

Hornton Grounds extension

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## **Appendix 2**

### **Working Plan, Restoration Scheme and Aftercare Scheme**



**GILL PAWSON PLANNING**

**Specialist in Minerals and Waste Matters**

**HORNTON GROUNDS EXTENSION**

**PROPOSED  
WORKING PLAN**

**RESTORATION SCHEME**

**And AFTERCARE SCHEME**

Mill House  
East Haddon  
Northamptonshire  
NN6 8DU

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## WORKING PLAN

### Site operations:

The site will be run in compliance with the regulations of the Mines and Quarries Act. The operations will be covered by the Peter Bennie Limited quality system, the procedures in which have been approved in accordance with the requirements of ISO 9002 and are covered by Certificate Number 5972/2 dated 5 January 1995 issued by National Quality Assurance Limited.

Normal working hours are observed and apart from maintenance, office and security activities, it is not the practice on the site to work otherwise than 0700 – 1800 hours Mondays to Fridays, and 0700 – 1300 hours on Saturdays.

### Mineral working:

The mineral to be worked is, on average 5 metres in depth, lying beneath more than 1 metre depth of topsoil and subsoil. Existing site contours are shown on DWG No NFT/2/1.

The mineral is excavated, crushed and screened using mobile plant. The excavator sits on top of the deposit; it lifts the mineral from the deposit into the mobile crushing and screening plant which sits on the worked out floor of the quarry. The process does not involve any blasting as it can be worked by modern plant. The plant is located close to the working face and is moved regularly to a position close to the excavator. The mineral is moved regularly into stockpiles on the quarry floor and the mineral waste is moved directly to the areas being restored. The stockpiles will not exceed 5 metres in height.

The mineral is to be worked from an advancing face that will follow the route shown by the arrows on DWG No NFT/2/3. The working will be continuous, with approximately 6 hectares being excavated each year and 6 hectares being restored each year.

Subsoil will be lifted and placed into the area being restored. Topsoil, and if necessary, overburden will be employed in the construction of the screening bunds and any surplus will be used in areas being restored. The materials will be moved directly to the areas being restored, once the working face has moved forward and new bunds have been constructed.

Recent rates of extraction at Hornton Grounds have averaged 300,000 tonnes per annum. The materials are moved from site on 8 wheel, 32 tonne lorries carrying approximately 20 tonnes per load. Averaged over 50 weeks, this gives 300 lorry loads per week.

### Site infrastructure within the existing quarry:

There is a tarmacadamed road of 650 metres into the main quarry site, which was constructed in October 1991.

A haul road is formed on the quarry floor that is adequate for the passage of the heavy equipment used on site. As the area the subject of this application is brought into use; the haul road will be extended and its use and dust-management will be in accordance with current best practice.

The site office is three portable cabin buildings with electricity supplied by generator and lighting. Washroom and toilet facilities and a telephone are available on site. An area is laid out adjacent to the site office for car parking with a capacity of 20 cars, for use by staff and visitors. A saw shed provides accommodation for the equipment used to cut stone to produce a range of products, including fireplaces, coping stones and decorative pieces.

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A weighbridge and wheelwash facility exist within the area of the site compound. All lorries pass through the wheelwash as necessary. The weighbridge is inspected regularly by the Inspector of Weights and Measures.

Noise Control:

A temporary 4 metre high bund with a base width of 16 metres and slopes of gradient 1:2 will be constructed along the northern boundary of the site, to screen the properties in Hornton village. This will ensure that the noise levels should not exceed 50 dB L<sub>Aeq,1hr</sub> for the locations in the centre and west end of the village. The location of the bund is shown on DWG No NFT/2/3.

It is proposed that the residential property located adjacent to the site, Manor Farm, will be left empty for the duration of the mineral working and surrounded by a 10 metre stand-off strip. It is owned by the applicants and is normally rented out.

Noise monitoring will be carried out to allow the maintenance of noise levels in line with those adopted for working the adjoining land, following a noise assessment carried out in conjunction with the agreement of modern conditions (planning application ref: 97/00430/CM ) This monitoring will be done at the time of commencement of work on the extended quarry area and subsequently in the event of noise complaints.

Dust Control:

After the wheelwash, the distance travelled by lorries from the working quarry area to the highway, along 650 metres of tarmac road has generally proven to be sufficient to ensure that no mud is deposited on the public highway, except during very wet weather. When there is evidence of mud on the highway, a road sweeper is used daily to sweep both the highway and the access road.

During dry weather, a vacuum road sweeper is also used to keep the access road clear of dust from the vehicle movements, on a regular basis. The sweeper contains a dust suppression unit that is integral to its operation.

The extraction and crushing operations at the mineral face do not generate dust as the rock is wet. Dust on the quarry floor is controlled by means of a dust suppression unit that is kept at the site. It is used at regular intervals during each day when required. It contains a high-pressure unit that sprays water as it travels around the site.

The mineral is stored in stockpiles of different sizes, having been graded by the screening plant. The stockpiles are located on the worked out floor of the quarry. After creation of the stockpiles, they are sprayed with water to create a crust to reduce the generation of dust. Subsequently, the stockpiles are sprayed with water during periods of dry weather.

All lorries are sheeted to prevent material coming off the loads.

Dust Monitoring is currently being carried out, it would continue during the life of the quarry extension.

Floodlighting is normally portable and as with current practice at the site will be used only occasionally, when natural lighting conditions are inadequate.

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### Wroxton Conservation Stone operation:

The preparation of dressed stone is undertaken within an area adjacent to the existing quarry compound. The work is carried out by hand, using guillotines and axes. Each operator is stationed in a hut, which has an open front. The huts are located in a separate compound adjacent to the site compound, but screened from it by means of a bund 5 metres high, constructed of overburden from the quarry site. Stone which is suitable for dressing is deposited on the quarry floor by the excavator. It is collected on a daily basis using a tractor with a front loading bucket and it is transported to the dressing compound. Dressed stone is stored within the compound, stockpiled separately as walling and building stone. Waste stone is transported by the tractor back to the main quarry operation, for screening through the mobile plant.

## **PROPOSED RESTORATION SCHEME**

### **Introduction**

During the extraction and restoration at the existing quarry, Peter Bennie Limited has achieved a consistently high quality of land restoration. The land handed over annually to the farmer is normally returned immediately into arable production and little of the land has required any artificial drainage. The current methods of working are therefore proposed for the area of the extension of the quarry.

Restoration has and will rely on the naturally occurring soils, which prior to stripping support high yielding crops, and within a few years of replacement have been brought back to intensive arable production.

### **Finished levels**

DWG No NFT/2/4 shows the proposed levels of the restoration surface with the levels blended in with those on the adjacent worked land.

### **Soils**

The existing soil profile is comprised generally of 250 mm of topsoil and 1000 mm of subsoil on top of a varying depth of overburden derived from the underlying ironstone. This profile is and will be reinstated on the restored areas.

### Soil movement

Wherever possible, soils will be moved directly from the stripping area to the area being restored. When it is necessary to construct the noise attenuation bund as specified in the Working Plan and as illustrated in Drawing No NFT/2/3 soils will be stripped, including from its base, and stored in the form of the bund. If necessary, to make up the volumes required, overburden will also be placed into the bund. The topsoil, subsoil and overburden will be stored separately, in accordance with good practice.

No plant or machinery shall cross any area of unstripped topsoil or subsoil except where unavoidable as a result of site operations authorised within the conditions agreed with the Mineral Planning Authority. Where trafficking is likely to occur it will be kept to an essential minimum and all available topsoil and subsoil stripped from that area prior to trafficking taking place.

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### Timing

Soils movements will only be undertaken when the full volume of soil is in a dry and friable condition, i.e. the soil is in a non-plastic state such that severe damage to soil structure can be avoided. Conditions shall be sufficiently dry so that topsoil and subsoil can be separated without difficulty. Generally, this will mean that work will not be undertaken in the winter.

Replacement of soils for each annual phase of working will generally be completed by early autumn, to allow the establishment of a winter sown arable crop on the land. This will help to reduce the risk of dust during dry periods over the winter and will speed up the rate at which the soil structure is reinstated.

The soils within the site are relatively dry and thus in suitable weather conditions can be handled by a wide range of machinery.

### Machinery

A tracked mechanical excavator will be used for the extraction of the mineral; the same machine will usually be used for the digging of the soils and overburden. The bucket on the excavator will lift the soil materials into a dump truck. The dump truck will carry the soil to its destination, where it is placed using the backacter arm on the CAT. All soil materials will be handled separately, as stated above. It may be necessary to bring on site a D8 bulldozer and scraper to assist in the soil movement operations. These processes and the machinery used ensure that the minimum damage of the soil structure occurs.

### Stripping

Topsoil and subsoil will be stripped and moved and if necessary stored, separately.

### Storage mounds

The noise attenuation mound, which is likely to be left in place for more than 1 year will be constructed of subsoil, to prevent the degradation of topsoil, stored in mounds. Topsoil will be stored separately. Construction of the mound and topsoils stockpiles will not take place during adverse weather conditions, including prolonged dry periods to reduce the risk of dust creation.

### Soil replacement

Soils will be replaced to replicate as closely as possible the original profile. If any compaction takes place, the subsoil will be ripped to an appropriate depth after subsoil replacement is complete. This will be carried out using a winged subsoiler, at 45 degrees to the restoration contours.

### Stone removal

Stones over 200 mm in diameter will be removed from the subsoil after ripping. Stones over 100 mm in diameter will be removed from the finished surface.

### Soil improvement

Due to existing practice at the rest of the site, the soil conditions and potential growing conditions are well-understood. Lime, farm yard manure and artificial fertilisers will be added in accordance with sound agricultural practice and based on past experience of the detailed site conditions, by the farmer after the restored area has been handed back.

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### Drainage

The drainage condition of the site will be monitored, assessed and discussed with the Mineral Planning Authority during the aftercare period, in accordance with the aftercare scheme.

### **Landscape enhancement**

The hedgerow adjacent to the road along the eastern site boundary will be reinforced where necessary and maintained at a height of 3 – 4 metres to screen the working area from users of the highway. Replacement hedgerows will be planted along the northern and western boundaries, where existing hedgerows are removed to facilitate working and restoration.

The proposed landscaping planting alongside the highway will be in accordance with the scheme details approved for the landscaping strip on the adjoining land to the north. The proposed woodland planting will be designed in conjunction with the County Council's Landscape Officer.

Planting will be undertaken within the season 1 November - 31 March, immediately following the restoration of the area. Planting will be protected by stock proof fencing, if required. Weed competition will be controlled with chemical until satisfactory establishment is achieved. This shall be done in any event for a minimum of three years. Dead plants will be replaced each year, for a minimum of five years.

## **PROPOSED AFTERCARE SCHEME**

### **GENERAL**

The objective of the aftercare scheme is to ensure that after the initial restoration of the site to the agreed contours the land is suitably managed for a period of 5 years. This will bring it to a satisfactory and acceptable standard and ensure that the site achieves maximum agricultural production with a minimum period of time.

Soil conditions will be monitored by the farmer who already has 240 ha of restored land in hand, and, in so far as it practicable, access for livestock and machinery restricted in severely wet conditions, so as to avoid damage to soil structure.

Restored land will be assessed annually by the farmer with professional advice if necessary in order to determine the need for and the kind of further remedial works necessary to achieve the overall objectives of the scheme. This could include the implementation of any progressive soil loosening programme, the installation of under-drainage where appropriate and the addition of fertilisers, manures and lime.

It is clearly recognised that good aftercare is in the long- term interest of the land and this should ensure that the farming practices of the farmer and landowner are sympathetic to the special needs of restored land.

### **OUTLINE STRATEGY**

#### **Objectives**

The method of soil placement practised in the restoration should result in an adequately fissured, restored soils profile. The main objectives of the aftercare programme are to

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encourage stabilisation of the existing fissures, to encourage development of smaller, stable, structural units especially in the upper rooting zone of the soil profile and to ensure that the land drains to a standard that will allow continued agricultural use. These objectives will be achieved by the encouragement of the regeneration of biological activity, by appropriate cropping and good management and by further soil loosening and/or the installation of an appropriate under-drainage system that should be reviewed during the aftercare period.

## **Detailed Proposals**

### Cropping Pattern

The land will initially be put down to grass, or arable crops by the farmer in accordance with his rotational requirements.

### Cultivation Practices

Except where deep loosening of the soil profile is necessary, normal agricultural machinery would be used for all cultivations; manuring, sowing, weed and pest control and for mowing/harvesting.

Initially the structure of the soils profile on restored land can be fragile and unstable and therefore all land work will be carried out only when the ground is in a suitably dry condition. However, should machine access be required before the ground has had sufficient opportunity to dry out and become sufficiently stabilised only low ground pressure machines will be used to avoid excessive damage to the soil structure.

### Remedial Measures

Provision will be made for further soil loosening with a winged tine subsoiler to rectify any significant permeability problems arising from soil placement. This will be assessed immediately soil placement has been completed and in subsequent years the need will be subject to agreement following annual reviews of the condition of the restored land during the aftercare programme.

During cultivation the ground surface will be stone picked if necessary to ensure that the soils are as free as practicable of any stones or debris larger than 100mm in any dimension.

Areas of uneven ground caused by differential settlement will be regraded if necessary.

### Fertilisers, Weed and Pest Control

Lime and fertiliser requirements for the first crop will be based on the results of nutrient and pH analysis of bulk topsoil samples that will be taken after the soil has been replaced. Subsequently, the application of lime, fertilizers and/or manuring will be undertaken according to normal agricultural practice.

Weed and pest control will be carried out as deemed necessary.

### Drainage

The need for underdrainage will be assessed and discussed with the MPA in Year 2. This will provide a 12 month period for initial ground settlement and remedial regrading.

If a scheme is installed, secondary treatment will comprise subsoiling across the drains to a depth of around 350-400mm.

### **Annual Review**

There will be an annual review meeting, usually in the period April/June, between representatives of the Mineral Planning Authority and their advisors, of the operator, of the surface and mineral owner and the farmer. Early meetings shall include a site visit but the need for site visits at later meetings shall be agreed as the aftercare progresses.

All works undertaken on the land will be recorded in a diary. This will be used to prepare a monitoring report on the land which will be submitted before the aftercare meeting as a basis for on-site discussion.

At the annual review meeting a plan will be available showing the area handed back by the operator after restoration during the previous year.