



A2 Bean & Ebbsfleet Junction Improvements, Kent

Archaeological Evaluation



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69 College Road,
Maidstone,
Kent
ME15 6SX

www.wessexarch.co.uk

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Address The Hub
500 Park Avenue
Almondsbury
Bristol
BS32 4RZ

On behalf of Highways England

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Fieldwork directed by Lisa McCaig
Project management by Sarah Barrowman
Document compiled by Lisa McCaig / Andrew Shaw
Contributions from Sam Rogerson and Inés López-Dóriga.
Graphics by Andrew Souter

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Summary

Wessex Archaeology was commissioned by Atkins on behalf of Highways England to undertake an archaeological evaluation and geoarchaeological test pitting evaluation on land located north and east of the A2260 junction with the M2.

The evaluation trenching and geoarchaeological test pitting was undertaken between the 12th to the 15th of November 2018.

No finds or features of archaeological significance were encountered within any of the archaeological evaluation trenches.

The geoarchaeological evaluation established the range of Quaternary deposits present across the evaluation area; these have been significantly impacted on and/or removed during previous quarrying and development. No deposits with greater than low geoarchaeological, or Palaeolithic archaeological potential were identified

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The fieldwork was directed by Lisa McCaig, with the assistance of Sarah Baker. Palaeoenvironmental samples were processed by Jenny Giddins, sorted by Nicki Mulhall and assessed by Inés López-Dóriga. This report was written by Lisa McCaig (archaeological evaluation) and Andrew Shaw (geoarchaeological evaluation). The report was edited by Sarah Barrowman. The project was managed by Sarah Barrowman on behalf of Wessex Archaeology.



A2 Bean & Ebbsfleet Junction Improvements

Archaeological Evaluation

1 INTRODUCTION

1.1 Project and planning background

1.1.1 Wessex Archaeology was commissioned by Atkins, on behalf of Highways England (the client), to undertake an archaeological evaluation and geoarchaeological evaluation through test pitting of a 2-ha parcel of land located north and east of the A2260 junction with the M2. The evaluation area is centred on NGR 561394, 172893 (**Figure 1**).

1.1.1 The proposed development comprises improvement works at the A2 Bean and Ebbsfleet Junctions as part of a wider scheme of Highways England upgrades.

1.1.2 All works were undertaken in accordance with a written scheme of investigation (WSI) which detailed the aims, methodologies and standards to be employed in order to undertake the evaluation (Wessex Archaeology 2018). Kent County Council (KCC) approved the WSI, on behalf of the Local Planning Authority (LPA), prior to fieldwork commencing.

1.1.3 The evaluation comprising 5 trial trenches and 5 test pits was undertaken from the 12th to the 15th of November 2018.

1.2 Scope of the report

1.2.1 The purpose of this report is to provide a detailed description of the results of the evaluation, to interpret the results within a local, regional or wider archaeological context and assess whether the aims of the evaluation have been met.

1.2.2 The presented results will provide further information on the archaeological and geoarchaeological resource that may be impacted by the proposed development and facilitate an informed decision with regard to the requirement for, and methods of, any further archaeological mitigation.

1.3 Location, topography and geology

1.3.1 The evaluation area is located north and east of the A2260, at the A2 Ebbsfleet Junction. The site is bounded to the south and west by the A2260 and A2 Ebbsfleet Junction and to the north and east by an arbitrary site boundary and undeveloped scrubland.

1.3.2 The basal underlying bedrock geology is mapped by British Geological Survey (BGS online viewer) as Late Cretaceous deposits of the Seaford Chalk Formation (86.3-72.1 mya). In the south-east of the evaluation area, this unit is overlain by deposits of the Thanet Sand Formation (56.0-57.8 mya). The Thanet Sand Formation, and underlying Seaford Chalk Formation, are incised through by a southwest to northeast trending tributary valley of the Ebbsfleet. Head deposits are recorded as infilling this valley.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

- 2.1.1 There has been extensive archaeological investigation within the area of the evaluation over the past few decades broadly summarised below, with the major investigations related to work on HS1 and the Springhead Quarter development.

2.2 Previous Investigations within the evaluation area

CTRL: ARC SPH95 (Wessex Archaeology 1997)

- 2.2.1 An evaluation undertaken as part of the Channel Tunnel Rail Link (CTRL) works in 1997 included four trenches within the evaluation area. Two trenches 1333TT and 1339TT did not contain any archaeological evidence, however Trench 1340TT contained a spread of Romano-British date and Trench 1346TT contained two discrete features and a shallow gully, all showing signs of truncation through ploughing.

Station Quarter Southern, Ebbsfleet, Kent (Wessex Archaeology 2005).

- 2.2.2 An evaluation intended to supplement previous archaeological work was undertaken in August 2005, with one trench within the current evaluation area. A shallow gully, a small posthole and a partially exposed elongated feature, most likely a ditch terminus but possibly an inhumation, were recorded within Trench 1. It was theorised that the gully could be a continuation of the gully found in Trench 1346TT and that the posthole and the discrete features from the same trench may form a linear structure, such as a fence line, running alongside it. The features were of Romano-British date.

Station Quarter South, Ebbsfleet, Kent: Archaeological (Palaeolithic) Test Pit Evaluation (Wessex Archaeology 2006)

- 2.2.3 Six test pits were excavated in the area immediately north of the current evaluation. These identified a sequence of well consolidated colluvial sands and silts overlying a crudely bedded sandy silt gravel; the latter was considered to have been deposited down-slope through solifluction processes (freeze-thaw). An undiagnostic flint flake was recovered from within the solifluction deposits.

- 2.2.4 In the most north-easterly test pit the colluvial deposits were shown to overlay fluviially deposited gravel. It was coarsely bedded and contained undulated sand lenses.

Springhead Quarter: T.W.U.L Water Main, Station Quarter (Wessex Archaeology 2007)

- 2.2.5 The south western end of the pipeline ended at the A2260 Junction. No archaeology was recorded within the evaluation area, although an area of disturbance was found directly north of the evaluation area.

Southfleet Road Improvements (Wessex Archaeology 2013)

- 2.2.6 A desk based-assessment produced in 2013 (Wessex Archaeology 2013) assessed the Palaeolithic archaeological potential of deposits associated with improvements to Southfleet Road; this included the current evaluation area. It proposed Palaeolithic/Pleistocene deposit character zones based upon prior investigations and topographic surveys (**Figure 1**). Zones directly relevant to the evaluation are outlined in **Table 1**. The assessment concluded that zones with uncertain, very low or low Palaeolithic potential are present in the current evaluation area. One zone was also considered to have a moderate potential for Roman evidence.

Table 1 Palaeolithic deposits character zones (Wessex Archaeology 2013) associated with the current evaluation

Zone	Main Quaternary deposits	Possible Palaeolithic remains	Palaeolithic potential	Likelihood of presence	Importance, if present
S7	None thought likely	None thought likely	Low	Low	Uncertain
S8	None thought likely	None thought likely	Very Low	Low	Uncertain
S9	Uncertain; maybe none, or just Holocene colluvium	Lithic artefacts; faunal/environmental remains	Uncertain	Uncertain	Maybe high
S12	Colluvial/shoreline sediments interdigitating with floodplain alluvium	Lithic artefacts and faunal/environmental remains (Palaeolithic); pottery, features <i>etc.</i> (Romano-British)	Low (Palaeolithic); Moderate (Romano-British)	Moderate	Maybe high

2.3 Archaeological Background

Prehistoric (500,000 BC – AD43)

- 2.3.1 Significant Middle and Upper Pleistocene geoarchaeological sequences are present in the Ebbsfleet Valley, although they have been extensively quarried and affected by development. Some of these are associated with extensive amounts of Palaeolithic lithic artefacts and paleoenvironmental datasets.
- 2.3.2 At Southfleet Road, Middle Pleistocene fluvial and alluvial deposits (MIS 11; 424 – 374 kya) have produced nationally significant Lower Palaeolithic archaeological assemblages and paleoenvironmental material, including the remains of a straight tusk elephant associated with a non-handaxe (Clactonian) lithic assemblage (Wenban-Smith ed. 2013). The locale has also produced stratigraphically separate non-handaxe (Clactonian) and handaxe (Acheulean) lithic assemblages, the status and relationship between which is of central importance to debates concerning palaeo-demography and cultural evolution during the reoccupation of Britain after the Anglian (MIS 12 478-424 kya) glaciation
- 2.3.3 The Ebbsfleet Valley is also associated with nationally important historic early Middle Palaeolithic (late MIS 8-MIS 7; 260-190 kya) artefact and faunal collections (Smith 1911, Burchell 1931, 1935 and 1936). Recent reanalysis of the historic lithic collections demonstrates that the bulk of this material can be attributed to the early Middle Palaeolithic and reflects the emergence of early Neanderthal behavioural adaptations in Britain (Scott 2011, Scott *et al.* 2010, 2011). Later Middle Palaeolithic (MIS 4-3; 56-36 kya) archaeology may also be associated with later Pleistocene fluvial and slope deposits in the Valley.
- 2.3.4 Immediately north of the current evaluation area, test pitting (Wessex Archaeology 2006) identified colluvial slope deposits overlying gravels deposits through solifluction processes; an undiagnostic flint flake was recovered from the latter. Additionally, in the most north-westerly test pit the colluvial deposits were underlain by fluvial gravels, with its surface height at 4m aOD.
- 2.3.5 Upper Palaeolithic material has also been recovered from deposits within the Ebbsfleet Valley. Late Upper Palaeolithic artefacts have been recovered from stratified colluvial deposits near the Ebbsfleet source at Springhead (Wessex 2006), whilst Mesolithic and possible Late Upper Palaeolithic flint horizons were recognized in retrospect of their discovery in the 1930s (Burchell 1931), associated with Neolithic Ebbsfleet deposits and

are now protected as Scheduled Ancient Monuments (KE268a and KE268b). Additionally, at Ebbsfleet Green an *in-situ* assemblage of Terminal Upper Palaeolithic (Long Blade) artefacts associated with a palaeo-landsurface was recovered in an area previously assessed as having low potential for Palaeolithic archaeology (CgMs 2015).

- 2.3.6 Prehistoric material and paleoenvironmental evidence has also been recovered from Holocene colluvium which infill valleys that dissect the local landscape. Work carried out by Burchell (1931, 1936a, and 1936b) recorded numerous lithic and pottery remains through the upper parts of these sequences as well as local concentrations of molluscan remains in un-decalcified parts of the colluvial build-up.
- 2.3.7 Recent investigations in vicinity of the current evaluation produced paleoenvironmental evidence, animal bone and waterlogged timber structures are also documented in the area. Investigations at the CTRL Ebbsfleet Crossing located deposits and archaeological features tentatively dated to the Neolithic.
- 2.3.8 Investigations within CTRL and close to Ebbsfleet indicated the likely potential of an adjacent zone along the lower slopes of the Ebbsfleet Valley side within the Springhead Quarter. A north-south aligned trench was located where the ground surface descended gently from 5.03m aOD (south) to 4.20m aOD (north). A geotechnical test pit at the southern end of the trench revealed a deposit of burnt flint and charcoal at a depth of 2.2m BGL. Further investigations located Neolithic and prehistoric features which had been truncated by a channel infilled with deposits of Roman date. Similar pits within the Springhead Quarter Phase 3 had also been uncovered and carbon dated to the Early Bronze Age.
- 2.3.9 During the development of High Speed 1 a scatter of prehistoric (predominantly Bronze Age) worked and burnt lithic material has been recovered from the ploughsoil by fieldwalking and during evaluation trenching.
- 2.3.10 Three phases of excavation within the Springhead Quarter Phase 3 have been undertaken by Wessex Archaeology. These have identified an extensive Bronze Age field system aligned north-south. They have also identified isolated Neolithic pits and a tree-throw, all of which produced early Neolithic artefacts or pottery. There is increasing evidence to suggest that the field system, which includes a central drove way, may well date to the Early Bronze Age.
- 2.3.11 During the Phase 2 archaeological excavation Middle-Late Bronze Age pits and 10 Middle-Late Bronze age cremations were discovered scattered across the south west corner of the site. Five Bronze Age beakers pits were uncovered with one pit containing an Early Bronze Age collared urn. A 'hearth pit' containing Bronze Age pottery was also identified, again indicative of a concentrated settlement which was located close by. During the Phase 3 archaeology evaluation, trench 1178, 1779 and 1881 located on the boundary of Phase 2 identified ditches forming part of the northern extent of the Early Bronze Age co-axial field system.
- 2.3.12 Two thirds of the pottery recovered during the 2003/4 evaluation was dated to Early-Middle Iron Age and appeared to highlight a possible enclosed Iron Age settlement comprising a series of linear ditches. Three 'D shaped' enclosures were identified in south-western extreme of the Springhead Quarter, one of which was identified during the CTRL excavations and appeared to relate to the Springhead/Ebbsfleet ceremonial way.

Romano-British (AD43 – 410) and Anglo-Saxon (AD410 – 1085)

- 2.3.13 The Roman town of Springhead (Vagniacae), lying astride Watling Street to the south of the Site is of particular significance because of its associated temple complex associated with the spring that made it a religious centre throughout the Romano-British period. Wessex Archaeology undertook an excavation of the area from 2000-2002 retrieving over 150,000 artefacts. Further archaeological work also revealed 150m of Roman road lined by properties containing a variety of (mainly timber) buildings associated with 'crafts/industries'. In addition, two small inhumation cemeteries, a waterfront, and another temple set to the southeast within a temenos were also recorded.
- 2.3.14 A walled cemetery of Roman date was also found in 1997 and 1999 along Watling Street (URN 2001). Only a handful of such sites have been found within Britain to date. The evaluation undertaken in 1997 also appeared to confirm the overall northern extent of the Roman town.
- 2.3.15 Evidence was obtained during the 2004 and 2005 evaluations for the re-cutting of the prehistoric ditches found within the Springhead Quarter. Three Romano-British inhumation burials were also found in the southern limits of the Springhead Quarter.
- 2.3.16 A Saxon cemetery, partially located and investigated during the CTRL related archaeological works, is known to have extended into the Springhead Quarter (Wessex Archaeology 2008) forming a cemetery of approximately 200 definite burials. Two thirds of the entire cemetery fell within the Springhead Quarter boundary. The cemetery is the richest early (2nd quarter of the seventh century) Anglo-Saxon cemetery in the western part of the Kent. Its existence could relate to the deliberate division of Kent by the Anglo-Saxon royal family because of increasing political pressure from other Anglo-Saxon kingdoms.
- 2.3.17 Truncated remains of an Early Anglo-Saxon sunken feature building have also been uncovered at the northern extent of the Springhead Quarter (Wessex Archaeology 2008). Some closely focussed Anglo-Saxon 9th century occupation/light industrial activity was also identified in the eastern part of the Springhead Quarter.

Medieval (AD1066 – 1540) and post-medieval (AD1540 – 1900)

- 2.3.18 No medieval features were identified during the original trench evaluation of the Springhead Quarter in 2004 and previous desk-based assessment. Lack of dating evidence has meant it is unclear if these features can be confidently associated within the medieval and post-medieval periods.
- 2.3.19 Trenches 1144 and 1150 of the 2005 evaluation did contain backfill of a large quarry pit measuring some 35 m in diameter. While no dating evidence was obtained, it is believed it had been dug within the last 500 years.
- 2.3.20 One medieval land boundary of 13th century date was observed to the south of the Station Quarter South site during the A2 re-alignment as part of the CTRL programme at Springhead. In addition to the Roman remains, Springhead Nurseries was also the site of a 19th century pleasure garden and the location of one of the earliest watercress industries in Britain.



3 AIMS AND OBJECTIVES

3.1 General aims

3.1.1 The general aims of the evaluation, as stated in the WSI (Wessex Archaeology 2018) and in compliance with the ClfA's *Standard and guidance for archaeological field evaluation* (ClfA 2014a), were:

- To provide information about the archaeological potential of the site;
- To establish the broad presence/absence, nature and distribution of Quaternary deposits across the evaluation area;
- To develop a preliminary assessment of the possible Pleistocene and Holocene geoarchaeological potential of the evaluation area; and,
- To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

3.2 General objectives

3.2.1 In order to achieve the above aims, the general objectives of the evaluation were:

- To determine the presence or absence of archaeological features, deposits, structures, artefacts or ecofacts within the specified area;
- To determine the presence or absence of Pleistocene geoarchaeological deposits, within the specified area;
- To establish, within the constraints of the evaluation, the extent, character, date, condition and quality of any surviving archaeological remains;
- To record and establish, within the constraints of the evaluation, the extent, character, date, condition and quality of any surviving Pleistocene and Holocene deposits, along with any associated archaeological material and palaeoenvironmental datasets;
- To place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance;
- To place any identified Pleistocene and Holocene deposits and geoarchaeological remains within a wider historical and archaeological context in order to assess their significance; and,
- To make available information about the archaeological and geoarchaeological resource within the site by reporting on the results of the evaluation.

4 METHODS

4.1 Introduction

4.1.1 All works were undertaken in accordance with the detailed methods set out within the WSI (Wessex Archaeology 2018) and in general compliance with the standards outlined in ClfA guidance (ClfA 2014a). The methods employed are summarised below.

4.2 Fieldwork methods

General

- 4.2.1 The trench and test pit locations were set out using GPS, in the approximate positions as those proposed in the WSI, though trenches and test pits **4**, **5**, **6** and **7** had to be slightly moved and or reduced in length from their original positions because of on-site obstacles such as trees and located services. Trenches and test pits **1** and **2** were not excavated due to unsuitable ground conditions and the established pre-existing disturbance from quarrying activity (**Figure 1**).
- 4.2.2 Five trial trenches, were excavated in level spits using a 360° excavator equipped with a toothless bucket, under the constant supervision and instruction of the monitoring archaeologist.
- 4.2.3 Machine excavation proceeded until either the archaeological horizon, the natural geology was exposed or the safe working depth (1.2m below ground level) was reached.
- 4.2.4 Where necessary, the base of the trench/surface of archaeological deposits were cleaned by hand. A sample of archaeological features and deposits if identified would have been hand-excavated, sufficient to address the aims of the evaluation.
- 4.2.5 Spoil derived from both machine stripping and hand-excavated archaeological deposits was visually scanned for the purposes of finds retrieval. If found, artefacts would have been collected and bagged by context. All artefacts from excavated contexts would be retained, although those from features of modern date (19th century or later) were recorded on site and not retained.
- 4.2.6 Five test pits, each measuring approximately 3 m in length and 2 m wide, were excavated using a 360° excavator equipped with a toothless bucket, under the constant supervision and instruction of a recognised Palaeolithic specialist with experience of recording, interpreting and sampling Pleistocene sediments.
- 4.2.7 Machine excavation proceeded in level spits of approximately 50-100 mm, respecting the interface between sedimentary units, until either the solid geology was exposed, or further excavation became impractical. The test pits were excavated to a maximum machine working depth of 4m bgl; the test pits were immediately backfilled after sampling and recording.
- 4.2.8 Test pits were entered at the maximum safe depth (usually c. 1.2m, but less if loose sands/gravel are present) to record the upper stratigraphy. After excavation had progressed beyond this depth, recording took place without entering the test pit.

Test pit sampling strategy

- 4.2.9 No sediments encountered within the test pits were suitable for sieving. Consequently, when Quaternary stratigraphy was encountered, excavation proceeded in spits, looking carefully for the presence of any geoarchaeological evidence. Spit samples were carefully investigated by hand using archaeological trowel.
- 4.2.10 The potential for deposits to preserve paleoenvironmental evidence was assessed for each sediment unit by the monitoring geoarchaeological specialist. Bulk sediment samples of suitable deposits were taken for palaeoenvironmental assessment (**Table 2**).

Table 2 Samples taken for rapid palaeoenvironmental assessment

Sample number	Context number	Stratigraphic context	Description	Sample size (litres)
404	403	Phase II: Valley fill deposits	Light greenish grey sandy silt; very fine sand; occasional dark reddish brown, slightly clayey silt pockets; structureless; poorly consolidated	2
701	703	Phase II: Valley fill deposits	Light reddish brown very fine sandy silt; clast free; structureless; poorly consolidated	2

4.2.11 Sampling strategies, including for the recovery, processing and assessment of environmental samples, were in line with those detailed in the WSI (Wessex Archaeology 2018). The treatment of environmental remains was in general accordance with Wessex Archaeology's in-house guidance, which adheres to the principles outlined in Historic England's guidance (English Heritage 2011 and Historic England 2015). *Guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014b) and *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (English Heritage 2011).

4.2.12 Consideration was given to the suitability of any sediment units for optically stimulated luminescence dating (OSL).

4.2.13 Trenches and test pits completed to the satisfaction of the client and KCC were backfilled using excavated materials in the order in which they were excavated, and left level on completion. No other reinstatement or surface treatment was undertaken.

Recording

4.2.14 All exposed archaeological deposits and features were recorded using Wessex Archaeology's pro forma recording system. A complete drawn record of excavated features and deposits was made including both plans and sections drawn to appropriate scales (generally 1:20 or 1:50 for plans and 1:10 for sections) and tied to the Ordnance Survey (OS) National Grid. The Ordnance Datum (OD: Newlyn) heights of all principal features were calculated, and levels added to plans and section drawings.

4.2.15 A Leica GNSS connected to Leica's SmartNet service surveyed the location of archaeological features. All survey data is recorded in OS National Grid coordinates and heights above OD (Newlyn), as defined by OSGM15 and OSTN15, with a three-dimensional accuracy of at least 50 mm.

4.2.16 A representative section from each test pit was drawn at a scale of 1:20 and photographed in colour (digital) once excavation has reached its full depth, and at appropriate stages during excavation if features of interest are revealed. Other sections were drawn and/or photographed as appropriate.

4.2.17 Accompanying geoarchaeological descriptions and interpretations were recorded (see **Appendix 2**).

4.2.18 A full photographic record was made using digital cameras equipped with an image sensor of not less than 10 megapixels. Digital images have been subject to managed quality control

and curation processes, which has embedded appropriate metadata within the image and will ensure long term accessibility of the image set.

4.3 Monitoring

- 4.3.1 The client and KCC, on behalf of the LPA, monitored the evaluation. Any variations to the WSI, if required to better address the project aims, were agreed in advance with both the client and KCC.

5 ARCHAEOLOGICAL RESULTS

5.1 Introduction

- 5.1.1 Four of the five trenches were located over deep deposits of made ground (more than 1.2m below ground level) and therefore no natural deposits were encountered. A single trench identified natural Quaternary deposits (**Figure 1**).
- 5.1.2 Detailed descriptions of individual contexts are provided in the trench summary tables (**Appendix 1**).

5.2 Soil sequence and natural deposits

- 5.2.1 Across the majority of the site, an imported topsoil with an average depth of 0.2m overlay made ground deposits from either historic quarry backfill or landscaping for the adjacent road scheme. The made ground deposits measured over 1m thick in all cases. Within a single trench, trench 4, the topsoil immediately overlay an isolated pocket of undisturbed Quaternary stratigraphy.

5.3 Results

- 5.3.1 Trench 3 has confirmed again the presence of substantial deposits of quarry backfill dating to the 20th century. This activity can be seen on historic mapping and some early aerial photography. Although trenches 1 and 2 could not be excavated during the course of the fieldwork, it is clear from desktop research that they also lie within the area of quarry disturbance and backfill.
- 5.3.2 Trench 4 had to be relocated due to the presence of dense woodland in the proposed location. Relocated to a high ground position between trenches 5 and 6, trench 4 was the only trench that did not fall within an area of significant disturbance. Although the topsoil was likely imported it overlay slope deposits infilling the dry valley running through this area of the site. No finds or features of archaeological potential were encountered within the trench.
- 5.3.3 Trenches 5, 6 and 7 confirmed the presence of substantial made ground deposits associated with the adjacent A2260 and Highspeed 1 developments.
- 5.3.4 No artefactual evidence predating modern were encountered during the course of the evaluation.
- 5.3.5 No deposits suitable for environmental sampling were encountered during the archaeological trial trenching.

6 GEOARCHAEOLOGICAL RESULTS

6.1 Stratigraphic evidence

6.1.1 The specific lithologies and stratigraphic succession encountered in each test pit are outlined in **Appendix 2**.

6.1.2 The deposits form a consistent sequence. Made ground in-filling an area of previous deep quarrying is present in the west and northwest parts of the evaluation. To the southeast deposits infilling a dry valley are present, however, the upper part of this sequence has been heavily truncated and is generally overlain by at least 2m of made ground.

6.1.3 The generalised stratigraphic sequence encountered is listed, and the deposits described below:

- *Phase C: Structural chalk*

- *Phase I: Lag gravel*

This consists of a very coarse angular to sub-angular clast supported flint gravel lacking fine matrix. It reflects material eroded from the underlying chalk, with the fine material removed through low energy water runoff and, potentially, subaerial processes.

- *Phase II: Valley fill deposits*

These reflect material eroded and reworked downslope from the valley margins by colluvial slope processes.

- *Phase MG1: Made ground*

Two distinct phases of made ground were identifiable. The earliest phases primarily consist of redeposited material derived from the Thanet Formation; this is infilling areas of deep quarrying.

- *Phase MG2: Made ground*

A later phase of more mixed made ground, generally consisting of large amounts of redeposited clay and chalk, was identified; this appears to be associated with the adjacent A2260 and Highspeed 1 developments.

- *Phase TS: Top soil/made ground*

Phase C: Structural chalk

6.1.4 This was exposed within test pits **4** and **5**, which are located on the southeast facing slope of the dry valley, which runs southwest to northeast through this part of the evaluation area. Its surface geometry in Test Pit **4** clearly follows that of the valley margins.

Phase I: Lag gravel

6.1.5 Identified in Test Pit **4**, this consists of a medium to very coarse, largely matrix free, structureless, angular and sub-angular flint gravel; it overlies structural chalk and underlies valley fill deposits (**Plate 7**). Situated within the dry valley, it reflects material which has been eroded from the underlying chalk; the fine material has been removed, either through low energy water runoff and/or subaerial processes. Some surfaces of the flint clasts are lightly waterworn, indicative of a period(s) of more high energy fluvial discharge.

Phase II: Valley fill deposits

- 6.1.6 Present in Test Pits **4** and **7**, these deposits consist of structureless, fine grained silts deposited down-slope through colluvial processes. Within Test Pit **4** they consist of 1m of clast free, light greenish grey to greyish yellow sandy to sandy clay silts, overlain by topsoil (**Plate 7**). In Test Pit **7** (**Plate 8**) the unit consists of clast free reddish brown sandy silt; here, the upper deposits have been truncated and are overlain by 2.70m of overlying made ground. Within Test Pit **6**, located between Test Pit **4** and **7**, at least 3.80m of made ground was also recorded; this demonstrates that these deposits have been very heavily truncated, and possibly totally removed, from this area.

6.2 Artefactual evidence

- 6.2.1 No artefactual evidence was recovered from the Quaternary deposits encountered.

6.3 Palaeoenvironmental assessment

Introduction

- 6.3.1 Two small bulk samples (2l) were taken from *Phase II: Valley fill deposits* in Test Pits **4** and **7**. 0.5l sub-samples were assessed for the presence of key micro-paleontological palaeoenvironmental indicators (ostracods, foraminifera, earthworm granules, slug plates).

Methods

- 6.3.2 Small bulk samples taken to assess for the presence of key micro-paleontological environment indicators were processed by wet sieving on 500 µm, 250 µm, 125 µm and 63 µm sieves. A riffle box was used to split large residue fractions into smaller subsamples when appropriate.

Results

- 6.3.3 The full results of this assessment are presented in **Appendix 5**. One sample contained a few fragments of marine molluscs reworked from the Thanet Formation. Both contained small amounts of modern roots and seeds, and industrial waste which is indicative of some stratigraphic movement and the possibility of contamination by later intrusive elements. No other environmental evidence was identified.

Conclusions

- 6.3.4 No significant palaeoenvironmental evidence was preserved in the samples assessed. The assemblages recovered from both samples have no potential and no further analysis is recommended.

6.4 Scientific dating potential

- 6.4.1 Consideration was given to the suitability of sediment units for optically stimulated luminescence dating (OSL). Although the sandy silts found at depth within the valley fill deposits (test pits **4** and **7**) contained horizons with potential for successful OSL dating, these were not safely accessible, and in any case lacked significant artefactual or ecofactual material. No accessible deposits were suitable for OSL dating, and no samples were taken.

7 CONCLUSIONS

7.1 Summary

- 7.1.1 The evaluation trenching and geoarchaeological test pitting have been successful in achieving the aims and objective as set out in the WSI (Wessex Archaeology 2018).



7.1.2 No finds, features or deposits of archaeological significance were encountered in the evaluation trenches. Several areas of the site can however now be clarified as disturbed beyond the archaeological horizon, which has been encountered elsewhere within the vicinity of the site during previous archaeological evaluations (Wessex Archaeology 2005).

7.1.3 The Quaternary stratigraphy once present in the evaluation has generally either been quarried away or has been heavily truncated. In places, remnant deposits infilling a dry valley which ran across the eastern part of the evaluation area are preserved. These consist of material deposited downslope through colluvial processes. They are of unknown age, but likely to have been deposited during the late Pleistocene and/or Holocene; in places these are underlain by a lag gravel that overlies chalk bedrock.

7.2 Geoarchaeological discussion and assessment of Palaeolithic potential

7.2.1 The results of the geoarchaeological evaluation allows the geoarchaeological and Palaeolithic potential of the deposits present to be directly related to previously identified Palaeolithic/Pleistocene deposit character zones (Wessex Archaeology 2013).

7.2.2 Test Pit 7 is situated within Zone S7, characterised as having low Palaeolithic potential. This evaluation has enhanced this assessment; the deposits in this area consist of made ground infilling an area of deep quarrying activity; its Palaeolithic potential is therefore **very low**.

7.2.3 Test Pit 5 is located within Zone S9, regarded as having uncertain Palaeolithic potential. This evaluation suggests that this area is heavily disturbed and largely consists of made ground that overlies chalk bedrock. A thin horizon (0.10m) overlying the chalk may be part of the weather edge late Pleistocene/Holocene valley fill sequence found to the east or be recent Holocene colluvium. The geoarchaeological and Palaeolithic archaeological potential of the deposits in this area is **very low**.

7.2.4 Test Pits 4, 6 and 7 are located with Zone S12, defined as having low Palaeolithic potential. This evaluation indicates that deposits infilling a dry valley are sporadically present here. These deposits have been heavily impacted on by previous development, with the deposits significantly truncated; from some areas (e.g. Test Pit 6) they may have been totally removed. Although of unknown age, the deposits infilling this valley are likely to have accumulated through an extended period of the late Pleistocene and/or Holocene.

7.2.5 The valley fill deposits are analogous with colluvial units identified during previous test pitting evaluation immediately to their north (Wessex Archaeology 2006). Both the current and previous evaluations indicate that these deposits have **low** geoarchaeological and Palaeolithic potential. They may, however, have broad potential in places to bury Pleistocene stratigraphy with higher geoarchaeological potential; no such deposits were identified during the current evaluation, however.

8 ARCHIVE STORAGE AND CURATION

8.1 Museum

8.1.1 The archive resulting from the evaluation is currently held at the offices of Wessex Archaeology in Maidstone. Dartford Museum has agreed in principle to accept the archive on completion of the project, under the code **201490** Deposition of any finds with the museum will only be carried out with the full written agreement of the landowner to transfer title of all finds to the museum.

8.2 Preparation of the archive

- 8.2.1 The archive, which includes paper records, graphics, artefacts, ecofacts and digital data, will be prepared following the standard conditions for the acceptance of excavated archaeological material by the accepting museum, and in general following nationally recommended guidelines (SMA 1995; ClfA 2014c; Brown 2011; ADS 2013).
- 8.2.2 All archive elements are marked with the **site code**, and a full index will be prepared. The physical archive currently comprises the following:
- 01 files/document cases of paper records.

8.3 Selection policy

- 8.3.1 Wessex Archaeology follows national guidelines on selection and retention (SMA 1993; Brown 2011, section 4). In accordance with these, and any specific guidance prepared by the museum, a process of selection and retention will be followed so that only those artefacts or ecofacts that are considered to have potential for future study will be retained. The selection policy will be agreed with the museum, and is fully documented in the project archive.

8.4 Security copy

- 8.4.1 In line with current best practice (eg, Brown 2011), on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

8.5 OASIS

- 8.5.1 An OASIS online record (<http://oasis.ac.uk/pages/wiki/Main>) has been initiated, with key fields and a .pdf version of the final report submitted. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service ArchSearch catalogue.

9 COPYRIGHT

9.1 Archive and report copyright

- 9.1.1 The full copyright of the written/illustrative/digital archive relating to the project will be retained by Wessex Archaeology under the *Copyright, Designs and Patents Act 1988* with all rights reserved. The client will be licenced to use each report for the purposes that it was produced in relation to the project as described in the specification. The museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use conforms to the *Copyright and Related Rights Regulations 2003*. In some instances, certain regional museums may require absolute transfer of copyright, rather than a licence; this should be dealt with on a case-by-case basis.
- 9.1.2 Information relating to the project will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to Wessex Archaeology for the purposes of archaeological research or development control within the planning process.



9.2 Third party data copyright

- 9.2.1 This document and the project archive may contain material that is non-Wessex Archaeology copyright (eg, Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which Wessex Archaeology are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the *Copyright, Designs and Patents Act 1988* with regard to multiple copying and electronic dissemination of such material.

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Wessex Archaeology 2018 *A2 Bean & Ebbsfleet Junction Improvements, Dartford, Kent Written Scheme of Investigation for Archaeological Evaluation* Unpublished client report ref 201490.01



APPENDICES

Appendix 1 Trench summaries

Trench No 1		Length Unknown	Width Unknown	Depth Unknown
Easting		Northing		MaOD
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
101		Not excavated due to inaccessible ground	Too wet and boggy	

Trench No 2		Length Unknown	Width Unknown	Depth Unknown
Easting		Northing		MaOD
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
201		Not excavated	Inaccessible due to ground conditions too boggy	

Trench No 3		Length 20m	Width 1.80m	Depth 1.20m
Easting 561284.28		Northing 173032.07		MaOD 10.75
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
301		Topsoil	Mid blackish brown silt with moderate (20%) small sub rounded stones. Rare (5%) very small chalk pieces. 5% broken CBM pieces. Abundant rooting from vegetation.	0.00-0.45
302		Made ground	Mid yellowish grey sand with 5% lumps of mid grey sandstone. Quarry backfill.	0.45-1.20+

Trench No 4		Length 4m	Width 1.80m	Depth 1.20m
Easting 561332.94		Northing 172908.69		MaOD 17.09
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
401		Topsoil	Dark grey brown. Silty clay. overlay natural sand (Thanet sand)	0.00-0.30
402		Natural	Pale greyish yellow. Thanet sand.	0.30-1.2m+



Trench No 5		Length 8m	Width 1.80m	Depth 1.20m
Easting 561304.55		Northing 172928.29		MaOD 18.98
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
501		Topsoil	Dark blackish brown silt. Moderate (20%) small sub rounded stones. Abundant rooting from thick vegetation.	0.00-0.30
502		Made ground	Mix of blueish grey clay, whitish grey sand, small patches of orange sandy. Moderate (35%) small sub-angular stone. Rare pieces of CBM. Made ground part of modern road build up and edge of quarry activity.	0.30-1.20+

Trench No 6		Length 12m	Width 1.80m	Depth 1.20m
Easting 561394.99		Northing 172880.89		MaOD 15.01
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
601		Topsoil	Dark greyish brown silt with infrequent- Moderate (15%) small sub rounded stones. Abundant rooting from thick vegetation.	0.00-0.40
602		Made ground	Mid greyish orange sand with lumps of blue grey silty clay. Moderate (20%) sub-angular stones. Patches of brownish orange sandy clay. Contains sub-angular broken CBM, metal, wood and concrete lumps.	0.40-1.20+

Trench No 7		Length 20m	Width 1.80m	Depth 1.20m
Easting 561478.61		Northing 172840.13		MaOD 13.80
Context Number	Fill Of/Filled With	Interpretative Category	Description	Depth BGL
701		Topsoil	Dark greyish brown silt with infrequent- Moderate (15%) small sub rounded stones. Abundant rooting from thick vegetation.	0.00-0.30
702		Made ground	Mix of irregular dark black silty patching, patches of yellowish white chalk, brownish orange clay sand and blueish grey clay with abundant chalk pieces / flecks.	0.30-1.20+



Appendix 2 Test pit summaries

The stratigraphic succession encountered in each test pit are outlined below. Heights are given in metres above OD.

NGR coordinates and OD heights taken at centre of each trench; depth bgl = below ground level

Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 3		Comments:	
Site code:		204360				NGR Easting/Northing 561258.308, 173036.404		
Level (top):		10.75 m aOD	Length:	3.80 m				
			Width:	1.80 m				
			Depth:	4.00 m				
Depth		Sediment description		Interpretation	Context	Samples	Lithic finds	Enviro remains
Mbg	maOD					< >		
0.00– 0.40	10.75– 10.35	Light greyish brown sandy clay loam; moderately frequent fine to coarse angular chalk and rounded Tertiary flint clasts; structureless; rooted; blocky; poorly consolidated –SHARP; SUB-HORIZONTAL –		TOPSOIL	701	-	-	-
0.40– 0.65	10.35– 10.10	Yellow very fine to fine sand; very occasional sub-angular and rounded (Tertiary) fine-medium flint clasts; structureless; poorly consolidated –SHARP; SUB-HORIZONTAL –		TOPSOIL	702	-	-	-
0.65– +4.00	10.10– +6.75	Yellow fine-medium slightly clayey sand; orange grey black silty sand blocks (2-34cm); occasional chalk flecks; angular chalk and flint clasts; occasional rounded Tertiary flint clasts; becomes fine to very fine sand with depth, which contains large (+30cm) blocks iron cemented gravels (Bullhead Bed) attached to glauconitic cemented sands		MADE GROUND	703	-	-	-

Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 4		Comments:	
Site code:		204360				NGR Easting/Northing 561334.496, 172909.904		
Level (top):		17.09 m aOD	Length:	3.20 m				
			Width:	1.80 m				
			Depth:	2.90 m				
Depth		Sediment description		Interpretation	Context	Samples	Lithic finds	Enviro remains
Mbg	maOD					< >		
0.00– 0.20	17.09– 16.89	Dark greyish brown silty clay; clast free; rooted; leaf litter; structureless; poorly consolidated –ABRUPT; SUB-HORIZONTAL –		TOPSOIL	401	-	-	-



Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 4	Comments: NGR Easting/Northing 561334.496, 172909.904		
Site code:		204360						
Level (top):		17.09 m aOD	Length:	3.20 m				
			Width:	1.80 m				
			Depth:	2.90 m				
Depth		Sediment description		Interpretation	Context	Samples < >	Lithic finds	Enviro remains
Mbg	maOD							
0.20–0.80	16.89–16.29	Light greyish yellow slightly sandy clay-silt; clast free; rooted; structureless; poorly consolidated –DIFFUSE; SUB-HORIZONTAL–		SLOPE DEPOSIT	402	401	-	-
0.80–1.90	16.29–15.19	Light greenish grey sandy silt; very fine sand; occasional dark reddish brown, slightly clayey silt pockets; structureless; poorly consolidated –ABRUPT; SUB-HORIZONTAL –		SLOPE DEPOSITS	403	402 403 404	- -	- -
1.90–2.15	15.19–14.94	Medium to very coarse sub-angular flint clasts – some lightly water abraded; largely matrix free; clast supported; structureless; poorly consolidated –ABRUPT; SUB-HORIZONTAL –		LAG GRAVEL	404	-	-	-
2.15–+2.90	14.94–+14.19	Chalk with flints		STRUCTURAL CHALK	405	-	-	-

Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 5	Comments: NGR Easting/Northing 561303.494, 172930.091		
Site code:		204360						
Level (top):		18.98 m aOD	Length:	3.10 m				
			Width:	1.80 m				
			Depth:	3.50 m				
Depth		Sediment description		Interpretation	Context	Samples < >	Lithic finds	Enviro remains
Mbg	maOD							
0.00–0.30	18.98–18.68	Light grey sandy clay; coarse sand; frequent fine angular chalk clasts; rooted; structureless; poorly consolidated –ABRUPT; SUB-HORIZONTAL –		TOPSOIL	501	-	-	-
0.30–1.70	18.68–17.28	Mixed light bluish-grey clay and light reddish yellow clayey gravel; structureless; blocky texture; moderately consolidated –ABRUPT; SUB-HORIZONTAL–		MADE GROUND	502	-	-	-



Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 5	Comments: NGR Easting/Northing 561303.494, 172930.091		
Site code:		204360						
Level (top):		18.98 m aOD	Length:	3.10 m				
		Width:	1.80 m					
		Depth:	3.50 m					
Depth		Sediment description		Interpretation	Context	Samples < >	Lithic finds	Enviro remains
Mbg	maOD							
1.70– 3.40	17.28– 15.58	Mixed light yellow sandy silty clay and yellow slightly clayey silty fine to very fine sand; contains large blocks (~40cm) of light yellow to light grey mottled slight sandy clay containing roots; plastic wrapper at 2.80m -NOT SEEN -		MADE GROUND	503	-	-	-
3.40– 3.50	15.58– 15.48	Medium reddish brown to light bluish grey mottled very fine sandy clay; occasional fine to very coarse rounded Tertiary flint clasts; structureless; well consolidated -SHARP; SUB-HORIZONTAL -		? SLOPE DEPOSITS	504	-	-	-
+3.50	+15.48	Chalk with flints		STRUCTURAL CHALK	505	-	-	-

Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 6	Comments: NGR Easting/Northing 561393.028, 172880.263		
Site code:		204360						
Level (top):		15.01 m aOD	Length:	3.00 m				
		Width:	1.80 m					
		Depth:	3.80 m					
Depth		Sediment description		Interpretation	Context	Samples < >	Lithic finds	Enviro remains
Mbg	maOD							
0.00– 0.30	18.98– 18.68	Light greyish brown slightly sandy silty clay; occasional fine to coarse angular chalk clasts; plastic; leaf litter; rooted; structureless; poorly consolidated -ABRUPT; SUB-HORIZONTAL -		TOPSOIL	601	-	-	-
0.30– 1.70	18.68– 17.28	Various redeposited lithologies including yellow very fine to fine sand with frequent rounded Tertiary clast; light greyish blue clays with abundant marine shells and shell fragments; fine to medium angular flint gravel in a dark grey clay matrix; grey clay with coal fragments; concrete block (60cm) at 3.80m		MADE GROUND	602	-	-	-



Site:		A2 Bean & Ebbsfleet Junction Improvements		Test Pit ID:	TP 7		Comments: NGR Easting/Northing 561456.351, 172848.990		
Site code:		204360							
Level (top):		13.80 m aOD	Length:	3.00 m					
			Width:	1.80 m					
			Depth:	3.80 m					
Depth		Sediment description		Interpretation	Context	Samples < >	Lithic finds	Enviro remains	
Mbg	maOD								
0.00– 0.50	13.80– 13.30	Dark greyish brown slightly medium sandy silty clay; rooted; blocky texture; structureless; moderately consolidated –ABRUPT; SUB-HORIZONTAL –		TOPSOIL	701	-	-	-	
0.50– 3.20	13.30– 10.80	Various redeposited lithologies including reddish yellow sand; mixed dark bluish grey to greyish brown medium-coarse sandy clay; concrete; brick fragments; tire fragment; structureless; moderately consolidated –ABRUPT; SUB-HORIZONTAL –		MADE GROUND	702	-	-	-	
3.20– +4.00	10.80– +10.00	Light reddish brown very fine sandy silt; clast free; structureless; poorly consolidated		SLOPE DEPOSITS	703	703	-	-	



Appendix 3 Kent County Council HER Summary Form

Site Name: A2 Bean & Ebbsfleet Junction Improvements	
Site Address: north and east of the A2260 junction with the M2. Ebbsfleet, Kent. DA10 1AZ	
Summary of discoveries: Wessex Archaeology was commissioned by Atkins, on behalf of Highways England, to undertake an archaeological evaluation and Palaeolithic test pitting of a 2-ha parcel of land located north and east of the A2260 junction with the M2. The proposed development comprises improvement works at the A2 Bean and Ebbsfleet Junctions as part of a wider scheme of Highways England upgrades. The archaeological evaluation comprised the excavation, investigation and recording of 5 trial trenches with 5 geoarchaeological test pits excavated within the footprint of each trench. No finds or features of archaeological significance were encountered during the course of the evaluation, with deposits of made ground beyond the depth of 1.2m bgl encountered in 4 of the 5 trenches. The geoarchaeological evaluation established the range of Quaternary deposits present across the evaluation area; these have been significantly impacted on and/or removed during previous quarrying and development. No deposits with greater than low geoarchaeological, or Palaeolithic archaeological potential were identified	
District/Unitary: Ebbsfleet	Parish: Swanscombe and Greenhithe
Period(s): None	
NGR (centre of site to nearest 1m): 561394, 172893	
Type of archaeological work: Archaeological Evaluation and Palaeolithic test pits	
Date of fieldwork (dd/mm/yy) From: 12/11/18 To: 15/11/18	
Unit/contractor undertaking recording: Wessex Archaeology	
Geology: Chalk/Thanet Sand	
Title and author of accompanying report: A2 Bean & Ebbsfleet Junction Improvements. Archaeological Evaluation and Geoarchaeological Test Pitting Evaluation	
Summary of fieldwork results (begin with earliest period first, add NGRs where appropriate) No finds, features or deposits of archaeological significance were encountered during the course of the evaluation. No finds or deposits of Palaeolithic significance were encountered during the course of the test pit excavations.	
Location of archive/finds: Wessex Archaeology (Maidstone)	
Contact at Unit: Sarah Barrowman	Date: 28/11/18



Appendix 4 OASIS Form

OASIS ID: wessexar1-335175

Project details

Project name	A2 Bean and Ebbsfleet Junction Improvements
Short description of the project	Wessex Archaeology was commissioned by Atkins, on behalf of Highways England, to undertake an archaeological evaluation and Palaeolithic test pitting of a 2-ha parcel of land located north and east of the A2260 junction with the M2. The proposed development comprises improvement works at the A2 Bean and Ebbsfleet Junctions as part of a wider scheme of Highways England upgrades. The archaeological evaluation comprised the excavation, investigation and recording of 5 trial trenches with 5 geoarchaeological test pits excavated within the footprint of each trench. No finds or features of archaeological significance were encountered during the course of the evaluation, with deposits of made ground beyond the depth of 1.2m bgl encountered in 4 of the 5 trenches. The geoarchaeological evaluation established the range of Quaternary deposits present across the evaluation area; these have been significantly impacted on and/or removed during previous quarrying and development. No deposits with greater than low geoarchaeological, or Palaeolithic archaeological potential were identified
Project dates	Start: 12-11-2018 End: 15-11-2018
Previous/future work	Yes / Not known
Any associated project reference codes	201490 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	NONE None
Significant Finds	NONE None
Methods & techniques	"Sample Trenches", "Test Pits"
Development type	Road scheme (new and widening)
Prompt	Direction from Local Planning Authority - PPS
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	KENT DARTFORD SWANSCOMBE AND GREENHITHE A2 Bean and Ebbsfleet Junction Improvements
Postcode	DA 10 1AZ
Study area	2 Hectares



Site coordinates TQ 561394 172893 50.933309911891 0.222317268272 50 55 59 N 000 13 20
E Point

Height OD / Depth Min: 9.28m Max: 18.02m

Project creators

Name of Organisation Wessex Archaeology

Project brief originator Atkins

Project design originator Wessex Archaeology

Project director/manager Sarah Barrowman

Project supervisor Andy Shaw

Project supervisor Lisa McCaig

Type of sponsor/funding body Highways England

Project archives

Digital Archive recipient no museum deposit

Digital Media available "Images raster / digital photography", "Survey", "Text"

Paper Archive recipient no museum deposit

Paper Media available "Context sheet", "Drawing", "Plan", "Report"

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title A2 Bean and Ebbsfleet Junction Improvements.

Author(s)/Editor(s) Wessex Archaeology

Other bibliographic details 201490.03

Date 2018

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Description A4 booklet. 24 pages of text including tabulated data, 2 figures and 6 plates

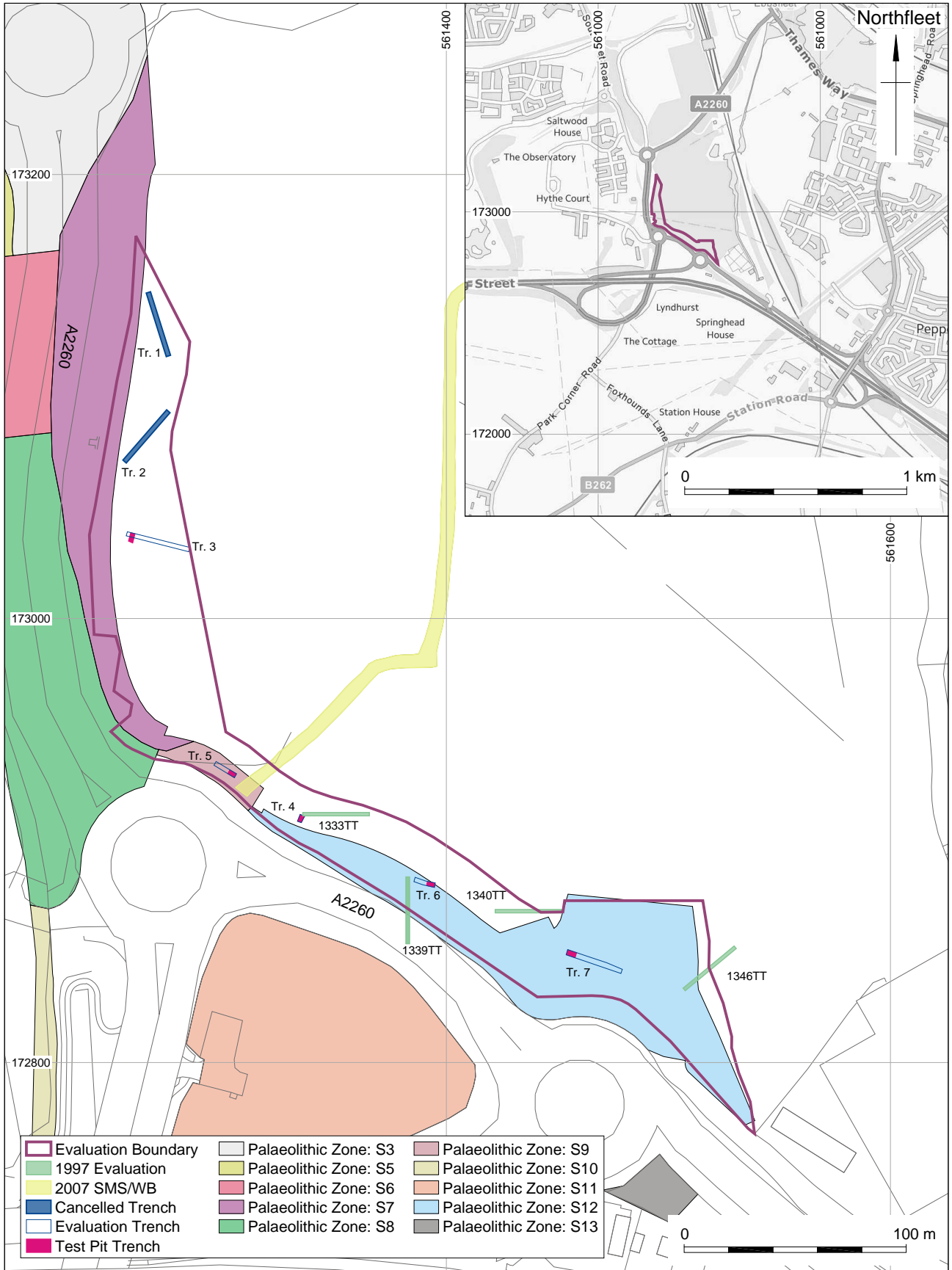
Entered by lisa mccaig (l.mccaig@wessexarch.co.uk)

Entered on 28 November 2018



Appendix 5 Environmental Data

Sample no.	Context no.	Depth	Sample volume (l)	Mesh size	Residue volume (ml)	Bioturbation proxies	Molluscs + Crustaceans	Fossils
504	503	1.80m	0.5	63µm	121	<5 C - Modern roots	-	-
701	703	3.60m	0.5	63µm	81	<5 C - Modern roots and seeds, Earthworm eggs, Slag/industrial waste <500µm	<5 cf. Marine mollusc fragments	-



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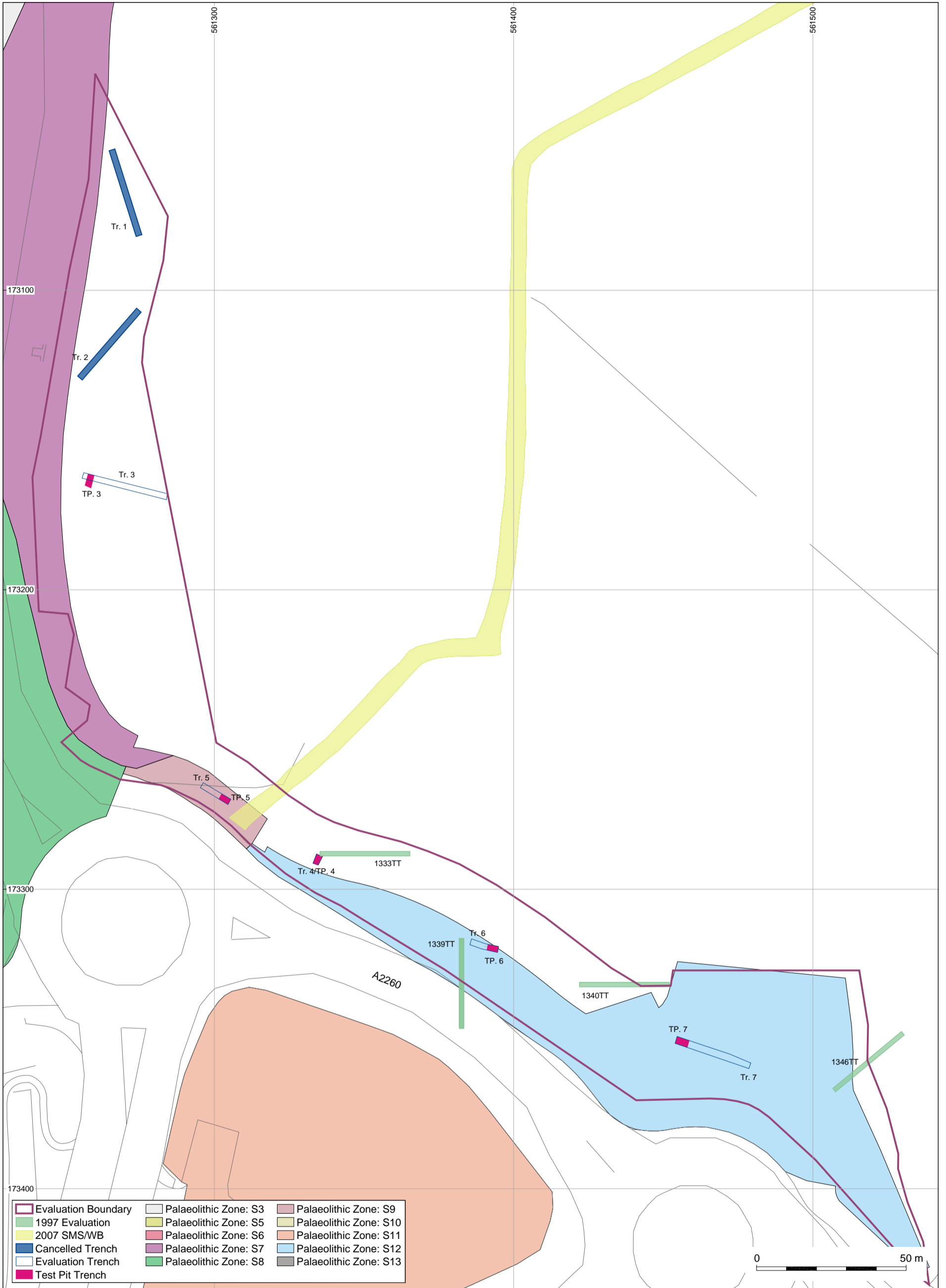


Coordinate system:
 OSGB36
 (OSTN15/OSGM15)

Date:	27/11/2018	Revision Number:	0
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Site location and trench layout

Figure 1



Coordinate system:
OSGB36 (OSTN15/OSGM15)



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Plate 1: Representative section in Trench 3, viewed from the south



Plate 2: Representative section in Trench 4 (combined with Test Pit 4), viewed from the northwest

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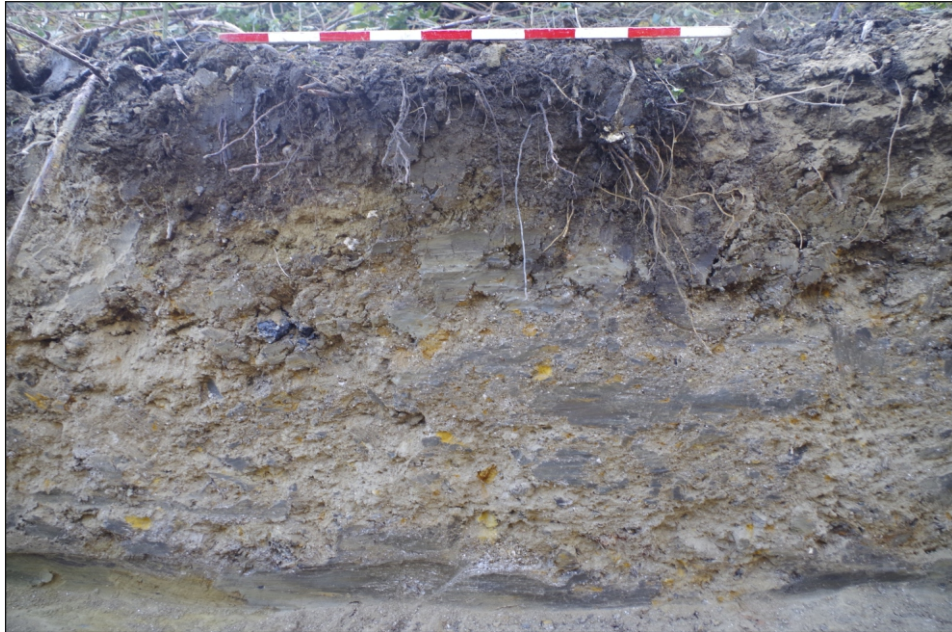


Plate 3: Representative section in Trench 5, viewed from the northeast



Plate 4: Trench 5, viewed from the southeast


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Plate 5: Trench 6, viewed from the west



Plate 6: Representative section in Trench 7, viewed from the north


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Plate 7: Test pit 4, slope deposits overlying chalk, viewed from the east

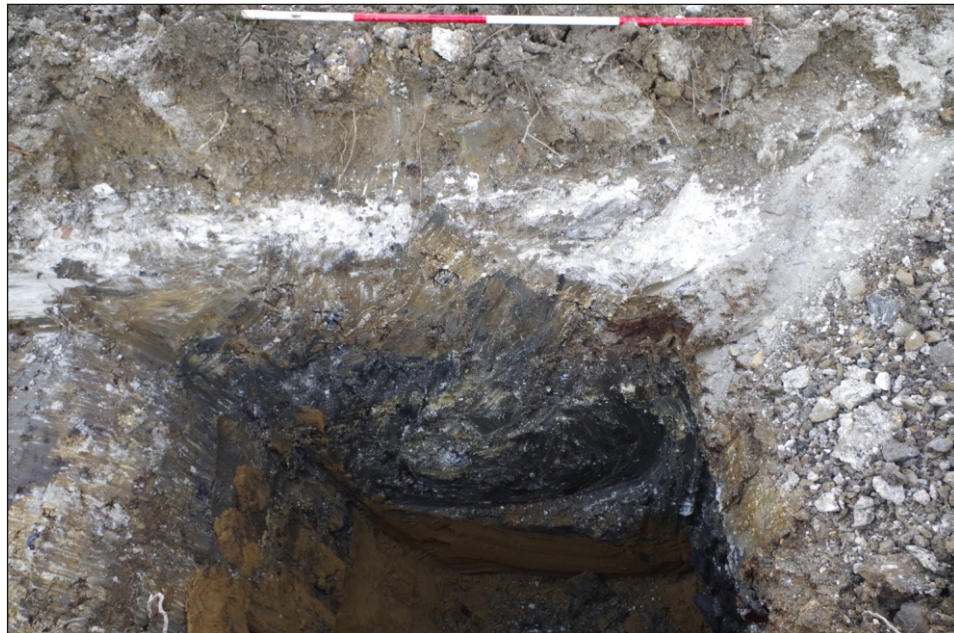



Plate 8: Test pit 7, made ground overlying slope deposits, viewed from the north

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Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk

