Braintree PZ Supply Demand Balance: Great Horkesley to Ardleigh, Essex

Archaeological Strip, Map and Monitoring

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By Gareth Rees BA MA ACIfA

With contributions by Sue Anderson BA MPhil MCIfA, Chris Faine MA MSc ACIfA, Rachel Fosberry ACIfA, Alice Lyons MA MCIfA, Sarah Percival MA MCIfA

Editor: Rachel Clarke BA MCIfA

Illustrator: *Séverine Bézie BA MA*

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Position:	Project Officer
Date:	07/07/2016
Checked by:	James Drummond-Murray
Position:	Senior Project Manager
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Signed:	

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Oxford Archaeology East,
15 Trafalgar Way,
Bar Hill,
Cambridge,
CB23 8SQ

t: 01223 850500
f: 01223 850599
e: oaeast@thehumanjourney.net
w: http://thehumanjourney.net/oaeast

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Summary

Oxford Archaeology East undertook monitoring, strip and map recording, and excavation along the route of the Braintree PZ Supply/Demand Balance pipeline for Anglian Water. This report deals with those sites and findings uncovered on the route from Great Horkesley (TL 97009 31227), in the west, to Ardleigh Reservoir (TM 02495 30124), in the east, between the 25th September 2014 and 19th January 2015. The westernmost segment of the route up to the A12 at Langham falls under the jurisdiction of Colchester Borough Council Planning Department (site code COLEM2014.72), whilst the eastern segment from the A12 to the termination at the Ardleigh Reservoir falls within the remit of Essex County Council Place Services (site code ARWP14).

Archaeological monitoring was required along virtually the entire length of the pipeline which ran for almost 10km. Five fields, two in the western segment and three in the eastern segment, were selected for strip and map excavation due to the presence of cropmarks, indicative archaeological sites, recorded in the Historic Environment Record. Cropmarks were also visible in several other fields along the route and a controlled topsoil strip was also conducted on these sites.

Excavations uncovered two sites between Great Horkesley and Langham (Sites 1 and 2) and another two sites between Langham and Ardleigh (Sites 3 and 4). Site 1 was spread over three fields to the east of the A134 and consisted of undated and post-medieval pits and ditches. Remains uncovered at Site 2, located in one field to the west of the A12, comprised Late Iron Age and Roman boundary ditches which may indicate that a settlement was located nearby. Site 3, located in four fields to the west of Ardleigh village, contained ditches and pits that have been dated to the post-medieval period, or did not produced any datable artefacts. These features may have related to former field boundaries and agricultural activities. Part of a medieval and post-medieval fieldsystem was also uncovered at Site 4, which was located in a field south of Ardleigh to the east of the A137.

A series of shallow pits with charcoal rich, undated fills were found in several fields to the west of the A12. It is possible that these pits are part of a complex of 'fire pit' features found throughout the landscape north of Colchester and dated in other excavations to the very Late Iron Age and early Roman period. A sample of charred plant remains from one of the pits returned a date of 21calBC – 125calAD (92.8%) from C14 analysis. Charcoal from a similar pit proved to be modern.

Site 4 also produced evidence of prehistoric activity. An Ardleigh-type vessel, radio carbon dated to the beginning of the Late Bronze Age, was recovered from an isolated pit. These vessels are commonly associated with cemeteries of the period, however no funerary evidence was uncovered on the site.

Monitoring of topsoil removal on the remainder of the route uncovered no significant archaeological features. A metal detector survey along the entire route located primarily modern finds.

1 Introduction

1.1 Location and scope of work

1.1.1 Archaeological monitoring, strip and map recording, and excavation was conducted by Oxford Archaeology East (OA East) along the route of the Braintree PZ Supply/Demand balance pipeline extending from Bocking near Braintree to Ardleigh Reservoir near Colchester, Essex. This report covers those sections of the pipeline between Great Horkesley (TL 97009 31227) eastwards to the A12 at Langham (6.4km) and then on to Ardleigh (3.5km; TM 02495 30124). This entailed two phases of work: the westernmost being assigned the code COLEM2014.72 and that to the east ARWP14. Trenching along this part of the route measured a total length of 9.9km (Figure 1). Other sections of the route are detailed in OA East reports 1686 and 1788 (Green and Rees 2016; Rees 2016).

1.1.2 The archaeological works were undertaken in accordance with Briefs issued by Martin Winter of Colchester Borough Council (CBC) and Adrian Gascoyne of Essex County Council (ECC), supplemented by Specifications prepared by OA East (Drummond-Murray 2014a; 2014b).

1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012).

1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology and topography

1.2.1 The pipeline crossed several different geological groups, however the majority of the route lies on the Aeolian Cover Sands (http://mapapps.bgs.ac.uk/geologyofbritain/home.html). These overlie Thames Group clay, silty, sedimentary bedrock in all areas. There are deposits of Lowestoft Formation Sand and Gravels to the north of the route at Langham Road and Park Lane whilst sand and gravels from the Kesgrave Catchment Subgroup are present adjacent to Ardleigh Reservoir.

1.2.2 The pipeline crossed predominantly through arable farmland and pasture with generally flat or gently sloping topography. The highest point of the route was at its western end where the ground level was *c.*50m OD, from here it sloped downwards to 34m OD adjacent to the Ardleigh Reservoir before climbing slightly to the south of Ardleigh. The route crossed three major modern roads: the A134 at Great Horkesley, the A12 at Langham and the A137 at Ardleigh.

1.3 Archaeological and historical background

1.3.1 A search of the Essex Historic Environment Record (EHER) was carried out for all sites within 500m of the route of the pipeline (Figure 2). This information has been supplemented by reference to published works in the vicinity of the sites identified.

Prehistoric (c.500,000BC - AD43)

1.3.2 There is evidence for continuous human occupation in Essex from the Palaeolithic period onwards with flint scatters including tools having been recovered from across the county associated particularly with ecotonal and estuarine environments (Wymer 1996,

2; Jacobi 1996, 10). Evidence for earlier prehistoric activity within the Study Area is limited to four stray finds of worked flint (EHER2365; EHER45455; EHER9262; EHER9210) one of which, located 240m to the west of the A134, may date to the Mesolithic period.

1.3.3 Across the county it is common to find Neolithic sites associated with earlier, Mesolithic activity. There was an increasing emphasis towards estuarine locations and river terrace deposits in these periods. Sites such as these, with evidence for intermittent occupation have been found locally at Ardleigh and Langham where Carinated Bowl pottery was recovered (Healy 2012, 9). Later Neolithic occupation may be evidenced at Ardleigh by the discovery of a 'low carinated' Beaker vessel (*ibid*, 18). Whilst this probable Late Neolithic Beaker was recovered from a cemetery to the east of Ardleigh, evidence for burial in the Early Neolithic may be represented at Dedham where a cropmark appears to show a long barrow (*ibid*, 9).

1.3.4 The most significant prehistoric remains in the vicinity of the pipeline route are those of the Bronze Age cemetery at Ardleigh located over a kilometre to the east of the Ardleigh reservoir. This site, situated on the terrace gravels, contained 18 ring ditches representing the location of burial mounds associated with cremation burials and distinctive 'Ardleigh type' urns (Brown 1999, 164).

1.3.5 Evidence for settlement becomes increasingly common throughout the Iron Age and this is reflected in the Study Area. Two sites attest to an Iron Age presence in the area to the east of Ardleigh. Occupation adjacent to the reservoir may be evidenced by a rim sherd possibly from a large storage vessel (EHER2335), whilst several sites dating from the Early Iron Age to the Early Roman period were uncovered during an archaeological evaluation at Wick Farm (EHER45456; EHER45455), 250m to the south of the pipeline route on Wick Lane. A kiln or furnace was located within the Early Iron Age site (A) here, whilst the Late Iron Age settlement (Site D) consisted of a probable 'D' shaped enclosure with two or more internal buildings (Germany 2006).

Roman (c.AD43 - 410)

1.3.6 Roman occupation evidence in this area is dominated by the presence of the Late Iron Age oppidum and subsequent Roman town of Camulodunum situated at Colchester. In the study area the influence of the Roman town can be seen by the presence of several Roman roads, notably the A134 (EHER9172) and the A12 (EHER2715) which transect the pipeline route.

1.3.7 A Late pre-Roman Iron Age and Early Roman settlement was found at Wick Farm (Site E; Germany 2006; EHER45455) at the Ardleigh end of the pipeline route, whilst an early Roman cremation cemetery was located at Great Horkesley (EHER9171). A posthole uncovered 200m to the north of the route adjacent to the modern A134 may be an indication of road-side settlement here in the Early Roman period (EHER45178).

1.3.8 It is possible that a large settlement, evidenced by an extensive pottery scatter, was located to the west of Great Horkesley in the 2nd to 3rd centuries AD (EHER18089). A kiln like feature and a ditch located adjacent to the Ardleigh reservoir also date to the Roman period, whilst spot finds of Roman coins (*e.g.* EHER50880; EHER 50899) attest to a Roman presence along the entire route of the pipeline (*e.g.* EHER2486; EHER17549).

1.3.9 Excavations at Cuckoo Farm Park and Ride, 0.8km to the south of the pipeline route, uncovered 30 circular or oval pits with evidence of in situ burning and charcoal rich fills. Although mainly undated, two of these pits were dated to the 1st century AD by ceramic finds and one was dated by C14 analysis to the very Late Iron Age (50BC to AD 5).

These features, interpreted as fire pits, appear to be a significant feature in the landscape to the north of Colchester and have been interpreted as possibly marking temporary camps out side the Roman town (Dyson 2015: 30). A number of similar features were also found during excavations for the Colchester northern approach road further to the south (Baister 2014).

Saxon and Medieval (c. AD410-1500)

1.3.10 There is no archaeological evidence of Saxon occupation within the study area, however evidence from place names demonstrates a Saxon origin for many of the villages in this area. The name 'Horkesley' derives from *horc-lēah* meaning sheltered or dirty wood or clearing; 'Langham', from *lahha-ingas-ham*, meaning the home or village of Lahha's people; and 'Ardleigh' from ?*earda?-eard-lēah*, meaning Earda's wood or clearing (http://kepn.nottingham.ac.uk/map/place/Essex).

1.3.11 Post-Conquest medieval development in the Study Area is demonstrated by the foundation or rebuilding of the churches of Great Horkesley and Langham at this time (Pevsner 1965, 204 & 258). In the 12th or 13th centuries a moated site (EHER2364), possibly a manor, was founded at Ardleigh Wick, 375m south of Wick Lane. This site was associated with medieval field boundaries and trackways (EHER45458; EHER45457); probably part of the estate that was later to become Wick Farm.

1.3.12 Throughout the county as a whole there was a distinct downturn in economy in the 14th century characterised by abandonment and shrinkage of rural settlements. This phenomena is demonstrated in the Study Area by a lack of evidence dating to this time. Medieval sites (EHER18091; EHER18090) located to the south-west of the western end of the pipeline are likely to post-date this period of decline. This may also be true of a medieval kiln uncovered adjacent to the A134 to the south of Great Horkesley (EHER9246).

1.3.13 The region may have experienced an economic boom from the late 15th/16th century onwards, evidenced by the construction of Ardleigh church (Pevsner 1965, 58) and the numerous surviving timber framed buildings in Great Horkesley (EHER39264; EHER33660; EHER32256; EHER32276; EHER32284; EHER32313; EHER32286; EHER32311; EHER32308; EHER32304; EHER32305; EHER32306), on The Causeway (EHER32233; EHER32238; EHER32239; EHER32240) and adjacent to the Roman road (EHER32234; EHER32236; EHER32237) which may still have formed an important communication route in this period.

Post-Medieval (c.1500 – c.1900)

1.3.14 There are numerous remains from the post-medieval period in the area, however none of these lie directly within the route of the pipeline. Several 17th and 18th century windmills and a watermill were located *c*.400m south of Clover Way (EHER2360; EHER47440; EHER47438; EHER2561; EHER34555), whilst 14 timber framed barns and houses dating to this period survive within the Study Area. There are also a further 14 brick built buildings, including a granary, dating from the 17th to 19th centuries are still standing in the Study Area.

Modern

1.3.15 Archaeology dating to the modern period consists of military installations. These comprise a spigot mortar base at the police station in Great Horkesley (EHER21088), a Cold War nuclear monitoring post at Langham (EHER46686) and a P.O.W. camp on the Ipswich road north of Wick Lane (EHER46824).

1.3.16 The primary remains from this period in the study area are those of Boxted WWII airfield (EHER21157; EHER16514 EHER 16509; EHER16508; EHER8913) which lies adjacent to the pipeline route and included several dispersed buildings.

Cropmarks

1.3.17 There are 16 entries in the EHER for cropmarks, primarily plotted as part of the National Mapping Programme, which may represent archaeological features in or adjacent to the Study Area (Figures 3 and 4). The Briefs for archaeological works highlighted four areas along the course of the route where the pipeline crossed cropmarks likely to be of an archaeological nature.

1.3.18 A series of features was identified from aerial photographs of fields near the Great Horkesley Plantation, *c.*600m to the east of the A134 (Figure 3; EHER8912) These included possible field boundaries, linear features, pits, a trackway and ring ditches.

1.3.19 Several possible linear features and pits were identified to the west of Blue Barns Farm and the A12 at Langham (Figure 3; EHER2718).

1.3.20 A large number of potential features have been identified to the north-east of the Ardleigh reservoir (Figure 4; EHER2367). These include a rectilinear enclosure with internal pits, a curvilinear enclosure and numerous pit-like features that may be archaeological or geological in origin.

1.3.21 The HER notes the cropmarks of a bi-vallate rectangular enclosure located to the east of the A137 at Ardleigh (EHER17205). The plot of the aerial photographs of this area also shows an apparent medieval strip field layout with trackways (Figure 4).

1.3.22 Two other records of cropmarks lie along the route of the pipeline. The Boxted WWII airfield has been plotted by the NMP (EHER8913) to the west of the A12 at Langham, whilst to the east of the A12, north of Wick Farm, linear features and field boundaries have been plotted (EHER7255).

1.3.23 The remaining ten records of cropmarks in the Study Area all lie outside of the route of the pipeline. They consist of linear features, field boundaries, pits, ring ditches, and a possible medieval site. Their locations are plotted on Figure 3 (Great Horkesley – Langham) and Figure 4 (Langham – Ardleigh).

1.4 Acknowledgements

1.4.1 The author would like to thank Jo Everitt of Anglian Water who commissioned and funded the works. The sites were monitored by Adrian Gascoyne and Chris Lister whilst the archaeological works were managed by James Drummond-Murray. Terry Kelly of @One Alliance managed the overall work on this segment of the pipeline and facilitated the archaeological works through provision of machines and drivers as well as regular communication throughout. Teresa O'Connor carried out the search of the Essex Historic Environment Record. The work was directed by Gareth Rees with assistance in the field from Robin Webb, Adele Lord, Jack Easen, Ted Levermore, Diogo Silva, Helen Stocks-Morgan, Lucas Barnes, Daria Tsybaeva and Thomas Lyons. Site survey was carried out by the author and Robin Webb. The author is grateful for specialist analysis from Rachel Fosberry, Sarah Percival, Alice Lyons, Chris Faine and Sue Anderson. Séverine Bézie digitised the plans and produced the illustrations.

2 Aims and Methodology

2.1 Aims

2.1.1 The original aims of the project were set out in the Briefs and Written Schemes of Investigation (Drummond-Murray 2014a; 2014b; Winter 2013; Gascoyne 2014) prior to the commencement of works. The objective of the monitoring was to mitigate against the effects of the groundworks in the development area and to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any archaeological deposits. In the areas where strip and map recording took place the objective was to document and characterise all features in the designated areas.

2.1.2 The works also aimed to add to the current knowledge of conditions for the preservation of archaeological remains. Linear works such as these provide a valuable insight in to the depth and preservation of archaeological deposits and sites over a wide area, and it was recognised that monitoring of this pipeline would provide an opportunity to characterise and map archaeological deposits on a large scale.

2.1.3 The aims and objectives of the excavations were developed with reference to the Regional Research Agendas (Medlycott 2011; Brown and Glazebrook 2000). The following research questions are of particular note for the sites that were likely to be encountered along the route of the pipeline in this area:

- The relationship of settlement sites and burials in the Bronze Age, including the development and use of monuments
- The identification of Bronze Age sites in non-gravel locations
- To establish or confirm the date and character of a representative sample of sites mapped by aerial photography
- The inter-relationship of Roman towns and their hinterlands.

2.2 Methodology

2.2.1 The methodology used followed that outlined in the Briefs and detailed in the Written Scheme of Investigations.

2.2.2 Machine excavation was carried out on all parts of the route by a 360-type tracked excavator using a 1.8m wide flat bladed ditching bucket. Spoil was stored on one side of the easement. Where archaeological deposits were identified, and in areas where strip and map recording was required, the machining took place under constant supervision by a suitably qualified and experienced archaeologist. Monitoring of the topsoil stripping was carried out under archaeological supervision. Where potential archaeological features were identified prior to or during monitoring, and with the agreement of the site manager and local authority representative, the methodology reverted to that of strip and map. Trenches generally measured between 10m and 15m wide. Monitoring also took place on the pits at locations where the pipeline had to be drilled under roads and water courses.

2.2.3 At Site 4 the entire width of the easement was stripped in a 20m long area around the location of a Bronze Age pit in order to ascertain the extent of the evidence for this period.

2.2.4 Topsoil was scanned with a metal detector prior to stripping and all spoil, exposed surfaces and features exposed by the strip were scanned. All metal-detected and

hand-collected finds were retained for inspection, other than those which were obviously modern.

2.2.5 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and photographs were taken of all relevant features and deposits.

2.2.6 The site survey was carried out using survey grade dGPS equipment Leica 1200 and Leica CS10\GS08.

2.2.7 Environmental samples were taken from archaeologically secure contexts for flotation and residue analysis. A total of 22 samples was taken from features located along this part of the pipeline, 14 from the western segment (COLEM2014.72) and eight from the eastern segment (ARWP14). Sample volumes were dependant on context with 100% of charcoal or finds rich discrete deposits taken, 50% of structural postholes and 20-30 litres of ditch fills likely to produced material from primary deposition.

2.2.8 The site conditions were generally good, mostly located in ploughed arable fields or pasture with access pre-arranged by Anglian Water (Plate 1). The route crossed a high pressure gas main in several locations as well as pre-existing water pipes, the locations of which were marked in advance and a suitable easement left around them. Some parts of the route were prone to flooding after heavy rain, however this did not impact a great deal on the archaeological works.

3 Results

3.1 Introduction

3.1.1 The results of the archaeological works are discussed below from west to east, along the route of the pipeline, beginning at Great Horkesley. The route has been separated into numbered fields in order to aid description of the findings. Only fields where archaeological features were uncovered are mentioned below. Topsoil varied in thickness from 0.25m to 0.4m whilst subsoil, where present, measured no more than 0.16m thick. As expected, the greatest depths of subsoil were encountered in those fields which lay under pasture and had not recently been subject to ploughing. A comprehensive listing of topsoil depths and contexts excavated is recorded in Appendix A, supplemented by finds and environmental reports included as Appendices B and C.

3.2 Great Horkesley to Langham (COLEM2014.72)

Site 1: South of Boxted Road, Great Horkesley (Figure 5)

3.2.1 This site was located in three fields to the east of the A137 and south of Boxted Road in Great Horkesley. The easternmost field (C12) is situated in an area where cropmarks have been plotted (EHER8912) perhaps indicating the location a prehistoric or Roman settlement. Cropmarks were also visible in two fields to the east of this (C13 and C14).

Field C14 (Figure 5a):

3.2.2 The excavated area, measuring 7m wide by 307m long, in this westernmost field contained four ditches and two pits or postholes. A north to south orientated ditch (**1095**) was located 13.8m from the north-western end of the easement and measured 2.08m wide and 0.55m deep. It contained two soft sandy-silt fills (1093 and 1094) which included late or post-medieval tile, glass and pottery in the upper fill.

3.2.3 Another ditch (**1103**) was located 109m to the south-east of **1095**. This north-east to south-west orientated ditch, measuring 1.90m wide and 0.27m deep, contained a single mid greyish brown sandy-silt fill (1102). Ceramic building material (CBM) dating to the post-medieval period was recovered from this fill. Two other ditches, on the same orientation, were located 40m and 80m to the east. The westernmost of these (**1105**) measured 0.74m wide and 0.22m deep, whilst that to the east (**1101**) measured 1.82m wide and 0.25m deep. Both contained a single sandy-silt fill (1104 and 1100) and no artefacts. All three ditches had gradually sloping sides with flat to concave bases.

3.2.4 Two pits were located between ditches **1101** and **1105**. The northern pit (**1099**), measuring 0.40m wide and 0.10m deep, was sub-rounded in plan with a concave base and contained no artefacts. The southern pit (**1097**), measuring 0.90m by 0.50m and 0.15m deep, was sub-rectangular in plan and contained a single fill (1096) from which no artefacts were recovered.

3.2.5 A modern land drain was located at the south-eastern end of the trench and was left *in-situ*.

Field C13 (Figure 5b):

3.2.6 The trench in this field measured 270m long by 6.70m wide and was orientated west-north-west to east-south-east. Four ditches and six discrete features were uncovered in this field. The westernmost ditch (**1072**) was orientated east-north-east to west-south-west and terminated 9m from the north-north-eastern baulk. It measured 0.84m wide and 0.15m deep and contained a single mid greyish-brown sandy-clay fill (1073), from which a single piece of post-medieval roof tile was recovered.

3.2.7 Two ditches were aligned north-south and were located 100m apart. That to the west (**1074**), measuring 1.60m wide and 0.42m deep, had a 'V' shaped profile and contained a single dark grey-brown silty-clay fill from which one fragment of CBM, possibly dating from the late medieval period, was recovered. The eastern ditch (**1086**), measuring 1.40m wide and 0.30m deep, was also 'V' shaped in section and contained a single silty-clay fill from which one piece of post-medieval roof tile was recovered.

3.2.8 Ditch **1092** was located 45m to the east and ran on a perpendicular course to those described above. Measuring 2.02m wide and 0.55m deep, it had a steep 'V' shaped profile and contained two soft sandy-silt fills (1090 and 1091). Pottery dating to the post-medieval period was recovered from the upper fill whilst roof tile from the same period was recovered from both fills. A fragment of lava quern was recovered from the upper fill (1090). These objects tend to be associated with Roman and Saxon activity (Appendix B6).

3.2.9 Located 8m to the south-east of ditch **1072** was a circular pit (**1077**) measuring 1.20m in diameter and 0.18m deep. The pit had gradually sloping sides and a flat base and contained a single firm silty-clay fill from which a large quantity of charcoal but no artefacts was recovered. An environmental sample also produced a large amount of charcoal (Appendix C2).

3.2.10 Five pits were located between ditches **1086** and **1092**. The westernmost of these pits (**1085**), measuring 0.9m in diameter and 0.14m deep, was circular in plan and contained a single fill (1084) from which a large quantity of charcoal and a small amount of burnt flint were recovered.

3.2.11 Located 6.5m to the east, two shallow sub-rectangular pits were uncovered, 2.9m apart. The western pit (**1078**), measuring 1.02m by 0.56m and 0.16m deep, was irregular in plan and profile with gently sloping sides and containing a single light yellowish-grey fill (1079) from which 348g of pottery dating to the Late pre-Roman Iron Age or Early Romano-British period was recovered (Appendix B3). An environmental sample produced a small amount of charcoal and iron working slag (Appendix C2). The eastern pit (**1089**), measuring 1.85m by 0.28m and 0.08m deep, had gently sloping sides and contained a single dark grey silty-clay fill (1088) from which no artefacts were recovered.

3.2.12 Two circular features, which may have been the remains of pits, were located 13m to the south-east. The pits (**1081** and **1083**), both measuring 0.5m in diameter and 0.04m deep, contained a single dark grey brown silty-clay fill from which no artefacts were recovered. The fill of pit **1083** (1082) had a reddish hue, maybe indicating in-situ burning, whilst that of **1081** (1080) contained a moderate amount of charcoal.

3.2.13 A modern land drain was located at the south-eastern end of the trench in this field and was left in-situ.

Field C12 (Figure 5c):

3.2.14 Three linear features were uncovered during trenching in Field C12 to the east. This trench measured 266m long by 6.60m wide and was orientated west-north-west to east-south-east. The westernmost ditch (**1069**), located 87.4m from the west-north-western end of the trench and orientated north-west to south-east, measured 1.40m wide and 0.22m deep and contained a single silty-clay fill from which large hedge roots were recovered but no artefacts. This ditch may correspond to one of those identified in this field on the plot of the cropmarks.

3.2.15 A north-east to south-west orientated ditch (**1070**) was located 75.7m to the east. This ditch, measuring 0.55m wide and 0.09m deep, was 'U' shaped in profile and contained a light brown-grey soft sandy-clay fill (1071) from which no artefacts were recovered. This ditch terminated 5.10m from the northern baulk.

3.2.16 Aligned on a north-west to south-east orientation, a ditch (**1065**) with a 'U' shaped profile was located 62m to the east-south-east (Plate 2). This ditch, measuring 1.50m wide and 0.46m deep, contained two mid brown-grey sandy-clay fills (1066 and 1067) neither of which produced any artefacts. An environmental sample from the upper fill produced a small amount of charcoal. This ditch may correspond to one of those identified in this field on the plot of the cropmarks.

3.2.17 Two sherds of medieval pottery were recovered, unstratified from this field (Appendix B4).

South of Old House Lane (Figures 6 and 7)

3.2.18 Monitoring at Fields C11, C5 and C6 uncovered twelve small circular or ovoid pits. These pits (**1036**, **1038**, **1042**, **1044**, **1046**, **1048**, **1050**, **1052**, **1054**, **1056**, **1062** and **1064**), measuring between 0.65m and 1.20m in diameter and up to 0.11m deep, had gently sloping sides and all contained evidence of *in-situ* burning (Plate 3; Figure 11, Sections 144, 145 and 146). Environmental samples from these features produced a large amount of charcoal (Appendix C2). These features contained no artefacts but may relate to similar features in the wider landscape, dating to the Late Iron Age or early Roman period and interpreted as fire pits (see below). This was supported by C14 analysis of a sample of charred plant remains from **1054** which returned a data of 21calBC-125calAD (92.8%; SUERC-67840; Appendix C3).

Site 2: South of Park Lane, Langham (Figure 8)

Field C2

3.2.19 This site lay entirely within one field (C2) at the eastern end of the western segment of the pipeline route. The trench measured 329m long by 12m wide, was orientated from east to west and contained five linear features and eight discrete features.

3.2.20 Two ditches in the centre of the trench were orientated north-east to south west and located 91m apart. The westernmost ditch (**1029**), measuring 1.16m wide and 0.2m deep, had gently sloping sides and a flat base and contained a single fill (1030) from which fragments of a possible iron vessel (sf1001) and a small amount of post-medieval CBM was recovered (Appendix B5; Figure 11, Section 110). The eastern ditch (**1027**) measured 2.60m wide and 0.80m deep and contained no artefacts in its single friable silty-clay fill (Plate 4). This ditch may correspond to one of those identified in this field on the plot of the cropmarks.

3.2.21 Two pits were located between these ditches. The western pit (**1015**), measuring 0.92m by 0.34m and 0.08m deep, was sub-rectangular in plan and 'V' shaped in profile. It contained a single fill (1014) from which 22 sherds of pottery dating to the Late pre-Roman Iron Age/ Early Romano-British period were recovered (Appendix B3). Charcoal was recovered from an environmental sample.

3.2.22 Fifty-one metres to the east, the second pit (**1026**) was circular in plan with steep sides and measured 0.67m in diameter and 0.30m deep. It contained two sandy-clay fills from which no artefacts were recovered, however charcoal was recovered from environmental samples from both fills. The upper fill (1024), measuring 0.16m in diameter and 0.17m deep, consisted of a mid yellow-brown firm sandy-clay.

3.2.23 A series of features was located at the eastern end of the trench. A curvilinear ditch (**1023**; **1032**) ran generally from south-west to north-east and measured 0.86m wide and 0.23m deep. The ditch had gradually sloping sides with a concave profile and contained a single fill from which 46 sherds of Late pre-Roman Iron Age pottery were recovered. An environmental sample produced a large amount of charcoal. This ditch was truncated by a substantial north to south orientated boundary ditch (**1021**). This ditch, measuring 4.5m wide and 0.61m deep, had stepped sides, a concave base and contained three fills (1018, 1019 and 1020) (Figure 11, Section 107). A primary fill (1020) had built up against the eastern edge of the ditch and may indicate the location of a bank on this side. No finds were recovered from this context. A total of 571g of early to middle 1st century AD pottery was recovered from the two secondary fills (Appendix B3). A shallow ditch (**1017**) truncated the upper fills but followed the same course as the earlier ditch. This ditch, measuring 0.20m wide and 0.11m deep, had a steep sided 'U' shaped profile and contained a single fill (1016) from which a small amount (3 sherds) of Late pre-Roman Iron Age pottery was recovered. An environmental sample produced charcoal and a small amount of slag (Appendix C2).

3.2.24 Two sub-circular postholes also truncated the boundary ditch. The southern posthole (**1009**) measured 0.34m in diameter and 0.06m deep and had a concave base. The northern posthole (**1011**) measured 0.25m in diameter and 0.05m deep and also had gradually sloping sides and a concave base. Both contained dark orange-brown clay-silt fills from which no artefacts were recovered.

3.2.25 A line of three postholes, running from north to south, spaced 1m apart, was located 22.70m to the east of the boundary ditch. Three of the postholes (**1003**, **1005**, **1007**) measured 0.3m-0.4m in diameter and up to 0.05m deep. They contained mid grey-brown soft clay-silt fills from which no artefacts were recovered. A fourth feature was located 1.70m to the north. This pit (**1001**), measuring 0.84m in diameter and 0.23m deep, contained a large amount of charcoal, a single charred wheat grain, and redeposited natural, but no artefacts (Appendix C2). C14 analysis of the charred wheat grain showed it to have a modern origin (Appendix C3).

3.3 Langham to Ardleigh Reservoir (ARWP14)

North-west of Ardleigh Reservoir (Figure 9)

3.3.1 Monitoring along this stretch of the pipeline route uncovered a single feature in Field A5 located to the north-west of the reservoir. This ditch (**1563**), measuring 1.10m wide and 0.33m deep, had gradually sloping sides and a flat base and contained a single mid brownish-grey loose silty-sand fill (1564) from which post-medieval pottery and a nail were recovered (Appendix B1; B4). Metal detecting along this part of the route recovered no other artefacts.

Site 3: North-east of Ardleigh Reservoir (Figure 9)

3.3.2 This site covered two fields, A3 and A4, located at the north-east of the Ardleigh reservoir either side of Wick Lane.

Field A4:

3.3.3 The trench in this field measured 10.30m wide and was curvilinear in plan measuring 103m south to to north before turning 45º to the west and continuing for a further 150m. Three linear features and two discrete features were uncovered in this trench.

3.3.4 The linear features were all aligned north-north-west to south-south-east and were located at the eastern side of the trench. The westernmost ditch (**1621**), measuring 1.20m wide and 0.36m deep, had a 'U' shaped profile with a concave base and contained a single dark greyish-brown friable sandy-silt fill (1620) from which CBM was recovered. This ditch appears to correspond to one of those identified in this field on the plot of the cropmarks.

3.3.5 Located 3m to the east, a shallow flat based ditch (**1619**), measuring 1.5m wide and 0.1m deep contained a single reddish-brown soft silty-sand fill from which no artefacts were recovered (Plate 5). This ditch, probably a furrow, continued into the northern part of the trench (**1615**). A further 2.60m to the east of this another ditch (**1617**), measuring 1.45m wide and 0.35m deep, contained a silty-clay primary fill (1624) and a dark greyish-brown soft clay-silt secondary fill (1616). This probable drainage ditch continued to the north of the trench (**1608**) where more CBM was recovered.

3.3.6 A second furrow was uncovered to the east of these ditches and this remained unexcavated.

3.3.7 Located 5.30m from the western end of the trench, an isolated flat based pit (**1613**) measuring 1.60m in diameter and 0.18m deep contained a single soft silty-sand fill from which three sherds of post-medieval pottery were recovered. A second small pit (**1610**) was located between a furrow (**1615**) and drainage ditch (**1608**). This pit, measuring 0.64m in diameter and 0.12m deep, had gradually sloping sides and a concave base and contained a single dark orange-brown friable silty-clay fill from which a small amount of CBM was recovered.

Field A3:

3.3.8 Five features, consisting of a ditch and four pits/postholes, were located in Field A3 located to the south of Wick Lane. The trench in this field measured 87.9m from north to south and 10m wide. The most northerly feature was a ditch (**1577**) which measured 1.9m wide and 0.29m deep. Running from east to west, it had gradually sloping sides and a concave base and contained a single mid grey-brown silty-sand fill (1576) from which no finds were recovered. This ditch appears to correspond to one of those identified on the plot of the cropmarks in this field.

3.3.9 Two postholes lay directly south of the ditch. The western posthole (**1591**), measuring 0.39m in diameter and 0.09m deep, was circular in plan with a gradual concave profile and contained a single dark grey fill (1590). Six metres to the east another posthole (**1589**), measuring 0.38m in diameter and 0.14m wide, had a similar profile and contained a single dark grey silty-sand fill (1588). Environmental samples from both of these features produced only a small amount of charcoal (Appendix C2).

3.3.10 A pit (**1596**) was located 4m to the south. Measuring 1.34m by 0.96m and 0.4m deep, it was sub-circular in plan with steep sides and a concave base and contained two soft silty-sand fills (1594 and 1595) from which no finds were recovered. An environmental sample from the upper fill produced a small amount of charcoal.

3.3.11 Located at the southern end of the trench, a pit (**1600**), measuring 1.06m by 0.74m and 0.23m deep, had steep sides and an irregular base. No finds were recovered from its single light blueish-grey firm silty-sand fill (1599). A small amount of charcoal was recovered from an environmental sample.

Site 4: South of Ardleigh (Figure 10)

3.3.12 Archaeological features uncovered at this site, adjacent to the A137, were located in two fields: A2 to the north and A1 to the south.

Field A2:

3.3.13 The trench in Field A2, measuring 10.70m wide, 95m from north to south and 64m from east to west at the southern end, contained nine linear features and a layer. The northernmost ditch (**1606**), orientated east-north-east to west-south-west and measuring 2.24m wide and 0.32m deep, contained two clay-silt fills. The lower fill (1607) had accumulated against the northern edge of the ditch and may be evidence for a bank on this side.

3.3.14 A ditch (**1601=1592**) running on a similar course was located 46m to the south. This ditch, measuring 1.12m wide and 0.38m deep, contained a single fill (1593=1602) (Plate 6). These ditches may have been field boundaries and could relate to some of the cropmarks plotted in this field.

3.3.15 Two inter-cutting east-west orientated ditches were located 3.5m to the south. The earliest of these ditches (**1583**), measuring in excess of 1.80m wide and 0.70m deep, contained a single mid greyish-brown friable clay-sand fill (1587) from which post-medieval\modern pottery and glass were recovered. The later ditch (**1584**), measuring 2.90m wide and 0.55m deep, contained two fills (1585 and 1586).

3.3.16 Orientated north-east to south-west, another ditch, measuring 0.72m wide and 0.13m deep, ran for 27.60m across the trench. This ditch had gradually sloping sides and a concave base and contained no datable artefacts from its single fill (1573).

3.3.17 Ditch (**1570=1572**) was truncated by a west-south-west to east-north-east orientated ditch (**1604=1574**). This feature, measuring 0.34m wide and 0.20m deep, contained a single mid yellow-brown soft silty-clay fill from which no artefacts were recovered.

3.3.18 Three roughly parallel ditches ran from north-north-east to south-south-west in the southern part of the trench. The western ditch (**1568**), measuring 1.32m wide and 0.19m deep, had gradually sloping sides and a concave base and contained a single mid greyish-brown friable sandy-clay fill (1569) from which post-medieval CBM and pottery were recovered. Located 16m to the south-east, ditch (**1566**) measured 1.70m wide and 0.34m deep. It had gradually sloping sides and a concave base and contained a single fill from which post-medieval pottery, CBM and an iron nail were recovered (Appendix B1; B4; B5). The third parallel ditch (**1578**), measuring 1.45m wide and 0.42m deep, was located 14.60m to the east. These features are likely to be the remains of furrows.

3.3.19 Located between ditches **1566** and **1578**, a shallow linear feature ran from south-west to north-east. This feature (**1580**), measuring 8m long, 3.4m wide and 0.27m deep, had gradually sloping sides and a flat base. It contained two fills from which probable Roman tile (Appendix B5) and a fragment of post-medieval clay tobacco pipe were recovered (Appendix B5 and B6).

3.3.20 A spread of material (1565) was located at the south-eastern end of the trench, and continued under the southern baulk. The spread was sub-rectangular in plan and measured 3.90m long, in excess of 2.60m wide and 0.15m deep. The deposit consisted of a mid greyish-brown friable sandy-silt from which medieval and post-medieval pottery was recovered along with fragments of animal bone and CBM possibly dating to the Roman period. This deposit may have been related to demolition or levelling of a building in this area.

Field A1:

3.3.21 Located to the east of the A137, Field A1 contained six linear features and six discrete features. The trench in this field measured 9.5m wide, 368m long from north-east to

south-west and 52m from north-west to south-east, where it turned at its south-eastern end.

3.3.22 All of the linear features uncovered in this field dated to the post-medieval period or later. One prehistoric pit was uncovered along with two undated features.

Pits

3.3.23 A pit (**1561**), measuring 1.45m by 0.34m and 0.13m deep, was located at the northern end of the trench. It contained pottery dating to the post-medieval period.

3.3.24 Pit **1501**, measuring 0.47m in diameter and 0.20m deep, was circular in plan with a flat base and steep sides (Plate 7; Figure 11, Section 151). It contained a mid brownish-grey, soft sandy-silt fill (1502) from which a large portion (890g) of a flint tempered Ardleigh-type Middle Bronze Age urn was recovered (Plate 7; Plate 9; Appendix B2). An environmental sample from the upper fill produced a large number of charred barley grains as well as charcoal (Appendix C2). A radiocarbon date at the beginning of the Late Bronze Age was obtained from one of the barley grains (1279-1057BC; SUERC-60672; 2968±31BP; Appendix C3).

3.3.25 Located 10.30m to the south of this pit, another small pit was uncovered. This pit (**1556**), measuring 0.60m by 0.49m and 0.24m deep, was sub-circular in plan with sharp sides and a concave base. It contained a mid greyish-brown soft sandy-silt (1555) from which no artefacts were recovered. A small amount of charcoal was recovered from an environmental sample taken from this feature.

3.3.26 A third pit was located 13.9m to the south-west. This pit (**1544**), measuring 1.20m by 0.90m and 0.20m deep, was irregular in plan and had gradual sides and a concave base. It contained two fills (1542 and 1543) from which charcoal and burnt flint were recovered. An environmental sample from the upper fill also produced charcoal.

Ditches

3.3.27 The most northerly feature in this trench was a ditch (**1559**) running perpendicular to the trench 74m from the north-eastern end. The ditch, measuring 1.05m wide and 0.38m deep, contained a single light brown-grey sandy-clay fill (1560) from which medieval and post-medieval pottery and CBM were recovered. This ditch may correspond to one of those identified in this field on the plot of the cropmarks. It was truncated by a pit **1561**.

3.3.28 Located 3.9m to the south-west of ditch **1559** the terminus of a curvilinear ditch, which ran for 146m across the trench, was uncovered. This ditch (**1557**, **1527**, **1520**, **1504**, **1541**), measuring up to 2m wide and 0.58m deep, had steep sides and a concave base and curved to the west at its south-western end (Plate 8; Figure 11, Section 156). A single mid brownish-grey fill was encountered along the majority of the length of the ditch, however four fills were uncovered mid-way along its length possibly indicating a backfilling event in this area. A primary fill (1521) had accumulated against the north-western edge indicating the possible location of a bank on the north-western side of the ditch. Post-medieval CBM was recovered along the entire length of the ditch along with several sherds of pottery and glass also dating to this period.

3.3.29 A ditch running on a perpendicular course and intersecting with the main boundary ditch was located 122m from its northern terminus. The fills of the two ditches appeared to be the same, perhaps indicating that they were in use simultaneously. This ditch (**1508**), measuring 0.65m wide and 0.20m deep, may have formed a boundary ditch or hedge line. It contained a compacted clay-sand fill (1507) which was truncated by two sub-circular features (**1514** and **1516**) up to 0.63m wide and 0.16m deep, which may

have been the location of fence posts or associated with hedging. No finds were recovered from these features.

3.3.30 A smaller ditch truncated the upper fills of the curvilinear boundary ditch. This ditch was comprised of two segments (**1525** and **1529=1531**), measuring a maximum of 0.70m wide and 0.30m deep, may also represent the re-establishment of the boundary with a hedge line after the ditch had been backfilled (Plate 8). Post-medieval pottery and glass were recovered from this feature, along with fragments of CBM that may have dated from the Roman period (Appendix B4; B5; B6).

3.3.31 A similar feature was located 50m to the south of the curvilinear ditch. This feature (**1546=1548=1550**), measuring 5.70m long, 0.70m wide and 0.07m deep, followed an irregular linear course and contained a loose sandy-silt fill from which no artefacts were recovered.

3.3.32 A large boundary ditch crossed perpendicular to the trench 20.90m to the south-west of **1546**. This ditch (**1537**), measuring 2.76m wide and 0.57m deep, contained four fills, two of which had derived from erosion of the edges (1535 and 1536) and two secondary fills (Figure 11, Section 158). The lower fill (1534), measuring 0.20m deep, consisted of dark brown-grey sandy-clay and may have derived from deliberate dumping. The upper fill (1533), measuring 0.48m thick, contained CBM, pottery, clay pipe and nails, all dating to the post-medieval period. This ditch may correspond to one of those identified on the plot of the cropmarks in this field.

3.3.33 Located in the southern part of the trench, 10.60m from the south-eastern end, another boundary ditch was uncovered. This ditch (**1554**), measuring 2.38m wide and 0.50m deep, had steep sides and a concave base and contained three fills. The lowest fill (1551) was banked up against the north-western edge and may have derived from eroded bank material. The upper fill (1552) consisted of a dark grey-brown sandy-silt from which a relatively large quantity of post-medieval pottery and CBM was recovered. This ditch appears to be the continuation of one of those identified on the plot of the cropmarks in this field.

3.3.34 Several modern features truncated the archaeology in this field. These included rubbish pits and the cuts for two water pipes.

3.4 Finds Summary

3.4.1 *Metalwork*: Three items of metalwork were recovered consisting of two nails and fragments of an iron vessel.

3.4.2 *Prehistoric* p*ottery*: A total of 21 sherds weighing 890g from a single, incomplete vessel were collected from a pit at Site 4. The assemblage comprises rim and upper body sherds along with a single base sherd from a flint-tempered Ardleigh Urn with fingertip-impressed decoration.

3.4.3 *Late pre-Roman Iron Age* p*ottery*: A total of 167 Late pre-Roman Iron Age pottery fragments, weighing 1494g, were recovered from two sites between Great Horkesley to Langham. The pottery was recovered from six deposits within several cuts of a ditch, gully, pit and tree root. The fragmentary vessels are all in poor condition and severely abraded with an average sherd weight of only *c*. 9g.

3.4.4 *Post-Roman pottery*: Medieval and post-medieval pottery (28 sherds; 566g) was collected from two contexts and two unstratified groups at Site 1, one context in Field A5, and 11 contexts at Site 4.

3.4.5 *Ceramic building material*: CBM was collected from seven contexts and two unstratified finds groups at Site 1, 15 contexts at Site 3 and 12 contexts at Site 4. It dates from the Roman to the post-medieval period.

3.4.6 *Other finds*: Fragments of glass, burnt flint and stone were recovered from four contexts at Site 1. Site 4 produced small quantities of clay tobacco pipe and glass.

3.5 Environmental Summary

3.5.1 *Animal Bone*: The assemblage consists of 19 fragments of which six were identifiable to species. Faunal material was recovered from contexts dating to the late medieval or post-medieval period.

3.5.2 *Environmental Samples*: A total of 22 bulk samples were taken from across five areas of the pipeline route: six from Site 1, six from Site 2, five from Site 3 and three from Site 4. Two other samples were taken from features encountered during monitoring. Charcoal was recovered from virtually all samples but not in significant quantities. A large amount of charcoal was recovered from the Bronze Age pit at Site 4, in association with charred barley grains.

4 Discussion and Conclusions

4.1 Accuracy of the Cropmark Evidence

4.1.1 Strip and map and monitoring of the route of this pipeline has uncovered many of the features previously identified from aerial photographs. In general, areas of archaeological interest, highlighted prior to the works for strip and map excavation, revealed either the cropmark features themselves or features that related to nearby cropmarks.

4.1.2 The features identified in Fields C13 and C14 had not previously been plotted, but were visible as cropmarks. These post-medieval features are likely to have related to previous field boundaries and drainage, some of which are visible on the 1st edition Ordnance Survey map. Two features (**1069** and **1065**) in Field C12 appear to relate to a former, probably post-medieval, field layout. Only the western feature was plotted whilst that to the east of the trench aligns with a boundary plotted from the cropmarks. A third small ditch in this field (**1070**) which was not previously plotted shares an alignment with the others uncovered and probably formed part of the same fieldsystem.

4.1.3 No linear features, with the exception of those associated with the 1940s airfield, were plotted or identified along the course of the route between Fields C11 and C3 suggesting that cropmark evidence is generally reliable in this area, as no archaeological features were revealed in these areas. In Field C2, one of the two probable post-medieval or modern features (**1027** and **1029**) had previously been plotted, however both were parallel and aligned with the modern field. The Roman ditches in this field were on a different alignment but were not visible on aerial photographs. This difference in aerial visibility may be due to the particularly clayey geology encountered in this field.

4.1.4 Between the A12 and the Ardleigh Reservoir only one feature was identified, and this had not been previously plotted. This post-medieval ditch (**1563**), located in Field A5, may have been a former field boundary. Field boundaries and furrows were also uncovered in Field A4, where no cropmarks had been plotted. Strip and map in Field A3 uncovered a single linear feature (**1577**) which had been previously identified. The four discrete features uncovered in this field may have been too small to have been identified from aerial photography. The ditch in this field appears to form part of a fieldsystem which aligns with those ditches to the north of Wick Lane, all of which may have been aligned with the road.

4.1.5 Three linear features had been previously identified in the northern part of Field A2, one of which appears to be the modern high pressure gas main. The other two, both identified during excavation (**1583** and **1606**), may have formed boundaries for a post-medieval plot aligned with Colchester Road (A137).

4.1.6 The southern part of Field A2 lay under pasture, making it more difficult to identify features from aerial photographs. No cropmark features had been plotted in this part of the field however seven features were uncovered during excavation. All but one of the features aligned with the modern plot boundaries. An undated ditch (**1604=1574**) was aligned with neither the modern plots or the Roman road and may be prehistoric in date.

4.1.7 In Field A1, located to the east of the A137, two features (**1537** and **1559**) were uncovered which were in the locations of cropmarks, whilst the other linear features that were revealed, although not previously plotted, also formed part of the same fieldsystem. The cropmarks appeared to show a medieval field layout with a droveway

and this was validated by the findings of the excavation. Finds from the ditches indicate that backfilling of the field boundaries took place in the post-medieval period. The Bronze Age pit was not previously plotted.

4.1.8 The archaeological work carried out on the route of this pipeline has demonstrated that the cropmark evidence is reliable for identifying post-medieval field boundaries on the predominantly sandy-clay geology encountered across the whole route. The majority of features that had been plotted were located during stripping. Areas where no cropmarks were plotted tended to have no archaeological features present when excavated. With the exception of the Roman ditch in Field C2, the cropmark evidence has proved successful in identifying the location of sites on this geology.

4.2 Prehistoric Activity

The Bronze Age Pit

4.2.1 The most significant feature uncovered along this part of the pipeline route was a small pit (**1501**) at Site 4, Field A1 south of Ardleigh. Given the relatively shallow depth of the overlying deposits it seems likely that some of this feature may have been truncated by ploughing. The pit contained the broken but nearly complete remains of a flint tempered decorated courseware vessel. Vessels of this type typically date to the Middle Bronze Age, however a radiocardon date from a barley grain found in this vessel dated to around the beginning of the Late Bronze Age or later. The entire fill of this pit was subject to flotation which produced a large amount of charcoal and charred barley grains. Sherds from the vessel appear to have been broken before they went in to the pit since there was no obvious order to their distribution to indicate that it had been complete prior to plough damage. Two other pits were uncovered nearby, however neither contained any artefacts and so cannot be attributed to the Bronze Age.

4.2.2 Similar vessels have been found in large quantities at Bronze Age cemeteries identified at Ardleigh (Brown 1999), Brightlingsea (Clarke and Lavender 2008), St. Osyth (Germany 2007) and Chitts Hill (Crummy 1977). They have been recovered primarily from contexts associated with ring ditches or used as cremation urns. An interesting comparison from Brightlingsea comes from one of the cremations (F1096/714) which also contained charred barley grains (Murphy 2008) indicating that such deposits do not necessarily relate to domestic activity.

4.2.3 It was noted during the Central Excavation Unit (CEU) excavations at the Ardleigh cemetery that there was exceptionally poor preservation of human bone due to the acidic gravel geology into which the burials had been dug. Although the geology at Site 4 was not the same terrace gravels as those to the east it may still have been acidic enough to remove any evidence of any bone which may have been in feature **1501**.

4.2.4 The form and contents of this pit tend to lead to three possible interpretations. The first being that it was close to or associated with a settlement and that the material in it derived from dumped domestic refuse, the presence of charcoal and barley grains seem to support this possibility. However, given the proximity of the Ardleigh cemetery and the rarity of domestic evidence associated with these vessels it is possible that this feature was a cremation from which all evidence of bone has degraded. A third possibility may be that this pit contained ritually deposited artefacts and that no cremation was interred here.

4.2.5 The limited size of excavation areas associated with a pipeline means this feature will only be able to provide a small insight into the Bronze Age occupation in this area,

south of Ardleigh. It is possible that the remaining unexcavated majority of Field A1 is the location of a more extensive cemetery or settlement dating to the Late Bronze Age.

4.3 Late Iron Age and Roman Occupation

4.3.1 Evidence of Late Iron Age and Roman occupation was uncovered in Field C2, south of Langham. Three phases of activity appear to have occurred here. A curvilinear gully (**1032**), broadly orientated north-east to south-west was truncated by a large boundary ditch (**1021**) running north to south. The third phase was evidenced by two postholes (**1009** and **1011**) cut through the upper fills of this ditch. These postholes, along with those uncovered further to the east, contained no artefacts in their dark clayey-silt fills that were indicative of modern topsoil redeposition.

4.3.2 No other features dating to these periods were uncovered in the vicinity of these ditches, however the quantity of pottery recovered from them tends to indicate that a settlement may have been located nearby. The fills in the large boundary ditch are indicative of a bank on the eastern side and this is also the likely location for any settlement. This is further supported by the location of the Roman road 160m to the east. Any settlement in this location is likely to have been located in proximity to the road, giving access to markets in Camulodunum. The earliest ditch also appears to be aligned with the road, if it followed a similar course as the A12 does today.

4.3.3 Another feature dating to the LPRIA was located in Field C13. A group of five pits or postholes was located at the south-eastern end of the trench. One of these pits contained pottery and iron working slag whilst another contained burnt flint. The remaining three pits contained no artefacts. These finds may indicate the location of a Roman domestic or industrial site close to the easement in this area.

4.3.4 A quantity of Roman CBM was recovered from Field A2 at Site 4. No pottery dating to this period was recovered, suggesting that this material may have been derived from recycled rather than *in-situ* building material.

4.3.5 A number of shallow rounded and sub-rounded pits were located in the fields to the west of the A12. None of the 17 pits (two in Field C2, eight in C5, two in C6, two in C11 and three in C13) contained any artefacts, however pit **1085** in Field C13 was associated with a pit containing Late Iron Age pottery and iron working slag. One of these pits in Field C5 was dated to the Late Iron Age\ Early Roman period (21cal BC-125calAD) by C14 analysis of charred plant remains. A similar distribution of charcoal rich 'fire pits' was found during excavations at Cuckoo Farm Park and Ride (Dyson 2015) and Northern Approach Road Phase III (Baister 2014) located less than a kilometre to the south of the pipeline route at Langham. Whilst these features were undated at the Northern Approach Road site, at Cuckoo Farm Park and Ride site two features contained pottery dating to the 1st century AD whilst a third was radiocarbon dated to the end of the Iron Age (50BC-AD5).

4.3.6 With these comparisons and the association of the pits in Fields C2, C5 and C13 with Late Iron Age and Roman features it is likely that these pits form part of the same phenomenon responsible for others in this area. These findings extend the zone of 'fire pit' activity significantly to the north of the Roman town.

4.4 Medieval, Post-Medieval and Modern Features

4.4.1 Two medieval sherds found unstratified in Field C12 are probably kiln wasters - production sites have previously been identified at Mile End and Great Horkesley, with waster pits excavated around the junction of the A134 with Old House Road (Drury and Petchey 1975). These sherds are likely to be wasters from the same industry, although based on current evidence it is uncertain whether their presence indicates further kiln sites in Field C12, or whether the sherds reached this area through manuring (see Appendix B.4).

4.4.2 The majority of features identified along the route of the pipeline have been dated to the post-medieval period either by pottery, CBM or by association with dated field boundaries and cropmarks.

4.4.3 The boundary ditch (**1557**) uncovered in Field A1 may have originated in the medieval period. It appears to have formed part of a fieldsystem, seen in cropmarks to the east, whose plan is that of medieval strip fields. The finds from the ditches in Field A1 were predominantly post-medieval, suggesting that at least in part, this fieldsystem remained in use until the 19th century. It seems likely that at this time the ditches were deliberately backfilled to form the large field that exists today.

4.4.4 Other ditches uncovered in Ardleigh also appear to relate to cropmarks which may date to the post-medieval period. These ditches tend to align with extant field boundaries and were probably former field divisions that were backfilled to form larger fields in the 19th and 20th centuries. This can also be seen in Fields C2 and C12, whilst ditches in Fields C13 and C14 also date to this period but were not initially identified as cropmarks.

4.5 Significance

4.5.1 The most significant remains uncovered during the works along the route of the Great Horkesley to Ardleigh section of this pipeline were those of pit **1501** which contained a deposit, including fragments of an Ardleigh-type vessel, dating to the first part of the Late Bronze Age. One possibility is that this pit was used for the deposition of pyre debris associated with cremation burials. Although no other contemporary features were associated with this pit it is likely to have been related to funerary activity in the vicinity. The relatively late date of the deposit is also significant given that vessels of the type found in the pit tend to date to the Middle Bronze Age. If a cemetery is associated with this pit it would probably have been a later outlier of the main group of Ardleigh burials uncovered to the east.

4.5.2 The identification of a previously unknown Late pre-Roman Iron Age site adjacent to the former Roman Road (A12) is also of significance and will add to the history of the development of the Late Iron Age/Early Roman landscape in this area. The quantities of pottery recovered from the boundary ditch in Field C2 are indicative of a settlement in the vicinity. If this is the case it may be an indication that the Roman road had an earlier (pre-Roman) origin.

Appendix A. Trench Descriptions and Context Inventory

Trench Depths: COLEM2014.72

COLEM2014.72					
Field No.	**Trench Length (m)**	**Trench Width (m)**	**Topsoil Depth (m)**	**Subsoil Depth (m)**	**Features and Finds**
C1	-	c.10	0.30	-	No features
C2	329	12	0.34	<0.1	Site 2: 5 ditches and 8 pits\postholes
C3	-	c.10			No features
C4	-	c.10	0.25	<0.1	Post-med field boundary
C5	-	c.10			No features
C6	-	c.10	0.35	-	Modern tree clearance pits
C7	-	c.10	0.35	-	Modern tree clearance pits
C8	-	c.10	0.3-0.35	-	No features
C9	-	c.10	0.3	-	No features
C10	-	c.10	0.3	-	Two modern pits
C11	-	c.10	0.3	-	Two modern pits
C12	266	6.6	0.3	0.1	Site 1: Three ditches
C13	270	6.7	0.30	0.05	Site 1: 4 ditches and 6 pits
C14	307	7	0.30	0.05	Site 1: 4 ditches and 2 pits
C15	-	c.10	0.30	-	No features

Trench Depths: ARWP14

ARWP14					
Field No.	**Trench Length (m)**	**Trench Width (m)**	**Topsoil Depth (m)**	**Subsoil Depth (m)**	**Features and Finds**
A1	368	9.5	0.29	0.16	Site 4: 6 linear features; 6 discrete features
A2	159	10.70	0.35	0.16	9 linear features and one layer. Post-med
A3	87.9	10	0.26	0.16	1 ditch and four discrete features.
A4	253	10.30	0.35	-	3 linear features and two discrete features
A5	-	c.10	0.32	<0.1	1 post-med field boundary
A6	-	c.10	0.3	<0.1	No features
A7	-	c.10	0.3	<0.1	No features

Context Inventory:

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orientation
2014.72	2	C2	1001	**1001**	Cut	Pit	0.84	0.23				Circular	Steep slope	Gradual	Flatish	
2014.72	2	C2	1002	**1001**	Fill	Pit	0.84	0.23	Dark greyish black	Ashy clayey silt	Soft					
2014.72	2	C2	1003	**1003**	Cut	Posthole	0.3	0.05				Circular	Gentle slope	Gradual	Concave	
2014.72	2	C2	1004	**1003**	Fill	Posthole	0.3	0.05	Mid greyish brown	Clayey silt	Soft					
2014.72	2	C2	1005	**1005**	Cut	Posthole	0.4	0.05				Circular	Vertical on n side, slopping on s	Sharp	Flatish	
2014.72	2	C2	1006	**1005**	Fill	Posthole	0.4	0.05	Mid greyish brown	Clayey silt	Soft					
2014.72	2	C2	1007	**1007**	Cut	Posthole	0.3	0.35				Circular	Gentle slope	Gradual	Flatish	
2014.72	2	C2	1008	**1007**	Fill	Posthole	0.3	0.35	Mid greyish brown	Clayey silt	Soft					
2014.72	2	C2	1009	**1009**	Cut	Posthole	0.34	0.06				Sub-circular	Gentle slopes	Gradual	Concave	
2014.72	2	C2	1010	**1009**	Fill	Posthole	0.34	0.06	Dark orangish brown	Clayey silt	Soft					
2014.72	2	C2	1011	**1011**	Cut	Posthole	0.25	0.05				Sub-circular	Gentle slope	Gradual	Concave	

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
2014.72	2	C2	1012	**1011**	Fill	Posthole	0.25	0.05	Dark orangey brown	Clayey silt	Friable					
2014.72	2	C2	1014	**1015**	Fill	Pit/Tree bowl	0.34	0.08	Dark brownish grey	Sandy clay	Soft					
2014.72	2	C2	1015	**1015**	Cut	Pit/Tree bowl	0.34	0.08				Sub-rectangular	Gentle slope	Gradual	Concave	SSW-NNE
2014.72	2	C2	1016	**1017**	Fill	Gully	0.2	0.11	Mid yellowish brown	Clayey sand	Soft					
2014.72	2	C2	1017	**1017**	Cut	Gully	0.2	0.11				Linear	Steep	Sharp	Flat	NNW-SSE
2014.72	2	C2	1018	**1021**	Fill	Ditch	3.75	0.37	Dark yellowish brown	Clayey sand	Plastic					
2014.72	2	C2	1019	**1021**	Fill	Ditch	1.2	0.24	Dark blueish grey	Sandy clay	Soft					
2014.72	2	C2	1020	**1021**	Fill	Ditch	0.7	0.16	Light blueish brown	Sandy silt	Firm					
2014.72	2	C2	1021	**1021**	Cut	Ditch	4.5	0.61				Linear	Stepped	Gradual	Concave	NNW-SSE
2014.72	2	C2	1022	**1023**	Fill	Ditch	0.74	0.23	Mid blueish brown	Clayey sand	Soft					
2014.72	2	C2	1023	**1023**	Cut	Ditch	0.74	0.23				Linear	Steep	Gradual	Concave	NNE-SSW

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orientation
2014.72	2	C2	1024	**1026**	Fill	Posthole	0.16	0.12	Mid yellowish brown	Sandy clay	Plastic					
2014.72	2	C2	1025	**1026**	Fill	Posthole	0.64	0.3	Mid greyish brown	Sandy clay	Soft					
2014.72	2	C2	1026	**1026**	Cut	Posthole	0.64	0.3				Circular	Steep	Sharp	Concave	ENE-WSW
2014.72	2	C2	1027	**1027**	Cut	Ditch	1.6	0.8				Linear	Steeply sloping	Gradual	V shape	N-S
2014.72	2	C2	1028	**1027**	Fill	Ditch	1.6	0.8	Light greyish brown	Silty clay	Friable					
2014.72	2		1029	**1029**	Cut	Ditch	1.16	0.2				Linear	Gentle slope	Gradual	Flat	NNW-SSE
2014.72	2	C2	1030	**1029**	Fill	Ditch	1.16	0.2	Mid oragney brown	Silty clay	Friable					
2014.72	2	C2	1031	**1032**	Fill	Ditch	0.86	0.19	Light blueish brown	Clayey silt	Friable					
2014.72	2	C2	1032	**1032**	Cut	Ditch	0.86	0.19				Linear	Gentle slope	Gradual	Concave	NNW-SSE
2014.72	1	C13	1033	**1034**	Fill	Pit	0.4	0.14	Mid brown	Silty clay	Soft					
2014.72	1	C13	1034	**1034**	Cut	Pit	0.4	0.14				Linear	Steep	Gradual	Flat	N-S
2014.72		C6	1035	**1036**	Fill	Pit	0.65	0.05								
2014.72		C6	1036	**1036**	Cut	Pit	0.65	0.05								
2014.72		C6	1037	**1038**	Fill	Pit	0.65									

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
2014.72		C6	1038	**1038**	Cut	Pit	0.65									
2014.72		C5	1041	**1042**	Fill	Pit	0.8	0.11								
2014.72		C5	1042	**1042**	Cut	Pit	0.8	0.11								
2014.72		C5	1043	**1044**	Fill	Pit	0.75	0.12								
2014.72		C5	1044	**1044**	Cut	Pit	0.75	0.12								
2014.72		C5	1045	**1046**	Fill	Pit	0.8	0.09								
2014.72		C5	1046	**1046**	Cut	Pit	0.8	0.09								
2014.72		C5	1047	**1048**	Fill	Pit	0.65									
2014.72		C5	1048	**1048**	Cut	Pit	0.65									
2014.72		C5	1049	**1050**	Fill	Pit	0.7									
2014.72		C5	1050	**1050**	Cut	Pit	0.7									
2014.72		C5	1051	**1052**	Fill	Pit	1.2	0.03								
2014.72		C5	1052	**1052**	Cut	Pit	1.2	0.03								
2014.72		C5	1053	**1054**	Fill	Pit	1	0.08								
2014.72		C5	1054	**1054**	Cut	Pit	1	0.08								
2014.72		C5	1055	**1056**	Fill	Pit	0.65	0.04								
2014.72		C5	1056	**1056**	Cut	Pit	0.65	0.04								
2014.72		C10	1057	**1058**	Fill	Pit?	0.8		Dark brownish grey							
2014.72		C10	1058	**1058**	Cut	Pit?	0.8									
2014.72		C10	1059	**1060**	Fill	Pit?	0.8		Dark brownish grey							

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
2014.72		C10	1060	**1060**	Cut	Pit?	0.8									
2014.72		C11	1061	**1062**	Fill	Pit	0.95	0.08	Dark grey	Silty clay	Firm					
2014.72		C11	1062	**1062**	Cut	Pit	0.95	0.08				Circular	Gentle slope	Imperce ptible	Flat	
2014.72		C11	1063	**1064**	Fill	Pit	0.9	0.08	Dark grey	Silty clay	Soft					
2014.72		C11	1064	**1064**	Cut	Pit	0.9	0.08				Circular	Gentle slope	Imperce ptible	Flat	
2014.72	1	C12	1065	**1065**	Cut	Ditch	1.5	0.46				Linear	Gentle slope	Gradual	Flat	
2014.72	1	C12	1066	**1065**	Fill	Ditch	1.5	0.26	Mid brown grey	Sandy clay	Plastic					
2014.72	1	C12	1067	**1065**	Fill	Ditch	1.2	0.46	Mid greyish brown	Sandy clay	Soft					
2014.72	1	C12	1068	**1069**	Fill	Ditch			Mid brown yellow	Silty clay	Soft					
2014.72	1	C12	1069	**1069**	Cut	Ditch						Linear	Steep	Sharp		
2014.72	1	C12	1070	**1070**	Cut	Ditch	0.55	0.09				Linear	Gentle slope	Gradual	Flat	
2014.72	1	C12	1071	**1070**	Fill	Ditch	0.55	0.09	Light brown grey	Sandy clay	Soft					
2014.72	1	C13	1072	**1072**	Cut	Ditch	0.84	0.15				Linear	Gentle slope	Gradual	Flat	
2014.72	1	C13	1073	**1072**	Fill	Ditch	0.84	0.15	Mid greyish brown	Sandy clay	Plastic					
2014.72	1	C13	1074	**1074**	Cut	Ditch	1.6	0.42				Linear	Steep	Gradual	Flat	
2014.72	1	C13	1075	**1074**	Fill	Ditch	1.6	0.42	Dark grey	Silty clay	Soft					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
									brown							
2014.72	1	C13	1076	**1077**	Fill	Ditch	1.2	0.18	Mid grey	Silty clay	Firm					
2014.72	1	C13	1077	**1077**	Cut	Pit	1.2	0.18				Circular	Gentle slope	Imperce ptible	Flat	
2014.72	1	C13	1078	**1078**	Cut	Pit	0.56	0.16				Irregular	Gentle slope	Gradual	Irregular	
2014.72	1	C13	1079	**1078**	Fill	Pit	0.56	0.16	Light yellow grey	Sandy clay	Soft					
2014.72	1	C13	1080	**1081**	Fill	Pit	0.5	0.04	Dark grey brown	Silty clay	Soft					
2014.72	1	C13	1081	**1081**	Cut	Pit	0.5	0.04				Circular	Gentle slope	Imperce ptible	Flat	
2014.72	1	C13	1082	**1083**	Fill	Pit	0.55	0.04								
2014.72	1	C13	1083	**1083**	Cut	Pit	0.55	0.04				Circular	Gentle slope	Imperce ptible	Flat	
2014.72	1	C13	1084	**1085**	Fill	Pit	0.9	0.14	Dark grey	Silty clay	Plastic					
2014.72	1	C13	1085	**1085**	Cut	Pit	0.9	0.14				Circular	Gentle slope	Imperce ptible	Flat	
2014.72	1	C13	1086	**1086**	Cut	Ditch	1.4	0.3				Linear	Gentle slope	Gradual	Flat	NW-SE
2014.72	1	C13	1087	**1086**	Fill	Ditch	1.4	0.3								
2014.72	1	C13	1088	**1089**	Fill	Pit	0.28	0.08	Dark grey	Silty clay	Soft					
2014.72	1	C13	1089	**1089**	Cut	Pit	0.28	0.08				Sub-rectangular	Gentle slope	Imperce ptible	Concave	
2014.72	1	C13	1090	**1092**	Fill	Ditch	2.02	0.33	Mid grey-brown	Sandy clay	Soft					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
2014.72	1	C13	1091	**1092**	Fill	Ditch	1.23	0.22	Light yellow grey	Sandy clay	Soft					
2014.72	1	C13	1092	**1092**	Cut	Ditch	2.02	0.55				Linear	Steep	Sharp	V shape	
2014.72	1	C14	1093	**1095**	Fill	Ditch	2.08	0.36	Light yellow grey	Sandy clay	Soft					
2014.72	1	C14	1094	**1095**	Fill	Ditch	1.12	0.24	Mid yellowish grey	Sandy clay	Soft					
2014.72	1	C14	1095	**1095**	Cut	Ditch	2.08	0.55				Linear	Steep	Sharp	Concave	
2014.72	1	C14	1096	**1097**	Fill	Pit	0.5	0.15	Mid grey	Sandy clay	Soft					
2014.72	1	C14	1097	**1097**	Cut	Pit	0.5	0.15				Sub-circular	Steep	Sharp	Concave	
2014.72	1	C14	1098	**1099**	Fill	Pit	0.4	0.1	Light grey	Sandy clay	Soft					
2014.72	1	C14	1099	**1099**	Cut	Pit	0.4	0.1				Sub-circular	Gentle slope	Gradual	Concave	
2014.72	1	C14	1100	**1101**	Fill	Ditch	1.82	0.25	Dark grey brown	Sandy clay	Soft					
2014.72	1	C14	1101	**1101**	Cut	Ditch	1.82	0.25				Linear	Gentle slope	Gradual	Concave	
2014.72	1	C14	1102	**1103**	Fill	Ditch	1.9	0.27	Mid grey brown	Sandy clay	Soft					
2014.72	1	C14	1103	**1103**	Cut	Ditch	1.9	0.27				Linear	Gentle slope	Gradual	Flat	N-S
2014.72	1	C14	1104	**1105**	Fill	Ditch	0.74	0.22	Light yellow grey	Sandy clay	Soft					
2014.72	1	C14	1105	**1105**	Cut	Ditch	0.74	0.22				Linear	Gentle	Gradual	Concave	NE-SW

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
													slope			
ARWP14	4	F1	1501	**1501**	Cut	Pit/posthole	0.47	0.2				Circular	Steep	Gradual	Flat	
ARWP14	4	F1	1502	**1501**	Fill	Pit/ posthole	0.47	0.2	Light brownish grey	Sandy silt	Soft					
ARWP14	4	F1	1503	**1504**	Fill	Ditch	1.86	0.2	Light yellowish brown	Clayey sand	Concrete					
ARWP14	4	F1	1504	**1504**	Cut	Ditch	1.86	0.2				Linear	Steep	Gradual	Flat	NE-SW
ARWP14	4	F1	1505	**1506**	Fill	Ditch	0.62	0.12	"light yellowish brown light yellowish brown"	Clayey sand	Concrete					
ARWP14	4	F1	1506	**1506**	Cut	Ditch	0.62	0.16				Linear	Steep	Sharp	Flat	NW-SE
ARWP14	4	F1	1507	**1508**	Fill	Ditch	0.65	0.2	Light yellowish brown	Clayey sand	Concrete					
ARWP14	4	F1	1508	**1508**	Cut	Ditch	0.65	0.2				Linear	Steep	Sharp	Flat	NW-SE
ARWP14	4	F1	1509	**1504**	Fill	Ditch	0.33	0.21	Mid greyish yellow	Sandy clay	Concrete					
ARWP14	4	F1	1510	**1504**	Fill	Ditch	0.14	0.15	Dark brownish grey	Sandy silt	Soft					
ARWP14	4	F1	1511	**0**	Layer	Top soil		0.4	Dark greyish brown	Silty silt	Loose					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
ARWP14	4	F1	1512	**0**	Layer	Natural		0.08	Mid greyish brown	Silty sand	Firm					
ARWP14	4	F1	1513	**1514**	Fill	Ditch/hedge	0.5	0.04	Dark brownish brown	Silty sand	Friable					
ARWP14	4	F1	1514	**1514**	Cut	Ditch/hedge	0.5	0.04				Sub-circular	Gentle slope	Gradual	Concave	NE-SW
ARWP14	4	F1	1515	**1516**	Fill	Ditch/hedge row	0.63	0.17	Dark brownish brown	Silty sand	Friable					
ARWP14	4	F1	1516	**1516**	Cut	Ditch/hedge row	0.63	0.17				Sub-circular	Steep	Sharp	Flat	NE-SW
ARWP14	4	F1	1517	**1505**	Fill	Ditch	0.16	0.04	Dark brownish brown	Silty sand	Soft					
ARWP14	4	F1	1518	**1504**	Fill	Ditch	0.66	0.2	Dark reddish brown	Silty sand	Concrete					
ARWP14	4	F1	1519	**1504**	Fill	Ditch	0.46	0.1	Light blueish grey	Sandy sand	Firm					
ARWP14	4	F1	1520	**1520**	Cut	Ditch	2.36	0.58				Linear	Stepped	Gradual	Flat	SW-NE
ARWP14	4	F1	1521	**0**	Fill	Ditch	0.22	0.38	Light blueish grey	Soft	Soft					
ARWP14	4	F1	1522	**1520**	Fill	Ditch	1.42	0.58	Light greyish brown	Sandy clay	Firm					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
ARWP14	4	F1	1523	**1520**	Fill	Ditch	1.1	0.44	Light brownish grey	Sandy clay	Firm					
ARWP14	4	F1	1524	**1520**	Fill	Ditch	1.08	0.32	Light greyish brown	Sandy clay	Firm					
ARWP14	4	F1	1525	**1525**	Cut	Ditch	0.56	0.24				Linear	Gentle slope	Gradual	Flat	NW-SE
ARWP14	4	F1	1526	**1525**	Fill	Ditch	0.56	0.24	Mid brownish brown	Sandy clay	Soft					
ARWP14	4	F1	1527	**0**	Cut	Ditch	0.9	0.42				Linear	Sloping	Gradual	Concave	NE-SW
ARWP14	4	F1	1528	**0**	Fill	Ditch	0.9	0.42	Light brownish grey	Silty clay	Firm					
ARWP14	4		1529	**1529**	Cut	Ditch	0.7	0.3				Linear	Steep	Imperce ptible	Concave	ENE-WSW
ARWP14	4	F1	1530	**0**	Fill	Ditch	0.7	0.3	Mid greyish brown	Sandy silt	Friable					
ARWP14	4		1531	**1531**	Cut	Ditch	0.6	0.21				Linear	Gentle slope	Gradual	Concave	ENE-WSW
ARWP14	4	F1	1532	**1531**	Fill	Ditch	0.6	0.21	Light greyish brown	Sandy silt	Friable					
ARWP14	4	F1	1533	**1537**	Fill	Ditch	1.85	1.48	Mid yellowish brown	Sandy silt	Soft					
ARWP14	4	F1	1534	**1537**	Fill	Ditch	1.28	0.2	Dark	Sandy	Plastic					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
									brownish grey	clay						
ARWP14	4	F1	1535	**1537**	Fill	Ditch	0.14	0.5	Mid brownish yellow	Silty sand	Soft					
ARWP14	4	F1	1536	**1537**	Fill	Ditch	0.7	0.38	Light yellowish gery	Silty sand	Concrete					
ARWP14	4	F1	1537	**1537**	Cut	Ditch	2.6	0.57				Linear	Gentle slope/steep	Sharp	Flat	NW-SE
ARWP14	4	F1	1538	**1541**	Fill	Ditch	0.54	0.44	Mid yellowish brown	Sandy silt	Concrete					
ARWP14	4	F1	1539	**1541**	Fill	Ditch	0.34	0.36	Mid geyish brown	Sandy silt	Concrete					
ARWP14	4	F1	1540	**1541**	Fill	Ditch	0.24	0.4	Mid reddish brown	Clayey silt	Plastic					
ARWP14	4	F1	1541	**1541**	Cut	Ditch	1.02	0.52				Linear	Steep	Gradual	Concave	
ARWP14	4	F1	1542	**1544**	Fill	Tree bowl	0.14	0.14	Light grey	Clayey silt	Plastic					
ARWP14	4	F1	1543	**1544**	Fill	Tree bowl	0.44	0.24	Dark brownish grey	Silty sand	Soft/friabl e					
ARWP14	4	F1	1544	**1544**	Cut	Tree bowl	0.9	0.2				Amorphous	Gentle slope/irregu lar	Gradual	Concave /irregular	
ARWP14	4	F1	1545	**1546**	Fill	Ditch/hedge row	0.7	0.06	Dark brownish brown	Sandy silt	Loose					

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
ARWP14	4	F1	1546	**1546**	Cut	Ditch/hedge row	0.7	0.06				Linear	Gentle slope	Gradual	Flat	NE-SW
ARWP14	4	F1	1547	**1548**	Fill	Ditch/hedge row	0.44	0.07	Dark brownish grey	Sand silt	Loose					
ARWP14	4	F1	1548	**1548**	Cut	Ditch/hedge row	0.44	0.07				Linear	Gentle slope	Gradual	Flat	NE-SW
ARWP14	4	F1	1549	**1550**	Fill	Tree bowl	1.5	0.27	Light/mid brownish grey	Silty sand	Soft					
ARWP14	4	F1	1550	**1550**	Cut	Tree bowl	1.5	0.27				Amorphous	Gentle slope	Gradual	Irregular	NE-SW
ARWP14	4	F1	1551	**1554**	Fill	Ditch	0.36	0.36	Light brownish uyellow	Clayey sand	Plastic					
ARWP14	4	F1	1552	**1554**	Fill	Ditch	2.04	0.33	Dark greyish brown	Sandy silt	Soft					
ARWP14	4	F1	1553	**1554**	Fill	Ditch	1.2	0.24	Mid brownish grey	Silty clay	Firm					
ARWP14	4	F1	1554	**1554**	Cut	Ditch	2.38	0.5				Linear	Gentle slope	Sharp	Flat	NNE-SSW
ARWP14	4	F1	1555	**1556**	Fill	Pit/posthole	0.6	0.24	Mid greyish brown	Sandy silt	Soft					
ARWP14	4	F1	1556	**1556**	Cut	Pit / posthole	0.6	0.24				Sub-circular	Gentle slope/steep	Sharp	Concave	N-S
ARWP14	4	F1	1557	**1557**	Cut	Ditch	2	0.51				Linear	Gentle	Gradual	Flatish	NNW-

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
													slope			SSE
ARWP14	4	F1	1558	**1557**	Fill	Ditch	2	0.51	Light brownish grey	Clayey silt	Firm					
ARWP14	4	F1	1559	**1559**	Cut	Ditch	1.05	0.38				Linear	Gentle slope	Gradual	Flat	SW-NE
ARWP14	4	F1	1560	**1559**	Fill	Ditch	1.05	0.38	Light brownish grey	Sandy clay	Soft					
ARWP14	4	F1	1561	**1561**	Cut	Pit	0.34	0.13				Circular	Gentle slope	Gradual	Flat	
ARWP14	4	F1	1562	**1561**	Fill	Pit	0.34	0.13	Mid greyish brown	Sandy clay	Soft					
ARWP14		F5	1563	**1563**	Cut	Ditch	1.1	0.33				Linear	Gentle slope	Gradual	Flat	SW-NE
ARWP14		F5	1564	**1563**	Fill	Ditch	1.1	0.33	Mid brownish grey	Silty sand	Loose					
ARWP14	4	F2	1565	**0**	Layer	Demolition layer	2.6	0.04	Mid greyish brown	Sandy silt	Friable	Irregular				
ARWP14	4	F2	1566	**1566**	Cut	Ditch	1.7	0.34				Linear	Gentle slope	Gradual	Concave	NE-SW
ARWP14	4	F2	1567	**1566**	Fill	Ditch	1.7	0.34	Light greyish/yellowish brown	Sandy silt	Firm					
ARWP14	4	F2	1568	**1568**	Cut	Ditch	1.32	0.19				Linear	Gentle slope	Gradual	Concave	NE-SW

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
ARWP14	4	F2	1569	**1568**	Fill	Ditch	1.32	0.19	Mid greyish brown	Sandy silt	Friable					
ARWP14	4	F2	1570	**1570**	Cut	Ditch	0.72	0.12				Linear	Gentle slope	Gradual	Flat	NNE-SSW
ARWP14	4	F2	1571	**1570**	Fill	Ditch	0.72	0.12	Light brownish grey	Clayey/sa nd ey silt	Soft					
ARWP14	4	F2	1572	**1572**	Cut	Ditch	0.58	0.13				Linear	Gentle slope	Gradual	Concave	NNE-SSW
ARWP14	4	F2	1573	**1572**	Fill	Ditch	0.58	0.13	Light brownish grey	Clayey silt	Soft					
ARWP14	4	F2	1574	**1574**	Cut	Ditch	0.61	0.19				Linear	Steep	Gradual	Convex	E-W
ARWP14	4	F2	1575	**1574**	Fill	Ditch	0.61	0.19	Mid greyish brown	Clayey silt	Friable					
ARWP14	3	F3	1576	**1577**	Fill	Ditch	1.9	0.29	Dark brownish grey	Silty sand	Moderate					
ARWP14	3	F3	1577	**1577**	Cut	Ditch	1.9	0.29				Linear	Concave	Gradual	Slightly concave	E-W
ARWP14	3	F2	1578	**1578**	Cut	Ditch	1.45	0.42				Linear	Nw side gradual slope, se side steep	Gradual	Concave	NE-SW
ARWP14	3	F2	1579	**1578**	Fill	Ditch	1.45	0.42	Light reddish brown	Clayey sand	Friable					
ARWP14	3	F2	1580	**1580**	Cut	Ditch	3.4	0.27				Linear	Gentle	Gradual	Flat/irreg	E-W

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
													slope		ular	
ARWP14	3	F2	1581	**1580**	Fill	Ditch	0.1	0.27	Light reddish grey	Clayey silt	Soft					
ARWP14	3	F2	1582	**1580**	Fill	Ditch	3.4	0.27	Light yellowish brown	Clayey sand	Friable					
ARWP14	3	F2	1583	**1583**	Cut	Ditch		0.66				Linear	Gentle slope	Gradual	Concave	N-S
ARWP14	3	F2	1584	**1584**	Cut	Ditch		0.36				Linear	Steep	Gradual	Concave /irregular	N-S
ARWP14	3	F2	1585	**1584**	Fill	Ditch	0.36	0.2	Mid reddish grey	Sandy clay	Plastic					
ARWP14	3	F2	1586	**1583**	Fill	Ditch	0.26	0.24	Light reddish grey	Sandy clay	Firm					
ARWP14	3	F2	1587	**1583**	Fill	Ditch	4.32	0.66	Mid greyish brown	Clayey sand	Friable					
ARWP14	3	F3	1588	**1589**	Fill	Posthole	0.38	0.14	Dark greyish brown	Silty sand	Moderate					
ARWP14	3	F3	1589	**1589**	Cut	Posthole	0.38	0.14				Sub-circular	Sloping	Imperce ptible	Concave	
ARWP14	3	F3	1590	**1591**	Fill	Posthole	0.39	0.09	Dark greyish black	Silty sand	Moderate					
ARWP14	3	F3	1591	**1591**	Cut	Posthole	0.39	0.09				Sub-circular	Concave	Moderat e	Concave	

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orientation
ARWP14	3	F2	1592	**1592**	Cut	Ditch	1.12	0.34				Linear	Steep	Sharp	Flat	WNW-ESE
ARWP14	3	F2	1593	**1592**	Fill	Ditch	1.12	0.34	Dark brown	Silty clay	Friable					
ARWP14	3	F3	1594	**1595**	Fill	Pit	0.96	0.28	Light brownish grey	Silty sand	Soft					
ARWP14	3	F3	1595	**1596**	Fill	Pit	0.9	0.13	Light brownish grey	Silty sand	Soft					
ARWP14	3	F3	1596	**1596**	Cut	Pit	0.96	0.4				Sub-circular	Steep on e, gentle on w	Sharp	Concave	NW-SE
ARWP14	3	F3	1597	**1600**	Fill	Pit	0.29	0.06	Dark greyish grey	Silty sand	Soft					
ARWP14	3	F3	1598	**1600**	Fill	Pit	1.06	0.15	Mid greyish brown	Silty sand	Soft					
ARWP14	3	F3	1599	**1600**	Fill	Pit	0.84	0.1	Mid greyish brown	Silty sand	Soft					
ARWP14	3	F3	1600	**1600**	Cut	Pit	1.06	0.23				Sub-circular	Steep	Gradual	Irregular	
ARWP14	3	F2	1601	**1601**	Cut	Ditch	1.02	0.38				Linear	Steep	Sharp	Flat	WNW-ESE
ARWP14	3	F2	1602	**1601**	Fill	Ditch	1.02	0.38	Dark orange brown	Silty clay	Friable					
ARWP14	3	F2	1603	**1604**	Fill	Ditch	0.34	0.2	Mid yellowish brown	Silty clay	Soft					
ARWP14	3	F2	1604	**1604**	Cut	Ditch	0.34	0.2				Linear	Vertical	Sharp	Flat	NE-SW

Code	Site	Field	Context	Cut	Cat.	Type	B	D	Colour	Fine comp.	Comp.	Shape in plan	Side	B.O.S.	Base	Orient ation
ARWP14	3	F2	1605	**1606**	Fill	Ditch	1.84	0.32	Mid yellowish brown	Clayey silt	Friable					
ARWP14	3	F2	1606	**1606**	Cut	Ditch	2.24	0.32				Linear	Gentle slope	Gradual	Concave	ESE-WNW
ARWP14	3	F2	1607	**1606**	Fill	Ditch	0.4	0.3	Mid brownish grey	Clayey silt	Soft					

Appendix B. Finds Reports and Catalogues

B.1 Metalwork

By Chris Faine

Introduction

B.1.1 Three items of metalwork were recovered from the monitoring and excavations along the route of the Great Horkesley to Ardleigh reservoir pipeline. A catalogue of these items is presented below.

ARWP14: Site 4

SF 1502 (Context 1567, ditch **1566**). Square section iron nail with head missing. Length: 28mm. Date: Uncertain.

SF 1501 (Layer 1565). Square section iron nail with square head. Length: 28mm. Head width: 15.9mm Date: Uncertain.

COLEM20147.2: Site 2

4.5.3 SF 1001 (Context 1030, ditch **1029**). Eight possible iron vessel sherds. The largest (length: 99.4mm, width: 70.9mm), displays a ridge possibly delineating the rim. Post-medieval.

B.2 Prehistoric Pottery

By Sarah Percival

Introduction

B.2.1 A total of 21 sherds weighing 890g from a single, incomplete vessel were collected from pit **1501**, Site 4 south of Ardleigh. The assemblage comprises rim and upper body sherds along with a single base sherd from a flint-tempered Ardleigh Urn with fingertip-impressed decoration (Plate 9).

Methodology

B.2.2 The assemblage was analysed in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gramme. Decoration and abrasion were also noted. The pottery and archive are curated by OA East until formal deposition.

Fabric

B.2.3 The coarse, flint-tempered fabric contains common angular burnt flint pieces up to 4mm in a fine clay matrix. The interior of the vessel is smoothed whilst the exterior has been horizontally wiped and displays occasional lunate fingernail marks, which are probably accidental impressions made during the forming or decorating of the urn.

Form and Decoration

B.2.4 The large, straight body sherds, straight neck and simple 90º base angle indicate a tub-shaped vessel with vertical sides. The urn is decorated with fingertip impressions along the rim top and on an applied cordon on the upper body 61mm below the rim. A row of pre-firing pierced holes perforate the body of the urn 12mm below the rim. Approximately 18% of the rim survives and the original diameter at the rim was 230mm. The interior of the urn is heavily sooted.

Deposition

B.2.5 The sherds were all recovered from pit **1501**. The pit was only a little larger than the diameter of the complete vessel. This phenomenon was also noted at Ardleigh Cemetery and Ardleigh Rings where it is claimed that urns would have fitted snugly into pits leaving a mound of earth above to act as a grave marker (Brown 1999, 165). The lack of base sherds within the fill perhaps suggests that the vessel was originally inverted within the pit and that the base was subsequently truncated when the urn was disturbed (presumably by ploughing).

Discussion

B.2.6 The vessel is similar in form, decoration and fabric to an example from Ardleigh Ring III (Brown 1999, fig.62, 80; Brown 1995 Gazetteer no.112). Whilst the fingertip impressed rim and cordon are decorative the pre-firing perforations below the rim are considered to be for attaching a leather or fabric lid (Brown 1995, 126). This would have helped

contain the contents, possibly a cremation, within the urn, especially if it was inverted for burial.

B.2.7 Radiocarbon dates from recent excavations at St Osyth and Brightlingsea confirm that the Ardleigh tradition was most active during the third quarter of the second millennium BC (Germany 2007, 113; Brown 2008). Brown's original analysis of the Ardleigh urns from Ardleigh Cemetery, Ardleigh Rings and other sites suggests a progression within the Ardleigh style from earlier elaborately decorated examples with profuse fingertip decoration in largely groggy fabrics to later flint-tempered urns with more limited decoration (Brown 1995, 128). The radiocardon date from the vessel recovered from Field A1 indicates a comparatively late date for this vessel, at the end of the 2nd millennium BC.

B.2.8 Vessels with perforations below the rim, fingertip impressions to the rim and on applied cordons form a characteristic element of the Deverel-Rimbury assemblage from Grimes Graves dated to 1375-845 cal. BC (Ellison 1988, 48 and figs. 37 and 38) and Brown especially notes the similarity between the form and decoration of the vessels from Ardleigh Ring III and those from Grimes Graves suggesting a likely later date for the Ring III urns (though it is worth noting that the validity of the Grimes Graves dates, taken on charcoal, have recently been questioned (Brudenell 2012, 160)). The similar form and fabric of urn 112 from Ardleigh Ring III, numerous vessels from Grimes Graves and the vessel from pit **1501** suggests a comparable date for the three sites, most likely towards the end of the third quarter of the second millennium BC.

B.3 Late pre-Roman Iron Age Pottery

By Alice Lyons

Introduction

B.3.1 A total of 167 Late pre-Roman Iron Age (LPRIA) pottery fragments, weighing 1494g, were recovered from two sites between Great Horkesley to Langham (Table B3.1). The pottery was recovered from six deposits within several cuts of a ditch, gully, pit and tree root (Table B3.2). The fragmentary vessels are all in poor condition and severely abraded with an average sherd weight of only *c*.9g.

Site	Sherd Count	Sherd Weight (g)	Sherd Weight (%)
1	53	348	23.29
2	114	1146	76.71
Total	**167**	**1494**	**100.00**

Table B3.1 The LPRIA pottery quantified by site

Feature	Sherd Count	Weight (g)	Weight (%)
Ditch	89	998	66.80
Gully	3	6	0.40
Pit	53	348	23.29
Pit/Tree root	22	142	9.51
Grand Total	**167**	**1494**	**100.00**

Table B3.2 The LPRIA pottery quantified by feature

Methodology

B.3.2 The pottery was examined in accordance with the guidelines set down by the Study group for Roman Pottery (Darling 2004; Willis 2004). The total assemblage was studied and a catalogue prepared (Table B3.3).

B.3.3 All the sherds have been counted and weighed to the nearest whole gramme. The pottery was divided into fabric groups defined on the basis of inclusion types present and a sample was examined using a x10 magnifying lens. The fabric codes are descriptive and abbreviated by the main letters of the title (Sandy grey ware = SGW). Vessel form was also noted, also any decoration, residue and levels of abrasion. A spot date has been provided for each individual sherd and context.

B.3.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

The Pottery

Site 1: South of Boxted Road, Great Horkesley

B.3.5 The fragmentary remains of a single medium mouthed lid-seated jar (Thompson 1982, type B1-6) were found within the fill (1079) of pit **1078**. The jar (53 sherds, weighing 348g) was produced in a coarse sandy fabric tempered with additional quartz and fine flint fragments. It was poorly fired to an orange grey colour and soft texture. It is also severely abraded and no original surfaces or residues survives. The vessel dates to the early-mid part of the 1st century AD.

Site 2: South of Park Lane, Langham

B.3.6 In addition the fragmentary remains of at least three further vessels (114 sherds, weighing 1146g), dating to the early-mid part of the 1st century AD, were also recovered from Site 2.

B.3.7 Forty-five pieces, weighing 266g, of one cordoned bowl (Thompson 1982, type D2-1) were recovered from two separate ditch deposits (1018) and (1022) – suggesting that ditches **1021** and **1023** were contemporary in date or at least back-filled at a similar time. This vessel is wheelmade and produced in a fairly fine reduced ware fabric, tempered with grog (crushed pot), and fired with an oxidised (red) outer surface. The rim of the vessel is of an everted bi-fid lid-seated type.

B.3.8 Also found were two storage jars. Both jars were produced in a reduced ware grog tempered fabric and had large rolled rims (Thompson 1982, type C6-1). The severely abraded storage jar (27 pieces, weighing 292g) recovered from a deposit (1019) within ditch **1021** is decorated with a combed motif. While the slightly less abraded second storage jar (six pieces, 188g) recovered from deposit 1022, ditch **1023** is cordoned on the upper body.

B.3.9 A few very fragmentary grog-tempered pottery pieces were found in a small number of other deposits (Table B3.3).

Discussion

B.3.10 This pottery belongs, unequivocally to a Late Iron Age cultural horizon, pre-dating the Roman conquest and dating to the early-mid 1st century AD; although precise dating is frustrated by the absence of continental imports and of metalwork. Nonetheless, the general form types present, together with the fabric varieties, are well precedented in the region as seen at the nearby contemporary settlement at Wick Farm (Compton 2009) and are also consistent with forms catalogued by Thompson (1982).

B.3.11 It is worthy of note, however, that at least four of the vessels found may have been largely complete when they were deposited, suggesting perhaps the settlement with which they were associated did not lie far away. There is no suggestion, however, that they were deliberately placed or associated with funerary or other ritual acts. Indeed, since deposition they have become severely abraded, perhaps as the result of repeated immersion in water (flooding) or agricultural activity.

Site	Context	Cut	Cat.	Type	Era	Hm/ wm	Fabric family	Fabric	Dsc	Form	Type	Quantity	Weight	Diameter	Eve	Ab	Dec	Spot date
2	1014	**1015**	fill	Pit	ERB	WM	SGW(GROG)	SGW(GROG) (FINE FLINT)	UB	JAR/ BOWL		18	138			SEVERE		M/LC1
2	1014	**1015**	fill	Pit	ERB	WM	SGW(GROG)	SGW(GROG) (FINE FLINT)	UB	JAR/ BOWL		4	4			VERY SEVERE		M/LC1
2	1016	**1017**	fill	gully	LPRIA	SW	RW(GROG)	RW(GROG)(OX SURFACES)	U	JAR/ BOWL		3	6			SEVERE		E/MC1
2	1018	**1021**	fill	ditch	LPRIA	SW	RW(GROG)	RW(SANDW) (GROG)	UB	SJAR		11	252			ABRADED		E/MC1
2	1018	**1021**	fill	ditch	LPRIA	SW	RW(GROG)	RW(GROG)(OX SURFACES)	RU	JAR/ BOWL	THOMPSON D2-1: CORDONED BOWL	5	27			SEVERE		E/MC1
2	1019	**1021**	fill	ditch	LPRIA	SW	RW(GROG)	RW(GROG) (MICA)	RUD	SJAR	"THOMPSON C6-1: ROLLED RIM	COMBED"	27	292	24	15	ABRADED	
2	1022	**1023**	fill	ditch	LPRIA	SW	RW(GROG)	RW(GROG)(OX	RU	JAR/ BOW	THOMPSON D2-1:	30	225	15	50	SEVERE		E/MC1

Site	Context	Cut	Cat.	Type	Era	Hm/ wm	Fabric family	Fabric	Dsc	Form	Type	Quantity	Weight	Diameter	Eve	Ab	Dec	Spot date
								SURFACES)		L	CORDONED BOWL							
2	1022	**1023**	fill	ditch	LPRIA	WM	RW(GROG)	RW(SANDW)(GROG)(OCC FLINT)	RUD	SJAR	"THOMPSON C6-1: ROLLED RIM	CORDONNED"	6	188	28	12	MILD	
2	1022	**1023**	fill	ditch	LPRIA	SW	RW(GROG)	RW(GROG)(OX SURFACES)	RU	JAR/ BOWL	THOMPSON D2-1: CORDONED BOWL	10	14					E/MC1
1	1079	**1078**	fill	pit	ERB	WM	SCW	SCW(Q& FLINT)	RU	JAR	THOMPSON B1-6: LID-SEATED	50	339	19	15			E/MC1
1	1079	**1078**	fill	pit	ERB	WM	SCW	SCW(Q& FLINT)	RU	JAR		3	9			SEVERE		E/MC1

Table B3.3 Late pre-Roman Iron Age pottery catalogue

B.4 Post-Roman Pottery

By Sue Anderson

Introduction

B.4.1 Post-Roman pottery was collected from two contexts and two unstratified groups at Site 1, one context in Field A5, and eleven contexts at Site 4.

Methodology

B.4.2 Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. A full quantification by fabric, context and feature is available in the archive. All fabric codes were assigned from the Suffolk post-Roman fabric series, which includes East Anglian and Midlands fabrics, as well as imported wares (equivalent Essex fabrics were noted). Form terminology follows MPRG (1998) and rim forms follow the Essex type series (*e.g.* Drury 1993; Cunningham 1985). Local wares were identified based on Cotter (2000), and Hedingham wares (Walker 2012) from kiln samples supplied by Helen Walker. Recording uses a system of letters for fabric codes. The results were input directly onto an Access database.

Site 1

B.4.3 Nine sherds of pottery (303g) were recovered from two contexts and two unstratified finds groups at Site 1 (COLEM2014.72). A full catalogue is available in the archive. Table B4.1 shows the distribution by fabric and context.

Description	Fabric date range	Fabric	1090	1093	99999	U/S
			1092	**1095**		
Medieval coarseware	12th-14th c.	20				1
Colchester-type Ware	13th-15th c.	21A			2	1
Late Colchester-type Ware	15th-16th c.	21A	1			
Glazed red earthenware	16th-18th c.	40	1			
Post-medieval redwares	16th-18th c.	40	2	1		

Table B4.1: Post-Roman pottery distribution by fabric and context at Site 1

B.4.4 Ditch fill 1090 (**1092**; Field C14) contained four sherds of late/post-medieval redwares (Fabrics 21A and 40). There is a body sherd of Late Colchester-type ware (15th/16th c.). Two worn and abraded post-medieval redware base sherds (mid 16th–18th c.) were also recovered. One is a fragment of a footstand base from a hollow ware vessel such as a chamber pot (*cf*. e.g. Cotter 2000, fig. 142, nos 101–4), although other forms in the Colchester corpus have similar bases. The other base is probably also from a hollow ware form. A rimsherd from a bowl with a hammerhead rim decorated with thumbing and internal brown glaze is comparable with an example from Colchester (Cotter 2000, fig. 136, no. 45), dated late 17th to early 18th century.

B.4.5 Ditch fill 1093 (**1095**; Field C13) contained a small body sherd of unglazed post-medieval redware (Fabric 40; 16th-18th c.).

B.4.6 Two unstratified sherds were collected from Field 12. One fragment is an upright flat-topped jug rim with partial green glaze externally, and the other is a plain body sherd.

Both are in a medium sandy fabric, similar to Colchester-type ware, which has been overfired to a dark grey. The rim is severely warped, suggesting that it was a kiln waster. Production sites have previously been identified at Mile End and Great Horkesley, with waster pits excavated around the junction of the A134 with Old House Road (Drury and Petchey 1975). These sherds are likely to be wasters from the same industry, although further fieldwork would be required to determine whether their presence indicates further kiln sites in Field 12, or whether they reached this area through manuring.

B.4.7 Two sherds were an unstratified find from Field C1. The fragments are abraded pieces of a medieval Colchester-type ware base (13th–15th c.).

Site 4

B.4.8 Nineteen sherds (263g) of pottery were recovered from five contexts in Field A2. A full catalogue is available in the archive. Table B.4.2 shows the distribution by fabric and context.

Description	Fabric date range	Fabric	1565	1567	1569	1587	1612
			-	**1566**	**1568**	**1583**	**1613**
Medieval coarseware	12th-14th c.	20	1				
Colchester-type ware	13th–15th c.	21A					
Late Colchester-type ware	15th-16th c.	21A	4				
Glazed red earthenware	16th-18th c.	40		2	5		2
Staffordshire-type Slipware	L.17th-18th c.	50	1				
Refined white earthenwares	L.18th-20th c.	48X				1	1

Table B.4.2: Post-Roman pottery distribution by fabric and context in Field A2

B.4.9 Layer 1565 contained a body sherd of medieval coarseware (12th–14th c.), four undecorated sherds of a late Colchester-type ware vessel (15th/16th c.), and a small sherd of a Staffordshire-type slipware mug or cup with yellow glaze and brown slip-trailed stripes (Fabric 50, late 17th/18th c.).

B.4.10 Ditch fill 1567 (**1566**) contained a small body sherd of Colchester-type ware (13th–15th c.) and two sherds of brown-glazed red earthenware (16th/17th c.). Parallel to this, ditch fill 1569 produced five sherds of an orange-glazed redware dripping dish (16th–18th c.).

B.4.11 Ditch fill 1587 (**1583**) contained a heavily abraded sherd of Colchester-type ware (12th–14th c.) with white slip line decoration and green glaze, and a small sherd of 19th-century factory-made whiteware with a blue willow pattern transfer print externally.

B.4.12 Context 1612 (**1613**) contained two sherds of heavily abraded glazed red earthenware (16th–18th c.) and a small sherd of 19th-century factory-made whiteware with a blue willow pattern border transfer print internally.

B.4.13 Six contexts in Field A1 produced 23 sherds (282g) of post-Roman pottery. A full catalogue is available in the archive. Table B.4.3 shows the quantities by context and fabric.

Description	Fabric date range	Fabric	1524	1526	1533	1552	1560	1562
			1520	**1525**	**1537**	**1554**	**1559**	**1561**
Medieval coarseware	12th-14th c.	20					1	
Late Colchester-type Ware	15th-16th c.	21A					1	
Glazed red earthenware	16th-18th c.	40	2		1	1	3	
Tin glazed earthenwares	16th-18th c.	46	1					
Creamwares	1730-1760	48C	4					1
English Stoneware	17th-19th c.	45M					1	
English Stoneware Nottingham-type	L.17th-L.18th c.	45G					1	
Late slipped redware	18th-19th c.	51A					1	1
Red stonewares	18th-19th c.	48R		2				
Refined white earthenwares	L.18th-20th c.	48X					2	

Table B.4.3: Post-Roman pottery distribution by fabric and context in Field A1

B.4.14 Ditch fill 1524 (**1520**) contained two sherds of a glazed red earthenware bead-rimmed pancheon or bowl with orange glaze internally, a tin-glazed earthenware handle, and four fragments of a creamware ?plate, suggesting an 18th-century date for the fill.

B.4.15 Two body sherds of an engine-turned and comb-decorated red stoneware vessel, probably a coffee pot, were recovered from ditch fill 1526 (**1525**). This would have been a relatively expensive item when it was made, in the 18th century.

B.4.16 Ditch fills 1533 (**1537**) and 1552 (**1554**) each contained a single sherd of brown-glazed red earthenware of probable 16th/17th-century date.

B.4.17 Ten sherds were recovered from ditch fill 1560 (**1559**), of which at least five were residual. A medieval coarseware in a hard-fired blue-grey fabric, similar to Colchester-type wares, appears to have a diagonal applied strip as decoration. There is a body sherd of a late Colchester-type vessel with internal clear glaze. Three sherds of brown or orange-glazed red earthenware represent three vessels, including a bowl with a slightly beaded rim. Five sherds of 19th-century date were probably contemporary with the final disuse of the ditch, and comprise a late slipped redware bowl rim, a base fragment of an English stoneware bottle, a Nottingham-type stoneware bowl rim, a plain factory-made whiteware and a transfer-printed base sherd. The ditch fill was cut by pit **1561**, which contained body sherds of late slipped redware and creamware of 18th/19th-century date.

Pottery from ARWP14 Field A5, North-west of Ardleigh Reservoir

B.4.18 Three sherds (37g) of English brown-glazed stoneware of probable 19th-century date were collected from ditch fill 1564 (**1563**).

B.5 Ceramic Building Material

By Sue Anderson

Introduction

B.5.1 CBM was collected from seven contexts and two unstratified finds groups at Site 1, 15 contexts at Site 3 and 12 contexts at Site 4.

Methodology

B.5.2 The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and tiles were measured where possible, but roof tile thicknesses were only measured when another dimension was available. Features such as peg hole shapes, glaze, mortar and firing were recorded as appropriate.

Site 1

B.5.3 Thirteen fragments of CBM (1132g) were recovered from seven contexts and two unstratified finds groups at Site 1. A full catalogue is available in the archive. Table B.5.1 provides a summary of the types and fabrics.

Fabric	code	LB	LB?	RID	RTM	RTP	RTP?
fine sandy	fs	1				1	
fs with clay pellets	fscp		2			1	
fs with flint	fsf				1		
fs with ferrous inclusions	fsfe	1		1			
medium sandy with coarse quartz	mscq			2	1		
ms with flint	msf					1	
ms with grog	msg						1
Totals		*2*	*2*	*3*	*2*	*3*	*1*
Total weights (g)		*635*	*8*	*287*	*57*	*41*	*104*

Table B.5.1: Ceramic building materials by fabric and form (fragment count) at Site 1

LB – late brick; RID – ridge tile; RTM – plain roof tile medieval; RTP – plain roof tile post-medieval

B.5.4 Two small fragments of a ?post-medieval brick in a fine sandy fabric with clay pellets were found in ditch fill 1030 (**1029**) (Field C2).

B.5.5 Four ditch fills in Field C13 contained small fragments of CBM. Three pieces of late or post-medieval plain roof tiles were found in fills 1073 (**1072**), 1087 (**1086**) and 1090 (**1092**), and a fragment of a post-medieval ridge tile also came from the latter. A fragment of a dense, overfired and partly vitrified brick with coarse ferrous inclusions was found in fill 1075 (**1074**). It is 55mm thick and may be of 15th/16th-century date.

B.5.6 A fragment of late/post-medieval roof tile in a grog-tempered fabric and a piece of medieval ridge tile in a fabric similar to Colchester pottery were found in ditch fill 1093 (**1095**) (Field C14). Also from this field, in ditch fill 1102 (**1103**), was a fragment of post-medieval brick in a fine sandy fabric with occasional coarse quartz and clay pellets.

B.5.7 Unstratified find 99999 was a fine sand and flint-tempered medieval roof tile fragment with a circular peg hole. Another medieval roof tile in a Colchester-type ware fabric was recovered from Field C1.

Site 4

B.5.8 One-hundred and thirty-eight fragments (7685g) of CBM were recovered from 27 contexts at this site. A full catalogue is available in the archive. Table B.5.2 provides a summary of the types and fabrics.

Fabric	code	RBT?	LB	RTM	RTP	FB	T	UN
coarse sandy	cs			1				
fine sandy	fs		3	4	6			
fs with clay pellets	fscp				3			1
fs with clay pellets and ferrous inclusions	fscpfe		6					16
fs with flint	fsf	2			1			
fs with ferrous inclusions	fsfe		9		3			
fs with grog	fsg			3				
fs with grog and ferrous inc	fsgfe		1					
medium sandy	ms			30	3		1	
ms with clay pellets	mscp				1			
ms with clay pellets and ferrous inclusions	mscpfe	4						
ms with coarse quartz	mscq			1				
ms with flint	msf				27			
ms with ferrous inclusions	msfe		2					1
ms with flint and ferrous inclusions	msffe		3		1			
ms with grog	msg			3				
white-firing fs	wfs					2		
Totals		*6*	*24*	*42*	*45*	*2*	*1*	*18*
Total weights (g)		*995*	*2702*	*1719*	*1671*	*192*	*30*	*376*

Table B.5.2: Ceramic building materials by fabric and form (fragment count) at Site 4

B.5.9 Possible Roman tile (RBT) fragments, all abraded, were recovered from layer 1565 and ditch fills 1526 (**1525**) and 1582 (**1580**). The fragment from 1526 is 41mm thick and may alternatively be a corner fragment from a medieval 'great brick'. There is a dog paw print on one edge, suggesting it had been dried standing on its side. The fragment from 1582 is 32mm thick, which is a typical size for Roman tiles of both roof and wall types.

B.5.10 A fragment recorded simply as 'tile' (T), is a partial-thickness fragment with a reduced core, comparable with Roman tiles from elsewhere in the region but also similar to some of the medieval roof tiles from this site.

B.5.11 Twenty-four fragments of late or post-medieval bricks (LB) were collected from thirteen contexts. They are in a limited range of similar fabrics, most of which contain coarse ferrous inclusions. Ten fragments have full thicknesses and range between 46–65mm, with seven below 55mm thick and probably of 15th–17th-century date, the remainder being 18th/19th-century. At least seven bricks are overfired and partly vitrified. These may be kiln wasters, or possibly deliberately vitrified 'Tudor' bricks, but they were not found in any particular concentrations, having been collected from the fills of several ditches across the site.

B.5.12 Fragments of unidentified (UN) fired clay, particularly those in 'fscpfe' fabric, may also be pieces of late brick but most are very abraded with no original surfaces.

B.5.13 Two fragments of an abraded 18th/19th-century white-firing brick were collected from ditch fill 1533 (**1537**). The brick is 114mm wide and 34+mm thick with signs of wear on the surface. It is likely to have been used as a paviour, or floor brick (FB).

B.5.14 The most common find in the assemblage is plain roof tile. A variety of fabrics is present, with medium sandy and medium sand and flint types being the most common. An attempt was made to separate the group into 'medieval' (RTM) and 'post-medieval' (RTP) types, although some in either category could be late medieval. The distinction was based on firing (with reduced cores and/or surfaces being more frequent amongst the medieval group), presence of glaze, and general appearance. Only one fragment was glazed, an abraded piece in 'ms' fabric from ditch fill 1533, this has a rough surface with traces of brown lead glaze and is 25mm thick, suggesting that it might be a piece of medieval ridge tile. Six fragments have peg holes, the majority circular, but one square example also occurs amongst the RTP group.

B.6 Miscellaneous finds

By Sue Anderson

Introduction

B.6.1 Fragments of glass, burnt flint and stone were recovered from four contexts at Site 1. Site 4 produced small quantities of clay tobacco pipe and glass from five ditch fills.

Glass

B.6.2 At Site 1, a body shard (14g) of green bottle glass was collected from ditch fill 1093 (**1095**) in Field C14. It is likely to be of 19th-century date.

B.6.3 At Site 4, ditch fills 1503 (**1504**) and 1526 (**1525**) produced fragments of green 'onion' bottles, a base and a neck respectively. Both are likely to be 17th/18th-century in date. Ditch fill 1538 (**1541**) contained a thin body shard of a 19th-century green bottle, and a small thin fragment of a post-medieval clear window glass quarry.

B.6.4 Ditch fill 1587 (**1583**; Site 4) contained two fragments of 19th-century green bottle glass.

Clay tobacco pipe

B.6.5 Ditch fill 1581 (**1580**; Site 4) contained a stem fragment of clay tobacco pipe with a bore diameter of 2.6mm, suggesting a date of 17th/18th century.

B.6.6 Two small fragments of stem came from ditch fill 1533 (**1537**; Site 4), both with bore diameters of 1.9mm, and probably dating to the 19th century.

Stone

B.6.7 A fragment of lava quern (415g) was found in sample <119> from ditch fill 1090 (**1092**; field C13). It was 39mm thick with a very worn grinding surface, which appears to have had at least one concentric groove. This type of quern is made from Niedermandig lava and was imported from Germany. Finds are relatively common in East Anglia, and occur on sites of Roman and Saxon date in particular.

Burnt flint

B.6.8 Forty-six pieces (784g) of fire-cracked and calcined white flint were recovered as surface finds 'near the airfield'. These are examples of so-called 'pot boilers', deliberately fire-heated stones which were added to pots of water to heat them. They are not closely datable but they suggest activity of prehistoric date in the area.

B.6.9 Four fire-cracked and reddened flints (25g) from pit fill 1084 (**1085**) are examples of flints which have been accidentally burnt through proximity to a fire, and they are intrinsically undatable.

Appendix C. Environmental Reports

C.1 Animal Bone

By Chris Faine

C.1.1 Two hundred and fourteen grammes of animal bone were recovered exclusively from Site 3 along the Langham to Ardleigh segment of the pipeline.

C.1.2 The assemblage consists of 19 fragments, of which six are identifiable to species. Faunal material was recovered from contexts dating to the late medieval or post-medieval periods. Layer 1565 contained a partial horse astragalus and a cattle mandible from an animal around 4-6 years of age, along with an unfused distal sheep/goat femur. Context 1569 (ditch **1568**) contained a partial cattle tibia.

C.2 Environmental samples

By Rachel Fosberry

Introduction

C.2.1 A total of 22 bulk samples were taken from five different areas during the archaeological works on the course of the Anglian Water pipeline from Great Horkesley to Ardleigh reservoir, Essex in order to assess the quality of preservation of plant remains (Table C1).

C.2.2 Four sites were identified ranging in period from the Bronze Age to Roman to post-medieval periods.

Code:	Site	Period	No. of Samples
COLEM2014.72	1	Medieval or later	6
COMEM2014.72	2	Roman and later	6
COMEM2014.72	-	LIA\Roman?	2
ARWP14	3	Medieval and later	5
ARWP14	4	Bronze Age, medieval and later.	3

Table C1: Environmental Samples taken at each site

Methodology

C.2.1 One bucket (approximately 10 litres) of each bulk sample was processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and a list of the recorded remains are presented in Table C2. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals.

C.2.2 The initial scan of the flots from Sites 3 and 4 revealed the presence of charred cereal grains in sample 152, fill 1502 of pit **1501**. The remaining soil of this sample was subsequently processed and the results included in this report.

Quantification

C.2.1 For the purpose of this assessment, items such as cereal grains have been scanned and recorded qualitatively according to the following categories

= 1-10, ## = 11-50, ### = 51+ specimens #### = 100+ specimens

Items that cannot be easily quantified such as charcoal have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Results

Sites 1 and 2 (COLEM2014.72)

C.2.2 Preservation of plant remains is restricted to wood charcoal which is abundant in many of the samples in addition to a single charred wheat (*Triticum* sp.) grain found in sample 101, fill 1002 of pit **1001.**

C.2.3 Pottery fragments were recovered from the residues of sample 103, fill 1022 of ditch **1023** and also from sample 106, fill 1014 of pit **1015.** Small pieces of slag were noted in sample 102, fill 1016 of gully **1017** and sample 115, fill 1079 of pit **1078**; but none of the samples contain hammerscale.

Sample No.	Site	Field	Context	Cut	Feature type	Volume processed (L)	Cereals	Charcoal > 2mm	Pottery	Slag	Burnt flint
101	2	C2	1002	**1001**	Pit	10	#	+++	0	0	0
102	2	C2	1016	**1017**	Gully	9	0	+	0	#	0
103	2	C2	1022	**1023**	Ditch	10	0	+++	###	0	0
104	2	C2	1024	**1026**	Post hole	5	0	++	0	0	0
105	2	C2	1025	**1026**	Post hole	8	0	+++	0	0	0
106	2	C2	1014	**1015**	Pit/Tree bowl	4	0	++	##	0	
107		C5	1055	**1056**	Pit	6	0	+++	0	0	#
108		C6	1053	**1054**	Pit	6	0	+++	0	0	0
114	1	C12	1067	**1065**	Ditch	8	0	+	0	0	0
115	1	C13	1079	**1078**	Pit	9	0	+	0	#	0
116	1	C12	1070	**1077**	Pit	7	0	+++	0	0	0
117	1	C13	1087	**1085**	Ditch	9	0	+	0	0	0
118	1	C13	1091	**1092**	Ditch	8	0	0	0	0	0
119	1	C13	1084	**1085**	Pit	9	0	+++	0	0	#

Table C.2.2: Environmental samples from COLEM2014.72

Sites 3 and 4 (ARWP14)

C.2.1 Sample 151, fill 1502 of later Bronze Age pit **1502** contains a significant number of charred cereal grains that are poorly preserved but have the distinctive 'spindle-shape' morphology of domesticated barley (*Hordeum vulgare*) grains and a density of 7.5 grains per litre of soil. Charcoal is abundant in this sample with fragments of roundwood present. A single fragment of pottery was recovered from the residue.

C.2.2 The remaining samples are devoid of charred plant remains other than sparse charcoal fragments.

Sample No.	Site	Field	Context	Cut	Feature Type	Volume processed (L)	Cereals	Charcoal	Pottery
151	4	1	1502	**1501**	pit	34	###	++	#
152	4	1	1543	**1544**	pit	8	0	++	0
153	4	1	1555	**1556**	pit	10	0	+	0
154	3	3	1588	**1589**	post hole	6	0	+	0
155	3	3	1590	**1591**	post hole	4	0	+	0
156	3	3	1594	**1596**	pit	10	0	+	0
157	3	3	1597	**1600**	pit	6	0	++	0
158	3	3	1598	**1600**	pit	8	0	+	0

Table C.2.3 Environmental samples from ARWP14

Discussion

C.2.1 A single charred wheat grain is the only preserved plant remains from Site 2 other than charcoal which is in abundance in many of the samples. Similarly the samples from Site 1 also contain charcoal but are devoid of any other preserved remains. It is possible that this large amount of charcoal may represent a burning event such as tree-clearance that would have resulted in charcoal being present on the ground surface and naturally accumulating in negative features such as ditches and open pits.

C.2.2 Sample 151, fill 1502 of pit **1501** is the only sample from the site at Ardleigh that contains preserved plant remains other than sparse charcoal. The charred plant assemblage is predominantly comprised of wood charcoal (approx 500ml from 34L soil) with charred barley grains. Barley varieties include hulled and naked barley and two and six-row strains although the poor preservation of the grains recovered from pit 1501 preclude detailed identification. Naked barley does not require processing and was an important food source in the prehistoric period for use in both bread and porridge (Nesbitt 2005). Hulled barley grains have a tough outer sheath that is unpalatable for human consumption unless removed by pearling but hulled barley has a higher sugar content making it more suitable for brewing than naked barley.

C.2.3 The contents of pit **1501** may represent a cremation burial, although no bone has survived. The high charcoal content could be indicative of a ritual gathering and burial of pyre debris that did not include any bone fragments (McKinley 1997). Bronze Age cremations in Essex often contain charred cereals and it has been suggested that this is even a characteristic of such deposits. A cremation from Brightlingsea contained nine barley grains per litre of soil and is considered to be an intentional pyre inclusion (Murphy 2008).

C.3 Radiocarbon Dating Certificate

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE
18 June 2015

Laboratory Code	SUERC-60672 (GU37619)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	ARWP14
Context Reference	1502
Sample Reference	151
Material	Charred plant remains : Hordeum vulgare
$\delta^{13}C$ relative to VPDB	-22.9 ‰
Radiocarbon Age BP	2968 ± 31

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

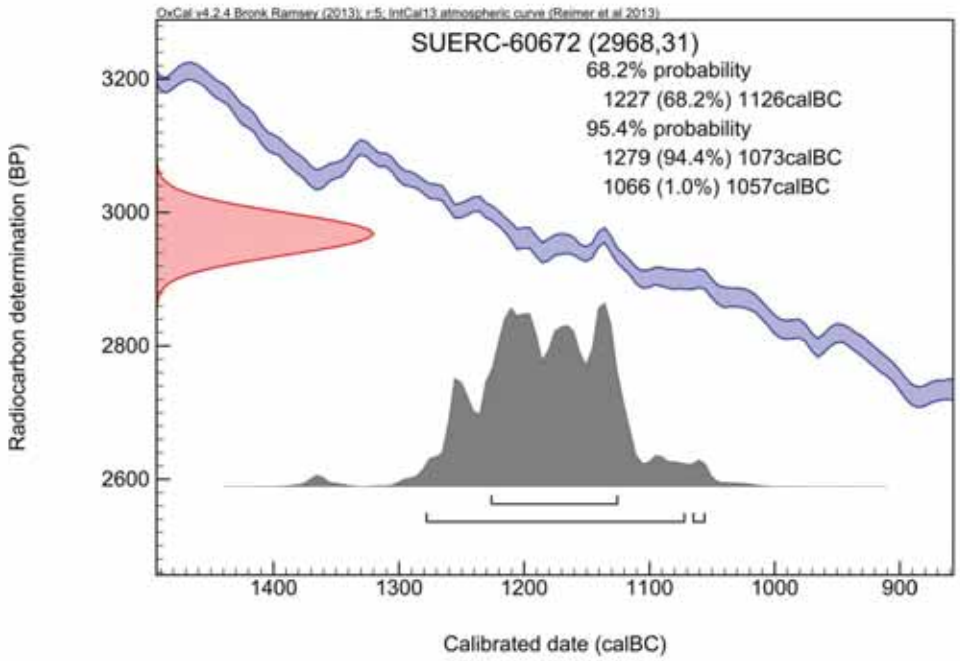
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- E Dunbar Date :- 18/06/2015

Checked and signed off by :- Date :- 18/06/2015

University of Glasgow

Calibration Plot



Scottish Universities Environmental Research Centre

Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

04 July 2016

Laboratory Code	SUERC-67840 (GU41168)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	COLEM2014.72
Context Reference	1053
Sample Reference	108
Material	Charred plant remains - monocot stems : unidentified
$\delta^{13}C$ relative to VPDB	-27.4 ‰
Radiocarbon Age BP	1950 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

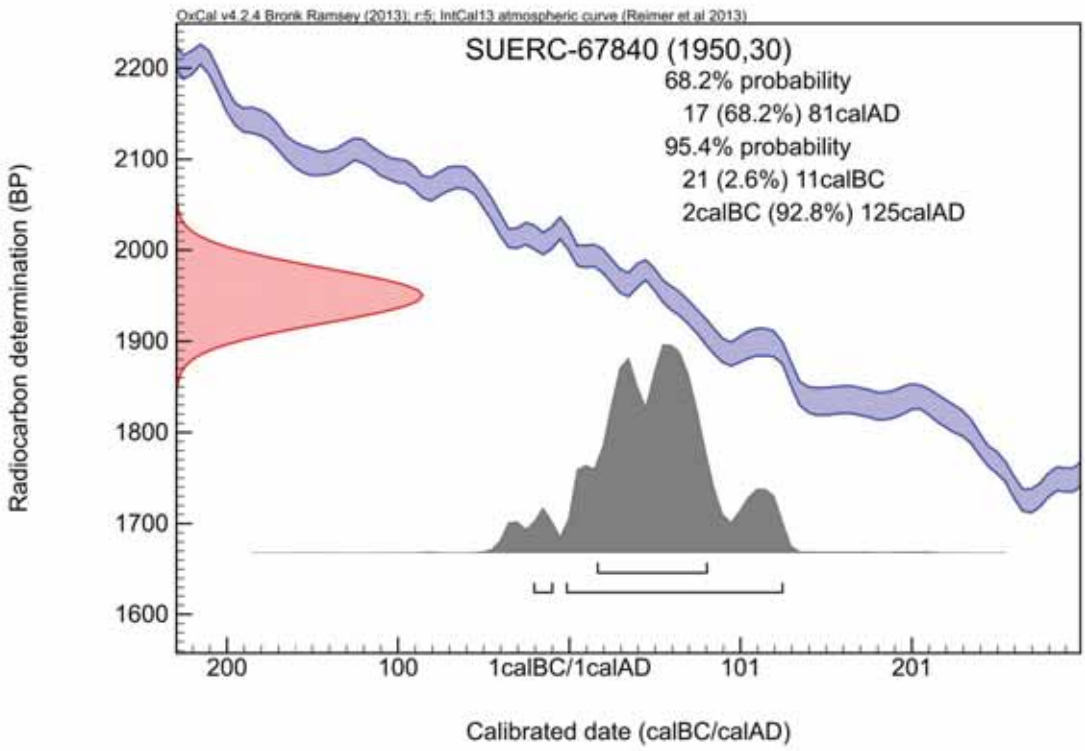
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- E Dunbar Date :- 04/07/2016

Checked and signed off by :- P. Naysmith Date :- 04/07/2016

University of Glasgow

Calibration Plot



Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

04 July 2016

Laboratory Code	SUERC-67844 (GU41169)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	COLEM2014.72
Context Reference	1002
Sample Reference	101
Material	Charred plant remains : Triticum sp.
$\delta^{13}C$ relative to VPDB	-26.6 ‰
Fraction Modern F	1.2725 ± 0.0046

N.B. The above result is reported with a fraction modern value of greater than 1. This indicates that the sample was formed in the nuclear era (post 1950 AD).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age calculated by :- C Dunbar Date :- 04/07/2016

Checked and signed off by :- P Naysmith Date :- 04/07/2016

University of Glasgow

Appendix D. Essex Historic Environment Record Summary Sheets

Site name/Address: Braintree PZ Anglian Water Pipeline **Site 1: South of Boxted Road, Great Horkesley**	
Parish: Great Horkesley	District: Colchester
NGR: TL 9853 3062	Site Code: COLEM2014.72
Type of Work: Strip and map, excavation	Site Director/Group: Gareth Rees, OA East
Date of Work: 25th September 2014 to 19th January 2015	Size of Area Investigated: Approx 900m x 7m
Location of Finds/Curating Museum: OA East/ Colchester and Ipswich Museum	Funding source: Anglian Water
Further Seasons Anticipated? No	Related EHCR No.s:
Final Report: OA East Report number 1685	OASIS number: OA3-206593
Periods Represented: prehistoric, post-medieval	
SUMMARY OF FIELDWORK RESULTS: *Oxford Archaeology East undertook monitoring, strip and map recording, and excavation along the route of the Braintree PZ Supply\Demand Balance pipeline for Anglian Water.* *Archaeological monitoring was required along the pipeline. Fields, were selected for strip and map excavation due to cropmarks, indicating archaeological sites, recorded in the Historic Environment Records. Cropmarks were also visible in several other fields along the route and a controlled topsoil strip was also conducted on these sites.* *Excavations uncovered two sites between Great Horkesley and Langham (Sites 1 and 2) Site 1 was spread over three fields to the east of the A134 and consisted of undated and post-medieval pits and ditches.* *Monitoring of topsoil removal on the remainder of the route uncovered no significant archaeological features. A metal detector survey along the entire route located primarily modern finds.*	
Previous Summaries/Reports: None	
Author of Summary: Gareth Rees	Date of Summary: 22/04/15

Site name/Address: Braintree PZ Anglian Water Pipeline **Site 2: South of Park Lane, Langham**	
Parish: Langham	District: Colchester
NGR: TM 0241 3012	Site Code: COLEM2014.72
Type of Work: Strip and map, excavation	Site Director/Group: Gareth Rees, OA East
Date of Work: 25th September 2014 to 19th January 2015	Size of Area Investigated: Approx 329m x 12m
Location of Finds/Curating Museum: OA East/ Colchester and Ipswich Museum	Funding source: Anglian Water
Further Seasons Anticipated? No	Related EHCR No.s:
Final Report: OA East Report number 1685	OASIS number: OA3-206593
Periods Represented: Late Iron Age and Roman, post-medieval	

SUMMARY OF FIELDWORK RESULTS:

Oxford Archaeology East undertook monitoring, strip and map recording, and excavation along the route of the Braintree PZ Supply\Demand Balance pipeline for Anglian Water.

Archaeological monitoring was required along the pipeline. Fields, were selected for strip and map excavation due to cropmarks, indicating archaeological sites, recorded in the Historic Environment Records. Cropmarks were also visible in several other fields along the route and a controlled topsoil strip was also conducted on these sites.

Excavations uncovered two sites between Great Horkesley and Langham (Sites 1 and 2). Remains uncovered at Site 2, located in one field to the west of the A12, comprised Late Iron Age and Roman boundary ditches which may indicate that a settlement was located near by.

Monitoring of topsoil removal on the remainder of the route uncovered no significant archaeological features. A metal detector survey along the entire route located primarily modern finds.

Previous Summaries/Reports: None	
Author of Summary: Gareth Rees	Date of Summary: 22/04/15

Site name/Address: Braintree PZ Anglian Water Pipeline **Site 3: North-east of Ardleigh Reservoir**	
Parish: Ardleigh	District: Tendring
NGR: TM 0437 2952	Site Code: ARWP14
Type of Work: Strip and map, excavation	Site Director/Group: Gareth Rees, OA East
Date of Work: 25th September 2014 to 19th January 2015	Size of Area Investigated: Approx 340m x 10m
Location of Finds/Curating Museum: OA East/ Colchester and Ipswich Museum	Funding source: Anglian Water
Further Seasons Anticipated? No	Related EHCR No.s:
Final Report: OA East Report number 1685	OASIS number: OA3-206593
Periods Represented: Post-medieval	

SUMMARY OF FIELDWORK RESULTS:

Oxford Archaeology East undertook monitoring, strip and map recording, and excavation along the route of the Braintree PZ Supply\Demand Balance pipeline for Anglian Water.

Archaeological monitoring was required along the pipeline. Fields, were selected for strip and map excavation due to cropmarks, indicating archaeological sites, recorded in the Historic Environment Records. Cropmarks were also visible in several other fields along the route and a controlled topsoil strip was also conducted on these sites.

Excavations uncovered two sites between Langham and Ardleigh (Sites 3 and 4). Site 3, located in four fields to the west of Ardleigh village, contained ditches and pits that dated to the post-medieval period or did not produced any datable artefacts. These features may have related to former field boundless and agricultural activities.

Monitoring of topsoil removal on the remainder of the route uncovered no significant archaeological features. A metal detector survey along the entire route located primarily modern finds.

Previous Summaries/Reports: None	
Author of Summary: Gareth Rees	Date of Summary: 22/04/15

Site name/Address: Braintree PZ Anglian Water Pipeline **Site 4: South of Ardleigh**	
Parish: Ardleigh	District: Tendring
NGR: TM 0424 2860	Site Code: ARWP14
Type of Work: Strip and map, excavation	Site Director/Group: Gareth Rees, OA East
Date of Work: 25th September 2014 to 19th January 2015	Size of Area Investigated: Approx 560m x 10m
Location of Finds/Curating Museum: OA East/ Colchester and Ipswich Museum	Funding source: Anglian Water
Further Seasons Anticipated? No	Related EHCR No.s:
Final Report: OA East Report number 1685	OASIS number: OA3-206593
Periods Represented: Middle Bronze Age, post-medieval	

SUMMARY OF FIELDWORK RESULTS:

Oxford Archaeology East undertook monitoring, strip and map recording, and excavation along the route of the Braintree PZ Supply\Demand Balance pipeline for Anglian Water.

Archaeological monitoring was required along the pipeline. Fields, were selected for strip and map excavation due to cropmarks, indicating archaeological sites, recorded in the Historic Environment Records. Cropmarks were also visible in several other fields along the route and a controlled topsoil strip was also conducted on these sites.

Part of a medieval and post-medieval field-system was also uncovered at Site 4 which was located in a field south of Ardleigh to the east of the A137.

Site 4 also produced evidence of prehistoric activity. An Ardleigh-type vessel, dating to the Middle Bronze Age, was recovered from an isolated pit. These vessels are commonly associated with cemeteries of the period, however no funerary evidence was uncovered on the site.

Monitoring of topsoil removal on the remainder of the route uncovered no significant archaeological features. A metal detector survey along the entire route located primarily modern finds.

Previous Summaries/Reports: None	
Author of Summary: Gareth Rees	Date of Summary: 22/04/15

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APPENDIX F. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-206593		
Project Name	Braintree PZ.Ardleigh to Great Horkseley Pipeline		
Project Dates (fieldwork) Start	25-09-2014	Finish	19-01-2015
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	COLEM2014.72; ARWP14	Planning App. No.	14681
HER No.	COLEM2014.72; ARWP14	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPS 5

Please select all techniques used:

☐ Field Observation (periodic visits)	☒ Part Excavation	☐ Salvage Record
☐ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☒ Recorded Observation	☒ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☒ Open-Area Excavation	☐ Salvage Excavation	☒ Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
Pit	Bronze Age -2.5k to -700	Vessel	Bronze Age -2.5k to -700
Settlement	Roman 43 to 410	Pottery	Roman 43 to 410
Ditch	Uncertain		Select period...

Project Location

County	Essex	Site Address (including postcode if possible)	
District	Ardleigh and Colchester	Ardleigh Reservoir, Clover Way, Ardleigh, Colchester, CO7 7PT	
Parish	Adleigh, Langham, Gt Hork		
HER	Essex; Colchester Museum		
Study Area	10km by c.10m	National Grid Reference	TL9700931227-TM0249530124

Project Originators

Organisation	OA EAST
Project Brief Originator	Adrian Gasgoyne and Martin Winter
Project Design Originator	James Drummond-Murray
Project Manager	James Drummond-Murray
Supervisor	Gareth Rees

Project Archives

Physical Archive	Digital Archive	Paper Archive
OA East	OA East	OA East
COLEM2014.72; ARWP14	COLEM2014.72; ARWP14	COLEM2014.72; ARWP14

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☐	☐
Ceramics	☒	☐	☐
Environmental	☒	☐	☐
Glass	☒	☐	☐
Human Bones	☐	☐	☐
Industrial	☐	☐	☐
Leather	☐	☐	☐
Metal	☒	☐	☐
Stratigraphic		☐	☐
Survey		☒	☐
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☐	☐	☐
Worked Stone/Lithic	☒	☐	☐
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☒ GIS	☒ Context Sheet
☐ Geophysics	☒ Correspondence
☒ Images	☐ Diary
☒ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☒ Spreadsheets	☐ Map
☒ Survey	☐ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☐ Photos
	☒ Plans
	☒ Report
	☒ Sections
	☐ Survey

Notes:

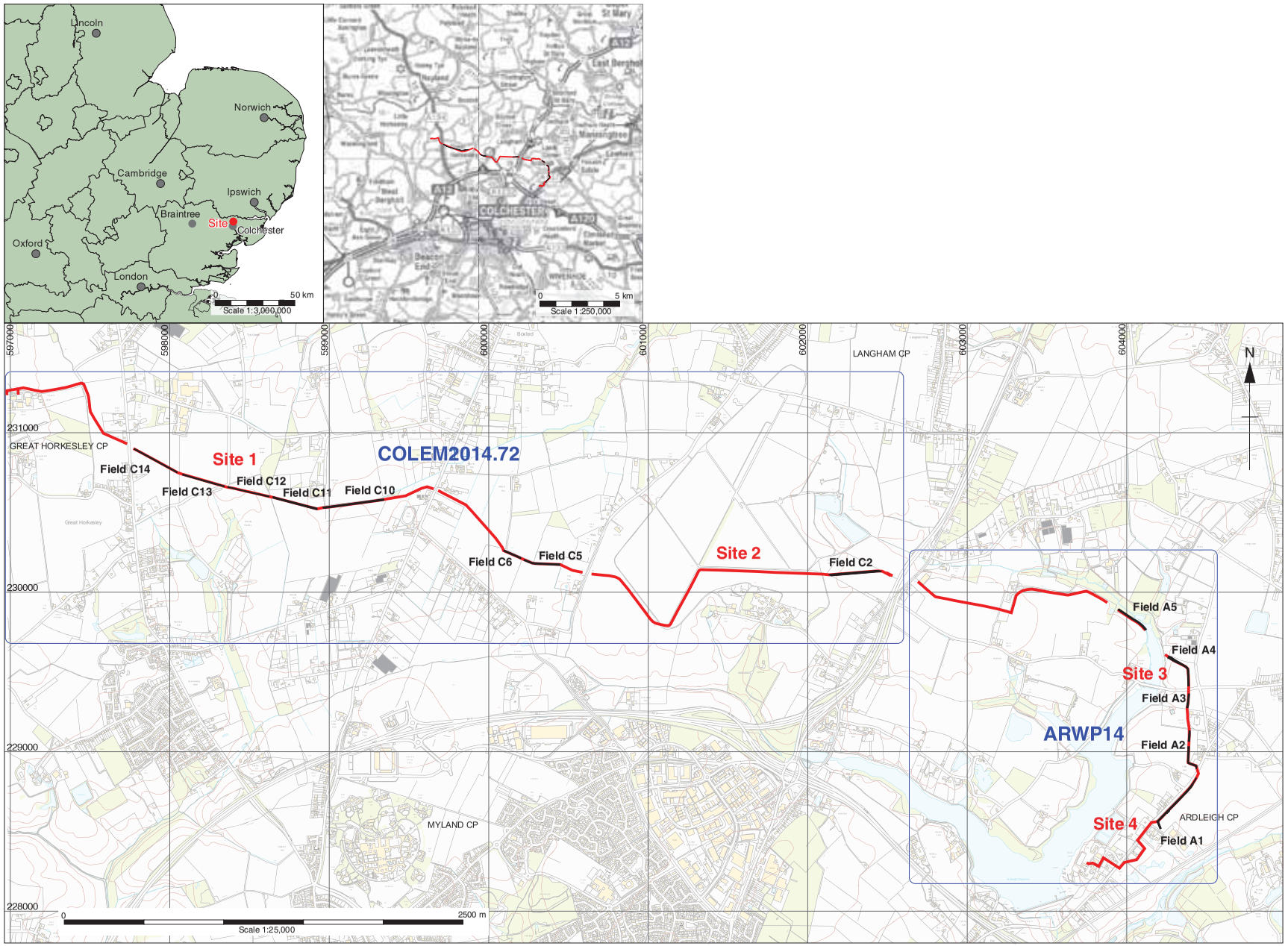

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Figure 1: Site location showing Fields A1-C14 (black) and pipeline route (red)

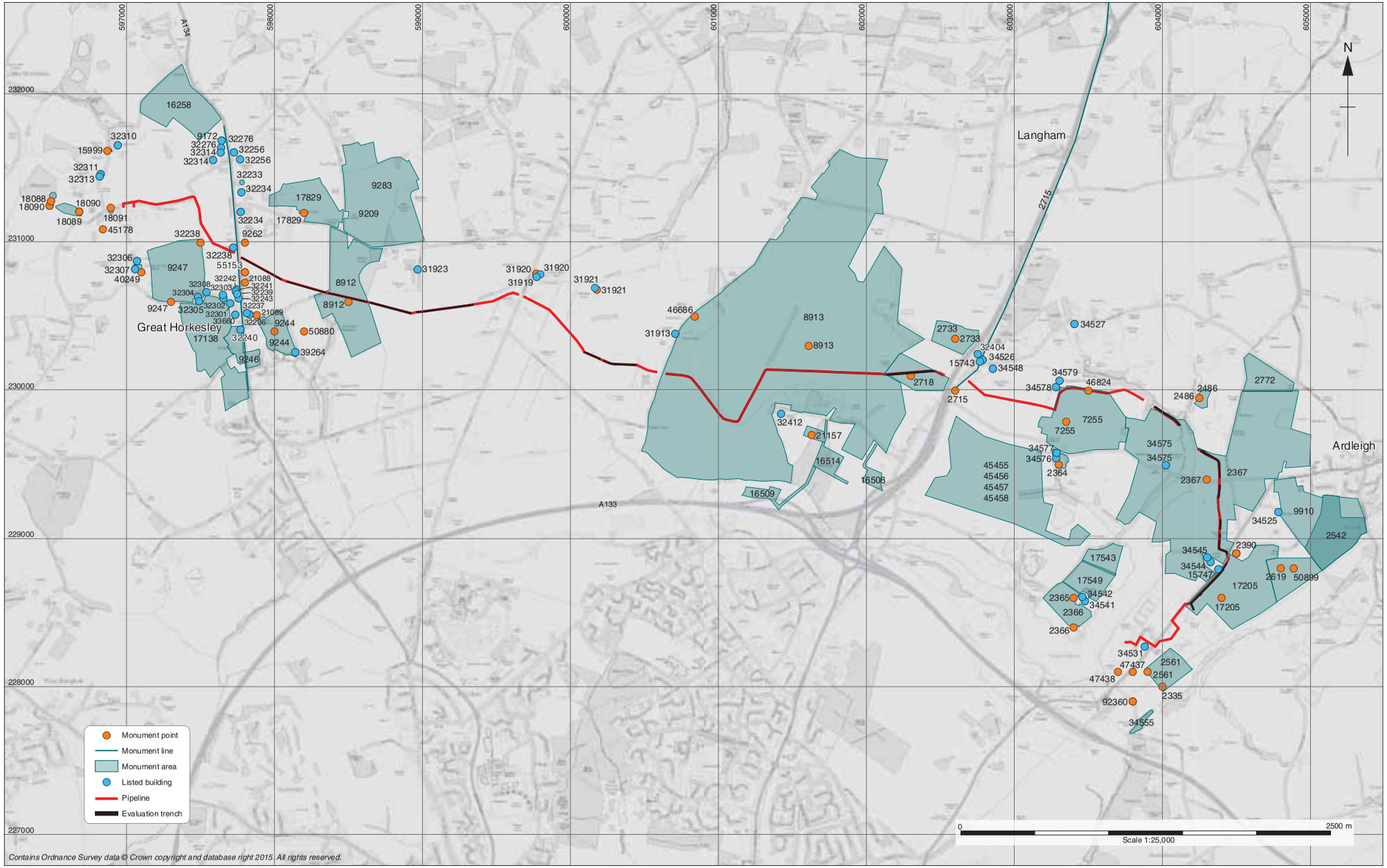

Figure 2: Essex and Colchester HER entries within 500m of the easement

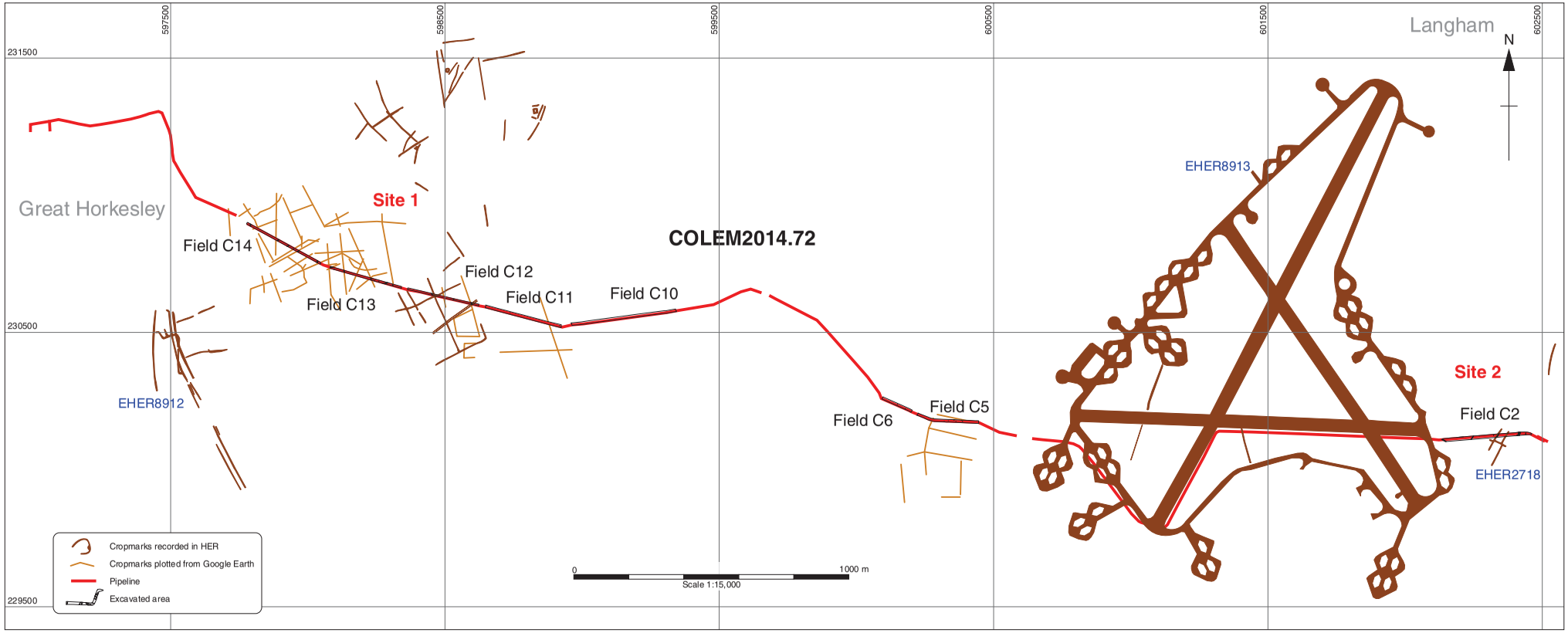

Figure 3: Cropmark between Langham and Great Horkesley

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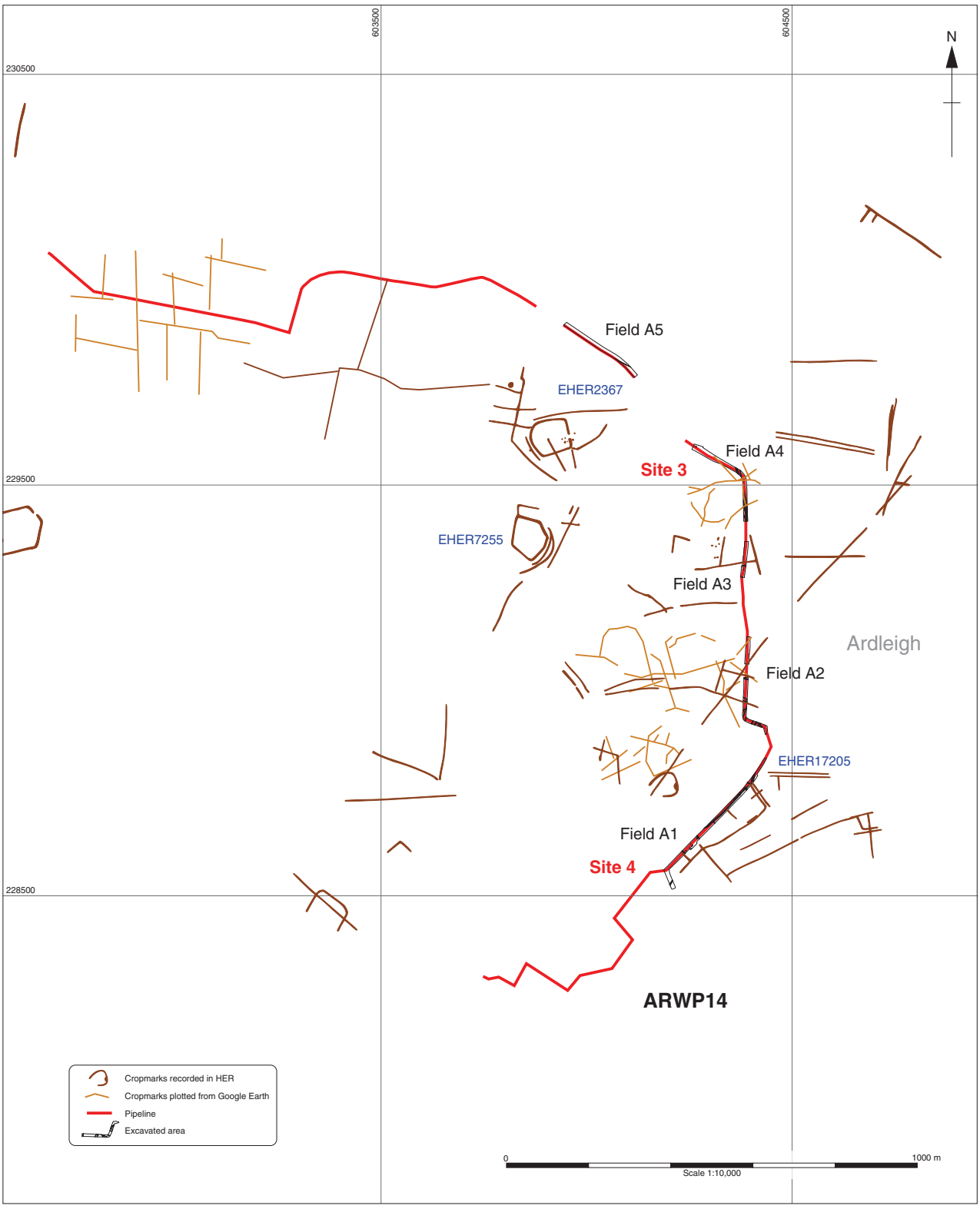

Figure 4: Cropmark sites in the Ardleigh area

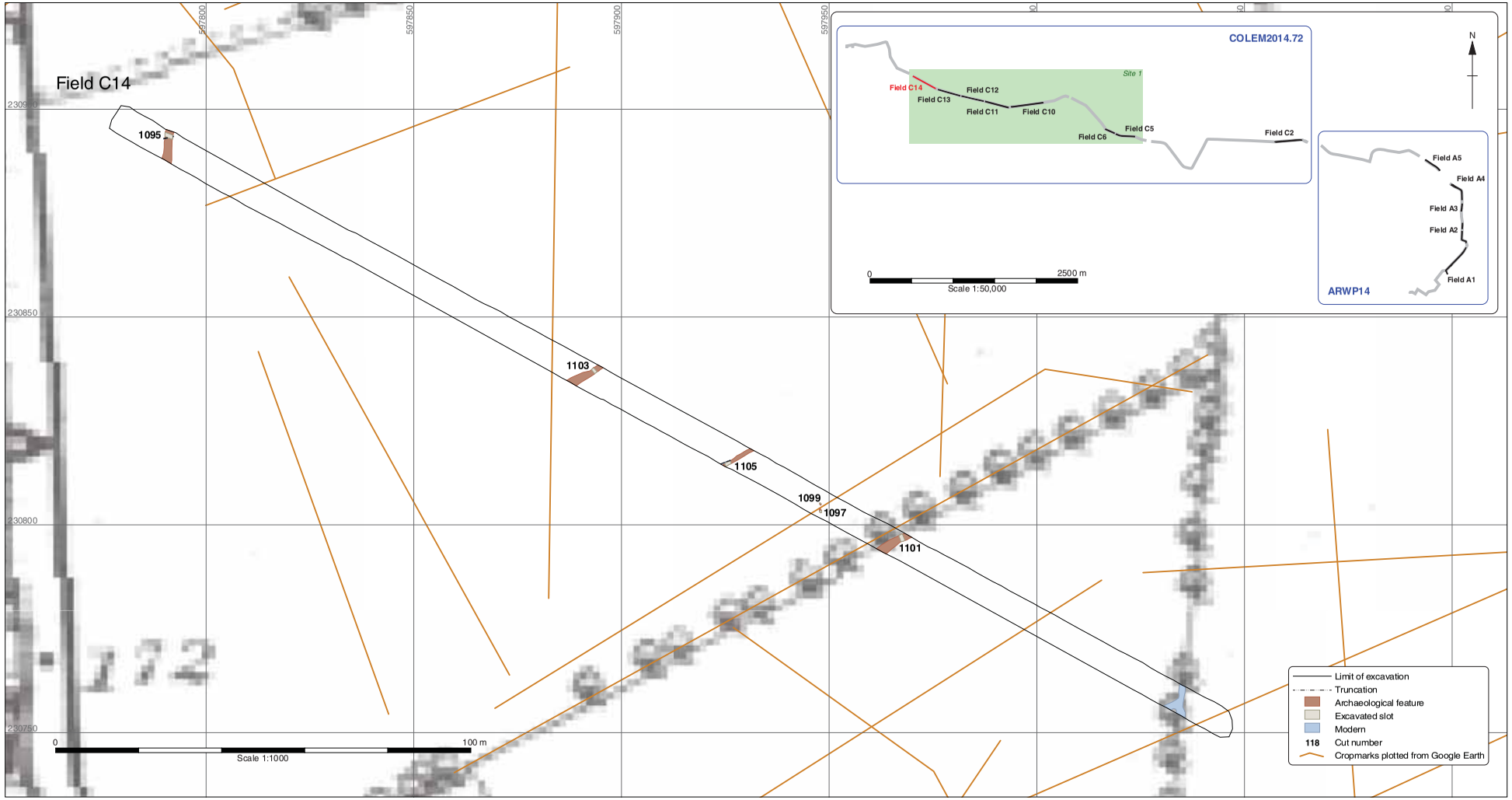

Figure 5a: Plan of Field C14 in Site 1, south of Boxted Road, Great Horkesley overlaid on 1st Edition Ordnance Survey map, 1898

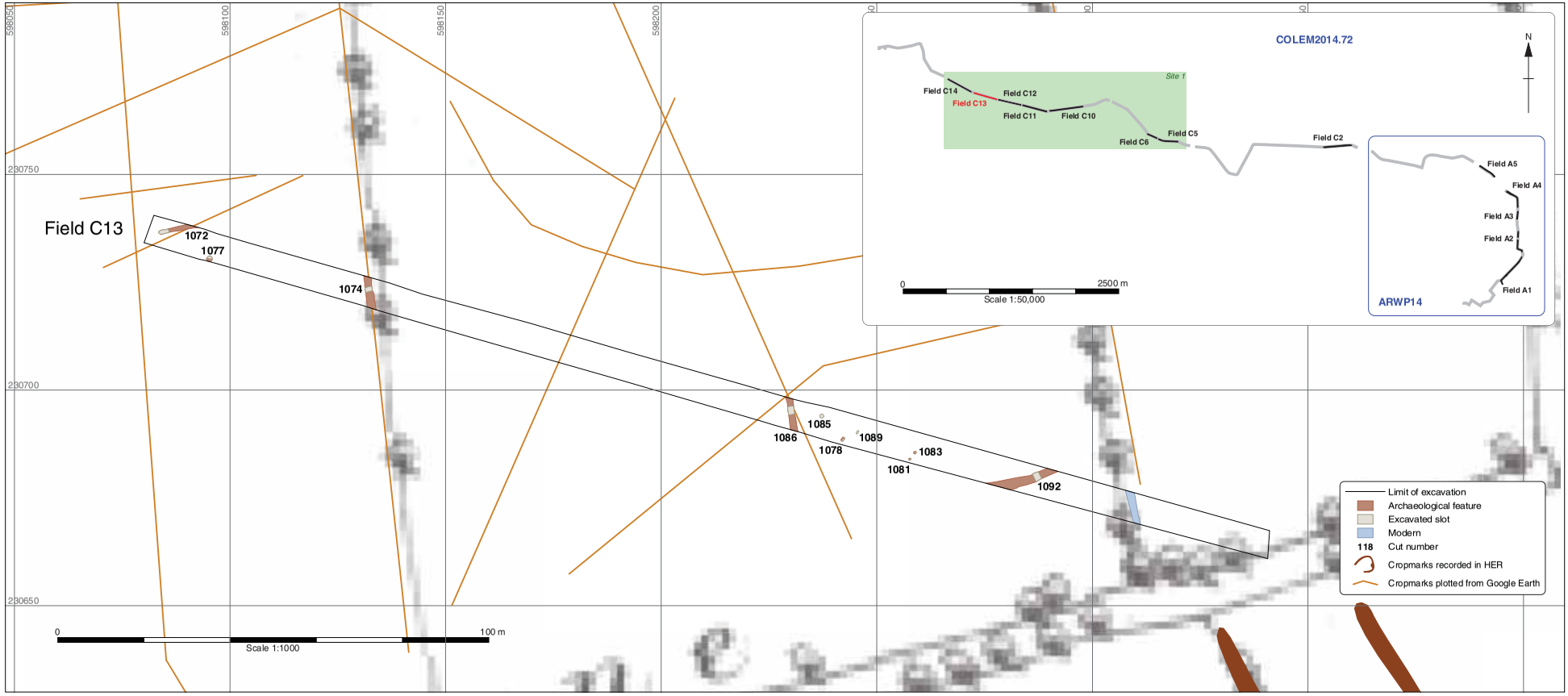

Figure 5b: Plan of Field C13 in Site 1, south of Boxted Road, Great Horkesley overlaid on 1st Edition Ordnance Survey map, 1898

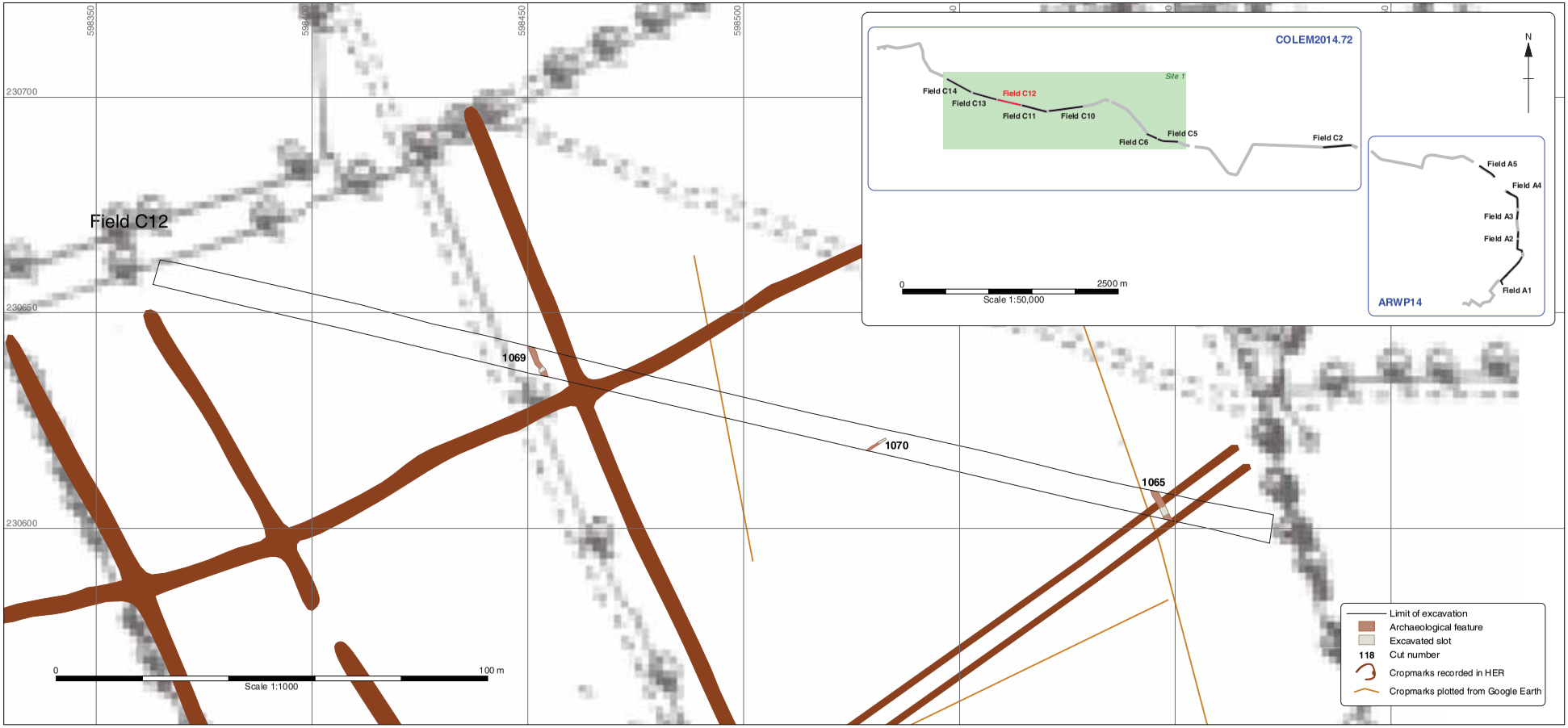

Figure 5c: Plan of Field C12 in Site 1, south of Boxted Road, Great Horkesley overlaid on 1st Edition Ordnance Survey map, 1898

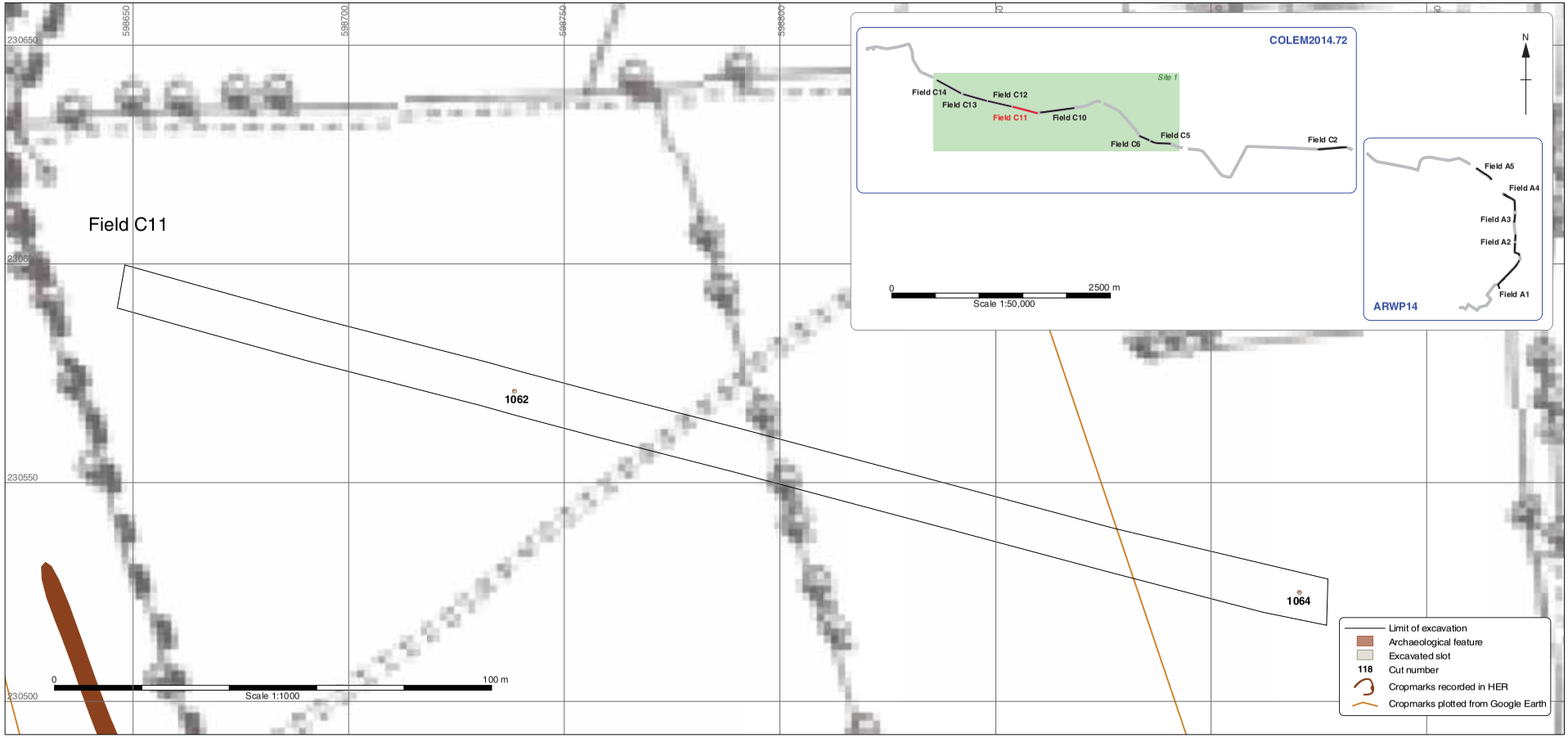

Figure 6: Plan of Field C11, south of Boxted Road, Great Horkesley overlaid on 1st Edition Ordnance Survey map, 1898

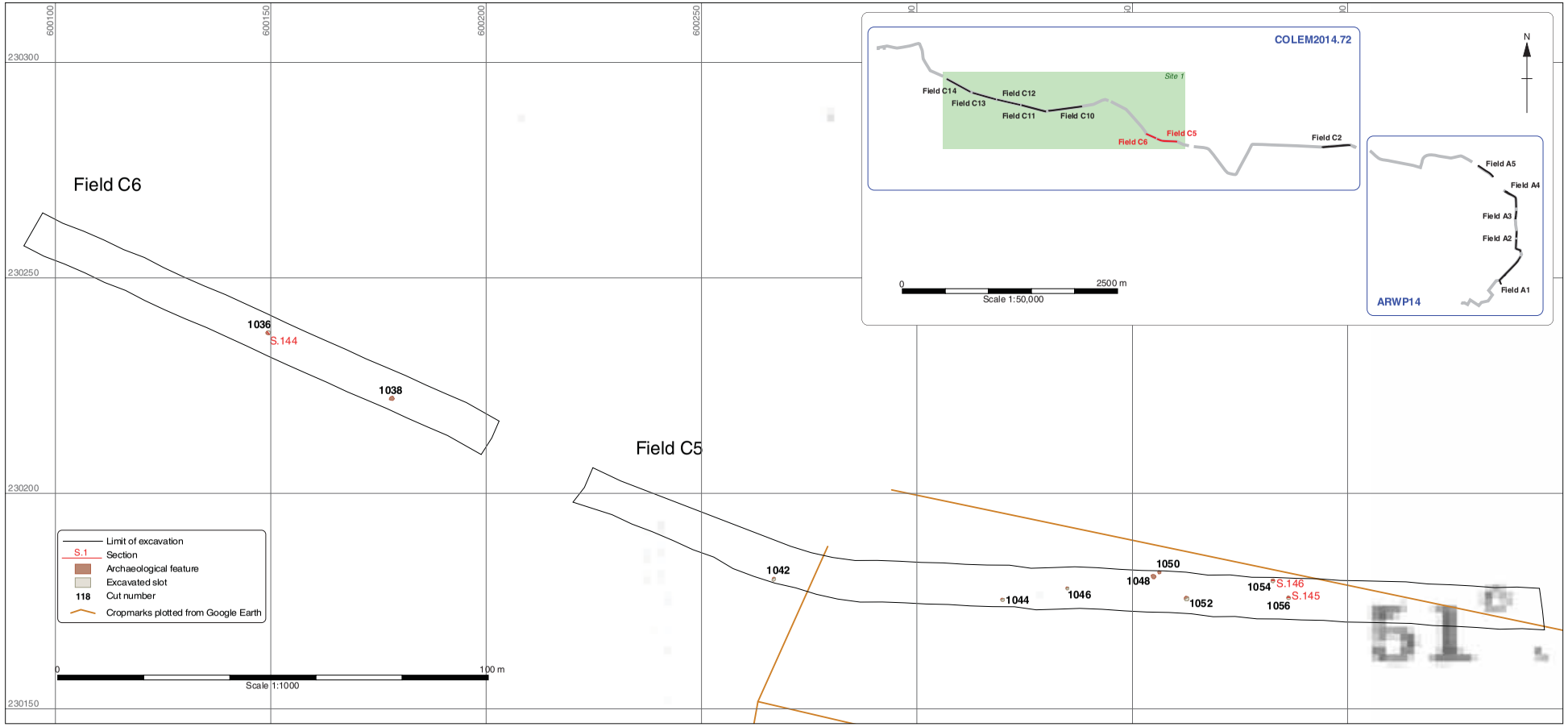

Figure 7: Plan of Fields C5 and C6, south of Old House Lane overlaid on 1st Edition Ordnance Survey map, 1898

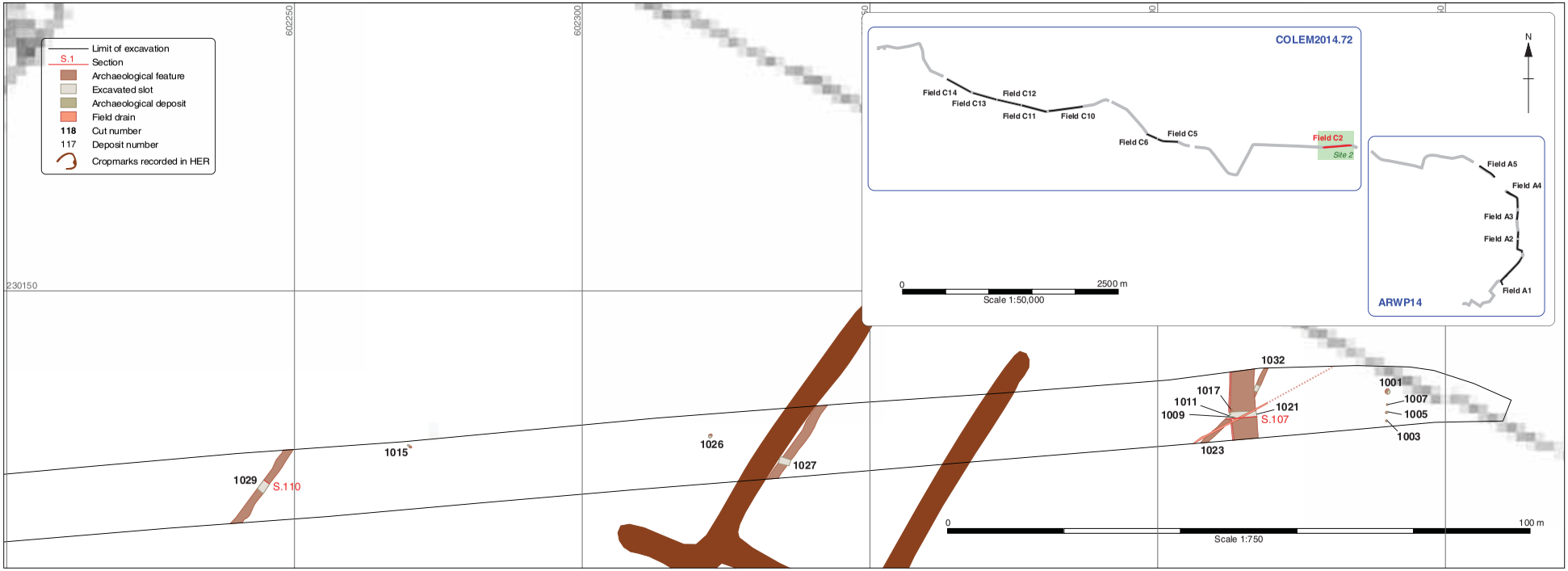

Figure 8: Plan of Site 2, south of Park Lane, Langham overlaid on 1st Edition Ordnance Survey map, 1898

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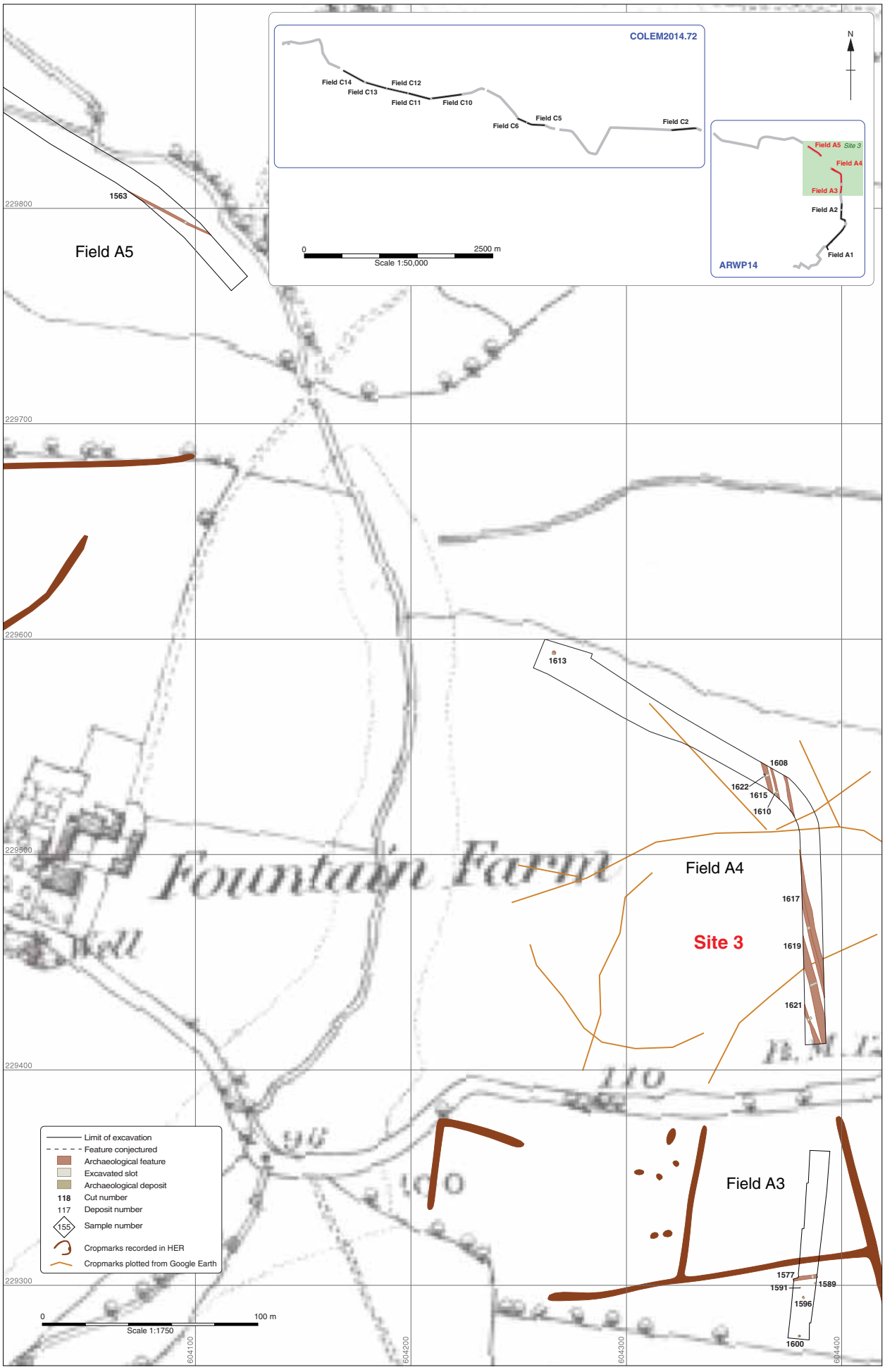

Figure 9: Plan of Site 3, North-east of Ardleigh Reservoir overlaid on 1st Edition Ordnance Survey map, 1885

Figure 10: Plan of Site 4, South of Ardleigh overlaid on 1st Edition Ordnance Survey map, 1885

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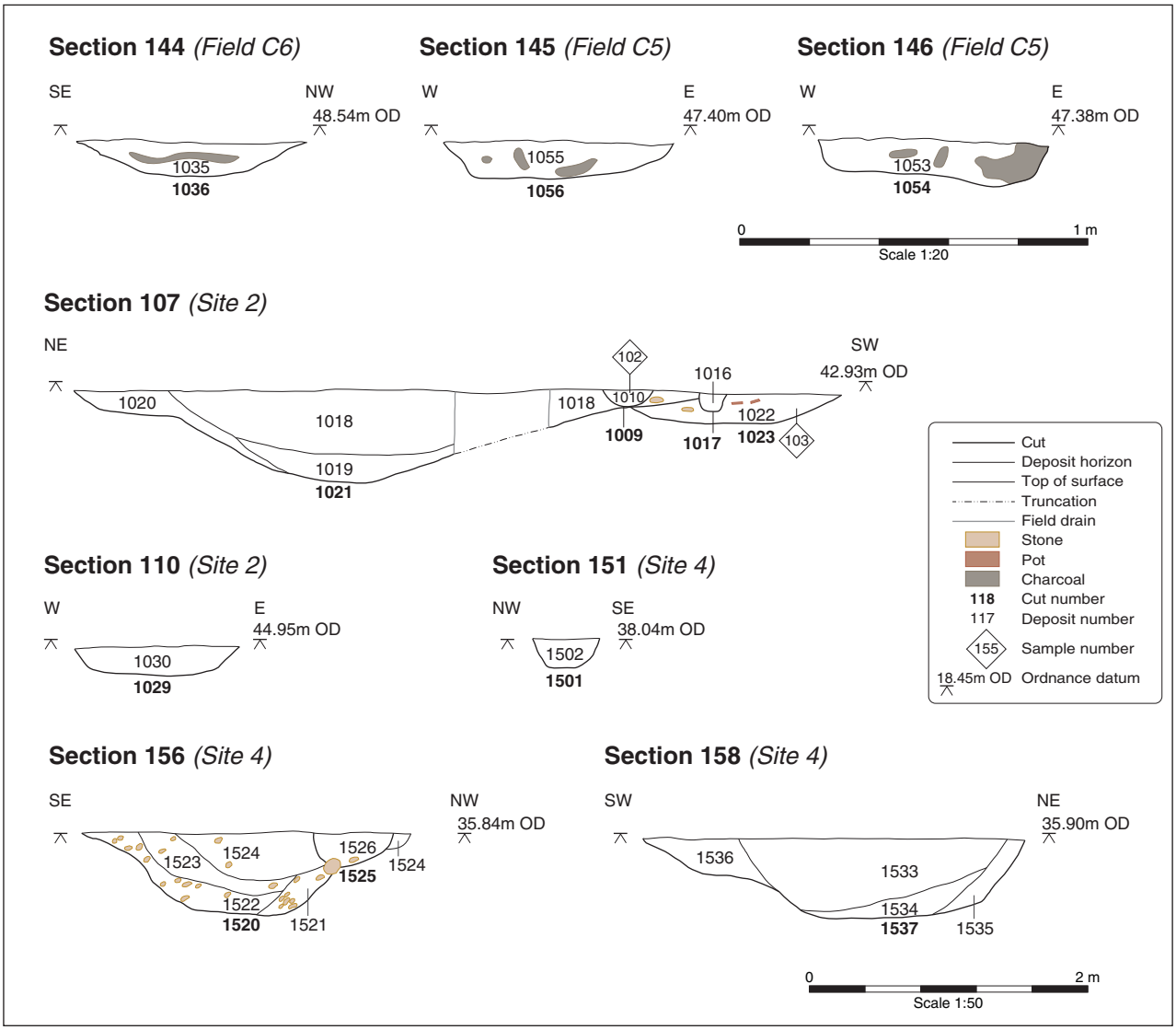

Figure 11: Selected sections

Plate 1: Site 1: Site conditions adjacent to the A134, facing south

Plate 2: Site 1: Ditch **1065**, facing north-west

Plate 3: Pits **1048** and **1050** (Field C5), facing north

Plate 4: Site 2: Ditch **1027**, facing north

Plate 5: Site 3: Ditch **1619**, facing north

Plate 6: Site 4: Ditch **1592** facing north-west

Plate 7: Site 4: Pit **1501**, facing north-west

Plate 8: Site 4: Ditches **1527** and **1529**, facing south

Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com

Director: Gill Hey, BA PhD FSA MCIFA
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