Longstone Edge, Peak Park, Derbyshire
Project Design

1.0 Introduction

This Project Design is put forward on the basis of recommendations which resulted from a topographical survey undertaken between December 13th and 16th 1995 by the CAS on two mounds located on Longstone Edge (CAS Project 472, Reeves 1996). Although not scheduled, the mounds are now believed to be two Bronze Age barrows and are considered to be of national importance. The CAS had been asked by Dr A Brown, Inspector of Ancient Monuments Conservation Midlands, to undertake necessary recording works at Longstone Edge before the two barrows are altered further, or irretrievably lost, due to the subsidence of the land parallel to the edge of the quarry.

2.0 Cause for Action

The two barrows are threatened by subsidence caused by active fluorspar mining 180 metres below them. The subsidence is also causing slippage into Longstone Rake, a gorge cut during medieval lead, and post-medieval fluorspar, mining. The larger of the barrows (Barrow 1) has collapsed in the centre due to subsidence and its eastern end has been dynamited into the rake below, for safety reasons. Barrow 2, the western-most barrow, remains intact and relatively untouched but is bisected by a large fissure. The natural processes of decay, fissuring and edge collapse will erode the barrows further in a relatively short time.

Although a firm date has yet to be set, the owners wish for urgent safety reasons to fill in the fissures. This is planned to occur sometime in late autumn or winter 1996. Laporte Minerals intend to infill the fissures with 'tailings' (pea grit size limestone chippings). The 'tailings' will be delivered to the site by a tipper lorry and then distributed to the fissures by a 'front loader'. The use of heavy plant to accomplish this task will result in compression of the surviving archaeological stratigraphy and the alteration of the present earthwork morphology over most of the site. The need to stabilise the fissured rock is considered by the curators to outweigh the desirability of preservation *in situ.*

3.0 Site Location and Description

Longstone Edge is part of the High Rake, an east west limestone escarpment in the White Peak region of the Peak District National Park (Figure 1 and 2). The escarpment rises 391 metres above sea-level. At Longstone the southern edge of the escarpment has been quarried away by medieval and post medieval mining activities. The barrows, sited at SK 2088 7841 on the quarry lip, are suffering considerable damage from the quarry edge that is slipping away and also from subsidence cracks opening up to the west of the quarry lip (Figure 2).

Barrow 1, the eastern-most mound, is sited at the highest point of the hill through which the rake is cut. When recorded by Barnatt in 1988 Barrow 1 measured 21 metres along its east west axis and was recorded as being 19 metres in breadth. The earthwork stood to a height of 1.1 metres above the hill crest. Barrow 2, to the west, is smaller, measuring 16 metres by 13.5 metres, and stands 1 metre above the hill crest.

Since 1988 Barrow 1 has decreased in length by almost 2 metres and the southern 4 metres of its breadth have been severely truncated by subsidence, or lost altogether due to the collapsing edge of the rake. The centre of the barrow has subsided, but the over-all height remains unchanged. The dimensions of Barrow 2 (16 x 13.5 x 1 metre) remain unchanged, but the monument is bisected by a very prominent fissure. Fissures (Figure 3) cut across the length of the site and on average are 0.40 metres wide, and an average of 4 metres deep, although depth has been observed to be variable.

4.0 Site History

The site is known to be one of many that were investigated by the Derbyshire antiquarian, Thomas Bateman. Confusion exists because in his scanty records Bateman refers to three barrows in the same vicinity but he 'excavated' into only two of them in 1848 (Barnatt 1988). Bateman's excavation methods usually involved the cutting of a trench from the outside edge of the barrow, generally the northern flank, toward the centre. This method on average removed 10 - 20% of the stratigraphy, leaving 80 - 90% of the barrow intact. Almost invariably the central rock cut grave or cist would be discovered but some secondary burials within the mounds of the barrows opened by Bateman have been missed.

Due to subsidence it is very difficult to ascertain whether Barrow 1 has been disturbed and Bateman's account may refer to another barrow lying to the east which has long since disappeared. Although the method of excavation was crude Bateman did write good field notes. He also backfilled his sites with great care which makes it difficult to determine which barrows were investigated by him.

If Barrow 1 is the mound which Bateman excavated on the afternoon of the 29th August 1848, it contained a central irregularly shaped rock cut grave 0.9 metres deep. The grave covered by 4 - 5 irregular rock slabs contained in its centre an adult human cremation, the bones mixed with pieces of antler tine. In one of the rock cut graves corners Bateman found a much decayed child inhumation and another corner contained two food vessels. Within the cist, but with no specific location, Bateman records cows' teeth, pieces of flint and two deer hooves. Immediately outside the area covered by the slabs Bateman retrieved a portion of a human skull.

Barrow 1 was disturbed when the Ordnance Survey erected a Trigonometric Pillar. The pillar has subsequently toppled over as a direct result of subsidence. In evidence of its location a circular depression and a small mound of upcast to the north can be seen. During the fieldwork undertaken by the CAS in December 1995 (Reeves 1996) no evidence was recorded to demonstrate that Barrow 2 had been opened by Bateman, although surface examination cannot be regarded as definitive. Barrow 2 shows evidence, in the form of shallow pitting, of more modern

interference on its western flank. Although described as shallow quarries in the field notes of the 1988 Barrow Survey (Barnatt) excavation evidence does not exist to demonstrate this. Between the two barrows a modern reservoir tank has been constructed; the tank now rests on the very edge of the rake. The deep depression to the north is part of its construction.

In this century, other than recording undertaken in the compilation of the survey of Peak District barrows (Barnatt 1988) and the topographical survey in December (Reeves 1996), no other study has occurred of either barrow or the site.

The recent topographic survey revealed an additional smaller mound lying to the west of Barrow 2. This smaller mound, which could be a natural knoll, measures 4.0 x 4.0 x 0.6 metres and is very regular in shape. Slightly further to the west a circular depression was also recorded in the survey; this depression measures 5 metres east to west, 3 metres north to south and was 1 metre deep. This could be a natural feature of limestone topography, an earthwork related to mining activity, or an earthwork associated with either both or one of the two barrows on the ridge.

5.0 Current Site Conditions and Observations.

An irregular longitudinal section through Barrow 1 demonstrated the amount of surviving archaeological stratigraphy. The section is formed from the northern face of the fissure separating the collapsed central area of the barrow from the intact northern half of the mound. The section demonstrates that a depth of 0.80 metres of stratigraphy remains along the exposed length of the barrow. Bone was observed at four locations along the line of this section (Figure 5). The western location contained a large deposit of rodent bones. The eastern location contained rodent bones and a large number of snail shells. The two points marked near the centre of the section are of most interest as, in addition to the remains of rodents and snails, long bones of animals were identified. It should be noted that these points coincide with a deeper part of the section. During the survey a single piece of human bone was retrieved from the section, from the western edge of a possible grave cut. It has been identified as part of the left upper occipital of an adult human skull. Barrow 1 is constructed of a mixture of stone and earth and would appear to have been built on an exposed out crop of the underlying limestone plateau.

The site was visited again on the 20th June 1996 during a meeting with the owners to discuss site accommodation. At a location roughly opposite the point at which the skull fragment was retrieved, but on the subsided area, a further large fragment of skull was observed. This fragment may belong to the same skull as the fragment retrieved in December, arguing for a fairly intact burial in the centre of the barrow, or it may belong to a completely different skull, suggesting at least two burials within the central area of Barrow 1.

Barrow 2 remains intact but is bisected by a large fissure. The depth of archaeological material observed in the faces of the fissure is approximately the same as that observed in Barrow 1 but fewer ecofacts were visible. The composition of the second barrow is similar to Barrow 1 but stone content is less evident and the stone is of smaller size. Due to the narrow width of the fissure the material on which the barrow was constructed could not be determined. It could have been constructed directly onto base rock, a truncated prepared surface, or it may rest on a buried land

surface.

On-site observation indicates that the archaeological stratigraphy of the larger of the two barrows is very well preserved and extremely valuable results could be obtained from an excavation. The observed ecofact assemblage is indicative of very good preservation of faunal remains.

Figure 6 locates the depression interpreted as a possible grave cut (Figure 5) on the contour plan, with the approximated original diameter of the barrow, before erosion, marked. It can be observed that the suspected grave cut is sited at the centre of the barrow.

Observation demonstrates that archaeological potential will not be realised if no further action is taken in advance of erosion. The Derbyshire barrows remain enigmatic and those that have been excavated to date have been investigated without the benefit of many of the techniques developed during the last few decades.

6.0 Aims

The aims of the project have been developed by Dr Andy Brown (the English Heritage Ancient Monuments Inspector for Derbyshire), Ken Smith and John Barnatt of the Peak Park Joint Planning Board, and CAS.

6.1 Curatorial Aims

The principle aim of the project is to realise the potential of the site prior to damage or destruction. The threat lies outside the planning process and no other appropriate agency is in a position to undertake the project at short notice.

In addition there is a clear heritage management research context within which the project should take place. The Peak Park contains numerous barrows, many of which are scheduled. A large number have yet to be reviewed, and more sites are being discovered. The curators view the project as an opportunity to develop further policy for the designation and management of barrows in the area, whether currently scheduled or not, and the spaces between and around them. Substantial data exist for the barrows of southern England, but not for the less well understood barrows of Derbyshire. The results will therefore be pertinent to the barrows of the Peak District but also to issues surrounding designation elsewhere.

6.2 Research Aims

6.2.1 Background

Current understanding of the function and construction sequence of the bowl barrows in the Peak District suggests that practices differ from those observed and recorded at barrows elsewhere. It derives from an assessment of notes from antiquarian excavations of barrows and from excavation undertaken in the 1960s, from which evidence is limited.

The Peak District 'bowl' barrows excavated to date (principally 1841 - 1861) appear not to have single central burials but are constructed over a group of central burials. In addition they demonstrate three stages of use. An area is selected for burials. After a number of burials have occurred a mound is then raised over the group. During the construction of the mound it has been argued that some form of ritual event takes place, loose bones and sometimes cremations being scattered across the earth. Finally secondary burials are inserted in and around the mound, sometimes leading to the expansion of the original barrow to cover the newly interred peripheral remains. This interpretation cannot be tested without new fieldwork.

Very little evidence exists relating to the use of the spaces around and between Peak District barrows. The sampling of the surrounding threatened area is therefore an important component of the research design.

6.2.2 Primary research aims

The primary research aims of the project must consequently be to determine the method of monument construction and use, define burial practice, and seek evidence of use of the inter-barrow zone. Dating, artefactual, and environmental evidence are needed to place the site in its chronological, cultural, and landscape context. Basic definition of these key characteristics of the site is an essential precursor to the subsequent assessment of potential for more detailed analytical research due to the paucity of evidence of this category of monument in this region.

6.3 Working in Partnership

The project will aim to support, by provision of data and/or material the research aims of two research projects, working in partnership with the Universities of Bristol and Sheffield. The relevant designs of these free-standing programmes will be presented in the Assessment Report if fieldwork does provide appropriate material or result for inclusion in these programmes.

6.3.1 Geophysical prospection of the limestone uplands

Ken Smith is keen to establish whether magnetometer survey is applicable on this type of geological strata. He proposes to fund a survey in advance of excavation, to be carried out by Sheffield University, in order to address this question. The results of the survey will be tested against the results of excavation in the Assessment phase of the project and lead to firm recommendations with regard to the applicability of magnetometer survey on the Carboniferous Limestone areas of the Peak District. Although suspected to be of little use, to date the technique has not been tested on the escarpment. The survey will aim to record features and cremations within and around the mounds. It should be noted that

. the excavation strategy will proceed independently of geophysical results, since these are expected to require more validation than usual, and may be misleading;

. the survey is not an essential precursor to the project, and, should weather, funding, or other factors prevent its occurrence, this will in no way affect the excavation;

. the results of the survey will be immediately available to the Peak Park, Sheffield University, and to CAS: but it is intended that CAS will formally assess its efficacy within their own assessment of the Longstone Edge Barrow project.

6.3.2 Chemical analyses and dating programmes

Bristol University, Organic Chemistry Unit, have several long running programmes which require soil and ceramic samples for analysis for C14 dating (7.2), ceramic samples for food residue research (7.5), and bone samples for isotopic analysis for trace indicators of diet and the formulation of a database of stable bone isotopes. The project will furnish samples which will be processed and evaluated by Bristol. The potential for further analysis within their own programmes (ie the suitability of the sample material) and the archaeological potential of its analysis will be defined in Assessment Report.

6.4 Technical and Methodological Development

This is small project of limited duration and field resource which is designed to meet specific curatorial and research aims during a small window of available time. For reasons of safety expansion of the field team or the duration of the project in the field is not feasible and care has been taken not to over-burden the fieldwork stage of the project with complex or time-consuming objectives which could jeopardise achievement of the primary aims. The intention is consequently either to gather data within the usual process of excavation for subsequent MTD research, or to look to affiliated staff or teams to support these components of the project. The programmes comprise:

6.4.1 Magnetometer survey testing (6.3.1)

6.4.2 C14 lipid dating (7.1)

6.4.3 Isotopic bone analysis (7.4)

6.4.4 Food residue lipid analysis (7.5)

6.4.5 Poster preparation (7.7.1)

6.4.6 Video sampling (7.7.2)

7.0 Project Objectives

7.1 Monument construction, Use, and Dating

The project will determine by excavation the method of barrow construction and development and examine structural differences between the barrows. Sampling of soil and ceramics will occur for C14 lipid dating - a relatively new breakthrough in dating studies - and tested for potential during Assessment. Lipid Dating samples will be collected and then sent to Bristol to be frozen, these samples will then form a 'bank' of material to be analyzed at a later date. The work will be supported by a "conventional" C14 dating programme.

7.2 Burial Practice

Through excavation recording, environmental sampling, and finds analysis, the project will investigate social or ritual practises either within, on, or around the periphery of the barrows, determining the number of individuals interred in or near the barrows and defining differing methods of burial. The recent assessment of Peak District barrows, largely based on assessment of Antiquarian excavations suggests that barrows greater than 12 metres in diameter have five or more central burials, and in 40% of cases this exceeds twenty burials. The Longstone barrows have diameters of 21 metres (Barrow 1 prior to erosion) and 16 metres and can consequently be expected to furnish evidence which will enhance our understanding of burial practice and provide a large assemblage sampled to accord with the requirements of current palaeopathological research in order to maximise information in this field of research.

7.3 Interbarrow/Peripheral Zone

Evidence will be sought for social or ritual activity and structural elements in the inter-barrow zones, in particular seeking to retrieve burials for comparison with those recovered within the barrows.

7.4 Environmental evidence

Through the retrieval of faunal/floral ecofacts the project will aim to reconstruct an accurate picture of the environment of the barrows at the time of construction and define the nature of any deposits placed with the burials either within the barrows or around their periphery.

Recovered ecofacts will give evidence of environmental and economic change, spatially and temporally, using features which are securely stratified and well dated

There is potential to research ecofactual taphonomy, contrasting the evidence from the barrow sited directly upon limestone with that from the barrow raised upon a soil horizon.

Assessment will examine the research potential of the human bone assemblage in palaeopathological studies and the animal bone assemblage for faunal studies. Research potential is dependant upon the assemblage size, articulation, and distribution (from one or both barrows, or inter-barrow areas).

Samples will be taken for isotopic bone analysis in order to retrieve trace indicators of diet and edible flora which is regarded as particularly useful as pollen does not survive well in these soils. The results, if successful, will contribute to development of the method and be entered on a national database, the Longstone barrows providing some of earliest samples and the only sample to date

from the north of England.

7.5 Artefacts

The project will retrieve artefacts for dating purposes to support the C14 programme, for investigation of ritual practices and social hierarchy, and regional characterisation: potential for both the study of individual artefact categories and groups of artefacts will be addressed in assessment.

Samples will be taken from ceramics for lipid analysis to examine remanant fats to provide evidence of pre-burial use. Results if successful will enhance the national database for which there are currently no examples from this region. Particular attention will be paid to the sampling of beaker sherds as there have been no lipid analyses of these vessels since the development of new methodology during the last five years.

7.6 Topographical survey

During the fieldwork undertaken in December the south western extremity of the site was not included. As one of the proposed exploratory trenches cuts a linear feature in this area it is proposed to make good this omission to complete the monument record prior to site alteration, for curatorial purposes. The barrows were recorded by contour survey using a total station theodolite or EDM. The data was recorded using a rough 2 metre grid radiating from a baseline set along the fence running east west to the northwest of the mounds, that is, the furthest possible point away from the quarry lip. This local grid was then tied into the OS National Grid on site.

The production of contour plans and a three dimensional image was achieved using the DGM software package.

7.7 Presentation, outreach, and MTD

The dangerous nature of the site prohibits free or easy access by the general public or by school groups. It will even be difficult for project specialists to have the ready access which they might normally expect. For this reason it is intended to incorporate two objectives which seek to serve both developmental and dissemination aims.

7.7.1 Poster production

During the last six months CAS has developed display poster production technique, and recommendations were made to improve quality and method following the last trial. To conclude this implementation stage of newly developed skills we will look to produce one or two display boards for the Peak Park, which will provide information about the excavation after its completion and serve popular demand in a high profile visitor area, in lieu of providing access to this dangerous site.

7.7.2 Video development

It is proposed that Longstone Edge should serve as the first test site for the CAS Video Development Project. We will aim to produce limited footage which targets aims defined within the developmental project, to test pre-project guidelines, video sampling and recording strategies, and provide material for evaluation and development of the method. The project specific aims will include:

- a record of the site prior to its destruction for curatorial purposes;
- health and safety information for CAS and EH teaching purposes;
- site locational information for intervisibility studies;
- footage of key discoveries to interest and inform specialists and CAS staff who have been unable to visit this inaccessible site.

8.0 Methodology

8.1 Excavation Strategy

For the purpose of maximum coverage and the retrieval of the best record the site has been divided into twelve areas of operation to gain maximum section records across the site to aim to stratigraphically link discrete monuments and/or inter-barrow activity areas, and compensate for stratigraphic interruptions resulting from fissuring (Figure 4). Those areas suffixed with an asterisk are regarded as being of primary importance.

The sequence of excavations takes account of perceived archaeological importance and safety issues. Areas where excavators are most at risk, nearest the edge of the rake and adjacent to the large fissures running across the site, are to be excavated first. Experience suggests that staff tend to be more alert on first arrival, before familiarity breeds carelessness. Additionally it can be anticipated that there may be more pressure to work rapidly and worse weather conditions in the later phases of the project.

The project is to be staged in two parts. During the initial six weeks the top priority areas of the site will be excavated. On week five a joint decision will be taken by the CAS and project team specialists, the Inspectorate, and the Peak Park Joint Planning Board on the value of continuing for a further four week period. This decision will be based upon the progress of work, and the achievement of, or continuing potential to achieve, the primary aims of the project (Appendix).

Area 1 - The north east quadrant of Barrow 1
12 x 9 m., with a maximum depth of stratigraphy 0.8 m. This quadrant is designed to encompass the mound and the flat area to the north east, its southern baulk to run roughly parallel to the fissure bisecting the barrow and the western baulk to section the area of the central burial. This area is targeted to locate burials, barrow construction, and look for a possible kerb (55% of bowl barrows have these) or any other peripheral features lying to the north east.

Area 2* - The north west quadrant of Barrow 1

10 x 8 m., with a maximum depth of stratigraphy of 0.8 m. Separated by a baulk from Area I. Although slightly irregular in line on its southern boundary it makes use of the extant fissure. Objectives as outlined for Area I.

Area 3* - The south east quadrant of Barrow 2
8 x 8 m., depth of stratigraphy approximately 0.8 m. This area targets the retrieval of burials, the method of barrow construction, and identification of a possible kerb surrounding Barrow 2.

Area 4* - The north west quadrant of Barrow 2
9 x 10 m. As outlined for Area III above.

Area 5 - The north east quadrant of Barrow 2
9 x 7 m. As above.

Area 6 - The south west quadrant of Barrow 2
8 x 7 m. As above.

Area 7 - The north east quadrant of the possible third mound
6 x 7 m. This area may be converted into an evaluation trench and expanded into a quadrant if a barrow is identified.

Area 8* - A rectangular area lying between Barrows 1 and 2
15 x 6 m., but depth of stratigraphy is unlikely to exceed 0.05m . To look for inter-mound activity and structures and/or link the barrows.

Area 9 - A small trench across the circular 'well' located to the south west of the barrows
7 x 1 m., to be expanded to 2 metres in width if the feature proves to be deep. To identify feature.

Area 10 - A small trench across the linear feature observed in survey
10 x 1 m., or 10 x 2 m., if feature is deeper than 1.2m. To identify feature.

Area 11 - the south east quadrant of the third mound
10 x 5 m. To be excavated only if the third mound is shown to be a barrow.

Area 12* - The sunken centre of Barrow 1
Although highly disturbed this area could contain material derived from the central mound structure and could also contain part of the central grave/graves. The curator has expressed a keen interest for this area to be investigated. It is potentially dangerous but is separated from the edge of the rake by up to 5 metres of ground. There has been no movement of soil and rock on Longstone Edge for over a year. If this area is tackled it is deemed best to bulk sample an area directly opposite the central grave as located in areas 1 and 2. It is within this area that a further fragment of human skull was observed.

Area 13 - Southern flank of mound three, up to 'well' feature in south east
17 x 7 m. This area only to be excavated if mound three proves to be a barrow and if time allows.

8.1.2 - Excavation Method.

All areas are to be deturfed and hand excavated, spoil to be taken to designated areas of the site. The backs of the turfs are to be dry sieved to retrieve those finds which have worked their way up the soil profile and become entangled in the roots of the surface ground cover plants. Finds, environmental, and context recording will be carried out in line with CAS procedures and the specialist guidelines provided for the site. All features will be 50% excavated, and if time allows

100% excavation of all features will take place. The central grave and any other burials will be 100% excavated/sampled.

8.2 Environmental strategy

8.2.1 Recovery potential

Ecofacts to be expected include animal and human bone, mollusca, insects, plant macrofossil remains. Pollen is less likely. Other ecofacts may be recovered including diatoms, ostracods, phytoliths and foraminifera. Pedological evidence may also be examined to enable an understanding of soil formation processes. The preservation of ecofacts is dependent on soil conditions. The solid geology at the site consists of limestone. A single fragment of human bone was recovered during evaluation and large numbers of rodent bones and mollusc shells were observed in section.

The environmental strategy will adopt methods which will enhance the retrieval of ecofacts without bias against the recovery of artefactual remains.

8.2.2 Sampling

Sampling will be carried out in accordance with CAS procedures, the advice of specialists, and the method statement (Appendix).

All samples will consist of whole earth, that is, no ecofacts or artefacts will be removed from the sample unless the processing will have a detrimental effect on the find itself. In some cases small finds may require three dimensional recording before a soil sample can be collected. If fragile finds are removed from a soil sample, these will be labelled with both the context and sample number. If a sample is suspected of containing a number of fragile artefacts, the sample will be examined manually before processing.

On site sampling strategy will be developed and applied in the field in accordance with the method statement in Appendix and the advice of the project environmentalist

8.2.3 Processing

For this site, the soils are very light and this will enable the samples to be processed very rapidly.

Flotation will not occur on site, but will take place at Fort Cumberland, flots to then be examined by specialists at agreed locations

Detailed method statements for environmental processing are contained in Appendix.

8.3 Finds Strategy

8.3.1. Recovery

From evaluation of the site, comparison with similar sites, and the documentary research of previous work at the site it can be expected that a wide range of artefactual material could be recovered, to include human bone, cremated human bone, animal bone, pottery, flint, antler, and foreign stone.

Strategy for the recovery of artefacts will be adapted according to the nature of the deposit, the materials, and requirements of the specialists undertaking further analysis of the object/artefact categories. All recovered objects will be retrieved. There will be no on-site discard of material.

Richard Evershed, currently undertaking lipid analysis research projects at Bristol University, has requested ceramic samples from Longstone Edge. Samples will be taken from a range of vessel types and burial conditions, with attached soil, for subsequent assessment at Bristol University.

8.3.2 Retrieval

All finds to be three dimensionally recorded. If, and where, applicable the angle of orientation and the angle of inclination to be recorded.

Cremations to be lifted in bulk, after recording, and treated as samples.

Complete pots to be lifted with the internal fill in place. Following discussion with specialists the fill of any whole pots to be micro-excavated either in Fort Cumberland or under Laboratory conditions.

8.3.3 Processing

Finds processing will be undertaken in accordance with CAS procedures and advice from specialists. Detail of method is presented in Appendix.

8.4 Methods to support MTD Objectives

8.4.1 Poster preparation

For poster preparation (7.7.1): collection of suitable photographic material to be done by the Project manager in the normal process of excavation, posters to be assembled by the CAS graphics studio during Record Completion and Assessment. The detailed method will reflect recently prepared guidelines to improve practice in this area (Graphics Office guidelines)

8.4.2 Video Development

For video development (7.7.2): pre-project preparation to be carried out by the Video Development Project Team and most service on site to be provided by fortnightly visits by the Graphics Manager, supported by occasional use by Longstone Project Staff to record special events. Post-excavation work to be carried out by the Video Development Project Team, supported by the

Longstone Project Manager. All work to be carried out in accordance with the Video Development Project Design

8.4.3 Analytical Sampling

Bone Isotope samples (7.4), ceramic residue samples (7.5), and C14 lipid samples (7.2) will be collected on site in the usual course of work by the finds/environmental project supervisor, according to usual sampling protocol, and to accord with objectives and methods defined for those projects (Appendix).

8.4.4 Geophysical Testing

There is no field involvement of CAS staff in the geophysical survey objective (6.3.1). Survey strategy and results will be incorporated into the Assessment report.

9.0 - Health and Safety

9.1 Policy

The project will be run in accordance with The Health and safety at Work Act (1974), English Heritage's Health and Safety Manual (1995) and Codes of Safe Working Practise, the SCAUM's Health and Safety in Field Archaeology, and the CAS Procedures Manual, Health and Safety Module. A risk assessment has been prepared (Appendix).

The excavation strategy has been devised to take account of the dangerous nature of the site and its environment. In brief, areas where staff are most at risk are to be excavated first when staff are generally more alert, less pressured, and weather conditions can be expected to be suitable; the team will be kept to a maximum of six, all of whom will be trained professional staff; and visits to the site will be closely controlled.

It should be noted that Public access is prevented by the site owners because of the dangerous nature of the site, due to past and present mineral extraction.

9.2 Strategy

Detail of specific Health and Safety instructions is contained in Appendix

10.0 Resources and Planning

10.1 Human Resource

Having taken into account the dangerous nature of the site and the speed and skill with which the site needs to be excavated the project has been designed to accommodate a staff of six or seven.

Costs are appended for the six and ten week periods. The excavation team will consist of a Project Manager, two Supervisors, and four Assistant Supervisors.

Additional costs will be incurred by environmental, graphics, and finds specialists visiting as and when required to provide specialist support services. This support will be provided by CAS and AML core staff in the course of their EH roles.

For the post excavation up to and including Record Completion at present we can assume the need for a finds person/environmentalist for approximately 6 weeks.

Costs are provided (Appendix) for both the six week excavation, and the potential ten week excavation.

10.2 Accommodation

Following consultation with Laporte Minerals the staff will be housed and the excavation run from two portacabins. The one cabin will serve as the records and finds hut, the second, to be split, will serve as office and tea room accommodation.

The cabins will be fitted out to run on electricity and equipped to provide light, warmth, and be furnished with appliances for the production of hot drinks and hot food.

The office area will also be the first aid centre.

The electricity will be provided by a generator.

The site will be equipped with a lockable tool store which will serve as a safe house for the site tools the generator and the environmental samples and the finds that are awaiting collection.

11.0 Timetable

The project is operating on a provisional start date of 12th August 1996 with a finish date on 20th September 1996, a six week duration of fieldwork, with a potential second stage of a further four weeks, to be agreed in week 5.

The initial record completion is provisionally timetabled to run from 23rd September 1996 until the 1st November 1996, if the site runs for six weeks, or to extend until the end of December if the site runs for ten weeks (Gantts in Appendix).

An interim note of excavation will be produced by 30th November 1996, or 30th December, if the site runs for ten weeks.

Assessment and an updated project design will be timetabled to accord with the CAS programme of work following record completion.

12.0 Acknowledgements.

Thanks are extended to the members of the survey team; Mike George, Adrian Brown and Tom Cromwell for undertaking the survey work on Longstone Edge, the results of which have led to the production of this Project Design; also to Project Team members based at Fort Cumberland who supported the work.

I would also like to thank Laporte Minerals for suspending their infilling of the fissures cutting across the site and therefore allowing access to the area for further work, especially Mr John Elkins for his continuing support of the proposed project, and Ken Smith, Archaeology Service Manager for the Peak Park Joint Planning Board for advice and support for the project.

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Appendix 1

The Evaluation Report (on project file)

Appendix 2

Finds and environmental method statements

Finds Processing

No finds to be washed until they have returned to Fort Cumberland for assessment for further analysis eg. lithic use wear analysis, lipid study (identification and C14 dating potential).

All finds to be individually wrapped and packed

All pottery sherds to be left out to dry before being individually wrapped in acid free paper and packed in small plastic boxes, lipid samples to be wrapped in soil and transferred to Bristol at the earliest opportunity following record completion

All flint artefacts to be left out to dry and then individually packed in small plastic bags, not wrapped.

All human skeletal remains (excluding cremations) to be dried before being packed in individual plastic bags (following CAS guidelines) and then packed in the appropriate boxes ie. skulls to be packed separately in skull boxes with clear labelling and cross referencing.

All animal bone to be dried before packing by context.

All foreign stone to be collected and packed separately.

All full finds boxes to be removed from site as soon as is practical.

Any delicate finds to be transported to Laboratory as soon as possible after discovery and recording.

Valuable finds to be removed from site immediately. If a member of CAS core staff enroute to Fort Cumberland is available then they could pick up the finds boxes and take them directly to Portsmouth. If no member of core staff is available and/or there is a significant time lapse before the next occasion for removal valuable finds are to be deposited with Laporte Minerals at Cavendish Mill until such a time that they can be removed safely.

Environmental Sampling and Processing

Within most of the areas, samples should be taken at set intervals for each stratigraphic layer. These will be determined as appropriate by the Project Officer in consultation with the environmental archaeologist and specialists (including the

finds officer) in the initial stages of the project.

It is recommended that features should be half sectioned and sampled from the unexcavated half of the feature after recording. The sampling strategy may be adjusted by the Project Officer in consultation with the specialists and Environmental Archaeologist (also Finds Officer where appropriate) for some features after initial assessment of samples on site. The change in sampling strategy will be recorded in the site records as appropriate.

Each bulk sample should consist of a minimum of 20 litres of soil (two blue buckets). Larger samples may be collected from features and layers where required (eg.primary or secondary burial areas); collection of these larger samples will be determined by the Project Officer in consultation with the Environmental Archaeologist and specialists (Finds Officer where appropriate). These larger samples may be recovered, for example, from a cremation, from the central grave cut, or from earlier prehistoric deposits.

If the volume of a feature is less than 20 litres, 100% of the feature should be sampled. The blue buckets used for sampling should be labelled both inside and out with the bucket number, sample number and context number. The sample must be fully recorded on the sample record form.

Sections will be made available to the AML specialists for pedological and pollen analysis and sampling will be undertaken by the specialists unless the Environmental Archaeologist is instructed otherwise.
Each dry bulk sample (preferred minimum size 20 litres) will be processed by flotation for the recovery of plant macrofossil remains, charcoal, insects, mollusca and bones.

The mesh sizes used for the flot and residue will be 500 um and 1mm respectively.

The remainder of the sample after initial flotation of 20 litres will normally be processed by wet sieving at 4mm and/or 1mm to enable recovery of larger bones and artefactual remains. Further samples may require flotation as determined by the specialists and the Environmental Archaeologist. If the samples processed by flotation are found to be unproductive, a discard policy will be instigated by the Environmental Archaeologist and specialists in consultation with the Project Officer(and where appropriate the Finds Officer) for the bulk samples recovered from the site.

When sorting dry bulk samples, all artefacts and ecofacts larger than 4mm should be recovered from the residue. A percentage of the 2 - 4 mm residue should be sorted; this is usually 25% unless advised otherwise by the specialists in consultation with the Environmental Archaeologist. The component of the residue less than 2mm in size should not normally be examined but should be retained for specialist assessment and analysis where appropriate.

A series of minimum default sizes of different material types are to be used for sorting sample residues. These will be modified by consultation with specialists

according to the type of site under investigation. For all material types, all fragments should be recovered.

The minimum default sizes for recovery of material while sorting residues are as follows.
Charcoal: not less than 4mm
Oyster Shell: not less than 10mm
Other marine shell: not less than 4mm
Bone shaft fragments: not less than 2mm

For the purpose of isotope analysis the bones should not be washed and be kept as cool as possible. The bones to be used will be selected by Richard Evershed when a sufficient number have been collected and their stratigraphical and spatial locations have been logged.

Appendix 3

Health and Safety

Detailed Health and Safety Instructions have been prepared, as follows:

the staff to receive a health and safety discussion prior to the commencement of the project. All staff to read the CAS Health and Safety Manual Module and sign to record that they have done so.

all staff to be shown how to rope themselves safely before starting work on site.

all staff to be logged in and out of Laporte Minerals offices at Cavendish Mill on a daily basis.

a mobile phone to be kept in full operational order at all times.

a list of the emergency telephone numbers for the area to be prominently displayed.

all staff to ensure they have adequate clothing for all weather conditions that could be met.

all visitors (CAS core staff, specialists, other) to the site to inform the director well in advance of the site visit.

all visitors to be logged in and out at Cavendish Mill.

all visitors to listen to the health and safety warnings covering the site.

all visitors to abide by the health and safety guidelines laid down by the H & S recommendations and the instructions of the site director.

neither English Heritage or Laporte Minerals are responsible/liable for any individual or group of individuals who have failed to comply the stipulations as set out in this section.

visitor groups from academic bodies, archaeological units and English Heritage should be small in number, six individuals being the maximum. This is subject to prior notification and approval of the site owners.

Appendix 4

Information to inform the review at week 5, to determine whether to proceed for a further six weeks.

Appendix *5*

1 Costings for six week excavation

2 Gantt chart for six week excavation

Appendix 6

1 Costings for ten week excavation

2 Gantt chart for ten week excavation