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**CLEVE HILL SOLAR PARK,
GRAVENEY, KENT:
GEOARCHAEOLOGICAL
BOREHOLE STUDY**





Prepared for Cleve Hill Solar
Park Ltd and Cotswold
Archaeology

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SUMMARY

*Fifty-nine manual and four mechanical boreholes were drilled at the proposed site for Cleve Hill Solar Park, Graveney, Kent, in February and March 2018. The deposits encountered were divided into five main stratigraphic units that pertained to the Holocene and overlay the northward dipping London Clay Formation (LCF). These units were: intertidal muds, channel sands, gravels, colluvium and modern Made Ground. The great majority of the sediments were fine grained intertidal deposits that outcropped across the site between +2.14m OD at BH 30 in the south and +0.77m OD in BH A in the north. At the base of Graveney and Cleve Hills in the south, thin intertidal muds overlapped the rising LCF at the margin of the Marshes. The thickness of the deposits increased to greater than 8m in the north at the foot of the Sea Wall. The deposits consisted of interbedded light grey and very dark grey muds with rare horizontal laminae of silt/very fine sand, and occasional examples of *Hydrobia ulvae* (a brackish water mollusc) and *Cerastoderma edule* (the edible cockle – a marine species of Mollusca). The muds represent an accreting saltmarsh and tidal flat environment in response to rising sea level.*

Nine Deposit Zones were identified and classified according to their archaeological and palaeoenvironmental potential. Of these four are considered to be significant:

Deposit Zone 1: where a deep sequence of intertidal muds has a low to moderate palaeoenvironmental potential;

Deposit Zone 3: where the environment of deposition (a deep channel) most closely resembles the location of the Graveney boat discovery;

Deposit Zone 4: marking the southern margin of the Marshes and the junction of dry land with waterlogged land where archaeological features might be found; and

Deposit Zone 7: where creek and bank deposits may also have limited archaeological potential.

1. INTRODUCTION

- 1.1 This report discusses the results of a geoarchaeological borehole study of land north and west of Cleve Hill, Graveney, Kent (henceforth 'the site'). The works were carried out by ARCA on behalf of Cotswold Archaeology and their client, Cleve Hill Solar Park Ltd between 1 February and 9 March 2018. The work presented here was in accordance with a Written Scheme of Investigation (WSI) approved by Simon Mason of Kent County Council (KCC) on 24 January 2018 (Wilkinson 2018), which in turn conformed to Historic England (2015) guidance on geoarchaeology.
- 1.2 The scheme proposed by Cleve Hill Solar Park Ltd will see the installation of ground mounted PV panels, a battery storage facility and associated infrastructure. The total area subject to the planning application (henceforth 'the study area') comprises 360 ha (Figure 1).
- 1.3 Cleve Hill is located on the north Kent coast, 1.5 km north-east of Faversham and 0.5 km north of Graveney, while the study area and is centred on National Grid Reference (NGR) 603892 163948 (Figure 1). The landscape encompassed by the site comprises a low rise [to +17m Ordnance Datum (OD)] (collectively Cleve Hill and Graveney Hill) in the eastern part of the site, and a flat surrounding plain elsewhere (Figure 2). The latter varies in elevation between +3.0 and +0.7m OD and is presently cultivated.
- 1.4 The British Geological Survey map the bedrock geology of the site as London Clay Formation, i.e. blue grey silts and clays that formed in a marine environment during the Ypresian stage of the Eocene (56-48 million years ago) (British Geological Survey 2018a, 2018b). Holocene (11,700 year ago-present) 'alluvium' is mapped as overlying the London Clay across the whole site except above c. +5m OD on Cleve and Graveney Hills where the latter has a surface outcrop. 'Alluvium' is a generic category used by the British Geological Survey to mean any deposits forming in flowing water during the Holocene period (British Geological Survey 2018b), but in the present case the 'Alluvium' is actually a product of intertidal processes. There are no existing records in the British Geological Survey borehole database from the site and its immediate surrounds, but two boreholes from 'The New Sportsman', Graveney, 1 km to the north-east of the study area indicate that the Alluvium has a

contact with London Clay at 2-3m below ground level (bgl) (British Geological Survey 2018a).

- 1.5 Little previous archaeological fieldwork has taken place on the site, but a Desk-Based Assessment (DBA) carried out by Wessex Archaeology (2017) highlights the presence of World War II military structures, and 19th century and post-medieval structural features and field boundaries. Other than a medieval midden found during a watching brief as part of geotechnical works in advance of the London Array Grid Connection, sub-surface archaeological remains have not been found (Wessex Archaeology 2017).
- 1.6 The aims of the geoarchaeological work report here are (Wilkinson 2018, 1-2):
 - 1.6.1 Characterise the Quaternary¹ lithostratigraphic sequence on the site (spatially and vertically);
 - 1.6.2 Provide a provisional assessment of the archaeological and palaeoenvironmental potential of the Quaternary strata;
 - 1.6.3 Assess the impact of the proposed development on the Quaternary strata and associated archaeologically-relevant materials.
- 1.7 The WSI stated that the aims of Section 1.6 would be addressed by (Wilkinson 2018, 2):
 - 1.7.1 Integrating the existing lithostratigraphic resource within a RockWorks database;
 - 1.7.2 Carrying out a borehole survey of the study area, describing the strata encountered using standard geological methods and adding the lithostratigraphic data that are collected to the RockWorks database;
 - 1.7.3 Plotting cross sections of the borehole lithostratigraphy to show the vertical distribution of Quaternary strata on the site;
 - 1.7.4 Developing surface and stratigraphic thickness models derived from the borehole data;
 - 1.7.5 Producing an integrated geoarchaeological assessment report, which would:
 - (i) Divide the site into zones of differing archaeological and palaeoenvironmental potential;

¹ The Quaternary comprises the Pleistocene (2.4 million to 11.7 thousand years ago) and Holocene, but only deposits of the latter are currently mapped on the site.

- (ii) Assess the impact of the proposed development on deposits of archaeological and palaeoenvironmental interest, and;
- (iii) Make recommendations (if appropriate) for further geoarchaeological work to refine understanding of the stratigraphic sequence and distribution of Quaternary deposits across the site so as to better assess their archaeological potential/significance and the impact of the proposed development.

1.7.6 Archiving the lithostratigraphic data

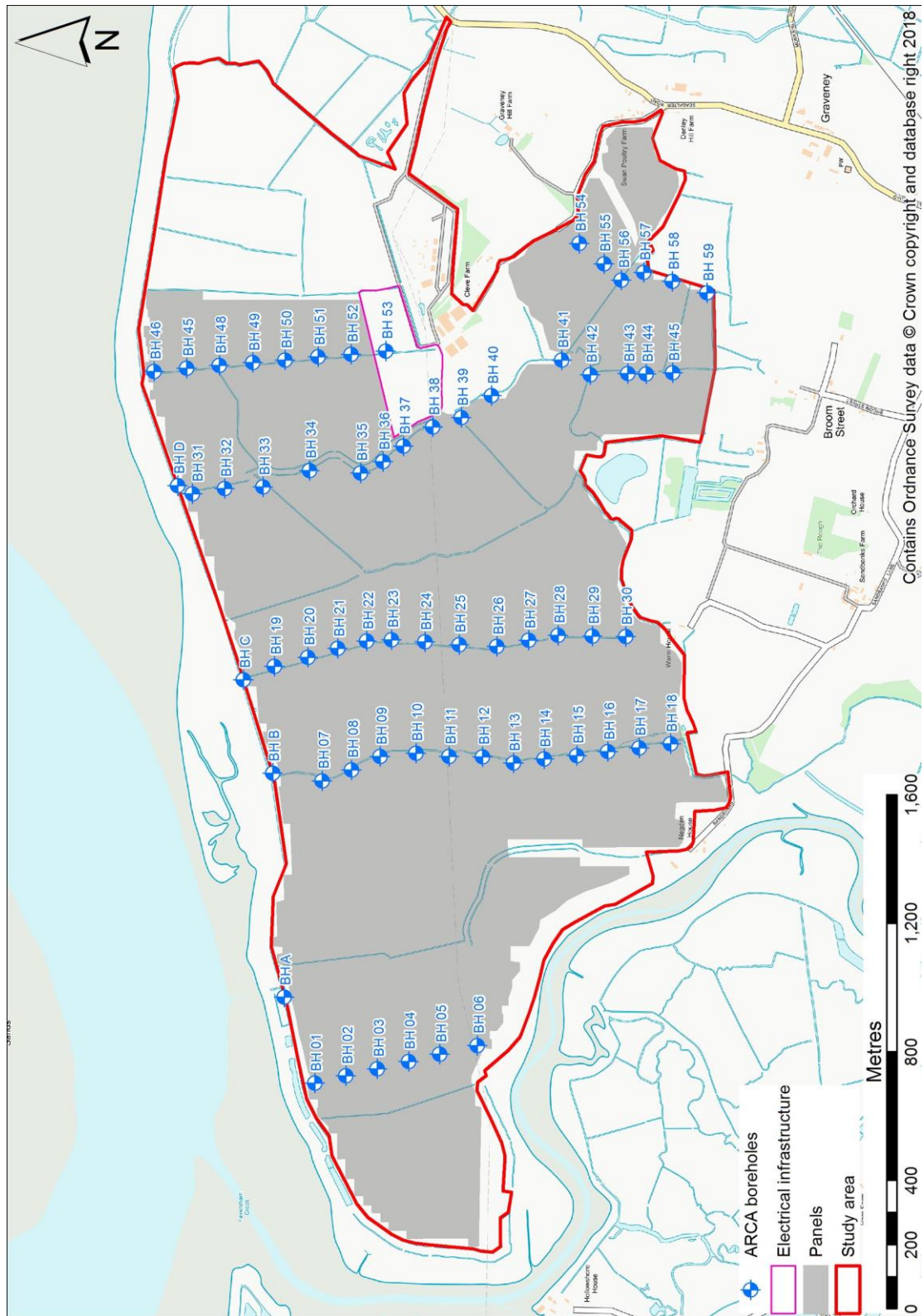


Figure 1. The Cleve Hill Solar Park site and the ARCA geoaerchaeological boreholes, plotted against the planned infrastructure.

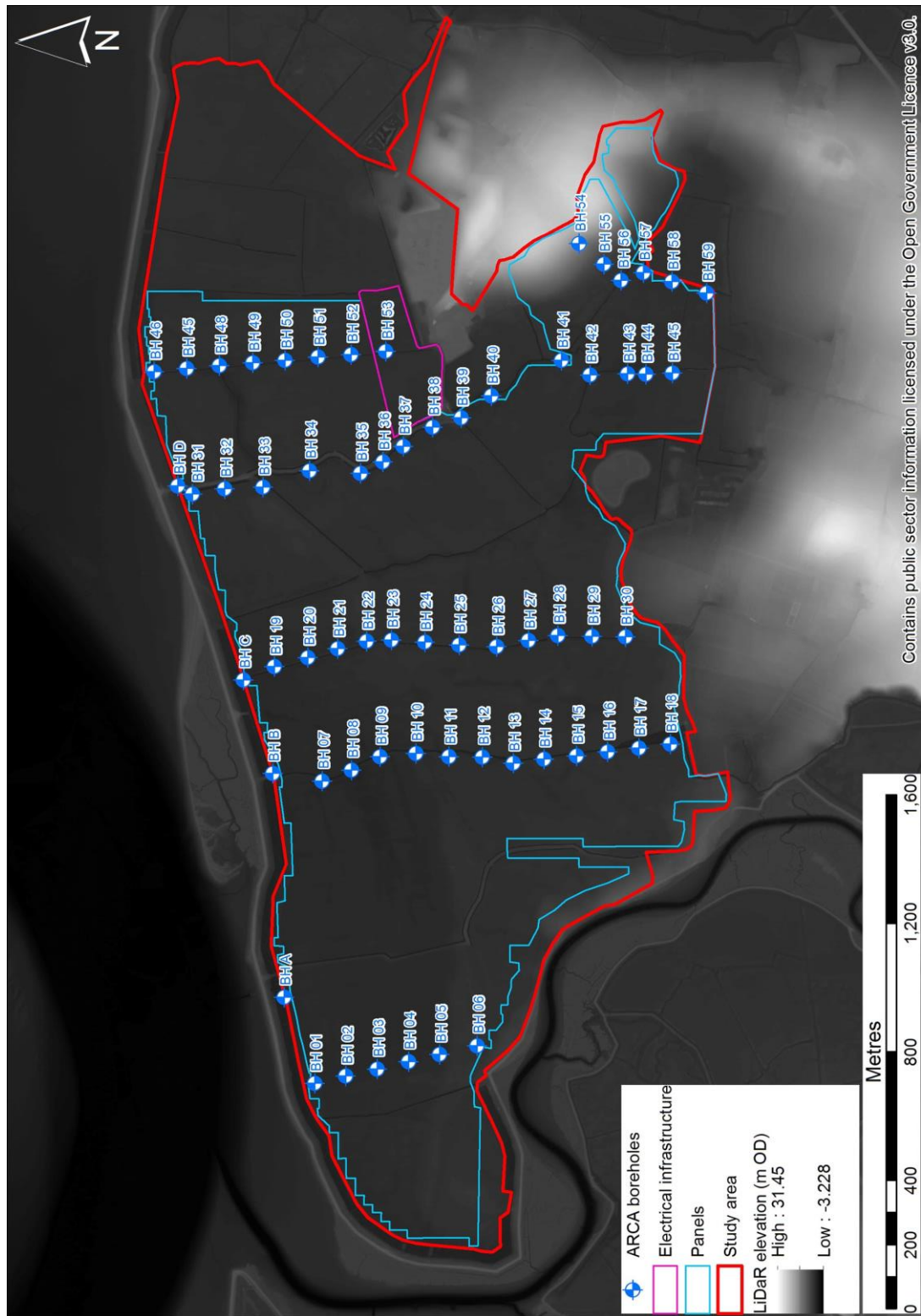


Figure 2. LiDaR imagery for the Cleve Hill Solar Park site showing the topography.

2. METHODOLOGY

2.1 Desktop

2.1.1 The WSI called for records from the British Geological Survey borehole database within 1 km of the study area boundary to be transcribed into a RockWorks 15 database (British Geological Survey 2018a, RockWare 2012). Only two such records exist, i.e. from 'The New Sportsman' in Graveney (Section 1.4), and both were added to the RockWorks database holding the geoarchaeological data.

2.1.2 Furthermore the WSI indicated that lithostratigraphic data from geotechnical studies associated with the scheme would also be added to the RockWorks database once they became available. However, data from the cone penetrometry survey undertaken at the same time as the present borehole study are not presently available, while a geotechnical survey (test pits and cable percussion-drilled boreholes) will commence in late March 2018.

2.2 Fieldwork

2.2.1 Six Transects of boreholes at 100m intervals were planned in the project GIS (Wilkinson 2018, 3, 7). The location of each borehole was then surveyed and marked in the field on 1 February 2018 using a Leica System 1200 GPS (precision = $\pm 0.02\text{m}$).

2.2.2 Boreholes (BH) in Transect 1 (BH 01-06) and two boreholes in Transect 6 (BH 54-55) were drilled in their intended locations during the initial phase of fieldwork (12-23 February 2018). However, wet conditions (which made working in ploughed parts of the study area extremely difficult) and a request to avoid areas in which crops had been planted meant that the other boreholes were moved to the sides of a series north-south orientated tracks passing through the site. As a result the boreholes had to be resurveyed on their completion (on 8-9 March) (Appendix 1). Their actual location is shown in Figure 1.

2.2.3 BH 01-59 were drilled using manual augers, together with 1m long extension rods. The relatively dry sediment/soil at the top of the sequence, i.e. oxidised silt/clays, was sampled with Edelmann heads and the underlying reduced silt/clay sequence was examined with gouge augers. The entire Holocene sequence or 5m depth (whichever is the lesser) was sampled at each borehole location using these devices. Sediment retained in the

gouge auger heads was photographed against an appropriate scale and then recorded using standard geological criteria (Jones et al. 1999, Munsell 2000, Tucker 2011). Boreholes were then back filled with the arisings immediately on completion of drilling.

2.2.4 BH A-D were drilled with an Atlas Copco Cobra petrol-powered hammer and either Eijkelkamp gouge augers of 75 and 60mm diameter (BH B, BH D and the uppermost 3m of BH C) or a 54mm diameter core sampler [BH A and deposits beneath 3m bgl in BH C]. These mechanical boreholes were placed at the northern ends of Transects 1-4, i.e. where the manual boreholes had not reached bedrock. The mechanical boreholes were advanced to the London Clay bedrock or 8m bgl, whichever was encountered first. Sediment retrieved in the gouge auger heads was photographed and described to standard geological criteria (Tucker 1982, Jones et al. 1999, Munsell Color 2000). These arisings were then used to refill the boreholes. Sleeved core samples collected in the core sampler were sealed and labelled on site and removed to ARCA's Winchester laboratory for further study. BH A and BH C were refilled with a mixture of arisings (e.g. from the cutting shoe that fronts the core sampler) and Bentonite pellets. This second phase of fieldwork was carried out on 8-9 March.

2.3 Post-fieldwork

2.3.1 In the laboratory the plastic tubing containing cores from BH A and BH C was cut open using a bench-mounted stone saw and then a pallet knife was used to slice the cores in two. One longitudinal half of each core was labelled, wrapped in plastic film and placed in storage. Sediments in the other half were hand cleaned using a scalpel, photographed and described as set out in Sections 2.2.3-2.2.4.

2.3.2 Lithological and positional data collected during the two phases of fieldwork (Sections 2.2.3-2.2.4) and the laboratory description of cores from BH A and BH C (Section 2.3.1) were combined with those from the two existing borehole records (Section 2.1.1) in a RockWorks 15 database (RockWare 2012). That software was then used to plot the cross sections.

2.4 Archive

2.4.1 The material archive comprises 13m of core from BH A (8m) and BH C (5m, i.e. 3-8m bgl). These cores will remain in storage at

the University of Winchester pending decisions on further assessment until 9 March 2019 whereupon they will be discarded with no further notification.

2.4.2 The digital archive consists of the RockWorks database (in Microsoft Access format); structural elevation and stratigraphic thickness models in ESRI Shape format; photographs of the gouge auger chambers and cores in JPG format and this report in PDF format. These digital archives are stored both on the University of Winchester server (backed up to tape on a weekly basis, with a duplicate server in Germany) and on an external hard drive stored outside the University of Winchester. A copy of the digital archive will be passed to relevant curatorial bodies on approval of the present report.

2.4.3 OASIS records will be completed for individual/associated groups of geoarchaeological boreholes on approval of this report.

3. RESULTS

3.0.1 The sedimentary sequence found in the boreholes is divided into six stratigraphic units. The units identified from youngest to oldest are:

1. Modern Made Ground (Drain dredging and modern track surface deposits).
2. Colluvium (Holocene deposit).
- 3a. Oxidised intertidal silt/clays with a topsoil/plough soil developed in the top and tidal bar deposits (Holocene deposits).
- 3b. Reduced intertidal silt/clays (Holocene deposits).
4. Fine grained alluvium (Holocene deposit).
5. Gravels (Late Pleistocene or Early Holocene reworked deposits).
6. London Clay Formation (Palaeogene bedrock)

These units are described in stratigraphic order below and lithostratigraphic cross-sections are illustrated in Figures 4 to 9.

3.1 London Clay Formation

3.1.1 The London Clay Formation (LCF) was recorded in 43 boreholes (see Figures 3 to 9 below). It sub-cropped below the superficial deposits between -6.82m OD (7.91m bgl) in BH C in the north of the site, and +8.34m OD (1.70m bgl) in BH 54 in the south on Graveney Hill. In general and excluding Graveney Hill, the LCF sub-cropped at c. 0m OD in the south and then fell in elevation sloping towards The Swale in the north. In the east, Transect 5 recorded a smooth surface dipping from Cleve Hill Substation to c. -2.5m OD in BH 46. To the west the surface was irregular with evidence of channels cut into it, and the elevation of the bedrock fell significantly northwards. In Transect 1 in the west, bedrock lay at an elevation lower than c. -7m OD (>8m bgl) in BH A and beyond the reach of the mechanical drill.

3.1.2 The LCF exhibited two main lithologies (see Figure 3 below): a stiff to hard blueish grey (Gley 2 5/10B) silt/clay with rare to occasional fine pebble-sized olive brown (2.5 Y 4/3) lenses; and in two boreholes, BH 28 and BH 44, a stiff to hard black (5 Y 2.5/1) silt/clay so coloured probably from humic acids leaching out of the overlying deposits. The former lithology was often soft and the brown lenses appeared as streaks and/or patches, before becoming very stiff and impenetrable. Frequently the

hardness of the LCF precluded the retrieval of a sample in the hand gouge auger.

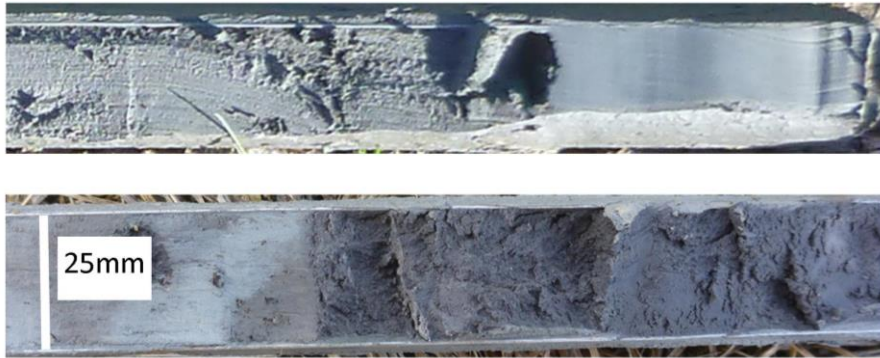


Figure 3. London Clay Formation bedrock as it appeared in the hand auger gouge. Top: bluish grey bedrock on the right overlain by very fine sandy intertidal silt/clay. Bottom: black bedrock overlain by grey and very dark grey intertidal silt/clays.

- 3.1.3 The LCF was unconformably overlain by Holocene intertidal deposits in the majority of the boreholes except on Graveney Hill where colluvium and gravel were recorded in BH 54 and BH 55 respectively; and in BH 35 to BH 38 where (impenetrable) gravels are presumed to overlie the bedrock.

3.2 Reworked Gravels

- 3.2.1 Gravel deposits were encountered in five boreholes in the hand auger survey; BH 35 to BH 38 and BH 55 located on Graveney Hill (see Figures 7 and 9 below). The gravel lay between -0.79m OD (1.83m bgl) in BH 37 and -0.17m OD (1.60m bgl) in BH 38 on Graveney Marshes. On Graveney Hill the gravel was found at +0.62m OD.
- 3.2.2 The lithology of the gravel, as far as could be ascertained, was sub-angular to well-rounded flint grains, granules and fine pebbles.
- 3.2.3 The gravel was unconformably overlain by Holocene intertidal deposits in BH 35 to BH 38 and by colluvium in BH 55.

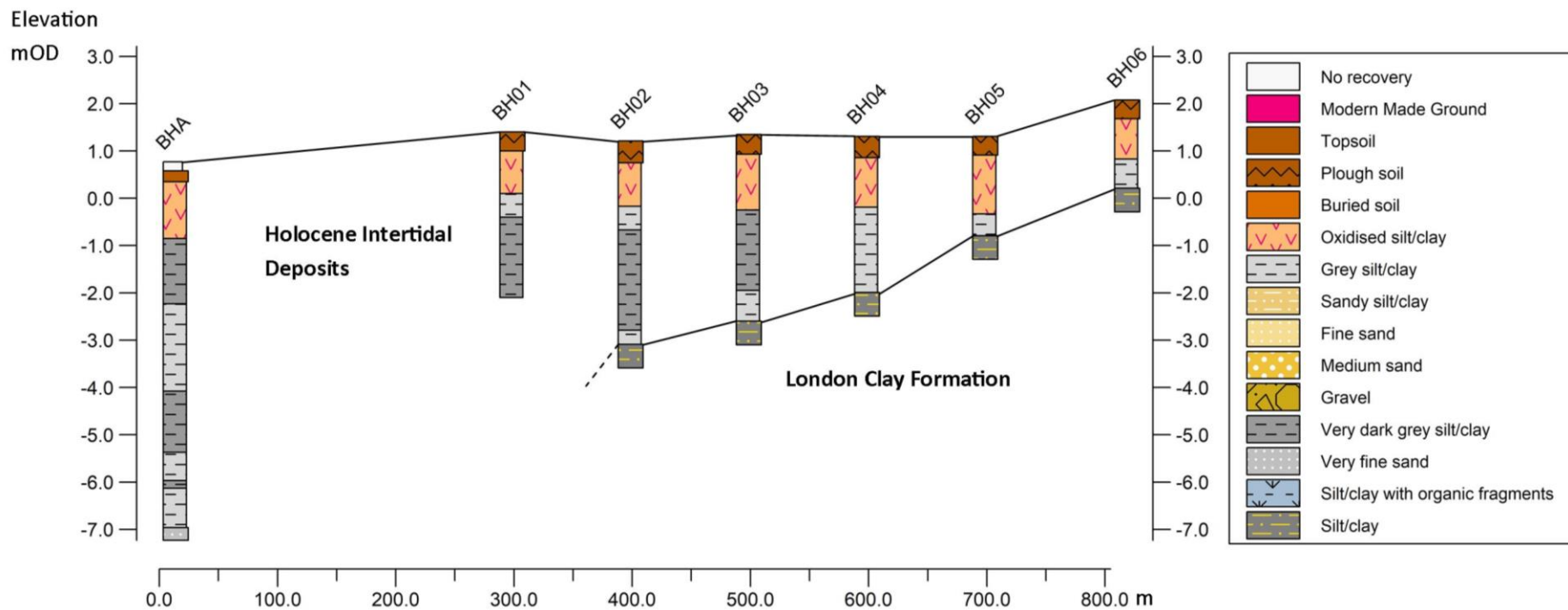


Figure 4. Lithostratigraphic cross section of Transect 1 (BH A to BH 06) from north to south. Vertical exaggeration x40.

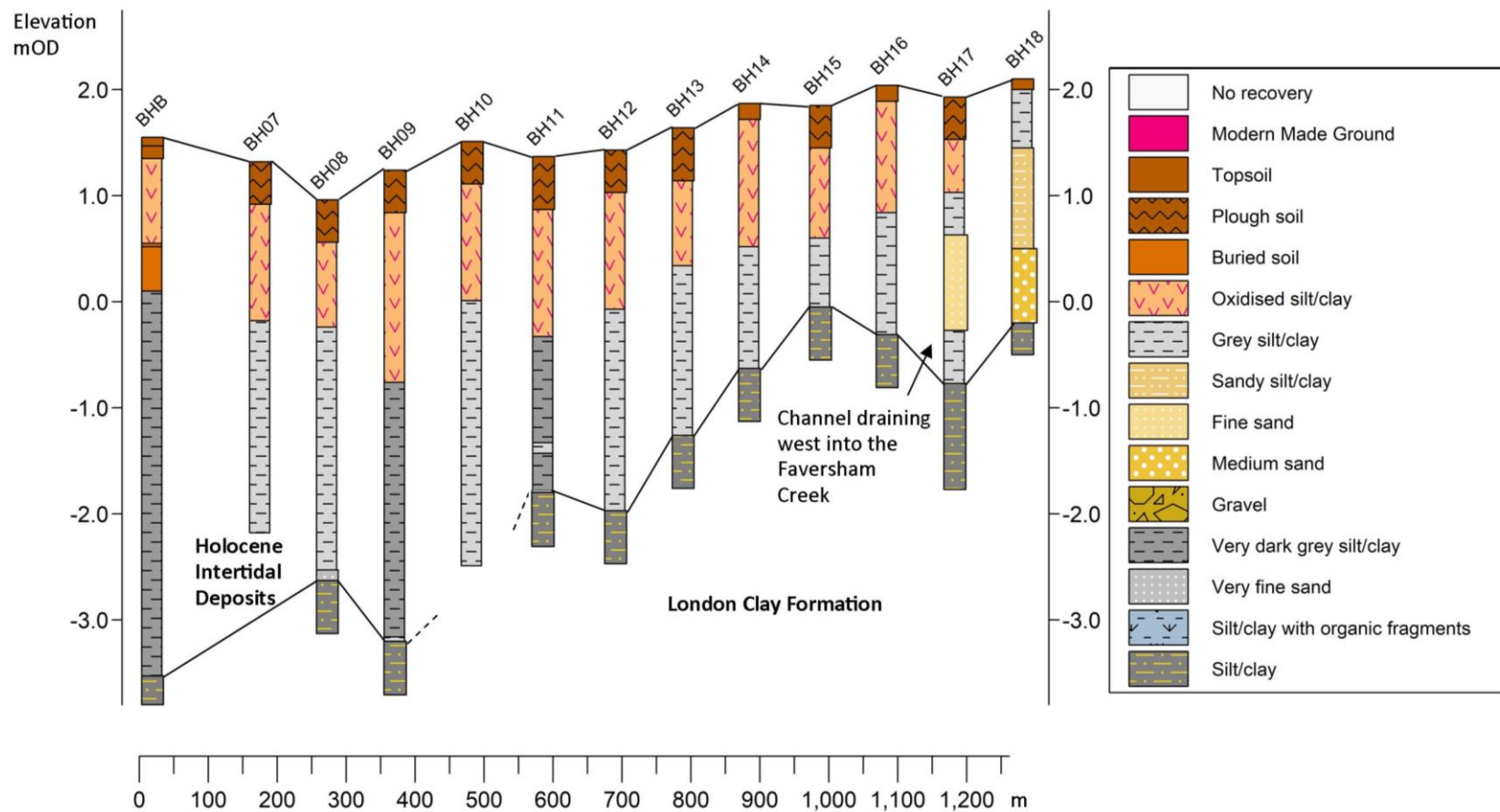


Figure 5. Lithostratigraphic cross section of Transect 2 (BH B to BH 18) from north to south. Vertical exaggeration x154.

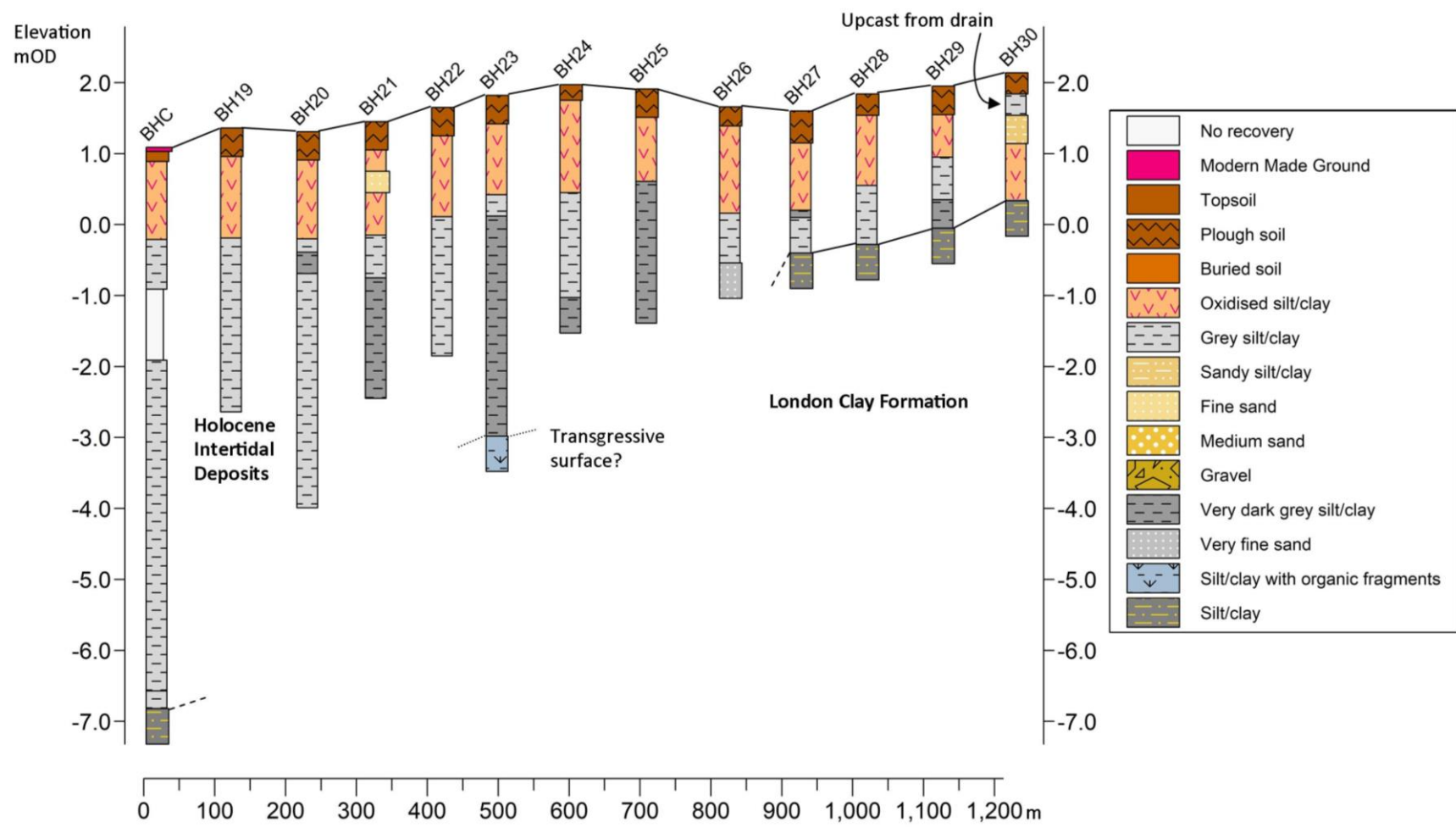


Figure 6. Lithostratigraphic cross section of Transect 3 (BH C to BH 30) from north to south. Vertical exaggeration x100.

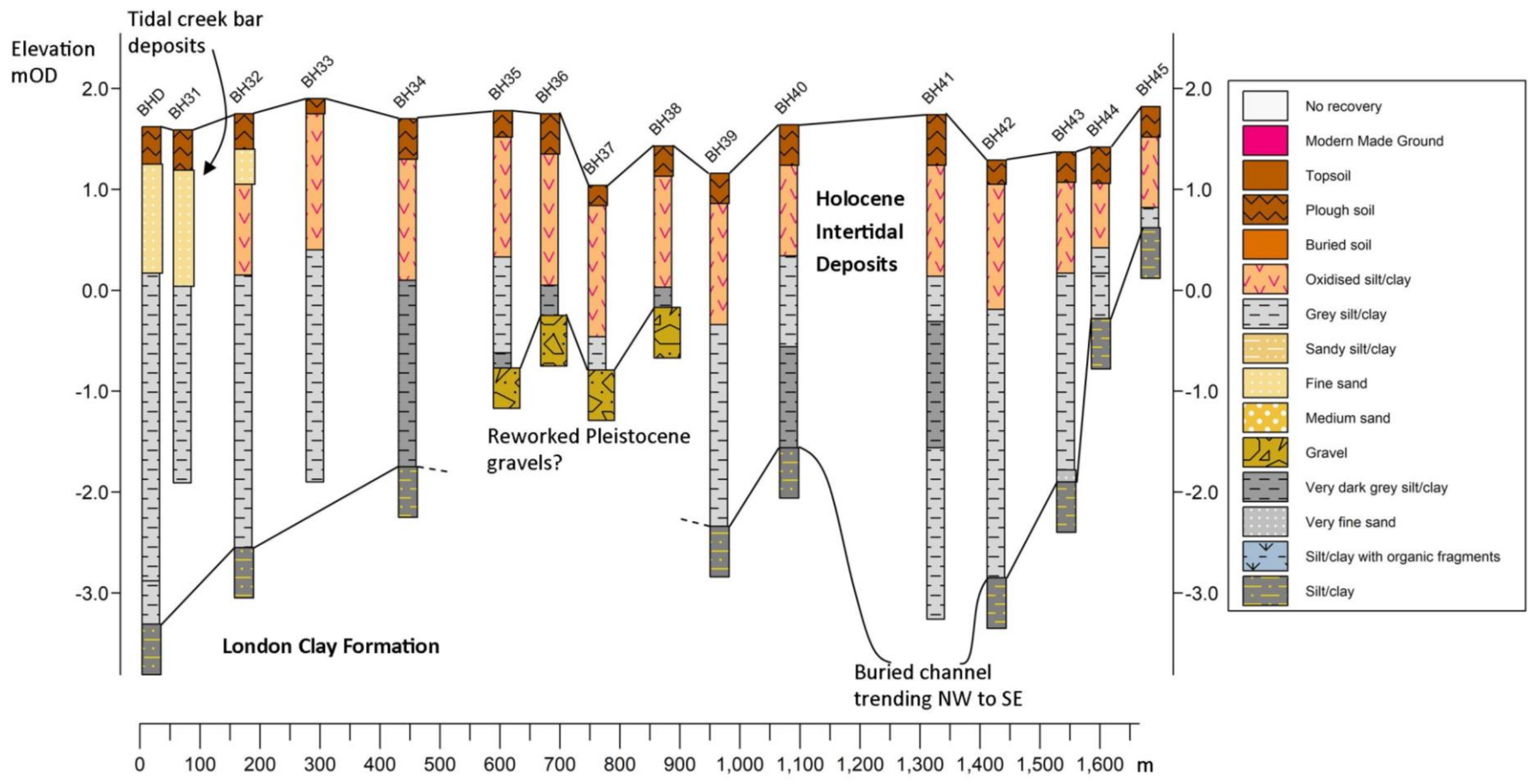


Figure 7. Lithostratigraphic cross section of Transect 4 (BH D to BH 45) from north to south. Vertical exaggeration x168.

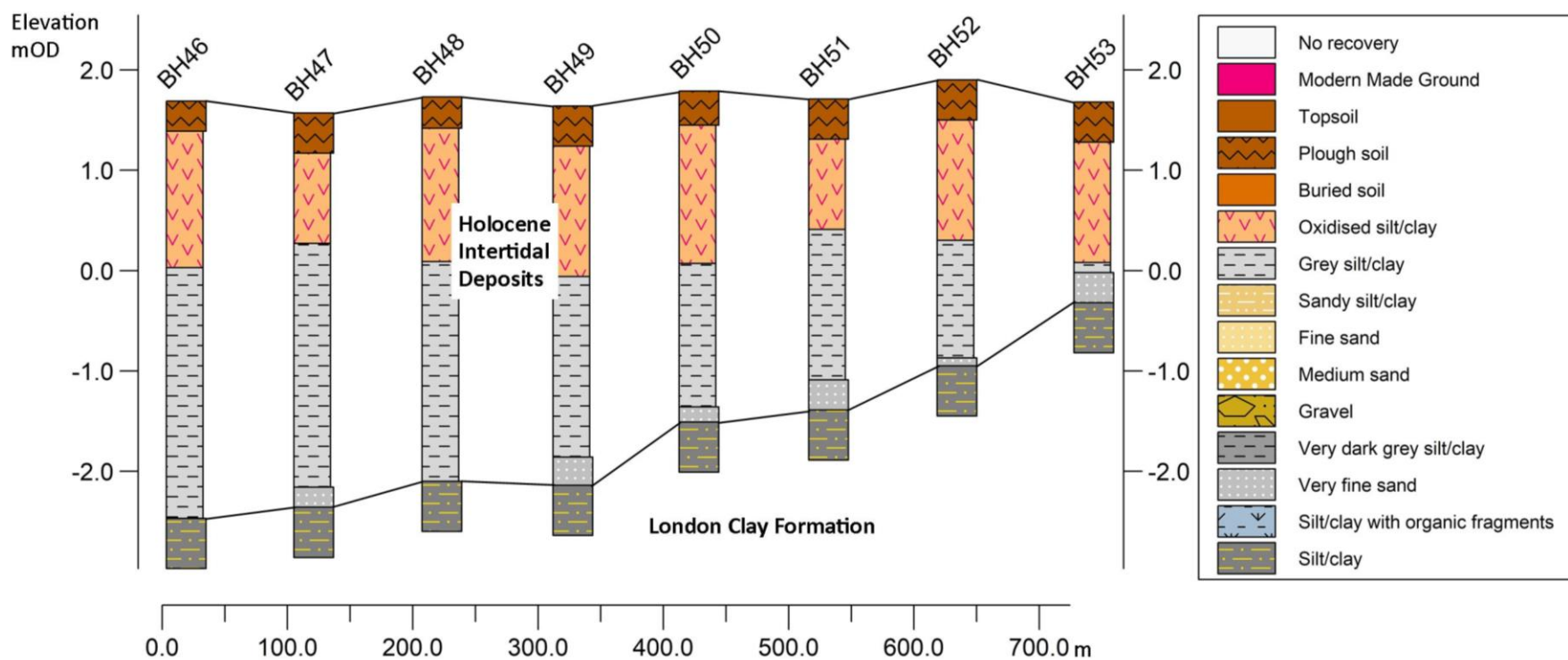


Figure 8. Lithostratigraphic cross section of Transect 5 (BH 46 to BH 53) from north to south. Vertical exaggeration x80.

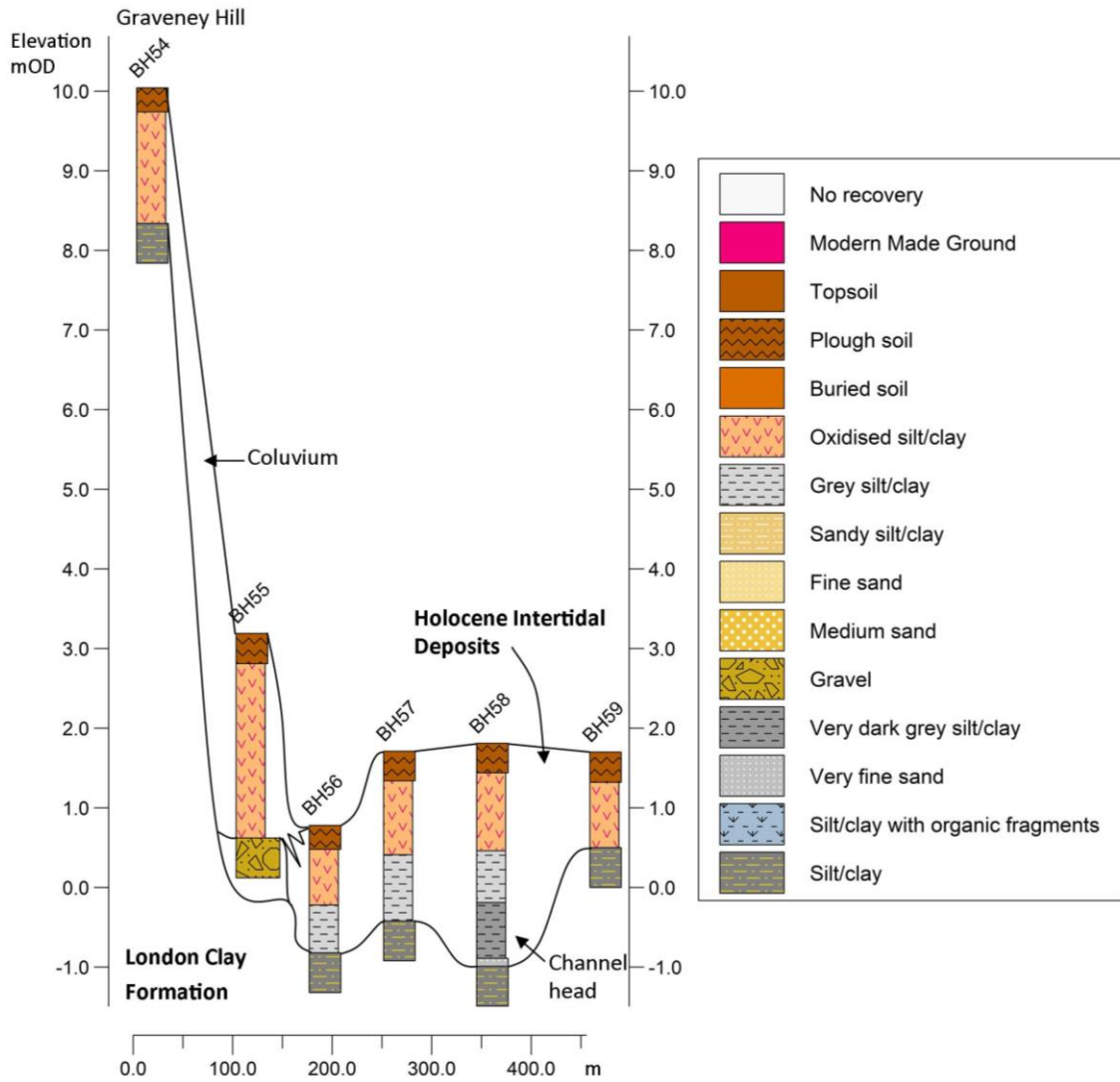


Figure 9. Lithostratigraphic cross section of Transect 6 (BH 54 to BH 59) from north to south. Vertical exaggeration x80.

3.3 Fine Grained Alluvium

3.3.1 In BH 23 a bluish grey (Gley 2 6/5B) silt/clay 0.5m thick, with occasional granular-sized plant fragments, was recorded underlying the intertidal deposits at -2.98m OD (4.8m bgl). The unique colour, the singular presence of plant fragments and its elevation suggest that it may represent Holocene alluvium laid down by a northward flowing tributary of the ancient River Swale and preserved within a concavity in the bedrock prior to the marine transgression and deposition of intertidal deposits.

3.3.2 The fine grained alluvium was unconformably overlain by intertidal deposits.

3.4 Intertidal Deposits

3.4.1 The intertidal deposits outcropped across the site from Nagden Marshes in the west, Graveney Marshes in the centre to Cleve Marshes in the east (see Figures 4 to 9). The deposits were recorded in 57 boreholes and increased in thickness from the south to the north. The minimum thickness was 1.20m in BH 59 and the maximum was 7.91m in BH C (in BH A in the west the bedrock was not proved and a thickness of greater than 8m was recorded). The maximum elevation of the outcrop was +2.14m OD at BH 30 in the south and the minimum was +0.77m OD in BH A in the north; a difference of only 1.37m and evidence of the level modern day surface of the Marshes.

3.4.2 The intertidal deposits consisted of a stack of fine grained sediment that was divisible into two main units distinguished on colour. The lower unit was grey to very dark grey (5 Y 5/1 to 5 Y 3/1) and the upper unit was an orangish brown (10 YR 4/3 with 5 YR 4/6 mottles). The boundary between the units was generally sharp at c. 1.50m bgl and represented the elevation of the water table. The upper unit was oxidised as a result of redox reactions driven by a fluctuating water table that oxidise the ferric iron compounds in the clay to their ferrous state and colour it brown (see Figures 10 and 11 below). This is a diagenetic process (i.e. it is post-depositional) that affects the original sedimentary chemical characteristics and not the mode of deposition. Deeper, where the sediment was permanently saturated, anoxic conditions persist and the clay was bluish grey in colour as a result of the presence of the mineral vivianite (hydrated iron phosphate) or darker grey as a result of humic compounds (see Figure 11 below).



Figure 10. Iron oxide mottling and some black manganese oxide (arrow) in the boundary between the upper oxidised intertidal sediments and the lower reduced fraction (increasing grey clay on the right).



Figure 11. Oxidised deposits overlying the reduced deposits: very dark grey silt/clays in the upper right and lighter grey silt/clays in the core below. (1 to 3m bgl BH A).

3.4.3 In the lower unit of reduced silt/clay very fine sands were frequently recorded as a fine bed (c. 0.10m thick) at the base of the unit. In one location (BH D) a lag deposit of broken marine shell (*Cerastoderma edule* and *Ostrea edulis*) was incorporated within the sand overlying the bedrock. In general, rare laminae of very fine sand were found irregularly distributed throughout the reduced silt/clay. The unit was also distinguished by the presence of spots, pebble-sized patches or more rarely sets of fine bands (<50mm), and thick beds (up to c. 3.5m in BH B) of very dark grey humic silt/clay; no macroscopic organic material was present. Occasionally both the grey and very dark grey sub-units contained examples of the minute, halophytic mollusc *Hydrobia ulvae* typically found in great numbers on the upper reaches of tidal mudflats (Kerney, 1999) (see Figure 12 below). Articulated shells of the edible cockle were occasionally recovered also.



Figure 12. The tidal mudflat mollusc *Hydrobia ulvae* in BH 28.

- 3.4.4 The upper unit of the intertidal deposits was heavily oxidised and in the top half metre bioturbated by fine roots. Deeper in the unit the silt/clay occasionally parted at boundaries with very fine sand laminae although the twisting action of the auger screw usually destroyed them.
- 3.4.5 In BH 17 and BH 18 (Transect 2) an upward fining sand unit lay at +1.45m OD (BH 18) with a maximum thickness of 1.65m (BH 18). It appeared to fill a recut channel that occupies a more ancient course eroded in top of the bedrock and drained westward towards the present location of the Faversham Creek (see Figure 5 above). Similar deposits were found in BH D, BH 31 and BH 32 in Transect 4 (see Figure 6 above) where they consisted of very well sorted fine sand c. 1m thick. These deposits were recorded at +1.40m OD (0.35m bgl in BH 32). The sand beds probably represent bar deposits within the channels of tidal creeks. Their high elevation, particularly the latter in Transect 4, suggests that they were laid down just prior or during land reclamation in the medieval period.
- 3.4.6 The modern soil profile had developed in the top c. 0.40m of the upper oxidised unit of the intertidal deposits delineated, in general, by a sharp boundary. This unit was a dark brown (10 YR 3/3) silt/clay with very poorly developed granular-sized peds and represented a plough soil. It contained rare granules of cbm (ceramic building material) and very rare pebble-sized clasts of angular brick. Two types of flint clast were recorded: rare, angular, fine to medium flint nodules ultimately derived from the Seaford Chalk Formation c. 2 km to the south; and rare, well-rounded black flints from the Upnor Formation of the

Lambeth Group c. 1 km to the south. The plough soil was bioturbated by frequent fine roots and root holes.

- 3.4.7 In BH B and BH 30 the intertidal deposits were overlain by modern upcast from drain dredging. BH C was capped by modern track surface deposits.

3.5 Colluvium

- 3.5.1 A colluvial deposit was recorded in the BH 54 and BH 55 on the slope of Graveney Hill (Transect 6). In BH 54 it was 1.70m thick and in BH 55 2.57m thick. It was an oxidised and firm, light yellowish brown (10 YR 6/4) silt/clay that overlay LCF in BH 54 towards the top of the hill, and gravels in BH55 towards the base of the hill.

3.6 Modern Made Ground

- 3.6.1 A buried soil was recorded in BH B at +0.55m OD (1m bgl) (see Figure 5). It was 0.45m thick and had a 30mm surface of very pale brown (10 YR 8/2) calcareous silt/clay in granular-sized aggregates with moderate-sized sub-rounded granular clasts. The underlying silt/clay unit was marked by a sharp boundary and was dark yellowish brown (10 YR 4/4) in colour with frequent coarse sand-sized iron oxide stains. Fine roots were present.
- 3.6.2 The buried soil was overlain by oxidised silt/clays with a modern soil profile in the top. The location next to the major east west drain and immediately south of the Sea Wall suggests that the buried soil had resulted from human activity, be it dredging or work on the sea defences in the recent past.
- 3.6.3 At BH 30 in the south of the site the plough soil was found to be developed within a reduced silt/clay unit (see Figure 3 above) that overlay an oxidised sandy silt/clay unit; that is to say the usual stratigraphy was reversed. The location of the auger hole beside the head of a drain suggests that work on dredging the drain was most probably the cause.
- 3.6.4 In BH C a 60mm cap of gravel of sub-angular pebbles in a humic, brown silt/clay matrix overly the top soil. A metallised track was located next to the borehole and was most probably the origin of the gravel unit.

4. ASSESSMENT

4.0.1 The text in the sub-sections below reviews the lithostratigraphic evidence against the relevant aims of Section 1.6.

4.1 Lithostratigraphic sequence

4.1.1 The London Clay Formation forms an irregular and incised basement to the Quaternary sediments of the ancient Swale Valley. The site lies at the southern edge of the flood plain of The Swale, and just to the north of and below the Cleve and Graveney Hills. The basal sediments covering the erosion surface are, in the main, fine grained intertidal deposits associated with the sea level rise in the Holocene (see Figure 13 below). Immediately to the south of the site and approximately delimited by the 5m OD contour, is the line of pinch out of these sediments where they onlap against the rising LCF.

4.1.2 Slender evidence was recovered in BH 23 for the existence of earlier fine grained alluvial sediments with peat fragments that may pertain to the Early Holocene floodplain of the ancient Swale. On a transgressive coast saltmarsh formation would be expected over a basal peat, however this alluvium was not recovered in any of the deeper mechanically drilled boreholes (BH A, BH B, BH C and BH D) and its presence may be only residual. There are no major river valleys in the vicinity of the site where a basal peat could form as a result of fresh water backing up as sea level rose. Nor is it possible to recognise any periods of stasis, transgression or regression that intercalated peats would make evident.

4.1.3 In the centre of Transect 4, four auger holes recorded gravel (see Figure 7 above and Section 3.2). The nature and date of this deposit is unclear; it may be a reworked late Pleistocene/Early Holocene gravel terrace or a channel bar (although there were no overlying sands) associated with the ancient precursor of the meandering drain along which the auger holes were located. This drain would appear to be the modern analogue to a tidal creek that once drained a small, local embayment at the head of the Graveney Marshes, south and west of Graveney Hill and overlooked by Graveney Church. Were this deposit a terrace then it may relate to gravel in BH 55, c. 800m south east, that appears to occupy a bench on the west slope of Graveney Hill (see Figure 9 above) and lies at +0.62m OD, i.e. c. 0.80m higher.

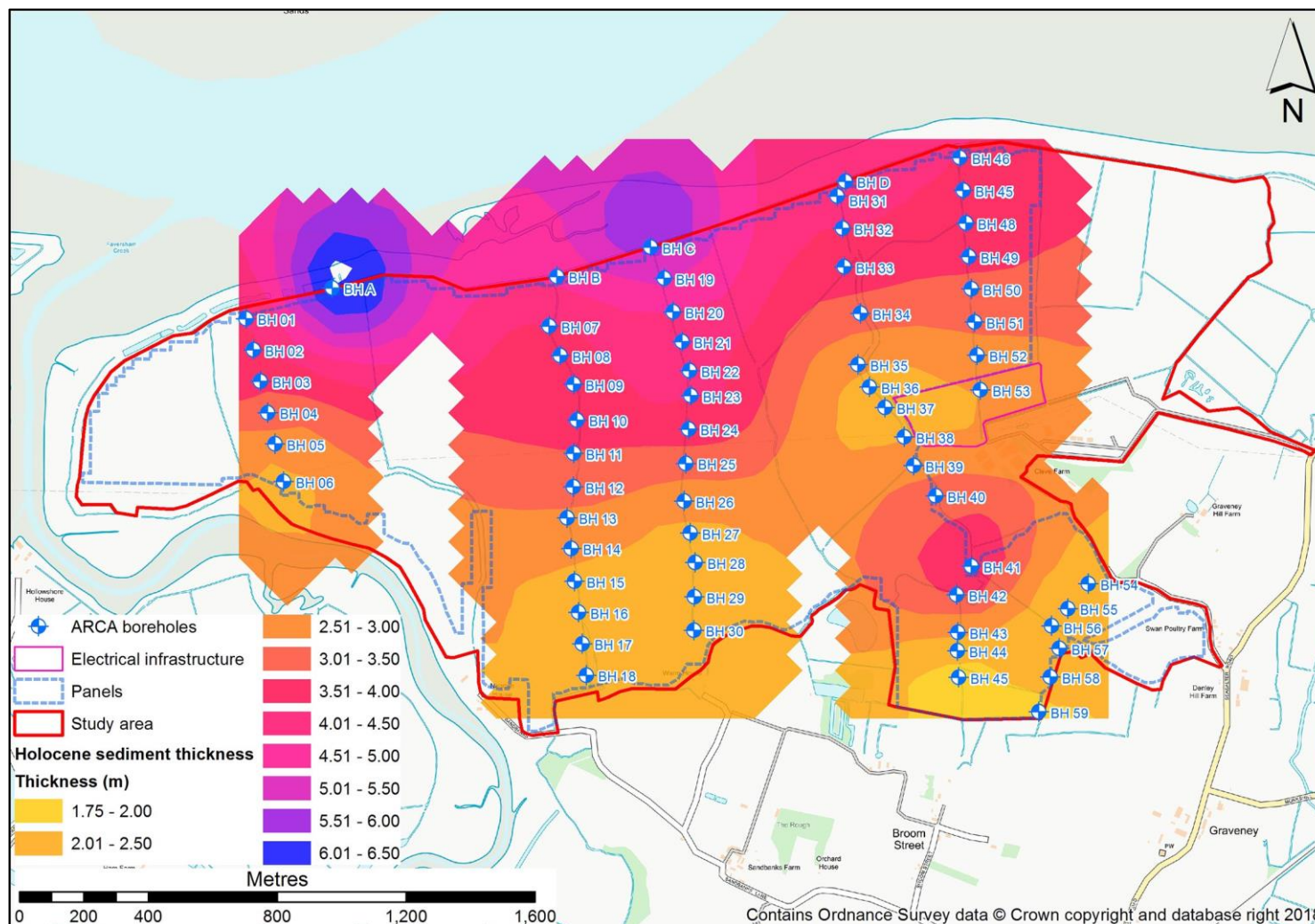


Figure 13. Map of the Holocene sediment thickness on the site.

- 4.1.4 The great majority of the sedimentary sequence preserved on the site pertains to deposits that were laid down in the intertidal zone (see Figure 13 above). These deposits are the result of a rising tidal frame in response to isostatic adjustment: not only does the Earth's surface rebound from the release of the weight of the Pleistocene ice sheet, but eustatic sea level changes take place as more water enters the system. A brackish environment of tidal mud flats, saltmarsh and tidal creeks is formed, the latter supplying a modicum of fresh water from the limited watershed to the south. Bartholdy (2012, 151) defines saltmarsh as 'vegetated areas located between coastal hinterlands and daily (or permanently) flooded coastal areas.' Flooding by high waters is partial or complete during the spring/neap tidal cycle. The vertically accreting sediment stack on the site, and prior to medieval land reclamation, was a product of external sediment supply of mineralogical mud,² silt and very fine sand, and internal supply derived from decaying saltmarsh vegetation. After reclamation sedimentation was derived from flooding creeks, primarily alluvial and probably slight, and artificial additions that may have been made to improve soil quality.
- 4.1.5 The intertidal deposits are divisible into two sedimentary facies: the first is derived from sheet flow over vegetated surfaces and the second associated with channel flow in the vicinity of tidal creeks.
- 4.1.6 The first facies represents marsh and tidal flat, however the distinction between the two in the sedimentary record is difficult to discern. They are both environments of mud and brackish water and will tend to replace each other depending upon changes in inundation. On the site, darker and consequently more humic strata were recorded (Munsell: 5 Y 3/1) and may represent areas of marsh in contrast to lighter strata representing tidal flat. *Hydrobia ulvae* and *Cerastoderma edule*, both molluscs typical of tidal flats, tended to be associated with the lighter coloured strata. A difference in lithology was noted between the two strata; horizontal, very fine laminae of mud and silt couplets were found only in the lighter strata and point to rhythmic tidal deposition, though these laminae were rare. Rooting and desiccation cracks can also help in distinguishing the two environments but neither were preserved. Colour alone is not sufficient to distinguish between marsh and tidal flat

² Mud is a mixture of silt and clay sized particles.

because of the redeposition of plant material and its subsequent humification.

- 4.1.7 The second facies is coarser grained sand deposits representative of channel bar formation in tidal creeks. There were two main areas of deposition both associated with the present day meandering drains/creeks: the northern terminal of the drain/creek traced by Transect 4 and at the southern terminal of Transect 2 (see Figures 5 and 7 above). The high elevation of both deposits within their respective stratigraphy suggests that they were laid down in the centuries just prior to reclamation; the siliciclastic sediment was perhaps derived from the mobilisation by agriculture of Head within the catchment.³ The buried channel of the drain/creek beside Transect 4 can be traced southwards, for example, BH 41 (Transect 4, Figure 7) on the Marsh and BH 58 (Transect 6, Figure 9) at the foot of Graveney Hill. The sand recorded in Transect 2 appears to occupy a recut channel draining west towards Faversham Creek.
- 4.1.8 The uppermost intertidal deposits are heavily oxidised as a result of historic land reclamation and the draining of the Marshes that ended diurnal tidal inundation. The drying out of the deposits and the renewed influence of mainly fresh water flooding from the creeks has allowed soil biota to flourish with the consequent development of a soil profile. The high concentration of coarse clastic rock fragments (Seaford Chalk flint nodules and Upnor flint gravel, see Section 3.4.6) in the profile, particularly so on the slopes of Graveney Hill and the adjacent fields, is greater than might be expected from artificial soil improvement through manuring. Possibly high level Pleistocene gravel terraces or Head once existed and have since been ploughed out. Agriculture, encouraging mass movement of sediment, was the most probable cause of the colluvial deposit that blankets the hill slope. Brick and cbm were also ubiquitous and were probably derived in part from the demolition of sheep folds.
- 4.1.9 The evidence for modern Made Ground is limited to fine grained sediment derived from dredging of the drains where in one location (BH B Transect 2, Figure 4) a buried soil was preserved.

³ Head is a Pleistocene mass movement deposit found at the base of slopes.

4.2 Archaeological and palaeoenvironmental potential

4.2.1 Introduction

To illustrate the archaeological and palaeoenvironmental potential of the deposits on the site nine Deposit Zones have been identified (see Figure 14 below). The location of each Zone is based on the modelled thickness of the Holocene deposits illustrated in Figure 13 above. In RockWorks the modelling employed an inverse distance algorithm which created an 'area of influence' for each borehole. To do this, within the area of the RockWorks' project dimensions (approximately equal to the area of the site) each borehole is plotted surrounded by the predicted area of Holocene sediment. To avoid over extrapolating data to regions where there is none (areas where no boreholes were drilled), a limit of 11% of the project dimensions is set per borehole, and the values of the surrounding grid nodes are then recorded as zero. Where the sub-surface features are linear, for example channel sands, then their occurrence in two neighbouring boreholes will allow a reasonable assessment of directionality to be made and a Deposit Zone can be assigned with some confidence. Deposits that are areal in nature, for example the intertidal muds, can also be assessed with some confidence even where the distance between boreholes that record the deposit are greater than the designated 11% because the deposit is deemed ubiquitous across the Marshes. Similarly, thickness can also be judged because, in general, the bedrock, which governs thickness, slopes down to the north. The ubiquity of the muds will, however, disguise features such as buried creeks unless recorded in a borehole.

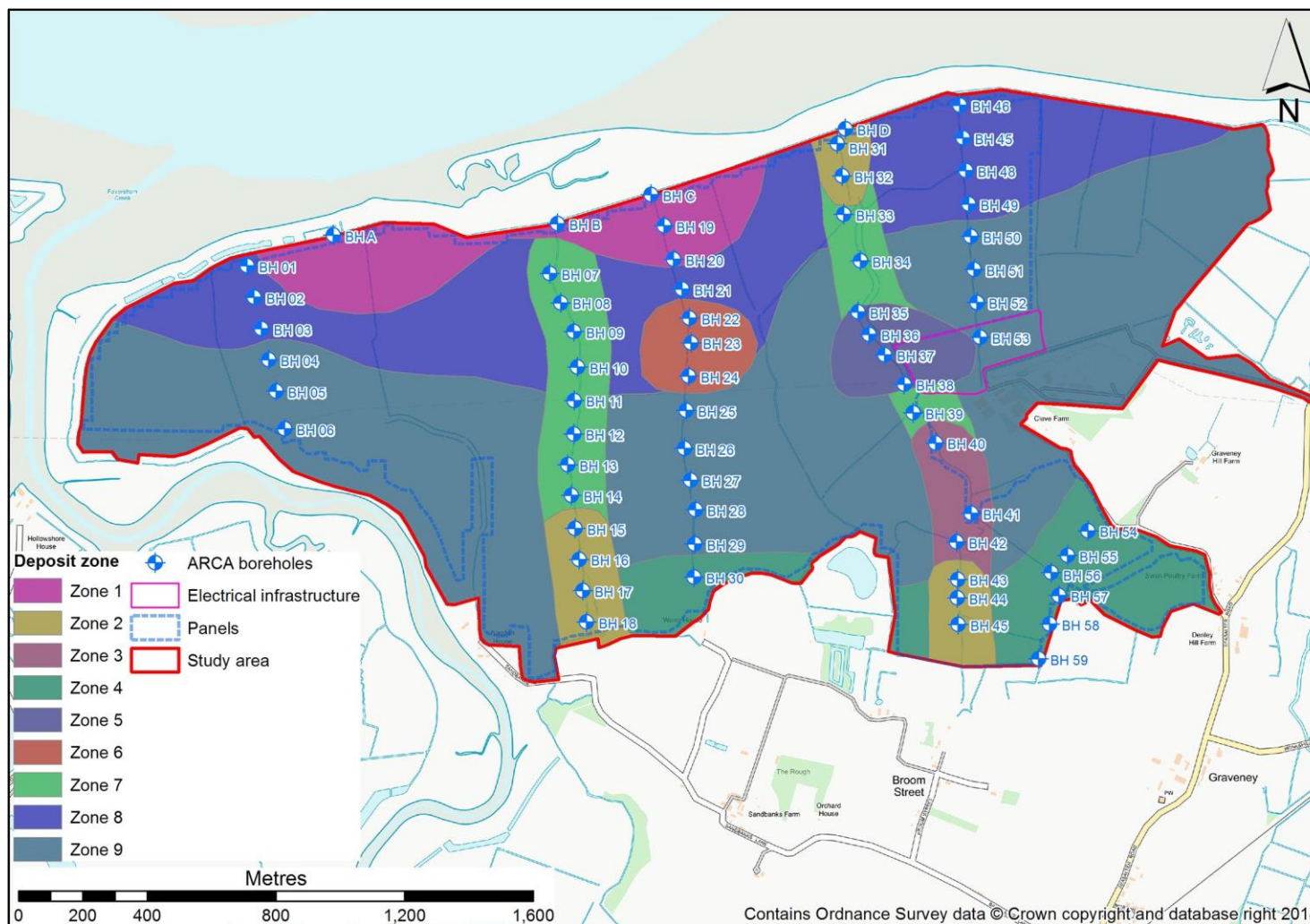


Figure 14. Map of the Deposit Zones on the site.

4.2.2 *Deposit Zone 1*

Deposit Zone 1 represents thickly stratified intertidal deposits recovered through mechanical drilling (BH A to BH C). The deposits are greater than 4m in thickness (>8m in BH A) and lie in the very north of the site where the bedrock is dipping steeply towards the middle of the ancient Swale valley. As these deposits lie at the extremity of the land reclaimed and were proximal to the influence of tides and waves then the potential for archaeology is low. On the other hand, they represent a long and continual sequence of reduced intertidal muds that may preserve diatom evidence, for example. Whether diatoms or comparable proxies would reveal more about environments of deposition than has already been determined from the lithology and chance molluscan finds is debateable. These deposits therefore have a low to moderate palaeoenvironmental potential.

4.2.3 *Deposit Zone 2*

Deposit Zone 2 represents channel sands that lie less than 2m bgl. They were recorded in Transect 3 (BH 17 and BH 18) and Transect 4 (BH D, BH 31 and BH 30). The sands are, in the main, oxidised which is not conducive to the preservation of organics. As a consequence evidence of any wooden quays built within the channel and/or sunken boats would not survive and the potential for wooden archaeology is low. Oxidation and the coarse grained nature of the sands is not conducive to the preservation of palaeoenvironmental proxies and the potential of their preservation is, therefore, also low.

4.2.4 *Deposit Zone 3*

Deposit Zone 3 represents channel muds that lie deeper than 2m bgl. These deposits fill a palaeochannel of the drain/creek that borders Transect 4 (BH 41 to BH 43) in a mid-position on the Marshes. There are over 2m of reduced muds below the water table which are favourable to the preservation of fluvial/marine archaeological structures and artefacts. On the site this Zone is the most comparable to the location of the Anglo Saxon Graveney boat discovered in 1971, 2.2 km due east (Evans and Fenwick 1971). The position of the boat was also alongside a meandering drain/creek on the Marshes. The potential for archaeology is therefore low to moderate in Zone 3. These reduced deposits will have a low to moderate palaeoenvironmental potential constrained by the caveat discussed in Section 4.2.2 (Deposit Zone 1) above.

4.2.5 *Deposit Zone 4*

Deposit Zone 4 represents thin intertidal deposits that onlap the LCF in the south of the site. They are less than 2m thick. The Zone also includes the colluvial deposits located on Graveney Hill (Transect 6, BH 54 and BH 55). The onlapping intertidal deposits are predominantly oxidised (in the top 1.5m) and will not preserve organic material either artefactual or natural. The Zone traces the edge of the Marshes in the south and represents the interface between dryland, and the opportunity for occupation that would have existed, and the generally inhospitable waterlogged land. The present day location of Warm House at the terminal of Transect 3 on the 5m contour is evidence of, if not the desirability, then certainly the possibility of occupation on the margin. The potential for inorganic archaeology is therefore low to moderate. Palaeoenvironmental proxies will only survive in the deeper fraction of the Zone and their overall potential for preservation is therefore low.

4.2.6 *Deposit Zone 5*

Deposit Zone 5 represents thin intertidal deposits that lie over gravels (Transect 4, BH 35 to BH 38). These deposits are under 2m thick and pertain to the oxidised upper fraction of the intertidal silt/clays. The exact nature of the gravels is unclear, however, they were laid down under a high energy regime that would have been inhospitable to human occupation. Nevertheless, it is possible that later in the Holocene this Zone provided a localised solid and dryer area within a developing saltmarsh that may have been exploited. The potential for archaeology is therefore low to moderate. The palaeoenvironmental potential of the majority of the overlying muds is low as a result of their oxidised nature.

4.2.7 *Deposit Zone 6*

Deposit Zone 6 represents moderately thick intertidal deposits that lie over alluvium (Transect 3, BH 23). This very localised Zone, based on the evidence of a single borehole only, records evidence of macroscopic organic remains at c. 5m bgl that may pertain to an early floodplain. The potential for archaeology at this depth and on a waterlogged floodplain is low. The fragmentary nature of the organic material recovered (there was no peat bed) mitigates against any optimistic grading of the palaeoenvironmental potential which must be set as low.

4.2.8 *Deposit Zone 7*

Deposit Zone 7 represents creek deposits and the creek banks (Transects 2 and 4). This Zone delineates the two main route ways through the saltmarsh and later reclaimed land to the sea. Movement could be by water and along the fractionally drier levies on the creek banks. The modern south-north track traces the crest of an early embankment (marked 'Centre of Old Sea Wall' on the OS County Series 1:2500, 1866) built alongside one of the creeks (Transect 4). The potential for late prehistoric to post-medieval archaeology associated with the two meandering drains/creeks on the site is therefore low to moderate. The potential for the recovery of palaeoenvironmental remains is, however, low on account of the oxidation of the deposits.

4.2.9 *Deposit Zone 8*

Deposit Zone 8 represents the moderately thick intertidal deposits located in an east to west band towards the north of the site. The thickness of the deposits is 3-4m and they lie over the LCF. The intertidal silt/clays in this Zone represent the accreting saltmarsh and tidal flats and no significant features within this environment have been recognised. Although exploitation of the marsh for its natural resources would have been intermittent no occupation can be countenanced. As a consequence the potential for archaeology is low. The palaeoenvironmental potential based on only c. 2m of reduced muds is also low.

4.2.10 *Deposit Zone 9*

Deposit Zone 9 represents the thin intertidal deposits located in an east to west band in the centre and towards the south of the site. The thickness of the deposits is c. 2m and they lie over the LCF. The intertidal silt/clays in this Zone also represent the accreting saltmarsh and tidal flats and no significant features within this environment have been recognised. The same qualification regarding human exploitation and occupation noted for Zone 8 also applies to this Zone. The result is that the potential for archaeology is low and the potential to recover palaeoenvironmental proxies is also low because the majority of the deposits are oxidised.

4.3 Impact of the proposed development on Quaternary strata

- 4.3.1 The foundations of the module tables (see Figure 10 above and Figure 1 in the WSI) are expected to be steel rods that will penetrate to c. 2m bgl. These will affect the upper oxidised deposits of intertidal mud in Deposit Zones 1-5 and 7-9. Of these Zones, 3, 4 and 7 are significant as they represent respectively: deep channel mud similar to the Graveney boat location; the southern margin of the Marshes and the junction between dry and waterlogged land; and the creek and bank deposits. The potential for archaeology is low to moderate and the palaeoenvironmental potential is low in these areas.
- 4.3.2 The foundations of the compound designated for Electrical infrastructure (see Figure 10 above and Figure 1 in the WSI) are expected to be deeper and will affect Deposit Zones 5, 7 and 9. Of these Zones, 5 and 7 are significant as they represent respectively thin intertidal deposits over gravel, a Zone that *may* have been a dryer locality within the accreting saltmarsh; and creek and bank deposits that have a low to moderate potential for archaeology. The palaeoenvironmental potential is low.

5. CONCLUSIONS

- 5.1 On the site the Holocene sedimentary stack forms a wedge that thickens northwards towards The Swale following the dip of the LCF. The thickness grades from c. 1m in the south to greater than 8m in the north. The great majority of the deposits are fine grained intertidal muds that represent an accreting saltmarsh and tidal flat environment in response to rising sea level. A modern soil profile has developed in the top of the stack since drainage and land reclamation that began in the medieval period.
- 5.2 Nine Deposit Zones have been identified the most important of which are: Deposit Zone 1 where a deep sequence of intertidal muds has a low to moderate palaeoenvironmental potential; Deposit Zone 3 where the environment of deposition most closely resembles the location of the Graveney boat discovery; Deposit Zone 4 marking the southern margin of the Marshes where archaeology may be found; and finally Deposit Zone 7 where creek and bank deposits may also hold potential for archaeology.

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- 6.2 The fieldwork reported here was carried out by Nick Watson, Matthew Palmer, David Ashby and Dr Keith Wilkinson. Laboratory assessment was undertaken by Nick Watson

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APPENDIX 1: BOREHOLE LOCATIONS

Borehole	Easting	Northing	Elevation (m OD)
BH 01	602422.06	164342.60	1.40
BH 02	602444.62	164245.18	1.21
BH 03	602467.18	164147.76	1.35
BH 04	602489.73	164050.33	1.31
BH 05	602512.29	163952.91	1.31
BH 06	602539.36	163836.00	2.08
BH 07	603363.47	164318.73	1.32
BH 08	603397.72	164227.93	0.96
BH 09	603439.08	164138.68	1.24
BH 10	603450.11	164027.43	1.51
BH 11	603439.85	163924.43	1.37
BH 12	603438.40	163820.12	1.43
BH 13	603418.90	163724.03	1.64
BH 14	603431.17	163628.68	1.87
BH 15	603442.38	163526.22	1.85
BH 16	603454.44	163430.36	2.04
BH 17	603466.28	163332.79	1.93
BH 18	603478.12	163235.22	2.10
BH 19	603719.62	164467.25	1.36
BH 20	603748.39	164363.47	1.31
BH 21	603775.47	164270.79	1.45
BH 22	603798.46	164180.21	1.65
BH 23	603802.64	164103.56	1.82
BH 24	603795.65	163999.64	1.97
BH 25	603787.52	163892.80	1.91
BH 26	603782.16	163775.06	1.66
BH 27	603801.26	163676.83	1.60
BH 28	603816.85	163585.07	1.84
BH 29	603814.60	163478.14	1.95
BH 30	603812.23	163374.73	2.14
BH 31	604257.34	164722.62	1.59
BH 32	604273.37	164622.20	1.75
BH 33	604278.13	164503.12	1.90
BH 34	604329.76	164357.96	1.70
BH 35	604322.00	164199.79	1.78
BH 36	604356.89	164129.41	1.75
BH 37	604405.26	164066.39	1.04
BH 38	604465.38	163974.69	1.43
BH 39	604494.13	163886.00	1.16
BH 40	604563.06	163792.36	1.64
BH 41	604673.87	163573.62	1.74
BH 42	604628.47	163484.17	1.29
BH 43	604631.80	163368.04	1.37

Borehole	Easting	Northing	Elevation (m OD)
BH 44	604630.51	163310.21	1.42
BH 45	604648.53	164740.68	1.57
BH 45	604634.01	163227.62	1.82
BH 46	604638.71	164841.98	1.69
BH 48	604657.02	164638.75	1.73
BH 49	604665.93	164534.63	1.64
BH 50	604673.29	164434.22	1.79
BH 51	604683.28	164331.34	1.71
BH 52	604691.64	164229.08	1.90
BH 53	604701.83	164120.43	1.68
BH 54	605037.11	163519.20	10.04
BH 55	604973.52	163442.02	3.19
BH 56	604922.71	163388.85	0.78
BH 57	604947.14	163318.28	1.71
BH 58	604918.29	163229.36	1.81
BH 59	604883.11	163121.20	1.70
BH A	602690.48	164437.59	0.77
BH B	603387.44	164473.32	1.55
BH C	603678.47	164563.84	1.09
BH D	604282.65	164768.67	1.62

APPENDIX 2: BOREHOLE LITHOLOGY

Bore	Top	Base	Lithology	Comments
BH01	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare granules of cbm. Rare, angular, fine pebble-sized flint. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH01	0.40	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble-sized smooth and finely ridged thin shelled bivalves (broken) and cockle (whole). (Oxidised intertidal deposits). Diffuse boundary to:
BH01	1.30	1.80	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Gradual boundary to:
BH01	1.80	3.50	Very dark grey silt/clay	5 Y 3/1 Very dark grey to 5 Y 2.5/1 Black, soft humic silt/clay. (Reduced intertidal deposits). (End of BH, collapsed).
BH02	0.00	0.46	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare granules of cbm. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH02	0.46	1.38	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide

				mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH02	1.38	1.88	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH02	1.88	4.00	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (End Of BH, collapsed).
BH02	4.00	4.30	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits).
BH02	4.30	4.40	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH03	0.00	0.42	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare, medium pebble-sized nodule of flint. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH03	0.42	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare broken fine cockle. (Oxidised intertidal deposits). Diffuse boundary to:
BH03	1.60	3.30	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH03	3.30	3.95	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH03	3.95	4.04	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH04	0.00	0.45	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed

				granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH04	0.45	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH04	1.50	3.30	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH04	3.30	3.35	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH05	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH05	0.40	1.64	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble-sized smooth and finely ridged thin shelled bivalves (broken). (Oxidised intertidal deposits). Diffuse boundary to:
BH05	1.64	2.10	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH05	2.10	2.20	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).

BH06	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH06	0.40	1.25	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH06	1.25	1.87	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH06	1.87	1.92	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH07	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare, angular, fine pebble of flint. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH07	0.40	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH07	1.50	3.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). (End of BH, collapse).
BH08	0	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:

BH08	0.4	1.20	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH08	1.2	3.49	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH08	3.49	3.59	Very fine sand	5 Y 5/1 Grey very fine sand. (Reduced intertidal deposits).
BH08	3.59	3.64	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH09	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare, angular, fine pebble of flint. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH09	0.40	2.00	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH09	2.00	4.40	Very dark grey silt/clay	5 Y 3/1 Very dark grey, soft, humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH09	4.40	4.41	Silt/clay	Hard base no recovery probably; LCF. (End of BH).
BH10	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare, angular, fine pebble of flint. Rare fine pebble of brick. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:

BH10	0.40	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble-sized cockle shell fragment (Oxidised intertidal deposits). Diffuse boundary to:
BH10	1.50	4.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Rare granule of cockle shell (Reduced intertidal deposits). (End of BH, collapsed).
BH11	0.00	0.50	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH11	0.50	1.70	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH11	1.70	2.70	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH11	2.70	2.80	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay and rare very fine sand laminae. (Reduced intertidal deposits). Diffuse boundary to:
BH11	2.80	3.15	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH11	3.15	3.16	Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH12	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Rare, sub-angular, fine pebble of flint.

				Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH12	0.40	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare cockle shell fragment. (Oxidised intertidal deposits). Diffuse boundary to:
BH12	1.50	3.40	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH12	3.40	3.50	Silt/clay	Gley 2 5/10B Blueish grey soft becoming stiff silt/clay with 2.5 Y 4/3 Olive brown fine lenses. (LCF). (End of BH).
BH13	0.00	0.50	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH13	0.50	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH13	1.30	2.90	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH13	2.90	3.40	Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH14	0.00	0.15	Topsoil	10 YR 3/3 Dark brown silt/clay. Poorly developed peds. Frequent fine roots and root holes. Rare, sub-angular, fine

				pebble of flint. (Topsoil, on grass away from ploughed field). Gradual boundary to:
BH14	0.15	1.35	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare cockle shell fragment. (Oxidised intertidal deposits). Diffuse boundary to:
BH14	1.35	2.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. At 2.3-2.5m black humic stains, greenish grey colours, rare coarse sand-sized? plant fragment. (Reduced intertidal deposits).
BH14	2.50	2.51	Silt/clay	Very stiff, no recovery probable LCF. (End of hole BH).
BH15	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH15	0.40	1.25	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH15	1.25	1.90	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH15	1.90	2.00	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).

BH16	0.00	0.15	Topsoil	10 YR 3/3 Dark brown silt/clay. Frequent fine roots and root holes. (Topsoil on grass away from ploughed field). Gradual boundary to:
BH16	0.15	1.20	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH16	1.20	2.35	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay with rare very fine sand in fine lenses. (Reduced intertidal deposits). Diffuse boundary to:
BH16	2.35	2.85	Silt/clay	Gley 2 5/10B Blueish grey soft becoming stiff silt/clay with 2.5 Y 4/3 Olive brown fine lenses. (LCF). (End of BH).
BH17	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH17	0.40	0.90	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH17	0.90	1.30	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH17	1.30	2.20	Fine sand	5 Y 5/1 Grey very fine sand. Sharp boundary to:
BH17	2.20	2.70	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:

BH17	2.70	3.70	Silt/clay	Gley 2 5/10B Blueish grey soft silt/clay with 2.5 Y 4/3 Olive brown fine lenses. Very wet. (probably LCF). (End of BH).
BH18	0.00	0.10	Topsoil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Topsoil on grass away from ploughed field). Gradual boundary to:
BH18	0.10	0.65	Grey silt/clay	2.5 Y 5/2 Greyish brown silt/clay. (Upcast from drain). Sharp boundary to:
BH18	0.65	1.60	Sandy silt/clay	10 YR 4/4 Dark yellowish brown, firm sandy silt/clay (Upcast from drain). Gradual boundary to:
BH18	1.60	2.30	Medium sand	2.5 YR 4/2 Dark greyish brown medium sand. Diffuse boundary to:
BH18	2.30	2.60	Silt/clay	2.5 Y 5/1 Grey with fine pebble-sized patches of 2.5 Y 5/6 Light olive brown, soft silt/clay becoming very stiff at 2.6m. (LCF)
BH19	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH19	0.40	1.55	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH19	1.55	4.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay, rare black stains and rare <i>Hydrobia ulvae</i> . (Reduced intertidal deposits). (End of BH, collapse).

BH20	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH20	0.40	1.51	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH20	1.51	1.70	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. At 1.68-1.70m frequent <i>Hydrobia ulvae</i> . (Reduced intertidal deposits). Diffuse boundary to:
BH20	1.70	2.00	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH20	2.00	5.30	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay irregularly interbedded black organic staining. Rare cockle shell fragments. (Reduced intertidal deposits). (End of BH).
BH21	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH21	0.40	0.70	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH21	0.70	1.00	Fine sand	10 YR 5/6 Yellowish Brown fine sand with frequent, fine

				shell fragments. Sharp boundary to:
BH21	1.00	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH21	1.60	2.20	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH21	2.20	3.90	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). (End of BH, collapse)
BH22	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH22	0.40	1.54	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine shell fragments. (Oxidised intertidal deposits). Diffuse boundary to:
BH22	1.54	3.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay with rare black stains. (Reduced intertidal deposits). (End of BH, collapse).
BH23	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH23	0.40	1.40	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine

				sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH23	1.40	1.70	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH23	1.70	4.80	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay, slightly coarser grained between 3.60 - 3.70m. Rare fine shell fragments. (Reduced intertidal deposits). Unknown boundary to:
BH23	4.80	5.30	Silt/clay with organic fragments	Gley 2 6/5B Blueish grey firm silt/clay with occasional grains of wood and granular-sized peat fragments. (End of BH).
BH24	0.00	0.22	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Fine pebble of well-rounded black flint. (Plough soil). Sharp boundary to:
BH24	0.22	1.52	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH24	1.52	3.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH24	3.00	3.50	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). (End of BH, collapse).

BH25	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH25	0.40	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH25	1.30	3.30	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). (End of BH, collapse).
BH26	0.00	0.27	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH26	0.27	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH26	1.50	2.20	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. At 1.91-2.20m poorly developed thick laminae of very fine sand. (Reduced intertidal deposits). Gradual boundary to:
BH26	2.20	2.70	Very fine sand	5 Y 4/1 Dark grey, stiff fine sand.
BH27	0.00	0.45	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:

BH27	0.45	1.40	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH27	1.40	1.50	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH27	1.50	2.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay with rare very fine sand. (Reduced intertidal deposits). Sharp boundary to:
BH27	2.00		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH28	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Compacted no ped structure. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH28	0.30	1.29	Oxidised silt/clay	5 Y 5/1 Grey reduced silt/clay predominates with iron oxide mottles.
BH28	1.29	2.12	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. At 1.70-1.75m frequent <i>Hydrobia ulvae</i> . (Reduced intertidal deposits). Gradual boundary to:
BH28	2.12	2.62	Silt/clay	5 Y 2.5/1 Black very stiff silt/clay. (Humic colouring to top of LCF?)
BH29	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH29	0.40	1.00	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide

				mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH29	1.00	1.60	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH29	1.60	2.00	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH29	2.00	2.01	Silt/clay	Hard base no recovery; probably LCF.
BH30	0.00	0.30	Plough soil	10 YR 4/3 Brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil/ Topsoil). Sharp boundary to:
BH30	0.30	0.60	Grey silt/clay	5 Y 5/1 Grey silt/clay with 25% mottles of iron oxide. (Upcast from drain). Sharp boundary to:
BH30	0.60	1.00	Sandy silt/clay	5 Y 4/1 firm, fine sandy silt/clay with iron oxide mottles. (Upcast from drain). Sharp boundary to:
BH30	1.00	1.80	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH30	1.80	2.08	Silt/clay	Gley 2 5/10B soft silt/clay with brownish streaks and patches becomes very stiff. White very fine sand -sized grains at base (selenite?). (LCF). (End of BH).
BH31	0.00	0.40	Plough soil	10 YR 4/3 Brown silt/clay. Very poorly developed granular peds. Fine pebble-sized angular flint clast. Frequent fine roots and root holes. (Plough soil/ Topsoil). Sharp

				boundary to:
BH31	0.40	1.55	Fine sand	2.5 Y 4/3 Olive brown, soft, well sorted fine sand becomes grey at base (water table level). (Channel sands). Sharp boundary to:
BH31	1.55	3.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). (End of BH, collapse).
BH32	0.00	0.35	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH32	0.35	0.70	Fine sand	10 YR 4/6 Dark yellowish brown fine sand. (Channel sands). Sharp boundary to:
BH32	0.70	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH32	1.60	4.30	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH32	4.30	4.40	Silt/clay	10 YR 5/4 Yellowish brown, soft silt/clay becoming very stiff (Probable LCF).
BH33	0.00	0.15	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH33	0.15	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide

				mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH33	1.50	3.80	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay, becomes stiff with no recovery. (Reduced intertidal deposits). (End of BH).
BH34	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH34	0.40	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH34	1.60	3.45	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH34	3.45	3.60	Silt/clay	10 YR 5/4 Yellowish brown, soft silt/clay becoming very stiff (Probable LCF).
BH35	0.00	0.26	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare granule of cbm. (Plough soil). Sharp boundary to:
BH35	0.26	1.45	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:

BH35	1.45	2.40	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH35	2.40	2.55	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH35	2.55	2.95	Gravel	Well-rounded fine flint pebble and grains and granules of flint recovered.
BH36	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH36	0.40	1.70	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH36	1.70	2.00	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH36	2.00	2.50	Gravel	Gravel, no recovery. (Hard deposit. Repositioned BH to check depth, same result at 2.00m bgl). (End of BH.)
BH37	0.00	0.20	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH37	0.20	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide.

				(Oxidised intertidal deposits). Diffuse boundary to:
BH37	1.50	1.83	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH37	1.83	1.84	Gravel	Well-rounded fine, black flint pebble and grains and granules of flint and possibly quartzite recovered. (End of BH)
BH38	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH38	0.30	1.40	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH38	1.40	1.60	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH38	1.60	1.61	Gravel	No recovery. (End of BH).
BH39	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:
BH39	0.30	1.50	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide.

				(Oxidised intertidal deposits). Diffuse boundary to:
BH39	1.50	3.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Rare granular fragment of mussel? shell. (Reduced intertidal deposits). Diffuse boundary to:
BH39	3.50	3.60	Silt/clay	10 YR 5/4 Yellowish brown, soft silt/clay becoming stiff (Probable LCF).
BH40	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:
BH40	0.40	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH40	1.30	2.20	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH40	2.20	3.20	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH40	3.20		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH41	0.00	0.50	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH41	0.50	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide

				mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH41	1.60	2.05	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH41	2.05	3.30	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH41	3.30	5.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). (End of BH).
BH42	0.00	0.24	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:
BH42	0.24	1.48	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH42	1.48	4.14	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH42	4.14	4.50	Silt/clay	Gley 2 5/10B Blueish grey soft silt/clay with brownish streaks and patches becomes very stiff. (LCF). (End of BH).
BH43	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:

BH43	0.3	1.20	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH43	1.20	3.15	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH43	3.15	3.27	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH43	3.27		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH44	0.00	0.36	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:
BH44	0.36	1.00	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble of angular flint. (Oxidised intertidal deposits). Diffuse boundary to:
BH44	1.00	1.25	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH44	1.25	1.70	Grey silt/clay	2.5 Y 3/1 Very dark grey mottled with 2.5 Y 4/3 Olive brown silt/clay. Rare coarse sand-sized plant fragments.
BH44	1.70	1.76	Silt/clay	5 Y 2.5/1 Black very stiff silt/clay. (Humic colouring to top of LCF?)

BH45	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Rare fine pebble of sub-angular flint. (Plough soil). Sharp boundary to:
BH45	0.30	1.00	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble of angular flint. (Oxidised intertidal deposits). Diffuse boundary to:
BH45	1.00	1.20	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH45	1.20		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH46	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH46	0.30	1.66	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH46	1.66	4.16	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Diffuse boundary to:
BH46	4.16		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH47	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed

				granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH47	0.40	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH47	1.30	3.73	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Fine sand lens at 1.74-1.76m. (Reduced intertidal deposits). Diffuse boundary to:
BH47	3.73	3.93	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH47	3.93		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH48	0.00	0.31	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Fine pebble-sized sub-angular brick fragment. (Plough soil). Sharp boundary to:
BH48	0.31	1.64	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Rare fine pebble-sized fragment of cockle shell (Oxidised intertidal deposits). Diffuse boundary to:
BH48	1.64	3.83	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Occasional fine sand towards the base (Reduced intertidal deposits). Sharp boundary to:
BH48	3.83	3.85	Silt/clay	Gley 2 5/10B Blueish grey, very stiff, silt/clay (LCF). (End of BH).

BH49	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH49	0.40	1.70	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH49	1.70	3.50	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Occasional fine sand towards the base (Reduced intertidal deposits). Sharp boundary to:
BH49	3.50	3.78	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH49	3.78		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH50	0.00	0.34	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH50	0.34	1.72	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH50	1.72	3.15	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Occasional fine sand towards the base (Reduced intertidal deposits). Sharp boundary to:
BH50	3.15	3.30	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH50	3.30	3.47	Silt/clay	Gley 2 5/10B Blueish grey soft silt/clay with brownish streaks and patches becomes very stiff. (LCF). (End of BH).

BH51	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH51	0.40	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH51	1.30	2.80	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Occasional granular-sized shell fragments (Reduced intertidal deposits). Sharp boundary to:
BH51	2.80	3.10	Very fine sand	5 Y 4/1 Dark grey, firm fine sand and occasional granular shell fragments. Sharp boundary to:
BH51	3.10		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH52	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. Medium pebble-sized nodular flint clast. (Plough soil). Sharp boundary to:
BH52	0.40	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH52	1.60	2.77	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH52	2.77	2.85	Very fine sand	5 Y 4/1 Dark grey, firm fine sand and rare <i>Hydrobia ulvae</i> .

				Sharp boundary to:
BH52	2.85		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH53	0.00	0.40	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH53	0.40	1.60	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH53	1.60	1.70	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH53	1.70	2.00	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH53	2.00		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH54	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH54	0.30	1.70	Oxidised silt/clay	10 YR 6/4 Light yellowish brown, firm silt/clay. (Colluvium) Sharp boundary to:
BH54	1.70	1.75	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BH55	0.00	0.38	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH55	0.38	2.57	Oxidised silt/clay	10 YR 6/4 Light yellowish brown, firm silt/clay grades into 10 YR 3/2 Very dark greyish brown (manganese oxide) with

				orange mottles of iron oxide. Becomes 10 YR 5/8 Yellowish brown towards base. (Oxidised colluvium).
BH55	2.57	2.60	Gravel	Recovered fine to medium pebble-sized angular black flint fragments probably broken by auger. (Gravel terrace?). End of BH).
BH56	0.00	0.30	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH56	0.30	1.00	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH56	1.00	1.60	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Basal 0.3m darker in colour with grains of black ?plant matter. (Reduced intertidal deposits). Sharp boundary to:
BH56	1.60		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH57	0.00	0.37	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH57	0.37	1.30	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:

BH57	1.30	2.13	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Sharp boundary to:
BH57	2.13		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH58	0.00	0.37	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH58	0.37	1.35	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. (Oxidised intertidal deposits). Diffuse boundary to:
BH58	1.35	2.00	Grey silt/clay	5 Y 5/1 Grey, soft silt/clay. Sharp boundary to:
BH58	2.00	2.70	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft humic silt/clay. (Reduced intertidal deposits). Sharp boundary to:
BH58	2.70	2.80	Very fine sand	5 Y 4/1 Dark grey, firm fine sand. Sharp boundary to:
BH58	2.80		Silt/clay	Hard base no recovery; probably LCF. (End of BH).
BH59	0.00	0.38	Plough soil	10 YR 3/3 Dark brown silt/clay. Very poorly developed granular peds. Frequent fine roots and root holes. (Plough soil). Sharp boundary to:
BH59	0.38	1.20	Oxidised silt/clay	10 YR 4/3 firm to stiff silt/clay with occasional very fine sand set probably in laminae and disrupted through action of auger. Irregular distribution throughout. 50% iron oxide mottles of 5 YR 4/6 Yellowish red irregularly distributed throughout. Rare black grains of manganese oxide. Occasional medium pebble-sized nodular flint clast and angular flint clast towards the top. (Oxidised intertidal deposits). Diffuse boundary to:

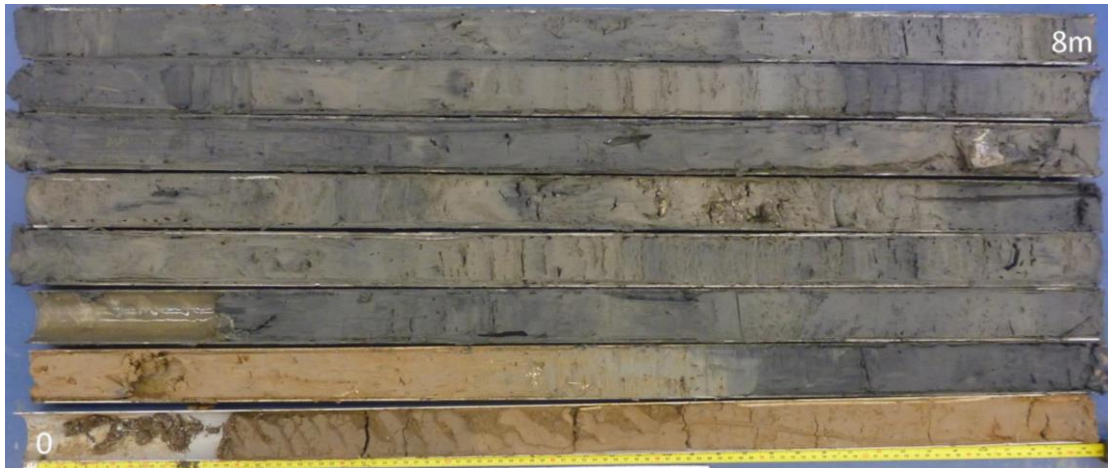
BH59	1.20	1.27	Silt/clay	Gley 2 5/10B Blueish grey very stiff silt/clay. (LCF). (End of BH).
BHA	0.00	0.19	No recovery	Void compaction
BHA	0.19	0.42	Topsoil	10 YR 3/3 Dark brown firm to stiff silt/clay. No ped structure visible (compacted). Frequent fine roots. Sharp boundary to:
BHA	0.42	1.62	Oxidised silt/clay	10 YR 4/4 Dark yellowish brown firm silt/clay, soft at base. Dark red iron oxide grains. Rare grain-sized shell fragments. (Oxidised intertidal fines). Diffuse boundary to:
BHA	1.62	3.00	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft silt/clay. Homogenous and unstructured unit. Unknown boundary to:
BHA	3.00	4.85	Grey silt/clay	5 Y 5/1 Grey soft silt/clay with occasional darker staining. Frequent very fine, horizontal sand laminae irregularly spaced. Rare fine pebble-sized crushed cockle shell at 4.6m. (Reduced intertidal fines). Sharp boundary to:
BHA	4.85	6.14	Very dark grey silt/clay	5 Y 3/1 Very dark grey soft silt/clay. Homogenous and unstructured unit. Pebble-sized oyster valve at 5.9m. Sharp boundary to:
BHA	6.14	6.74	Grey silt/clay	5 Y 4/1 Dark grey soft silt/clay with rare very fine sand laminae in thin sets. (Reduced intertidal fines). Sharp boundary to:
BHA	6.74	6.90	Very dark grey silt/clay	5 Y3/1 Very dark grey soft silt/clay with rare horizontal very fine sand laminae. (Reduced intertidal fines). Sharp boundary to:
BHA	6.90	7.73	Grey silt/clay	5 Y 5/1 Grey soft silt/clay
BHA	7.73	8.00	Very fine sand	5 Y 5/1 Grey soft silt/clay with lenses and fine beds of very fine sand. End of BH.

BHB	0.00	0.08	Topsoil	10 YR 3/2 Very dark greyish brown humic silt/clay with frequent fine to medium roots. Well sorted. (O horizon). Diffuse boundary to:
BHB	0.08	0.20	Topsoil	10 YR 4/3 Brown silt/clay, well sorted. Rare fine roots. Angular ped aggregates. (A horizon). Diffuse boundary to:
BHB	0.20	1.00	Oxidised silt/clay	10 YR 4/4 Dark yellowish brown silt/clay with frequent coarse sand-sized iron oxide stains. Rare fine roots. Well sorted. (B horizon/ intertidal fines). Sharp boundary to:
BHB	1.00	1.03	Buried soil	10 YR 8/2 Very pale brown calcareous silt/clay in granular-sized aggregates with moderate sub-rounded granular clasts (calcareous). Rare fine plant roots. Moderately sorted. (Surface). Sharp boundary to:
BHB	1.03	1.45	Buried soil	10 YR 4/4 Dark yellowish brown silt/clay with frequent coarse sand-sized iron oxide stains. Well sorted. (B horizon/ intertidal fines). Sharp boundary to:
BHB	1.45	5.08	Very dark grey silt/clay	5 Y3/1 Very dark grey, well sorted silt/clay with rare fine sand-sized quartz grains (Intertidal deposit). Sharp boundary to:
BHB	5.08	5.35	Silt/clay	5 Y 4/1 Dark grey stiff silt/clay. (London Clay Formation). End of BH.
BHC	0.00	0.06	Modern Made Ground	10 YR 3/2 Very dark greyish brown matrix-supported gravel of sub-angular pebbles in a humic silt/clay matrix. Poorly sorted. (Made Ground). Sharp boundary to:
BHC	0.06	0.20	Topsoil	10 YR 4/3 Brown humic silt/clay with moderate fine roots and occasional coarse sand-sized to granular-sized carbonate and brick clasts. Moderately well sorted. (A Horizon). Diffuse boundary to:

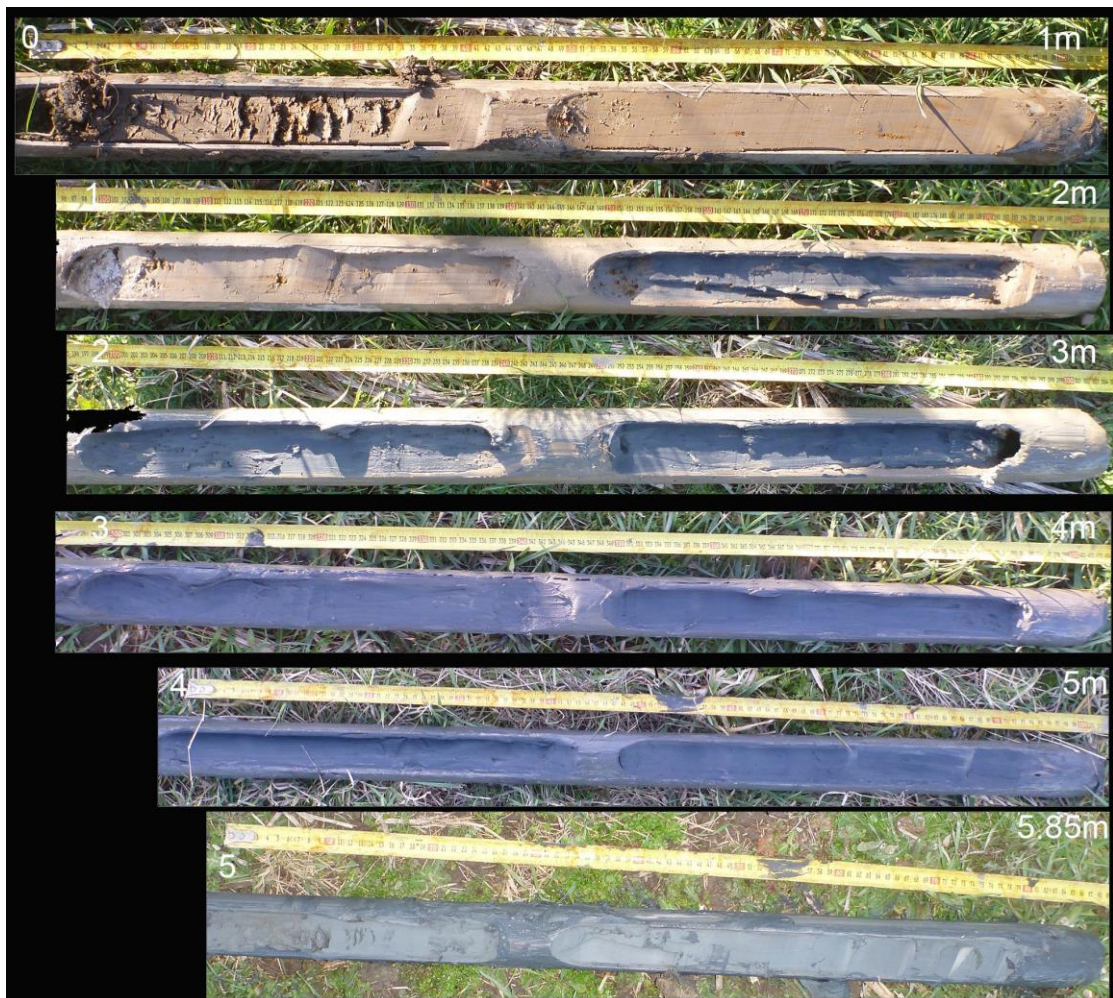
BHC	0.20	1.30	Oxidised silt/clay	10 YR 5/3 Brown silt/clay stained 7.5 YR 5/6 Strong brown with rare fine pebble-sized marine mollusc shell below 1m. (Oxidised unit). Diffuse boundary to:
BHC	1.30	2.00	Grey silt/clay	5 Y 4/1 Dark grey silt/clay with occasional granular-sized marine mollusc shell.
BHC	2.00	3.00	No recovery	Void.
BHC	3.00	7.66	Grey silt/clay	5 Y 4/1 Dark grey soft silt/clay with frequent diffuse horizontal bands of dark stained silt/clay (c. 50mm wide) Rare fine pebble-sized oyster and cockle shell, broken. (Reduced intertidal fines). Sharp boundary to :
BHC	7.66	7.91	Grey silt/clay	10 YR 4/2 Dark greyish brown stiff silt/clay with horizontal, short laminae and grain to granular-sized lenses of black silt/clay (reworked London Clay Formation). Diffuse boundary to:
BHC	7.91	8.00	Silt/clay	10 YR 4/2 Dark greyish brown stiff , homogenous silt/clay. (London Clay Formation). End of BH.
BHD	0.00	0.37	Plough soil	10 YR 4/2 Dark greyish brown firm silt/clay. No clear ped structure. Rare granules of cockle shell. Rare fine pebble-sized angular flint. Occasional iron oxide mottles. Frequent fine roots. Diffuse boundary to:
BHD	0.37	1.45	Fine sand	10 YR 5/4 Yellowish brown, firm, very fine sand. Very well sorted. No clear bioturbation but vertical fine mottles. Gradual boundary to:
BHD	1.45	4.50	Grey silt/clay	2.5 Y 4/1 Dark grey soft silt/clay with rare granules of cockle shell fragments and <i>Hydrobia ulvae</i> . Rare black humic staining below 3m and rare very fine sand throughout, not in laminae.

BHD	4.50	4.93	Grey silt/clay	2.5 Y 4/1 Dark grey soft silt/clay with horizontal, very fine sand laminae irregularly spaced. At base lag deposit of broken, granule to pebble-sized mussel, oyster and cockle shell fragments. Sharp boundary to:
BHD	4.93	5.00	Silt/clay	5 Y 4/1 Dark grey, stiff silt/clay (London Clay Formation). End of BH.

**APPENDIX 3: CORE PHOTOGRAPHS FROM THE MECHANICAL DRILLING:
BH A**



BH B



BH C



BH D

