestone Formation. The is classed as a Principal Aquifer which is exploited locally for its groundwater resource via a number of licensed abstractions and private water supplies. Groundwater flow within the aquifer is dominated via fracture flow in the competent limestone and through intergranular flow in the basal sands, which are in hydraulic continuity.

1.3.7 Quantitative modelling was undertaken using a representative pollution source term and site-specific groundwater and surface water quality data to identify whether the proposed waste recovery activities poses a significant risk to the local groundwater resource potential of the aquifer.

1.3.8 The modelling undertaken indicates that the restoration of Cross Leys Quarry using inert wastes materials will present a limited risk to groundwater, taking into consideration the proposed construction of a attenuation layer across basal areas and the implementation of appropriate Waste Acceptance Procedures.`

Environment and Accident Risk Assessment

1.3.9 The potential impact from the following emissions from the facility on the surrounding receptors has been considered:

- Dust and Particulate Matter;
- Odour;
- Dirt and Mud on Highway;
- Litter;
- Birds, Vermin and Insects; and
- Noise and Vibration.

1.3.10 All potential risks to nearby receptors have been considered and mitigated in that all residual risks are of a low magnitude. Due to the proximity of Wittering Lodge, a management plan for dust has been prepared to support the future restoration activities.

1.3.11 Noise assessments conducted as part of an NIA conducted in October 2024 demonstrated that noise levels associated with the waste operations will not result in significant noise levels at the nearest sensitive noise receptors. As a result of this, it has been determined that a Noise Management Plan will not be necessary to support these operations.

1.4 ENVIRONMENTAL MONITORING

1.4.1 The waste operations will be subjected to detailed environmental monitoring covering the following areas:

- Waste Composition (Operational Phases Only)
- Landfill Gas
- Surface Water
- Groundwater
- Site Topography
- Dust

1.4.2 Noise Monitoring results will be submitted to the Environment Agency in accordance with the Permit conditions and records will be kept in order that monitoring trends can be reviewed and appropriate actions taken if necessary.

1.4.3 All monitoring systems will be maintained and calibrated by trained technicians and the equipment manufacturers to ensure that the equipment and infrastructure is maintained in good working order.