
BRADSHAW QUARRY

Supporting Statement for the restoration of Bradshaw Quarry

For
J.G.Pears Ltd

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SUPPORTING STATEMENT FOR THE RESTORATION OF BRADSHAW QUARRY FOR J.G.PEARS LTD

1.0 Introduction`

- 1.1 Bradshaw Quarry is situated on Fullshaw Lane west of the Flouch Inn on the Manchester road and of Langsett Dam. The NGR is SE21250118.
- 1.2 This is a planning application to cap off the inert waste that was previously deposited in the quarry to provide the landform previously permitted in the planning permission, Ref No B/01/0334/PR. The application area covers 36902m² (3.69 Hectares)
- 1.3 The landfill site is classified as inert under the Waste Management Licensing Regulations 1994 and is licensed for the disposal of non-biodegradable (inert) waste, comprising of uncontaminated earth and excavation waste, solid waste concrete products, construction and demolition materials, together with spent foundry glass and sands.
- 1.4 The reason for the application is that due to changes in waste legislation, the site has not been completed in the time allowed in the previous permission. The site has to be capped off with an impermeable material to enable the licence holder to close the site and then ultimately surrender the licence. If the site is not capped rainwater will continue to flow into the waste mass and it could take years for the water quality in the boreholes downstream to improve. The site would remain definitively closed but it is unlikely that the situation would improve and therefore the licence could not be surrendered.
- 1.5 This proposal is to cap off the waste with inert material which will consist of excavation material such as sandstones, mudstones, bricks/rubble etc, and any coarse material should be screened out and used for the roads and as an underdrainage layer. Any clay recovered will be used as capping material and all soils will be screened off and used in the final restoration scheme.
- 1.6 The waste being imported under the paragraph 9 exemption was, in the main, soil making material but also comprising some hardcore to grade the site roads to prevent mud and debris being transferred across the site and onto the public highway.
- 1.7 The applicant has recently, in July 2009, installed three in-waste gas monitoring boreholes and one downstream groundwater monitoring borehole in the south east corner
- 1.8 The site requires approximately 33,000 cubic metres of capping material to prevent the ingress of water into the waste mass thereby preventing contaminants leaching out of the waste into the groundwater and surface water downstream and causing a reduction in the quality of the water. The site has accepted foundry sand in the past

and there are elevated levels of metals in the borehole water which have recently been sampled.

- 1.9 The 33,000 cubic metres equates to 66,000 tonnes of material which is necessary to cap off the waste previously tipped. It is proposed to undertake this works to be completed within 2 years of the grant of permission. This application is not to allow more material than was previously permitted.
- 1.10 We envisage that there will be up to 30 vehicular movements per day (15 in 15 out) required for the scheme. This will allow the applicant a degree of flexibility dependant on the availability of suitable restoration materials which may not consistently be available throughout the year.
- 1.11 It has been agreed that the pond which exists in the south east corner of the application area is to be filled in as it is too deep for livestock and they will not be able to climb out of the steep sided cut where the pond is if it is not filled in to a shallow angle. It will be filled in with indigenous material as per drawing number JP/BQ/2009-01. The applicant also has concerns about the safety of children if they are attracted to the pond to paddle and fish.
- 1.12 The location of the operational area is shown on Drawing No: JGP/BQ/03 with the restored area coloured green and the waste area that is up to level and further void space coloured buff. The contours show the area that requires further tipping is on the south east side.

2.0 The Site and Site History

- 2.1 The landfill site lies within an area of land known as Fullshaw / Bradshaw. The site lies within a quarry that was worked for ganister and coal and fireclay within strata associated with the Halifax Hard Bed.
- 2.2 The site originated as a ganister quarry that was acquired by JG Pears in 1990 to infill and restore. JG Pears Ltd were granted Waste Management Licence (WML) Number WD20B813 for Bradshaw Quarry on 29 April 1990 after receiving planning permission from Barnsley Metropolitan Borough Council to restore the site by infilling.
- 2.3 The site is at an elevation of 280 m above sea level adjacent to Fullshaw Lane lying within a bed of Ganister Rock associated with the Middle Band of coal that lies under the Halifax Hard Bed coal which is present near to the surface, from Sheffield to North of Bradford. The seams are at the lower section of the Middle Coal Measures lying above the grit stones. The land falls gently to the east and consists of old surface mine workings that are filled over with waste. To the south west is Langsett Reservoir.
- 2.4 Around the area are a number of dwellings along Fullshaw Lane and Hartcliffe Road to the north. The land falls to the east from relatively flat land around Fullshaw. To the north the land rises moderately to Hartcliffe at an elevation of 330 metres.

- 2.5 The quarry has been excavated to a depth of around 15 m at the western end and down to the base of the Ganister bed and the Middle Band Coal accessed by a trench. Above this seam is the Halifax Hard Bed, which has been worked in the site. To the north is an outcrop of the Upper Band and the Lower Band, which is the 36 yard band in Halifax and north of the coalfield. Shafts exist near to the site, which would have accessed the Halifax Hard Bed.
- 2.6 The current waste management licence allows disposal of inert waste derived from construction and demolition. The list of permitted and prohibited types can be read on the actual licence included with this report. The company now wish to continue tipping material that falls within the definition of inert waste dictated by the Landfill Directive. No putrescible or biodegradable waste will be accepted onto the site. The material will be clay, sandstone, mudstone and hardcore.
- 2.7 The present use of the land that has been restored is pasture for sheep and beef cattle and the remaining area which has been brought up to level is ready for a layer of restoration subsoil before topsoil is spread over the site. The restored area drains surface water in an easterly direction and flows to a large pond on the north side of the site and in hollows and depressions in the despoiled area to the south east.
- 2.8 The site has been used for the deposit of inert materials since 1990 and inert waste has been tipped including foundry sand. The site has also been used for ganister quarrying and the mining of the Halifax Hard Bed and the Soft Bed coal seams in the area from 1880 until 1940. The foundry sand is a source for heavy metals to be leached into the water environment.

3.0 Geology

- 3.1 The geology of the area is Lower Coal Measures with 4 coal seams and fireclay seat earths within interbedded mudstone and sandstone. The site is situated between the Halifax Hard Bed Coal and the Middle Bed Coal which is mainly mudstone and shale beds. Within the mudstone is ganister bed that is 4 metres above the Middle Bed Coal. Beneath the coal seams is mudstone overlying a bed of grit rock known as the Rough Rock, separated from the underlying White Rock Grit by beds of mudstone and shale.
- 3.2 The beds dip gently to the east and the bedding is clearly seen in the old mine adit cutting. The faulting is in a south south east trend to the west and east of the site forming graben blocks of strata. A fault runs in a west to east direction with downthrows to the south. Smaller parallel faults run through the site forming an outcrop of Halifax Hard Bed.

4.0 Working Method

- 4.1 Under a Paragraph 9A Exemption or the existing Waste Management Licence and the closure report agreed with the Environment Agency, the site is to be improved for agricultural use and to increase bio-diversity by way of re-grading the profile of the land within the application area to an evenly sloping terrain. The soils will be used to cap the waste disposal site, and due to the Landfill Directive, the site is to be closed under Waste Management Licensing and the additional exempt material is required to cap off the waste deposited under that licence.
- 4.2 Coarse aggregate and inert waste derived from construction and demolition is to be imported from local sites for use on the site to provide material for site roads and drainage. Clays and soils from local excavations, which will be tested for the coefficient of permeability to comply with the Landfill Regulations and will be used for the capping layer.
- 4.3 The clays and aggregates can be temporarily stored along the northern boundary prior to being laid to the correct level. Refer to plan JGP/BQ/03.
- 4.4 Soils brought to the site nearing the end of the scheme can be stored on the western boundary in preparation for completing the site to finished levels.
- 4.5 It is proposed the coarse aggregate will be used as a layer under the cap, laid and compacted by tracked machines and used by the applicant to maintain a good quality haul road for the duration scheme. The clay and mudstone will then be laid on top to cap off the waste to a level of 0.5m below the final profile.
- 4.6 Subsoil to a depth of 0.3m will then be laid above the clay and 0.2m of topsoil to finish the site completely prior to landscaping. Site retained topsoil will be laid last to replicate the original soil profile.

5.0 Planning Policies

- 5.1 The primary concern of this part of the plan is the land use implications of waste disposal and this is reflected in the policies previously mentioned. These policies are consistent with the 'relevant objectives' set out in the EC Framework Directive on Waste and PPS23.
- 5.2 Waste disposal was not identified as a key issue during the preparation of South Yorkshire Structure Plan, due to the lack of essential survey work information. At a late stage in its preparation it was accepted that waste disposal policies should be developed in the review of the Plan but this review was never carried out. Consequently, there was only a general statement of intent in the Plan, and a reference to restoration of mineral workings by infill with waste, and these now need to be replaced by updated policies.
- 5.3 The South Yorkshire Minerals Local Plan did not deal with waste disposal as a self contained issue, but it did recognise the close linkages between mineral extraction and

waste disposal, especially in the field of restoration. The possibility of using waste disposal as a means of restoration has several potential benefits. It can reduce the net amount of land taken out of agriculture or other uses; better land form can be achieved; more effective use of investment in infrastructure can be obtained, and often the environmental impact can be reduced by effective screening.

- 5.4 The Minerals Local Plan also identified the problems and risks that could be created by waste disposal. The issue of potential pollution to surface and underground water is a major factor, and the Environment Agency groundwater protection policy is an important basis for proposals. Waste disposal on some sites can also damage local amenity as a result of traffic, smells, fumes, wind blown material and pest infestation, although all of these can be reduced by good management.
- 5.5 There is an important need to relate the planning process to on-site control through waste disposal licences, and to have regard to the best practice procedures set out in the series of waste management papers which are available. The Environment Agency is preparing a Waste Disposal Plan under the requirements of the 1990 Environmental Protection Act, but it is a planning responsibility to deal with the land use issues and the impact of the site on the surrounding area. The operational policies of the Waste Disposal Authority are set out in the draft Waste Management Plan and these will complement the policies contained in the Unitary Development Plan.
- 5.6 Because of this situation, therefore, most of the policies referred to below relate to landfill in the planning context but restoration as an activity, although some are equally relevant to waste processing facilities. Should there be a major change in the waste disposal market, then these policies will need to be reviewed.

Planning Policy Statement 10 (PPS10)

- 5.7 PPS 10 'Planning and Waste Management' provides policy guidance on waste management. The guidance advocates that future waste management decisions should be based upon the following principles:
- Consideration of the Best Practicable Environmental Option (BPEO) for each waste stream;
 - Regional self sufficiency;
 - The proximity principle;
 - A waste hierarchy.

The waste hierarchy is:

- Reduction
- Re-use
- Recovery (recycling, composting and energy recovery)
- Disposal

- 5.8 Whilst each level of the hierarchy has a role to play, it provides a theoretical framework to be used as a guide for ranking waste management options being considered as part of the BPEO assessment for individual waste streams. The aim being to direct component materials within each waste stream further up the hierarchy.
- 5.9 The 'Best Practicable Environmental Option' (BPEO) is considered to be the option of waste management that provides the most benefit or the least damage to the environment, whilst remaining practicable.
- 5.10 The principle of regional self sufficiency states that each region should provide for facilities with sufficient capacity to manage the quantity of waste that the region expects to deal with in a specific area, over at least the next ten years. For the future, given the expected significant increases in the levels of non-hazardous waste that will have to be managed, a large number of additional landfill facilities, will inevitably be required.
- 5.11 The proximity principle requires waste to be managed as near as possible to its place of production because the transportation of waste has an environmental impact. Inert waste does not have an environmental impact of the same degree as municipal waste.
- 5.12 Annex A of PPS 10 considers the future need for landfill development in the UK. The guidance states that although in the interests of sustainable development, alternative forms of waste management must be used to deal with waste, it also underlines the need to continue to send some wastes to landfill, stating that landfilling;
- 'May be the only practicable way of finally disposing of some materials, such as incineration residues and other inert materials, including mineral wastes, which cannot be recycled or treated'.***

Local Policies

- 5.13 The main objectives as outlined in the Barnsley UDP with regards to waste disposal are:
1. To minimise the generation of waste and to encourage re-cycling.
 2. To protect the environment of the Borough and to avoid loss of amenity to its residents.
 3. To ensure that waste is disposed of safely, efficiently and effectively.
 4. To ensure control over waste operations and the full restoration of sites to a beneficial afteruse.
- 5.14 The proposal is the recovery of inert waste streams to provide a capping layer over the previously deposited waste and secondary aggregate for tracks and drainage on site. It is now a requirement to pre treat waste prior to deposit or reuse hence the requirement for screening. The material being recovered to restore a former mineral working.

POLICY WD1

The council will seek to make provision for sufficient sites and facilities to cater for the waste disposal needs arising within the borough during the UDP period, subject to all appropriate environmental safeguards being met. The council accepts the need for a strategic approach to waste disposal and will co-operate with neighbouring authorities and other interested parties in the assessment of suitable opportunities to deal with waste materials.

Proposals for waste disposal sites and facilities will be considered on their merits, and the environmental acceptability of such proposals will be assessed with regard to the following:

- (a) The effect on local amenity based on an assessment of visual impact, dust, fumes, noise and other potential disturbance, taking into account screening and other protective measures, which are available.*
- (b) The likely duration of tipping*
- (c) The proposed final appearance and landform of the site*
- (d) The effect on the natural and built environment*
- (e) The effect on agricultural land*

These effects shall be demonstrated wherever appropriate by the preparation of an environmental statement. Planning permission will not be granted where there is significant and unavoidable damage to the environment resulting from any of the factors identified above.

POLICY WD5

The council will seek to ensure the use of the best available techniques to improve standards of design and control in waste disposal operations.

POLICY WD2

In order to minimise the need for waste disposal sites and facilities, the council will seek to minimise waste generation and achieve the maximum amount of re-use and recycling of potential waste materials.

Considering these policies, inert material has to be treated differently from other waste streams. Construction, demolition and excavation waste is used for secondary aggregate and the residues used for restoration and reclamation of land. To all intents and purposes, the material is being recycled and recovered for another use.

6.0 Transport and Access

- 6.1 The access route to the site for vehicles depositing waste shall be via Manchester Road A628 and then south along Fullshaw Lane. The material will be coming from various sites in surrounding areas such as Huddersfield, Sheffield, Barnsley, Penistone bringing clean construction and demolition wastes from these areas.
- 6.2 It is envisaged that there will be up to 30 vehicular movements per day (15 in 15 out) required for the scheme. This will allow the applicant a degree of flexibility dependant on the availability of suitable restoration materials which may not be consistently be available throughout the year due to weather conditions, activity in the lighter days of the year and contracts.
- 6.3 The access to the working in the quarry is via the existing gated road for the waste site on Fullshaw Lane. The access is wide with stone walls on both sides and locked double gate. The western part of the site is restored and returned to pasture with the access road running through the fields. The access to the quarry is filled with hardcore and will be regularly maintained with materials which are recycled on site, hard surfaced and drained near the lane.
- 6.4 The inert material will be transported to the site via this access for the duration of the scheme and the remaining void will be progressively filled in. The access is modern and was constructed as a necessity for waste importation.

Policy WD4 of the Barnsley UDP states:

The following transportation criteria will be taken into account in consideration of planning applications for waste disposal

- a) ***The effect which traffic generated by the proposed waste disposal will have on road safety, property and the amenities of the people living in the vicinity of the development, or along the transportation routes to be used***
- b) ***The degree to which alternative transport modes can be used to minimise traffic disturbance***
- 6.5 Waste disposal sites and facilities generate considerable volumes of road traffic. Good location and acceptable access to a major highway are important elements in an acceptable site. Proper management of vehicles, the site and loading are essential to prevent nuisances and the deposit of material on adjacent roads.
- 6.6 Bradshaw Quarry will not generate any more traffic than was using the site when it was being filled in before.

7.0 Dust

- 7.1 The nearest residential properties to the site boundary are Field House and Cliff View approximately 100m east of the site. The next closest property is Hoodlands, on Fullshaw Lane to the south of the site. The nuisance associated with general dust deposition is unlikely to be significant as dust particles ie. greater than 30µm, which are responsible for most dust annoyance, will typically deposit up to 100m from the source. The proportion of fine and ultrafine particles (10µm or smaller) in the wastes accepted at this site is likely to be very small based on particle size analysis for inert waste.

Current Regulations on dust

- 7.2 The amount of dust that might cause a potential nuisance is extremely difficult to determine. Similarly, numerous attempts have been made at identifying a nuisance standard for dust, without success.
- 7.3 Currently, there are no statutory or recommended levels of dust deposition that may constitute an official nuisance. It is normally left to the Local Environmental Health Officer, under Part III Section 791(d) of the Environmental Protection Act, to determine, if, in his opinion, a statutory nuisance exists.
- 7.4 Planning permissions incorporate a number of conditions for the minimisation of dust emissions, and these were generally based on the principle of the Best Practical Environmental Option appropriate for the site under consideration.
- 7.5 The three main factors, which potentially affect the sensitivity of the site with regard to dust, are:
- The distance of inhabited areas from site activities
 - The location of the inhabited areas relative to the prevailing winds
 - The density of habitation
- 7.6 The most critical element in the consideration of the potential for a dust nuisance to be caused is the direction of the prevailing winds. The general prevailing winds in the U.K are South-Westerlies (blowing from Southwest to the Northeast). To determine the sensitivity of the surrounding area, the location of residential areas to the site activities has to be examined.
- 7.7 The operator shall appoint a responsible person for dealing with environmental issues on the site. That person will keep a daily log of the weather conditions, including the direction of the prevailing wind. This log will include any complaints received, with a record of any investigations carried out and changes to the working practices on that day. The log will be available for inspection on the site.
- 7.8 The following shall be implemented:
- All unsurfaced roads to be dampened when necessary

- Vehicles used for the movement of materials on the site, where appropriate, shall be fitted with exhausts pointed away from the ground
- A speed restriction shall be imposed on the site of 15mph.

- 7.9 In the event that the wind is blowing towards any sensitive properties, the responsible person shall satisfy himself that the control measures are adequate. If the control measures are insufficient to prevent dust blow from the operations to the sensitive locations, the filling operations shall cease until the conditions improve.
- 7.10 It is not anticipated that dust will be a problem but the soiling operations could be potential sources of dust during periods of prolonged dry weather. The soil bunds will be seeded immediately after completion with a grass seed mix to prevent dust blow. All vehicles carrying material to be tipped on the site will be sheeted.
- 7.11 The spreading of the material, either by dozer or front end loader, involves the slow movement of these items and therefore vehicle speed is not a significant factor when considering the potential for dust nuisance being caused.
- 7.12 A water bowser will be used to suppress any unacceptable levels of dust during soiling operations. In the event that weather conditions mean that the suppression of dust by these methods is not successful, operations on the site will be suspended until weather conditions improve to permit resumption.
- 7.13 No development shall take place until wheel cleaning facilities have been installed on the site. The facilities shall be maintained in working order at all times and shall be used by any vehicle carrying mud dust or other debris on its wheels before leaving the site. No vehicle shall leave the site carrying mud dust or debris.
- 7.14 In particularly dry conditions the haul road into the site may need to be dampened to ensure that dust emissions are minimised so that dust is not carried onto the main road network.
- 7.15 Also the movement of topsoil and subsoil will be suspended in adverse weather conditions to further reduce the possibility of dust emissions.

Summary

- 7.16 None of the potential receptors are close enough to the site to be significantly affected by wind borne dust emanating from the site and the risks to nearby receptors are considered to be low.
- 7.17 There have been no record of complaints on dust blow whilst this site has operated over the last 10 years.

8.0 Noise

- 8.1 The nearest residential properties to the installation boundary are Field House and Cliff View approximately 100m east of the site. The next closest property is Hoodlands, on Fullshaw Lane to the south of the site. The landfill operations will be intermittent and the site will not be operated constantly throughout the working week. Machinery will be used on site when necessary to spread and compact incoming waste.
- 8.2 Landfilling operations will take place for the most part within the existing quarry void. In the south of the site, the quarry walls provide a degree of noise attenuation and reduce the effect of noise experienced at residential receptors. The noise of machinery working on site will be most noticeable when site operations are carried out in the northwest area, when final landfill levels are being achieved and during site restoration works involving soil spreading. These factors, combined with the distance to these nearest receptors, results in these receptors being at a low risk from noise impact.
- 8.3 Monitoring should be undertaken during normal production working hours. Measurements should ideally be taken in calm conditions or where there is a component of wind blowing from the site towards the measurement location. Where noise monitoring is undertaken when weather conditions are not ideal and noise levels appear to be of concern, the impact of weather conditions on ambient noise should be considered as well as noise propagation from the site.
- 8.4 Waste disposal and restoration operations on site shall only be carried out between the hours of:
- | | |
|---------------------|---------------|
| Monday – Friday | 07.00 – 18.00 |
| Saturday and Sunday | 07.30 – 13.00 |
- 8.5 There shall be no working outside these hours. No working shall take place on public holidays unless agreed in writing with the Mineral Planning Authority. These are the same hours that the site was open under the previous planning permission.

Minerals Policy Statement 2 (MPS 2)

- 8.6 Where appropriate, planning conditions should be used to ensure that minerals operations are carried out in such a way that the noise emissions are minimised at source and thereby controlled to acceptable levels.
- 8.7 The layout and plant location, the sequencing of operations and the hours of working can have significant effect on the levels of noise emissions and their impact on sensitive receptors.
- 8.8 Planning conditions may be used to apply absolute controls on noise emissions with limits normally being set at particular noise sensitive properties. This enables the effect of noise to be related most directly to its impact on local people.

- 8.9 In some circumstances, however it might be more appropriate to set the limits at the site boundary or some other point. Subject to a maximum of 55dB(A) Laeq, MPA's should aim to establish a noise limit at the noise sensitive property that does not exceed the background level by more than 10dB(A).
- 8.10 It is recognised, however, that this will in many circumstances be difficult to achieve without imposing unreasonable burdens on the mineral operators. In such cases the limit set should be as near that level as practicable during normal working hours (07.00 – 19.00) and should not exceed 55dB(A) Laeq.
- 8.11 All mineral operations will have some particularly noisy short-term activities that cannot meet the limits set for normal operations. Examples include soil stripping, the construction and removal of soil storage mounds and the construction of new permanent landforms. However, these activities can bring longer term environmental benefits.
- 8.12 Increased temporary daytime noise limits of up to 70dB(A) Laeq, for periods of up to 8 weeks per year at specified noise sensitive properties should be considered to facilitate essential site preparation and restoration work where it is clear that this will bring longer term environmental benefits to the site.
- 8.13 Where work is likely to take longer than 8 weeks, a lower limit over a longer period should be considered.
- 8.14 Operators should seek ways of minimising noisier activities and the noise emissions from them when designing the layout and sequencing of temporary operations and should liaise with local residents prior to such operations taking place.
- 8.15 Where possible, workings should be arranged so that earlier operations provide screening for noise sensitive properties from noise generated by subsequent activities. This could influence both the direction of working and the placement of overburden and soil mounds on the site perimeter.

9.0 Restoration Proposals

- 9.1 The approved restoration scheme provides for a gradual slope throughout the site with An existing pond built by the applicant in the south east corner of the site will be retained to gather surface water run off.
- 9.2 The final restoration contours and cross sections are shown on plan JGB/BQ/04 and will allow the site to be capped and there will be no restrictions on site to cultivation and mowing to allow a hay meadow to be formed that will provide a wide ranging habitat for birds, insects, aquatic life and mammals.
- 9.3 The final land form at Bradshaw will be finally be restored to pasture and woodland with adequate falls on the land to assist in surface water run-off above the backfilled area to the east to replicate the surface water flow patter before quarrying began.
- 9.4 The capping layer is a requirement of the waste management licence closure plan The capping layer forms a fundamental part of the restoration and aftercare programme to be discussed with the MPA and the EA. In the applicant's opinion due to the elevated level of metals, especially molybdenum and selenium which can be harmful to livestock if they drink water tainted by either metal.
- 9.5 The restoration scheme will aim to retain features of ecological interest and restore the remainder to conditions suitable for upland grazing whilst incorporating features of benefit for wildlife.
- 9.6 Existing wildlife communities within the site boundary but outside the proposed working area will be protected, as far as it is reasonably practicable, from disruption during the course of the works.
- 9.7 All existing vegetation, together with soil and soil making materials will be carefully stripped and used to restore completed areas. This material will be stripped and spread as a single operation and will not be stockpiled.
- 9.8 The restored areas will be supplemented with a light sowing of an upland grass seed mixture to be agreed with the Local planning Authority prior to sowing.
- 9.9 Tree planting will be within the areas of the approved restoration plan and will consist of forestry transplants 450-600mm high planted at 2.0m centres with Enmae planting fertiliser and a suitable root dip.
- 9.10 The species list for planting will be as follows:

<i>Fraxinus Excelsior</i> (Ash)	20%
<i>Quercus Petraea</i> (Oak)	20%
<i>Acer Pseudo-Platanus</i> (Sycamore)	20%
<i>Selix Caprea</i> (Goat Willow)	20%
<i>Sorbus Aucuparia</i> (Rowan)	10%
<i>Pinus Nigra Austriaca</i> (Austrian Pine)	10%

10.0 Conclusions

- 10.1 The scheme is to recover excavation, construction and demolition waste, pre-treat that material prior to using for capping, haul roads and drainage.
- 10.2 Using inert material to fill in old mineral sites has been a recognised sustainable use of resources for over 50 years to reclaim land for agriculture. Upland farms require all the land they can use to remain competitive, grow feed for livestock and graze these annually. The proposal is sustainable and will improve the groundwater quality.
- 10.3 The site has to be capped off with an impermeable material to enable the licence holder to close the site and then ultimately surrender the licence. If the site is not capped rainwater will continue to flow into the waste mass and it could take years for the water quality in the boreholes downstream to improve. The site would remain definitively closed but it is unlikely that the situation would improve and therefore the licence could not be surrendered.

Fennell Green & Bates
December 2009