Extension to Sevenoaks Quarry, Greatness, Kent

An Archaeological Evaluation
for Tarmac Ltd

by Steve Ford
Thames Valley Archaeological Services Ltd

Site Code SQK05/124

July 2006
Summary

**Site name:** Extension to Sevenoaks Quarry, Greatness, Kent

**Grid reference:** TQ 542 577

**Site activity:** Evaluation

**Date and duration of project:** 30th May to 19th June 2006

**Project manager:** Steve Ford

**Site supervisor:** Steve Ford

**Site code:** SQK05/124

**Area of site:** c. 35ha

**Summary of results:** A small area of the site revealed deposits of prehistoric, probably Bronze Age, date. A single undated charcoal-filled pit and a gully were also located elsewhere along with a number of large pits (quarries) of late post-medieval date. A ditch forming the parish boundary was found to have been infilled with late post-medieval material. A small number of stray finds of prehistoric pottery and struck flint were also recovered including a Palaeolithic handaxe. A single medieval sherd was recovered from one of the late post-medieval quarries. Test pitting for Palaeolithic finds failed to reveal either finds or contexts conducive to the survival of *in-situ* Palaeolithic remains. Few of the anomalies indicated by previous geophysical survey were identified in the evaluation trenches.

**Location and reference of archive:** The archive is held at Thames Valley Archaeological Services, 47-49 De Beauvoir Road, Reading, RG1 5NR and will be deposited with Sevenoaks Museum in due course.

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Extension to Sevenoaks Quarry, Greatness, Kent
An Archaeological Evaluation

by Steve Ford

Report 05/124b

Introduction

This study, commissioned by Andrew Josephs Archaeological Consultants Limited, on behalf of Tarmac Limited, Colchester Quarry, Warren Lane, Stanway, Colchester, Essex, CO3 0NN, as part of an assessment of the archaeological potential of land at Sevenoaks Quarry, Kent (TQ 542 577) (Fig. 1). This report constitutes the third (invasive) stage of a process to determine the presence/absence, extent, character, quality and date of any archaeological remains that may be affected by development within the area.

This study has been requested in accordance with the Department of the Environment’s Planning Policy Guidance, *Archaeology and Planning* (PPG16 1990), and the County’s policies on archaeology. The field investigation was carried out to a specification approved by Mr Adam Single, Archaeological Officer with Kent County Council Heritage Service. The fieldwork was carried out during May and June 2006 by Steve Ford assisted by Joanna Pine, Danielle Colls, Jennifer Ryder, Chris Gibson and Mary O’Donahue and the site code is SQK05/124.

The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited at Sevenoaks Museum in due course.

The site

The whole proposal site comprises an irregular parcel of about 35ha, on the northern margins of Sevenoaks. It lies to the north-west of the village of Seal and is bounded to the north by the London–Maidstone railway line and to the south and west by the existing quarry. The parish boundary between Seal and Sevenoaks crosses the site and is partly undefined. The south-east portion of the site lies partly on land that slopes gently down to the east with the remaining parts on land steeply sloping down to the north and forming the valley side of a tributary of the River Darent. The highest points of the site at c. 97m above Ordnance Datum lie to the south-east with the lowest points at c. 70m above Ordnance Datum in the north-west. The highest parts of the site are capped by small areas of relict river gravel (4th terrace and possibly 3rd river terrace) with the remaining higher areas comprising lower greensand (Folkestone Beds). The sloping northern parts of the site comprise Gault Clay,
presumably with some colluvium present on the level ground at the base of the slope though only a thin skim of the latter was observed (BGS 1971). The gravel and greensand deposits contain small amounts of flint and chert.

**Planning background and development proposals**

The site is being promoted for an extension to the existing quarry for mineral (sand) extraction. Information in support of this and a forthcoming planning application with regard to archaeology has been requested, as detailed in *Archaeology and Planning* (PPG16, 1990) and the County Council’s policies on archaeology.

**Archaeological background**

A desktop study has suggested a moderate archaeological potential within the site including a possible cropmark enclosure (Josephs 2005). In summary, the site lies in an area from which only a modest number of previous archaeological sites and finds have been recorded. An indistinct cropmark, possibly of archaeological interest, is present on part of the site. A watching brief during topsoil stripping over part of the quarry to the south revealed nothing of archaeological interest and showed that the area had been disturbed by modern field drains. Non-invasive fieldwork has also been carried out on the site comprising geophysical survey (Tibble 2006) and fieldwalking survey (Ford 2006).

The geophysical survey, using both resistivity and fluxgate gradiometer, identified a number of anomalies interpreted as of archaeological significance. These spread across almost the whole of the proposal area but with greater concentrations in the southern third of the site. It was suggested that these might represent a mixture of prehistoric settlement and medieval or post-medieval kilns (Tibble 2006). Fieldwalking across about half of the area produced an extraordinarily low quantity of finds, comprising just a single sherd of pottery, a single unidentified copper-alloy object, and 21 pieces of struck flint (Ford 2006). The low density of these finds, and their scattered distribution, suggested casual losses in the landscape rather than settlement.

**Objectives and methodology**

Two components of work were required for this stage of the project, namely conventional field evaluation by means of machine trenching, and test pitting of geological strata to assess the potential survival of Palaeolithic deposits. The aims of the evaluation are to determine the presence/absence, extent, condition, character, quality and date of any archaeological or palaeoenvironmental deposits within the area of development. The work was to be carried out in a manner which did not compromise the integrity of archaeological features or deposits.
which might warrant preservation *in situ*, or might better be excavated under conditions pertaining to full excavation.

The specific research aims of this project were:

- to determine if archaeologically relevant levels have survived on the site;
- to determine if archaeological deposits of any period are present;
- to determine the extent to which the geophysical anomalies represent archaeological deposits, and;
- to determine the potential for Palaeolithic deposits within or beneath gravel deposits on the south east portion of the site.

**Results**

*Evaluation trenches*

A total of 44 trenches were dug ranging in length from 18.0m to 52.6m as shown on Figure 2. Most of the trenches were 1.8m wide but two (43, 44) were 0.85m wide. The trenches were dug by 360° and JCB-type machines, both fitted with toothless buckets. The trenches were dug under constant archaeological supervision. A catalogue of the trench details is presented in Appendix 1; test pit details form Appendix 2. Feature details are tabulated in Appendix 3. All spoilheaps were examined for finds and metal-detected.

The majority of the trenches were located in specific consultation with the Kent County Archaeological Officer to test specific or generalized areas of anomalies presented on the interpreted plot of the geophysical survey results (Tibble 2006, fig 6). Several trenches were located to test apparently blank areas in the geophysical plot. Two extra trenches were dug subsequent to the main phase of fieldwork, located to examine the environs of a chance find of a Palaeolithic handaxe lying on the surface.

The trenches located on the sloping ground towards the north and north-west of the site usually revealed topsoil directly overlying gault clay. The latter was variable with orange and grey patches and with some lenses of gravel or stones present in some trenches. Trenches located on the summit towards the south and south-west of the site revealed topsoil overlying a gravelly subsoil overlying gravel and sand. No colluvial deposits were revealed on the lower ground towards the north of the site with the possible exception of the environs of trench 34 where a thin layer of subsoil was observed above the natural clay.

Few trenches contained deposits of certain or possible archaeological interest or even finds recovered from spoilheaps. Most if not all trenches contained land drains suggesting at least three phases of layout and in one
trench the drains were present at a spacing of less than 3m. The trenches with specific archaeological, or potentially archaeological, deposits are discussed below.

**Trench 1**

This trench was 37.5m long and revealed a simple stratigraphy of topsoil overlying orange clay with grey patches and some stone patches. A small pit (8) was largely infilled with charcoal (Figs 5 and 7; Pl. 3). The pit was rectangular with rounded corners in plan (where present within the trench) and was 0.12m deep with a flat base. It is unclear if this feature was one identified by the geophysical survey. No datable finds were recovered from the fill. The charcoal was mostly of oak and Pomoideae family (hawthorn, etc) with a few seeds of oat, rye and barley. It is suggested (below) that the presence of rye indicates a post-Roman date for the formation of the deposit.

**Trench 17**

This trench was 41.1m long and revealed a stratigraphy of topsoil overlying a gravelly subsoil above gravel. Large parts of the western and central parts of the trench were occupied by infilled hollows, all interpreted as quarries. Quarry 7 occupied the south-western end of the trench for 3m. A sondage produced modern brick/tile and glass and this feature was not further investigated. Quarry 5 was 6m across and 0.45m deep and again produced brick/tile and modern bottle glass. It was cut by a pit (4) which was charcoal rich and produced further fragments of modern brick/tile and wood, though it is possible that the latter may have been driven into the feature. Interestingly pit 4 also produced a large base sherd from a green-glazed medieval jug. Nevertheless both features are unambiguously of late post-medieval date. Quarry pit 13 was 13m across and was partly investigated and recorded during the digging of Test Pit 6 just to the north which revealed it to be 0.6m deep with a charcoal rich base.

The geophysical survey suggested the presence of several linear features traversing this trench. Whilst these have not been found, it is possible that the quarry features revealed are responsible for the geophysical anomalies.

**Trench 18**

This trench was 52.6m long and revealed a stratigraphy of topsoil overlying a gravelly subsoil above gravel. Several deposits of certain and possible archaeological significance were revealed. Ditches 1 and 12 were both aligned NW–SE. Ditch 1 was 0.42m deep and 1.2m wide (Figs 6 and 8; Pl. 4). It contained a single gravelly fill
but no datable finds were recovered. Ditch 12 was 0.5m deep and 2.3m wide and also contained a single gravelly fill which was more gravelly at the base. No datable finds were recovered from this feature either.

Feature 2 is either the terminal of a wide shallow ditch, or a pit. The feature is 0.85m wide and 0.35m deep with a flat base. It contained two fills from which were recovered a flint flake and three sherds of prehistoric, probably Bronze Age, pottery. A 40 litre soil sample was sieved for charred plant remains and other finds but apart from a few fragments of unidentifiable wood charcoal, no other material was recovered.

Feature 6 is a posthole 0.25m across and 0.12m deep with a bowl-shaped profile. A single sherd of prehistoric pottery was recovered from its gravelly fill.

Feature 3 is a large hollow 6m wide and 0.45m deep. No datable finds were recovered from its gravelly fill. It is considered that it is a former gravel pit of no great age, its shallowness due to the thin band of gravel present above the clay at this location. The cut for a clay pipe land drain was not visible in either the plan of the trench nor in the section, though this may well be a product of the backfill being indistinguishable from the cut. However, it is possible that the lack of an obvious cut is that the hollow had only been partially infilled when the drain was laid: if so this may suggest a very recent date for its use.

Ditch 1 appears to have been identified by the geophysical survey in terms of its alignment and location. It is also possible that ditch 12 and quarry pit 3 towards the western end of the trench have been located by the geophysical survey though interpretation is far from clear.

Trench 24

This trench was 36.2m long and revealed a stratigraphy of topsoil overlying a gravelly subsoil above gravel. A single posthole (10) was recorded at the western end of the trench. The posthole was 0.3m deep and 0.24m wide. It contained two struck flints and a single sherd of prehistoric pottery. A 5 litre soil sample was sieved for charred plant remains and other finds but apart from a few fragments of unidentifiable wood charcoal, no other material was recovered.

Trench 26 (Pl. 2)

This trench was 26.8m long and revealed a stratigraphy of topsoil overlying orange clay with grey patches. A ditch (9) was 2m across and 0.4m deep with a single fill. This ditch corresponded with the position of the parish boundary between Seal and Sevenoaks. Finds recovered comprised brick/tile and pottery of late 19th-century date. This feature does not appear to have been identified by the geophysical survey. It is also of interest to note
that Trench 21 (Fig. 2) to the north-west also traversed the projected line of the parish boundary but no trace of a
ditch was revealed.

**Trench 34**

This trench was 37.8m long and revealed a stratigraphy of topsoil overlying a clayey subsoil overlying orange
clay with grey patches. What was considered to be a ditch was revealed (11) but on excavation was found to
contain a large diameter (0.3m) clay land drain and so is presumably a collector for the other field drains on the
site. No further record was made. This feature was located beyond the area covered by the geophysical survey.

**Trench 38**

This trench was 32.8m long and revealed a stratigraphy of topsoil overlying a gravel with orange clay with grey
patches to the north. Gully 14 was found at the southern end of the trench and was 0.3m wide and 0.19m deep
aligned west-east. It produced no datable finds. It appears that this feature was identified by the geophysical
survey.

**Trench 40**

This trench was 32.8m long and revealed a stratigraphy of topsoil overlying a gravelly subsoil above sandy
gravel. It was located across a large surface depression for which geophysical survey had indicated a very strong
magnetic anomaly. A 6.5m extension was dug to produce a T-shaped trench plan so as to further define the
extent of the depression and enable a small investigation using the machine. This revealed that the cause of the
anomaly was of modern date, with the infill of the feature containing modern items such as burnt tyres and
wood. The feature was not further recorded A linear feature at the west end of the trench contained modern
bottle glass and was similarly not further recorded.

**Test pits**

A total of 23 test pits were dug. These were nominally 2m x 3m in extent and twenty were located in the area of
3rd gravel terrace identified by the British Geological Survey, towards the centre of the southern portion of the
site. However, a further three test pits (21-24) were dug in the south-eastern portion of the site where further
gravel deposits appeared to be present but were not mapped by the British Geological Survey. All of the pits
were inspected by Dr Simon Colcutt and his detailed report is presented as Appendix 7.
The test pits were all dug by a 360¹-type machine fitted with a ditching bucket under archaeological supervision. Beneath the topsoil and subsoil, the trenches were inspected for post-glacial archaeological finds or deposits prior to the digging of the gravel. This exercise resulted in the discovery of a deposit in test pit 6 interpreted as a quarry pit, which was further located in nearby Trench 17 as feature 13 (above). Beneath the topsoil and subsoil, the gravel was excavated in spits of c. 0.2–0.3m and the spoil spread to facilitate examination for lithic artefacts. This exercise did not reveal any finds of archaeological interest.

**Finds**

*Struck flint*

In all, just 7 struck pieces were recovered, as detailed in Appendix 4. All of the pieces were made of flint but of variable colours (black, honey-coloured). The material was of variable condition with iron stained, patinated and relatively fresh pieces present.

From a search of the spoilheaps and trench bases three pieces were found comprising a broken flake, a broken narrow flake and a possible crested blade (Fig. 4). The latter items are possibly of Mesolithic or earlier Neolithic date. From excavated features, two pieces (a spall and a broken flake) were recovered from posthole 10 in Trench 24 and a further broken flake from pit/ditch 2 in Trench 18. These were associated with Bronze Age pottery and there is no particular reason why they could not be contemporary with the pottery, other than the usual caution regarding the durability of struck flint and hence the possibility that they may be residual.

The final, and most notable item is that of a near complete cordate handaxe of Palaeolithic date. It was found as a surface find on the lower (clayey) area in the north-west portion of the site. It is 76mm long, 53mm at its widest and 24mm thick (Pls 5 and 6). It is mostly stained orange/brown lighter on one side but with a small area of patination. It is frost cracked with about 15% missing. It is slightly rolled with a few areas of modern damage.

*Pottery*

The evaluation resulted in the recovery of just 7 sherds of pre-modern pottery (Appendix 5). Six small body sherds with a combined weight of less than 5g, are all of a soft fabric tempered with calcined flint in varying proportions. They are thought to be of prehistoric date, and from the use of calcined flint as a temper, probably of later Bronze Age or Neolithic date rather than later.
The seventh sherd was of medieval date comprising a fragment of a jug with a finger-tip pinched base (49g). The fabric is tempered with a very fine sparse sand and there are faint traces of a green glaze remaining.

**Metal detecting (spoil heaps)**
The spoil heaps of the evaluation trenches (except for trenches 43 and 44) were scanned by metal detector. Apart from miscellaneous iron objects of modern date, non-ferrous finds were very few and comprised only modern items such as bottle caps. These were not retained.

**Charred plant remains by Lucy Cramp**
Three samples of sediment were taken for environmental analysis. Although finds were limited, two of the features are believed to be Bronze Age in date whereas the third is undated.

Samples measuring 5-40 litres in volume were floated over a 0.25mm mesh and the flots were then assessed under a low-power microscope for preserved plant material. Only one sample (from pit 8, fill 57) contained identifiable plant material, and the remaining two from Bronze Age features 2 (fill 51) and 10 (60) which only contained fragmentary wood charcoal are not considered further. The sample from pit 8 contained a low number of cereal grains and a very high concentration of charcoal pieces, although despite this concentration, the majority was too fragmentary or badly preserved to be identifiable. Transverse sections of identifiable charcoal were examined under a low-power (x7-45) binocular microscope. Whilst this is adequate for *Quercus* charcoal, identification of Pomoideae charcoal should be regarded as cautious. The taxa identified in the sample are presented in Appendix 6. Cereal grains included three of *Avena* sp. (oat). No floret bases were present to distinguish between wild and domesticated species; however, oats were not domesticated until the Iron Age/Roman period in Britain, although these may therefore have been growing as crop contaminants of wheat or barley. A single grain of *Hordeum* sp. (barley) and a grain of *Secale cereale* (rye) were also recovered: the latter would be very unusual before the Iron Age in the British Isles. No weed seeds or cereal or chaff were present to indicate any crop processing activity.

**Conclusion**
The evaluation has been successful in determining the archaeological potential of the proposal site. The trenching has revealed that an area of the site (centred on trenches 18 and 24) contains a modest amount of certain and probable prehistoric activity, represented by a pit/ditch and two postholes which are likely to represent the remains of an occupation site. This area of potential is highlighted on Figure 10. Although the
dating evidence is sparse and uncertain, it is considered that the remains are of later Bronze Age date. Finds were few and the density of cut features low, but this is typical of what would be expected in an evaluation trenching exercise for a short-lived occupation site, of which there are number of examples in the literature for this period. It is possible that two undated ditches in the same area are of similar date.

In the other trenches, finds and deposits of archaeological interest are noteworthy only by their absence. A search of the spoilheaps revealed a few finds of struck flint and a single sherd of prehistoric pottery was also recovered. A small charcoal-filled pit in Trench 1 is undated except for the observation that charred plant remains include species unlikely to be present in a pre-Roman context. A ditch located on the exact position of the parish boundary (undefined on Ordnance Survey maps) in Trench 26 is unlikely to date to much before the late Saxon period and in the slot examined here contained unambiguously Victorian or modern material.

The area where the prehistoric remains were encountered also contained large in-filled pits, which, when producing dating evidence, are unambiguously of late post-medieval or modern date. These appear to be localized quarries dug for gravel.

A proportion of the evaluation trenches were located to examine specific and general anomalies presented on the interpretation plot of the geophysical survey (Tibble 2006, fig 6). One undated ditch (Trench 18) does indeed appear to have been identified by the interpreted geophysical survey. However, a large anomaly interpreted as a possible kiln was shown to be a 20th-century dump in Trench 40. Apart from land drains, other trenches failed to locate archaeological deposits or artefacts with only a variable geology and the multitude of land drains suggested are possible causes of the geophysical anomalies (Fig. 9).

The programme of test pitting to determine the potential of gravel deposits for Palaeolithic archaeology produced two negative outcomes. Firstly, the test pitting produced no artefact of Palaeolithic date from within the gravel. Secondly, the specialist examination of the strata by Dr Colcutt (Appendix 7) has indicated that the gravel present was of high energy formation such that there is no potential for the presence of in-situ or near in-situ Palaeolithic sites in these deposits. It is suggested that these deposits are mid-channel, not close to habitable terrace edges and also that the finer, lower energy sediments forming the upper part of a gravel sequence where Palaeolithic deposits could be preserved in situ are missing (eroded). The Palaeolithic potential of the site is therefore considered to be very low. It is, however, with some surprise that the only Palaeolithic find on this site, a handaxe was found casually, on the surface of the lower lying (clay) part of the site. Few finds of Palaeolithic date are recorded for the environs of the site, although one is approximately located on, or just to the south of the site (Wymer, 1999, map 49). Two additional evaluation trenches in the vicinity of the handaxe findspot
confirmed that there were no localized geological circumstances where in-situ Palaeolithic deposits could have survived.

It is concluded therefore that whilst a small area of the site does contain some deposits of archaeological interest the evidence recovered indicates that these are neither artefactually nor palaeo-environmentally rich, nor dense nor stratigraphically complex and not of a type of site of great rarity. They do, however, merit recording prior to destruction. It is considered that the large remainder of the site has very low archaeological potential and based upon the results of this evaluation would not benefit from further archaeological investigation.

References
Ford, S. 2006, Extension to Sevenoaks Quarry, Greatness, Kent, An archaeological fieldwalking survey, Thames Valley Archaeological Services report 05/124, Reading
Tibble, M, 2006, Geophysical Survey of proposed development area, Sevenoaks Quarry, Greatness, Archaeology South-East report 2244, Ditchling
Wymer, J J, 1999, The Lower Palaeolithic occupation of Britain, Salisbury
## APPENDIX 1: Trench details

0m at south end

<table>
<thead>
<tr>
<th>Trench No.</th>
<th>Length (m)</th>
<th>Breadth (m)</th>
<th>Depth (m)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37.5</td>
<td>1.8</td>
<td>0.40</td>
<td>0-0.25m topsoil; 0.25m + Orange clay (natural geology). Pit 8 at 25m [Plate 3]</td>
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<tr>
<td>2</td>
<td>25.2</td>
<td>1.8</td>
<td>0.30</td>
<td>0-0.3m topsoil; 0.25m + Orange clay with grey patches and some stone (natural geology)</td>
</tr>
<tr>
<td>3</td>
<td>24.0</td>
<td>1.8</td>
<td>0.34</td>
<td>0-0.25m topsoil; 0.25m + Orange clay with grey patches and some stone (natural geology)</td>
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<td>4</td>
<td>26.4</td>
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<td>0.345</td>
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<td>5</td>
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<td>1.8</td>
<td>0.36</td>
<td>0-0.3m topsoil; 0.25m + Orange clay with many gravel patches (natural geology)</td>
</tr>
<tr>
<td>6</td>
<td>27.6</td>
<td>1.8</td>
<td>0.36</td>
<td>0-0.25m topsoil; 0.25m + Orange clay with gravel patches (natural geology)</td>
</tr>
<tr>
<td>7</td>
<td>24.8</td>
<td>1.8</td>
<td>0.35</td>
<td>0-0.25m topsoil; 0.25m + Orange clay with some gravel (natural geology)</td>
</tr>
<tr>
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<td>0.42</td>
<td>0-0.25m topsoil; 0-0.30m Subsoil; 0.30m + Gravel with some clay to north west (natural geology)</td>
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<td>12</td>
<td>24.3</td>
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<td>0.28</td>
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<td>13</td>
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<td>14</td>
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<td>0-0.25m topsoil; 0.25m + Brown/grey clay with some stone (natural geology)</td>
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<td>0.38</td>
<td>0-0.2m topsoil; 0-0.3m Subsoil; 0.3m+ Gravel with some sand patches (natural geology) Quarries 4, 5, 7 and 13</td>
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<td>52.6</td>
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<td>0.46</td>
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<td>19</td>
<td>31.4</td>
<td>1.8</td>
<td>0.38</td>
<td>0-0.3m topsoil; 0.3m + Gravel (natural geology)</td>
</tr>
<tr>
<td>20</td>
<td>26.8</td>
<td>1.8</td>
<td>0.0</td>
<td>0-0.3m topsoil; 0.3m + Gravel (natural geology)</td>
</tr>
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<td>21</td>
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<td>0-0.25m topsoil; 0.25m + Orange and grey clay (natural geology)</td>
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<td>1.8</td>
<td>0.30</td>
<td>0-0.25m topsoil; 0.25m + Grey clay (natural geology)</td>
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<td>34.0</td>
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<td>0.32</td>
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<td>24</td>
<td>36.2</td>
<td>1.8</td>
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<td>0-0.25m topsoil; 0.20-0.32m subsoil; 0.32m + Gravel (natural geology) Posthole 10</td>
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<td>0.40</td>
<td>0-0.20m topsoil; 0.20-0.28m subsoil; 0.28m+ Gravel (natural geology)</td>
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<tr>
<td>26</td>
<td>26.8</td>
<td>1.8</td>
<td>0.40</td>
<td>0-0.20m topsoil; 0.20-0.28m subsoil; 0.28m + Gravel and orange clay (natural geology) Ditch 9 [Plate 1]</td>
</tr>
<tr>
<td>27</td>
<td>31.0</td>
<td>1.8</td>
<td>0.30</td>
<td>0-0.2m topsoil; 0.2m + Orange clay with grey patches (natural geology)</td>
</tr>
<tr>
<td>28</td>
<td>33.9</td>
<td>1.8</td>
<td>0.34</td>
<td>0-0.25m topsoil; 0.25m + Orange clay (N), clayey silt (S) (natural geology)</td>
</tr>
<tr>
<td>29</td>
<td>29.0</td>
<td>1.8</td>
<td>0.40</td>
<td>0-0.20m topsoil; 0.20-0.30m subsoil; 0.30m + Silty clay with gravel (natural geology). Test pit at 27m 1.1m deep</td>
</tr>
<tr>
<td>30</td>
<td>31.5</td>
<td>1.8</td>
<td>0.36</td>
<td>0-0.20m topsoil; 0.20-0.28m subsoil; 0.28m + Orange silty clay (natural geology)</td>
</tr>
<tr>
<td>31</td>
<td>29.6</td>
<td>1.8</td>
<td>0.30</td>
<td>0-0.25m topsoil; 0.25m + Orange clay (natural geology)</td>
</tr>
<tr>
<td>32</td>
<td>36.8</td>
<td>1.8</td>
<td>0.28</td>
<td>0-0.20m topsoil; 0.20m + Orange and grey clay (natural geology)</td>
</tr>
<tr>
<td>33</td>
<td>30.3</td>
<td>1.8</td>
<td>0.30</td>
<td>0-0.20m topsoil; 0.20m + Orange and grey clay with some stone (natural geology)</td>
</tr>
<tr>
<td>34</td>
<td>37.8</td>
<td>1.8</td>
<td>0.38</td>
<td>0-0.25m topsoil; 0.25-0.30m Subsoil; 0.30m + Orange silty clay (natural geology) Ditch/drain 11</td>
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<tr>
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<td>36</td>
<td>31.2</td>
<td>1.8</td>
<td>0.38</td>
<td>0-0.20m topsoil; 0.20-0.30m Subsoil; 0.28m+ Orange and grey clay with some stone (natural geology)</td>
</tr>
<tr>
<td>37</td>
<td>22.9</td>
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<td>0.30</td>
<td>0-0.25m topsoil; 0.25m+ Orange and grey clay with gravel patches (natural geology)</td>
</tr>
<tr>
<td>38</td>
<td>32.8</td>
<td>1.8</td>
<td>0.35</td>
<td>0-0.25m topsoil; 0.25m+ gravel with some orange and grey clay (N) (natural geology) Gully 14</td>
</tr>
<tr>
<td>39</td>
<td>30.6</td>
<td>1.8</td>
<td>0.38</td>
<td>0-0.25m topsoil; 0.25-0.30m subsoil; 0.30m+ Gravel with some sand (natural geology)</td>
</tr>
<tr>
<td>40</td>
<td>32.8</td>
<td>1.8</td>
<td>0.34</td>
<td>0-0.25m topsoil; 0.25-0.30m subsoil; 0.30m+ Gravel with some sand (natural geology). Large area of modern infill</td>
</tr>
<tr>
<td>41</td>
<td>27.5</td>
<td>1.8</td>
<td>0.34</td>
<td>0-0.25m topsoil; 0.25m+ Gravel with some clay (natural geology)</td>
</tr>
<tr>
<td>42</td>
<td>24.8</td>
<td>1.8</td>
<td>0.46</td>
<td>0-0.25m topsoil; 0.25-0.30m subsoil; 0.30m+ Gravel with some sand (natural geology)</td>
</tr>
<tr>
<td>43</td>
<td>20.3</td>
<td>0.85</td>
<td>0.60</td>
<td>0-0.23m topsoil; 0.23m+ Orange and grey clay (natural geology)</td>
</tr>
<tr>
<td>44</td>
<td>22.3</td>
<td>0.85</td>
<td>0.60</td>
<td>0-0.23m topsoil; 0.23m+ Orange and grey clay with gravel patch (natural geology)</td>
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APPENDIX 2: Test pit details

<table>
<thead>
<tr>
<th>Test pit No.</th>
<th>Breadth (m)</th>
<th>Depth (m)</th>
<th>Comment</th>
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<tr>
<td>1</td>
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<td>1.30</td>
<td>3 spits</td>
</tr>
<tr>
<td>2</td>
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<tr>
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<td>2.00</td>
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<td>10 spits</td>
</tr>
<tr>
<td>5</td>
<td>1.8</td>
<td>1.70</td>
<td>11 spits</td>
</tr>
<tr>
<td>6</td>
<td>1.8</td>
<td>1.80</td>
<td>10 spits. Quarry pit 13</td>
</tr>
<tr>
<td>7</td>
<td>1.8</td>
<td>1.35</td>
<td>5 spits</td>
</tr>
<tr>
<td>8</td>
<td>1.8</td>
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<td>10</td>
<td>1.8</td>
<td>1.10</td>
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<tr>
<td>11</td>
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</tr>
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<td>13</td>
<td>1.8</td>
<td>0.90</td>
<td>6 spits</td>
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<td>5 spits</td>
</tr>
<tr>
<td>16</td>
<td>1.8</td>
<td>1.20</td>
<td>5 spits</td>
</tr>
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<td>1.8</td>
<td>1.40</td>
<td>6 spits</td>
</tr>
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<td>18</td>
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<td>2.80</td>
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</tr>
<tr>
<td>23</td>
<td>1.8</td>
<td>2.10</td>
<td>8 spits</td>
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## APPENDIX 3: Feature details

<table>
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<tr>
<th>Trench</th>
<th>Cut</th>
<th>Fill(s)</th>
<th>Type</th>
<th>Date</th>
<th>Dating evidence</th>
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<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>50</td>
<td>Ditch</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>51,58</td>
<td>Pit or ditch terminal</td>
<td>Bronze Age</td>
<td>Pottery and flint</td>
</tr>
<tr>
<td>18</td>
<td>3</td>
<td>52</td>
<td>Quarry</td>
<td>Post-medieval?</td>
<td>-</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>53</td>
<td>Ditch or pit</td>
<td>Post-medieval</td>
<td>Wood, stratigraphy</td>
</tr>
<tr>
<td>17</td>
<td>5</td>
<td>54</td>
<td>Quarry</td>
<td>Post-medieval</td>
<td>Brick/tile, glass</td>
</tr>
<tr>
<td>18</td>
<td>6</td>
<td>55</td>
<td>Posthole</td>
<td>Bronze Age?</td>
<td>Pottery</td>
</tr>
<tr>
<td>17</td>
<td>7</td>
<td>56</td>
<td>Quarry</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>17</td>
<td>8</td>
<td>57</td>
<td>Pit</td>
<td>Post-medieval?</td>
<td>-</td>
</tr>
<tr>
<td>26</td>
<td>9</td>
<td>59</td>
<td>Ditch</td>
<td>Medieval?</td>
<td>Parish boundary, Medieval Land drain fragments</td>
</tr>
<tr>
<td>24</td>
<td>10</td>
<td>60</td>
<td>Posthole</td>
<td>Bronze Age</td>
<td>Pottery and flint</td>
</tr>
<tr>
<td>34</td>
<td>11</td>
<td>-</td>
<td>Ditch/drain</td>
<td>Post-medieval</td>
<td>Pipe</td>
</tr>
<tr>
<td>18</td>
<td>12</td>
<td>61</td>
<td>Ditch</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>17 and TP6</td>
<td>13</td>
<td>62, 63</td>
<td>Quarry</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>38</td>
<td>14</td>
<td>64</td>
<td>Gully</td>
<td>-</td>
<td>-</td>
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APPENDIX 4: Catalogue of pottery

<table>
<thead>
<tr>
<th>Trench</th>
<th>Feature</th>
<th>Fill</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>4</td>
<td>53</td>
<td>Jug base sherd (45 g) with traces of green glaze (Medieval)</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>51</td>
<td>3 sherds (10g) abraded, fine moderate flint tempered, reduced. Prehistoric (Bronze Age)</td>
</tr>
<tr>
<td>18</td>
<td>6</td>
<td>55</td>
<td>1 sherd (1g) abraded/ laminated, coarse, moderate flint tempered, oxidised. Prehistoric (Bronze Age)</td>
</tr>
<tr>
<td>24</td>
<td>10</td>
<td>60</td>
<td>1 sherd (1g) abraded, fine, sparse flint tempered, reduced. Prehistoric (Bronze Age?)</td>
</tr>
<tr>
<td>42 0-5m</td>
<td>burrow</td>
<td>-</td>
<td>1 sherd (3g) abraded, fine moderate flint tempered, oxidised surface, reduced core. Prehistoric (Bronze Age?)</td>
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</tbody>
</table>
APPENDIX 5: Catalogue of struck flint

<table>
<thead>
<tr>
<th>Trench</th>
<th>Feature</th>
<th>Fill</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>2</td>
<td>51</td>
<td>Broken flake</td>
</tr>
<tr>
<td>24</td>
<td>10</td>
<td>60</td>
<td>Broken flake; Spall</td>
</tr>
<tr>
<td>35 5-10m</td>
<td>-</td>
<td>-</td>
<td>Broken narrow flake</td>
</tr>
<tr>
<td>41 10-15m</td>
<td>-</td>
<td>-</td>
<td>Broken crested blade</td>
</tr>
<tr>
<td>42 0-5m</td>
<td>-</td>
<td>-</td>
<td>Broken flake</td>
</tr>
<tr>
<td>TQ 53872 57802</td>
<td></td>
<td></td>
<td>Cordate Handaxe</td>
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**APPENDIX 6: Charred plant remains**

<table>
<thead>
<tr>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td>Cut</td>
<td>8</td>
</tr>
<tr>
<td>Deposit</td>
<td>57</td>
</tr>
<tr>
<td>Sample volume (litres)</td>
<td>5</td>
</tr>
<tr>
<td>Feature</td>
<td>pit</td>
</tr>
</tbody>
</table>

**Cereals**

| Hordeum sp. | barley | 1 |
| Avena sp.   | oat    | 3 |
| Secale cereale | rye    | 1 |

**Charcoal**

| Quercus sp. | oak     | ++ |
| Pomoideae   | hawthorn, apple etc. | ++ |

+ present ++ some +++ much
SEVENOAKS QUARRY (TARMAC)
BAT & BALL ROAD, SEVENOAKS, KENT

GEOARCHAEOLOGICAL (PLEISTOCENE) ASSESSMENT

Produced by Oxford Archaeological Associates Limited under the direction of
S.N. Collcutt
MA(Hons) DEA DPhil FSA

Commissioned by
Thames Valley Archaeological Services Limited

June 2006
1. INTRODUCTION

1.1 On the 2nd June 2006, OAA were commissioned by Dr. S. Ford, of Thames Valley Archaeological Services (TVAS), to provide a geoarchaeological assessment of Pleistocene deposits (presumed gravel terrace remnants) exposed in test pits within a planned northeasterly extension (centred at TQ 544 574) to Sevenoaks Quarry (Tarmac), Kent.

1.2 Accordingly, the author, Dr. S.N. Collett, attended the site on the 6th June. A sufficiently dense pattern of 20 test pits had previously been opened by machine, using a spit system, in order that TVAS could check the fill for possible Palaeolithic artefacts or associated remains (in the event, nothing of archaeological significance was recovered, pers. comm. S. Ford). All these pits were re-opened on the 6th, for the geoarchaeological assessment, with the machine available both to establish good exposures and to create stable (usually stepped) faces which could be safely observed. This set of 20 pits was located in the northwestern part of the extension area, Test Pit 2 (TP2) giving GPS co-ordinates of TQ 54296 57487 ± 5 m and a surface altitude of 95 m (8 satellites). A further set of 3 test pits was opened in the southeastern part of the extension area, TP22 giving GPS co-ordinates of TQ 54508 57425 ± 4 m and a surface altitude of 92 m (9 satellites).

1.3 The BGS (England & Wales Sheet 247 solid & drift) map the geological basement as Folkestone Beds (sands from which being the current economic mineral in this quarry) capped, over much of the extension area, by the Gault (clays with some glauconitic sands) wedging out southwards in the hilltop exposures. The BGS also map an isolated patch of "4th terrace" Pleistocene sands & gravels, which is the material targeted in the northwestern set of 20 test pits. There are no Pleistocene deposits mapped at the location of the southeastern set of 3 test pits (targeted in the present project due to stony topsoils), although the BGS show "3rd terrace" sands & gravels 200 300 m further still to the southeast (beyond the quarry boundary). These terraces would appear to relate to a rightbank tributary of the River Darent, that tributary running east-west in the valley north of the quarry, with a further short streamway and cul passing northwards from around Seal to join the main tributary.

2. OBSERVATIONS & LITHOGENESIS

Northwestern Test Pit Set (TP 1-20)

2.1 The following observations were made (see TVAS report for pit locations):
TP1 A gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP2 (Fig.3) A coarsely stratified very clayey gravelly deposit, with iron and manganese staining, similar to that in TP4, but with a very thin sandier gravel interval (no internal structure) downwards, above basal clay (Gault).
TP3 A gravelly deposit, very similar to that in TP4 but with more manganese deposition in the top of the reddish-brown clayey gravel, above basal clay (Gault).
TP4 (Fig.1) 0-0.5 Subsoil
0.5-1.5 Poorly to very poorly sorted, reddish-brown clayey medium gravel and sand; some zones of matrix-support, other of clast-support, no coherent fabric; large amorphous patches of clay (Gault-derived), sometimes quite clean and sometimes stony or even armoured (possible mudballs); pithole forms throughout, some drilled into underlying clay; total absence of fine depositional structures or graded intervals.
1.5+ Grey clay (Gault), with ripped and sometimes potholed upper boundary,
TP5 A thin gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP6 A thin gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP7 0-0.5 Subsoil
0.5-1.0 Poorly to very poorly sorted, reddish-brown clayey medium gravel and sand; some zones of matrix-support, others of clast-support mostly as gravel stringers with incipient imbrication (nose-up westwards); small amorphous patches of clay (Gault-derived); patch of clayey sand apparently caught in the top of a pithole; absence of fine depositional structures.
1.0+ Grey clay (Gault), with upper (erosion) boundary dipping consistently southwards within test pit.
TP8 A thin smear of clayey finer gravel between subsoil and basal clay (Gault).
TP9 A very thin smear of clayey gravel between subsoil and basal clay (Gault).
TP10 A very thin smear of clayey gravel between subsoil and basal clay (Gault).
TP11 A very thin smear of clayey gravel between subsoil and basal clay (Gault).
TP12 A very thin smear of clayey gravel between subsoil and basal clay (Gault).
TP13 (Fig. 2)
0.0-0.4 Topsoil (10YR 3/3).
0.4-0.75 Very sandy, gravelly subsoil (10YR 4/4).
0.75-0.8 Clayey gravel (10YR 5/4).
0.8-0.9 Clayey medium to coarse sand, with textural tail of fine gravel; contorted boundaries; no surviving internal bedding structure (10YR 5/5).
0.9-1.3 Very poorly sorted, clayey medium gravel and sand; chaotic structure; irregular patches of more or less stony clay; (10YR 6/4 with blotches of 5YR 4/6 or stronger orange).
1.3+ Clay (Gault), with ripped and sometimes potholed upper boundary (2.5Y 5/2 with orange streaks).

TP14 A thin smear of clayey finer gravel between subsoil and basal clay (Gault).
TP15 A very thin smear of clayey gravel between subsoil and basal clay (Gault).
TP16 A gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP17 A coarsely stratified gravelly deposit, very similar to that in TP11, above basal clay (Gault).
TP18 A thin gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP19 A thin gravelly deposit, very similar to that in TP4, above basal clay (Gault).
TP20 A very thin smear of clayey gravel between subsoil and basal clay (Gault).

2.2 The gravels in this area appear to be dominated by well rounded, fine grained quartzites, followed by rounded Chalk flint (mostly edge-rounded fragments of nodular forms but also with edge-rounded angular clasts). There are small amounts of coarser cobbles and very well rounded sandstone clasts (mostly in the finer gravel range).

2.3 Very little can be said concerning the lithogenesis of the gravely intervals in these test pits, beyond the fact that it is very likely that this is indeed fluvial sediment, since the base of the gravels seems to drop a little to the north. It is possible that the thalweg (centre line) of the river lay in that direction. However, the generally chaotic structure implies 'tectonic' emplacement during the early, incision stage of 'terrace' formation. Such a style is very different from the more mature structure, with bedding features produced by steady and lower energy flows, to be expected later in each aggradation. There are certainly no traces of individual channel forms or of 'sandbars' with laminated fine sediments. There is no evidence of emergence at any point in the observed sequence, all the fluvial sediments present having been deposited under deep water conditions.

Southeastern Test Pit Set (TP 21-23)

2.4 The following observations were made (see TVAS report for pit locations):
TP21 Poorly sorted and stratified slightly clayey very sandy medium gravel, above grey clay and thin seams of green-tinted glauconitic sands (presumed Gault).
TP22 (Figs. 4 and 5)
0.0-0.6 Subsoil
0.6-1.5 Poorly to very poorly sorted, clayey sandy medium gravel; some zones of matrix support, others of clast support, with strong gravel stringers; amorphous patches of clay (Gault-derived), sometimes quite clean and sometimes stony or even armoured (possible mudballs); irregularly cross-stratified throughout, major beds 20-30 cm thick dipping down very strongly (32-35°) towards an apparent bearing of approximately 220° (cf. Fig. 5, in which the main bed boundaries have been picked out in red); some clay seams and/or basal scours on foresets between main units.
1.5+ Grey clay with sandy partings (Gault), with strongly ripped (westward diag) and sometimes potholed upper boundary.

TP23 Strong orange, poorly sorted slightly clayey sand with finer gravel, all showing coarse and irregular large-scale high-angle cross-bedding (cf. TP22) dipping to the west (but apparently no structure at lamina-scale), above very thin clay over glauconitic sands (possibly true Greensand, with Gault only as a thin wedge).

2.5 The gravels in this area appear to be dominated by edge-rounded but rather platy clasts of coarser quartzites and sandstones (including some ironstones). There are only very rare flint clasts, mostly nodular but with even rarer chattered pebbles (secondary clasts derived from a marine sediment source).

2.6 The lithogenesis of the gravely intervals in these test pits shows similarly 'chaotic' conditions to those evidenced in the northwestern set. The new element is the large-scale coarse cross-bedding. Such bedform structures imply very rapid lateral movement of high-angle depositional fronts (for instance, on the advancing face of a megaripple), coupled with very active accretion (not just sinuous migration). Basically, a lot of fast flowing water would be needed, with a lot of sediment (as suspended, saltation and bedload), such that the large bedforms could be created.
rapidly without much sorting or resolution of fine structure. Truly "torrential" emplacement during the early, incision stage of "terrace" formation would again have been the context. The appearance of cross-bedding here is perhaps due simply to a greater availability of source sediment more likely to give mobile bedforms (i.e. sand and platy gravel), as compared with the stickier sediment in the northwestern area, which would be more likely to remain more or less in place once dumped. It should be stressed that much, if not all, of the gravelly sedimentation, whether seen in the southeast or the northwest area, may represent an extremely short timescale, perhaps even a single flood season in each case.

**Terrace Morphostratigraphy**

2.7 Based upon the apparent difference in gravel lithology and the slight difference in altitude, it is suggested that two different terrace remnants are present, one (older) remnant in the northwestern zone and one (a little younger) in the southeastern zone. Whether the latter is low enough to be attributed to the BGS "3rd. Terrace" seems doubtful (not low enough), especially since the cross-bedding dips suggest local flow direction towards a bearing generally in the western sector.

2.8 It is clear that only the very basal expression of each terrace sequence now survives; all the overlying fluvial sediments (commonly >5 m thicknesses in well preserved deposits with this range of textures) have been stripped, presumably mostly by later Pleistocene cold stage mass movement. Holocene agriculture would be enough to have obscured any residual erosion structures (see below).

3. **ABSENCE OF CRYOGENIC FEATURES**

3.1 At no point in the test pit exposures were unequivocal macroscopic cryogenic (ground-ice) features (such as ice-wedge casts or gelification structures) observed. However, since all the presumed Pleistocene deposits have a generally "chaotic" aspect, it is reasonable to consider whether the current state is due more to post-depositional processes than to original processes of deposition.

3.2 Mitigating against the proposition that the observed state is dominantly post-depositional is the fact that small-scale features, in practice always associated with large-scale structures, are also absent. There are no microfauna, no cryostructure pockets or stone-nests, no pressure-sintering or pressurised clast orientation, no fluidic injection structures, no cracking or verging overprinted on warped boundaries, no tight and especially no overturned folding – none of the features usually seen in even small exposures when ground-ice has affected existing deposits, either by inducing pressure between freezing fronts or by causing mass movement during thaw over frozen substrates. The slope angles in the immediate vicinity are not high enough to produce mass movement (gelification) in deposits of these textures in the absence of ground-ice.

3.3 In the special case of the coarse but steeply dipping beds in TP22 and in the somewhat similar case (not so closely observed for safety reasons) of TP23 (both interpreted above as primary fluvial cross-beding), one might wonder whether, in reality, this might be material that has been drawn down on the flank of a very large ice-wedge, too large to be perceived given the scale of the available test pit. However, not only are the small-scale features (noted above) again absent, but the toes of the coarse beds clearly "plunge" (sometimes somewhat erosively) against the underlying clays (cf. Gault); this geometry simply cannot be part of a "cone" of warped sediments in the neck of a major ice-wedge.

3.4 Whilst there may well be microscopic signs of ground-ice (e.g. silt lensing), or even some dispersed macroscopic structures, in these deposits, there is no evidence to cast doubts on the proposition that at least the broad "style" of the deposits is an accurate reflection of the primary depositional mode under "torrential" fluvial conditions.

4. **ARCHAEOLOGICAL IMPLICATIONS**

4.1 The fluvial deposits exposed in the test pits all represent rapid, aggressive erosion/deposition in deep water. There are no periodically emergent forms (sand or gravel banks) upon which humanins could have "camped". Even if a primary archaeological site had been formed on a nearby river bank, the process of incorporation into the observed deposits would have dispersed the archaeological material, and mixed it with objects eroded from other sites, beyond all hope of recovery of meaningful assemblages.
4.2 As was noted above, TVAS have recovered no Palaeolithic material from the test pits during the other evaluation stages (superficial trenching and fieldwalking) in the vicinity of the fluvial remnants (although it is understood that one find has been made at lower altitude in the proposed extension site on land underlain by the Gault). There are no published Palaeolithic finds from the immediate vicinity; the general spread of Early (and Middle) Palaeolithic material across this region is shown by Wymer (1999), with the nearest occurrence being a minor find from terrace gravel (presumably the "3rd. Terrace" of the BGS) at Great Oaks Farm (approximate NGR TQ 545 572).

4.3 All the deposits encountered (save for contexts deeper within the basal clays) show strong oxidation and fluctuating groundwater levels; ancient soft organic tissues would not survive in such material. There are no well stratified sequences covering significant durations in which suites of more robust palaeoenvironmental indicators might have survived. Larger bone fragments might have survived the depositional process and have become fossilised in indomitable salts (although none have been discovered to date) but there would be no meaningful assemblages. The erosion and sedimentation rates would have been so high that there would have been no time to reset useful physical parameters; dating approaches relevant to the likely Pleistocene time frame (such as palaeomagnetism, optically stimulated luminescence or microtephra correlation) could certainly not be applied to these deposits.

5. SUMMARY

5.1 The river gravels observed in test pits in the proposed northeasterly extension to Sevenoaks Quarry all represent very rapid and chaotic deposition at the early stage of valley incision normally expected to occur at the start of Pleistocene (Ice Age) cold phases. Two sets of gravels seem to be present, one in the northwestern and one in the southeastern, probably of slightly different age. Later, in each case, the river system would have built up more ordered deposits but, due to subsequent slope erosion, all such deposits have since been removed, leaving only the thin traces of the initial fluvial activity.

5.2 Ancient man cannot have lived 'on' such constantly underwater sediments. Nor would any archaeological material or accompanying biological material as may have fallen or been eroded into the torrential river be likely to have remained intact and well associated or grouped. Even isolated stone artefacts, which are often robust enough to survive very rough treatment, have not been observed during the evaluation. These gravels have no significant potential for Palaeolithic (Old Stone Age) archaeology.

FIGURES

Fig.1 (SEV060806-2b) TP4 (viewer looking eastwards)
Fig.2 (SEV060806-23b) TP13 (viewer looking southwards)
Fig.3 (SEV060806-27b) TP2 (viewer looking eastwards)
Fig.4 (SEV060806-34b) TP22 (viewer looking southwards)
Fig.5 (SEV060806-34e) TP22 (version of Fig.4 with main bed boundaries overdrawn in red)

REFERENCE

Sevenoaks Quarry, Greatness, Kent, 2006
An Archaeological Evaluation (trenching)

Figure 1. Location of site within Sevenoaks and Kent.

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Figure 2. Location of evaluation trenches and test pits.
Figure 3: Location of features in evaluation trenches.
Figure 4. Location of stray, spoilheap and residual finds.
Figure 5. Plan of trenches 1 and 17.
**Sevenoaks Quarry, Greatness, Kent 2006**

**Trench 18**

```
+ + + + + + +
1m 3m + + + + 6m
```

**Trench 18 (continued)**

```
+ + + + +
3m + 16m + + +

(not bottomed)
```

**Trench 18 (continued)**

```
+ + + + + + +
36m + + + + + 44m + +
```

**Trench 24**

```
+ + + + +
1m + + + 3m + +
```

**Trench 38**

```
+ + + + +
1m + 3m + + +
```

Figure 6. Plan of trenches (continued).
Figure 7. Sections of features.
Figure 8: Sections of features (continued), Trench 18.
Sevenoaks Quarry, Greatness, Kent 2006

Figure 9. Location of interpretation of geophysical anomalies and evaluation trenches.
Sevenoaks Quarry, Greatness, Kent 2006

Figure 10. Area of archaeological potential.
Plate 1. Trench 26 and ditch 9 (parish boundary) looking north-east, Scale 1m.

Plate 2. Trench 34 looking north, Scales 2m and 1m.
Plate 3. Trench 1, Pit 8 looking north, horizontal scale 1m, vertical scale 0.1m.

Plate 4. Trench 18 Ditch 1 looking south, horizontal scale 1m, vertical scale 0.3m.
Kent County Council SMR summary form

Site address: Extension to Sevenoaks Quarry, Greatness

Summary: A small area of the site revealed deposits of prehistoric, probably Bronze Age date. A single undated charcoal-filled pit and a gully were also located elsewhere along with a number of large pits (quarries) of late post-medieval date were found. A ditch forming the parish boundary was found to have been infilled with late post medieval material. A small number of stray finds of prehistoric pottery and struck flint were also recovered including a Palaeolithic handaxe. A medieval sherd was also recovered from one of the late post-medieval quarries. Test pitting for Palaeolithic finds failed to reveal either finds nor contexts conducive to the survival of in-situ Palaeolithic remains. Few anomalies identified by previous geophysical survey were identified in the evaluation trenches.

District/Unitary: Seal and Sevenoaks

Parish: Seal and Sevenoaks

Periods: Palaeolithic, Mesolithic, Neolithic/Bronze Age, Roman/medieval

NGR: TQ 544 575

Type of archaeological work: Evaluation

Date of Recording: 30th May-19th June 2006

Unit undertaking recording: Thames Valley Archaeological Services Ltd

Geology: Gault Clay, river terrace gravels, lower greensand, colluvium

Title and author: Extension to Sevenoaks Quarry, Greatness, Kent, Archaeological Evaluation; by Steve Ford

Summary of results by period (from bottom up):
Mesolithic flint; later prehistoric flint and pottery, Probable Bronze Age pits and postholes, Medieval pottery. Undated ditches, gully pit, post-medieval quarries

Location of archive and finds: The archive is presently held at Thames Valley Archaeological Services, 47–49 De Beauvoir Road, Reading RG1 5NR.

Contact at Unit: Steve Ford  Date: 11.07.2006