OXFORDSHIRE COUNTY COUNCIL

APPROVED

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Bridge Farm quarry, Sutton Courtenay, Oxfordshire.

Proposed extension

Further information – Soils and land quality

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1. Introduction

This statement has been prepared to address a request for further information by Oxfordshire County Council (OCC) in relation to a planning application for a small extension to the quarry at Bridge Farm, Sutton Courtenay, Oxfordshire.

OCC requested additional information to demonstrate how the impact on soils and land quality have been assessed as part of the EIA process.

The statement:

- Sets out where relevant material is submitted in the application
- Adds further detail to that material
- Provides assessment and summary

2. Material submitted and further detail

The Environmental Statement (ES) sets out[1] that:

- The scheme has been developed as an iterative design process;
- It uses progressive restoration techniques; and
- That all soil handling, mineral extraction and restoration principles and techniques are to follow the good practice techniques developed and practised by the applicant on its sites for many years.

Iterative design

The scheme submitted is the result of a process of assessment, design, review, and design amendment. This process takes account of a range of opportunities and constraints and the review stages enable all of these to be taken into account, and a balanced 'best solution' to be developed.

In this case, the background work included:

- Identification of existing land use;
- ALC survey.

The initial design was based on the following soil-related considerations:

- Retain all soils on site
- No importation of materials
- Retain highest grade land for agriculture
- Increase range of habitats and biodiversity

The design process then leads to quantification of resources and development of a working and restoration scheme. This includes:

[1] Page 14

- Identification of the direction of working
- Calculation of quantities of material by type – ie topsoil, subsoil, overburden and mineral
- Material movements – ie sequence of working, soil stripping, placement and storage areas.

Progressive restoration

It is a fundamental principle that restoration is achieved progressively, ie at the same time as working. This maximises direct movement to achieve restoration and avoids double handling soils.

The staged working and restoration plans[2] show the scheme diagrammatically and illustrate how the progressive restoration works. The drawings show:

- Areas stripped of soils;
- areas where soils are direct placed;
- storage bunds (separated into soil types)
- progressive restoration with placement of overburden and soils.

Good practice techniques

The good practice techniques referred to on page 14 of the ES have been set out in several documents, for example by MAFF[3] and in the more recent construction *Code of Practice for the sustainable use of soils on construction sites*[4] .

The main principles are as follows:

- Topsoil and subsoil to be stripped and stored separately
- Soils to be stripped to full depth
- Soils to be moved only when dry and friable
- Soils to be stripped and placed using a 360° tracked excavator
- Stripping to be in sequential strips, reflecting the width of the excavator reach, to avoid dumpers running on unstripped surfaces. Similarly when placing materials.
- Low ground pressure dump trucks used for soil movements
- Designated haul routes to be used (to avoid running on unstripped soils)
- Soils are to be stored like on like (ie topsoil on topsoil and subsoil on subsoil) – a subsoil storage area will therefore be stripped of subsoil before storage
- Soil stores to be placed in layers and graded using low ground pressure dozer
- Soil bunds no higher than 4m.
- Stockpiles in store for greater than c 6 months to be seeded to grass and mown to maintain tidy appearance

Retention of best and most versatile land

The ES included an ALC survey which identified the majority of the site (58%) as Grade 3b.

[2] As submitted with the planning application – Dwgs No. S3/Han/10/21 – 26 and Sections S3/HAN/10/34 and 35
[3] Good practice guide for handling soils, Apr 2000
[4] Defra, 2009

One of the fields was identified as almost all comprising Grade 2 land, with a small amount of 3a. As set out in the iterative design section above, it was a principle of design to retain the best quality land as agriculture. Phase 5 was therefore identified to be returned to agricultural use and therefore, in this area, the technique of dry working is to be used.

This means that once water table level is reached in this phase, it is dewatered during operation and restoration. Prior to the dewatering, appropriate measures are put in place to avoid adverse hydrological impacts, including the hydrological seal/ picture framing technique identified on the staged working plans and scheme description on pages 15-17 of the ES.

The working scheme described in the ES[5] identifies the distinction made between the types of soils, and reflects careful use of the ALC information. The restored profile for the Phase 5 area is to be 300mm topsoil; 300mm upper subsoil and 600mm lower subsoil, making 1.2m depth in total. This restored profile is achieved using the best practice methods reviewed above and to the levels identified, which provides a sufficient slope for drainage whilst also meeting requirements of the flood risk level for level assessment required by the Environment Agency.

Phase 5 is therefore anticipated to return to an ALC grading equivalent to that which existed previously, and the best quality agricultural land on site is thereby retained.

Lakes and lake margins

For the areas of the site to be returned to lakes, the wet working technique is used (ie no picture framing). The margins are formed in the same progressive way as described above, using direct placement and taking materials from store, placing and grading them to form the restoration profile, prior to seeding and planting. The same soil handling techniques are used in stripping, storing and placing soils and the ALC grading after working is therefore likely to be similar to the existing.

No soils imported or exported

All the soils and soil forming materials on the site will be reused in the restoration scheme. No soils will be taken off site, nor is it necessary to bring any soils onto site in order to effect the restoration.

Enhancing biodiversity

Those areas of the extension site which are not to be returned to agriculture are designed to add to the existing consented wetland to form a wide zone near the River Thames which is of enhanced value to wildlife.

All the area is currently in use as arable agriculture, and by introducing a range of new habitats and linking with the Phase 1-4b consented area, the scheme offers significant biodiversity enhancement.

Aftercare

It is usual for a mineral permission to be subject to a condition for a 5 year aftercare scheme to be submitted and approved by the Mineral Planning Authority. The applicant is a highly experienced operator which is used to complying with such a condition.

[5] Pages 15-17

3. Summary and assessment

Soils and ALC were considered at an early stage in scheme design as part of the constraints and opportunities.

The iterative nature of the design ensures the effect on soils and ALC was assessed as an integral part of design testing.

All soils on the site are retained and re-used.

Retention of the highest grade of ALC land was a design objective and has been achieved through careful consideration of site conditions, use of progressive working and restoration techniques, and good practice soil handling methods.

A 5 year aftercare condition is standard practice for a minerals consent and the applicant is experienced in producing and effecting such a condition.

The restoration achieves both agricultural and water based afteruses, and offers a significant biodiversity enhancement.