London Gateway Rail Corridor: Mucking Creek Watching Brief

Archaeological Watching Brief Report

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LONDON GATEWAY
RAIL CORRIDOR MITIGATION – MUCKING CREEK
ARCHAEOLOGICAL WATCHING BRIEF REPORT

CONTENTS

FIGURE LIST

PLATE LIST

NON-TECHNICAL SUMMARY

Between 4th June 2012 and 18th June 2013 Oxford Archaeology, on behalf of DP World London Gateway, carried out an archaeological watching brief in the western section of the London Gateway Rail Corridor near Mucking, Thurrock, Essex (NGR: TQ 6870 8160). The watching brief was part of a wider mitigation programme during re-alignment of the existing Thameshaven Branch Line of the London, Tilbury and Southend Railway. The watching brief was designed to monitor potential archaeological impacts where the rail line crosses Mucking Creek.

Monitoring was focussed on substantive excavations offering reasonable opportunities for archaeological visibility, principally ground preparation works for piling mats and a slight re-alignment of the creek edges. The excavations penetrated the upper parts of the thick sequence of Pleistocene and Holocene alluvial deposits infilling the valley of Mucking Creek, confirming the results of a previous geoarchaeological modelling exercise. These deposits were thought to have high potential for archaeological discoveries due to the concentration of historic settlement in the vicinity of Mucking Creek and its main tributary, the Hassenbrook stream. The waterlogged deposits within the valley offered potential for the preservation of organic materials. However the excavation impacts associated with the rail re-alignment were relatively shallow and limited in extent. In the event no significant archaeological features or deposits were encountered.

1 INTRODUCTION

1.1 Project planning background

1.1.1 This report details the results of archaeological mitigation arising from the development by DP World London Gateway of a rail connection to serve the London Gateway Port and Park development, in Stanford-le-Hope and Mucking, Essex (Fig. 1).

1.1.2 The Rail Corridor comprises part of the London Gateway development and its potential impact on cultural heritage was assessed as part of the Environmental Statement presented at Public Inquiry in 2002. The outline planning approval (OPA) for the London Gateway park was granted in May 2007 by the then Secretary of State. Secretary of State's approval for the related port development was also issued in May 2007 under Harbour Empowerment Order (HEO) procedures following the same Public Inquiry, and this came into force in May 2008.

1.1.3 Areas that lie within the OPA and HEO boundaries are covered by the London Gateway Archaeological Mitigation Framework (AMF). Compliance with the AMF is a condition attached to planning consent for the HEO and Reserved Matters for the OPA. The scope of the mitigation in relation to the Rail Corridor was defined in a site specific Archaeological Project Design (APD) produced by OA in March 2012, as required by the AMF. This report describes the results of mitigation in the Mucking Creek section of the Rail Corridor.

1.1.4 The Secretary of State's policy on archaeological remains and how they should be preserved or recorded, is set out in Section 12 of the National Planning Pollicy Framework (NPPF). It indicates the need to take account of known archaeology in development proposals and to ascertain the extent of further archaeological remains which may be affected by the proposed development.

1.2 Location and scope of work

1.2.1 The railway crosses Mucking Creek near the western end of the London Gateway rail corridor, on the boundary between the parishes of Stanford-le-Hope and Mucking, Essex (NGR: TQ 6870 8160, Figs 1 and 2).

1.2.2 The rail route for the most part follows the line of the existing Thames Haven Branch of the London, Tilbury and Southend Railway. Previous assessment (OA March 2012) established that the ground within the existing rail corridor had been extensively disturbed by previous railway construction, and that the ground levels were to be extensively built up within the floodplain areas of the London Gateway development. There were therefore no significant archaeological impacts anticipated along most of the rail route, except for the Broadhope Loop and Mucking Creek sections where the route was to be realigned (Fig. 2). The results of the Broadhope Loop excavations are reported separately (OA 2013). This report presents the results of a watching brief in the Mucking Creek section, which was targeted on the footprint of piling mats for the re-aligned bridge over Mucking Creek and an associated minor re-alignment of the banks of Mucking Creek. The Watching brief took place mainly between 4th and 18th June 2012. A

final phase took place a year later in June 2013, during the final stage of the Mucking Creek re-alignment.

1.2.3 The aim of the monitoring was to identify any heritage assets that may have been affected by the development.

1.3 Geology and topography

1.3.1 The site is located on River Terrace deposits of Pleistocene age (Fig. 1, based on British Geological Survey (BGS) digital mapping). A thick sequence of Holocene alluvial deposits infill the valley of Mucking Creek, to a depth of up to c 6m (-3.20m to +2.75 OD). Borehole data shows that the infilled channel is relatively narrow and steep-sided. The sediments infilling the eastern side of the valley includes a thick, richly organic main peat bed. The western side comprises thin peat beds interleaved with minerogenic alluvium (Fig. 3).

1.4 Archaeological background

1.4.1 A full archaeological and historical background for the London Gateway Rail Corridor was included in the project design prepared by Oxford Archaeology (OA April 2012). The rail route crosses a variety of geological/ topographical zones, each with different characteristics and archaeological potential. For assessment purposes the route was divided into 'mitigation zones' defined on the basis of BGS mapping. This report is concerned solely with the Mucking Creek section.

1.4.2 The rail corridor cuts transversely across Mucking Creek, the valley of which is infilled by a build up of alluvium (Fig.1). The creek forms an incised channel which has cut into and exposed deeper areas of the alluvial sequence. Geotechnical records from the railway crossing indicate that the alluvium is of variable depth, depending on the position of the boreholes within the valley profile (Fig.3). Peat horizons recorded in the borehole logs demonstrated that the Holocene alluvial sequence is intact and has the potential to contain preserved organic artefacts and palaeoenvironmental evidence. In borehole BH05, peat deposits were found at a depth of 2.2m - 3.0m and the underlying Pleistocene River Terrace Gravels were encountered at 5.2m. In BH06 peat was found from a depth of 1.5m down to the surface of the River Terrace Deposits at 6.0m. In BH07 peat was found from a depth of 0.8m down to the surface of the River Terrace Deposits at 3.0m. The logs record the presence of wood fragments within the peat in several boreholes.

1.4.3 The boundary between the alluvium infilling Mucking Creek and the River Terrace Deposits has high archaeological potential. The stream valley is an 'ecotonal location' - an optimum settlement location with access to a wide range of natural resources, including a tidal creek and a freshwater stream, as well as gravel, clay and sandy areas, which would historically have been capable of supporting a wide range of natural vegetation and crops within a small area. This assessment is reinforced by the former presence of Cabborns medieval manor house on the eastern bank of Mucking Creek, 150m to the east (OA 14, Fig. 1), which is thought to be one of two settlements named in the Essex Domesday Book (1086) under the name 'Hassinghbroc' (Hassenbrook). There is a strong likelihood that associated features could survive within the alluvial sequences infilling Mucking Creek. The shallow sediment sequences at the edge of the creek were considered particularly likely to contain significant archaeological remains, which

could be exceptionally well-preserved in the waterlogged conditions. The rail bridge crosses the creek close to the present upper limit of the tidal range. In this topographical context, timber structures preserved within the alluvium could include boats, wharves, or tidal watermills for example.

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The Watching Brief aims were:

1. To determine and/or confirm the general nature of any remains present.
2. To determine and/or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.
3. To assess the depth and extent of archaeological deposits.

2.2 Methodology

2.2.1 The methodology was detailed in the Archaeological Project Design, which was developed within the context of the Archaeological Mitigation Framework (AMF) (OA, last updated March 2012). The investigation strategy was determined in consultation with Gill Andrews, the London Gateway Archaeological Liaison Officer (ALO), and the local authority archaeological advisor, Richard Havis (ECC Historic Environment Branch), to ensure compliance with the aims and methods of the AMF.

2.2.2 Six monitoring visits were made during groundworks, including excavations to a depth of up to c 2m to install piling matts, and during a minor re-alignment of the banks of Mucking Creek.

3 RESULTS

3.1 Monitoring results

3.1.1 No significant archaeological features, deposits or artefacts were discovered.

3.1.2 Ground conditions were variable, including extensive localised disturbance from services, railway infrastructure and other modern disturbances. Most of these only affected the upper part of the alluvial sequence infilling Mucking Creek.

3.1.3 The piling mat areas were the most extensive open area excavations and offered the best opportunities for archaeological visibility. On the eastern side of Mucking Creek these excavations exposed River Terrace gravels at a depth of c. 1 – 2m, beneath variable thicknesses of minerogenic alluvium and made ground. No archaeological features were identified.

3.1.4 Within the main cut of the stream valley excavations for the piling mat installation and stream re-alignment revealed the upper part of the main peat body to a depth of up to c 3m. The peat was organic rich and very soft – so soft that a machine sank into it during excavation (Plates 7 and 8). Visibility in this area was limited as the excavations flooded rapidly.

3.1.5 Excavations for ecological mitigation purposes were initially monitored, but as only the topsoil was removed were too shallow to provide useful visibility for archaeological purposes.

3.2 Finds summary

3.2.1 No artefacts were recovered

3.3 Environmental summary

3.3.1 No environmental samples were recovered.

4 DISCUSSION

4.1 Interpretation

4.1.1 The excavations penetrated the upper parts of the thick sequence of Pleistocene and Holocene alluvial deposits infilling the valley of Mucking Creek, confirming the results of a previous geoarchaeological modelling exercise. These deposits were thought to have high potential for archaeological discoveries due to the concentration of historic settlement in the vicinity of Mucking Creek and its main tributary, the Hassenbrook stream. In particular the waterlogged deposits within the valley have the potential to contain organic archaeological remains. However the excavation impacts associated with the rail re-alignment were relatively shallow and limited in extent. In the event, no significant archaeological features or deposits were encountered.

4.1.2 Monitoring was focussed on substantive excavations offering reasonable opportunities for archaeological visibility, mainly comprising ground preparation works for piling mats and a slight re-alignment of the creek edges. Archaeological visibility ranged from ‘good’ to ‘very poor’, depending on the excavation method and ground conditions encountered in different parts of the valley. Plates 1 – 8 illustrate the most favourable ground conditions encountered.

4.2 Requirements for further work

4.2.1 As no significant archaeology was identified, and no environmental samples were recovered, no substantive additional work is required in relation to the Mucking Creek Watching Brief. The conclusions of this report will be summarised in a planned combined publication report on the London Gateway Rail Corridor and Access Road.

4.3 Acknowledgements

4.3.1 Oxford Archaeology would like to thank Marcus Pearson, Chris Webb and Emma Deary of DP World London Gateway, and Gill Andrews (ALO), for facilitating the works, and Richard Havis (Essex County Council Historic Environment Branch) for monitoring and advice during the fieldwork.

4.3.2 Brian Dean and Ashley Strutt carried out the monitoring at Mucking Creek on behalf of OA, under management of Stuart Foreman.

4.4 Location of archive

4.4.1 The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with the Thurrock District Museum in due course.

5 REFERENCES

OA April 2012 Rail Connection to Serve the London Gateway Port and Park Development, Archaeological Project Design, prepared by Oxford Archaeology on behalf of DP World London Gateway

OA September 2012 London Gateway Rail Corridor, Broadhope Loop mitigation report, prepared by Oxford Archaeology on behalf of DP World London Gateway

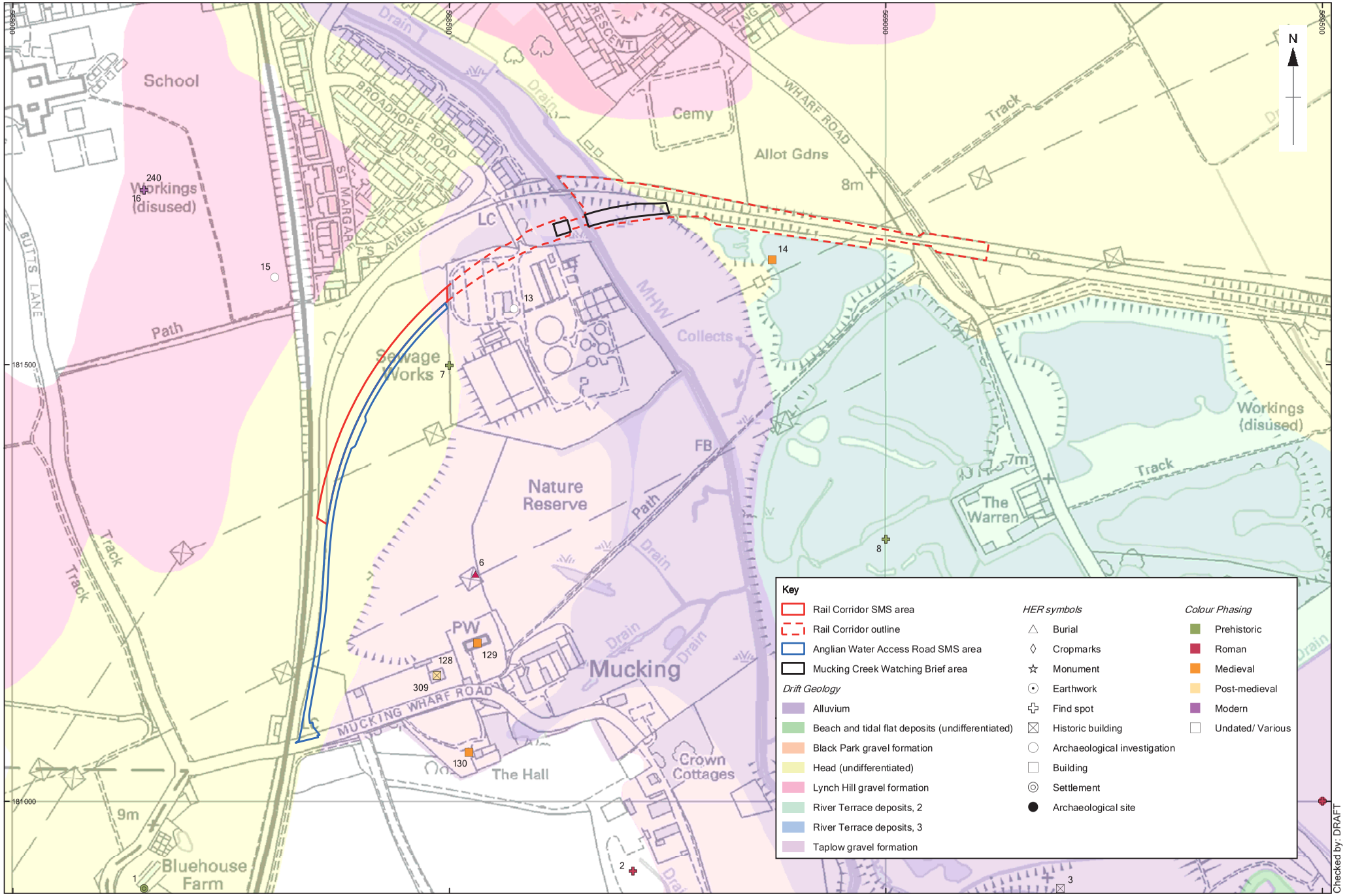

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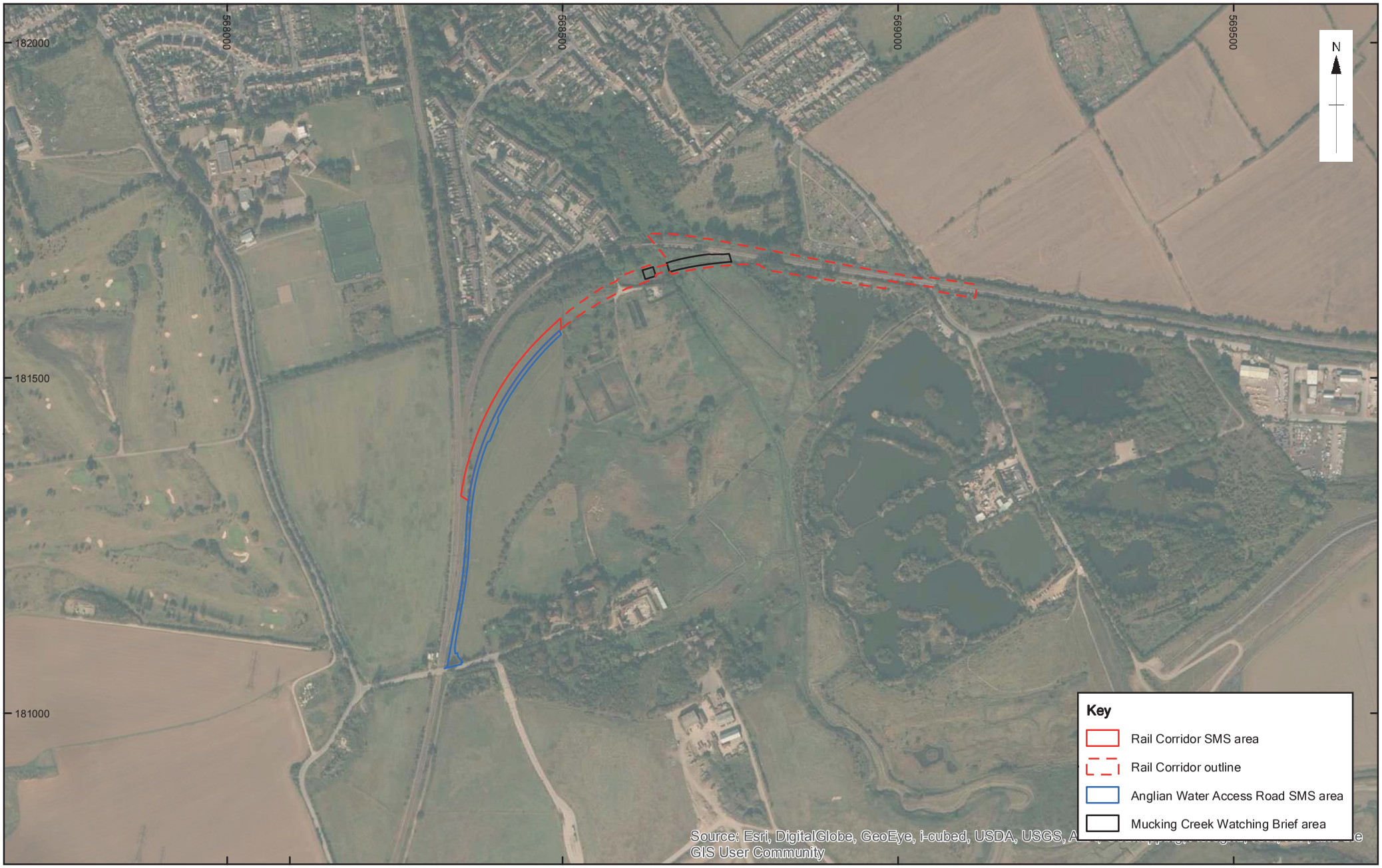
Figure 1: Site location map



X:\LG2007\03_Geomatics\GIS\ArcGIS\current\001 projects\Arcview 3 projects\LG Rail Corridor Archaeological Project Design_040412\LG_Rail_Corridor_PD_Fig4_050412*Leo Healley*05.04.2012

Checked by: GJ 05.04.2012

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Figure 2: Plan showing location Mucking Creek Watching Brief location on aerial photo (ESRI)

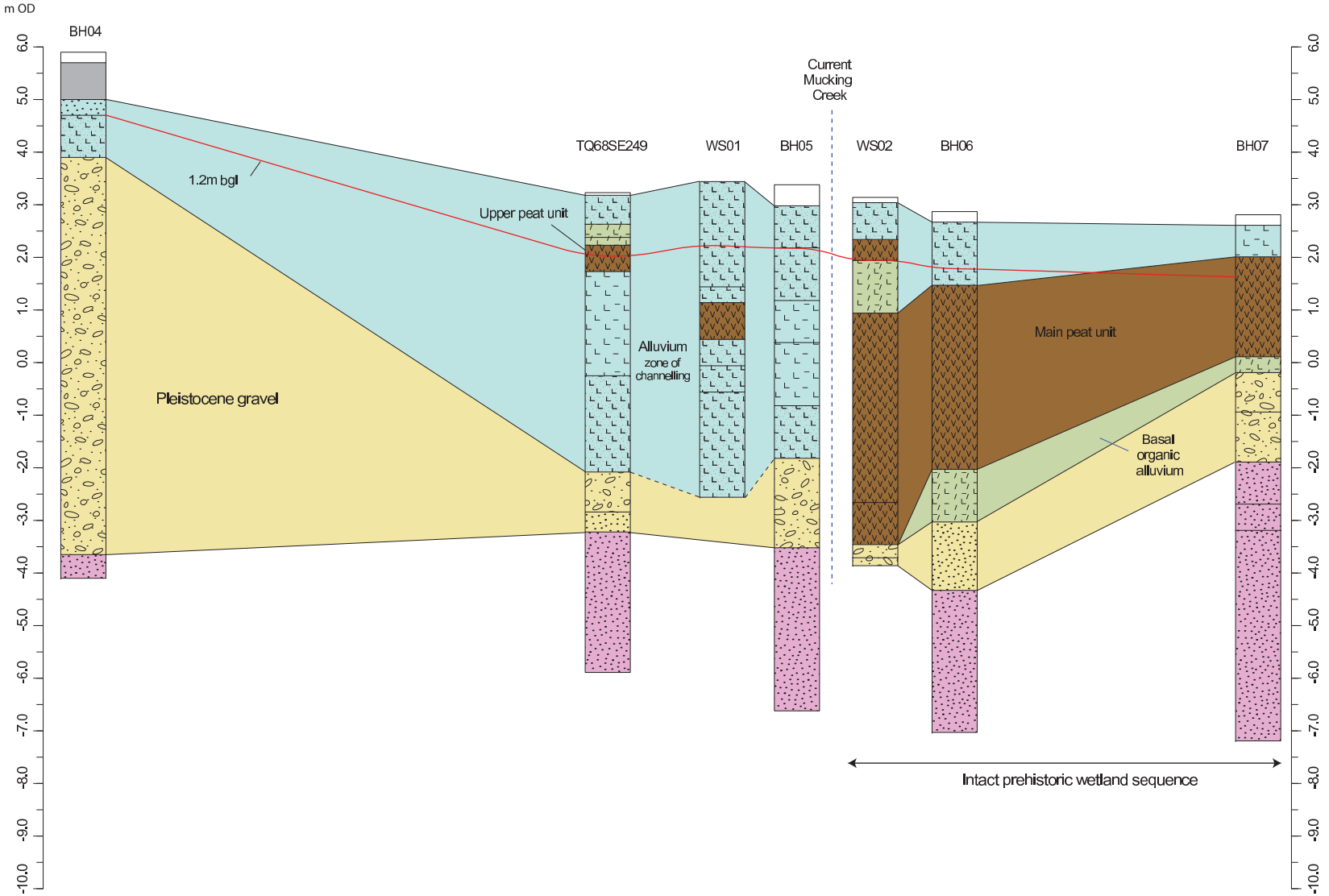

Figure 3: Interpretative geoarchaeological cross-section through deposits infilling the valley of Mucking Creek (based on geotechnical data)

Plate1: Installing piling matts in Mucking Creek

Plate 2: Exposure of terrace gravel beneath made ground on east side of Mucking Creek

Plate 3: Excavation into upper alluvium adjacent to Mucking Creek

Plate 4: Shallow sequence of alluvium overlying terrace gravel on east side of Mucking Creek valley

Plate 5: Shallow sequence of alluvium overlying terrace gravel on east side of Mucking Creek valley

Plate 6: Exposure of terrace gravel beneath made ground on east side of Mucking Creek

Plate 7: Upper alluvium overlying peat, adjacent to Mucking Creek

Plate 8: An excavator sinks into the soft, deep peat deposits infilling the valley of Mucking Creek. The surface of the underlying terrace deposits can be seen emerging to the right of the picture, forming the east bank of the stream valley

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