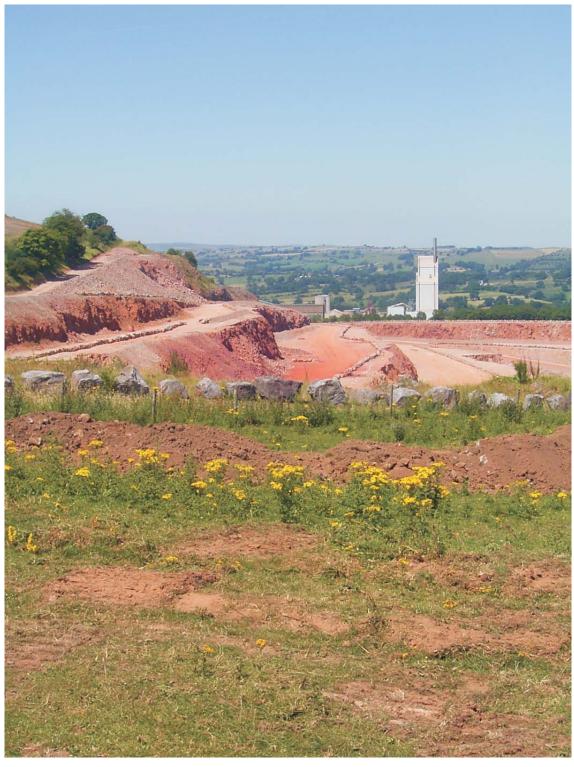
# LCUK Cauldon Works, Staffordshire

Proposed Extension to Limestone Quarry: Archaeological Evaluation Report



Ref: 63500.03 September 2006

# **Archaeological Evaluation Report**

Prepared for
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Report reference: 63500.03

September 2006

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# **Archaeological Evaluation Report**

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## **Archaeological Evaluation Report**

#### **Summary**

Wessex Archaeology was commissioned by Lafarge Cement UK to undertake an archaeological evaluation of land immediately south of its current limestone quarry at Cauldon, Staffordshire. LCUK propose to expand the Cauldon quarry works into the evaluation area (centred on NGR 408694 348046, 'the Site'), and an evaluation was required by Staffordshire County Council to determine the archaeological potential of the Site.

Apart from the recently infilled remains of a small, historically mapped, quarry pit at the northwestern extent of the Site, no archaeological features or finds were identified during the evaluation. Indentations in the local surface topography examined were confirmed by the trial trenching as limestone fissures.

# **Archaeological Evaluation Report Acknowledgements**

The project was commissioned by Lafarge Cement UK through Dr Chris Down, and Wessex Archaeology is particularly grateful to Dr Down and Keith Rowland (Quarry Manager, Cauldon Works) in this regard. Thanks are also extended to Steve Dean, Historic Environment Officer (Archaeology), Staffordshire County Council, for his advice and assistance.

The fieldwork was undertaken by Mike Trevarthen, Laura Catlin, and Simon Reames, with additional help by Andy Baines.

This report was prepared by Mike Trevarthen, with illustrations by Elizabeth James. The project was managed for Wessex Archaeology by Brigitte Buss and Paul McCulloch.

## **Archaeological Evaluation Report**

#### 1 INTRODUCTION

### 1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Lafarge Cement UK (LCUK) to undertake an archaeological evaluation of 3.2 ha of land immediately south of existing limestone quarry works at Cauldon, Staffordshire and north of Rue Hill (centred on NGR 408694 348046, hereafter 'the Site', **Figure 1**). LCUK propose to expand their quarry works into the area of the Site, and the evaluation was commissioned in preparation of an Environmental Statement which will be submitted in support of a planning application for the quarry extension.

### 1.2 Site Description

1.2.1 Underlying solid geology comprises Carboniferous limestone. The main part of the Site occupies a gently domed spur of land, falling away steeply to the east beyond the Site limit, and more gently to the north. Local ground-levels in the wider environs vary considerably; within the Site, surface elevations ranged from a maximum of approximately 329m above Ordnance Datum (aOD) to a minimum of approx. 310m aOD.

### 1.3 Archaeological and Historical Background

1.3.1 The archaeological setting of the Site has previously been discussed in an Archaeological Desk-based Assessment undertaken by Wessex Archaeology for all proposed quarry extensions (**WA doc ref 53946.01, Revision 1**). The study identified several localised scatters of worked flint to the south and southwest of the current Site, with material ranging in date from Mesolithic through to the Bronze Age. Evidence of historic quarrying within the Site had also been identified from historic mapping.

#### 2 METHODS

#### 2.1 Aims and objectives

- 2.1.1 The fieldwork methods, aims and objectives of the evaluation were established in the Project Design (WA doc ref 53946.02) and Addendum (WA doc refs 63500.01 and 63500.02) and are not re-iterated in full here. In summary, the aims of this phase of evaluation were:
  - To investigate the prehistoric potential of the proposed extension the limestone quarry

- To record the remains of previous industrial exploitation of the landscape within the proposed extension to the limestone quarry
- To give attention to remains of all periods, including palaeoenvironmental indicators

### 2.2 Methodology

- 2.2.1 A trench layout was agreed prior to the commencement of fieldwork, however none were specifically targeted on known archaeological features or anomalies.
- 2.2.2 The positions and/or orientations of several trenches were subsequently modified, primarily in response to local ground-conditions, above-ground obstacles, or due to Health and Safety considerations with regard to excavation on slopes. Variations to the designed layout are represented in **Figure 1** and are summarised as follows:

### **Table 1 – Trench layout variations**

- Trench 1 Southern end shifted several metres west to avoid machine excavation through an old, partially infilled extraction pit
- **Trench 3** Redesigned in response to availability of land within the newly laid-out quarry fence
- **Trench 4** Re-sited to investigate a low knoll, forming the highest topographic point within the main field (specifically to address the potential for a funerary round-barrow)
- **Trench 5** Northern end of trench re-aligned to run directly downslope, instead of obliquely across the break of slope
- **Trench 9** Alignment modified as a result of stakeout error
- Trench 10 Repositioned to investigate land above a linear group of localised old extraction pits. Lengthened to compensate for shortening of Trench 12 (see below)
- **Trench 11** Recorded in former position of Trench 10. Alignment modified due to stakeout error. Eastern end curtailed to avoid machining near groundwater monitoring borehole
- Trench 12 Alignment modified to avoid linear arrangement of old extraction pits along natural break of slope. Western end curtailed to avoid extant field-wall
- Trench 14 Southern end curtailed to avoid severing site-access. Anecdotal evidence from quarry staff is that ground beneath north end comprises modern fill tipped into a localised hollow, therefore avoided.

- 2.2.3 Upon completion of excavation, trench edges and bases, and the positions of drawn plans and sections were recorded using GPS survey equipment, allowing these to be located accurately within the Ordnance Survey National Grid.
- 2.2.4 In accordance with the project design, a 10 litre sample of topsoil and subsoil from each trench was hand-sieved on site for the recovery of worked flint. Additionally, a rapid visual scan of excavated topsoil and subsoil was undertaken. No worked flint or other artefacts were retrieved as a result.
- 2.2.5 Upon completion of monitoring by SCC's Curator, the trenches were backfilled by LCUK. No specialist re-instatement was required or undertaken.

### 2.3 Confidence rating

2.3.1 Although machining of the subsoil/bedrock interface presented considerable difficulty, clean and controlled stripping of the relatively stone-free, silty topsoil and subsoil layers was unproblematic, and weather and ground conditions were favourable throughout the duration of the investigation. Archaeological visibility overall was therefore good, and a high degree of confidence regarding the observation of archaeological deposits was achieved.

#### 3 RESULTS

#### 3.1 Introduction

- 3.1.1 Trench locations are indicated in **Figure 1**, and deposit data from all trenches is presented in the trench summary tables included in **Appendix 1**. Selected representative trench plans and sections are presented as **Figure 2**.
- 3.1.2 No archaeological features were identified, and only scarce unstratified finds were recovered. With the exception of a single sherd of post-medieval tile from the topsoil in **Trench 9**, all were demonstrably recent or modern in date, reflecting casual discard, or possibly occasional manuring with domestic waste.

### 3.2 Deposit sequence

3.2.1 A consistent soil-sequence was seen in the majority of trenches (see **Figure 2**):

*Topsoil* 

3.2.2 Topsoil appeared to have developed from longstanding use as pasture. It comprised a mid-greyish brown, slightly clayish silt, usually stone-free, but with occasional small-large limestone pieces. Rare items of modern pottery etc. were noted.

- Subsoil and natural deposits
- 3.2.3 Subsoil comprised a mid-yellowish brown subsoil of similar composition and inclusions. Some sub-division of the subsoil was noted, although this is probably a result of post-depositional disturbance and sorting. The base of subsoil graded into an intermittent mid yellow, orange, or sometimes reddish brown clay-silt (occasionally silty clay, rarely purer clay), set around and between bands and other outcrops of weathered, geologically inclined Carboniferous limestone.

#### Previous quarrying activity

- 3.2.4 The modern infill of a small quarry was identified in **Trench 15.** This is could be identified as the quarry indicated on the Ordnance Survey 25 inch map of 1881 discussed in the Desk-Based Assessment (**Figure 2**). Anecdotal evidence suggested that final infilling and levelling of the resulting hollow did not take place until recent years, and the discovery of wood fragments, broken glass and fragments of plastic sweet-packet amongst its grey, stone-free clay-silt fill confirms this.
- 3.2.5 Two localised patches of sterile, darker grey-brown soil noted in adjacent **Trench 14** may similarly relate to quarry backfilling, or alternatively may represent localised soil formation environments within bedrock-hollows.

#### Possible limestone fissure [104]

- 3.2.6 A large east-west aligned limestone fissure, recorded as [104], (or possibly a collapsed cave system) was identified at the southern end of **Trench 1** (see **Figure 2**, **Plate 2**). This feature is reflected in the Site's surface topography as a steep-sided coombe, albeit exaggerated in places by small extraction pits.
- 3.2.7 This feature is at least 7m wide, although its southern edge was not exposed, and the true width may be between 8-10m. It was mechanically excavated to 1.55m below ground level (BGL measured at the base of the surface depression), then hand-augured to an additional 1.15m without any stone inclusions or significant change in fill composition being encountered.
- 3.2.8 Two fills were defined during the feature excavation: the upper deposit (105), was a mid-red silty clay, whilst the lower fill, (106), was a mid-orange brown silty clay. No artefacts were recovered from either fill.

#### 4 FINDS

#### 4.1 Finds summary

4.1.1 All objects recovered were of post-medieval or modern date. This small collection has no potential for further analysis, and is not recommended for long-term curation. **Table 2** presents a breakdown of the finds by material type and by context.

#### Table 2: All finds by context (number / weight in grammes)

Context	Trench	C.B.M.	Glass	Pottery
101	1			1/3
201	2			1/9
701	7			1/2
901	9	1/64		
1201	12			1/37
1508	15		1/38	
TOTAL		1/64	1/38	4/51

CBM= Ceramic Building Material

#### 5 ENVIRONMENTAL SAMPLING

5.1.1 No features or deposits suitable for environmental sampling were identified.

#### **6 CONCLUSIONS**

- 6.1.1 The absence of evidence for modern ploughing and the often undisturbed soil sequences observed across much of the Site indicated favourable preservation conditions for archaeological features. However, no archaeological features were discovered and the absence of pre-modern finds across the Site indicates a minimal likelihood of any such activity present.
- 6.1.2 Evidence of historic quarrying, as previously identified by the Desk-Based Assessment, was confirmed by the evaluation, but is of limited local significance. Knowledge regarding this historic activity is unlikely to be enhanced by further archaeological exploration.
- 6.1.3 The extent and depth of the possible limestone fissure (Feature [104]) at the southern end of **Trench 1** remains uncertain. Although some potential for the recovery of palaeo-environmental from this feature remains, no dating evidence was located within its fills during the evaluation, therefore indicating a low potential for a meaningful interpretation of any such assemblages.
- 6.1.4 No archaeological, or significant historical, remains were identified within the Site during the evaluation, and its archaeological potential is therefore considered low to negligible.

#### REFERENCES

Wessex Archaeology (2004a) LCUK Cauldon Works, Staffordshire: Archaeological and Cultural Heritage Assessment, WA doc ref 53946.01

Wessex Archaeology (2004b) LCUK Cauldon Works, Staffordshire: Proposed Extensions to Limestone and Shale Quarries: Project Design for Initial Archaeological Evaluation, WA doc ref 53946.02

- Wessex Archaeology (2006a) LCUK Cauldon Works, Staffordshire: Proposed Extensions to Limestone and Shale Quarries: Addendum to the Project Design for Initial Archaeological Evaluation, WA doc ref 63500.02
- Wessex Archaeology (2006b) Cauldon Works, Staffordshire: Supplementary Documentation to Project Design for Initial Archaeological Evaluation. WA doc ref 63500.01

# **APPENDIX 1: Trench summary tables**

TRENCH 1 (no	Length: 38.80 m	Width: 2.70 m	May	Depth: 1.55 m
Context	Description Description	Width. 2.70 m	Wiax	Depth BGL
101	1 0 1	brown slightly clayish but with rare-occasion	-	0.00 - 0.19m
102		I-light yellowish to oran usually stone-free but vone fragments.	_	0.19 - 0.31m
103	Natural deposits: Rub	obly limestone.		0.31m +

TRENCH 1 (south	TRENCH 1 (southern end)			
101	Topsoil: Mid-greyish brown slightly clayish silt,	0.00 - 025m		
	generally stone-free but with rare-occasional			
	limestone fragments.			
102	Subsoil: Variable mid-light yellowish to orange-	0.25 - 0.60m		
	brown clayish silt, usually stone-free but with			
	rare-occasional limestone fragments.			
105	Fill of 104: Mid-red silty clay, usually stone-free	0.60 - 1.15m		
	but with rare-occasional limestone fragments.			
106	Fill of 104: Orange-brown silty clay, no coarse	1.15 2.70m +		
	natural components. Lenses of manganese			
	inclusions at lower interface			
104	Large limestone fissure: natural in origin.			
	Known to be at least 2.70m deep, but full extents			
	and depth not determined.			

TRENCH 2				
Max. Dimensions	Length: 59.0 m	Width: 2.70 m	Max	. Depth: 1.12 m
Context	Description		-	Depth BGL
201	Topsoil: Mid-greyish	brown slightly clayish	silt.	0.00 - 0.18
	Stone-free but with	rare-occasional limes	stone	
	fragments.			
202	Subsoil: Variable mic	d-light yellowish to ora	inge-	0.18 - 0.44m
	brown clayish silt, usually stone-free but with			
	rare-occasional limestone fragments.			
203	Colluvium/solifluctio	n deposit? Mid ora	nge-	0.44 - 0.91
	brown silty clay, most	ly stone-free.	_	
204	Natural deposits: Rubbly limestone with patches			0.91m +
	of yelloy, red and grey	clay.		

TRENCH 3			
Max. Dimensions	Length: 43.0 m	Width: 2.70 m Ma	x. Depth: 0.76 m
Context	Description		Depth BGL
301		brown slightly clayish silt, but with rare-occasional	
302		d-light yellowish to orange- isually stone-free but with one fragments.	

303	Natural deposits: Yellow/orange-brown silty clay with common limestone fragments, giving way to bedded limestone.			0.47m +
TRENCH 4				
Max. Dimensions	Length: 26.3 m	Width: 2.70 m	Max.	Depth: 0.31 m
Context	Description			Depth BGL
401		brown slightly clayish but with rare-occasion	-	0.00 - 0.25m
402	_	Yellow/orange-brown s mestone fragments, giv ne.	-	0.25m +

TRENCH 5					
Max. Dimensions	Length: 51.5 m	Width: 2.70 m	Max.	Depth: 0.51 m	
Context	Description	-		Depth BGL	
501	Topsoil: Mid-greyish	brown slightly clayish	silt,	0.00 - 0.20m	
	generally stone-free	but with rare-occasion	onal		
	limestone fragments.				
502	Subsoil: Variable mid	Subsoil: Variable mid-light yellowish to orange-			
	brown clayish silt, u	brown clayish silt, usually stone-free but with			
	rare-occasional limesto	rare-occasional limestone fragments.			
503	Natural deposits:	Natural deposits: Yellow/orange-brown silty 0.			
	clay with common li	mestone fragments, giv	ing		
	way to bedded limesto	ne.			

TRENCH 6				
Max. Dimensions	Length:47.5 m	Width: 2.70 m	Max.	Depth: 0.54 m
Context	Description			Depth BGL
601		brown slightly clayish to but with rare-occasion	-	0.00 - 0.18m
602	Subsoil: Variable mid-light yellowish to orange-brown clayish silt, usually stone-free but with rare-occasional limestone fragments.			0.18 - 0.26m
603		Yellow/orange-brown s mestone fragments, giv ne	-	0.26m +

TRENCH 7				
Max. Dimensions	Length: 46.6 m	Width: 2.70 m	Max	. Depth: 0.77 m
Context	Description			Depth BGL
701		brown slightly clayish but with rare-occasion	-	0.00 - 0.38m
702		I-light yellowish to orar isually stone-free but vone fragments.		0.38 - 0.64m
703	_	Yellow/orange-brown simestone fragments, givene	•	0.64m +
		·		

TRENCH 8				
Max. Dimensions	Length: 47.1 m	Width: 2.70 m	Max	Depth: 0.62 m
Context	Description			Depth BGL
801	1	<b>Topsoil</b> : Mid-greyish brown slightly clayish silt, generally stone-free but with rare-occasional limestone fragments.		
802	brown clayish silt, u	<b>Subsoil</b> : Variable mid-light yellowish to orange-brown clayish silt, usually stone-free but with rare-occasional limestone fragments.		
803	_	Yellow/orange-brown simestone fragments, givene		0.57m +

TRENCH 9				
Max. Dimensions	Length: 52.1 m	Width: 2.70 m	Max.	Depth: 0.61 m
Context	Description	-	-	Depth BGL
901		brown slightly clayish but with rare-occasion	_	0.00 - 0.23m
902		of mid-light orange-bro stone-free but with ra ragments.		0.23 - 0.37m
903	<b>Subsoil</b> : Mid-orange free.	brown clayish silt, sto	one-	0.37 - 0.61m
904		Orange-red-brown silty one fragments, giving wa	-	0.61m +

TRENCH 10				
Max. Dimensions	Length: 51.0 m	Width: 2.70 m	Max.	Depth: 0.51 m
Context	Description			Depth BGL
1001		brown slightly clayish but with rare-occasion	-	0.00 - 0.24m
	limestone fragments.			
1002	Subsoil: Variable mid	l-light yellowish to oran sually stone-free but wone fragments.		0.24 - 0.39m
1003	_	Yellow/orange-brown s mestone fragments, giv ne	-	0.39m +

TRENCH 11				
Max. Dimensions	Length: 37.2 m	Width: 2.70 m	Max	. Depth: 0.52 m
Context	Description			Depth BGL
1101	Topsoil: Mid-greyish	brown slightly clayish	silt,	0.00 - 0.18m
	generally stone-free	but with rare-occasion	onal	
	limestone fragments.			
1102	Subsoil: Variable mid	l-light yellowish to oran	ige-	0.18 - 0.52
	brown clayish silt, u	sually stone-free but v	vith	

	rare-occasional limestone fragments.	
1103	Natural deposits: Yellow/orange-brown silty clay with common limestone fragments, giving way to bedded limestone	

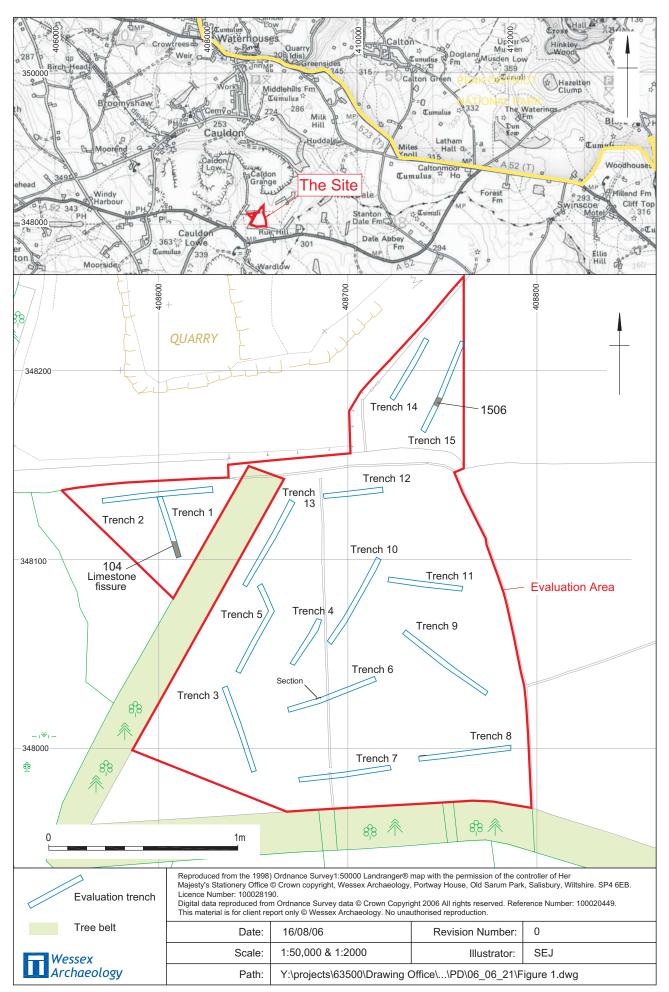
TRENCH 12			
Max. Dimensions	Length: 30.2 m	Width: 2.70 m	Max. Depth: 0.63 m
Context	Description		Depth BGL
1201	generally stone-free	brown slightly clayish so but with rare-occasion	-
	limestone fragments.		
1202		I-light yellowish to orang isually stone-free but wone fragments.	·
1203	<b>Subsoil</b> : Mid-orange free.	brown clayish silt, stor	ne- 0.36 - 0.63m
1204	_	Yellow/orange-brown si imestone fragments, givi ne	

TRENCH 13				
Max. Dimensions	Length: 49.0 m	Width: 2.70 m	Max	. Depth: 0.67 m
Context	Description			Depth BGL
1301		brown slightly clayish	-	0.00 - 18m
	generally stone-free	but with rare-occasion	onal	
	limestone fragments.			
1302	<b>Subsoil</b> : Variable mid-light yellowish to orangebrown clayish silt, usually stone-free but with rare-occasional limestone fragments.		0.18 - 0.28m	
1303	<b>Subsoil</b> Mid-orange free.	brown clayish silt, sto	one-	0.28 - 0.56m
1304	clay (recorded as siltie	Yellow/orange-brown sor than other trenches), way	vith	0.56m +

TRENCH 14		
Max. Dimensions	Length: 34.5 m Width: 2.70 m	Max. Depth: 0.76 m
Context	Description	Depth BGL
1401	<b>Reinstated topsoil</b> : Mid-greyish brown clayish silt, generally stone-free but voccasional limestone fragments.	
1402	Reinstated subsoil: Variable mid-light to orange-brown clayish silt, usually sut with rare-occasional limestone fragm	stone-free
1403	<b>Subsoil</b> : Mid-orange brown clayish stree.	ilt, stone- 0.29 - 0.58m

1404	Natural deposits: Yellow/orange-brown silty	0.58m +
	clay with common limestone fragments, giving	
	way to bedded limestone. Two sounded patches	
	of sterile dark stone-free soil near north end of	
	trench likely to be naturally formed.	

TRENCH 15		
Max. Dimensions	Length: 47.3 m Width: 2.70 m M	ax. Depth: 1.30 m
Context	Description	Depth BGL
1501	<b>Reinstated topsoil</b> : Mid-greyish brown slightly clayish silt, generally stone-free but with rare	
	occasional limestone fragments.	
1502	Reinstated subsoil: Variable mid-light yellowish to orange-brown clayish silt, usually stone-free but with rare-occasional limestone fragments.	
1503	<b>Dumped soil</b> : 'Dirty' mottled orange and dark brown clay-silt, very compact in places	0.25 - 0.39m
1504	<b>Redeposited rubbly soil:</b> Possibly quarry waster in a mid-orange brown clay-silt matrix.	e 0.39 - 0.66m
1505	Natural deposits: Yellow/orange-brown silty clay with common limestone fragments, giving way to bedded limestone	
1506	<b>Cut of former quarry</b> : Edge seen in plan only Full depth not established.	. 0.66m +
1507	<b>Backfill of quarry</b> : Dark brown silty clay occasional limestone fragments.	, 0.66 – 1.01m
1508	<b>Backfill of quarry</b> : Dark brown – very dark brown silty clay, occasional limestone.	1.01 - 1.30m +



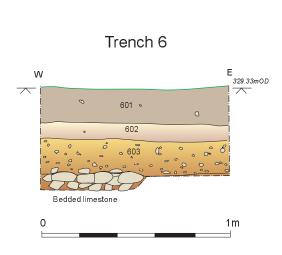




Plate 1. Trench 8 representative section



Plate 2. Trench 1 viewed from the south

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