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COAL CLOUGH WINDFARM EXTENSION

LANCASHIRE

Assessment Report

Coal Clough Windfarm Extension, Burnley
Lancashire

Archaeological Assessment Report

Report no 1999-2000/26/AUA8926

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SUMMARY

An archaeological assessment was undertaken in September / November 1999, by Lancaster University Archaeological Unit (LUAU), in advance of the proposed extension (centred at NGR SD 890 284) to the existing Coal Clough Windfarm, on behalf of Renewable Energy Systems Ltd. LUAU was required to assess the archaeological resource within two areas (A and B) that have been proposed as options for the windfarm extension.

The desk-based study demonstrated a potentially important early communication route (Long Causeway) that extended along the northern part of the area. It also highlighted considerable mining activity within the study area. The mining activity was confirmed by the identification survey which revealed a series of mine shaft groups in area B, and also an intensive, but later pit on the east side of Area A.

Area B has the greatest concentration of mining features, but Area A adjoins the Long Causeway and has an early field system and wayside cross (Maiden Cross) in association. In general archaeologically there is little to choose between the areas, and it is therefore recommended that the proposed turbine and infrastructure be designed so as to avoid the identified resource. If this proves impossible, mitigation recording should be undertaken in advance of any ground works.

ACKNOWLEDGEMENTS

Thanks are due to the staff of Lancashire Record Office in Preston, and Peter Iles of Lancashire County Council Archaeology Service for SMR information.

Lancaster University Archaeological Unit (LUAU) would like to thank Gavin McAlpine of Renewable Energy Systems Ltd for enabling access, and the landowners, Mr Pollard and Mr Wyld, for allowing access onto their properties.

The documentary survey was carried out by Caron Newman of the Egerton Lea Consultancy and the rapid identification survey was by Chris Scurfield and Daniel Elsworth (LUAU). The report was compiled by Caron Newman and Chris Scurfield, and edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 An archaeological assessment was undertaken by Lancaster University Archaeological Unit (LUAU) on behalf of Renewable Energy Systems Ltd, in advance of the proposed extension of a wind farm (centred on SD 8980 2825). The study area comprised an 'L'-shaped area of enclosed moorland, in the modern civil parish of Cliviger, south of an unclassified road known as the Long Causeway, and to the north-west of the settlement of Holme. The assessment follows on from an earlier assessment by LUAU (1992a) which was undertaken in advance of the construction of the existing windfarm.
- 1.1.2 The assessment was required to inform an Environmental Impact Assessment, and its purpose was to provide an accurate archaeological appraisal of the proposed development area, within its broader context. The aim of the survey was to collate all available information relating to the archaeology of the site and to determine the significance of the archaeological resource. The survey was required to assess the impact on the archaeological resource of two different development options: one within an area (A) to the west of the present windfarm and the other an area (B) to the south of the present windfarm (Fig 2).
- 1.1.3 The desk-based study consisted of a search of existing records held by the Lancashire Sites and Monuments Record (SMR), the Lancashire County Record Offices in Preston (PRO), and secondary sources in Lancaster University Library and Lancaster City Library. This was followed by a rapid identification field survey of the study area. The desk-based study was undertaken in September 1999 and the field identification was undertaken in early November, because of access restrictions.
- 1.1.4 This report sets out the results of the work as a gazetteer, in conjunction with a methodology statement, a brief text description of desk-based and field results, an assessment of the archaeological potential within the study area, and an evaluation of the impact that the development will have upon the archaeological resource, with recommendations for any further archaeological recording. The assessment outlines the impact of the development on the two areas forming the different options (A and B).

2. METHODOLOGY

2.1 DESK-BASED STUDY

- 2.1.1 Existing archaeological information was obtained from the Lancashire SMR, along with aerial photographic information held by Lancashire County Council. There were 15 known archaeological sites recorded on the Lancashire SMR in the vicinity of the assessment area, three of which actually lay within the area itself, and another was adjacent to its northern boundary. A search was made for previous archaeological work in the area, which comprised an assessment report (LUAU 1992a) and building recording (LUAU 1992b) carried out in advance of the construction of the original windfarm. No sites were noted on available aerial photographs. Geological information was obtained from Ordnance Survey maps held in Lancaster University Library.
- 2.1.2 Manuscript maps and selected other documents were studied in the Lancashire Record Office (PRO), along with published antiquarian sources. There were no available manuscript maps in the PRO, neither were there any title or enclosure maps for the area. Available maps and plans were restricted to the Ordnance Survey (OS) 6 inches to one mile, first edition maps of 1848 (Sheets 64 and 64). There were many documents relating to the historical parish of Cliviger, in which the study area lies, although very few were of direct relevance. A list of the documents consulted is given in *Section 7*.

2.2 IDENTIFICATION SURVEY

- 2.2.1 A systematic surface inspection of Green Clough, Cartridge and Short Edge Pastures was undertaken to ensure complete coverage of the ground. The majority of both study areas consisted of upland pasture and moorland; the ground was walked on 30m transects to identify earthworks and extant surface features. The archaeological detail was mapped to an accuracy of $\pm 0.5\text{m}$, using differential Global Positioning System (GPS) techniques, which use electronic distance measurements along radio frequencies to satellites to enable a fix in latitude and longitude. These were subsequently converted mathematically to Ordnance Survey National Grid.

2.3 GAZETTEER OF SITES

- 2.3.1 All of the information concerning archaeological sites in the affected areas has been collated into a gazetteer (*Appendix 1*), which provides details of their location, origin, and character. Locations are given as eight or ten-figure National Grid References where possible. A summary description of each site is provided in conjunction with a reference to the source of the information (SMR, cartographic, documentary, field inspection) with references as appropriate, and an assessment has been given of the interpretation and archaeological potential of the site. The sites have been marked onto a digital map showing their position (Figs 2 and 3). Other sites beyond the extent of the study area, which were considered to be of background relevance, are mentioned in the text with appropriate SMR references.

2.4 ARCHIVE

- 2.4.1 A full archive of the desk-based study and the field inspection has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Lancashire Record Office with a copy to the Lancashire Sites and Monuments Record and a copy will be available for deposition to the National Monuments Record.

3. TOPOGRAPHY

3.1 LOCATION AND GEOLOGY

- 3.1.1 The study area is centred on SD 8980 2825 (Figs 1 and 2) at, or just below, the 300m AOD contour line. It is in an area of enclosed moorland on hills overlooking the Calder Valley to the south-west, and is east of the settlement of Holme Chapel. It comprises an 'L'-shaped area around an existing windfarm, to the south of the Long Causeway, a minor road running from Mereclough to Hebden Bridge.
- 3.1.2 The solid geology comprises rocks of the Carboniferous series, with Middle Coal Measures across most of the study area, but with Lower Coal Measures to the south and west, divided by a fault (OS 1948). Glacial overflow channels run west and south from the Long Causeway, leading to streams running down to the settlements of Holme Chapel and Cornholme.

4. RESULTS

4.1 DESK-BASED STUDY

- 4.1.1 **Prehistoric and Roman:** the only known feature of possible prehistoric date was a small oval cairn (3m x 2m) (Site 1) which was reported within the southern part of the current study area (LUAU 1992a). There were also three earthwork sites of unknown date, none of which lay within the study area. The first (Site 6) was a sub-semicircular enclosure with sub-division, but the other two (Sites 7 and 8) were probably fairly recent and perhaps relate to mining or Limestone hushings.
- 4.1.2 Although there are no other known sites of prehistoric date, and none known of Roman date within or around the study area, the antiquarian historian Whitaker recorded the discovery of some sites in the seventeenth and eighteenth centuries, which are imprecisely located and could be from this locale. In 1695 a Roman coin hoard was discovered in the township, '*on the skirts of the wild moors which border upon Yorkshire*', and in 1773 he obtained two enamelled copper fibulae, discovered when quarrying for stones for the turnpike road above Holme (Whitaker 1876, 195). He also recorded a tumuli, destroyed in 1763 when stones were removed for the new turnpike road, which contained a skeleton in a cist, and another, which was opened in 1766, contained an urn (1876, 195). The locations of these finds have been lost, but the reference to the turnpike road, which was built along the line of the Long Causeway, indicates that they must have been in the vicinity of the study area. Surveys by LUAU (Howard-Davies, 1996) in Southern Lancashire have demonstrated that upland areas typically contain a scatter of prehistoric burial mounds and also, in exposures through the peat there are often scatters of flint and chert lithics, pertaining to hunting activity from the Mesolithic to Neolithic periods.
- 4.1.3 **Medieval:** in the medieval period, the study area was situated within the historical parish of Whalley and township of Cliviger (Farrer and Brownbill 1911, 478). The name Cliviger was first documented in 1196 as Clivercher, and is Old English in origin, meaning 'cliff acre' (Ekwall 1922, 84). The name derives from the location of the township, which originally lay mainly on the steep slope rising from the north bank of the River Calder. The ancient parish of Whalley was very large, including three forest districts up until 1507, and comprised 35 townships in the post-medieval period (Whitaker 1872, 218); it formed part of the important medieval lordship of the Honor of Clitheroe, first held by the De Lacy family (Farrer and Brownbill 1911, 349). The township of Cliviger lay in the south-eastern corner of the parish, on the boundary with Yorkshire, and in the late nineteenth century was described as an extensive though not very populous district (Whitaker 1876, 192).
- 4.1.4 In the medieval period, around 1160, one carucate, or a ploughland, of land in Cliviger was granted to Kirkstall Abbey probably by Hugh de Elland, who held the land of the De Lacy family (Farrer and Brownbill 1911, 479). The Abbey established a grange, or monastic farm, in Cliviger, although in 1287 the land was surrendered to Henry de Lacy, the chief lord (Farrer and Brownbill 1911, 480). The grant included the estate of Holme, which lies to the south-west of the study area, and although there is no evidence to show that the grant incorporated the area of moorland which comprises the study area, it would have included areas of waste.

The Holme estate passed into the hands of the De la Legh family, and from there to the Tattersalls, who were in possession in the 1380s (Mather 1894, 49-50; Whitaker 1876, 203). By 1430 the estate became the property of the Whitaker family (Baines 1870, 40; Farrer and Brownbill 1911, 482), in whose hands it remained.

- 4.1.5 Much of the land around Holme appears to have been unenclosed moorland, over which the De la Legh family had right of free warren, that is a licence to keep and kill game birds and beasts (Richardson 1989, 24). There is little archaeological evidence of medieval activity in the area, and what there is relates to the Long Causeway, known as an ancient trackway and a probable packhorse route (Site 2), with three associated wayside crosses (Sites 23-5), one of which (Site 3) lay at the northern boundary of the study area. According to Whitaker, most of Cliviger was open country, ‘*excepting a few patches of culture about the villages*’, and it was not until the beginning of the eighteenth century that the first sheep fences were erected (1876, 212-3).
- 4.1.6 **Post-Medieval:** there were known to be 952 acres of enclosed cultivatable land in Cliviger in 1602. From the beginning of the eighteenth century, more land was brought in from the waste and enclosed, making a total of 1,324 acres by 1734, and a further 300 acres in 1795. A document dated between 1735 to 1765 records the intentions of the local landholders to enclose the commons of Cliviger (PRO DDT0/B/9/1-7), but the remainder of the common land was not enclosed until 1809 (Whitaker 1876, 216). There are surviving features associated with the enclosures of the moorland, such as a probable shepherd’s hut built into an enclosure wall (Site 19), and a fold (Site 21) marked on the OS first edition map of 1848, but which is not shown on modern maps. There is only one farmhouse in the area, Warcock Farmhouse (Site 20; LUAU 1992b) which dated to the seventeenth or eighteenth century and was perhaps associated with the enclosures of that date. The field names recorded on the OS first edition maps of 1848 were also probably associated only with the enclosures, and provide no information on any earlier activity. The names indicate allocations of land to individuals at enclosure, for example, Catridge (or Cartridge) Pasture, Bent’s Pasture, Hartley’s Pasture, and Bradget Hey. The latter name contains the element hey, which derives from Middle English and merely means an enclosed piece of land (Field 1972, 270).
- 4.1.7 **Industrial:** coal had been mined in the township of Cliviger from the medieval period onwards. The accounts of Henry de Lacy for Cliviger in 1296 include amongst the feudal dues 3d from the sea coal sold there (Farrer and Brownbill 1911, 480). This coal was almost certainly mined in Cliviger as it was of so little value and would not have been worth transporting over any distance. Although this early reference to coal probably does not indicate that it was worked on any scale, there are documents from the early post-medieval period onwards which demonstrate the continuing presence of coal mining in Cliviger. In 1556-7 Queen Mary granted all the ‘coole-mynes’ and ‘coole-pitts’ in Cliveger (*sic*) to Thomas Whitaker, although he then transferred the rights to John Townley for £20 in 1567 (Whitaker 1876, 237). A bundle of documents in the Townley archive from 1572 to 1692 (PRO DDT0 K/3/1-4), and another covering the year 1589-90 (PRO DDT0/O/9/39) relate to coal mines in the area, the latter referring to a moiety (or part) of a mine demised to Thomas Whitaker by John Townley. This mine had been demised by the Queen in 1575-6 to Thomas Bulbecke and later to Robert Ballthroppe. There are further documents which show that coal mining continued

throughout the seventeenth, eighteenth and nineteenth centuries (PRO DDT0/I/3/1-2, 1636-1661; PRO DDT0/D/28/1-3, 1737-1844).

- 4.1.8 The locations of the documented coal mines are not known, however, a document from 1739 (PRO DDT0/D/28/1-3) records that William Townley had leased the rights to mine coal within '*all and every customary and copyhold land and wasted within the township of Cliviger*'. This would have included the study area, where there are three old coal mine sites both within and around it. The largest site (Site 9) lay to the east of the study area and comprises about a dozen pits. Within the study area were two sites, one comprising three pits (Site 10) and the other one pit (Site 11). Both may be associated with the building marked as Coal Pit House (Site 23) in 1848, which lay just to the south of the study area. In addition to coal mining, there were other extractive industries in this area, mainly sandstone quarries (Site 12-17), recovering both building stone and rubble, and also a large area of limestone hushings to the north of the study area (Site 18). Again, the same document that leased coal mining rights to William Townley, also gave him the right to '*slate mines and pits and quarries of slate flags and limestone with full liberty to dig and delve for the same and to sink shafts*' (PRO DDT0/D/28/1-3, 1739).

4.2 IDENTIFICATION SURVEY

- 4.2.1 The field survey identified a total of 26 sites, 20 of which had not previously been identified. Of these new sites nine were agricultural, such as boundary banks, six related to mining, and three to quarrying, with the remaining sites functioning as reservoirs. Three sites are duplicated in the desk-based study (Sites 10, 11, and 14) and three sites are represented on OS maps (Sites 36, 46 and 48). A 3m wide round cairn was reported within the study area (Site 1; *Section 4.1.1*), although the reported location was extensively searched during the present survey, but it could not be located. There is a possibility that the site has become obscured by the vegetation since it was previously visited.
- 4.2.2 **Agricultural Sites:** the field survey identified four field boundaries (Sites 25, 28, 29 and 37) that were additional to those marked on modern 1:10,000 OS maps. With the possible exception of Bank 25, none had a direct relationship with the present enclosure field boundaries; they are not particularly straight and may reflect survivals of an earlier field-system. The boundaries sited around Green Clough were associated with modern drainage (Sites 24 and 26); their furrow intervals varied between 2.5m and 3m and all were orientated downslope.
- 4.2.3 Site 44 was a small single-celled sheepfold and was probably contemporary with the enclosure wall abutting it to the south.
- 4.2.4 **Mining Sites:** mine shafts were identified extending in a south-west/north-east band, following a seam, through Area B, and partly extending into Area A (Sites 10, 11, 14, 35, 40 and 41). Sites 11, 40 and 45 were isolated shafts, each being about 3m across with a small depression and edged by a prominent bank; although, Site 45 is notable in being up to 12m across. Sites 10, 14, 35 and 41 each represent groups of shafts and as such reflect a considerable amount of non-intensive coal extraction. Some of these (Sites 10 and 14) are depicted on the Ordnance Survey first edition maps (1848) as mine shafts. Those that are not shown on the OS first edition maps (1848) may potentially post-date the mapping, but may also predate

the maps, having fallen out of use by the time of their creation. The largest, however, and by implication the most productive mine (Site 46), was to the north of the band of mines. It was not shown on the OS first edition map (1848), but is shown on modern maps and the implication is that it was of relatively recent date. It was located at the south-western end of a substantial embanked tramway (Site 48) which provides access between the mine and the Long Causeway. The structure comprises a platform constructed of large ashlar blocks with various sockets and rebates for a substantial machine, which may have been the winding gear for the shaft. The shaft, however, was not evident and may be obscured by spoil to the north-west. In association with the workings was a large spoil heap, 50m to the west and also a decayed wall which may be the relict remains of a works' office.

- 4.2.5 Associated with the cluster of shafts (40 and 41) was a reservoir and dam, about 30m from the shafts. The dam faced towards the shafts and undoubtedly supplied them, but an additional outlet runs out to the south-east. A further reservoir (43) was identified, being an 8m diameter mound, which has an outfall to the south-east.
- 4.2.6 **Quarrying Sites:** the survey identified three new stone quarries (Sites 34, 36 and 42). The largest quarry (Site 36) reflected a relatively large amount of extraction and probably supplied buildings stone to the Calder Valley to the south-west. Sites 34 and 42 were adjacent to dry-stone walls and probably reflect small-scale quarrying for boundary walls.

5. DISCUSSION

5.1 ARCHAEOLOGICAL CONTEXT

- 5.1.1 **Early Activity:** the documentary study identified the presence of a putative prehistoric cairn within the study area, although this could not be confirmed by the identification survey. It, coupled with the tumuli destroyed in 1763 by the construction of the turnpike along the Long Causeway, demonstrates the potential for prehistoric elements within the local landscape. Similarly there are references to Roman finds from the environs, one of which was recovered during the construction works for the turnpike (*Section 4.1.1*).
- 5.1.2 **Communications:** one of the most significant elements within the area is the Long Causeway (Site 2) which has been a routeway for some considerable period, as evidenced in part by the wayside crosses (Sites 3-5). This has acted as a channel and focus for activity throughout an extended period and inevitably there is a propensity of archaeological sites and finds within its vicinity, although not necessarily within the study area. The evidence of relict boundaries within the area (Sites 25, 28, 29 and 37), which pre-date the obvious post-medieval enclosures, suggest that there was also earlier agricultural activity, both within the environs and also in the study area.
- 5.1.3 **Coal Mining:** the communications through the area may also have encouraged industrial extraction, and coal mining in particular. The identification survey revealed major concentrations of mining activity throughout the eighteenth to twentieth centuries from within the study area. There is a broad swathe of mines at Riddle Scout, and the Cartridge Clough concentration (Sites 39-41) provides further evidence of extraction. There is also the more intensive and later (post-1848) working in Short End Pasture (Sites 46-8). The substantial scale of coal working in the area provides testament and justification for the Coal Clough name which relates to a beck just east of the study area.
- 5.1.4 **Potential:** the study has revealed a locally important resource, and the study area does include areas of upland peats which may conceal further archaeological sites and deposits. Therefore, despite the apparent relative dearth of findspots, there is the potential that there are buried remains from the prehistoric and other periods into the proposed areas of development.

6. IMPACT AND RECOMMENDATIONS

6.1 IMPACT

- 6.1.1 This assessment has highlighted the archaeological resource within and around the study area at Coal Clough. Field walking has identified 26 sites with surface expressions, of which three were also identified from documentary sources (10, 11, 14). In general the archaeological material has the potential to be of local importance, comprising typical examples of post-medieval agricultural features, mining and also sandstone quarrying.
- 6.1.2 The generalised impact of the construction of the turbines can be assessed, albeit in broad terms. The individual turbines will have a relatively small footprint, but it is anticipated that the site preparation and clearance of the ground cover will involve disturbance of the ground over an area of about 16-20m diameter. In addition to the turbines, the greatest overall ground disturbance will result from the construction of access roads, which will link the turbines. Similarly, the excavation of trenches for power cables may have a direct impact upon archaeological monuments. At present the layout of the communications has not been designed, but this layout should allow for any archaeological constraint.
- 6.1.3 **Relative Impact in Areas A and B:** the principal resource in both areas is the remains of mining; Area B is aligned the line of a coal seam and there is a large number of small, non-intensive and potentially early mine shafts. By comparison Area B has a smaller density of shafts but does include the larger, and later, Site 46-8 mine complex. Although only a limited resource has been identified in association with the Long Causeway, principally the relict field system (Sites 25-28) and the Maiden Cross (Site 3), there is the potential for further sub-surface remains in Area A. In general terms both areas are broadly comparable, Area A having only localised mining remains, but it is adjacent to the early communication route.
- 6.1.4 LUAU has been provided with a proposed turbine configuration for Area A, but not for Area B. The proposed configuration in Area A will have only a limited impact upon the identified archaeological resource. Turbine 1 is to be sited in the north-west corner of Short Edge Pasture; turbines 2 and 3, however, are to be sited to the east of Green Clough. The turbines are remote from any identified archaeological features other than the modern drainage at Site 24, which is of low significance.

6.2 RECOMMENDATIONS

- 6.2.1 It is strongly recommended that, as the first option, the monuments identified by the present assessment be preserved *in situ*. The code of conduct for the Institute of Field Archaeologists states that members should seek to achieve as the first option, the preservation of archaeology *in situ*, and only if this is neither possible nor practical then is it appropriate in some cases to undertake further work to mitigate the effect of development. Defined below is a series of options for mitigating and evaluating the archaeological resource in advance of and during the proposed development.
- 6.2.2 **Avoidance Options:** the two areas (A and B) are broadly comparable and for both it would be possible to avoid the identified resource as the size of the area, coupled

with a relatively low-density turbine distribution, provides for considerable latitude in the siting of individual turbines and roads. For the most part the sites are individual entities and therefore avoidance of the individual monument is an adequate solution. In these instances turbine and road construction should be at least 30m away from the edge of an identified monument to ensure that both the monument and its topographic context are undisturbed. With industrial groups or archaeological landscapes, however, each individual monument is only one element of an interrelated complex, and any construction within the group will damage the contextual and topographic relationships that define the broad archaeological landscape. It is therefore necessary that each monument group be treated as a whole rather than as a collection of independent entities.

- 6.2.3 **Mitigation Survey:** if any sites are affected by the final design of roads or turbine construction, they should be surveyed in detail, to create a record of their current extent and features as mitigation for their eventual destruction. In conjunction with this cartographic recording an oblique photographic record of the site should be generated.
- 6.2.4 **Evaluation:** there is the potential for surviving below ground archaeological features, and it is therefore recommended that the turbine footprints be evaluated by trial trenching. This would be necessary to establish the nature, extent, date and detailed character of any sites or buried features. It is possible that this work may demonstrate the need for further recording and this should be discussed with the county archaeological curator. If further evaluation is required, this should be conducted in sufficient time to allow for final recording of sites of particular significance prior to construction.
- 6.2.5 **Watching Brief:** there is the potential for prehistoric sub-surface sites within the extent of the study area and it is thus recommended that a watching brief be undertaken during any topsoil stripping for the construction of the turbines and roads.

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APPENDIX 1 GAZETTEER OF SITES

Sites 30, 32 and 33 were survey sites coincident and duplicated by documentary sites and have been omitted from the gazetteer

Site number	01
Site name	Cartridge Pasture
NGR	SD 89044 27892
Site type	Cairn
Period	Bronze Age?
Source	LUAU 1992a
Description	A small, oval cairn, 3m by 2.5m in size. The reported location of the cairn was extensively searched during the identification survey, but no remains were identified.
Assessment	The site lies within the southern part of study area B.

Site number	02
Site name	The Long Causeway
NGR	SD 8788 3000 – SD 9000 2848
Site type	Trackway
Period	Medieval
Source	SMR 1823
Description	A portion of an ancient road or packhorse track.
Assessment	The site lies along the northern edge of study area A.

Site number	03
Site name	Maiden Cross
NGR	SD 8937 2882
Site type	Cross
Period	Medieval
Source	SMR 1824
Description	The site of a stone cross, which was erected along the Long Causeway (Site 02) supposedly by the monks of Whalley as a guide to travellers. All that survives is a plain slab of millstone grit in the roadside wall.
Assessment	The site lies just outside the north-eastern edge of the study area.

Site number	04
Site name	Duke's Cross
NGR	SD 8978 2859
Site type	Cross
Period	Medieval
Source	SMR 1825
Description	Site of a stone cross, erected on the southern side of the Long Causeway (Site 02) supposedly by the monks of Whalley as a guide to travellers.
Assessment	The site lies to the north-east of the study area.

Site number	05
Site name	Stiperden Cross
NGR	SD 9037 2831
Site type	Cross
Period	Medieval
Source	SMR 1826

Description	The site of a stone cross, erected along the Long Causeway (Site 02) supposedly by the monks of Whalley as a guide to travellers.
Assessment	The site lies to the east of the study area.

Site number	06
Site name	Green Clough
NGR	SD 8804 2889
Site type	Earthwork
Period	Unknown
Source	SMR 2472
Description	The faint traces of a sub-semicircular enclosure with sub-division. It was noted on SMR aerial photograph 1478.
Assessment	The site lies to the west of the study area.

Site number	07
Site name	Shedden Clough
NGR	SD 8938 2926
Site type	Earthwork
Period	Unknown
Source	SMR 2471
Description	A large flat-topped circular mound, which was very regular. It was noted on SMR aerial photographs 1479-1481.
Assessment	The site lies to the north of the study area.

Site number	08
Site name	Robin Cross Hill
NGR	SD 8831 2952
Site type	Earthworks
Period	Unknown
Source	SMR 3284
Description	A number of small pits, which were possibly a product of mining.
Assessment	The site lies to the north-west of the study area.

Site number	09
Site name	Coal Clough
NGR	SD 9034 2723
Site type	Coal mine
Period	Pre-1848
Source	SMR 6739; OS first edition map (1848)
Description	A coal mine marked on the OS first edition map of 1848, comprising a series of a dozen pits marked along the length of Coal Clough.
Assessment	The site lies to the east of the study area.

Site number	10
Site name	Cartridge Pasture
NGR	SD 8914 2798; SD 8914 2802; SD 8914 2795
Site type	Coal pits
Period	Pre-1848
Source	SMR 8143; OS first edition map (1848); Identification Survey
Description	These are three coal pits shown on the OS first edition map of 1848. The identification survey identified two, low degraded mounds in this area which may correspond to these shafts. The area has been improved, hence the degraded form of the mounds.
Assessment	The site lies within study area B.

Site number	11
Site name	Short Edge Pasture
NGR	SD 88759 28234
Site type	Coal pit/ Mine shaft
Period	Pre-1848; eighteenth to nineteenth centuries
Source	SMR 8146, Identification Survey 1999; OS first edition map (1848)
Description	An old coal pit marked on the OS first edition map of 1848. It was observed to form a circular depression 3.5m in diameter and 2m deep, which has now become infilled with rubbish (oil drums and a stone gatepost). Partial revetting occurs forming a sharp break of slope along the south-east-facing internal slopes.
Assessment	The site lies within the south-western edge of study area A.
<hr/>	
Site number	12
Site name	Warcock Hill
NGR	SD 8973 2838
Site type	Quarry
Period	Pre-1848
Source	SMR 6748; OS first edition map (1848)
Description	A series of large quarry pits on Warcock Hill marked on the OS first edition map of 1848 as a sandstone quarry (rubble and ashlar).
Assessment	The site lies to the east of the study area.
<hr/>	
Site number	13
Site name	East of Far Pasture
NGR	SD 8932 3000
Site type	Quarry
Period	Pre-1848
Source	SMR 8153; OS first edition map (1848)
Description	An old sandstone quarry marked on the OS first edition map of 1848.
Assessment	The site lies to the north of the study area.
<hr/>	
Site number	14
Site name	Cartridge Pasture
NGR	SD 89247 27808
Site type	Mine shafts
Period	Eighteenth - nineteenth centuries
Source	LUAU 1992a; Identification Survey 1999
Description	A series of pits and mounds from old extraction. They were observed as a series of pits sited 4m north of the existing field wall. The pits are roughly in a north-west to south-east orientation. The largest pit has a 6m diameter and is marked out by tall reed growth in the centre. The pits are up to 0.5m in depth, each having a circular apron of spoil around the depression.
Assessment	The site lies at the centre of study area B.
<hr/>	
Site number	15
Site name	Warcock Hill
NGR	SD 8990 2800
Site type	Quarry
Period	Unknown
Source	LUAU 1992a
Description	A large quarry pit, less than 4m deep, to the south of Warcock Hill. It is marked as a sandstone quarry (ashlar) on the OS first edition map of 1848.
Assessment	The site lies to the east of the study area.

Site number	16
Site name	Coal Clough
NGR	SD 9028 2795
Site type	Earthwork
Period	Unknown
Source	LUAU 1992a
Description	A large depression, c 10m wide enclosed by a bank of variable height. It is probably the remains of an extractive industry.
Assessment	The site lies to the north-east of the study area.

Site number	17
Site name	Warcock Hill
NGR	SD 8975 2828
Site type	Quarry
Period	Pre-1848
Source	OS first edition 1848 map
Description	A sandstone ashlar quarry is marked on the OS first edition map of 1848.
Assessment	The site lies just to the north-east of the study area.

Site number	18
Site name	Shedden Clough
NGR	SD 8950 2950 at centre
Site type	Limestone hushings
Period	Post-medieval
Source	SMR 11179
Description	The centre of a large area of limestone hushings.
Assessment	The site lies to the north of the study area.

Site number	19
Site name	Warcock Hill
NGR	SD 8971 2800
Site type	Structure
Period	Unknown
Source	LUAU 1992a
Description	A small structure, 4m by 2m, incorporated into an enclosure wall. It was possibly a shepherd's hut.
Assessment	The site lies just to the east of the study area.

Site number	20
Site name	Warcock Hill farmhouse
NGR	SD 8979 2818
Site type	Building
Period	Seventeenth - eighteenth century
Source	LUAU 1992a
Description	The Warcock Hill farmhouse is now abandoned and derelict. The visible architectural features indicate a seventeenth to eighteenth century origin with evidence of subsequent alterations.
Assessment	The site lies just to the east of the study area.

Site number	21
Site name	Warcock Hill
NGR	SD 8970 2850

Site type Sheep fold
Period Pre-1848
Source OS first edition 1848
Description A fold is marked on the OS first edition map of 1848.
Assessment The site lies just to the north-east of the study area.

Site number 22
Site name High Gate
NGR SD 9020 2695
Site type Well
Period Pre-1848
Source SMR 7434; OS first edition 1848
Description A well is marked on the OS first edition map of 1848.
Assessment The site lies to the east of the study area.

Site number 23
Site name Coal Pit House
NGR SD 8904 2769
Site type Buildings and well
Period Pre-1848
Source OS first edition 1848; SMR 8145
Description The SMR records a well here, as marked on the OS first edition map of 1848. The well is sited next to buildings marked Coal Pit House.
Assessment The site lies just to the south of the study area.

Site number 24
Type Drainage channels
Site name Green Clough Enclosures
NGR SD 89137 28937
Period Twentieth century
Source Identification Survey 1999
Description This area within the enclosure walls has been subject to improvement by the digging of narrow parallel ditches on a north-east to south-west orientation (down slope). This feature is more noticeable away from areas of tall reed vegetation.
Assessment The site lies within study area A.

Site number 25
Type Bank
Site name Green Clough Enclosures
NGR SD 89002 29020 to 88870 28977
Period Eighteenth to nineteenth centuries
Source Identification Survey 1999
Description A low earthfast bank, which is 2m wide and approximately 150m long. This linear feature is in a broadly south-west / north-east orientation and it curves following the contours of the hillside. At its western end the bank survives as a drystone wall in association with the existing field pattern noted on the current Ordnance Survey map. The bank delineates the steep slopes of the upper Green Clough valley to the south-east from ploughed land to the north (Site 26).
Assessment The site lies within study area A.

Site number 26
Type Drainage Ditches
Site name Green Clough Enclosures
NGR SD 88996 29039

Period	Post-medieval
Source	Identification Survey 1999
Description	An area of drainage ditches, which is edged to the south by bank 25 and by the north-east/south-west field boundary, and as such the area forms a small enclosed field. The earthworks appear as faint parallel ditches set at a 2m interval. These ditches are orientated south-west to north-east.
Assessment	The site lies within study area A.
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Site number	27
Type	Trackway
Site name	Green Clough Enclosures
NGR	SD 88980 29023 to 89022 29007
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A linear trackway forms a notable cut into the south-east-facing hillside. It is about 2.5m wide and 40m long and emanates from a crossing point of the Green Clough bog; at this crossing point it has been surfaced with tarmac hard core. The trackway appears to truncate Site 25 and at its north-western extent the drainage feature (Site 26) truncates it.
Assessment	The site lies within study area A.
<hr/>	
Site number	28
Type	Bank
Site name	Green Clough Enclosures
NGR	SD 88958 29001 to 88973 28971
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A bank which is apparently contemporary with Site 25, forms a right angle to the south-east stopping at the base of the slope at the start of a bog in the upper reaches of Green Clough. The remains of the original drystone wall are extant at the south-east terminal of the bank.
Assessment	The site lies within study area A.
<hr/>	
Site number	29
Type	Bank
Site name	Green Cough Enclosures
NGR	SD 88833 28797
Source	Identification Survey 1999
Period	Eighteenth to nineteenth centuries
Description	An east/west orientated bank, which is earthfast and is 2m wide. There is no direct relationship between it and the enclosure walls. The bank delineates a steep slope to the north from more gently sloping land to the south.
Assessment	The site lies within and extends out of study area A.
<hr/>	
Site number	31
Type	Gateway
Site name	Short Edge Pasture
NGR	SD 88860 28538
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A blocked gateway which is 1.8m wide and 1.75m high. It provided access through the field boundary into Short Edge Pasture.
Assessment	The site lies within study area A.
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Site number	34
Type	Quarry
Site name	Cartridge Pasture
NGR	SD 89226 27799
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	An oval-shaped quarry hollow (15m diameter and 4-5m deep). The site is at the head of a droveway, which turns to the east before accessing Cartridge Pasture. The quarry is turf covered with no evident working faces. It is interpreted as a stone quarry probably for enclosure wall construction.
Assessment	The site lies within study area B.

Site number	35
Type	Mine shafts
Site name	Riddle Scout
NGR	SD 89240 27758
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A zone of shafts varying from 5-8m in diameter and up to 4m deep. The associated spoil heaps are doughnut-shaped around the pit, though the topography has merged with the slope of the hillside. These pits are turf covered and are each marked by a change to reed vegetation.
Assessment	The site lies within study area B.

Site number	36
Type	Quarries
Site name	Riddle Scout
NGR	SD 89374 27656
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A pair of quarries which are marked on the modern OS mapping; they comprise two main linear depressions (20m long by 8m deep). The quarries have steeply inclined scree slopes and extremely narrow floors. The eastern quarry is accessed from the south-east by a trackway (Site 38).
Assessment	The site lies within study area B.

Site number	37
Type	Wall
Site name	Riddle Scout
NGR	SD 89335 27641 to 89387 27650
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	This comprises the decayed remains of a drystone wall which is orientated south-west to north-east. The wall traversed the westerly quarry (site 36) and post it.
Assessment	The site lies within and extends out of study area B.

Site number	38
Type	Trackway
Site name	Riddle Scout
NGR	SD 89396 27632 to 89382 27575
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A trackway forming a sinuous linear depression (2m wide) that cuts into the west-facing slopes of Riddle Scout. The trackway accesses the eastern quarry (Site 36) and gradually descends the slope for 50m before disappearing.
Assessment	The site lies within and extends out of study area B.

Site number	39
Type	Dam
Site name	Cartridge Pasture
NGR	SD 89710 27631
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A dam consisting of a 7m revetted wall which has been breached so that no standing water remains. The dam's outflow would have been directed to the north-east towards the mine shafts at Site 40 and 41 and the two sites may be associated. The dam and reservoir are depicted on the modern OS map (1:10,000).
Assessment	The site lies within study area B.

Site number	40
Type	Mine Shaft
Site name	Cartridge Pasture
NGR	SD 89728 27653
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A single shaft appears to have been edged by the construction of a small wall within the 3m wide depression.
Assessment	The site lies within study area B.

Site number	41
Type	Mine Shafts
Site name	Cartridge Pasture
NGR	SD 89688 27665
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	This is an area of mine shafts; there were at least three shafts with diameters of between 4-9m and each had an apron-like spoil heap extending north-north-west down the hillside.
Assessment	The site lies within study area B.

Site number	42
Type	Quarry
Site name	Cartridge Pasture
NGR	SD 89592 27699
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	This was a quarry cut into the north-east-facing slope above Cartridge Clough; the quarry forms a series of large six depressions with low spoil heaps to the north-east.
Assessment	The site lies within study area B.

Site number	43
Type	Reservoir?
Site name	Cartridge Pasture
NGR	SD 89159 27838
Period	Modern
Source	Identification Survey 1999

Description	A large circular feature, with a 8m diameter and a narrow (2m) spoilheap/bank sited around the feature to the south and east. The site enjoys a good aspect to the south-east. It appears to be a water-related feature, possibly a small reservoir. It has an incoming drain from the west and an outgoing one to the south-east.
Assessment	The site lies within study area B.

Site number	44
Type	Sheep Fold
Site name	Cartridge Pasture
NGR	SD 88878 28008
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A small single-celled enclosure, which is orientated north-west to south-east. This 'L'-shaped feature appears to abut the adjacent field wall. The fold extends north-east and is 2.5m wide by 7.5m long and has an entranceway towards the north-west. The remains of the walls do not exceed 0.2m and are not earthfast.
Assessment	The site lies within study area B.

Site number	45
Type	Mine Shaft
Site name	Short Edge Pasture
NGR	SD 88940 28258
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A large oval-shaped depression (12m long by 8m wide); the sides are turf covered and the spoil remains as a doughnut around the depression. The depression is partially filled with farm rubbish, stone from field clearance episodes across Short Edge Pasture (which is still peppered with large stones).
Assessment	The site lies within study area A.

Site number	46
Type	Mining Platform
Site name	Short Edge Pasture
NGR	SD 89089 28453
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A platform located at the south-western end of an embanked trackway (Site 48); it is 1.5m high and is 6m by 8m in size. It is constructed from large ashlar sandstone blocks with various sockets and rebates to the upper surface, suggesting a substantial superstructure, probably a winding gear for a deep mine shaft. There is a prominent spoil heap 7m to the east and in between is a partially collapsed wall, suggestive of a building now obscured by spoil.
Assessment	The site lies within study area A.

Site number	47
Type	Spoil Heaps
Site name	Short Edge Pasture
NGR	SD 89047 28475
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	A series of low heaps, which are up to 1.5m high 20m wide (north/south) by 20m long. The spoil heap is linked to Site 46 by a 30m causeway, again 1.5m high. The spoil heaps are marked by a vegetation change to short grass in contrast to the taller grasses in the surrounding field.
Assessment	The site lies within study area A.

Site number	48
Type	Trackway
Site name	Short Edge Pasture
NGR	SD 89425 28826 to 89693 28442
Period	Eighteenth to nineteenth centuries
Source	Identification Survey 1999
Description	An embanked trackway which links Site 46-7 with 'The Long Causeway' to the north-east. The embankment consists of industrial slag and is up to 2m high by 4m wide. There are no associated features such as rails to suggest that it was anything other than a trackway.
Assessment	The site lies within study area A.

ILLUSTRATIONS

- Fig 1 Site Location Plan
- Fig 2 Coal Clough Windfarm Site Plan
- Fig 3 Study Area Plan



based upon the Ordnance Survey 1:50,000
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Fig 1: Coal Clough Windfarm, Lancashire, Location Map

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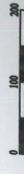
TEL: 01524 848666



PROJECT:

Coal Clough Windfarm
Lancashire

DRAWING No: 3



DRAWN BY: JQ

DATE: November 99

NOTES:

- KEY
- Study area
 - Documentary Sites
 - Survey Sites
 - Proposed Turbine Sites

TITLE:

General Site Plan

COMMISSIONED BY:

Renewable Energy Systems Ltd

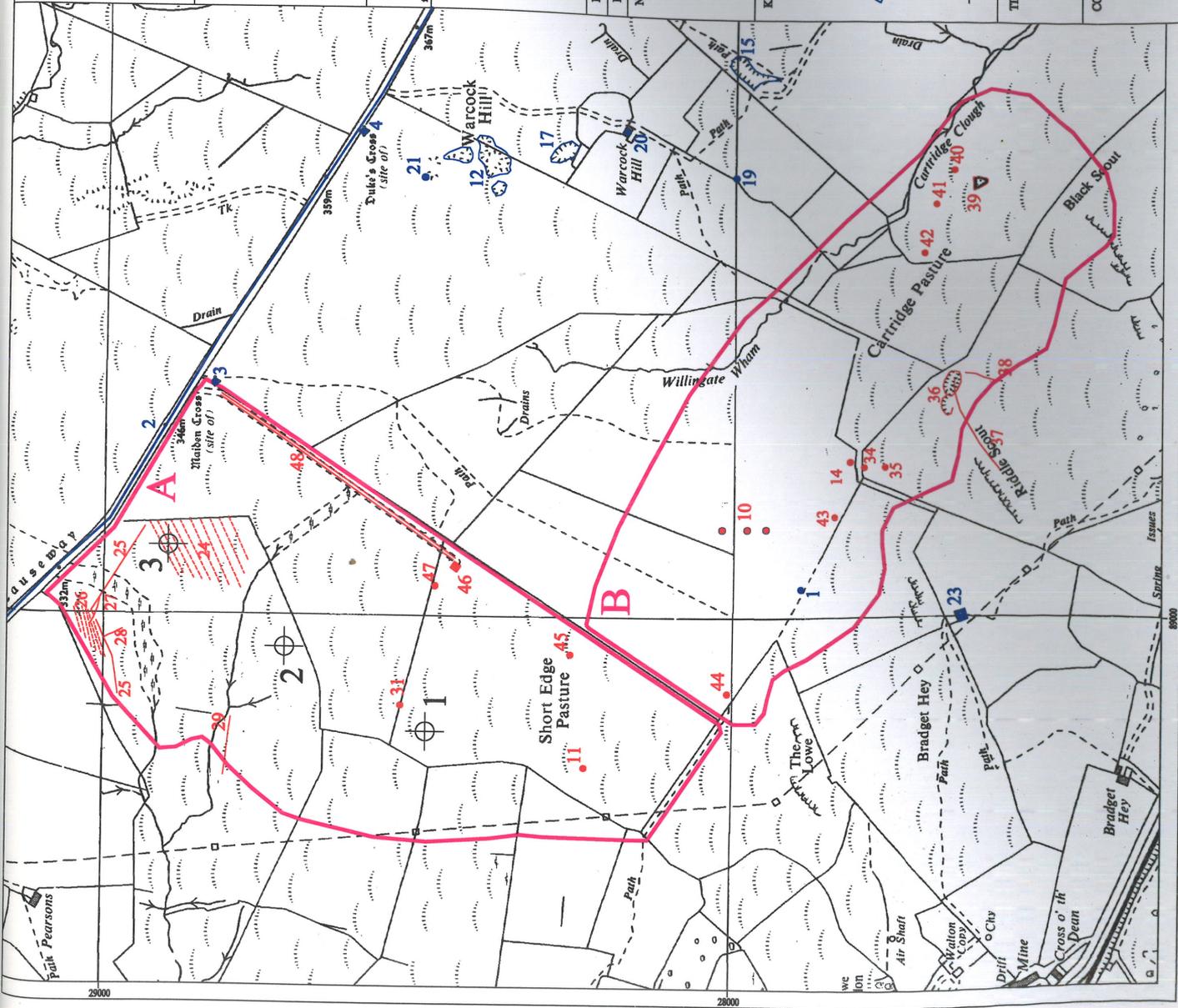


Fig 3: Study Area Plan